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MONTHLY LABOR REVIEW

U.S. Department of Labor  
Bureau of Labor Statistics  
October 1982

In this issue:  
Articles on unpaid family workers  
and the productivity puzzle

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# MONTHLY LABOR REVIEW

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# Labor Month In Review



**COOPERATION** between management and labor was the focus of an unusual conference that drew nearly 1,000 industrial relations practitioners to Washington, D.C., September 9 and 10. Sponsored by the Federal Mediation and Conciliation Service, the conference featured a report by Peter Pestillo, vice president for labor relations of the Ford Motor Company, about union-management cooperation in the auto industry, and a score of discussions and workshop sessions dealing with labor-management committees, quality of worklife programs, quality circles, and similar efforts. Excerpts:

**Daniel Quinn Mills**, Harvard University: Collective bargaining practiced primarily as rule-making has become self-defeating for both unions and management. We must go beyond both rule-making and the adversarial emphasis if a major new contribution to American economic performance is to be made. Rule-making may be replaced by a greater degree of employee participation and commitment in the workplace, but unless the adversarial posture changes, increased participation is of no use. Instead of resolving production problems, participatory schemes will simply add additional delays to management decisionmaking.

It is time to draw on the older tradition of the American labor movement to move beyond the concept of collective bargaining as primarily a rule-making process. This should be done by putting far more flexibility into the collective bargaining agreement through less detailed provisions, through reorganized work arrangements, and through different incentives for both management and labor. Some rule-making and the legal enforceability of contracts are not to be abandoned. But they must now take a back seat to attempts to move the

collective bargaining process beyond continual confrontation and into a more constructive mode.

A commitment to enhancing productivity is not easily made by American unionists. Too often increased productivity has simply meant speeding up the pace at which managers require employees to work. But there is far more to improving productivity than speed-ups; and the failure to seek productivity improvement in a company threatens the continued existence of jobs that the company provides. Unions must find a way to be more sophisticated in their response to management efforts to improve productivity. Some efforts should be opposed, but others must be supported. And the goal of improving productivity should be accepted.

**Raymond J. Donovan**, Secretary of Labor: I recently created, within the Department's Labor-Management Services Administration, a Division of Cooperative Labor-Management programs. This new unit, whose work is just now getting under way, will serve as the focal point of our various activities in this area of concern. It will be responsible for developing and administering a program of technical assistance and information designed to encourage and assist employers and unions to undertake joint efforts to enlist the talents and energies of workers in a common campaign to improve productivity and quality of working life. When fully operative, management and union officials, as well as academic and other third parties, should have at their disposal a hitherto unavailable store of information about current issues and innovative industrial relations practices. While these kinds of data may now exist in goodly amounts, they are widely scattered and not readily accessed by those most in need of them. As a result of this information clutter,

there is too much reinventing of the wheel and too little chance to build on the basis of experience already gained. The type of central information exchange we envision should go far to correct this problem.

One of the chief purposes of the Labor Department's program is to bolster existing institutional capabilities by providing services primarily to such intermediate support groups as area and industry labor-management committees, productivity and quality of working life centers, trade associations and international unions. These are the organizations that local employers and unions should rely on to obtain more direct forms of assistance in developing their own cooperative programs.

**Glenn Watts**, president, Communications Workers of America: During the past few years, Quality of Work Life has become a controversial topic for American labor. A growing number of unions have become involved in QWL efforts, either on their own initiative or management's; but at the same time opposition has become stronger.

The controversy comes from the fact that QWL challenges many of the traditional ways in which unions do business. It is based, first of all, on a cooperative, problem-solving relationship between labor and management, instead of the familiar adversarial style.

One result is that in most QWL efforts the grievance rate drops significantly. And further, QWL increases the direct contact between employers and shop-floor workers, threatening to bypass the union.

These aspects of QWL are seen by many in the labor movement as a threat. But others—and I include myself among them—see it as offering a great opportunity to extend the reach of collective bargaining. □



# Unpaid family workers: long-term decline continues

*The number of those working without pay in family businesses dropped by 1981 to less than half of the 1950 total; agriculture, where most had been employed, registered the sharpest loss of jobs*

PATRICIA A. DALY

For more than 30 years, the total number of persons working without pay in family businesses has dwindled to a point that, by 1981, was less than half of the 1950 total. At 650,000, unpaid family workers accounted for less than 1 percent of total employment in 1981, down from almost 3 percent in 1950.

Historically, the vast majority of unpaid family workers had been in the agricultural sector, but there are now fewer unpaid family workers in agriculture than in other industries. Unpaid family workers accounted for one-sixth of farm employment in 1950, but for less than one-tenth in 1981. The largest numerical decline occurred between 1960 and 1970, a decade which experienced dramatic declines in total agricultural employment. Although the number of unpaid family workers in nonagricultural industries has fluctuated in the last 30 years, the levels for 1950 and 1981 were virtually the same at about 400,000, a very small share of nonfarm employment. (See table 1.)

This article is the first by the Bureau of Labor Statistics to examine and analyze the available data on unpaid family workers. The group, although numerically small, exhibits some interesting characteristics and reflects some of the widespread changes in the work force and the economy.

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## Classification of workers

Since the 1940's, the Current Population Survey (a monthly survey of households) has obtained information on an individual's labor force activity during a designated period. Based on the responses of a household member to a series of questions, each individual aged 16 years and older is classified as employed, unemployed, or not in the labor force. To be considered employed, a person must be paid for at least one hour of work (wage and salary worker); operate one's own business, profession, or farm (self-employed); or work without pay for 15 or more hours per week in a family business or on a family farm (unpaid family worker). Those who have a job but are not at work temporarily for such reasons as illness, vacation, or an industrial dispute are also counted as employed, whether or not they are paid.

The first question asked the respondent about each appropriate household member is, "What was . . . doing most of last week—working or something else?" This is followed by "Did . . . do any work at all last week, not counting work around the house?" If there is already a farm or business operator enumerated in the household, the respondent is asked specifically about unpaid work.

Data are collected on hours worked at all jobs; however, an individual is assigned to an occupation, industry, and class-of-worker category based on the job in which he or she worked the most hours. Thus, individu-



**Table 1. Unpaid family workers in agriculture and nonagricultural industries by sex, annual averages, selected years, 1950-81**

[Numbers in thousands]

Industry and year	Total		Men		Women	
	Number	Percent of employment	Number	Percent of employment	Number	Percent of employment
All industries:						
1950 . . . . .	1,573	2.7	523	1.3	1,050	6.1
1960 . . . . .	1,499	2.3	385	.9	1,114	5.1
1970 . . . . .	1,001	1.3	213	.4	788	2.7
1981 . . . . .	656	.7	138	.2	519	1.2
Agriculture:						
1950 . . . . .	1,190	16.6	466	7.8	724	62.5
1960 . . . . .	901	16.5	310	6.9	596	60.4
1970 . . . . .	499	14.4	160	5.6	339	56.4
1981 . . . . .	266	7.9	91	3.4	176	26.4
Nonagriculture:						
1950 . . . . .	383	.7	57	.2	326	2.0
1960 . . . . .	598	1.0	75	.2	518	2.5
1970 . . . . .	502	.7	53	.1	449	2.2
1981 . . . . .	390	.4	47	.1	343	.8

als who do unpaid family work but work more hours in another job are not counted as unpaid family workers.

### Demographic changes

**Sex.** Women are far more likely to be unpaid family workers than men, particularly in nonagricultural industries. As the mix between agriculture and nonagricultural industries has changed, the female proportion of unpaid family workers has increased:

	1950	1960	1970	1981
Total employment (in percent):				
Men . . . . .	30	26	21	21
Women . . . . .	70	74	79	79
Agriculture:				
Men . . . . .	35	34	32	34
Women . . . . .	65	66	68	66
Nonagriculture:				
Men . . . . .	15	13	11	12
Women . . . . .	85	87	89	88

The number of unpaid female family workers declined by 530,000 between 1950 and 1981 and the number of male workers, by 300,000. The percentage declines were more drastic for men overall (74 percent) than for women (51 percent). Table 1 provides employment levels and the percent of agriculture and nonagricultural employment which unpaid family work represents.

The employment declines may reflect changing societal values and economic conditions which include the fact that more women are seeking paid employment and that there is an increasing societal acceptance and expectation of this phenomenon. In agriculture, particularly, the trends are consistent with the breakup of the traditional family farm which has resulted in increases in farm size, decreases in the number of farms, more incorporations, and more part-time farming.

**Age.** One of the ways in which young persons can gain valuable experience and assist their families until they begin their own careers is by doing unpaid family work. As the following percentage distribution of 1981 data suggests, the vast majority of male unpaid family workers are under 25 years of age, while most women in this category are in the central age group—25 to 54:

	Agriculture		Nonagriculture	
	Men	Women	Men	Women
Total number (in thousands) . . . . .	91	176	47	343
Percent . . . . .	100	100	100	100
Ages 16-24 . . . . .	81	13	57	7
Ages 25-54 . . . . .	11	67	23	73
Ages 55 and over . . . . .	8	20	19	20

The large differential may reflect the fact that men in the central age group were somewhat more likely to seek paid employment. What may be more important, however, is that, in a family operated business or farm, the husband may be counted as self-employed and the wife as an unpaid family worker. This would explain the large percentage of female unpaid family workers in the 25-54 age group. The fact that men accounted for almost 90 percent of the self-employed in agriculture and nearly 70 percent in nonagricultural industries lends some support to this interpretation.

**Race.** Although black and other minority races made up about 13 percent of the civilian labor force, they accounted for only 2 percent of unpaid family workers in agricultural industries and 6 percent of those in nonagricultural industries. This is undoubtedly related to the low proportion of blacks and other minorities operating their own farms and businesses—4 percent of self-employed workers in agriculture and 7 percent in other industries.

### Occupational trends

An examination of data on unpaid family workers by occupation revealed sharp differences between men and women as well as a shift from farm to white-collar occupations as the most common job categories for unpaid family workers. Women accounted for almost 80 percent of unpaid family workers in 1981 and they had more jobs than men in every occupational group. More than half were doing white-collar work, while most of the male unpaid family workers were in farming.

With the decline in unpaid family work on farms, white-collar occupations have overtaken farm occupations as the dominant group for unpaid family workers. Within the white-collar group, three-fourths of unpaid family workers had clerical jobs in 1981 and more than 100,000 were bookkeepers. Unpaid family workers were



also frequently employed as secretaries and as sales clerks in retail trade. Individuals doing unpaid family work were dispersed throughout other white-collar occupations, and a sprinkling may be found in blue-collar and service occupations.

The number of farm laborers declined by half a million between 1960 and 1970 and by a quarter million since 1970. Nevertheless, at 254,000 in 1981, farm laborers ranked the highest among the specific occupations.

The nature of various occupations obviously makes them more or less suitable for unpaid family work. It is more likely that a family member will be called upon to do farm chores or typing than plumbing or carpentry.

### Patterns by industry

In general, there was a higher incidence of unpaid family workers in industries with a large number of self-employed workers. Agriculture, for instance, had an extremely high percentage of self-employed workers (almost half), and thus had the largest percentage and number of unpaid family workers.

Trade also had a substantial number of unpaid family workers—about 170,000 in 1981 or one-fourth of all unpaid family workers. Most unpaid family workers were in retail trade, with particularly high concentrations in eating and drinking places, groceries, and gasoline service stations—establishments which had a high number of self-employed workers.

Among the service industries, business and repair services such as automobile repair, personal services such as laundry and cleaning, and professional services such as those of physicians and dentists employed more unpaid family workers than others. The self-employed were also well represented in these industries.

Between 1970 and 1981, the greatest industrial change among unpaid family workers was the decline in agricultural employment as its proportion of the total dropped from 50 to 41 percent, representing a reduction of over 200,000 workers. The construction, manufacturing, and miscellaneous service industries all gained in the percentage of unpaid family workers, although only construction and manufacturing actually added jobs.

### Hours worked

Unpaid family workers who put in less than 15 hours a week on the job are classified as not in the labor force

rather than as employed.<sup>1</sup> In 1981, there were 130,000 persons in this group—mostly women in nonagricultural jobs.

Although obtaining information on the number of hours worked is important, it may be difficult to remember exactly how many hours were worked if no pay was involved. Reporting by another household member (proxy response) may be even less reliable. Nonetheless, it is worthwhile to compare average hours at work for agricultural and nonagricultural workers by whether they work for wages or salary, or are self-employed, or are unpaid family workers:

	<i>Agriculture</i>	<i>Nonagriculture</i>
Wage and salary . . . . .	40.8	37.7
Self-employed . . . . .	49.3	40.5
Unpaid family workers . .	39.4	35.8

While unpaid family workers averaged fewer hours than either wage and salary or self-employed workers, the differential was not as large as might be anticipated. Thus, in terms of worker input as measured by time, unpaid family work is not a marginal form of employment but rather a significant contribution to family businesses.

THE ECONOMIC STRUCTURE and labor force trends in recent years would seem to preclude the possibility of an increase in either the number or concentration of unpaid family workers in the foreseeable future. If employment in agriculture continues to decline, unpaid family workers will undoubtedly do the same. This tendency is compounded as farms grow larger, incorporate, and consequently employ more wage and salary workers. Because unpaid family work accounts for less than 1 percent of total employment, the aggregate changes are not of great importance. The real significance is the socioeconomic changes which influence a person to choose this kind of work. □

— FOOTNOTE —

<sup>1</sup> The number of hours worked is integral to the assignment of a worker to the unpaid family worker category, in that the individual must work 15 or more hours per week to be counted in this group.



# Productivity growth average in farm machinery manufacturing

*Productivity gains, aided by new technology, especially computers, but moderated by cyclical downturns, averaged 2.6 percent a year over the 1958–80 period*

ARTHUR S. HERMAN AND JOHN W. FERRIS

Productivity, as measured by output per employee hour, in farm machinery manufacturing<sup>1</sup> was about the same as the average for all manufacturing industries over the 1958–80 period. Growth was aided by numerically controlled machine tools, automatic welding, computerized manufacturing, industrial robots, and computerized automatic warehouses, but was partially offset by sharp declines in demand. Almost every decline in productivity during the period studied can be associated with a drop in output, which, in turn, usually coincides with downturns in the economy. During the 22-year period, productivity in the farm machinery industry grew at a rate of 2.6 percent a year, compared with 2.7 percent per year for all manufacturing industries; 1.9 percent for construction machinery, an industry which uses similar manufacturing techniques; and 3.2 percent for motor vehicles, another similar industry.

## **Output, productivity follow farm income**

Productivity growth in the farm machinery industry can be divided into three distinct periods. From 1958–65, productivity grew at an annual rate of 1.7 percent; from 1965–74, it accelerated to a 3.3-percent rate; and from 1974–80, slowed to 0.2 percent. (See table 1.) The higher rate of gain during the 1965–74 period can be associated with years of very high output, fueled by dramatic increases in farm income.

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Productivity changes in the farm machinery industry are closely tied to output changes over the short term. Demand for farm machinery is based on a number of interrelated factors. A major factor is the overall state of the economy. However, an even more directly related factor is farm income. Changes in the output of farm machinery closely parallel changes in farm income. When farm income is up, farmers tend to purchase new equipment. Among the determinants of income are crop size, both actual and anticipated in the near future, and farm prices. Crop size is, of course, affected by a number of variables, including the weather, farm prices, government policies, and the worldwide food supply. Other important factors affecting the production of farm machinery are farmers' costs, such as for loans, new machinery, land, fertilizers, and pesticides, as well as age and condition of existing equipment and imports and exports of farm equipment.

When income is low and prospects appear poor, farmers tend to make do by repairing, rather than replacing, existing equipment. Conversely, when income is growing and prospects for further expansion of profits appear good, they tend to purchase new, more productive equipment. Demand for machinery increases significantly during these expansive periods, as does productivity.

The impact of the numerous variables affecting demand changes rapidly over time; therefore, output of farm machinery shows wide swings. Productivity, however, moves in a less volatile manner. For example, output grew by 6.3 percent between 1958 and 1959, but

then dropped precipitously in 1960, a recession year, falling 18.3 percent. Concomitantly, productivity had no growth in 1959 and dropped sharply, by 7.1 percent, in 1960. In 1966, output increased substantially, up 19.4 percent, then declined for 4 consecutive years, one of which was the recession year of 1970. Following output, productivity also grew substantially in 1966, up 6.2 percent, and then dropped sharply, averaging 0.8 percent from 1967 to 1970.

The early 1970's were a period of high output growth, with gains of 16.5 percent in 1972, 21.3 percent in 1973, and 14.3 percent in 1974. This strong growth can be attributed to a sharp increase in farm income resulting, in part, from large exports of farm products, including sales of grain to Russia. Productivity recorded its largest advances during this period, with increases of 8.9 percent in 1971, 9.3 percent in 1972, 5.2 percent in 1973, and 3.6 percent in 1974.

In the more recent period—1980, a recession year—output dropped 15.1 percent, as farm income declined precipitously. In turn, productivity declined 6.7 percent.

A factor affecting output over the long term is the continuously increasing size of farms. The average farm in the United States has shown a significant increase in size, growing about 40 percent in acreage over the period studied.<sup>2</sup> This created a need for an increase in the physical dimensions and horsepower of farm machinery. To cope with the growing acreage, farmers purchased larger, more powerful equipment, rather than increasing their labor force. For example, the average horsepower (PTO) rating of tractors was 106 in 1980, compared with 67 in 1958. Demand for farm equipment has also been enhanced by such equipment as 4-wheel drive tractors, which allow farming in previously marginal areas, and such amenities as air conditioning and stereo radio and cassette equipment in the cabs of the larger units.

Demand for larger, more productive farm machinery has been one factor leading to the industry's long-term growth rate in output of 4.2 percent, somewhat higher than the 3.8 percent for the total manufacturing sector. Highly advanced farm equipment is one of many reasons that productivity has been significantly higher in the farm sector than in the nonfarm sector.

### Plants located in Farm Belt

The farm machinery manufacturing industry has paralleled the growth of agriculture in the United States. Some of the larger firms can trace their origins to the development of horse drawn harvesting equipment in the early 1800's. Therefore, farm machinery manufacturing is a mature industry, producing a variety of equipment for both U.S. markets and export.

There were 2,148 establishments in the farm machinery industry as of 1977, a significant increase over the 1,949 establishments reported in 1958. The number of

**Table 1. Output per employee hour and related indexes in the farm machinery equipment industry, 1958-80**

[1977=100]

Year	Output per hour			Output	Employee hours		
	All employees	Production workers	Non-production workers		All employees	Production workers	Non-production workers
1958 ...	65.1	64.9	65.5	49.4	75.9	76.1	75.4
1959 ...	65.1	63.4	70.3	52.5	80.7	82.8	74.7
1960 ...	60.5	61.3	58.6	42.9	70.9	70.0	73.2
1961 ...	62.9	61.3	67.7	45.7	72.7	74.5	67.5
1962 ...	65.1	65.1	64.8	48.8	75.0	75.0	75.3
1963 ...	66.6	64.3	74.3	53.7	80.6	83.5	72.3
1964 ...	70.2	66.9	82.0	60.1	85.6	89.9	73.3
1965 ...	72.2	68.6	84.8	64.0	88.6	93.3	75.5
1966 ...	76.7	72.3	92.7	76.4	99.6	105.6	82.4
1967 ...	76.8	73.3	88.8	73.6	95.8	100.4	82.9
1968 ...	76.7	75.0	82.1	70.8	92.3	94.4	86.2
1969 ...	73.8	73.2	75.9	65.8	89.1	89.9	86.7
1970 ...	75.7	75.2	77.3	65.1	86.0	86.6	84.2
1971 ...	82.4	83.0	81.0	66.2	80.3	79.8	81.7
1972 ...	90.1	87.0	99.9	77.1	85.6	88.6	77.2
1973 ...	94.8	90.7	109.2	93.5	98.6	103.1	85.6
1974 ...	98.2	92.6	118.3	106.9	108.9	115.4	90.4
1975 ...	97.7	95.3	105.2	100.0	102.4	104.9	95.1
1976 ...	101.1	100.5	103.1	98.9	97.8	98.4	95.9
1977 ...	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1978 ...	100.8	100.1	103.1	95.6	94.8	95.5	92.7
1979 ...	103.2	101.7	108.0	114.7	111.1	112.8	106.2
1980 ...	96.3	99.6	88.1	97.4	101.1	97.8	110.6
Average annual rates of change (percent) <sup>1</sup>							
1958-80	2.6	2.7	2.4	4.2	1.5	1.5	1.8
1958-65	1.7	1.0	3.9	3.9	2.2	2.9	( <sup>2</sup> )
1965-74	3.3	3.4	2.9	3.7	0.5	0.4	0.8
1974-80	0.2	1.2	-2.9	-0.1	-0.3	-1.4	2.9

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

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

employees per establishment has remained fairly constant, dropping slightly from 74 in 1958 to 70 in 1977 (the average for all manufacturing industries was 53).

The industry has a few very large firms with numerous establishments making a variety of equipment—tractors, combines, and other harvesting equipment, crop sprayers, plows, harrows, planters, cultivators, hay balers, and fertilizing equipment. These firms are highly integrated and manufacture many of the parts that are assembled into the final products, including both gasoline and diesel engines, as well as replacement parts for the older units in operation. The large firms generally produce the larger equipment, such as grain harvesting combines, 4-wheel drive tractors, and accessories. There are numerous medium and small firms in the industry. They usually specialize in a particular line or type of equipment, such as milking, poultry, or irrigation equipment. Many of them serve local markets for highly specialized equipment. The smaller firms also make lawn and garden equipment, such as walk-behind lawnmowers and snowblowers.

Farm machinery manufacturers are concentrated in the Farm Belt, with most plants in midwestern States—Illinois, Wisconsin, Minnesota, Iowa, Nebraska, and



Kansas, Texas and California also have a large number of plants.

The largest export market for U.S. manufacturers is Canada. In turn, Canada provides the largest amount of imports of farm machinery into the United States.

### **Employment and hours rapidly adjusted**

Over the 1958–80 period, the number and hours of production workers and nonproduction workers in the farm machinery industry have grown at similar rates. Production workers increased at an average annual rate of 1.7 percent and their hours grew 1.5 percent. Nonproduction workers grew at rate of 1.7 percent, and their hours increased at a rate of 1.8 percent.

Year-to-year changes in employment and hours in this industry tend to move in a similar but less volatile pattern than changes in output. This indicates that the industry can adjust its hours and employment fairly rapidly to changing demand. For example, when demand is falling overtime usually is cut, the number of shifts worked are reduced, the normal summer shut-downs may be extended, and workers may be laid off.

The extent of the adjustments in hours due to changes in demand is influenced by the occupational makeup of the work force. In the farm machinery industry, the largest occupational group is operatives, most of whom are assemblers. Welders, precision machine operators, punch and stamp machine operators, and transportation operators also are important. These employees, along with laborers (mainly freight handlers) are most affected by reductions in demand. The industry also employs a large group of craftworkers—machinists, mechanics, tool and die makers, and blue-collar supervisors.<sup>3</sup> Craftworkers are least affected by declines in production; because of their skill levels, employers are reluctant to lay them off for fear that they may not be available when demand picks up.

### **Technology aids productivity**

Technological change varies greatly among plants in the farm machinery industry. The more advanced highly sophisticated equipment is used, for the most part, by larger firms engaged in mass production of various products. Slower changes are undertaken by the smaller firms which make short runs of highly specialized products and generally have limited capital.<sup>4</sup>

The level of complexity of farm machinery manufacturing differs greatly depending on the product, which can range from a simple plow pulled by a tractor to a complex self-propelled grain harvesting combine. However, there are factors common to most farm equipment manufacturing: most of the components are made of iron and steel; they are shaped by such processes as casting, cutting, stamping, punching, boring, and machining; and they are joined to form the final product in

an assembly operation which uses welding and fastening with air powered tools. Farm machinery is usually finished by painting, either in the parts stage or as a completed unit.

Because of the complex nature of many of the products, the varied manufacturing operations involved in producing units, and the fact that farm machinery manufacturing is a mature industry with many old plants, there are numerous areas that are subject to technological change. The larger companies usually make most of the parts they assemble into the final product. Therefore, the technological innovations they employ cover a range of manufacturing operations and have resulted in significant labor savings.

During the 1960's, capital expenditures per employee for new plant and equipment were consistently below the average for all manufacturing industries. However, because of sustained demand for farm equipment in the early 1970's which strained the industry's capacity,<sup>5</sup> firms began to increase their capital expenditures for new plant and equipment. By 1975, capital expenditures per employee had almost tripled, compared to the level in 1970. This resulted in the installation of advanced manufacturing equipment and large scale plant modernization and probably was one of the factors leading to a higher rate of productivity increase during the 1970's than during the earlier decade.

Computers are among the widespread innovations with significant impact upon the industry. They are used for many functions, including inventory control, data collection, tracking progress of semi-completed products, design, and for numerous accounting and other business purposes. In recent years, computers have been more directly used for manufacturing operations on the factory floor.

Numerically controlled machine tools are used extensively by major companies in the manufacture of the parts used in assembling farm machinery. A recent innovation is computerized numerically controlled machine tools, which are more versatile than standard equipment because they can be programmed for changes by the operator rather than from tapes. One unit installed in a large firm is a completely computer-controlled gear case transfer line, using numerically controlled machine tools, where parts automatically go through 87 machining operations.<sup>6</sup>

One plant is experimenting with a change in machine tool layout, from the traditional setup consisting of banks of individual machines designed for a single operation to cells of machine tools based on workflow. This new layout requires high volume, but has cut bottlenecks in production and has resulted in operating efficiencies.

Automatic welding has replaced manual welding in a number of installations. In addition, industrial robots

are being introduced for welding functions, resulting in more versatile automatic welding operations.

Significant efforts have been made to increase efficiency in materials handling and warehousing functions. These functions are very important because of the numerous parts that must be moved, the many operations that must be carried out, and the large size of the factories involved in the manufacture of the more complex farm machines. A number of plants have installed computerized automatic warehousing and materials handling systems. In one plant, such a system is used for the materials receiving warehouse. The system is located in a special high rise building attached to the single story plant. Materials are shipped in using the plant's containers, logged on the computer, and moved automatically to a preassigned location. When needed, they are called for by the computer, which automatically sends a remote controlled sideloader for them, and are sent via conveyor to the location requesting them. This warehouse is run by a single computer operator. The installation of this system resulted in substantial labor savings, while doubling warehouse capacity, because the previously used equipment required numerous forklift operators.

Sideloader are an important innovation in the industry, even though they require operators. They are narrower and higher than the conventional forklifts which they replace, allowing for increased storage space and versatility in the warehouse. Sideloader are increasingly being used in semi-automatic computerized high rise warehousing systems installed in a number of plants.

An example of the most advanced technology for assembly line manufacture in the industry is a recently built tractor plant designed specifically for computer control.<sup>7</sup> This plant is unique in that almost all phases of its operations are computer controlled or directed. The plant has high rise computerized automatic warehouses. The parts to be assembled are programmed to move in the correct sequence to produce a finished tractor via conveyor through the various assembly lines. This is a major advance over the system where parts are made in advance and stored until needed, boxes of parts are moved to the assembly line via forklift trucks, and assemblers pick the correct parts out of the boxes to assemble the final product. The new plant uses industrial robots for welding and painting. The robotic painting machines are programmed to move their spray guns to paint the correct part of the tractor chassis as it moves by on the conveyor line. This differs from conventional automatic spray painting equipment, which uses fixed spray guns, in that it more closely approximates a human spray painter. Almost all welds for the frame of the tractor cabs made at this plant are done on an electronically controlled automatic framing buck which

is run by a single operator. The assembly lines are set up so that fasteners and other small parts are fed directly to the assemblers at the correct height for their use. This plant's design significantly cuts parts inventory, reduces handling, increases manufacturing efficiency, and results in overall labor savings.

Besides robotic painting, which is just being introduced in the industry, there are a number of other innovations that increase painting efficiency. One system, electrostatic painting, has been used for a number of years. In this process, electrically charged parts move through an automatic paint spray booth, with the paint mist attracted to the charged part. Another innovation is electric dip paint lines, in which charged parts are dipped into a paint-filled tank from which paint is precipitated out on the part. These systems have resulted in savings in both paint and labor.

While the advanced innovations are most readily adapted by the larger multiline companies, smaller firms in the industry tend to introduce new technology more slowly. Many of the latter specialize in a particular product, such as pipeline milking units or self-propelled irrigation systems. Although these units are usually produced from common components (pipes, tanks, spray guns, and pumps), they are generally assembled to fit a particular farmer's need. Because of the semicustom nature of production used by these smaller firms, it is difficult to adapt much of the available new technology which is designed for volume production. In addition, many of the smaller firms are located in rural areas near the farms they serve and do not have the access to the capital markets as do the major companies.

### **Future trends uncertain**

Changes in output and productivity in the farm machinery industry are expected to continue to reflect changes in farm income. In the near future, the outlook for farm income is uncertain. It has been falling since 1979; and currently, there are pressures on farm prices that are expected to slash farm profits. In addition, such factors as high interest rates and high fertilizer and pesticide costs are also expected to reduce farm income. The export market is uncertain, and farm prices are down. This situation could result in a continuation of the recent negative pressure on demand for farm machinery. In addition, technological changes in the near future may be affected by the financial difficulties of a number of the major companies in the industry, which are expected to limit capital expenditures for new plant and equipment.

Over the long term, modernization of plant and equipment is expected to continue in the farm machinery industry, with particular emphasis on labor savings and cost reduction. These changes will be fueled by possible competition with Japan in the market for larger



farm equipment, which is presently dominated by U.S. concerns. Japan currently holds a large share of the U.S. market for small tractors.<sup>8</sup> The future will see growing installation of automatic welding equipment

and increasing use of industrial robots for welding, painting, and other high volume, difficult operations. Computers will increasingly be used for manufacturing operations and in design functions. □

—FOOTNOTES—

<sup>1</sup> Average annual rates of change are based on the linear least squares trends of the logarithms of the index numbers. The farm machinery and equipment industry is designated industry 352 in the *Standard Industrial Classification Manual, 1972 Edition*, issued by the Office of Management and Budget. The industry comprises establishments primarily engaged in the manufacture of farm machinery and equipment, and garden tractors and lawn and garden equipment. A technical note describing the indexes is available from the Office of Productivity and Technology, Bureau of Labor Statistics, Washington, D.C. 20212. The indexes for this industry will be updated and included in the Bureau of Labor Statistics' annual bulletin, *Productivity Measures for Selected Industries*.

<sup>2</sup> *Statistical Abstract of the United States, 1980* (U.S. Department of Commerce, 1980), p. 686.

<sup>3</sup> *1970 Census of Population, Occupation by Industry*, Vol. PC(2)-7C (U.S. Department of Commerce, 1972), pp. 281-88.

<sup>4</sup> Based on discussions with industry experts.

<sup>5</sup> *U.S. Industrial Outlook, 1974* (U.S. Department of Commerce, 1973), p. 301.

<sup>6</sup> *John Deere Harvester Works* (Deere and Company, 1979), p. 10.

<sup>7</sup> *John Deere Tractor Works* (Deere and Company, 1980), pp. 6-18.

<sup>8</sup> *U.S. Industrial Outlook, 1981* (U.S. Department of Commerce, 1980), p. 260.

### APPENDIX: Measurement techniques and limitations

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

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

In the absence of adequate physical quantity data, the output index for this industry was constructed by a deflated value technique. The value of shipments of the various product classes were adjusted for price changes by appropriate Producer Price Indexes to derive real

output measures. These, in turn, were combined with employee hour weights to derive the overall output measure. These procedures result in a final output index that is conceptually close to the preferred output measure.

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

# Hand and edge tools industry experiences slow rise in productivity

*During 1958–80, annual productivity growth averaged just 1.3 percent, less than half the rate for manufacturing as a whole; industry employment grew by more than 50 percent*

MARY K. FARRIS AND JAMES D. YORK

Despite the growing do-it-yourself market and the introduction of new technology, productivity growth has been sluggish in the manufacture of wrenches, hammers, axes, files, and other hand and edge tools. During the 23-year period ended in 1980, output per employee hour increased at less than half the annual rate of all manufacturing.

This modest productivity rise in the hand and edge tools industry stems from the very gradual nature of technological improvements. These improvements have been characterized by increases in equipment speed and the continued introduction of automated controls.

As measured by output per employee hour, productivity in the industry grew at an average annual rate of only 1.3 percent during 1958–80, compared with 2.8 percent for all manufacturing.<sup>1</sup> Output increased at a rate of 3.3 percent and employee hours, by 2.0 percent. (See table 1.)

During the period, the industry experienced moderate productivity growth in the early years and a significant slowdown in the later years—a pattern exhibited in general by the manufacturing sector. From 1958 to 1965, output per employee hour increased at an average annual rate of 2.6 percent. Productivity increased in every year except 1960. During 1965–80, productivity growth slowed significantly from the earlier period, advancing at an average rate of only 0.7 percent a year. The average annual output increase slowed to 2.6 percent while

employee hours went up by 1.9 percent a year.

This marked falloff in productivity growth in turn reflects developments during two subperiods, 1965–73 and 1973–80, with different growth rates. From 1965 to 1973, productivity grew at an average annual rate of 1.3 percent, and during 1973–80, by 0.5 percent per year. The productivity trend was not steady, however, with both the largest increase and decrease occurring during the earlier subperiod. The largest drop, 6.4 percent, was in 1970, a recessionary year, during which output fell 7.1 percent and employee hours declined 0.7 percent. Both continued to decrease in 1971, but in 1972 the industry experienced a large turnaround; output rose by 17.1 percent, greatly outstripping the rise in employee hours of 9.2 percent. The resulting productivity gain of 7.2 percent was the largest during the study period.

The slow growth during the 1973–80 period reflected in part the 1974–75 recession. In 1974, output per employee hour dropped by 4.8 percent and in 1975, by 3.1 percent. Industry productivity rebounded strongly from the recession, however, rising by 3.9 percent in 1976 and by 2.5 percent in 1977. Productivity gains slowed in 1978 and 1979 as output growth moderated. The increase in 1978 was only 0.6 percent, followed by a rise of 3.7 percent in 1979. In 1980, with the economy experiencing a strong downturn, productivity fell by 5.1 percent.

## Employment and plant size

The level of employment in the industry has grown 56 percent since 1958, from 30,300 to 47,200, equivalent

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to an average annual increase of 2.2 percent. Employee hours advanced at an annual rate of 2.0 percent during the period, reflecting a slight decline in average hours per person. The number of production workers increased 53 percent; the share of the total work force accounted for by production workers has remained close to 80 percent.

A trend to larger plant size has resulted in an increase in the average number of employees per establishment. Between 1958 and 1977, the average number of employees per establishment rose from 40 to 65. The number of establishments with 500 employees or more almost tripled during this period, growing from 8 to 22. However, despite the trend to larger plant size, most establishments in the industry remain small. In 1977, 59 percent had fewer than 20 employees, although they only accounted for 5 percent of the shipments. The larger firms (100 employees or more) accounted for 79 percent of industry shipments.

## Markets

Automotive distributors, industrial distributors, and consumers constitute the major markets for handtools. The largest group of handtools consists of mechanics' hand service tools, the bulk of which is marketed by automotive jobbers or distributors. Some of these vendors are "wagon peddlers" who sell the tools directly to garages and professional mechanics, providing quality

tools and service-oriented marketing. Mechanics' hand tools are a fast growing segment of the industry. Demand is generated from the design changes made by automakers (including the conversion to metric) necessitating the purchase of new tools by the professional mechanic.<sup>2</sup>

Distribution to industrial users creates another market for handtools. Demand in this segment generally follows overall economic trends—rising during industrial expansion and slackening during economic downturns. Construction activity also has an impact on sales of handtools, especially heavy forged tools such as sledges and picks.

The burgeoning do-it-yourself market has influenced some domestic producers to orient their product lines toward the household market. Rising interest rates and declining housing starts have generated more remodeling and self-improvement projects which require tools. Expenditures for maintenance and repairs tripled during 1965–79, and construction improvements quadrupled.<sup>3</sup> In the 1970's, some companies redesigned their line of specialized professional tools to provide the amateur with popularly priced, good-quality versions. The proportion of the population in the household-forming years has been increasing, thus providing the industry with a potentially good future market. The do-it-yourself market is somewhat countercyclical, providing some cushion to the companies during economic downturns. Do-it-yourself sales grew 27 percent during the 1974–75 recession.<sup>4</sup>

Competition from imports has been intensifying in recent years and is becoming an increasingly important factor in the domestic market. Imports of all handtools as a percent of new supply (domestic shipments and imports) have increased considerably since 1968, rising from about 6 percent to 11.5 percent in 1979.<sup>5</sup> The export market has declined in relative importance during the last few years. Exports as a percent of domestic product shipments reached a peak during 1974 and 1975, rising to ratios of 15 and 16.2 percent. The ratio has declined steadily since then, falling to 12.4 percent in 1979.

## Technological advancement

The hand and edge tools industry produces a wide variety of products ranging from wrenches of all types and sizes to striking tools such as hammers, axes, and sledges. The industry also makes garden equipment such as hoes, rakes, and forks.

Although the basic processes involved in the production of hand and edge tools have changed little over the period, there have been improvements in the equipment and methods used. Many of these changes have been evolutionary in nature and have occurred on an in-house basis, with individual plants developing much of their own equipment to improve productivity. The re-

**Table 1. Productivity and related indexes for hand and edge tools, 1958–80**

[1977 = 100]

Year	Output per employee hour	Output	Employee hours	Employees
1958	74.0	47.2	63.8	64.5
1959	79.0	55.0	69.6	67.9
1960	77.0	52.1	67.7	66.2
1961	79.8	55.7	69.8	68.1
1962	81.5	60.8	74.6	71.7
1963	84.0	56.9	67.7	67.0
1964	86.1	61.5	71.4	69.6
1965	91.2	70.2	77.0	75.1
1966	88.8	75.6	85.1	80.9
1967	93.9	73.3	78.1	76.4
1968	95.5	74.4	77.9	76.6
1969	97.2	80.4	82.7	81.1
1970	91.0	74.7	82.1	80.2
1971	94.4	72.7	77.0	75.7
1972	101.2	85.1	84.1	83.6
1973	101.8	92.2	90.6	89.8
1974	96.9	87.1	89.9	89.4
1975	93.9	75.8	80.7	80.9
1976	97.6	85.1	87.2	87.7
1977	100.0	100.0	100.0	100.0
1978	100.6	107.8	107.2	106.8
1979	104.3	112.1	107.5	108.7
1980	99.0	95.5	96.5	100.4
Average annual rates of change (in percent)				
1958–80	1.3	3.3	2.0	2.2
1975–80	1.4	6.1	4.7	5.2

sult has been faster equipment speeds, increasing automation of certain processes, and more rapid materials flow. The introduction of robots by some manufacturers has been part of the effort to achieve more complete mechanization of the production processes. Robots are an integral part of an automated materials handling operation. They are used to help move workpieces to and from forging presses and to and from the forging press dies, and to assist with other operations such as the movement of workpieces to and from the oil quenching process.

One of the most basic processes involved in the production of products requiring a high degree of strength and hardness is forging. The objective of forging is to "hot work" the steel into specific shapes, concentrating the grain structure and fiber formation at the point of greatest shock and stress. This results in the achievement of the utmost strength and toughness inherent in the specific grade of steel that is used. This is especially important for striking tools.

To make hand and edge tools, a steel bar is sheared to the desired length and is then heated in an electric, oil, or gas-fired furnace. The bar is heated to a plastic condition and is then transferred to the forging hammer. Typically, drop forging hammers using closed impression dies perform the actual forging operation. (However, forging presses can also be used.) Intermittent blows of the hammer refine the steel billet or bar through a series of cavities in the die attaining the required shape in the finishing impression. A matched set of dies is used, with the lower die remaining stationary while the upper die vertically strikes the steel bar. Separate die impressions are used for preliminary and final forming operations.

Improvements in the ovens used to heat the metal for the forging operation have contributed to faster production rates. The speed with which these ovens can raise the temperature of the metal to the necessary level has improved, thus reducing the time needed for heating. Improved ovens have also reduced the amount of excess metal that needs to be removed from forged pieces, resulting in less finishing work.

There has been increasing mechanization in the "feeding" of metal to the forging equipment. Correspondingly, the operating speed of the forging equipment has also been improved. It is important that the proper temperature for the particular metal and the specific job be maintained throughout the successive stages of forging. The faster forging equipment has facilitated this and has thus reduced the problems associated with reheating.

In recent years, some plants have adopted horizontal impact forging equipment, which provides a high degree of automation. The piece of metal being worked is moved along by an electrically controlled manipulator.

The dies, which are attached to pneumatically powered rams, act on the metal pieces horizontally as they shape them. The pieces are automatically moved from impression to impression within the die as successive stages of forging are carried out. The automatic control of the dies and the movement of the workpieces results in reduced labor requirements.

After forging is completed, a trimmer press may be used to remove the excess (flash) metal squeezed out by the impact pressure. Grinding and polishing operations may subsequently be performed on the forged piece of metal. Improvements in grinding and polishing equipment have also contributed to productivity gains; both procedures were formerly done with hand-fed and hand-held equipment. However, manufacturers have increasingly been adopting equipment which permits these operations to be performed on a continuous flow basis. Further reduction in the time required for grinding and polishing has been achieved through redesign of the product to reduce the surfaces which need to be worked on.

Heat treating of the forged pieces is frequently performed for various reasons such as achieving a more uniform grain structure, relieving stresses, hardening the surface, and increasing the ease of machining. Improvements in heat treating ovens, including better controls, have aided productivity. Increasing automation in heat treating has reduced the operators' work in this process.

The adoption of cold forming techniques is also aiding productivity. In the cold forming process, dies are still used to give the workpieces their final shape. However, advancements in the feeding mechanisms permit preforming of the pieces to such an extent that they can enter the dies without the usual need for heating. This technique is becoming increasingly popular, especially in the production of mechanics' hand tools.

Some manufacturers have achieved additional efficiencies through the use of edge hardening equipment. For items whose strength requirements are primarily limited to edge strength, such as hedge shears, this can mean faster production because the hardening of the workpiece is concentrated only on critical edges versus the whole piece.

Efficiencies have also occurred in the broaching operation, which is the metal cutting process that enlarges or changes the contour of the tool openings (for example, wrench openings). The increased use of manipulators, which control point-to-point movement of workpieces, has reduced the work performed by operators.

Computers have encouraged productivity growth in several ways. In addition to helping with administrative functions such as payroll and inventory, the computer has proven valuable for production planning. Its use enables many of the activities involved in daily production operations to be scheduled more efficiently. Computers



also aid in coordinating the setup of production lines and the scheduling of die changes and downtime. This contributes to better utilization of die shops and other related in-house functions.

### The outlook

Productivity should benefit from continued mechanization of production processes and gradual improvements in equipment. Continued introduction of robots and the increasing adoption of cold forming techniques should be contributing factors, as will the expanded use of computer technology.

Horizontal impact forging equipment may be a factor in future productivity increases as more plants adopt this technology, especially where long production runs are involved. The cost and setup time associated with this equipment, however, may hinder its adoption. The demand for industry output has benefited from growth in the do-it-yourself market and demographic factors suggest that this trend could continue. However, competition from imports, as measured by the import penetration ratio, has been increasing—as a percent of new supply they rose from 7.5 percent in 1975 to 11.5 percent in 1979. □

### FOOTNOTES

<sup>1</sup> The hand and edge tool industry is composed of establishments primarily engaged in the manufacture of files and other hand and edge tools for metalworking, woodworking, and general maintenance. The industry is designated as SIC 3423 in the *Standard Industrial Classification Manual, 1972*. Establishments primarily engaged in the manufacture of saws are classified in industry 3425 and power-driven hand tools in 3546. All average annual rates of change are based on the linear least squares trends of the logarithms of the index numbers. Extension of the indexes will appear in the annual BLS Bulletin, *Productivity Measures for Selected Industries*.

<sup>2</sup> See Kathleen Wiegner, "Quality Still Matters," *Forbes*, Aug. 21, 1978, pp. 114–15.

<sup>3</sup> *Residential Alterations and Repairs*, Construction Reports C50 (Bureau of the Census).

<sup>4</sup> "Stanley Works: Capitalizing on the homeowner do-it-yourself trend," *Business Week*, Feb. 26, 1979, pp. 125–26.

<sup>5</sup> The import penetration ratio is calculated by dividing the value of shipments of imports by the value of new supply, where new supply is defined as the sum of the value of imports and domestic product shipments.

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*A Review Essay*

# The productivity puzzle: numbers alone won't solve it

*From vantage points in management, labor, academia, and government, contributors to four recent books grapple with the productivity slowdown, with little help from economic theory*

PAUL S. ADLER

Over the last two decades, there has been a major decline in the rate of growth in U.S. productivity. The lag in the ratio of output to input has also occurred in many other industrial countries, including Japan.

Orthodox economic theory hypothesizes a basically technical link between trends in output and input, namely, the production function. This hypothesis has been put to a severe test, for the precise extent, the origins, and the significance of the productivity slowdown are yet to be analyzed with a clarity that would demonstrate the usefulness of traditional economics in analyzing such problems.

There is, in particular, a surprising contrast between the wealth of studies that attempt to quantify the decline and calculate its causes, and the poverty of material on the role played by such a lag in macroeconomic performance. It should be remembered that, in general, at a company and an industry level, labor productivity and profitability are *not* well correlated, and that in capitalist economies decisions are based on the latter, *not* the former. Paul Samuelson's neoclassical paradigm claims its

originality in the capacity to link the two factors, in a synthesis of micro- and macro-economics. But so far, this approach has not shed light on the most elementary part of the productivity puzzle: Is the productivity slowdown basically a cause or an effect of current economic problems?

Research on productivity thus progresses somewhat unevenly. Three foci of study have emerged: data analysis, study of management practices, and research into labor relations and conditions. *Productivity: Prospects for Growth*, edited by Jerome Rosow, deals with all three subjects. The interdependence of the three themes makes this presentation most judicious. Three other recent books have also addressed one or other of these matters. Before discussing the major issues, we will identify the overlapping concerns of the four volumes.

*Productivity: Prospects for Growth* includes five contributions to the task of data analysis. Solomon Fabricant of New York University and Dale Jorgenson of Harvard University present the growth accounting data, Jerome Mark of the Bureau of Labor Statistics, the measurement consideration, and Howard Samuel and Rudy Oswald of the AFL-CIO, their views on the role of foreign trade and labor unions.

The reader seeking more detail on current data analysis methods can consult *Aggregate and Industry-Level*

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Productivity Analysis, edited by Ali Dogramaci and Nabil R. Adam, both of Rutgers University; this is the second volume of the Studies in Productivity Analysis series. Two papers address methodology: that by Ephraim Sudit of Rutgers University and Nachum Finger of Ben Gurion University presents a general survey and that by Douglas Moon of Columbia University, the dynamic input/output model. The formidable problems posed by time-series analysis are discussed by Lawrence Cohen of Columbia University and Salin Neftci of Boston College. Tom Boucher of Cornell University assesses technical change; J. R. Norsworthy and Michael Harper of the Bureau of Labor Statistics consider capital formation, and Frank Gollop of Boston College and Mark Roberts of Pennsylvania State University analyze imported intermediate inputs.

The next theme, management, is examined in *Productivity: Prospects for Growth* by John Donnelly, who discusses the role of the chief executive, and by Alfred Neal, former president of the Committee for Economic Development, who analyzes the role of the tax system. Exploring technological change at the corporate level are Reginald Jones, chairman of General Electric, John Diebold, chairman of the Diebold Group, Thomas Donahue, secretary-treasurer of the AFL-CIO, and Robert Ranftl of Hughes Aircraft Corp.

The problems of productivity management are also the theme of papers edited by Vernon M. Buehler and Y. Krishna Shetty, both of Utah State University, in *Productivity Improvement: Case Studies of Proven Practice*. Represented are 11 companies and three unions. Contributors also include Murray Weidenbaum, former chairman of the Council of Economic Advisers, and Clement Preiwisch of the General Accounting Office.

The last theme, dealing with labor, is discussed in *Productivity: Prospects for Growth* from four perspectives. Rosow of the Work in America Institute surveys the problems associated with the various "human factors" and discusses their possible remedies. Writing on worker participation are Stephen Fuller, vice president of General Motors, Douglas Fraser, president of the United Auto Workers, and Wayne Horvitz, director of the Federal Mediation and Conciliation Service.

These problems are given more theoretical treatment in Stephen Hill's *Competition and Control at Work: The New Industrial Sociology*, the fruit of his teaching at the London School of Economics.

The four books incorporate some of the most advanced thinking in this, somewhat fragmented, area of research. Our review will thus attempt to assess some of the strengths and weaknesses of the state of the art. The first two sections will deal with conceptual and analytical problems and will therefore consider the contributions of the Rosow volume and Dogramaci and Adam collection. The following two sections will cover the

management and labor aspects, as they are discussed in Buehler and Shetty, Hill, and the other chapters of Rosow. In a concluding section, we sketch some alternative lines of research.

### The conceptual problems of data analysis

The literature on the productivity problem shows little patience with the troublesome theoretical problems of economics. These books are no exception. Fabricant's overview gives theory scant attention; Mark's discussion of measurement problems includes an extensive survey of the reliability of our data, but from an exclusively pragmatic point of view. Sudit's discussion of methodological issues is broad-ranging but makes no effort to draw any conclusions concerning the value of the empirical work that is founded on fragile hypotheses. Most of his fellow contributors to the Dogramaci/Adam collection, concentrating on empirical industry-level and time-series analysis, struggle with the practical difficulties associated with these problems without the benefit of a viable theoretical framework. Not surprisingly, such studies are principally of interest to the professional student of productivity.

Two theoretical problems in particular would seem to merit discussion. Productivity analyses inspired by the neoclassical paradigm attempt to quantify the contribution of each factor of production to output growth. The productivity growth that cannot thus be explained, called the residual, has been attributed to technical change. Growth is thus decomposed into movements *along* a production function (representing a certain technology), and shifts *of* the production function (indicative of a change in technology). If this sounds plausible for small, marginal changes, Nelson<sup>1</sup> has already drawn attention to the absurdity of the attempt to extrapolate the procedure to major changes such as we have witnessed over the postwar period.

The second question warranting additional research takes us further back, into the great "Capital Debate" between Cambridge (U.S.) and Cambridge (U.K.). The conclusion was that the neoclassical attempt to base a theory of distribution on the theory of production was fatally flawed: even under competitive equilibrium conditions, the remuneration of capital is not determined by its marginal productivity, because the definition of a quantity of capital presupposes determination of the distributional variable. This conclusion vitiates much of the growth accounting exercise, because the calculation of a stock of plant and equipment—at first sight purely physical entities—involves a nontechnical factor like the rate of return. Multifactor productivity studies, however, continue to calculate a stock of capital (or a flow of capital services) by virtue, as C. E. Ferguson put it, of an "act of faith": "The question that confronts us is not whether the [British] Cambridge Criticism is the-

oretically valid. It is. Rather the question is an empirical or econometric one: is there sufficient substitutability within the system to establish neoclassical results? . . . Until the econometricians have the answer for us, placing reliance upon neoclassical economic theory is a matter of faith."<sup>2</sup> It is somewhat disconcerting to find the current productivity research pursued as if the Cambridge U.K. school had never existed.

Some relief from these attacks on the very legitimacy of growth accounting models may be forthcoming from the sophistication of more recent econometric techniques. Much of the capital debate concerned the circularity of reasoning in the neoclassical theory, attacking its explanatory power, but perhaps not its descriptive power. To our knowledge, however, none of the partisans of the growth accounting techniques has made this case. Most of the technical debates to date—for example, those surrounding the replacement of Laspeyres and Paasche indexes by Divisia indexes—are by comparison of limited import.

The basic problem posed by such theoretical interrogations concerns the usefulness of the neoclassical paradigm for dynamic analysis in conditions of real-world complexity. As Joan Robinson has written,<sup>3</sup> there is something inherently wrongheaded in trying "to find out from the record of what actually happened, what growth of output *would have been* if the value of capital had grown as much as it did without any technical progress having taken place." The value for long-term analysis of the distinction between shifts of and along a production function seems at best extremely limited.

The concrete problems of a choice of productivity indicators are thus posed against a backdrop of vast theoretical disputes; and the latter permeate the former. The usefulness of multifactor indexes, on the one hand, in attempting to define quantities of the different inputs, is limited by the need to assume that factors are remunerated at their marginal product. If this assumption is of dubious legitimacy for capital, the case of labor is not simple either. Obviously, different qualities of labor have different productive potentials; but it is much less clear that relative pay reflects these differences.

The use of simple labor productivity indexes, on the other hand, is theoretically uncontroversial. But their use does little to reduce the productivity puzzle to its purely quantitative dimension. The substitution of capital for labor must be somehow incorporated into the analysis. Relying on labor productivity, therefore, supposes the development of a model of accumulation, which the neoclassicists thought they had provided.

Beyond these properly economic disputes, there is also confusion over broader issues.

Measures of output, including those of the Bureau of Labor Statistics, are often approximate, especially in the many industries with no clearly defined products or

quality range. In an extreme case, that of the computer equipment industry, the difficulty of the task of measuring quality change has led to total capitulation, and the price deflator is conventionally set at 1, as if there had been no qualitative improvement at all since the birth of the computer industry. Some, not implausible, estimates of quality changes in this industry can be shown to boost output measures so much that the productivity lag for manufacturing disappears entirely.<sup>4</sup>

The rapid development of the service sector aggravates this problem. It is remarkable that as we narrow our focus from GNP, to private business sector output, and further to manufacturing output, the productivity slowdown appears progressively less dramatic. This seems perhaps normal, when one contrasts automation trends in manufacturing with those of service industries like shoe-shining. But the image of a technically backward service sector is belied by the example of computerization in telecommunications, banking, and insurance.

Two hypotheses thus compete in explaining the difference between the roles of manufacturing and services in the productivity slowdown. The first is that we mismeasure and underestimate service output; pushed far enough, this hypothesis could lead to the argument that there has been no serious productivity lag. Against such skeptics, it can, however, be shown that in the manufacturing sector, too, and in particular in many industries where measurement problems are least important, there seems to have been a significant productivity slowdown. The second hypothesis reverses the perspective, to emphasize the collapse of the service sector's apparent productivity. Could this reflect a real breakdown

### Books reviewed

Jerome Rosow, ed., *Productivity: Prospects for Growth*. New York, Van Nostrand Reinhold, Work in America Series, 1981, 340 pp. \$19.00.

Ali Dogramaci and Nabil R. Adam, eds., *Aggregate and Industry-Level Productivity Analysis*. (Volume 2 of Studies in Productivity Analysis.) Hingham, Mass., Martinus Nijhoff, 1981, 195 pp. \$25.00

Vernon M. Buehler and Y. Krishna Shetty, eds., *Productivity Improvement: Case Studies of Proven Practice*. New York, AMACOM, American Management Associations, Inc., 1981, 273 pp. \$19.95.

Stephen Hill, *Competition and Control at Work: The New Industrial Sociology*. Cambridge, Mass., Massachusetts Institute of Technology Press, 1981, 280 pp. \$25.00 cloth, \$9.95 paper.



in the efficiency with which this sector performs its mediating and informational functions? Unfortunately, little research has been conducted on the industrial dynamics of these functions.<sup>5</sup>

Deeper conceptual problems are not absent here either: how should we treat nonmarket goods? Pollution control expenses are commonly included in the cost side of production, but are difficult to include in the output side as, for example, clean air. Do market prices bear sufficient relation to utility to justify our reliance on them for evaluating economic performance? There is a venerable tradition of rejecting output (and therefore productivity) statistics as irrelevant to real welfare. The rub, of course, is that even if the data reflect the specifically market forms of welfare calculation, it is such calculations which orient real-world decisions. As limited as these measures are, they therefore have a key role to play in analysis.

The Rosow and Dogramaci/Adam volumes give these problems but scant attention.

### Looking for scapegoats

Beyond the conceptual and measurement difficulties, there has nevertheless probably been a fall in labor productivity growth rates. This deceleration is sufficiently important in a large enough range of indicators, both aggregate and industry level, to overcome most skepticism. Do we have an explanation for it?

In the aggregate data, the slowdown is particularly dramatic since 1973. In the total factor productivity framework, this shows up as a precipitous decline in the main factor contributing to growth, the residual. This fact alone should be sufficient to show that Edward F. Denison's interpretation of the residual as primarily reflecting advances in knowledge cannot be sustained.<sup>6</sup> Whatever slowdown one may imagine taking place in research and development, the accumulation of knowledge can hardly be imagined to have braked so suddenly.

A first hypothesis might be that companies today treat labor as a quasi-fixed factor, and that therefore the adjustment of employment to production is slower than it used to be. This has been verified statistically, and many of the contributors to the Buehler/Shetty volume claim that increased labor flexibility is the key to increasing corporate profitability. While this may explain a certain (downside) volatility of productivity ratios over the shorter period, the question remains as to why the slowdown persists.

Indeed, the U.S. debate has been characterized by a great resistance to the idea that the recent recessionary trends could be other than purely cyclical or exogenously generated. Jorgenson,<sup>7</sup> in *Productivity: Prospects for Growth* and elsewhere, develops the exogeneity thesis, arguing for the importance of energy prices in

explaining the slowdown. The data are far from showing this; but, above all, one would want to ask: why have the major economies proved themselves to be so incapable of surmounting such a handicap? The vigor of the upturns in GNP growth since 1973 has slowed recognition in this country that the long-term growth path has been shifted downward.

Under the title "Free the Fortune 500," Weidenbaum presents the now-classic case for assigning the role of chief culprit to government regulation. No statistics, and certainly not Denison's, have been advanced to substantiate his claim. The text is a candidly ideological manifesto that gives the reader a glimpse into the mind set of the recently resigned head of the Council of Economic Advisers.

The most serious candidate for blame is capital formation—the object of a study by Norsworthy and Harper in *Aggregate and Industry-Level Productivity Analysis*. The proportion of GNP going to investment has been remarkably stable over the last decade, but as GNP growth has slowed, so has capital formation. Other data in this contribution indicate that the price of capital services sharply accelerated from 1973, almost reaching the rate of increase in hourly labor compensation. The combination of higher interest rates, massive increases in the labor force owing to the arrival of the baby-boom generation and to the "mobilization" of women, as well as more direct pressure on real wage levels, may have thus led to such a cheapening of labor relative to capital as to slow the substitution of the latter for the former.<sup>8</sup> The principal difficulty with these explanations of the productivity slowdown is that the reduction in investment flows only marginally affects the "productivity" of the stock of capital. A further hypothesis is explored by Alfred Neal in *Productivity: Prospects for Growth*; he blames "excessive" taxation for insufficient investment. The argument is weakened by the ubiquity of the slowdown in countries with widely different taxation trends. Energy costs have also been incriminated, their rise rendering redundant a certain fraction of the capital stock because of energy/equipment complementarities.

Any or all of these factors may have played a role, but a key lesson from John Maynard Keynes seems to have been forgotten: the "animal spirits" of the investor will surmount many such obstacles if the weather forecasts for the business climate are good.<sup>9</sup> In particular, that somewhat tired old culprit, deficiency in savings, cannot constitute a real brake in a modern economy in which investment is financed on a credit-based, forward-contract system. If business prospects are good, low levels of retained corporate earnings will be supplemented by extra external finance, and a lack of deposits in the lending institutions will be overcome by money-creating credit.

The problem would thus appear to be systemic rather than localized. Any particular difficulty can be surmounted, and, often, transformed into a stimulus. The search for the origin of, and the cure for, the productivity "problem" has therefore recently turned to management and labor, the major actors in a socioeconomic system, the dynamism of which may be faltering.

### The role of management

The link between productivity and management is difficult to establish because product change and marketing flexibility are often more direct determinants of commercial survival and success than the technical efficiency with which a firm produces a hypothetically stable product. Accordingly, management itself tracks profitability rather than the more abstract notion of productivity.

*The second part of Productivity: Prospects for Growth* discusses a number of management problems related to the productivity issue. The principal area of analysis is the dynamism of technological change in the firm. Diebold sketches the (well known and still) fascinating account of the Office of Tomorrow, with a refreshingly pragmatic touch as to the limits both of the current technology and above all of its impact on office-work productivity. This contribution is valuable in reminding us that the availability of new technologies does not guarantee their rapid implementation—the delays are often measured in decades. Furthermore, implementation does not guarantee improvement of the standard productivity indexes, for new technologies create new tasks.

Other contributions include a disappointingly low-key union assessment of technological trends by Donahue, somewhat in contrast with the more thought-provoking piece by Oswald, AFL-CIO research director, on the general productivity question. The contribution of John Donnelly, the chairman of Donnelly Mirrors, Inc., is useful in outlining one manager's perception of the importance of practical labor-management cooperation in the framework of a Scanlon Plan.

This latter approach to labor, seeking to transform the presence of unions from a handicap into an advantage for corporate competitiveness, is in sad contrast to the approaches outlined in the case study volume published by AMACOM (a division of American Management Associations). The reader cannot but be impressed by the presence of such important companies as Kaiser Aluminum and Chemicals, Hughes Aircraft, and Burger King, even if the papers themselves are disappointingly short and lacking in detail. The message is basically that productivity demands more Taylorism, more control, more incentive pay schemes, and a small dose of Japanese-style Quality Circles. The last are designed to capitalize on workers' intimate knowledge of the pro-

duction process. The Quality Circle view, in contrast to the "quality of worklife" philosophy to which Rosow and others allude, excludes any commitment to real cooperation in which the gains of labor would not be premised on the *prior* increase of company profits.

Some cracks do, nevertheless, appear in the management orthodoxy. Nucor Corp. insists on the importance of job security and has implemented group bonus schemes that include foremen and maintenance crew. Crompton Co., Inc., has instituted a 36-hour, 3-day workweek paid 40 hours. Hughes Aircraft declares its commitment to designing "meaningful" jobs by enlarging the range of tasks.

The union contributions by Cass Alvin of the AFL-CIO echo somewhat alone in this landscape. The conservatism of his interlocutors would indeed seem to constitute a major handicap in putting the United States back onto the map of innovative entrepreneurship. Abernathy, Clarke, Hayes, and Kantrow<sup>10</sup> have recently launched a major critique of this conservatism. They attribute the decline in the relative strength of U.S. companies to the short-term, bottom-line myopia of corporate decisionmaking. Overemphasis on quarterly and annual results, according to the Harvard authors, cripples American corporations' capacity for long-term technological programming. Symptomatic of the disease is the U.S. managers' tendency, perfectly explicit in the case studies, and above all in the "Free the Fortune 500" contribution, to interpret every constraint on their prerogatives as an intolerable shackle on individual creativity. Whence the paradox: in the United States, where Government intervention and unions are smaller and weaker than in most other developed countries, the blame attributed to Government and unions in causing the current crisis is greatest.

The difficulty, of course, with this critique of management, is that in less expert hands it can easily slide into the same "blame the victim" mode that constitutes one of management's own shortcomings. Can one sustain the argument that the current economic woes of the United States are principally due to a particularly incompetent group of managers? Is not their myopia the most rational programming strategy in a period of great uncertainty? Is it not the flip side of the flexibility of operations that European managers so envy? Is not long-term technological programming vastly easier for those in second place who are imitating the frontrunner?<sup>11</sup>

Alternatively, one could perhaps hypothesize that the cyclical characteristics of capitalist growth can be dampened in the shorter term but not eliminated. The problem is thus rephrased: in the current worldwide recessionary climate the only way to limit the cost of the market system's congenital myopia is by aligning short- and long-term prospects. Such a reconnection implies a



stabilization of macroeconomic conditions. Because markets are in themselves unable to provide such stability, capitalist growth seems to necessitate its imposition by non-market forces, via the further institutionalization of social consensus and conflict-resolution mechanisms.

### The role of labor

The frequency with which incentive pay schemes are mentioned by the contributors to the case studies is perhaps not to be simply attributed to the blame-the-victim syndrome. Assuring the cooperation of labor is a major permanent task; poor labor relations can be very costly in terms of excess supervisory personnel, of under-performance of workers, of underutilization of plant, and of lack of product quality and timeliness. If these costs are less important than those associated with a deficit of technical and organizational adaptation, they are by no means negligible.

Stephen Hill's book presents a valuable framework for the analysis of these problems. Written from an English perspective, but with a solid grasp of U.S. developments, its dual reference to Max Weber and to a context where class conflict is manifest could prove a tonic for a U.S. audience. Especially in the current period when labor leaders have rediscovered the pertinence of a "class war" rhetoric.

U.S. industrial sociology has been dominated by a Durkheimian perspective which privileges the reproduction of a community of values. The absence of consensus thus constitutes the horizon of much social thinking: conflict is ever present but always on the horizon, beyond theoretical grasp. This approach contrasts with that of Weber, for whom the conflict of interests is the starting point of social analysis.

The fundamental hypothesis of Hill's work is that antagonistic interests compete within the firm. This conflict is not just over income distribution, but also over power, and in particular allocative power on the shop floor (work rules, staffing patterns and levels, work intensity, and so on). The fact that U.S. unions are seen as having de-emphasized allocative struggles in exchange for concessions in income distribution should not, in Hill's view, be interpreted as implying that shop-floor conflicts can be relegated to the status of a problem of maintaining consensus within the unions. The basic separation of ownership or control and productive activity—as opposed to their unity in a cooperative system—makes competition and conflict primary, if not permanent, features of the capitalist firm.

Hill's Weberianism is not the diluted version to which U.S. audiences are accustomed. Power within the capitalist firm is inexorably asymmetrical. The wage relation is a power relation, not just a "contract," because the worker, while free not to enter this or that *particular* employment contract, must enter *some* contract on

pain of distressing unemployment. (Milton Friedman's identification of Capitalism and Freedom rests on obscuring the general constraint in order to vaunt the freedom of its particularity.)

This leads to an interesting if somewhat fragmented discussion of Taylorism that contrasts favorably with what one often finds in the U.S. literature. Hill follows much of the recent research which characterizes Taylorism as an expression of this asymmetry in the labor process: management control over the immediate labor process is gained at the expense of craft-type worker autonomy. But he tempers this account by a discussion of the limits of Taylorism: its partial adoption in management circles, the resistance of workers to its effects, and, most importantly, the fact that the production process always necessitates some degree of cooperation—even within the framework of conflict.

The conflictuality of labor-management relations is, in this perspective, somewhat independent of the degree of institutionalization taken by the forms of its resolution. By contrast, U.S. discussion of quality of worklife programs seems hampered by the assumption that *cooperative* and *adversarial* relations can and should be two totally distinct modes of labor-management interaction. It is as if an overly consensual (and individualist) ideology blocked recognition by management and by unions that plant-level conflict was healthy and that cooperative moments *within* this conflictual relation were perfectly normal. Whence a fruitless polarization between the cynics and the naive.

The import of such research for the productivity puzzle is considerable, for many discussants locate the root of productivity decline in shop-floor tensions. The value of Hill's work is to remind such "radicals"—who appear at all points of the political spectrum—that growth in capitalist economies is not a zero-sum game. Workers' gains are not simply capitalists' losses, because in the longer run such gains are one of the most potent stimuli to technical change and hence to productivity growth. Whether worker resistance plays this role depends on the dynamism of the system.

### The dynamism of socioeconomic systems

The productivity puzzle is a valuable indicator of the current state of economics, reflecting this discipline's difficulties—theoretical, quantitative, historical, and sociological. Richard Nelson has drawn the uncomplimentary parallel with the drunk looking for his lost watch under the lamp post "because that's where the light is." But why is the economics profession tipsy? Part of the reason may be its excessive focus on formulating policy recommendations, an objective not always conducive to major theoretical research.

The role played by this policy focus might, however, shift from debilitating to revivifying. The urgent need

for vigorous policy remedies to current economic problems will not, we believe, be satisfied by a reliance on the automaticity of market adjustments. The demand for serious policy may thus, indirectly, become a stimulus for the revival of those theoretical trends that have for too long been relegated to the margins of economic theory: the heterodoxies of institutionalist and "fundamentalist" Keynesian theories.

The most fruitful areas of research may be at the intersection of Joseph Schumpeter and Nelson, in its proximity with that developed by certain French researchers<sup>12</sup> along the lines suggested by Michel Aglietta.<sup>13</sup> It would associate the analysis of macroeconomics to that of social institutions, going beyond the neoclassical, market-centered model by breaking with its implicit assumption that real developments, such as a productivity slowdown, can be accounted for by the juxtaposition of purely exogenous shocks and the spontaneous equilibrating market mechanism.

Market mechanisms need to be integrated into a historical model that explains their (always limited) pertinence to any given epoch. Periods of economic history are thus distinguished according to their money-creation regimes, wage-setting institutions, price determination mechanisms, and international trade

hierarchies. The coherence of these social forms with the dominant macroeconomic relations of productivity and income growth—"deepening" or "widening" modes of accumulation—assures a harmonious balance in the expansion of output and demand; their incoherence generates a protracted, Kondratieff-like period of instability.

Periods of coherence naturally exhaust their dynamism. Tensions accumulate. The diffusion of finite sets of organizational and technological innovations reaches higher plateaus. Virtuous circles become vicious. No meta-auctioneer guarantees the timely replacement of failing system-stabilizers.

In such a perspective, the downward shift in growth paths, of which the productivity deceleration is but a symptom, is attributable neither to a single cause nor the accidental conjunction of several causes. Longer downswings are part of our economic history, as the system exhausts and then recreates the social-structural conditions of accumulation.

Economic history, the real history of cycles, short and long, of accumulation and crashes, is made in the interstices of "economics" as Academia currently imagines it. At least, such might be the lesson of the productivity puzzle. □

—FOOTNOTES—

<sup>1</sup> Richard R. Nelson, "Research on productivity growth and productivity differences: dead ends and new departures," *Journal of Economic Literature*, September 1981, pp. 1029–64.

<sup>2</sup> C. E. Ferguson, *The Neoclassical Theory of Production and Distribution* (London and New York, Cambridge U.P., 1969).

<sup>3</sup> Joan Robinson, *Contributions to Modern Economics* (New York, Academic Press, 1978).

<sup>4</sup> Unpublished paper by Michael J. McKee of the Council of Economic Advisers staff.

<sup>5</sup> But see Robert S. Cohen, *The Internationalization of Capital and U.S. Cities* (Ph.D. dissertation, New School for Social Research, 1979), and Thomas Stanback Jr. and Thierry Noyelle, *Services/the New Economy* (Montclair, Allanheld, Osmun, 1981).

<sup>6</sup> Edward F. Denison, *Accounting for Slower Growth* (Washington, The Brookings Institution, 1979).

<sup>7</sup> Dale W. Jorgenson, interview, *Challenge*, November-December 1980, pp. 16–25. Note, however, that the rate of capital/labor substitution does not seem to have slowed in manufacturing.

<sup>8</sup> Gregory Schmid, "Productivity and Reindustrialization: A Dissenting View," *Challenge*, January-February 1981, pp. 24–29.

<sup>9</sup> Martin Baily, "Productivity and the Services of Capital and

Labor" (*Brookings Papers on Economic Activity*, 1, 1981) discusses this hypothesis in relation to Tobin's  $q$  ratio between market valuation and replacement costs of capital. The practical import of the Cambridge U.K. position may lie in the modeling of the tensions generated by the real-world gap between the competing *financial* estimates of capital stocks approximated in  $q$ 's numerator and denominator.

<sup>10</sup> William J. Abernathy, Kim B. Clark, and Alan M. Kantrow, "The New Industrial Competition," *Harvard Business Review*, September-October 1981, pp. 68–81; and William J. Abernathy and Robert H. Hayes, "Managing Our Way to Economic Decline," *Harvard Business Review*, July-August 1980, pp. 67–77.

<sup>11</sup> Robert Z. Lawrence, *Phase I Report: International Trade, to the National Science Foundation. Essay number two: Trade performance patterns*, unpublished paper, (Washington, The Brookings Institution, April 1982).

<sup>12</sup> See, in particular, Robert Boyer and Pascal Petit, "Employment and Productivity in the EEC," *Cambridge Journal of Economics*, Vol. 5 No. 1, March 1981, pp. 47–58. Also see Robert Boyer, "Wage Formation in Historical Perspective: the French Experience," *Cambridge Journal of Economics*, Vol. 3, No. 2, June 1979, pp. 99–118.

<sup>13</sup> Michel Aglietta, *A Theory of Capitalist Regulation: the U.S. Experience* (London, N.L.B., 1979).



# How Sweden combats unemployment among young and older workers

*Joblessness among the 16- to 24-year-olds and those 45 years and over in Sweden, although low by American standards, worsened during the recessions of the 1970's; government responded with innovative policies to increase job prospects for these groups*

HELEN GINSBURG

The Swedish Government Bill of 1966, which forms the basis of labor market guidelines, states that its aim is to "achieve and maintain full, productive and freely chosen employment." Although unemployment only averaged about 2 percent in the 1970's, that goal has not yet been attained for all young people, women, immigrants, older workers, and the disabled. The proportion who are unemployed in these groups is small by American standards, but not by Swedish standards. One of the major challenges of Swedish society, with its strong commitment to full employment, is to provide jobs for these workers. This article discusses some of the policies Sweden uses to contend with unemployment among its young (16 to 24 years) and older (45 years and over) workers.

## Causes of youth unemployment

As recently as the mid-1960's, jobs were plentiful for most Swedish youngsters, regardless of whether they had only completed the 9-year comprehensive school (which is compulsory for 7- to 16-year-olds), upper sec-

ondary school (which follows), or had graduated from a university.<sup>1</sup>

In the 1970's, job prospects became less promising. Sweden's first recession of the 1970's, starting in 1971, drove the annual unemployment rate up to 2.5 percent and slightly higher for several consecutive years. Youth were hard hit. Since then, unemployment rates of 7 and 8 percent have been common for 16- to 19-year-olds (reaching 9 percent in 1981), as have rates of 3 to 5 percent for 20- to 24-year-olds. (See table 1.) Myriad factors affected the rise of youth unemployment. For example, apprenticeships practically disappeared and most companies that once provided on-the-job training for youngsters no longer did so because many already received training in the secondary schools. In the 1970's, manufacturing employment stagnated as a result of productivity gains that reduced labor requirements, recessions, structural problems that beset important export industries, and the tendency of Swedish transnational corporations to locate more manufacturing jobs abroad. Thus, many blue-collar jobs that might have been available to youngsters disappeared. Gone, too, were other jobs—such as delivering packages—that once gave some employment in small businesses. Most job creation was in the public sector, but some fast growing areas—for example, hospitals—were often out of bounds for persons under 18 years because they cannot

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work at night, drive vehicles, or do other unsuitable work. And in some cases, housewives, who entered the labor force in large numbers, were hired in preference to the young.

In slack labor markets, lack of experience became a more important barrier to employment for young workers, and employers often claimed that wages for youths were too high.<sup>2</sup> Unlike the United States, Sweden has no minimum wage law, but the negotiated contracts that set most wages allow youths to earn less than adults. Partly as a result of the wage solidarity principle of the Swedish Trade Union Confederation (LO), to which most blue-collar workers belong, the youth to adult wage differential narrowed in the 1970's. (The aim of this policy is to reduce wage differentials in accordance with the rule of equal pay for equal work, regardless of the profitability of the firm.) However, the narrowing of the youth to adult differential has been occurring for three decades and some of it reflects the higher average age of young workers resulting from longer schooling. To the extent that this is a factor, subsidies that reduce the cost to the employer of hiring the young have been used in preference to lowering the differential. Swedish unions present no barriers to employment of the young—anyone who is hired is accepted as a member.

Some employers contend that employment security laws caused the youth unemployment problem. However, youth unemployment worsened before the advent of these laws, although employers may now be more reluctant to hire any workers but those perceived as "prime." Interestingly, the law permits hiring for a probationary period if sanctioned by a collective bargaining contract, which usually is the case. Also, many firms had "no hiring" policies in effect at times during the 1970's, especially in the middle of the decade.<sup>3</sup> These policies hurt new labor market entrants. And, with many policies aimed at maintaining employment, recovery from a recession often meant that some additional demand for labor could be met without additional hiring.

In the early 1970's, about 70 percent of Swedish comprehensive school graduates went directly to upper secondary school, and that figure was about 85 percent by the end of the decade.<sup>4</sup> Secondary schools in Sweden are more specialized and more vocationally-oriented than those in the United States. There are more than 20 lines or courses of study that last from 2 to 4 years. Lines are practical or theoretical (academic) and designed to prepare a student for further education, although some higher education is now also open to those who study practical lines.<sup>5</sup> Youngsters from lower socioeconomic backgrounds are more likely to either take shorter, more practical courses and to drop out along the way, or not to enter secondary school at all. Hence, youth unemployment has a class as well as an age di-

mension. Changes in higher education during the 1970's worsened the relative position of the youngest and least educated workers by increasing the supply of better educated young workers. Unemployment among university graduates led to a substantial decline in enrollment in higher education, which added to the competition in the job market. Some college graduates had to take lower level jobs that they would not have accepted in previous years, including jobs that once had gone to secondary school graduates. These better educated young people were often preferred by employers and this caused a chain reaction that reverberated down the line and ultimately affected even the comprehensive school graduate.<sup>6</sup> Similar competition results from another factor. University applicants with work experience are now given extra credit, making it easier for them to gain entrance. Hence, more students work for a few years before going on to higher education.

### Policies to increase job prospects

Policies to combat youth unemployment are wide ranging and include those targeted at youth as well as those targeted at specific kinds of unemployment which disproportionately affect young people. General economic policies, needless to say, are particularly important because recessions inevitably hit the young harder than adults.

*Role of schools.* Within the school system, there are efforts to inform students about the world of work. For example, students visit a variety of work sites in their last years of comprehensive school. In addition, there are vocational guidance officers in all schools, and the

**Table 1. National and youth unemployment rates in Sweden, 1963-81**

Year	All ages	16- to 19-year-olds			20- to 24-year-olds		
		Total	Men	Women	Total	Men	Women
1963	1.7	3.8	2.9	4.7	2.2	2.1	2.3
1964	1.6	4.4	3.7	5.1	2.0	2.1	1.8
1965	1.2	2.9	1.9	5.1	1.9	1.2	2.9
1966	1.6	3.7	2.7	4.8	2.2	2.0	2.3
1967	2.1	5.2	4.7	5.8	3.2	3.0	3.5
1968	2.2	5.7	5.0	6.5	3.0	3.0	3.0
1969	1.9	4.6	3.8	5.4	2.8	2.6	3.0
1970	1.5	4.3	3.4	4.8	2.2	2.5	2.4
1971	2.5	7.7	7.1	8.4	3.7	3.7	3.8
1972	2.7	8.2	7.8	8.7	4.5	4.2	4.9
1973	2.5	6.8	5.8	8.0	4.4	4.2	4.7
1974	2.0	6.6	5.2	8.1	3.2	2.7	3.8
1975	1.6	5.5	4.2	7.1	2.8	2.1	3.5
1976	1.6	5.5	4.1	7.0	2.7	2.2	3.4
1977	1.8	6.7	5.4	8.1	3.2	2.9	3.5
1978	2.2	7.9	7.1	8.7	4.3	4.3	4.3
1979	2.1	7.4	7.0	7.9	3.7	3.6	3.8
1980 <sup>1</sup>	2.0	7.6	6.5	8.8	3.7	3.5	3.9
1981	2.5	9.4	8.2	10.5	4.7	4.8	4.6

<sup>1</sup> Because of a conflict in the labor market, data exclude second quarter.

NOTE: Data are based on Sweden's Central Bureau of Statistics Labor Force Surveys. The unemployment rate is the percentage of the labor force that is unemployed.



Labor Market Board (a tripartite board which carries out labor market policies) provides personnel from its Public Employment Service to talk to secondary school students and at parents' meetings. Also, as part of its broad educational effort, the board prepares printed material and radio and television programs aimed at students.

There is excellent cooperation between the local Labor Market Boards and the Boards of Education. They work together to develop special courses in the adult municipal school system, and in folk high schools (a type of boarding school with no official syllabus or compulsory subject matter and run by local governments, churches, trade unions, temperance societies, and other nonprofit organizations). Labor Market Boards and Boards of Education also cooperate to develop courses in the regular school system and in the more than 50 government-sponsored labor market training centers located throughout Sweden.

*Planning councils.* Since 1977, there have been planning councils for youth in all municipalities. These are headed by local school authorities and include representatives of other municipal agencies, the Employment Service, labor, and management. Under this arrangement, schools are responsible for maintaining contact for 2 years with all students who leave compulsory school without continuing their education. Until these youths are 18 years of age, they must be guided and advised about jobs or other educational opportunities that may arise, such as special courses or the availability of additional openings in particular lines in the regular school system. The aim is to prevent out-of-work 16- and 17-year-olds from drifting aimlessly on their own.<sup>7</sup>

*Occupational stereotyping.* Breaking down the stereotyping of jobs by sex is considered very important in the fight against youth unemployment. Young women already in the labor market are encouraged to consider nontraditional jobs and greater efforts are being made within the school system, among employers, within the family, and in the media to stop the stereotyping of occupations.<sup>8</sup>

*Monetary support.* Cash assistance for those who have never worked or are otherwise ineligible for regular unemployment benefits was introduced in the 1970's with the young and women in mind. Persons who have finished secondary school (or the equivalent) are eligible for these benefits, which pay less than regular unemployment insurance, if they have unsuccessfully sought work for 3 months through the Employment Service. Those who have not completed secondary school and who are at least 16 years old must have worked for at least 5 months. Slightly more than half of all recipients

of cash assistance at the end of the 1970's were under 25 years, representing only 30 percent of the unemployed in that age group.<sup>9</sup> However, some may have been receiving regular unemployment benefits. Sweden does not consider unemployment insurance a solution to joblessness among the young; it views such benefits as temporary income until something more substantive can be arranged—a job or training for a job.

*Placement efforts.* The Employment Service (at which almost all jobs must be listed) helps in the job search and often intensified placement efforts are made for youths. However, if employers demand an experienced worker or a highly skilled worker, there is little the service can do. Telephone follow-ups and even personal visits to job sites by placement officers have occasionally proven helpful in placing young people in jobs.

*Relief work.* Until the 1970's, there were few young people in labor market training or "relief work" (comparable to Public Service Employment jobs in the United States). With few exceptions, training was reserved for persons 20 years and over. The major thrust of relief work was to help adults in the work force adapt to changing demands for labor. With rising youth unemployment, the proportion of trainees under 25 years rose from 30 percent in 1969 to 38 percent in 1979.<sup>10</sup> In the 1970's, the age limit for relief work was relaxed and about 10 percent of the training slots were taken by teenagers.<sup>11</sup> Youngsters uncertain about their occupational choice were encouraged to try several types of jobs before deciding on further training or more formal education. Programs were developed for those with special problems who were turned off by ordinary schooling: groups of about eight young people were given alternating periods of general education and work—2 weeks of education followed by 6 to 8 weeks of relief work, repeated with different jobs.

The biggest expansion was in relief jobs at regular wages for the young. Between 1970 and 1979, the proportion of persons under age 25 in relief work rose from 4 percent to 68 percent. The expansion was particularly important for young women—83 percent of women, but only 57 percent of men in relief work in 1979 were that young.<sup>12</sup> In the public sector, office work, maintenance and repair work, environmental conservation, and care of children and the elderly were popular, to cite some examples. Private sector employees who hired young people referred by the Employment Service were also able to provide relief work, and received a 75-percent subsidy if these jobs were in addition to their regular recruitment and included some useful training. The hope that employers would offer regular jobs after the 6-month maximum for relief work often did not materialize. Sometimes a succession of relief workers were

taken on for 6 months, and training was sometimes lacking or cursory.

In the case of 16- and 17-year-olds, the government feared that labor market training and relief work would compete with regular schooling and might even induce students to quit school for short-term jobs. Secondary school students in Sweden receive a stipend which, in 1979, was 208 kronor a month (a krona was equivalent to 22 cents in U.S. currencies in 1979), while relief jobs paid from 3,000 to 4,000 kronor a month.

Did this high pay for students lure them away from school and into the temporary jobs? That, along with questions about the reliability of some of the training were major reasons for the policy changes toward 16- and 17-year-olds approved by Parliament in June 1980. The new approach is less costly and possibly that was also a consideration of the government. Both relief work and labor market training were considered inappropriate for youths under 18 years. Now, 16- and 17-year-olds are not eligible for these programs. Instead, they are encouraged to return to secondary school. If they do not wish to do that, they are offered additional vocational education and training within industry or some flexible "sandwich course" arrangement of education and practical work experience, with the responsibility shifted from the Labor Market Board to the educational authorities. The stipend paid is the same as for other secondary school students. The Social Democrats (not in power at the time) opposed ending relief work, contending that to do so would retreat from the Parliament's goal of a "youth guarantee" to insure either training or employment for all out-of-school youth.<sup>13</sup> The success of the new program will surely depend on the adequacy of the training and the ability to attract back into the program students who had become alienated from the educational establishment. Not enough time has elapsed to know the results, but early reports are positive. However, the ability to absorb the young into the labor market in the 1980's will also depend on the state of the economy.

### Special protection for older workers

For both men and women in Sweden, unemployment declines steadily with age until it reaches a trough of about 1 percent among 45- to 54-year-olds and then rises to about 2 percent among 55- to 65-year-olds. (See table 2.) Beyond age 65, there appears to be no unemployment, but labor force participation is very low, 14 percent for men and 4 percent for women (1979). Many older workers who lose their jobs slip into retirement, as the pensionable age was lowered to 65 during the 1970's. Although older workers are less likely to lose their jobs, they are out of work longer than those who are younger. This pattern is the same as that in the United States.

**Table 2. Unemployment rates in Sweden, by age and sex, 1979-81**

Age	Total			Men			Women		
	1979	1980	1981	1979	1980	1981	1979	1980	1981
16-74 years ...	2.1	2.0	2.5	1.9	1.7	2.4	2.3	2.3	2.6
16 to 19 ...	7.4	7.6	9.4	7.0	6.5	8.2	7.9	8.8	10.5
20 to 24 ...	3.7	3.7	4.7	3.6	3.5	4.8	3.8	3.9	4.6
25 to 34 ...	1.9	1.8	2.3	1.8	1.5	2.2	2.1	2.2	2.5
35 to 44 ...	1.2	1.1	1.4	.9	.9	1.3	1.5	1.4	2.5
45 to 54 ...	1.0	1.0	1.3	.9	.9	1.4	1.1	1.1	1.3
55 to 64 ...	2.0	1.6	2.0	1.8	1.6	2.2	2.2	1.6	1.8
65 to 74 ...	.0	.0	.0	.0	.0	.0	.0	.0	.0

NOTE: These data are based on Sweden's Central Bureau of Statistics, Labor Force Sample Surveys. The unemployment rate is the percentage of the labor force that is unemployed.

The situation of older workers started to deteriorate in the late 1960's and early 1970's, partly because of the demand for higher productivity, the LO contends.<sup>14</sup> During that time, whenever there was a plant closing or cutback in production, most of those who lost their jobs found others. But, even in nonrecession years, a residual group was left without work, usually older workers and the handicapped. The recession of the early 1970's made their plight worse. Many of the laws that protect these workers came after that period, partly in response to these developments in the labor market. Policies towards older workers fall into two main categories: those that seek to maintain employment and those that seek to maintain income when there is no work. (Policies for disabled workers such as subsidized employment and workplace and job redesign also apply to many older workers. These are not discussed in this article.)

### Keeping older workers at work

Much of the sweeping labor legislation of the 1970's aimed at increasing the security of all workers. But the vulnerable status of older workers and the handicapped was recognized and they were given special protection. The Security of Employment Act requires prior notice of dismissal and also requires the time of notice to vary with age, reaching a maximum of 6 months for employees older than 45 years.<sup>15</sup> Seniority determines the order of dismissal and that tends to protect older workers. The computation of the length of service for those over 45 years is also governed by more generous rules. And, the Security of Employment Act states that there must be reasonable grounds for dismissal. Illness and reduced work capacity are not generally considered sufficient grounds, unless an employee is "no longer capable of doing work of any significance." In the case of illness, the workers are given disability pensions; if they are unable to carry a full work load, the employer must find less demanding work for them. Thus, there is great job security for older (and disabled) workers whose capacity to do certain work has diminished or who cannot



perform their old jobs but can do other types of work.

The Promotion of Employment Act helps both older and handicapped workers by requiring that the County Labor Market Board be notified before any layoff or plant closing. The employer must, if requested, provide information about the number of employees above a certain age or with diminished work capacity, so that special plans can be made for their reemployment, although these employees are usually retained unless the plant actually shuts down. That act also gives the County Board the day-to-day responsibility of consulting with employers—even when no dismissals are involved—in order to improve the situation of elderly or handicapped workers already within firms and to promote their recruitment.<sup>16</sup> Thus, the primary thrust of policies toward older workers is to prevent their unemployment by maintaining their existing jobs.

Labor market training is not extensively used by the older worker. During the 1979–80 fiscal year, for example, about 15 percent of the unemployed were over 55 years old, but only 2 percent of those in labor market training (excluding inplant training) were in that age group.<sup>17</sup> In most cases, the problem confronting older workers is not lack of skill, but lack of an employer who will hire them. Relocation is not used much either, because older workers have so many ties to a locality and relatively few working years left.

Some older workers are in relief work. Those 45 years and older held about 45 percent of all relief jobs in 1975. But, the large expansion of relief work in the late 1970's was aimed at persons under age 25; as a result, only 13 percent of relief workers were age 45 or older at the beginning of 1979.<sup>18</sup>

### Income support

Despite the protection given to older employed workers, unemployment does happen, particularly when plants close. And then, income support plays an important role. Regular unemployment benefits are usually payable for up to 60 weeks, but for persons age 56 to 64, benefits are payable for 90 weeks, if necessary. The Cash Labor Market Assistance, available to those who have exhausted benefits, also varies with age, rising from 30 weeks for persons under age 55, to 60 weeks for those age 55 to 59; for those age 60 and over, and for some structurally unemployed persons, benefits can be paid until age 65, when the normal retirement pension begins.

However, unemployed workers over age 60 often can qualify for a disability pension. The medical test is more lenient for older workers than for younger persons. If a person is considered permanently unemployed, there is no medical test at all, if he or she has exhausted regular benefits or has received cash labor market support for 90 weeks. Liberalization in granting disability pensions

resulted from concern of the blue-collar workers' union for older workers who, at the end of the 1960's, began to encounter increasing difficulties in the labor market. Statutory amendments were passed in the early 1970's to change the rules that govern eligibility for disability pensions. It is estimated that a worker earning the average wage receives about 88 percent of prior after-tax income from a government disability pension and, for most workers, there is also a union-negotiated disability pension.<sup>19</sup> So, older workers who leave the labor market in this way maintain their living standards.

While there is much talk in the United States about increasing the age of eligibility for full social security retirement benefits from 65 to 68, Sweden has been going in the opposite direction. In 1976, the pensionable age for full benefits was lowered from 67 to 65, and reduced benefits can be received at age 60. Unlike an American worker, a jobless Swedish worker is not forced to take early retirement with its permanently reduced benefits, because there are no alternative sources of income. The disability pension can maintain income until age 65, when the old-age pension would start.

The most interesting option for an employed worker who wishes to gradually reduce working prior to full retirement is the partial pension system that was introduced in 1976. Partial pensions are geared to part-time work. The rule is that working hours must be reduced by at least 5 hours a week and, after the reduction, must still be at least 17 hours weekly. The worker must also have been employed for at least 10 years after the age of 45. (Because of these rules, the partial pension has been used disproportionately by men.) The partial pension pays 50 percent of the loss of earnings that result from the reduction in hours. However, because of Sweden's high marginal tax rates, the actual disposable income from the combined partial pension *and* part-time earnings is substantial. Unlike early retirement benefits, a partial pension does not result in a smaller pension at age 65. At age 65 a worker can receive a full old-age pension without any retirement test. It is also possible to postpone collecting all or part of the old-age pension. If that is done, the pension will be larger when payments finally start.

The partial pension plan is extremely popular. It provides a bridge between work and full-time retirement. Many people who retired faced a shock—an abrupt change in their way of life after a lifetime of work. They missed their friends and social contacts at work. Doctors and psychologists supported unions in their desire to enable a more gradual transition into retirement. The main argument against disability pensions for the older unemployed worker in Sweden is not based on economics, but is based on the feeling that such pensions lead to social isolation and a self-identification as disabled.<sup>20</sup> The partial pension avoids these problems and also is

available to workers not threatened by unemployment. Partial pensions also enable some workers who might not be able to function on a full-time basis to avoid disability pensions. The partial pension increases the individual's freedom of choice about the age and extent of

retirement. It does not, however, resolve the problem of those older workers whose jobs are eliminated by a plant closing. One cannot work part time at a nonexistent job. Nor does it resolve the problems of older jobless workers who still have not reached the age of 60. □

— FOOTNOTES —

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<sup>1</sup> Eva-Lena Ahlqvist, "Youth Unemployment in Sweden," *Current Sweden*, No. 216, April 1979, p. 3.

<sup>2</sup> This paragraph draws heavily from Gösta Rehn and K. Helveg Peterson, *Education and Youth Employment in Sweden and Denmark*, a Study Prepared for the Carnegie Council on Higher Education (Carnegie Council on Policy Studies in Higher Education, 1980), pp. 75–77. This comprehensive study of Swedish youth deals with all aspects of behavior, attitudes, education, employment, and unemployment.

<sup>3</sup> Rehn, p. 74.

<sup>4</sup> "The Integrated Upper Secondary School in Sweden" (Stockholm, The National Board of Education, 1976), p. 1, and "Primary and Secondary Education in Sweden," Fact Sheets on Sweden (Stockholm, the Swedish Institute, 1981), p. 4.

<sup>5</sup> *Ibid.*, pp. 3–4.

<sup>6</sup> Ahlqvist, p. 3.

<sup>7</sup> See, for instance, *Unemployment Among Young People in Sweden—Measures and Experience* (Solna, Sweden, National Labor Market Board, 1979), p. 3.

<sup>8</sup> Sweden, National Committee on Equality Between Men and Women, *Step by Step: National Plan of Action for Equality*, SOU 1979–56 (Stockholm, Liber Förlag, 1979), ch. 2.

<sup>9</sup> Ahlqvist, p. 7.

<sup>10</sup> Rehn, p. 92.

<sup>11</sup> *Ibid.* Derived from data on p. 91.

<sup>12</sup> Sweden, National Central Bureau of Statistics, *Arbetsmarknadsstatistisk årsbok 1979–1980* (Stockholm, Liber Förlag, 1980), table 2.14.6, p. 179.

<sup>13</sup> Rehn, p. 90.

<sup>14</sup> Swedish Trade Union Confederation-LO, *Report on Labor Market Policy* (Stockholm, Swedish Trade Union Confederation-LO, 1975), pp. 15–17. See also, the Swedish Government's Commission on Long-Term Employment Policy, *Employment for Handicapped Persons: A Summary of the Commission's Report, January 1978 and of Five Research Projects* (Stockholm, Ministry of Labor, 1978), p. 3.

<sup>15</sup> For the detailed contents of this act see, Ministry of Labor, *Swedish Laws on Security of Employment, Status of Shop Stewards, Litigation in Labour Disputes* (Stockholm, Ministry of Labor, 1977), pp. 1–2 and 6–20.

<sup>16</sup> *Ibid.*, pp. 2–3 and 21–24.

<sup>17</sup> Derived from Central Bureau of Statistics, Labor Force Sample Survey, unpublished data; and *Swedish Employment Policy, 1979/80, Annual Report*, Reprint (Solna, Sweden, The National Labor Market Board, 1979), p. 16.

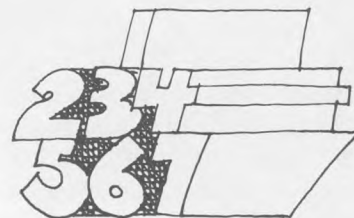
<sup>18</sup> *Swedish Employment Policy 1978/79, Annual Report*, Reprint (Solna, The National Labor Market Board, 1979). Derived from data on p. 23.

<sup>19</sup> Eskil Wadensjö, "Disability Policy in Sweden: The Swedish Contribution to the Cross National Disability Study" (Stockholm, Swedish Institute for Social Research, March 1981), Part 4, table 4.7, p. 22. This study will be part of Victor Halberstadt and Robert Haveman, eds., *The Economics of Disability: A Cross National Perspective* (tentative title), forthcoming. Wadensjö estimates that a worker earning half the average earnings receives 117 percent of prior after-tax income and one earning twice the average receives 66 percent.

<sup>20</sup> *Ibid.*, part 5, p. 3.



# The Anatomy of Price Change



## Reconciling the CPI and the PCE Deflator: 2nd quarter 1982

JULIE A. BUNN AND JACK E. TRIPLETT

This article presents the fifth reconciliation of the Federal Government's two major inflation measures—the Consumer Price Index (CPI), published by the Bureau of Labor Statistics, and the Implicit Price Deflator for Personal Consumption Expenditures (PCE Deflator), produced by the Bureau of Economic Analysis. The first reconciliation, which established the technical basis for the analysis, appeared in the September 1981 *Review* and showed that the divergence between the two price measures could be reconciled in terms of three factors—differences in the measurement of housing costs, differences in “weighting”, and the effects of “all other” factors.<sup>1</sup>

**Table 1. “Reconciliation” of annual and quarterly percent changes in the CPI-U and the Personal Consumption Expenditure price measures, 1980 to second quarter 1982**

Difference	1980 <sup>1</sup>	1981 <sup>1</sup>	1981 <sup>1,2</sup>				1982	
			I	II	III	IV	I	II
CPI-U <sup>3</sup> . . . . .	13.5	10.4	11.0	7.8	11.8	7.7	3.2	4.6
PCE: Chain-Weight <sup>4</sup> . . . . .	10.7	9.1	10.3	7.4	8.0	7.2	5.2	3.7
Total difference <sup>5</sup> . . . . . (CPI-U minus PCE: Chain-Weight)	2.8	1.3	0.7	0.4	3.8	0.5	-2.0	0.9
Housing treatment <sup>6</sup> . . . . .	2.3	0.9	0.4	0.5	2.7	-0.5	-1.3	1.6
Weighting effect <sup>7</sup> . . . . .	0.5	0.2	0.6	0.3	-0.4	-0.1	-0.4	-0.4
“All other” effect <sup>8</sup> . . . . .	0.0	0.2	-0.3	-0.4	1.5	1.1	-0.3	-0.3

<sup>1</sup> Owing to the July 1982 revision of data produced by the Bureau of Economic Analysis, U.S. Department of Commerce, the annual and quarterly figures may differ slightly from those which appeared in table 1, p. 37, July 1982, *Monthly Labor Review (MLR)*.

<sup>2</sup> Seasonally adjusted annual rates.

<sup>3</sup> Annual and quarterly changes in the CPI-U are taken from tables provided by the Office of Prices and Living Conditions, Bureau of Labor Statistics (BLS). The changes are compiled from 1967 based indexes.

<sup>4</sup> Data for the “PCE: Chain-Weight” were obtained from the Bureau of Economic Analysis (BEA), U.S. Department of Commerce.

<sup>5</sup> CPI-U minus “PCE: Chain-Weight” equals the sum of “housing treatment”, “weighting”, and “all other” effects.

<sup>6</sup> Change in CPI-U minus change in CPI-X1. See September 1981 *MLR*, p. 12, for fuller explanation. Source of CPI-X1 data is same as footnote 3.

<sup>7</sup> Change in “PCE: 1972-Weight” minus change in “PCE: Chain-Weight”. See September 1981 *MLR*, pp. 8-9, for fuller explanation. Data source for “PCE: 1972-Weight” changes is same as for footnote 4.

<sup>8</sup> Change in CPI-X1 minus change in “PCE: 1972-Weight”. See September 1981 *MLR*, p. 6, for fuller explanation.

**Table 2. “Reconciliation” of the CPI-U and the Personal Consumption Expenditure price measures: cumulative percent change from 1972 to the dates shown**

Difference	1980	1981	1981 <sup>1</sup>				1982	
			I	II	III	IV	I	II
CPI-U (1972 = 100) <sup>2</sup> . . . . .	197.0	217.4	210.3	214.3	220.4	224.6	226.3	228.9
PCE Deflator (1972 = 100) <sup>3</sup> . . . . . (Current-Weight) . . . . .	179.2	194.5	189.2	192.6	196.4	199.8	202.2	204.0
Total difference <sup>4</sup> (CPI-U minus PCE Deflator) . . . . .	17.8	22.9	21.1	21.7	24.0	24.8	24.1	24.9
Housing treatment <sup>5</sup> . . . . .	11.7	14.5	13.3	13.7	15.4	15.5	15.3	16.0
Weighting effect <sup>6</sup> . . . . .	5.6	7.6	7.4	7.6	7.5	7.7	7.7	7.7
“All other” effect <sup>7</sup> . . . . .	0.5	0.8	0.4	0.4	1.1	1.6	1.1	1.2

<sup>1</sup> Owing to changes in seasonal adjustment factors and to the July 1982 revision of data produced by the Bureau of Economic Analysis, U.S. Department of Commerce, annual and quarterly figures may differ slightly from those which appeared in table 2, p. 38, July 1982, *Monthly Labor Review (MLR)*.

<sup>2</sup> Annual data for the CPI-U are annual averages, 1972=100. The quarterly data for 1981 and 1982 were computed by the Office of Research and Evaluation, employing seasonally adjusted monthly data provided by the Office of Prices and Living Conditions (BLS).

<sup>3</sup> Data for the Implicit PCE Deflator, or “PCE: Current-Weight” index, were provided by the Bureau of Economic Analysis, U.S. Department of Commerce. The data incorporate revisions released in August 1982.

<sup>4</sup> CPI-U minus PCE Deflator equals the sum of “housing treatment”, “weighting”, and “all other” effects.

<sup>5</sup> CPI-U minus CPI-X1. See September 1981 *MLR*, p. 5, for fuller explanation. Data source for the CPI-X1 is the same as footnote 2.

<sup>6</sup> “PCE: 1972-Weight” minus “PCE: Current-Weight”. See September 1981 *MLR*, p. 6, for fuller explanation. Data source for the “PCE: 1972-Weight” is same as footnote 3.

<sup>7</sup> CPI-X1 minus “PCE: 1972-Weight”. See September 1981 *MLR*, p. 6, for fuller explanation.

As with earlier articles in this series, two different reconciliations are presented, one dealing with period-to-period changes in the price measures, and the other with total movement over the decade from 1972 to date.

*Reconciling period-to-period changes.* In the second quarter of 1982, the Consumer Price Index for All Urban Consumers (CPI-U) rose more rapidly than the “PCE: Chain-Weight” index.<sup>2</sup> This followed an unusual first quarter in which, for only the second time in 3 years, the reverse had been true. (Compare the first two lines in table 1.)

The renewed acceleration of the CPI-U relative to the “PCE: Chain-Weight” index in the most recent quarter is, however, attributable only to the reemergence of a positive “housing treatment” effect. During the most recent quarter, the CPI-U was once again accelerating at a faster rate than the CPI-X1, the Consumer Price Index which approximates a rental equivalence measure of housing comparable to that employed in the PCE Deflator (the difference between the two being 1.6 percentage

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points—the “housing treatment” effect).

The other two components of the difference between the CPI-U and the “PCE: Chain-Weight” index—the “weighting effect” and “all other effect”—remain negative and are both identical to their values in the first quarter of 1982. The “PCE: Chain-Weight” index, which draws its weights from the immediately preceding period, continued to rise more rapidly than a fixed weight index (1972=100) based on the same price data,<sup>3</sup> giving rise to the negative “weighting effect” recorded in table 1. The latter, as noted in previous articles, is unexpected

and unusual, though it has now persisted for four quarters. Included in the “all other” effect is the influence of different seasonal adjustment procedures followed in the CPI-X1 and the “PCE: 1972-Weight” indexes.

*Reconciling cumulative changes.* Table 2 updates cumulative comparisons of the CPI-U and PCE Deflator which appeared in previous articles, extending the reconciliation through the second quarter of 1982. Results are complementary to those of the period-to-period reconciliation.

— FOOTNOTES —

<sup>1</sup> The initial reconciliation and technical basis for the analysis are contained in Jack E. Triplett, “Reconciling the CPI and PCE Deflator,” *Monthly Labor Review*, September 1981, pp. 3–15. Subsequent reconciliations appeared in the January, May, and July 1982 issues of the *Monthly Labor Review*.

<sup>2</sup> As discussed in Triplett, pp. 7, 13–14, the PCE Deflator, a

Paasche-formula index, cannot be used for this reconciliation because Paasche formulas lend themselves to statistical interpretation only when referring back to the base year (in this case, 1972).

<sup>3</sup> See footnote 7 to table 1 and the September 1981 *MLR* article for information on the computation of the weighting effect.

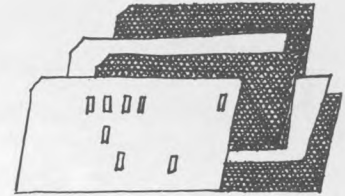
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#### A note on communications

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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## Occupational salary levels for white-collar workers, 1982

MARK S. SIELING

The Bureau of Labor Statistics recently released the results of its March 1982 survey of professional, administrative, technical, and clerical pay in medium and large firms. The survey, 23rd in an annual series, provides nationwide salary averages and distributions for some 100 work level categories covering two dozen occupations.<sup>1</sup> The number of work levels per occupation varied from one for messengers to eight for engineers. Each level describes duties and responsibilities in private industry that are comparable with those of specific groups of Federal white-collar employees. In keeping with the Federal Pay Comparability Act of 1970, the narrowly defined occupational classifications of the survey provide the link between private and Federal Government sectors, thereby permitting compliance with the congressional directive that "Federal pay rates be comparable with private enterprise pay rates for the same levels of work."<sup>2</sup>

Among the various skill levels of white-collar work, salary increases continued to be largest for journeyman and senior levels of professional and administrative occupations. Table 1 shows that Group C jobs—equivalent to grades 11–15 of the Federal Government's General Salary (GS) Schedule—experienced a record 10.4-percent salary rise in 1981–82. Group C pay increases also led those of the two lower groups in 4 of the preceding 5 years. (See table 2 for identification of the survey classifications that equate to each GS grade.<sup>3</sup>)

A closer look finds that the pay gap between entry-level professionals and their experienced coworkers widened in the 1970's, as the latter group generally chalked up substantially larger salary increases. The following

**Table 1. Percent increases in average salaries by work level category, 1970–82**

Period	Group A (GS grades 1–4)	Group B (GS grades 5–9)	Group C (GS grades 11–15)
1970–82 .....	130.4	123.0	135.0
1970–71 .....	6.2	6.3	6.2
1971–72 <sup>1</sup> .....	6.3	5.2	5.6
1972–73 .....	5.5	4.4	5.7
1973–74 .....	6.2	5.7	6.2
1974–75 .....	9.1	8.6	8.8
1975–76 .....	7.6	6.4	6.5
1976–77 .....	6.9	6.3	7.7
1977–78 .....	7.5	8.0	8.8
1978–79 .....	7.2	7.5	8.0
1979–80 .....	9.1	10.1	9.3
1980–81 .....	9.8	9.6	10.2
1981–82 .....	9.5	9.4	10.4

<sup>1</sup> Actual survey-to-survey increases have been prorated to a 12-month period.

tabulation illustrates this point by showing pay levels of four journeyman classifications (GS 11 equivalents) as a percent of the corresponding entry levels (GS 5).<sup>4</sup> Note that the journeyman advantage has slipped slightly since 1979:

	1970	1979	1982
Accountant .....	150	174	173
Auditor .....	158	183	179
Chemist .....	155	176	173
Engineer .....	144	150	146

In recent years, however, the strong demand for engineers has bolstered their starting salaries, thus keeping the pay gap between their entry and journeyman levels relatively small. This practice is evident when engineer salaries are compared to those of another technical profession—chemist. In 1982, average salaries for entry-level engineers were 20 percent higher than starting chemist salaries; at the journeyman level, in contrast, the difference was only 1 percent (table 2).

The effects of such changes are reflected in the overall salary structure for professional jobs since 1970. Based on a matrix analysis of five professional occupations spanning 30 work levels, the average difference for 435 paired comparisons was 65 percent in 1982 and 58 percent in 1970.<sup>5</sup> How these individual jobs and their work

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**Table 2. Average salaries of employees in selected white-collar occupations in private establishments, March 1982**

Occupational level and Federal GS grade equivalent	Number of employees <sup>1</sup>	Average annual salary <sup>2</sup>	Occupational level and Federal GS grade equivalent	Number of employees <sup>1</sup>	Average annual salary <sup>2</sup>
<b>Accountants and auditors</b>			<b>Chemists and engineers—Continued</b>		
Accountants I (GS-5)	14,281	\$18,260	Engineers I (GS-5)	31,293	\$23,622
Accountants II (GS-7)	23,570	22,068	Engineers II (GS-7)	60,083	26,060
Accountants III (GS-9)	35,575	25,673	Engineers III (GS-9)	116,212	29,331
Accountants IV (GS-11)	21,187	31,658	Engineers IV (GS-11)	138,972	34,443
Accountants V (GS-12)	7,614	38,680	Engineers V (GS-12)	101,701	40,677
Accountants VI (GS-13)	1,344	48,549	Engineers VI (GS-13)	45,853	47,442
Chief accountants I (GS-11)	654	34,506	Engineers VII (GS-14)	14,102	54,338
Chief accountants II (GS-12)	953	39,708	Engineers VIII (GS-15)	2,874	62,494
Chief accountants III (GS-13)	672	50,414			
Chief accountants IV (GS-14)	180	61,255	<b>Technical support</b>		
Auditors I (GS-5)	2,456	17,901	Engineering technicians I (GS-3)	7,178	14,688
Auditors II (GS-7)	3,760	22,065	Engineering technicians II (GS-4)	20,271	17,246
Auditors III (GS-9)	4,797	26,502	Engineering technicians III (GS-5)	31,340	20,219
Auditors IV (GS-11)	2,559	32,004	Engineering technicians IV (GS-7)	36,630	23,620
Public accountants I (GS-7)	9,035	17,266	Engineering technicians V (GS-9)	21,651	26,761
Public accountants II (GS-9)	9,570	19,177	Drafters I (GS-2)	3,161	11,739
Public accountants III (GS-11)	8,485	22,830	Drafters II (GS-3)	11,929	14,257
Public accountants IV (GS-12)	4,439	27,286	Drafters III (GS-4)	23,277	17,046
			Drafters IV (GS-5)	26,149	20,964
<b>Attorneys</b>			Drafters V (GS-7)	20,762	25,909
Attorneys I (GS-9)	1,628	25,162	Computer operators I (GS-4)	6,141	11,896
Attorneys II (GS-11)	3,008	31,696	Computer operators II (GS-5)	14,928	13,895
Attorneys III (GS-12)	3,622	39,649	Computer operators III (GS-6)	29,523	15,804
Attorneys IV (GS-13)	2,919	49,818	Computer operators IV (GS-7)	16,252	19,325
Attorneys V (GS-14)	1,896	61,579	Computer operators V (GS-8)	3,212	22,889
Attorneys VI (GS-15)	707	76,202	Computer operators VI (GS-9)	360	23,267
			Photographers II (GS-5)	570	18,773
<b>Buyers</b>			Photographers III (GS-7)	725	22,425
Buyers I (GS-5)	6,422	18,074	Photographers IV (GS-9)	434	25,392
Buyers II (GS-7)	18,901	22,174			
Buyers III (GS-9)	17,561	27,424	<b>Clerical</b>		
Buyers IV (GS-11)	5,449	33,409	Accounting clerks I (GS-2)	27,738	10,478
			Accounting clerks II (GS-3)	85,417	12,488
<b>Programmers</b>			Accounting clerks III (GS-4)	58,670	14,713
Programmers/programmer-analysts I (GS-5)	13,043	17,535	Accounting clerks IV (GS-5)	23,519	18,083
Programmers/programmer-analysts II (GS-7)	30,366	20,629	File clerks I (GS-1)	22,496	9,018
Programmers/programmer-analysts III (GS-9)	45,970	25,192	File clerks II (GS-2)	12,109	10,474
Programmers/programmer-analysts IV (GS-11)	26,360	29,365	File clerks III (GS-3)	4,037	12,794
Programmers/programmer-analysts V (GS-12)	7,950	35,430	Key entry operators I (GS-2)	59,672	11,771
			Key entry operators II (GS-3)	40,048	13,956
<b>Personnel management</b>			Messengers (GS-1)	13,931	9,999
Job analysts I (GS-5)	216	18,573	Personnel clerks/assistants I (GS-3)	2,353	11,706
Job analysts II (GS-7)	444	19,900	Personnel clerks/assistants II (GS-4)	4,683	14,122
Job analysts III (GS-9)	822	25,028	Personnel clerks/assistants III (GS-5)	3,576	15,718
Job analysts IV (GS-11)	524	31,221	Personnel clerks/assistants IV (GS-6)	1,787	18,432
Directors of personnel I (GS-11)	1,061	31,136	Purchasing assistants I (GS-4)	4,791	13,589
Directors of personnel II (GS-12)	2,120	38,168	Purchasing assistants II (GS-5)	4,605	17,117
Directors of personnel III (GS-13)	958	47,553	Purchasing assistants III (GS-6)	1,577	22,276
Directors of personnel IV (GS-14)	287	57,859	Secretaries I (GS-4)	63,768	14,000
			Secretaries II (GS-5)	63,060	14,939
<b>Chemists and engineers</b>			Secretaries III (GS-6)	106,688	17,051
Chemists I (GS-5)	3,617	19,640	Secretaries IV (GS-7)	45,616	18,603
Chemists II (GS-7)	6,677	23,474	Secretaries V (GS-8)	22,679	21,546
Chemists III (GS-9)	10,900	28,016	Stenographers I (GS-3)	15,562	14,867
Chemists IV (GS-11)	11,028	34,047	Stenographers II (GS-4)	11,534	18,094
Chemists V (GS-12)	8,912	40,207	Typists I (GS-2)	31,703	10,893
Chemists VI (GS-13)	3,828	46,971	Typists II (GS-3)	17,822	13,723
Chemists VII (GS-14)	1,438	53,658			

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

<sup>2</sup> Salaries reported relate to the standard salaries that were paid for standard work schedules; i.e., the straight-time salary corresponding to employee's normal work schedule excluding overtime hours. Nonproduction bonuses are excluded, but cost-of-living bonuses and incentive earnings were included.

NOTE: The following occupational levels were surveyed but insufficient data were obtained to warrant publication: Chief accountant V; director of personnel V; chemist VIII; personnel clerk/assistant V; engineering technician VI; and photographer I and V.



levels fared in salary increases over the 1970–82 period is shown below:

	Percent increase		Average for remaining levels
	Level I	Level II	
Accountant . . . . .	115	130	146
Attorney . . . . .	112	133	139
Auditor . . . . .	101	122	131
Chemist . . . . .	114	129	137
Engineer . . . . .	131	135	141

Although the salary structure widened, it left the relative ranking of professional work levels by pay virtually unchanged. Only 2 (Attorneys I and II) of 30 moved more than one position between 1970 and 1982.

In 1982, the survey's highest professional salary average was for top-level (VI) corporate attorney at \$76,202 a year; the lowest-paid professional classification—entry-level (I) auditor—averaged \$17,901 (table 2). These extremes reflect the wide range of duties and responsibilities represented by all professional categories covered by the survey. In contrast, the typical salary spread among job categories with equivalent levels of work is relatively narrow. Thus, annual average salaries for the six work levels surveyed that equate to Federal GS grade 13 ranged from \$46,971 for chemist VI to \$50,414 for chief accountant III<sup>6</sup>—a difference of only 7 percent. Salary relationships produced by the survey are evidence that companies recognize equivalent duties and responsibilities among a wide range of occupations within broad categories.

Another characteristic of white-collar workers reported in the survey is the pronounced variation in their earnings within occupational work levels. Salaries of the highest paid employees in a single work level were commonly twice those of the lowest paid employees. Consequently, some professional workers in the first journeyman level earned as much as, or more than, their counterparts in more senior levels; for example, 10 percent of accountants III and 7 percent of accountants V earned between \$30,000 and \$32,500 annually in March 1982. Factors contributing to dispersed salaries include such traditional wage determinants as firm size, industry, and geographic location in addition to range-of-rate plans used by many employers to recognize merit or seniority.

A MORE DETAILED ANALYSIS of white-collar salaries and complete results of this year's survey are contained in the *National Survey of Professional, Administrative, Technical, and Clerical Pay, March 1982*, BLS Bulletin 2145, September 1982. It includes salary distributions by occupational work level, and relative employment and salary levels by industry division for the two dozen occupations studied. □

—FOOTNOTES—

<sup>1</sup> The survey is conducted annually with a March reference period in metropolitan areas and nonmetropolitan counties in the United States, except Alaska and Hawaii. Metropolitan areas accounted for nine-tenths of the employees in occupations for which salary data were developed.

<sup>2</sup> 5 U.S.C. Sec. 5301(a)(3)(1970). The pay-setting role of the Professional, Administrative, Technical, and Clerical Survey is described in George L. Stelluto, "Federal pay comparability: facts to temper the debate," *Monthly Labor Review*, June 1979, pp. 18–28.

<sup>3</sup> In 1982, a total of 101 work levels produced publishable data out of the 108 levels within scope of the survey. Of these 101 work levels, 92 were sufficiently unchanged in definition between the 1981 and 1982 surveys to be used in computing the 1981–82 increases shown in table 1. Widely varying duties and responsibilities may be embodied in work levels within each of the broad categories of table 1; for example, Group B includes journeyman, clerical, and technical levels, such as accounting clerk IV and engineer technicians III through IV, as well as the entry and developmental levels of professional occupations.

<sup>4</sup> A similar pattern was found for the 1970's in the salary relationship of recent law graduates with bar membership (survey job attorney I) and attorneys with experience handling legal work with few precedents (attorney III)—GS grade equivalents 9 and 12, respectively. The salary relatives were 142 in 1970 and 158 in 1979 and 1982.

<sup>5</sup> The pay matrix helps to analyze the comparative salary position of each job classification with each of its counterparts. The matrix expands upon the traditional approach which limits comparisons of occupational averages to the highest and lowest levels or to setting a single job as the base for all others to be measured against. The difference between the resulting means of the paired comparisons in 1970 and 1982 was statistically significant at a 5-percent level. For a description of the matrix and its use, see Mark S. Sieling, "Interpreting pay structures through matrix applications," *Monthly Labor Review*, November 1979, pp. 41–45.

<sup>6</sup> In the survey coding structure, the level designations among various occupations are not synonymous: For example, the first level of attorneys equates to the third levels of accountants, chemists, and most other professional and administrative occupations. See table 2 for more details on job level equivalents. Classification of employees in the occupations and work levels surveyed is based on factors detailed in definitions which are available upon request.

## Employment Cost Index continues to decelerate in second quarter

The Employment Cost Index (ECI), measuring changes in employer compensation costs, increased 1.1 percent in the 3 months ended in June. Wages and salaries alone rose 0.9 percent. The index stood at 107.5 for compensation costs (wages, salaries, and employer costs for employee benefits) based on June 1981=100. The ECI does not cover farm, private household, and Federal government workers and is not seasonally adjusted.

The deceleration in rates of increase for both compensation costs and for wages and salaries alone that began in 1981 continued to be widespread among occupational and industrial groups measured by the ECI. Compensation costs for all private nonfarm workers slowed to a 1.3-percent rise in the second quarter, down from 1.9

percent a year earlier. The corresponding wage and salary increase, 1.1 percent, was down from 2.0 percent a year earlier.

Workers in occupations and industries that typically receive the bulk of their wage adjustments in the second quarter showed relatively small gains. Transport equipment operatives, for example, posted a 0.9-percent wage increase. The advance was dampened by the recent trucking industry bargaining settlements that provided no specified wage increases and diverted part of the cost-of-living adjustment to maintain existing employee benefits. Over the past 5 years, second-quarter wage increases for transport equipment operatives ranged between 3 and 5 percent.

Wages for workers in the construction industry rose 1.3 percent in the second quarter—an unusually low increase for an industry with a heavy bargaining schedule in the spring and summer months. Second-quarter wage increases in construction ranged between 2 and 3 percent over the past 5 years.

A substantial deceleration in rates of increase in compensation costs and wages and salaries for the year ended in June 1982 compared with the preceding year also occurred. A particularly dramatic slowdown occurred in compensation cost increases for blue-collar workers in private industry. These costs slowed to a 7.0-percent increase in the year ended in June 1982, from a 10.5-percent rise in the year ended in June 1981. Wage increases alone for these workers slowed to 6.6 percent, down from 9.2 percent a year earlier.

Among white-collar workers, compensation costs rose 7.2 percent for the 12 months ended in June 1982 compared with 10.2 percent during the year ended in June 1981; their wages and salaries increased 7.3 percent, down from 9.4 percent in June 1981. Rates of change within the white-collar group varied substantially, however. Salesworkers' wages, which include volatile commission earnings, rose only slightly, 1.8 percent, for the June 1981–82 period in contrast to 10.2 percent for June 1980–81. However, wage increases for clerical workers, 8.3 percent for the 12 months ended in June 1982, were only slightly below the June 1981 advance of 8.8 percent.

Compensation costs for union workers rose 8.4 percent in the June 1981–82 period, contrasted to 11.5 percent a year earlier; union wage and salary increases dropped to 8.1 percent from 10.1 percent.

The slowdown was also evident for nonunion workers. Compensation costs increased 6.5 percent for the 12 months ended in June, down from 9.8 percent a year earlier; wage increases were 6.5 percent and 9.0 percent.

Compensation costs for State and local government employees, coverage introduced in June 1981, increased 9.3 percent over the year. Wages for these workers advanced 8.7 percent.

Additional data on second-quarter ECI results appear in the Current Labor Statistics section of the *Review*. □

## GAO study focuses on problems of teenagers in labor market

Teenage unemployment, especially that of blacks, has been a concern among policymakers in recent years. According to the General Accounting Office (GAO), unemployment among black teenagers had increased sharply since 1970—along with a coincident rise in crime among all teens.

During 1949–80, the unemployment rate of white male teenagers stayed about three times higher than that of adult males. However, a substantial amount of the difference in these rates can be traced to teens voluntarily leaving jobs and the labor force.

Of all teenagers, those who are unemployed represent only a fraction; but this relatively small group is largely composed of poor and black persons. Therefore, high unemployment indicates a serious labor market problem for black teenagers.

GAO found that using labor force and employment status as the major criteria for ascertaining the need for teenage employment services was insufficient. Many teenagers lack the basic reading, writing, and computation skills required to compete and succeed in the job market, the congressional agency reported. Therefore, using a detailed analysis of the educational achievement, labor force status, and demographic characteristics of teens, GAO estimated that in 1977 “approximately 962,000 economically disadvantaged teenagers (16 to 21 years old) with a high school degree or lower attainment [were] most in need of Federal assistance.” In subsequent years, the number in need depends on how long the average person needs assistance.

Since 1940, there have been extensive racial differences in teenage unemployment outside the South. From 1940 to 1950, nonwhite unemployment was lower in the South than white unemployment during the same period. However, since 1970, the difference has widened significantly in all U.S. regions.

GAO cites two major unresolved questions—why did the black teenage unemployment rate rise so sharply since 1970 and what are the underlying factors of the large and persistent (40 plus years outside the South) teenage unemployment difference? The study finds the most important reasons to be lower scholastic achievement, which, in turn, is a function of many family background variables, and inaccessibility to job vacancy information.

Factors which caused the racial dissimilarities in teenage labor participation were difficult to find. A partial



explanation appears to be discouragement. Teenagers, who lack the personal qualifications necessary for a job, may have had a few bad employment experiences and then decided to withdraw from the labor force, discouraged over their predicament.

Some additional evidence on this issue is provided by an analysis of other possible causes. It shows that nearly three-fourths of the racial difference in labor force participation of out-of-school teens is explained by family background. The analysis also suggests that black teenagers living in households receiving Aid for Families with Dependent Children since 1960 may have been a cause of the relative worsening of labor force participation and unemployment rates among young blacks in recent years.

The claim that a teenager's inability to find a job can have an effect on his or her inclination to commit a crime seems plausible, the GAO study states. However, evidence on the causes of crime does not show how important the effect of unemployment is. Some studies suggest that it may be important, but they are flawed statistically and those that do not have these flaws deal with problems other than unemployment.

Inability to find a job is not the only factor potentially contributing to crime. Being unable to qualify for a job would logically seem much more conducive to criminal behavior, but, because of insufficient data, GAO has

not been able to analyze this group. Regardless of a link to crime, teenagers unqualified for jobs are a serious social problem, GAO noted.

Considering the effect of low wage jobs versus unemployment may also be important. A "job-qualified" teenager might not be driven to crime by a moderately difficult period of unemployment, but, depending on aspirations, the prospect of a lifetime of very modest paying jobs might make crime attractive, according to the study.

On the bright side, GAO could find no evidence that being out of work occasionally as a teenager has any adverse effect on future labor market opportunities or successes. This held true even for out-of-school teenagers.

The GAO report concludes that studies should be conducted to find new ways of identifying and delivering education and training services to disadvantaged teens. Also, the agency believes that extended research is necessary on the link between teenage unemployment and crime. However, the study notes that the Department of Labor disagrees with both suggestions.

The full report, *Labor Market Problems of Teenagers Result Largely from Doing Poorly in School*, Washington, D.C., March 1982, (PAD-82-06), is available from the U.S. General Accounting Office, Document Handling and Information Services Facility, Gaithersburg, Md. 20760. □

# Foreign Labor Developments



## Political issues dominate ILO conference; new worker standards adopted

JULIE MISNER

The International Labor Organization (ILO), which this year had grown to number 150 member states, held its 68th general conference in Geneva, Switzerland. Alfonso Grados Bertorini, labor minister from Peru, was elected conference president. Although the conference adopted a number of new international labor standards, its deliberations were dominated by political issues, according to members of the U.S. delegation.

Founded in 1919, the ILO is unique among the United Nations' specialized agencies because of its tripartite structure. Worker and employer delegates enjoy equal and independent representation with governments. The ILO's mission is to promote employment, better working conditions, and worker and employer rights. Its tools include an annual conference, smaller technical meetings, research, and technical cooperation.

From the outset, all the elements were present to make the June 2-23 conference a political arena—the Israeli invasion of Lebanon, the Argentine-British hostilities in the Falkland Islands, apartheid, Poland, and the Iran-Iraq war. In reaction to these developments, some delegates used the conference plenary sessions to make political denunciations, often insulting other member states and straying far from the competence of the ILO conference. Other delegates, including those of the United States, reminded the conference of the one political issue germane to and at the very heart of the ILO: freedom of association. These participants lamented the renewed and heightened challenges to the principles of freedom of association and the unfortunate absence of Poland's Lech Walesa, who had participated in the 1981 conference—to the cries of “political interference” from Communist delegates.

The same political undercurrents were present—although usually unstated—in the technical work of the

conference and during the special visits by French President Francois Mitterand and Pope John Paul II. But it was in three committees, which by their mandate and makeup were politically charged, that most of the drama of the conference developed: the Resolutions Committee, the Committee on the Application of Conventions and Recommendations, and the Committee on Apartheid.

### Resolutions deadlock

Because it considers proposals unrelated to any item on the conference agenda, the Resolutions Committee is always a prime target for excessive and extraneous politicization. In theory, resolutions should deal with technical labor issues and propose new areas for ILO program emphasis. In practice, such resolutions are usually overshadowed by politically inspired resolutions having little to do with the ILO.

This year's Resolutions Committee was so beset by chaotic procedural wrangling (including one session adjourned because of a bomb threat and another adjourned following an almost total breakdown of order) that it ended in a deadlock. Not only were no resolutions forwarded to the conference plenary for adoption, but the committee was unable to adopt a report describing its work. Nevertheless, after 2½ weeks of chaos in committee, the anticipated blowup when the “non-report” reached the plenary never materialized.

Eighteen draft resolutions were submitted to the conference secretariat prior to the May 18 deadline (that is, 15 days before the opening of the conference, as required by ILO rules). The most potentially difficult and explosive of these was an Arab resolution concerning “The Observance of a Day of Solidarity with the Workers and People of Palestine, the Golan and the other occupied Arab Territories.”<sup>1</sup>

The Arab bloc and its allies joined the committee in unprecedented numbers to ensure adoption of the resolution, but when results of the secret ballot for the five priority resolutions were announced, the Arab resolution—for the first time in almost 10 years—had not taken first place. The committee had decided to consider the draft resolutions in the following order:

- Freedom of association
- Arab resolution concerning Palestinian workers

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- Employers' group resolution on possible ILO funding of conference delegations
- Sudanese resolution on African refugees
- ILO participation in the International Youth Year

This meant that the discussion on the freedom of association resolution—which contained language unacceptable to the Soviet bloc—would have to be completed before the committee could consider amendments to the Arab resolution. What ensued, according to many knowledgeable participants and observers, was an apparently calculated disruption and blockage of the committee's proceedings, and the ultimate failure of the committee to agree on anything. Following a general discussion of the first three resolutions, the committee never progressed beyond the first 5 of 71 amendments to the freedom of association resolution. In its last sitting, the committee was even unable to adopt a report describing its lack of progress.

On the final day of the conference, the President noted the absence of a Resolution Committee report and concluded that there was, as a result, nothing to discuss. His statement, to the great surprise of many delegates who anticipated a major confrontation sparked by the Arabs' failure to win passage of their resolution, went unchallenged, and the conference quietly proceeded to the next item of business. However, the toll had already been taken the day before on the report of the Committee on the Application of Conventions and Recommendations.

### Poland criticized

The Committee on the Application of Conventions and Recommendations faced a particularly difficult task this year, with 115 cases concerning approximately 70 countries. Among the politically sensitive cases on the agenda were Poland, the Soviet Union, Cuba, Czechoslovakia, Argentina, Nicaragua, Chile, and Bolivia. Coupled with the sheer number of cases to be examined, as well as the sensitive nature of some of them, were the emotional tensions surrounding the Israeli invasion of Lebanon and the clear disregard for the whole process of standards supervision on the part of the Eastern bloc.

Despite its frequently electric atmosphere, the Committee on the Application of Conventions and Recommendations for the most part continued to successfully use its new methods of work (that is, a new special list system for highlighting both cases of progress and problems in implementing standards) adopted in 1980. This system includes a heading called "continued failure to implement," in which are listed governments which violated ratified ILO standards for a number of years and have failed to cooperate with ILO efforts to bring their law and practice into line. This is the ILO's most serious form of censure.

In the committee's report, Chile was cited for "continued failure to implement" Convention 111 concerning discrimination in employment—in this case dismissals of persons from the public service because of their political opinions. The governments of Bolivia and Burma were highlighted in special paragraphs for their problems in implementing Convention 87 on freedom of association.

But it was the case of Poland which took and maintained center stage throughout the proceedings of the Committee on the Application of Conventions and Recommendations, both in terms of the substance of discussion as well as the influence it exerted over the subsequent work of the committee. The Government of Poland came under the scrutiny of the committee for its violations of freedom of association stemming from its December 1981 declaration of martial law and imprisonment of hundreds of Solidarity leaders and members—this immediately following a separate examination on the same subject by the Governing Body's Committee on Freedom of Association. Although the Polish government initially expressed its willingness to cooperate with the ILO's supervisory machinery, it reversed its position when the committee recommended that the case be highlighted in a special paragraph—even going so far as to call for a vote on that part of the committee's report. (The committee in its conclusions commended the Polish government's recent efforts and progress, but nevertheless expressed its deep concern regarding the infringements of Convention 87 and associated itself with the very strong recommendations of the Committee on Freedom of Association.)

Following some discussion as to whether such a vote could be taken—that is, after the set of conclusions had already been accepted by the committee—a vote by show of hands resulted in the adoption of the special paragraph. One week later, the committee unanimously adopted its full report. However, those who believed that the subject of Poland had been laid to rest were quite surprised when the committee report reached the plenary.

In plenary, just as conference President Alfonso Grados was about to move that the report of the Committee on the Application of Conventions and Recommendations be adopted by consensus, a delegate from the Soviet bloc took the floor to protest the special paragraph on Poland and requested that the report as a whole be put to a vote by the conference. What ensued were two successive votes (first a show of hands, then a record vote the next morning) which prevented the report from being adopted by lack of a quorum—although by a very narrow 8-vote margin.

A breakdown of the record vote on the Committee on the Application of Conventions and Recommendations report revealed that many Arab delegates had

joined the Soviets to prevent a quorum from being obtained, at least partly because of their frustration over the events in the Resolutions Committee. Only twice before, in 1974 and 1977, has the conference similarly failed to adopt such a report. While the failure to adopt was disappointing, several delegates made powerful statements—starting with the U.S. Government—commending the work of the committee, supporting the other aspects of the ILO's machinery for the supervision of international labor standards, and pointing out that the conference's failure to adopt the report did not affect the ILO's continued scrutiny of events in Poland.

### Conclusions on apartheid questioned

The stated task of the newly established permanent Committee on Apartheid was to review the Director-General's report on the application of the June 1981 "Declaration Concerning the Policy of Apartheid" in South Africa, which contained information on efforts to eliminate apartheid. The information had been submitted by governments and workers' and employers' organizations since adoption of the declaration. The committee's six sessions consisted primarily of a series of speeches denouncing apartheid and calling for measures—mostly economic—to combat it. Its conclusions outlined a number of recommended steps to be taken by governments and the private sector to reduce or eliminate economic relations with South Africa, including supplying information on foreign companies with investments in South Africa, and providing direct assistance to national liberation movements.

Both in the committee and in plenary, a significant minority of government and employer delegates, including those of the United States, stated that while they abhorred apartheid, they found unacceptable the conference's tendency to disregard the ILO's established procedures for due process and to take the organization "beyond its appropriate mandate and competence." The committee's conclusions took note of the reservations expressed by these members, and the anticipated, heated plenary discussion of the apartheid report never came to pass. The report was adopted without vote and without incident.

### New labor standards adopted

The 1982 conference considered four technical agenda items. Two items resulted in the adoption of new Conventions and Recommendations, one in the minor revision of an existing Convention; the remaining item will undergo final discussion at the 1983 conference.

An ILO Convention is an international treaty that carries a legal obligation under international law for states which ratify it. A Recommendation, on the other hand, is simply what the name implies—a document which

suggests specific measures that can be taken to implement labor policies. Recommendations are not subject to ratification and therefore bear no legal obligation.

*Termination of employment.* The conference adopted both a Convention and a Recommendation concerning the termination of employment at the initiative of the employer, updating a 1963 Recommendation. At the end of last year's discussion of this item, workers and employers had been diametrically opposed on virtually every point of the proposed standards, with governments divided according to their law and practice. The major controversy surrounded the amount of government regulation that is necessary and appropriate to protect workers against arbitrary and unfair dismissal.

This year the committee remained controversial and at times confrontational, but a small worker-employer working group did successfully propose shifting some of the more objectionable provisions from the Convention to the Recommendation and otherwise moderate the former. Nevertheless, the employers and a number of governments, including the United States, contended that the Convention adopted by the conference still relies too heavily on government intervention and too little on private initiative. As a result, they argued that the instrument is not sufficiently flexible and universal to be widely ratified and implemented.

*Social security for migrant workers.* The conference also adopted a new Convention (actually a revision of a 1948 Convention) concerning the social security rights of workers and family members who are employed outside their home countries. The new standard extends coverage to all forms of social security and opens the way for applying social security standards to self-employed persons as well as to salaried employees. Most of the provisions of the Convention would take effect as a result of bilateral or multilateral agreements between governments, though some provide for direct and immediate application as a consequence of a member state's ratification of the instrument.

Although U.S. legislation is not completely compatible with the provisions of the new Convention, and U.S. ratification is thus not likely in the foreseeable future, the entire U.S. delegation was able to support adoption of the instrument. The Convention was adopted in an overwhelming affirmative vote by the conference.

Next year, the conference will take up an unprecedented third discussion of the social security issue. This discussion, preceded by a tripartite meeting of social security experts, will formulate model provisions designed for bilateral and multilateral international social security agreements. These provisions will take the form of a Recommendation to supplement the new Convention.



*Vocational rehabilitation.* The 1982 conference held a general discussion which will lead to the possible adoption in 1983 of a Recommendation supplementing the Vocational Rehabilitation (Disabled) Recommendation of 1955. While the provisions of the original instrument are still relevant, new developments in the field have made it necessary to broaden its scope by updating and expanding its definitions of the terms "vocational rehabilitation" and "disabled." The conference did not accept the ILO secretariat's proposal to include among disabled persons the socially maladjusted, but proposed coverage in the revised instrument for all individuals whose prospects of securing and retaining suitable employment are substantially reduced as a result of "an impairment of a physical, mental, or psychological nature duly recognized by a competent authority."

During the committee's discussions, the workers' group unsuccessfully proposed that the supplementary standard on vocational rehabilitation should take the form of a Convention. While the committee's draft conclusions were easily adopted both in committee and in plenary, the workers are expected to rekindle their call for a Convention next year.

*Revision of the Plantations Convention.* In the shortest and quietest technical discussion in ILO history, the conference easily adopted a protocol revising Article One of the 1958 Convention concerning the Conditions of Employment of Plantation Workers. The objective of the revision was to limit the ILO's very broad definition of the term "plantation" and thereby pave the way for wider ratification and implementation of the instrument. There was no substantive discussion of conditions of work on plantations.

The revision of the Plantations Convention marks the first time that the protocol format has been used by the ILO conference. The new procedure eliminates the need for publishing an entire new text (only 1 article of 99 was changed) with a new number. In the future, governments will have the option of ratifying either version of the Plantations Convention.

### Other work of the conference

In the Conference Finance Committee, which is composed only of government members, contributors to the ILO began—at the initiative of the United States—to take a closer and more critical look at the ILO's growing practice of using supplemental budget requests to finance so-called "unforeseen" expenditures, that is, in excess of the organization's biennial program and budget.

The Structure Committee, on the other hand, accomplished little more than to call for the reconstitution and resumption of the Working Party on Structure (now in its 9th year) and to request that an item on

structure be included in the 1983 conference agenda. The structure question involves, among other things, proposed changes in the size and composition of the ILO's Governing Body and its relationship to the conference. Although some of the issues have been ironed out, the structure question is being considered as a "package" and nothing can be resolved until complete agreement is reached. □

### —FOOTNOTE—

<sup>1</sup> Sponsors were the government delegations of Algeria, Democratic Yemen, Iraq, Jordan, Kuwait, Lebanon, Libyan Arab Jamahiriya, Morocco, Qatar, Saudi Arabia, Somalia, Sudan, Syrian Arab Republic, Tunisia, United Arab Emirates, and Yemen.

## Canadian legal approaches to sex equality in the workplace

HARISH C. JAIN

During the last several decades, labor market discrimination against women has become a matter of considerable social and political concern. The rising female labor force participation rate over the years and its projected further increase render this issue even more important.<sup>1</sup> This type of discrimination can take conceptually two forms: employment discrimination and pay discrimination. The former can be defined as unequal job levels for men and women with similar qualifications, and the latter as unequal pay for men and women who have equal qualifications and are performing similar jobs, jobs of equal value, or both (that is, comparable worth).<sup>2</sup>

In this report, equal employment and equal pay legislation are discussed; then, selected cases decided by courts and boards of inquiry are analyzed; and finally, conclusions and policy implications are presented.

### Public policy

*Equal pay.* All Canadian jurisdictions have laws which require equal pay for equal work within the same establishment, without sex discrimination. These provisions have been incorporated either in human rights legislation (Federal jurisdiction, Alberta, British Columbia, New Brunswick, Newfoundland, Northwest Territories, Prince Edward Island, and Quebec) or in labor standards legislation (Manitoba, Nova Scotia, Ontario, Saskatchewan, and Yukon Territory).

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At the Federal level, equal pay legislation was first put into effect in 1956 and amended in 1967. It required equal wages for men and women performing the same or similar work under the same or similar working conditions on jobs requiring the same or similar skill, effort, and responsibility. This legislation remained in effect until 1977, when it was replaced by the Canadian Human Rights Act embodying the equal value principle. According to the act, men and women performing work of equal value (regardless of whether the work is similar) must be paid equal wages. The act also elaborates on how the value of work may be assessed; section 11 (2) specifies that in assessing the value of work performed by persons employed in the same establishment, the criterion to be applied is the composite of skill, effort, and responsibility required in the performance of the work and the conditions under which the work is performed. The Quebec legislation calls for equal pay for equivalent work.<sup>3</sup>

Compared with the Federal and Quebec jurisdictions, the various provincial jurisdictions follow a narrow definition of equal work, such as "same work," "similar work," or "substantially the same work." In 6 of the 12 jurisdictions (Ontario, Nova Scotia, New Brunswick, Newfoundland, Prince Edward Island, and Saskatchewan), legislation also specifies factors on which equality of work may be based. These factors are education, skill, experience, effort, responsibility, and working conditions.

The legislation in a majority of jurisdictions provides for a general exception permitting differentials between the pay of men and women based on any factor other than sex. Other jurisdictions list specific exceptions which include seniority, work experience, and merit.

Several court decisions have helped to provide a more precise interpretation of equal pay legislation in Canada.<sup>4</sup> In the Greenacres Nursing Home case in 1970, the Ontario Court of Appeal ruled that "the same work" did not necessarily imply "identical work" and that job comparisons should be based on work performed rather than on formal job descriptions or terms of employment. In the Riverdale Hospital Case in 1973, the concept of equal work was further broadened. Here, the Ontario Court of Appeal ruled that different job titles do not necessarily indicate different work, slightly different job assignments do not make the work unequal, and within an occupation, if some men do the same work as women, equal pay is justifiable for the whole occupation. The last point was clarified in a case in which the Saskatchewan Court of Appeal declared that even when only 5 of 46 male caretakers performed work similar to female cleaners, it should be considered a sufficient number within the provincial equal pay legislation, and that "some" employees being paid a rate of pay higher than others doing similar work warrants equal pay.<sup>5</sup>

The courts have also dealt with what might properly constitute "a factor other than sex" in justifying male-female pay differentials. In two decisions at the Federal level—the C.T.V. Television Network case in 1975 and the La Societe Radio-Canada case in 1977—the Court ruled that differences in the quality of work as assessed by management are sufficient to justify unequal pay. The Court acknowledged that such an assessment might be subjective and, thus, might involve an error of judgment; however, the Court held that it was not within the competence of the judiciary to review management's judgment. The courts have also ruled on whether the existence of two separate bargaining units could be considered "a factor other than sex" to permit pay differentials between them. The Alberta Court of Appeals in the Gares case in 1976 decided against it.<sup>6</sup>

*Equal employment.* As in the case of equal pay, all jurisdictions in Canada have also enacted human rights legislation. All the statutes prohibit discrimination on the basis of race, national origin, color, religion or creed, sex, marital status, and age. The age groups protected vary among jurisdictions, with the most common being between the ages of 40 or 45 and 65. Discrimination due to physical disability is proscribed in seven jurisdictions. Other prohibited grounds include sexual orientation in Quebec and pardoned offenses in the Federal jurisdiction.<sup>7</sup> These statutes apply to employers, employment agencies, and trade unions. Discrimination is prohibited with respect to advertising and terms and conditions of employment including promotion, transfer, and training.

*Indirect or systemic discrimination.* Both direct<sup>8</sup> and indirect employment discrimination is prohibited. The Canadian Human Rights Act, as well as numerous decisions by boards of inquiry in several provinces, has borrowed the concept of indirect discrimination from U.S. case law and relevant British legislation, that is, the Race Relations Act and the Sex Discrimination Act.

In the United States, the concept was articulated by the Supreme Court in *Griggs v. Duke Power Co.* in 1971. The Court unanimously endorsed a results-oriented definition of what constitutes employment discrimination and indicated that intent does not matter; the consequences of an employer's actions determine whether it may have discriminated under Title VII of the Civil Rights Act.<sup>9</sup>

*Enforcement.* In the enforcement of both the equal pay and equal employment legislation, the method common to all jurisdictions is investigation based on employee complaints. (Although, sometimes, Human Rights Commissions may file a complaint or commence an investigation.) All the acts provide for the settlement of com-



plaints, if possible, by conciliation and persuasion and for an initial, informal investigation into a complaint by an officer who is directed to effect a settlement. If conciliation fails, a board of inquiry is usually appointed; it may issue orders for compliance, compensation, and so on. This order may be appealed to the Supreme Court of the Province on questions of law, fact, or both. The Federal jurisdiction allows an appeal by either the complainant or defendant to a review tribunal, if the original tribunal had fewer than three members.<sup>10</sup> In practice, the emphasis has been to concentrate on effectuating a satisfactory settlement rather than legal guilt.<sup>11</sup>

### Analysis of cases

*Methodology.* In order to study the incidence of pre- and post-employment sex discrimination, 52 board of inquiry and court cases were analyzed.<sup>12</sup> These were all the cases that were adjudicated by boards of inquiry, and in some cases by courts, from 1975 to 1980, in Alberta, British Columbia, New Brunswick, Nova Scotia, Ontario, and Saskatchewan. (To our knowledge, no relevant cases were decided by either boards or courts in other jurisdictions.)

Although the bulk of a typical human rights commission's workload consists of cases that do not go to a board, the data on, for example, conciliated cases or cases under investigation are confidential and, therefore, are not analyzed.

The cases covered a cross-section of industries and institutions and were not confined to blue-collar or lower level white-collar workers; professional, technical, and to some extent administrative and managerial workers were also involved. A majority of the cases involved secretarial workers (38 percent) and unskilled laborers (21 percent).

*Pre- and post-employment discrimination cases.* Pre-employment discrimination cases decided by selected boards of inquiry include allegations regarding male-female job stereotypes, height and weight restrictions, refusal to interview female applicants, sex not being a bona-fide occupational requirement, discriminatory job interviews, and discriminatory job advertisement.

Decisions of boards of inquiry have prohibited such pre-employment barriers as height and weight requirements for a police constable's job,<sup>13</sup> and for jobs requiring physical strength;<sup>14</sup> discriminatory or sex stereotyped questions in job interviews;<sup>15</sup> and employers' misconceptions and stereotypes about traditionally male or female jobs such as not considering: a woman for the job of a cost accountant trainee,<sup>16</sup> a man for the position of a copywriter,<sup>17</sup> a woman as a rental clerk for a rental truck agency,<sup>18</sup> and a woman for heavy-duty janitorial work.<sup>19</sup>

A bona-fide occupational qualification exemption with respect to sex discrimination has been very narrowly construed by the boards. Employers' arguments such as: work being too strenuous for a woman,<sup>20</sup> customer preference for service from either a man or a woman,<sup>21</sup> restaurant atmosphere is created by having all female waitresses,<sup>22</sup> lack of restroom facilities for women,<sup>23</sup> and male-dominated and remote worksite,<sup>24</sup> have been rejected by boards of inquiry in several jurisdictions.

Post-employment discrimination cases deal with casual workers denied full-time jobs; promotion; dismissal; reemployment; pregnancy; and sexual harassment.

*Casual to permanent employment.* At least three boards of inquiry in Saskatchewan,<sup>25</sup> New Brunswick,<sup>26</sup> and Ontario<sup>27</sup> have dealt with complaints from women regarding their attempt to switch from part- to full-time permanent jobs with the same employer. In these cases, the boards of inquiry held against the employers for denying women permanent positions because of their sex.

*Pregnancy.* In British Columbia, the "reasonable cause" provision of the Human Rights Code has had a major impact in broadening the scope of prohibited grounds of discrimination that otherwise would have been excluded.<sup>28</sup> In one case, a British Columbia board of inquiry ruled that a woman who was fired from her job as a reservation clerk, when she told her employer that she was pregnant, had been discriminated against.<sup>29</sup> In another case, a board of inquiry allowed sick leave benefits to teachers absent from employment for sickness caused or aggravated by pregnancy, under the "reasonable cause" provision.<sup>30</sup>

*Sexual harassment.* In a precedent-setting decision, an Ontario board of inquiry declared in August 1980 that sexual harassment is discrimination based on sex, according to section 4(1) of the Human Rights Code. In this case, *Anna Korchzak and Cherie Bell v. Ernest Lada and the Flaming Steer House Tavern, Inc.*, the complainants had alleged that they had been sexually harassed by their employer, the owner of the restaurant. Although the complainants lost, Board Chairman Owen Shime declared that ". . . there is no reason why the law, which reaches into the work place so as to protect the work environment from physical or chemical pollution or extremes of temperature, ought not to protect employees from negative psychological and mental effects where adverse gender-directed conduct emanating from a management hierarchy may reasonably be construed to be a condition of employment." Thus, sex as a prohibited ground of discrimination includes sexual harassment where because of a worker's sex some term or condition of employment is modified by the sexual harassment.<sup>31</sup>

*Indirect or systemic discrimination.* In 7 of the 52 cases, systemic discrimination was found. An analysis of these cases revealed that the approach adopted in the *Griggs* case, which was previously mentioned, has now been widely emulated in Canada; malice or intent to discriminate is no longer a relevant factor. For example, in a case involving a female applicant, the board decided that the Commission's minimum height requirement of 5 feet, 10 inches "virtually eliminates women as police constables," as only 5 percent of Canadian women are that tall.<sup>32</sup>

*Remedies ordered.* In most cases in which discrimination was found and that went before a board of inquiry, more than one remedy was ordered. The most frequently given one was compensation for lost wages; the other remedies (in order of frequency) were orders to employers to:

- display the relevant human rights code in predominant places in employer premises;
- stop their unlawful conduct;
- compensate for general damages;
- compensate for expenses incurred by the complainant;
- compensate for pain and humiliation suffered by the complainant;
- reinstate the complainant;
- send a letter of apology to the complainant;
- offer employment or interview at the next available opening;
- have the relevant human rights commission conduct a human rights workshop for company executives;
- amend application form or other selection tools, or both;
- send a letter of apology to the relevant human rights commission; and
- provide separate facilities for women.

## Conclusions

The cases discussed in this report seem to indicate that entry and training requirements should be carefully established and maintained only if they are necessary prerequisites for employment and promotion. Therefore, employers should develop clear equal opportunities policies to ensure that they are not discriminating by default of appropriate action and to give themselves some safeguard in case their policies are challenged. For instance, organizations must issue explicit instructions regarding the employment interview through their personnel departments. Interviews should be structured and only questions of direct relevance to the job should be asked.

Organizations should keep in mind that, over the years, substantial evidence of validity has accumulated for many of the predictors. When comparing employment tests, ability tests and work sample tests—relative

to personality and interest tests—have proved the most valid. References, recommendations, and interviews usually have been found to be less valid as predictors of job success.<sup>33</sup> Choices of predictors to be used in staffing systems should be governed by the nature of the job, and the validity of the predictors. Staffing systems can be improved considerably by standardization (to obtain reliable information), and by the validation process. Emerging research evidence seems to indicate that validity of tests need not be specific to the situation.<sup>34</sup>

There would appear to be three broad types of human resource policies which might be used to assist minority workers.<sup>35</sup> First, taking labor supply and demand as given, one might attempt to make the labor market operate more efficiently by means of placement activities, worker counseling, and labor mobility or related measures, which would be appropriate regardless of the labor market structure. Second, one might attempt to upgrade the supply of minority workers by means of greater investment in education and training. Third, following the labor market segmentation approach, one might recommend solutions lying on the demand side rather than the supply side, with a requirement for government employment and expenditure policy to favor those in the secondary sector. This would include equal opportunity and affirmative action programs.

Critics have suggested changes in both the scope and enforcement of equal opportunity legislation in Canada in order to improve its effectiveness. Instead of the case-by-case approach adopted by most human rights commissions, class action suits, routine investigation of firms,<sup>36</sup> and contract compliance have been advocated.

Equal opportunity legislation may be a necessary condition for the elimination of sexual inequality. But legal approaches are limited because they operate only on the demand side of the problem (that is, the employer side) and do little to change supply (that is, education and training). Moreover, the existing empirical evidence points to only a limited impact of such legislation; the small number of complaints filed is apparently because of ignorance of legislation, lack of resources, and fear of employer reprisals.<sup>37</sup> However, these and other cases do have an educational effect and may have served to enhance public awareness of the need to provide equality of opportunity. □

## — FOOTNOTES —

<sup>1</sup> In January 1982, women accounted for more than 40 percent of the Canadian labor force. By the year 2000, the labor force participation rate of women is expected to approach that of men. See Carole Swan, *Women in the Canadian Labour Market* (Ottawa, Ontario, Employment and Immigration Commission, July 1981).

<sup>2</sup> Naresh C. Agarwal, "Pay discrimination: Evidence, policies and issues," in Harish C. Jain and Peter J. Sloane, *Equal Employment Issues: Race and Sex Discrimination in the USA, Canada and Britain* (New York, Praeger Publishers, 1981).



Harish C. Jain, "Employment and pay discrimination in Canada: Theories, evidence and policies," in John Anderson and Morley Gunderson, eds., *Union-Management Relations in Canada* (Toronto and Reading, Mass., Addison-Wesley, 1982).

<sup>4</sup> Harish C. Jain, *Ibid.* Also see Naresh C. Agarwal, "Pay discrimination."

<sup>5</sup> *Ibid.*

<sup>6</sup> *Ibid.*

<sup>7</sup> Harish C. Jain, "Race and sex discrimination in Canada," *Relations Industrielles*, forthcoming.

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

<sup>9</sup> In this case, the Court struck down educational requirements and employment tests, stating that these requirements could not be justified on the grounds of business necessity because they were not valid or related to job performance, and they had adverse impact because they screened out a greater proportion of blacks than whites. However, if business necessity could be proved, that is, if the educational and testing requirements that had disproportionate or adverse impact on minorities were related to job performance, then the practice was not prohibited.

<sup>10</sup> Harish C. Jain, "Employment and pay discrimination."

<sup>11</sup> Daniel G. Hill, "The Role of the Human Rights Commission: The Ontario Experience," *University of Toronto Law Journal*, Vol. 19, 1979, pp. 390-401.

<sup>12</sup> Harish C. Jain, "Race and sex discrimination."

<sup>13</sup> *Ann Colfer v. Ottawa Board of Commissioners of Police*, 1978, an Ontario board of inquiry decision.

<sup>14</sup> *Kathleen Grafe v. Sechelt Building Supplies (1971) Ltd.*, a British Columbia board of inquiry.

<sup>15</sup> *Kerry Segrave v. Zeller's Ltd.*, 1975, an Ontario board of inquiry decision.

<sup>16</sup> *Stairs v. Maritime Cooperative Services Ltd.*, 1975, a New Brunswick board of inquiry decision.

<sup>17</sup> *Francis Perry v. Robert Simpsons Ltd.*, 1976, a Nova Scotia board of inquiry decision.

<sup>18</sup> *Betty-Ann Shack v. London Drive-Ur-Self Ltd.*, 1974, an Ontario board of inquiry decision.

<sup>19</sup> *E. Garnett v. Komplete Industries Ltd.*, 1979, a British Columbia board of inquiry decision.

<sup>20</sup> *Betty-Ann Shack*. Similarly, in the *David J. Foreman et al v. Via Rail Canada Inc.*, 1980, a Federal case, the tribunal held that Via's acuity standards were not based on a bona-fide occupational requirement because Via had failed to justify the standards. This was not a sex discrimination case; however, it is an important bona-fide occupational case.

<sup>21</sup> *Donald J. Berry v. The Manor Inn*, 1980, a Nova Scotia board of inquiry decision.

<sup>22</sup> *Kesterton v. Spinning Wheel Restaurant*, 1975, a British Columbia board of inquiry decision.

<sup>23</sup> *Jean Tharp v. Lornex Mining*, 1975, a British Columbia board of inquiry decision.

<sup>24</sup> *Ibid.*

<sup>25</sup> *Gail Oliver v. Her Majesty the Queen in right of Saskatchewan as represented by the Minister of Highways and Transportation of Sas-*

*katchewan*, 1976, a Saskatchewan Human Rights Commission formal inquiry decision.

<sup>26</sup> *Shirley Naugler v. The New Brunswick Liquor Corporation*, 1976, a New Brunswick board of inquiry decision.

<sup>27</sup> *Hetty Hendry v. L.C.B.O.*, 1980, an Ontario board of inquiry decision.

<sup>28</sup> Bill Black, "'Reasonable cause' in Human Rights Legislation," *Labour Research Bulletin*, Vol. 9, February 1981.

<sup>29</sup> *H.W. v. Riviera Reservations*, 1976, a British Columbia board of inquiry decision.

<sup>30</sup> *Kerrance Gibbs and Surrey Teachers Association v. Board of School Trustees School District #36 (Surrey, B.C.)*, 1979, a British Columbia board of inquiry decision.

<sup>31</sup> *Anna Korchzak and Cherie Bell v. Ernest Lada and the Flaming Steer Steak House Tavern Inc.*, 1980, an Ontario board of inquiry decision.

<sup>32</sup> *Ann Colfer v. Ottawa Board of Commissioners of Police*, 1978, an Ontario board of inquiry decision.

<sup>33</sup> Herbert G. Heneman III, Donald P. Schwab, John A. Fossum, and Lee D. Dyer, *Personnel/Human Resource Management* (Homewood, Ill., Richard D. Irwin, 1980).

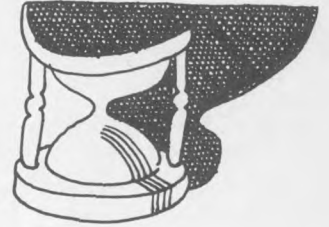
<sup>34</sup> Frank L. Schmidt and John E. Hunter, "Development of a general solution to the problem of validity generalization," *Journal of Applied Psychology*, Vol. 62, October 1977, pp. 529-40. Also see, Marvin D. Dunnette and Walter C. Borman, "Personnel Selection and Classification Systems," *Annual Review of Psychology*, Vol. 30, 1979, pp. 477-525; Frank L. Schmidt, John E. Hunter, Robert C. McKenzie and Tressie W. Muldrow, "Impact of valid selection procedures on work-force productivity," *Journal of Applied Psychology*, Vol. 64, December 1979, pp. 609-26; and Mary L. Tenopyr, "Trifling he stands," *Personnel Psychology*, Vol. 34, Spring 1981, pp. 1-17.

<sup>35</sup> Harish C. Jain and Peter J. Sloane, *Equal Employment Issues*.

<sup>36</sup> Apparently, routine investigation of firms does bring increased backpay settlements. For instance, 157 investigations and routine audits under Ontario's equal pay regulations resulted in \$284,000 of salary increases and backpay settlements for female employees over a 10-month period, April 1980 to January 1981. Thirty-six employers were found guilty in cases involving 134 women. The beefed-up inspection procedures by the Ministry of Labour were made possible by the hiring of 11 officials who were added to the Ministry's equal pay monitoring team in Spring 1980. See *Globe and Mail*, Feb. 27, 1981, p. B-8. A comparison of previous statistics highlights the role of routine audits in increasing backpay settlements. In 1979-80, nine employers were found guilty involving 44 employees and \$56,212 in settlement; in 1978-79, eight employers involving 29 employees were found guilty and the settlement was \$8,311; in 1977-78, nine employers involving 20 employees were found guilty and the settlement was \$6,672.67. The exception to the rule was during 1976-77 when 29 employers and 452 employees were involved and the settlement was \$535,966.02. However, during 1975-76, the settlement sum of \$31,248.88 was in line with other years and involved 17 employers and 76 employees. These figures were provided by the Women's Bureau of the Ontario Ministry of Labour.

<sup>37</sup> *The Status of Women in Canada* (Ottawa, Ontario, Information Canada, 1970).

# Major Agreements Expiring Next Month



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

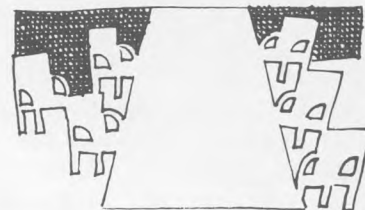
Employer and location	Industry	Labor organization <sup>1</sup>	Number of workers
Allis-Chalmers Corp. (La Porte, Ind.)	Machinery	Auto Workers	1,000
Allis-Chalmers Corp. (West Allis, Wis.)	Machinery	Auto Workers	1,900
Apartment Building Owners and Managers Association of Chicago (Illinois)	Services	Service Employees	3,000
Armstrong Cork Co. (Lancaster, Pa.)	Miscellaneous manufacturing	Rubber Workers	2,000
Bendix Autolite Corp. (Michigan)	Transportation equipment	Auto Workers	1,200
Carrier Corp. (Syracuse, N.Y.)	Machinery	Sheet Metal Workers	3,250
Central States Area Tank Truck Agreement (Interstate) <sup>2</sup>	Trucking	Teamsters (Ind.)	15,000
Chain and Independent Food Stores (Wisconsin) <sup>2</sup>	Retail trade	Food and Commercial Workers	2,300
Colgate-Palmolive Co. (Jersey City, N.J.)	Chemicals	Employees Association, Inc. of Colgate-Palmolive Co. (Ind.)	1,200
Film Exchange Employees Agreement (Interstate) <sup>2</sup>	Amusements	Theatrical Stage Employees	1,500
Food Employers Council, Inc. (Los Angeles, Cal.)	Retail trade	Food and Commercial Workers	6,500
General Telephone Co. of Indiana (Indiana)	Communication	Electrical Workers (IBEW)	1,550
Graphic Arts Association of Delaware Valley, Inc. (Pennsylvania)	Printing and publishing	Graphic Arts	1,200
Greater Boston Hotel and Motor Inn Association (Boston, Mass.)	Hotels	Hotel Employees and Restaurant Employees	3,000
Hotel and Motel Association of Greater St. Louis (St. Louis, Mo.)	Hotels	Hotel Employees and Restaurant Employees	2,500
ICI United States, Inc. (Charlestown, Ind.)	Fabricated metal products	Chemical Workers	1,250
Londontown Corp. (Interstate)	Apparel	Clothing and Textile Workers	1,950
Retail Distribution Agreement (San Diego, Cal.) <sup>2</sup>	Retail trade	Food and Commercial Workers	1,200
United States Potters Association (Interstate)	Stone, clay, and glass products	Potters	1,500
USAIR (Interstate)	Air transportation	Air Line Pilots	1,100
United Aircraft Corp., Pratt and Whitney Aircraft Division, 4 agreements (Connecticut)	Transportation equipment	Machinists	18,350
	<b>Government activity</b>	<b>Labor organization<sup>1</sup></b>	
Pennsylvania: Pittsburgh Board of Education	Education	American Federation of State, County and Municipal Employees	1,050

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

<sup>2</sup> Industry area (group of companies signing same contracts).



# Developments in Industrial Relations



## Westinghouse workers to contribute to pensions

Only minutes before a July 25 strike deadline, Westinghouse Electric Corp. and three electrical workers' unions agreed on 3-year contracts that included a "contributory" pension plan. In the 1979 negotiations, Westinghouse's demand that workers begin financing part of their pensions resulted in a 7-week strike by the three unions and other union members of the Coordinated Bargaining Committee formed in 1965 to strengthen bargaining with Westinghouse and General Electric Co. Westinghouse maintained that partial financing of pensions by employees was necessary to alleviate a competitive cost advantage held by General Electric, which has had a contributory plan since the early 1950's.

The unions involved were the International Brotherhood of Electrical Workers, the International Union of Electrical, Radio and Machine Workers, and the United Electrical Radio and Machine Workers. All three unions bargain with Westinghouse on a "national" basis for about 31,000 workers. A union official said the decision was not a "concession" and that the unions were not "philosophically opposed" to the concept if Westinghouse made several changes in its proposal. The unions' negotiators also maintained that the Westinghouse contributory plan was better than that at General Electric.

The Westinghouse plan requires employees to contribute an amount equal to 3 percent of annual earnings in excess of \$14,700, in contrast to the \$12,000 threshold at General Electric. Minimum monthly benefits were increased to a range of \$14 to \$17.50 a month (depending on preretirement average annual earnings), compared with a range of \$12 to \$17.50 at General Electric. In 1984, the range will rise to \$14 to \$19.50 at both companies. The preretirement average annual earnings for Westinghouse retirees will be based on the last 3 years of work, compared with the last 5 years at General Electric. All Westinghouse workers were also given

the option of staying in the existing company-financed plan, with the benefit rate remaining at \$13 a month.

The pension changes negotiated by the three electrical unions (and subsequently accepted by the other Coordinated Bargaining Committee unions for 9,000 additional workers) were identical to those the Federation of Westinghouse Independent Salaried Unions negotiated in July for 11,000 employees. The Federation had already agreed to a contributory pension plan in its 1979 settlement.

Except for the pension differences, all of the Westinghouse contracts provided for essentially the same wage, benefit, and job security terms as at General Electric (see *Monthly Labor Review*, September 1982, 44-45).

## Steel industry update

There were several occurrences in the financially pressed steel industry. The United Steelworkers rejected an employer proposal for labor-cost concessions and efforts to end alleged "dumping" of foreign steel in the United States continued with no clear outcome in sight.

In announcing the rejection of the industry's concession proposals and the termination of negotiations, Steelworkers President Lloyd McBride said the bargainers "have spent a great deal of time trying to find answers to our mutual problems and we simply have failed." He said the talks with the eight Coordinating Committee Steel Companies, which generally set the bargaining pattern for other producers, had floundered because the employers' final proposal "went too far" by indicating "if you can't accept that [the proposals], there's no deal." McBride contended that the proposals called for much greater sacrifices than the revised contracts the Auto Workers negotiated with Ford Motor Co. and General Motors Corp.

The unanimous decision by the union's Basic Steel Industry Conference (which consists of 400 local union officials) drew a bitter response from J. Bruce Johnston, U.S. Steel Corp. vice president and chief industry bargainer. Johnston said that the union's refusal to accept wage and benefit cuts suggests to unemployed steelworkers that their problems will be solved by a recovery in steel order volume, when in fact, it is "their ever-

"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.

increasing wage costs [that] are pulling against any sustained recovery for domestic steel.”

The rejected proposal would have superseded the remaining year of the current 3-year contract and would have terminated on August 1, 1985. It called for a freeze on wages; suspension of automatic quarterly cost-of-living adjustments; elimination of extended vacations; a 50-cent-an-hour increase in employer financing of Supplemental Unemployment Benefits; guaranteed durations of benefit payments to laid-off workers with 10 years of service; establishment of stock ownership and individual retirement accounts; and a possible contract reopening linked to the level of steel production.

McBride said the parties were not considering a renewal of the Experimental Negotiating Agreement. This opens the possibility of an industry strike if the parties are unable to agree on a new wage-and-benefit contract in 1983. The Experimental Negotiating Agreement, which was introduced in 1973, essentially banned industrywide strikes at the termination of agreements in exchange for an “economic floor” under wage-and-benefit settlements.

Meanwhile, Secretary of Commerce Malcolm Baldrige announced that the Reagan Administration would not reopen negotiations with six European nations to gain import limitations. The parties had reached agreement on limits, but the accord was rejected by the seven domestic producers that had filed the unfair trade charges in January against South Africa and Brazil, as well as the European countries. The producers had charged that some nations were unfairly subsidizing steel produced for export to the United States.

Baldrige said a resumption of talks would not be fruitful because “there comes a time when both sides say enough is enough.” He maintained that U.S. negotiators had gained all the import restrictions the domestic companies had sought, but the U.S. companies later decided they wanted lower import quotas.

In another aspect of the controversy, the Department of Commerce announced a preliminary finding that the steel products from the six countries were, in fact, being sold in the United States at unfairly low prices. As a result, importers of steel from these nations were required to begin posting bonds to assure payment of penalty duties that could be imposed when the department issues a final ruling later in the year.

### **Western Union contract ends 90-minute strike**

A 90-minute strike against Western Union Telegraph Co. ended when the parent Western Union Corp. and the United Telegraph Workers agreed on a 3-year contract. About 8,800 workers were involved. Later, the Communications Workers agreed to virtually identical terms for the 900 Western Union Telegraph employees

it represents in the New York City area.

The United Telegraph Workers accord provided for a reported 31.066-percent increase in wages and benefits over the term, including a 30-percent rise in pension rates. The wage portion of the package calls for increases of 8 percent the first year, 7 percent the second, and 7.1 percent the third. With these increases, pay will average \$10.43 an hour, according to the union.

Other terms included additional pay increases for some job classifications, a new optical care plan, and a \$50,000 increase in major medical coverage, to \$200,000.

### **Union mergers**

A 91,000-member Glass, Pottery, Plastics and Allied Workers union resulted from the merger of the Pottery Workers and the Glass Bottle Blowers unions. Speaking to a special convention of the Pottery Workers, union president James E. Hatfield said the move was necessary to increase “unity and strength” in negotiations with employers. Hatfield will head the new organization, and Pottery Workers’ President Lester H. Null will serve as assistant president. The 11,000-member Pottery Workers, which, like the Glass Blowers, traced its origins to the 1800’s, had been an autonomous affiliate of the Seafarers from 1976 to 1978.

A 70,000-member Aluminum, Brick and Glass Workers International Union resulted from the merger of the Aluminum, Brick and Clay Workers and the Glass and Ceramic Workers. Aluminum Workers President Lawrence A. Holley will head the new union and will be assisted by Glass and Ceramic Workers President Joseph Roman.

Merger talks between the Steelworkers and the Insurance Workers failed for the second time. The first round of consolidation talks ended in 1980, when the unions were unable to agree on a dues structure. This also was the main barrier to success in the recent talks. The executive board of the Insurance Workers rejected the proposal because of concerns that the formula—1.15 percent of 80 percent of the agents’ average earnings—would amount to \$20 to \$25 a month. Current monthly dues are \$11 a month for the Insurance Workers and 2 hours of pay for the Steelworkers.

### **AFL-CIO Executive Council holds summer session**

The summer session of the AFL-CIO Executive Council focused on the economy. In 1 of 16 policy statements, the council charged that Reagan Administration economic actions were pushing “the lowest-paid workers into a frightening abyss of subpoverty” and they are increasingly being joined “by workers with valuable, hard-won skills who previously had a respected place in

the community." Further, the council contended, the damage was being exacerbated by "deep budget cuts in social programs at the exact moment the recession makes them so needed."

In a move to strengthen workers' role in the 1984 presidential campaign, the council decided that the Federation's general board (which consists of officials from all the affiliated unions) will meet before the first political primary to decide whether to endorse a candidate. In recent presidential campaigns, the member unions were not unified in their choice and entered the campaign later, which reduced their role in the selection, according to Federation officials. Federation President Lane Kirkland said that member unions will not be bound to back any candidate endorsed by the general board.

In other actions, Kirkland announced formation of committees to examine the changing work force and the organizing outlook; develop and promote greater participation by retirees in attaining labor's objectives; and coordinate efforts to defeat the proposed constitutional amendment requiring a balanced Federal budget.

### **Maintenance of Way Employees convene**

Delegates to the quadrennial convention of the Maintenance of Way Employees approved a plan that could lead either to an autonomous division or a separate union for Canadian members. The 450 delegates, meeting in Vancouver, British Columbia, unanimously endorsed the proposal in a voice vote. The delegates also amended the constitution to provide for the U.S. vice president and executive board members to be elected by delegates from their region, rather than by all U.S. delegates. In other affairs, Ole M. Berge was elected to another term as president of the 120,000 member union, and Geoffrey N. Zeh, the union's general counsel and research director, defeated incumbent B.L. Sorah for the vice presidency.

### **Electrical workers in New York get raises**

About 7,500 workers were covered by a 2-year contract negotiated between the International Brotherhood of Electrical Workers and the Niagara Mohawk Power Co. of Syracuse, N.Y. Wages increased by 9.5 percent on June 1, and will rise an additional 9 percent on June 1, 1983. New employees will be paid \$1 an hour less than the current starting rate. Prior to the settlement, pay averaged \$11.19 an hour for the 1,900 clerical workers and \$11.48 for other workers.

Other terms included a raise in normal pensions, which will be financed by increasing the number of years used in calculating career average annual salary; \$300,000 major medical coverage, instead of \$200,000;

free eye examinations every 2 years for 500 customer service representatives who use video display terminals regularly; changes in work schedules, including one that requires some employees to work as late as 9 p.m. to read the meters of customers who are not home during usual business hours; and a raise (to \$20) in the bonus paid to employees who discover a theft of service.

### **Accord ends 7-week casino strike**

Carpenters, painters, and maintenance workers at three hotel-casinos in Atlantic City, N.J., approved a 5-year settlement that was later extended to other hotel-casinos. The accord, which ended a 7-week strike at the Playboy, Bally's Park Place, and Caesar's Boardwalk Regency, called for a 7-percent pay increase in the first year, 8 percent in each of the next 3 years, and 7 percent in the final year. The previous wage rate was \$10 an hour for the employees, who are represented by the Operating Engineers, Carpenters, and Painters unions.

The casinos also agreed to pay 25 cents an hour into an annuity fund for the employees during the last 6 months of the contracts. The money will be distributed at retirement, transfer out of the local union, or death.

### **Wages of Oregon State employees frozen**

The State of Oregon, which has been experiencing budget problems because of the economy and, in particular, the severe cutbacks in its lumber and wood products industry, received some aid when State employees agreed to give up \$20 million in wages. The Oregon Public Employees Union, which represents half of the workers, agreed to a wage freeze for the fiscal year beginning July 1. The union's 17,000 members had been scheduled for pay increases of 3 percent on July 1 and November 1 of 1982 and March 1, 1983 under their current 2-year contract, negotiated in 1981. In exchange for the freeze, the workers will receive 6 additional paid vacation days during the 12 months.

Instead of a pay freeze, the Teamsters agreed to reduce the paid workweek of State employees it represents to 37.5 hours, from 40.

The pay increases and the 40-hour week will be restored after July 1, 1983. The State also negotiated comparable concessions with 10 other unions.

### **NLRB orders company to bargain with union**

In a departure from usual practice, the National Labor Relations Board ordered a company to bargain with a union even though the union was unable to show support by a majority of the workers. The board said the bargaining order was warranted because the firm, Conair Corp. of Edison, N.J., had engaged in "outra-



geous and pervasive" conduct to counter an organizing campaign by Local 222 of the Ladies Garment Workers union.

According to the board, the union had obtained authorization cards from 46 percent of the 380 workers early in 1977, but Conair, a maker of hair and beauty care products, had then initiated a massive and unrelenting campaign to defeat the drive. Some of the illegal tactics cited by the board included threats to close the plant and move the operations to Hong Kong and threats that employee benefits would be terminated. Subsequently, the union struck, but was forced to end the walkout after 5 months because of continued coercive tactics by the company. About 9 months after the start of the organizing drive, the union garnered only about one-third of the votes cast in a representation election held in December 1977.

The board held that the order to bargain with Local 222 was necessary because Conair had "foreclosed any possibility of holding a fair representation election," and therefore, "we find that a remedial bargaining order is the only way to restore to employees their statutory right to make a free and uncoerced determination whether they wish to be represented in collective bargaining by a labor organization. Anything short of a bargaining order would deny employees that right which has been the hallmark of national labor policy for nearly five decades."

In the majority opinion, several board members said that Conair's conduct fell within the "exceptional" category specified in the Supreme Court's 1969 decision in *Gissel Packing Co.* In that ruling, the Court said that when an employer engages in flagrant violations that preclude a fair election, the board could issue a bargaining order "without need of inquiry into majority status on the basis of cards or otherwise."

### **Serious violations target of mine safety agency**

A change in mine safety and health regulations by the Department of Labor indicates it will concentrate on correcting serious violations by mine owners. A spokesman for the Department's Mine Safety and Health Administration said the agency will seek greater

penalties for operators who are "found to be negligent" or who do not correct violations, but the agency will now propose only a \$20 fine for minor violations. Previously, all penalties were set through a lengthy process based on six criteria. As before, penalties require the approval of the independent Mine Safety and Health Review Commission.

The Bituminous Coal Operators Association applauded the changes, saying that it will reduce paperwork for inspectors and allow everybody to concentrate on the more serious violations. Sam Church, president of the United Mine Workers, said he was disappointed with the reduced penalties for minor violations but noted that the Assistant Secretary of Labor for Mine Safety and Health had promised that the program would not be used by operators to circumvent the law.

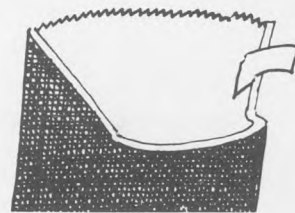
### **Employer with EEO plan guilty of bias**

In a 5 to 4 decision, the Supreme Court held that even an employer with a successful equal employment opportunity program can be guilty of discrimination in administering parts of the program. The case arose when four black employees of the State of Connecticut's Department of Income Maintenance complained that they failed to gain promotions because the written examination was biased against blacks. In their complaint, filed under provisions of title VII of the Civil Rights Act of 1964, the four employees said that blacks had passed the examination at only 68 percent of the rate for white candidates.

In its response, the State contended that only the overall results of the program should be considered, noting that 23 percent of the blacks who passed the test were promoted, compared with only 13 percent of the whites who passed.

However, the Court rejected the contention. Writing for the majority, Justice William J. Brennan said that the four blacks who failed the test and initiated the complaint did not get promotions, so the fact that other blacks did was not beneficial to the four, that "the principal force of the statute is the protection of the individual employee, rather than the protection of the minority group as a whole." □

# Book Reviews



## The 'comparable worth' conundrum

*Comparable Worth: Issues and Alternatives.* Edited by E. Robert Livernash. Washington, Equal Employment Advisory Commission, 1980. 260 pp.

*Women, Work, and Wages: Equal Pay for Jobs of Equal Value.* Edited by Donald J. Treiman and Heidi I. Hartmann. Washington, National Academy Press, 1981. 136 pp.

If the saying that timing is everything has any validity, then 1982 and its high level of unemployment is probably not an optimum time for action on the pay equity issue of comparable worth. It is, however, a good time to prepare for any future action. To do so, I strongly recommend that people of all persuasions on the issue—for, against, undecided, or unknowledgeable—use the two books in this review as their primers.

Although each has a different outlook, both books agree on two main points. First, that the most generally accepted definition of comparable worth is equal pay for work of comparable (or equal) value; and second, that the comparable worth issue is an extension of the issues covered in the Equal Pay Act of 1963 and Title VII of the Civil Rights Act of 1964.

In simple terms, the Equal Pay Act mandates equal pay for equal work without regard to sex, race, and other factors. It exempts any wage differential attributable to systems of seniority, merit, quantity, or quality of production. Title VII prohibits employment discrimination with respect to pay and terms, conditions, or privileges of employment because of sex, race, and so forth, except when wage differentials are based on systems of seniority, merit, quantity, or quality of production (the Bennett amendment).

After some 15 years of litigation under these laws, many women's groups began to lobby for stronger methods of dealing both with the male-female wage differences that had not sufficiently improved and the seemingly intractable job segregation of women. Thus, in the late 1970's, the comparable worth concept resurfaced, having had a brief tenure during World War II, and earlier periods. (See the excellent historical background provided by Herbert R. Northrup in *Comparable Worth: Issues and Alternatives*.)

Knowing the sponsor of each book provides a good indication of the stand each takes. *Comparable Worth: Issues and Alternatives* was funded by a grant from the Business Roundtable and was published by the private, business-oriented Equal Employment Advisory Council. The book takes an employer-oriented approach and argues strenuously against comparable worth.

*Women, Work, and Wages: Equal Pay for Jobs of Equal Value* was funded by a grant from the Federal Government's Equal Employment Opportunity Commission and was published by the National Academy of Sciences. This book takes an employee-oriented approach, concluding that sex-based job evaluation and biases still exist and that a comparable worth mechanism should be pursued to remedy the situation.

E. Robert Livernash, Professor Emeritus of the Harvard School of Business, edited the Equal Employment Advisory Council's book. He also wrote the introductory Overview, which is so overwhelmingly subjective and vitriolic, that this is one of the rare times I must recommend reading an Overview last, more as a conclusion. Otherwise, I believe a considerable number of readers, especially women, may be deterred from reading the seven topical chapters, which for the most part, contain a great deal of valuable information.

For example, Janet R. Bellace's excellent chapter on "A Foreign Perspective" discusses the equal pay and comparable worth concept in 13 countries, beginning with ILO Convention 100 in 1951 and Article 19 of the Treaty of Rome in 1957. She points out that today there is hardly any uniformity in defining comparable worth and that in some countries the term is synonymous with equal pay.

In his chapter on "Job Evaluation and Pay Setting," Donald P. Schwab provides a thorough review of the current state of the art, its good points and deficiencies. He emphasizes the importance of external market constraints, such as regulations and unions, in the job evaluation process, as well as the role of internal key and nonkey jobs. Schwab concludes that "At present [1980] there is no mechanism for defensibly establishing comparable worth. Certainly, job evaluation does not do it."

About two-thirds of Herbert R. Northrup's chapter on "Wage Setting and Collective Bargaining" presents

exceptionally interesting historical material on wage structure relationships and bargaining techniques between unions and management. The remaining third of the chapter contains a strongly worded case against government intervention and regulation in job evaluation and pay-setting processes. In Northrup's words, "Perhaps the most pernicious aspect of the comparable worth theory is that it would establish a government agency as the final arbiter of wages."

Other chapters and authors are "The Emerging Debate," by George T. Milkovich; "The Market System," by George Hildebrand; "Statistical Biases in the Measurement of Employment Discrimination," by Harry V. Roberts; and "The Legal Framework," by Robert E. Williams and Douglas S. McDowell.

The Equal Employment Advisory Commission volume concludes that comparable worth has neither been operationally defined by its supporters, nor will it ever be, and that a nonarbitrary wage structure requires the use of traditional job evaluation procedures and market rate standards. ". . . any attempted implementation of comparable worth would encounter substantial difficulties and would have disruptive and undesirable consequences." A viable alternative is ". . . the accelerated promotion of women, particularly within the managerial and professional hierarchy," a course which "is being effectively pursued by many companies." Upward mobility programs for workers are seen as the most promising path employers can follow.

The U.S. Equal Employment Opportunity Commission was established in 1965 to enforce Title VII of the Civil Rights Act. In 1977, the EEOC commissioned the National Academy of Sciences to produce a study on the issues involved in obtaining a measure of the comparable worth of jobs. An interim study, *Job Evaluation: An Analytical Review*, was released in 1979. The final volume entitled *Women, Work, and Wages: Equal Pay for Jobs of Equal Value* reflects the work of the 14-member Committee on Occupational Classification and Analysis.

Chair of the committee, Anne R. Miller, Professor of Sociology, University of Pennsylvania, writes in the book's Preface, "The format of the report reflects [the committee's] consensus. A major portion of our early discussion focused on whether, in fact, the existing wage rate is a good approximation of the worth of a job. Our ultimate view, as described in chapter 3 and summarized in chapter 5, is that the substantial influence of institutional and traditional arrangements makes it impossible to view current wage rates as set solely by the free play of neutral forces operating in an entirely open market, no matter how attractive such a theoretical formulation may be. Our examination of the outcomes—that is, the earnings differentials reviewed in chapter 2—and the processes—the arrangements by

which workers are allocated and wages are set, covered in chapter 3—led us to that judgment."

Despite the committee's consensus on many important issues, evidence of dissension can be found in the minority and supplementary reports at the end of the book and in some equivocating elsewhere in the book about the feasibility of measuring comparable worth scientifically. One committee member, Ernest McCormick, Professor Emeritus of Industrial Psychology, Purdue University, filed a minority report on two counts. First, he disagreed with the committee about concluding that institutional and traditional arrangements frequently are a major factor in setting current wages. Second, McCormick thought the final report should have included his views on job evaluation procedures.

Another committee member, Gus Tyler, Assistant President, International Ladies' Garment Workers' Union, filed a supplementary report, which was also endorsed by member Mary C. Dunlap, lawyer and lecturer at the University of California, Berkeley. Their statement supports the committee's report but says it is too narrowly focused to have a major impact on the root causes of pay differentials. Tyler and Dunlap believe broader issues are involved, including a maldistribution of workers by sex, with women entering traditionally low paying, service sector jobs; indexing the minimum wage; regulating imports; and supplementing the traditional wage with a social wage (rent supplements, health care, social security, and so forth).

Donald J. Trieman, Professor of Sociology, University of California, and Heidi I. Hartmann, Associate Executive Director, Assembly of Behavioral and Social Sciences, National Academy of Sciences, edited the book's five chapters. Chapter 1 introduces the main points on which the committee focused, with wage discrimination an overwhelming theme. The text states that women who are nurses, librarians, government employees, and clerical workers have assessed their skills and requirements of their jobs and have argued that their jobs are underpaid relative to jobs of comparable worth that are held by men—that is, jobs requiring similar levels of skill, effort, and responsibility and similar working conditions. ". . . the issue raised is that of pay equity in a labor market that is highly segregated by sex. While the opportunity to move out of segregated job categories may be welcome to many women, many others, who have invested considerable time in training for their jobs, demand wage adjustments in 'women's jobs' rather than opportunities to work in other jobs."

Taken together, chapters 2, 3, and 4 present a superb roundup of statistics and research, including reviews of many studies of sex differences in earnings, empirical and theoretical frameworks for investigating earnings



inequalities, and the efficacy of various econometric modeling techniques in determining wage discrimination.

Chapter 2, "Evidence Regarding Wage Differentials," takes the reader through a thicket of statistics, studies, and theories in an effort to pinpoint the underlying reasons for earnings inequalities by sex. Provided are exceptionally clear discussions about the explanatory value of human capital factors and about measures of segregation within occupations and firms.

This chapter concludes that because wages may not reflect the entire reward paid for a job and that differences in the productivity of many workers are neither easily nor accurately measured, measures of wage discrimination often cannot be obtained with a high degree of confidence.

Chapter 3, "Wage Differentials and Institutional Features of Labor Markets," emphasizes the belief of institutional economics that while wage rates reflect the forces of supply and demand, supply and demand themselves are strongly affected by such institutional factors as union contracts, promotions from within firms, and segmentation of workers into noncompeting groups on the basis of sex, race, and so forth.

This chapter's discussion on job segregation is especially provocative, including the historical information on women's underpayment in the labor markets of the 1930's and World War II.

Chapter 4, "Wage Adjustment Approaches to Overcoming Discrimination," reviews a variety of job evaluation procedures that adjust wages through conventional factor point methods and statistical adjustments of pay rates to estimate and remove the effects of the sex, race, and ethnic composition of job categories. The committee concludes that, "Techniques used in job evaluation have not kept pace with developments in econometrics, psychometrics, and sociological measurement. Serious attention should be given to the selection and measurement of compensable factors, the functional form of regression models, and assumptions about error structures, each of which can seriously affect the factor weights and the pay rates predicted by these models."

The conclusion of the National Academy of Sciences book (chapter 5) seems a bit schizophrenic; that is, the committee's review of the evidence "strongly suggests that wage discrimination is widespread." But "would the low-paying jobs be low-paying regardless of who held them, or are they low-paying jobs because of the sex, race, or ethnic composition of their incumbents?" In the committee's judgment, a correct response recognizes that both elements account for observed earnings differentials.

I have not dwelled on the few misprints and errors in some of the tables and text in both volumes. Readers will discover these on their own. I believe, however,

that they do not detract from the richness of the information and opinions provided. We are indeed fortunate to have available two highly readable books with different views on such a controversial subject.

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### Retirement issues: required reading

*The Economics of Aging: The Future of Retirement.*

Edited by Malcolm H. Morrison. New York, Van Nostrand Reinhold Co., 1982. 294 pp. \$24.

This book focuses upon several key issues pertaining to our national retirement policies and programs. It especially emphasizes the areas of social security, other public and private retirement income programs, and employment policies and programs for older workers. All seven chapters are clearly written but some are a little redundant. Several chapters contain both analytical and new material on the subjects covered. I believe that *Economics of Aging* will become a major reference for those working in the broad fields of aging, income maintenance, and employment.

The introductory chapter by Ruth Blank is a comprehensive discussion of the history of retirement as a social institution in preindustrial, industrial, and postindustrial America. It has a most complete set of references on retirement practices and programs in the United States.

The second chapter, by Elizabeth Meier and Barbara Boyle Torrey, is a scholarly discussion of future demographic changes and retirement age policy in the United States. This includes an interesting discussion of the likely consequences of an increasing dependency ratio that will see, in the next century, a smaller working population having to transfer more of its income to a larger retired population, especially after the year 2010. Meier and Torrey argue that some increase in the normal retirement age (65) seems economically and socially desirable. However, they do caution that any increase in the eligibility age for retirement benefits in social security and other public and private retirement income programs should be planned thoughtfully and introduced gradually over a number of years.

The next two chapters are major contributions to the social policy literature on retirement income issues. Chapter 3, by Eric Kingson, is an excellent discussion of current retirement trends, including both voluntary and involuntary early retirement trends, barriers to the continued employment of older workers, and an assessment of both the voluntary and involuntary factors that govern why people leave the work force prior to age 65. The section on early retirement trends should be re-

quired reading for any one who wishes to participate in the current and future debate regarding changing the retirement age in the massive social security program. Kingson, whose major academic research is the area of early retirement practices and trends, cautions against raising the normal social security age past 65. He believes, and I agree, that such a move could greatly exacerbate the economic position of involuntary early retirees, by, in effect, forcing them to retire on greatly actuarially reduced benefits than is now the case in social security and various public and private retirement income programs.

Chapter 4, by Gary Hendrick and James Storey of the Urban Institute, is a broad and incisive analysis of the characteristics and goals of social security, public employee retirement plans, private pensions, and tax subsidies. Hendrick's and Storey's major retirement policy questions: When should nondisabled workers retire? How should various retirement benefits be coordinated? What proportion of workers' former earnings should be replaced by retirement? When should nondisabled workers retire? How should retirement benefits be adjusted for inflation or economic growth, and so on. I was impressed by the authors' candor in addressing these and other questions in their discussion. The chapter includes a section on specific policy responses to these questions. Their agenda would include, in part, a gradual rise in the retirement age in social security, improving benefits to a 70- to 75-percent wage replacement level for workers at or below the median wage, modifying the present "indexing" system of benefits, and eliminating the so-called "welfare" aspects of social security. It is not a tame agenda by any standard.

The final three chapters concentrate on employment policies and programs for older persons. Chapter 5, by Charles Harris and Dorothy Bauer, discusses current employment programs and current and projected employment prospects for older workers. They foresee a somewhat optimistic future for the next generation of older workers—a debatable point. Their review of current programs is inclusive but largely descriptive. I would have appreciated a much stronger analysis and critique of the role, or nonrole, of the U.S. Employment Service in aiding older workers. They do point out, however, that over the years there has been strong resistance in the field of manpower and employment in serving the older worker population.

Chapter 6, covering the subject of age discrimination and mandatory retirement, by Edward Howard, Nancy Peavy, and Lauren Selden, is a superior piece of policy analysis and scholarship. They discuss, in depth, the evolution and implementation of the Age Discrimination in Employment Act of 1967 and 1978. Their section on the issues and problems that have been associated with the enforcement of this act is excellent.

I also liked their description of the dynamics of the legislative process associated with the 1978 law.

The book concludes with an interesting discussion by Malcolm Morrison on the need for a broader range of alternative work patterns and more flexible retirement options and a brief summary. Morrison is disturbed over, and raises several objections to, the prevalent "linear life pattern" of education, work, and retirement in our society. He believes such a pattern is dysfunctional and contributes to various employment problems of both younger and older workers. He suggests and recommends that a number of employment and retirement options be introduced into the work force. These would include reduced workweek schedules prior to retirement; extra vacation time in the years prior to retirement; reduced hours of work, job transfer programs, and other innovations being experimented with currently in the Scandinavian countries, West Germany, and France.

—WILLIAM D. BECHILL

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## Book notes

*Youth Without Work, Three Countries Approach the Problem.* By Shirley Williams and others. Paris, France, Organization for Economic Cooperation and Development, 1981. 255 pp. \$15, OECD Publications and Information Center, Washington, D.C. 20006.

Employment among young people in many countries is hindered by traditional and rigid institutional attitudes such as antipathy towards hiring young people, especially minorities; refusal to train young women in nontraditional occupations; and reluctance to allow vocational training in school.

This book analyzes the youth employment problem of three countries in the Organization for Economic Cooperation and Development (OECD): Denmark, West Germany, and the United States. It also analyzes their educational and training policies and provides recommendations.

In Denmark, unemployment among persons 18 to 25 years of age was much higher than for those under 18 years of age. A high guaranteed minimum wage for workers 18 years of age and over and highly regulated collective agreements between employers and unions have affected youth employment and added to labor market segmentation.

Of all OECD countries, the Federal Republic of Germany has the most elaborate transition system from



school to work. The author maintains, however, that West Germany underestimates the unemployment measurement of their youngsters by including them in the labor force figure (denominator) and excluding them from the unemployed figure (numerator) if they are seeking an apprenticeship.

The United States created 12 million jobs in the public and private sectors during the 1970's, but an increased number of middle-aged women returned to the labor force and filled over 7 million jobs. Unemployment among young people remained high. The authors advocate expansion of apprenticeships and other training programs to enlarge the supply of skilled labor.

*Company Productivity: Measurement for Improvement.*

By Irving H. Siegel. Kalamazoo, Mich., W. E. Upjohn Institute for Employment Research, 1980. 88 pp. \$3.50, paper.

American businessmen have become more concerned with improvement of national productivity performance, which is generally recognized as essential for countering inflation and preserving jobs and living standards.

Irving H. Siegel maintains that companies can inexpensively improve their productivity performance by adoption and use of a system for measuring it. He offers a practical application of measurement techniques and notes a number of specific ways in which a system can improve organizational performance. Siegel points out that productivity monitoring may help a company anticipate and locate operational anomalies and take corrective steps and appraise the effectiveness of such remedial action.

*Working-Class Life "The American Standard" in Comparative Perspective, 1899-1913.* By Peter R. Shergold. Pittsburgh, University of Pittsburgh Press, 1982. 306 pp. \$21.95.

In his provocative work, Peter R. Shergold compiles extensive data on the standards of living in Pittsburgh and Birmingham in the first decade of the century. Mining the Pittsburgh Survey, various bulletins and reports of the U.S. Bureau of Labor, reports of the British Board of Trade, and many other sources, Shergold develops substantial materials on wages, hours, diet, food prices, rents, fuel, and clothing costs, as well as labor force participation by women and children. His announced goal is to examine the thesis that high wages gave the American worker a high standard of living, thus encouraging a conservative "business" unionism rather than a revolutionary labor movement. Indeed, Shergold finds that the skilled worker in Pittsburgh did

earn higher wages than his counterpart in Birmingham. At the same time, however, the unskilled earned about the same, and, in fact, the Birmingham laborer enjoyed more leisure time and greater security against unemployment.

Shergold acknowledges the influence on his work of Alan Dawley, David Brody, and Herbert Gutman, radical American labor historians. Ironically, his findings seem to contradict their working-class ideology. Indeed, Shergold emphasizes the wide range of wage rates found in Pittsburgh, a structure reinforced by ethnic and racial prejudice: "American workers found it profoundly difficult to perceive their very diverse lifestyles as the product of a common exploitation."

The book leaves many questions unanswered. Indeed, the author poses a number of topics for further study. And, he seems at times overwhelmed by the discussion of methodology. Yet, Shergold shows the value to labor history of detailed economic analysis, and one might wish for more such investigation rather than the ideological debates frequently encountered in the field.

*Steelmasters and Labor Reform, 1886-1923.* By Gerald G. Eggert. Pittsburgh, University of Pittsburgh Press, 1981. 212 pp. \$17.95.

Formation of the U.S. Steel Corporation in 1901 symbolized the technological, managerial, and financial revolutions reshaping American economic institutions, and William Brown Dickson's career spanned crucial, formative years. Beginning in 1881 as a manual laborer at Carnegie's Homestead mill, Dickson left the Steel Corporation in 1911, resigning his position as first vice president. As an officer in the corporation, he had fought for two major reforms: safety programs and shorter hours. He carried his ideas into Midvale Steel and Ordnance, which he helped form in 1915 and which he served as vice president and treasurer until its demise in 1923, establishing an employee representation plan during World War I.

Dickson's high position and reform interests put him at the heart of the Steel Corporation's deliberations, and Gerald G. Eggert provides an insider's view of the struggles for power and control within the corporation, the establishment of labor policy, and the birth of "welfare capitalism." Indeed, Dickson's difficulties at U.S. Steel and Midvale emphasized the inherent limitations of the "welfare" or "industrial betterment" movement.

It is a useful story but rather limited. Eggert sets the context well in the introduction, but he relies on Dickson's papers, Steel Corporation minutes, and *Iron Age* for the bulk of his sources, and he focuses on Dickson. The result is a book longer on anecdote than on interpretation and analysis of broader implications.



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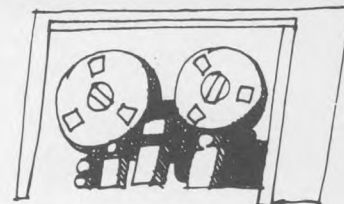
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## NOTES ON CURRENT LABOR STATISTICS

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 2-7 were revised in the March 1982 issue of the *Review* to reflect experience through 1981. The original estimates also were revised to 1970 to reflect 1980 census population controls.

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

Annual revision of the seasonally adjusted payroll data shown in tables 10, 12, and 14 were made in August 1981 using the X-11 ARIMA seasonal adjustment methodology. New seasonal factors for productivity data in tables 28 and 29 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. The *BLS Handbook of Labor Statistics*, Bulletin 2070, provides more detailed data and greater historical coverage for most of the statistical series presented in the *Monthly Labor Review*. More information from the household and establishment surveys is provided in *Employment and Earnings*, a monthly publication of the Bureau. Historically, comparable information from the establishment survey is published in two comprehensive data books—*Employment and Earnings, United States* and *Employment and Earnings, States and Areas*, and their annual supplements. More detailed information on wages and other aspects of collective bargaining appears in the monthly periodical, *Current Wage Developments*. More detailed price information is published each month in the periodicals, the *CPI Detailed Report* and *Producer Prices and Price Indexes*.

### Symbols

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

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

Series	Release date	Period covered	Release date	Period covered	MLR table number
Employment situation .....	October 8	September	November 5	October	1-10
Producer Price Index .....	October 15	September	November 16	October	21-25
Consumer Price Index .....	October 26	September	November 23	October	17-20
Real earnings .....	October 26	September	November 23	October	11-15
Major collective bargaining settlements .....	October 27	1st 9 months	.....	.....	33-34
Productivity and costs:					
Nonfarm business and manufacturing .....	October 28	3rd quarter	.....	.....	26-29
Nonfinancial corporations .....	.....	.....	November 29	3rd quarter	26-29



## EMPLOYMENT DATA FROM THE HOUSEHOLD SURVEY

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

### Definitions

**Employed persons** are (1) those 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. 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 **unemployment rate** represents the number unemployed as a percent of the civilian labor force.

The **civilian labor force** consists of all employed or unemployed persons in the civilian noninstitutional population; the **total labor force** includes military personnel. Persons **not in the labor force** are

those not classified as employed or unemployed; this group includes persons 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.

**Full-time workers** are those employed at least 35 hours a week; **part-time workers** are those who work fewer hours. Workers on part-time schedules for economic reasons (such as slack work, terminating or starting a job during the week, material shortages, or inability to find full-time work) are among those counted as being on full-time status, under the assumption that they would be working full time if conditions permitted. The survey classifies unemployed persons in full-time or part-time status by their reported preferences for full-time or part-time work.

### 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 2-7 are seasonally adjusted, based on the seasonal experience through December 1981.

**1. Employment status of the noninstitutional population, 16 years and over, selected years, 1950-81**

[Numbers in thousands]

Year	Total non-institutional population	Total labor force		Civilian labor force						Not in labor force	
		Number	Percent of population	Total	Employed			Unemployed			
					Total	Percent of population	Agriculture	Nonagricultural industries	Number		Percent of labor force
1950	106,645	63,858	59.9	62,208	58,918	55.2	7,160	51,758	3,288	5.3	42,787
1955	112,732	68,072	60.4	65,023	62,170	55.1	6,450	55,722	2,852	4.4	44,660
1960	119,759	72,142	60.2	69,628	65,778	54.9	5,458	60,318	3,852	5.5	47,617
1965	129,236	77,178	59.7	74,455	71,088	55.0	4,361	66,726	3,366	4.5	52,058
1966	131,180	78,893	60.1	75,770	72,895	55.6	3,979	68,915	2,875	3.8	52,288
1967	133,319	80,793	60.6	77,347	74,372	55.8	3,844	70,527	2,975	3.8	52,527
1968	135,562	82,272	60.7	78,737	75,920	56.0	3,817	72,103	2,817	3.6	53,291
1969	137,841	84,240	61.1	80,734	77,902	56.5	3,606	74,296	2,832	3.5	53,602
1970	140,272	85,959	61.3	82,771	78,678	56.1	3,463	75,215	4,093	4.9	54,315
1971	143,033	87,198	61.0	84,382	79,367	55.5	3,394	75,972	5,016	5.9	55,834
1972	146,574	89,484	61.1	87,034	82,153	56.0	3,484	78,669	4,882	5.6	57,091
1973	149,423	91,756	61.4	89,429	85,064	56.9	3,470	81,594	4,365	4.9	57,667
1974	152,349	94,179	61.8	91,949	86,794	57.0	3,515	83,279	5,156	5.6	58,171
1975	155,333	95,955	61.8	93,775	85,846	55.3	3,408	82,438	7,929	8.5	59,377
1976	158,294	98,302	62.1	96,158	88,752	56.1	3,331	85,421	7,406	7.7	59,991
1977	161,166	101,142	62.8	99,009	92,017	57.1	3,283	88,734	6,991	7.1	60,025
1978	164,027	104,368	63.6	102,251	96,048	58.6	3,387	92,661	6,202	6.1	59,659
1979	166,951	107,050	64.1	104,962	98,824	59.2	3,347	95,477	6,137	5.8	59,900
1980	169,848	109,042	64.2	106,940	99,303	58.5	3,364	95,938	7,637	7.1	60,806
1981	172,272	110,812	64.3	108,670	100,397	58.3	3,368	97,030	8,273	7.6	61,460

**2. Employment status by sex, age, race, and Hispanic origin, seasonally adjusted**

[Numbers in thousands]

Employment status	Annual average		1981						1982						
	1980	1981	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
<b>TOTAL</b>															
Total noninstitutional population <sup>1</sup>	169,848	172,272	172,559	172,758	172,966	173,155	173,330	173,495	173,657	173,843	174,020	174,201	174,364	174,544	174,707
Armed Forces <sup>1</sup>	2,102	2,142	2,160	2,165	2,158	2,158	2,164	2,159	2,168	2,175	2,176	2,175	2,173	2,180	2,196
Civilian noninstitutional population <sup>1</sup>	167,745	170,130	170,399	170,593	170,809	170,996	171,166	171,335	171,489	171,667	171,844	172,026	172,190	172,364	172,511
Civilian labor force	106,940	108,670	108,818	108,494	109,012	109,272	109,184	108,879	109,165	109,346	109,648	110,666	110,191	110,522	110,644
Participation rate	63.8	63.9	63.9	63.6	63.8	63.9	63.8	63.5	63.7	63.7	63.8	64.3	64.0	64.1	64.1
Employed	99,303	100,397	100,840	100,258	100,343	100,172	99,613	99,581	99,590	99,492	99,340	100,117	99,764	99,732	99,839
Employment-population ratio <sup>2</sup>	58.5	58.3	58.4	58.0	58.0	57.9	57.5	57.4	57.3	57.2	57.1	57.5	57.2	57.1	57.1
Agriculture	3,364	3,368	3,404	3,358	3,378	3,372	3,209	3,411	3,373	3,349	3,309	3,488	3,357	3,460	3,435
Nonagricultural industries	95,938	97,030	97,346	96,900	96,965	96,800	96,404	96,170	96,217	96,144	96,032	96,629	96,406	96,272	96,404
Unemployed	7,637	8,273	7,978	8,236	8,669	9,100	9,571	9,298	9,575	9,854	10,307	10,549	10,427	10,790	10,805
Unemployment rate	7.1	7.6	7.3	7.6	8.0	8.3	8.8	8.5	8.8	9.0	9.4	9.5	9.5	9.8	9.8
Not in labor force	60,806	61,460	61,581	62,099	61,797	61,724	61,982	62,456	63,324	63,321	62,197	61,360	61,999	61,842	61,867
<b>Men, 20 years and over</b>															
Civilian noninstitutional population <sup>1</sup>	71,138	72,419	72,559	72,670	72,795	72,921	73,020	73,120	73,209	73,287	73,392	73,499	73,585	73,685	73,774
Civilian labor force	56,455	57,197	57,250	57,262	57,355	57,459	57,665	57,368	57,448	57,554	57,730	58,164	58,016	58,084	58,026
Participation rate	79.4	79.0	78.9	78.8	78.8	78.8	79.0	78.5	78.5	78.5	78.7	79.1	78.8	78.8	78.7
Employed	53,101	53,582	53,791	53,693	53,504	53,354	53,122	53,047	53,097	53,006	52,988	53,260	52,985	52,996	52,887
Agriculture	2,396	2,384	2,422	2,383	2,413	2,382	2,311	2,390	2,386	2,377	2,382	2,464	2,424	2,474	2,436
Nonagricultural industries	50,706	51,199	51,369	51,310	51,091	50,972	50,811	50,657	50,711	50,629	50,606	50,796	50,561	50,522	50,451
Unemployed	3,353	3,615	3,459	3,569	3,851	4,105	4,543	4,322	4,351	4,548	4,742	4,904	5,031	5,088	5,139
Unemployment rate	5.9	6.3	6.0	6.2	6.7	7.1	7.9	7.5	7.6	7.9	8.2	8.4	8.7	8.8	8.9
<b>Women, 20 years and over</b>															
Civilian noninstitutional population <sup>1</sup>	80,065	81,497	81,671	81,792	81,920	82,038	82,151	82,260	82,367	82,478	82,591	82,707	82,811	82,926	83,035
Civilian labor force	41,106	42,485	42,666	42,344	42,831	42,987	42,888	42,868	43,031	43,243	43,301	43,683	43,904	44,076	44,115
Participation rate	51.3	52.1	52.2	51.8	52.3	52.4	52.2	52.1	52.2	52.4	52.4	52.8	53.0	53.2	53.1
Employed	38,492	39,590	39,841	39,426	39,814	39,878	39,713	39,764	39,744	39,807	39,715	40,075	40,350	40,392	40,490
Agriculture	584	604	609	608	596	635	572	649	628	636	601	634	581	600	589
Nonagricultural industries	37,907	38,986	39,232	39,818	39,218	39,243	39,141	39,115	39,116	39,172	39,114	39,441	39,769	39,791	39,901
Unemployed	2,615	2,895	2,825	2,918	3,017	3,109	3,175	3,104	3,286	3,435	3,586	3,608	3,554	3,684	3,626
Unemployment rate	6.4	6.8	6.6	6.9	7.0	7.2	7.4	7.2	7.6	7.9	8.3	8.3	8.1	8.4	8.2
<b>Both sexes, 16 to 19 years</b>															
Civilian noninstitutional population <sup>1</sup>	16,543	16,214	16,169	16,131	16,093	16,037	15,995	15,955	15,913	15,902	15,861	15,820	15,794	15,753	15,702
Civilian labor force	9,378	8,988	8,902	8,888	8,826	8,826	8,631	8,643	8,686	8,549	8,616	8,819	8,271	8,362	8,503
Participation rate	56.7	55.4	55.1	55.1	54.8	55.0	54.0	54.2	54.6	53.8	54.3	55.7	52.4	53.1	54.2
Employed	7,710	7,225	7,208	7,139	7,025	6,940	6,778	6,771	6,748	6,679	6,637	6,782	6,429	6,344	6,463
Agriculture	385	380	373	367	369	355	326	373	359	336	326	390	353	386	411
Nonagricultural industries	7,325	6,845	6,835	6,772	6,656	6,585	6,452	6,398	6,389	6,343	6,311	6,392	6,076	5,958	6,052
Unemployed	1,669	1,763	1,694	1,749	1,801	1,886	1,853	1,872	1,938	1,870	1,979	2,037	1,842	2,018	2,040
Unemployment rate	17.8	19.6	19.0	19.7	20.4	21.4	21.5	21.7	22.3	21.9	23.0	23.1	22.3	24.1	24.0
<b>White</b>															
Civilian noninstitutional population <sup>1</sup>	146,122	147,908	148,144	148,370	148,562	148,631	148,755	148,842	148,855	149,132	149,249	149,250	149,429	149,569	149,536
Civilian labor force	93,600	95,052	95,163	94,884	95,365	95,329	95,120	95,333	95,508	96,015	96,641	96,223	96,493	96,414	96,414
Participation rate	64.1	64.3	64.2	64.0	64.2	64.3	64.1	63.9	64.0	64.0	64.3	64.8	64.4	64.5	64.5
Employed	87,715	88,709	89,221	88,628	88,734	88,498	88,010	87,955	87,990	87,956	87,988	88,450	88,173	88,137	88,133
Unemployed	5,884	6,343	5,942	6,256	6,631	7,037	7,319	7,165	7,344	7,552	8,026	8,191	8,050	8,356	8,281
Unemployment rate	6.3	6.7	6.2	6.6	7.0	7.4	7.7	7.5	7.7	7.9	8.4	8.5	8.4	8.7	8.6
<b>Black</b>															
Civilian noninstitutional population <sup>1</sup>	17,824	18,219	18,266	18,297	18,333	18,362	18,392	18,423	18,450	18,480	18,511	18,542	18,570	18,600	18,626
Civilian labor force	10,865	11,086	11,069	11,134	11,188	11,207	11,226	11,188	11,205	11,217	11,170	11,335	11,253	11,322	11,412
Participation rate	61.0	60.8	60.6	60.9	61.0	61.0	61.0	60.7	60.7	60.3	61.1	60.6	60.9	61.3	61.3
Employed	9,313	9,355	9,267	9,319	9,313	9,321	9,279	9,314	9,265	9,197	9,111	9,216	9,174	9,223	9,262
Unemployed	1,553	1,731	1,802	1,815	1,875	1,886	1,947	1,874	1,939	2,020	2,058	2,120	2,079	2,098	2,150
Unemployment rate	14.3	15.6	16.3	16.3	16.8	16.8	17.3	16.8	17.3	18.0	18.4	18.7	18.5	18.5	18.8
<b>Hispanic origin</b>															
Civilian noninstitutional population <sup>1</sup>	8,901	9,310	9,400	9,466	9,559	9,556	9,519	9,400	9,341	9,297	9,235	9,297	9,428	9,521	9,689
Civilian labor force	5,700	5,972	5,924	5,964	6,074	6,151	6,095	6,054	6,065	6,024	5,933	6,001	5,931	5,966	6,087
Participation rate	64.0	64.1	63.0	63.0	63.5	64.4	64.0	64.4	64.9	64.8	64.2	64.5	62.9	62.7	62.8
Employed	5,126	5,348	5,340	5,393	5,422	5,446	5,426	5,330	5,298	5,260	5,191	5,166	5,131	5,135	5,197
Unemployed	575	624	584	571	652	705	669	724	767	764	743	834	800	832	890
Unemployment rate	10.1	10.4	9.9	9.6	10.7	11.5	11.0	12.0	12.6	12.7	12.5	13.9	13.5	13.9	14.6

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

<sup>2</sup> Civilian employment as a percent of the total noninstitutional population (including Armed Forces).

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

### 3. Selected employment indicators, seasonally adjusted

[Numbers in thousands]

Selected categories	Annual average		1981					1982							
	1980	1981	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
<b>CHARACTERISTIC</b>															
Total employed, 16 years and over .....	99,303	100,397	100,840	100,258	100,343	100,172	99,613	99,581	99,590	99,492	99,340	100,117	99,764	99,732	99,839
Men .....	57,186	57,397	57,551	57,471	57,266	57,051	56,725	56,629	56,658	56,472	56,401	56,820	56,223	56,192	56,210
Women .....	42,117	43,000	43,289	42,787	43,077	43,121	42,888	42,952	42,932	43,020	42,940	43,297	43,541	43,540	43,630
Married men, spouse present .....	39,004	38,882	38,961	38,855	38,746	38,553	38,342	38,234	38,255	38,181	38,142	38,312	38,354	38,213	38,184
Married women, spouse present .....	23,532	23,915	24,043	23,626	23,874	23,820	23,691	23,744	23,727	23,900	23,831	24,213	24,401	24,223	24,300
Women who maintain families .....	4,780	4,998	4,988	5,015	5,045	5,049	5,064	5,107	5,158	5,095	5,095	4,986	5,112	5,247	5,216
<b>OCCUPATION</b>															
White-collar workers .....	51,882	52,949	53,141	52,908	53,199	53,086	53,084	52,836	52,841	52,763	53,177	53,705	53,586	53,685	53,750
Professional and technical .....	15,968	16,420	16,621	16,598	16,681	16,657	16,774	16,803	16,612	16,659	16,844	16,818	17,053	17,292	17,023
Managers and administrators, except farm .....	11,138	11,540	11,460	11,533	11,616	11,461	11,424	11,091	11,253	11,311	11,501	11,541	11,504	11,355	11,613
Salesworkers .....	6,303	6,425	6,490	6,441	6,400	6,418	6,450	6,520	6,544	6,637	6,603	6,587	6,547	6,567	6,677
Clerical workers .....	18,473	18,564	18,570	18,336	18,502	18,550	18,436	18,423	18,432	18,155	18,229	18,759	18,482	18,471	18,437
Blue-collar workers .....	31,452	31,261	31,611	31,266	30,953	30,683	30,344	30,203	30,309	30,416	29,924	29,926	29,716	29,609	29,465
Craft and kindred workers .....	12,787	12,662	12,724	12,514	12,446	12,411	12,446	12,370	12,454	12,511	12,492	12,316	12,207	12,229	12,342
Operatives, except transport .....	10,565	10,540	10,658	10,524	10,410	10,220	10,169	9,966	9,955	9,860	9,688	9,585	9,655	9,453	9,257
Transport equipment operatives .....	3,531	3,476	3,530	3,506	3,580	3,438	3,368	3,415	3,503	3,397	3,400	3,419	3,414	3,439	3,268
Nonfarm laborers .....	4,567	4,583	4,699	4,722	4,517	4,614	4,361	4,451	4,397	4,648	4,343	4,607	4,441	4,488	4,598
Service workers .....	13,228	13,438	13,282	13,391	13,525	13,670	13,639	13,709	13,612	13,526	13,555	13,738	13,791	13,634	13,926
Farmworkers .....	2,741	2,749	2,753	2,743	2,770	2,802	2,660	2,817	2,787	2,710	2,623	2,731	2,660	2,750	2,711
<b>MAJOR INDUSTRY AND CLASS OF WORKER</b>															
Agriculture:															
Wage and salary workers .....	1,425	1,464	1,501	1,461	1,502	1,436	1,352	1,377	1,426	1,416	1,423	1,541	1,431	1,530	1,568
Self-employed workers .....	1,642	1,638	1,638	1,643	1,631	1,641	1,602	1,674	1,596	1,644	1,664	1,698	1,676	1,674	1,613
Unpaid family workers .....	297	266	256	256	261	321	228	380	359	277	270	236	251	250	254
Nonagricultural industries:															
Wage and salary workers .....	88,525	89,543	89,995	89,376	89,460	89,238	88,991	88,759	88,586	88,526	88,322	89,051	88,606	88,541	88,737
Government .....	15,912	15,689	15,526	15,475	15,491	15,397	15,585	15,578	15,527	15,492	15,453	15,422	15,635	15,443	15,569
Private industries .....	72,612	73,853	74,469	73,901	73,969	73,841	73,406	73,181	73,059	73,034	72,869	73,629	72,970	73,098	73,168
Households .....	1,192	1,208	1,259	1,102	1,162	1,204	1,291	1,248	1,161	1,225	1,192	1,202	1,201	1,200	1,242
Other .....	71,420	72,645	73,210	72,799	72,807	72,637	72,115	71,932	71,898	71,809	71,677	72,427	71,770	71,898	71,927
Self-employed workers .....	7,000	7,097	7,103	7,217	7,152	7,141	7,057	6,971	7,055	7,126	7,264	7,269	7,319	7,268	7,352
Unpaid family workers .....	413	390	387	399	451	425	410	410	408	434	413	382	397	390	409
<b>PERSONS AT WORK <sup>1</sup></b>															
Nonagricultural industries .....	90,209	91,377	91,569	90,878	91,384	91,323	90,922	90,125	90,892	90,548	90,596	91,282	91,020	90,501	90,508
Full-time schedules .....	73,590	74,339	74,467	73,794	73,886	73,915	73,360	72,803	73,028	72,649	72,335	73,036	72,662	<sup>c</sup> 72,430	72,112
Part time for economic reasons .....	4,064	4,499	4,350	4,656	5,009	5,026	5,288	5,071	5,563	5,717	5,834	5,763	5,444	5,492	5,648
Usually work full time .....	1,714	1,738	1,729	1,759	2,006	1,945	2,121	1,783	2,193	2,237	2,223	2,211	2,064	2,001	2,054
Usually work part time .....	2,350	2,761	2,621	2,897	3,003	3,081	3,167	3,287	3,370	3,480	3,611	3,552	3,380	3,491	3,594
Part time for noneconomic reasons .....	12,555	12,539	12,752	12,428	12,489	12,382	12,274	12,251	12,300	12,183	12,427	12,483	12,914	12,579	12,748

<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.

c = corrected.



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

[Unemployment rates]

Selected categories	Annual average		1981					1982							
	1980	1981	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
<b>CHARACTERISTIC</b>															
Total, 16 years and over	7.1	7.6	7.3	7.6	8.0	8.3	8.8	8.5	8.8	9.0	9.4	9.5	9.5	9.8	9.8
Both sexes, 16 to 19 years	17.8	19.6	19.0	19.7	20.4	21.4	21.5	21.7	22.3	21.9	23.0	23.1	22.3	24.1	24.0
Men, 20 years and over	5.9	6.3	6.0	6.2	6.7	7.1	7.9	7.5	7.6	7.9	8.2	8.4	8.7	8.8	8.9
Women, 20 years and over	6.4	6.8	6.6	6.9	7.0	7.2	7.4	7.2	7.6	7.9	8.3	8.3	8.1	8.4	8.2
White, total	6.3	6.7	6.2	6.6	7.0	7.4	7.7	7.5	7.7	7.9	8.4	8.5	8.4	8.7	8.6
Both sexes, 16 to 19 years	15.5	17.3	16.1	17.2	17.7	19.0	19.0	19.6	20.0	19.0	20.8	20.3	19.4	21.0	20.6
Men, 16 to 19 years	16.2	17.9	16.7	17.5	17.9	19.6	20.2	20.8	20.4	20.2	22.3	21.2	21.1	22.6	22.5
Women, 16 to 19 years	14.8	16.6	15.4	16.8	17.5	18.3	17.7	18.2	19.4	17.6	19.2	19.2	17.5	19.2	18.6
Men, 20 years and over	5.3	5.6	5.2	5.5	5.9	6.4	6.9	6.6	6.7	7.0	7.3	7.5	7.7	7.9	7.9
Women, 20 years and over	5.6	5.9	5.5	5.9	6.1	6.3	6.4	6.3	6.6	6.9	7.2	7.3	7.1	7.3	7.1
Black, total	14.3	15.6	16.3	16.3	16.8	16.8	17.3	16.8	17.3	18.0	18.4	18.7	18.5	18.5	18.8
Both sexes, 16 to 19 years	38.5	41.4	49.0	40.8	45.6	44.1	42.2	41.2	42.3	46.0	48.1	49.8	52.6	49.7	51.6
Men, 16 to 19 years	37.5	40.7	49.9	38.5	41.6	41.9	39.6	36.3	40.7	48.5	48.3	50.6	58.1	48.3	50.1
Women, 16 to 19 years	39.8	42.2	47.8	43.4	49.5	46.6	45.1	46.7	44.2	43.1	47.8	48.9	46.2	51.2	53.1
Men, 20 years and over	12.4	13.5	13.6	14.5	14.7	15.5	16.5	16.3	16.0	16.9	17.0	17.1	16.8	17.2	17.2
Women, 20 years and over	11.9	13.4	13.8	14.0	13.9	13.6	14.1	13.3	14.5	15.4	15.6	15.3	15.0	15.5	15.1
Hispanic origin, total	10.1	10.4	9.9	9.6	10.7	11.5	11.0	12.0	12.6	12.7	12.5	13.9	13.5	13.9	14.6
Married men, spouse present	4.2	4.3	4.0	4.4	4.8	5.2	5.7	5.3	5.3	5.5	6.0	6.1	6.5	6.6	6.7
Married women, spouse present	5.8	6.0	5.5	6.0	6.1	6.5	6.6	6.2	7.0	7.1	7.8	7.4	7.0	7.4	7.1
Women who maintain families	9.2	10.4	10.1	10.7	10.6	10.8	10.5	10.4	10.2	10.6	11.5	11.8	12.4	12.0	11.6
Full-time workers	6.9	7.3	6.9	7.3	7.7	8.1	8.7	8.4	8.5	8.9	9.2	9.2	9.4	9.5	9.6
Part-time workers	8.8	9.4	9.6	9.6	9.5	10.2	9.2	9.6	10.8	10.0	10.9	10.5	9.8	11.4	10.3
Unemployed 15 weeks and over	1.7	2.1	2.0	2.1	2.1	2.2	2.2	2.2	2.5	2.7	2.7	3.0	3.3	3.2	3.3
Labor force time lost <sup>1</sup>	7.9	8.5	7.9	8.5	9.1	9.5	10.1	10.0	9.8	10.4	10.4	11.1	10.2	10.7	10.7
<b>OCCUPATION</b>															
White-collar workers	3.7	4.0	3.9	4.1	4.1	4.2	4.5	4.2	4.6	4.8	4.9	4.8	5.0	4.9	4.8
Professional and technical	2.5	2.8	2.5	2.8	2.6	2.7	3.4	2.9	3.1	3.2	3.2	3.3	3.3	3.3	3.1
Managers and administrators, except farm	2.4	2.7	2.7	2.7	2.8	3.0	3.1	2.7	3.1	3.0	3.3	3.5	3.8	3.7	3.8
Salesworkers	4.4	4.6	4.7	5.0	4.9	5.0	4.9	4.5	4.8	5.8	5.6	5.2	5.8	5.4	5.5
Clerical workers	5.3	5.7	5.7	5.8	6.0	6.0	6.2	6.3	6.7	6.9	7.2	6.8	6.9	6.9	6.7
Blue-collar workers	10.0	10.3	9.5	10.2	10.9	11.8	12.7	12.5	12.9	12.9	13.7	13.5	13.9	14.4	14.2
Craft and kindred workers	6.6	7.5	7.0	7.7	8.3	8.5	9.3	9.0	8.4	9.1	9.6	9.4	10.3	10.9	10.6
Operatives, except transport	12.2	12.2	11.1	11.6	12.8	14.1	15.5	15.4	15.4	15.9	16.9	16.5	16.7	17.4	17.5
Transport equipment operatives	8.8	8.7	8.0	8.7	8.0	10.4	10.5	10.2	10.3	10.4	10.7	11.8	13.0	11.6	12.5
Nonfarm laborers	14.6	14.7	13.2	14.6	15.6	16.0	16.9	16.9	17.9	17.9	19.2	18.3	17.9	18.6	17.4
Service workers	7.9	8.9	8.9	9.0	9.3	9.7	9.6	9.2	9.8	10.2	11.1	11.3	9.9	10.5	10.6
Farmworkers	4.6	5.3	5.4	4.0	6.2	6.2	6.4	6.9	4.9	5.4	5.8	8.3	7.2	6.1	6.9
<b>INDUSTRY</b>															
Nonagricultural private wage and salary workers <sup>2</sup>	7.4	7.7	7.3	7.7	8.1	8.4	9.1	8.8	9.0	9.5	9.9	9.9	10.0	10.2	10.1
Construction	14.1	15.6	16.2	16.3	17.6	17.8	18.1	18.7	18.1	17.9	19.4	18.8	19.2	20.3	20.3
Manufacturing	8.5	8.3	7.0	7.9	8.6	9.4	11.0	10.4	10.6	10.8	11.3	11.6	12.3	12.0	12.1
Durable goods	8.9	8.2	6.5	7.7	8.6	9.5	11.8	11.0	11.3	10.8	11.9	12.2	13.2	12.7	12.9
Nondurable goods	7.9	8.4	7.9	8.3	8.6	9.3	9.6	9.5	10.8	10.5	10.7	11.0	11.0	10.8	
Transportation and public utilities	4.9	5.2	4.8	4.2	4.8	5.5	6.0	6.4	5.9	5.6	7.0	6.5	6.9	6.1	7.0
Wholesale and retail trade	7.4	8.1	7.9	8.5	8.4	8.6	8.9	8.7	9.0	10.3	10.1	10.6	9.7	10.5	9.8
Finance and service industries	5.3	5.9	5.7	6.0	6.2	6.1	6.4	5.9	6.5	6.9	7.0	6.9	6.8	7.0	7.0
Government workers	4.1	4.7	4.5	4.7	4.7	5.2	5.0	4.8	5.2	4.9	5.3	5.0	4.6	4.6	4.6
Agricultural wage and salary workers	11.0	12.1	12.0	11.0	13.4	14.1	14.8	16.2	12.8	14.0	14.6	18.2	16.3	13.8	14.3

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

<sup>2</sup> Includes mining, not shown separately.

### 5. Unemployment rates, by sex and age, seasonally adjusted

Sex and age	Annual average		1981					1982							
	1980	1981	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
Total, 16 years and over	7.1	7.6	7.3	7.6	8.0	8.3	8.8	8.5	8.8	9.0	9.4	9.5	9.5	9.8	9.8
16 to 19 years	17.8	19.6	19.0	19.7	20.4	21.4	21.5	21.7	22.3	21.9	23.0	23.1	22.3	24.1	24.0
16 to 17 years	20.0	21.4	20.8	21.4	21.5	22.6	21.9	21.9	22.7	22.7	24.6	25.3	23.7	26.1	25.8
18 to 19 years	16.2	18.4	17.6	18.5	20.0	20.5	21.2	21.3	22.0	21.3	21.9	21.3	21.9	22.8	22.6
20 to 24 years	11.5	12.3	12.1	12.3	12.7	13.0	13.5	13.5	14.1	14.2	14.7	14.3	14.4	14.5	15.2
25 years and over	5.1	5.4	5.2	5.4	5.7	6.0	6.5	6.3	6.4	6.8	7.0	7.1	7.4	7.5	7.3
25 to 54 years	5.5	5.8	5.5	5.8	6.2	6.5	6.9	6.7	6.8	7.3	7.4	7.7	7.7	7.9	7.8
55 years and over	3.3	3.6	3.5	3.8	3.8	3.8	4.1	4.2	4.3	4.6	5.0	4.8	5.4	5.2	5.1
Men, 16 years and over	6.9	7.4	7.1	7.3	7.7	8.3	9.0	8.6	8.7	9.0	9.4	9.6	9.7	9.9	10.0
16 to 19 years	18.3	20.1	19.8	19.9	20.1	21.8	22.3	22.1	22.5	23.5	24.4	24.0	24.2	25.1	25.1
16 to 17 years	20.4	22.0	21.5	21.5	21.1	22.7	22.6	23.0	23.0	24.3	24.7	26.3	25.8	28.1	27.3
18 to 19 years	16.7	18.8	18.3	18.7	19.3	21.0	22.2	21.4	22.1	22.9	24.3	21.9	24.0	23.4	23.4
20 to 24 years	12.5	13.2	12.9	13.1	13.8	14.4	14.8	14.9	15.4	15.7	16.0	15.5	15.8	15.9	16.6
25 years and over	4.8	5.1	4.9	5.0	5.5	5.8	6.5	6.3	6.3	6.6	6.9	6.9	7.5	7.5	7.5
25 to 54 years	5.1	5.5	5.2	5.5	5.9	6.3	6.9	6.7	6.7	7.1	7.2	7.5	8.0	8.1	8.0
55 years and over	3.3	3.5	3.4	3.5	3.7	3.7	4.4	4.3	4.2	4.8	5.1	4.7	5.0	4.8	5.4
Women, 16 years and over	7.4	7.9	7.7	8.0	8.2	8.4	8.5	8.4	8.9	9.0	9.4	9.5	9.1	9.6	9.5
16 to 19 years	17.2	19.0	18.2	19.5	20.7	20.9	20.5	21.2	22.1	20.1	21.3	20.2	20.2	23.1	22.8
16 to 17 years	19.6	20.7	20.0	21.2	21.9	22.5	21.1	20.6	22.5	20.8	24.5	24.1	21.4	24.1	24.2
18 to 19 years	15.6	17.9	16.9	18.3	20.6	19.9	20.0	21.1	21.9	19.6	19.4	20.6	19.7	22.2	21.7
20 to 24 years	10.4	11.2	11.1	11.4	11.5	11.3	12.0	11.9	12.7	12.6	13.3	12.9	12.9	12.9	13.7
25 years and over	5.5	5.9	5.6	6.0	6.1	6.4	6.4	6.3	6.5	7.0	7.2	7.4	7.2	7.4	7.0
25 to 54 years	6.0	6.3	6.0	6.3	6.5	6.8	6.9	6.7	7.0	7.6	7.7	8.0	7.4	7.7	7.5
55 years and over	3.2	3.8	3.7	4.3	4.0	3.8	3.7	4.1	4.3	4.3	4.8	5.0	6.0	6.0	4.6

### 6. Unemployed persons, by reason for unemployment, seasonally adjusted

[Numbers in thousands]

Reason for unemployment	Annual average		1981					1982							
	1980	1981	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
<b>NUMBER OF UNEMPLOYED</b>															
Lost last job	3,947	4,267	4,106	4,426	4,573	4,905	5,343	5,205	5,153	5,622	5,906	5,901	6,302	6,177	6,347
On layoff	1,488	1,430	1,276	1,452	1,631	1,826	2,042	1,860	1,740	1,828	1,946	1,969	2,071	2,079	2,180
Other job losers	2,459	2,837	2,830	2,974	2,942	3,079	3,301	3,345	3,413	3,794	3,959	3,932	4,231	4,098	4,167
Left last job	891	923	879	921	976	916	923	835	964	885	937	874	813	813	806
Reentered labor force	1,927	2,102	2,034	2,058	2,178	2,339	2,244	2,079	2,277	2,249	2,365	2,438	2,372	2,528	2,440
Seeking first job	872	981	971	977	1,002	996	1,021	1,055	1,100	1,044	1,081	1,154	1,088	1,249	1,328
<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	51.7	51.6	51.4	52.8	52.4	53.6	56.1	56.7	54.3	57.4	57.4	56.9	59.6	57.4	58.1
On layoff	19.5	17.3	16.0	17.3	18.7	19.9	21.4	20.3	18.3	18.7	18.9	19.0	19.6	19.3	20.0
Other job losers	32.1	34.3	35.4	35.5	33.7	33.6	34.6	36.5	35.9	38.7	38.5	37.9	40.0	38.1	38.2
Job leavers	11.7	11.2	11.0	11.0	11.2	10.0	9.7	9.1	10.2	9.0	9.1	8.4	7.7	7.5	7.4
Reentrants	25.2	25.4	25.5	24.6	25.0	25.5	23.5	22.7	24.0	22.9	23.0	23.5	22.4	23.5	22.3
New entrants	11.4	11.9	12.2	11.7	11.5	10.9	10.7	11.5	11.6	10.7	10.5	11.1	10.3	11.6	12.2
<b>PERCENT OF CIVILIAN LABOR FORCE</b>															
Job losers	3.7	3.9	3.8	4.1	4.2	4.5	4.9	4.8	4.7	5.1	5.4	5.3	5.7	5.6	5.7
On layoff	.8	.8	.8	.8	.9	.8	.8	.8	.9	.8	.9	.8	.7	.7	.7
Other job losers	1.8	1.9	1.9	1.9	2.0	2.1	1.9	2.1	2.1	2.2	2.2	2.2	2.2	2.3	2.2
Job leavers	.8	.8	.8	.8	.8	.8	.8	.8	.8	.8	.8	.8	.8	.8	.8
Reentrants	1.8	1.9	1.9	1.9	2.0	2.1	1.9	2.1	2.1	2.2	2.2	2.2	2.2	2.3	2.2
New entrants	.8	.9	.9	.9	.9	.9	.9	1.0	1.0	1.0	1.0	1.0	1.0	1.1	1.2

### 7. Duration of unemployment, seasonally adjusted

[Numbers in thousands]

Weeks of unemployment	Annual average		1981					1982							
	1980	1981	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
Less than 5 weeks	3,295	3,449	3,326	3,529	3,707	3,852	4,037	3,852	3,789	3,825	3,958	3,874	3,543	3,990	3,923
5 to 14 weeks	2,470	2,539	2,469	2,585	2,686	2,882	3,016	3,068	3,052	3,078	3,304	3,320	3,458	3,161	3,304
15 weeks and over	1,871	2,285	2,217	2,248	2,292	2,364	2,372	2,399	2,724	2,954	3,015	3,286	3,673	3,580	3,631
15 to 26 weeks	1,052	1,122	1,078	1,146	1,166	1,229	1,189	1,210	1,445	1,605	1,508	1,634	1,826	1,792	1,810
27 weeks and over	820	1,162	1,139	1,102	1,126	1,135	1,183	1,190	1,278	1,349	1,507	1,652	1,847	1,788	1,821
Mean duration, in weeks	11.9	13.7	14.3	13.7	13.6	13.1	12.8	13.5	14.1	13.9	14.2	14.6	16.5	15.6	16.2
Median duration, in weeks	6.5	6.9	7.0	6.9	6.8	6.9	6.7	7.2	7.3	7.6	8.5	9.0	9.8	8.3	8.2

## 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 177,000 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 11-15 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.

### 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 1982 data, published in the July 1982 issue of the *Review*. Consequently, data published in the *Review* prior to that issue are not necessarily comparable to current data. Complete comparable historical unadjusted and seasonally adjusted data are published in a Supplement to Employment and Earnings (unadjusted data from April 1977 through February 1982 and seasonally adjusted data from January 1974 through February 1982) and in *Employment and Earnings, United States, 1909-78*, BLS Bulletin 1312-11 (for prior periods).

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



## 8. Employment by industry, selected years, 1950-81

[Nonagricultural payroll data, in thousands]

Year	Total	Private sector	Goods-producing				Service-producing									
			Total	Mining	Construction	Manufacturing	Total	Transportation and public utilities	Wholesale and retail trade			Finance, insurance, and real estate	Services	Government		
									Total	Wholesale trade	Retail trade			Total	Federal	State and local
1950	45,197	39,170	18,506	901	2,364	15,241	26,691	4,034	9,386	2,635	6,751	1,888	5,357	6,026	1,928	4,098
1955	50,641	43,727	20,513	792	2,839	16,882	30,128	4,141	10,535	2,926	7,610	2,298	6,240	6,914	2,187	4,727
1960 <sup>1</sup>	54,189	45,836	20,434	712	2,926	16,796	33,755	4,004	11,391	3,143	8,248	2,629	7,378	8,353	2,270	6,083
1964	58,283	48,686	21,005	634	3,097	17,274	37,278	3,951	12,160	3,337	8,823	2,911	8,660	9,596	2,348	7,248
1965	60,765	50,689	21,926	632	3,232	18,062	38,839	4,036	12,716	3,466	9,250	2,977	9,036	10,074	2,378	7,696
1966	63,901	53,116	23,158	627	3,317	19,214	40,743	4,158	13,245	3,597	9,648	3,058	9,498	10,784	2,564	8,220
1967	65,803	54,413	23,308	613	3,248	19,447	42,495	4,268	13,606	3,689	9,917	3,185	10,045	11,391	2,719	8,672
1968	67,897	56,058	23,737	606	3,350	19,781	44,160	4,318	14,099	3,779	10,320	3,337	10,567	11,839	2,737	9,102
1969	70,384	58,189	24,361	619	3,575	20,167	46,023	4,442	14,705	3,907	10,798	3,512	11,169	12,195	2,758	9,437
1970	70,880	58,325	23,578	623	3,588	19,367	47,302	4,515	15,040	3,993	11,047	3,645	11,548	12,554	2,731	9,823
1971	71,214	58,331	22,935	609	3,704	18,623	48,278	4,476	15,352	4,001	11,351	3,772	11,797	12,881	2,696	10,185
1972	73,675	60,341	23,668	628	3,889	19,151	50,007	4,541	15,949	4,113	11,836	3,908	12,276	13,334	2,684	10,649
1973	76,790	63,058	24,893	642	4,097	20,154	51,897	4,656	16,607	4,277	12,329	4,046	12,857	13,732	2,663	11,068
1974	78,265	64,095	24,794	697	4,020	20,077	53,471	4,725	16,987	4,433	12,554	4,148	13,441	14,170	2,724	11,446
1975	76,945	62,259	22,600	752	3,525	18,323	54,345	4,542	17,060	4,415	12,645	4,165	13,892	14,686	2,748	11,937
1976	79,382	64,511	23,352	779	3,576	18,997	56,030	4,582	17,755	4,546	13,209	4,271	14,551	14,871	2,733	12,138
1977	82,471	67,344	24,346	813	3,851	19,682	58,125	4,713	18,516	4,708	13,808	4,467	15,303	15,127	2,727	12,399
1978	86,697	71,026	25,585	851	4,229	20,505	61,113	4,923	19,542	4,969	14,573	4,724	16,252	15,672	2,753	12,919
1979	89,823	73,876	26,461	958	4,463	21,040	63,363	5,136	20,192	5,204	14,989	4,975	17,112	15,947	2,773	13,147
1980	90,406	74,166	25,658	1,027	4,346	20,285	64,748	5,146	20,310	5,275	15,035	5,160	17,890	16,241	2,866	13,375
1981	91,105	75,081	25,481	1,132	4,176	20,173	65,625	5,157	20,551	5,359	15,192	5,301	18,592	16,024	2,772	13,253

<sup>1</sup>Data include Alaska and Hawaii beginning in 1959.

## 9. Employment by State

[Nonagricultural payroll data, in thousands]

State	July 1981	June 1982	July 1982 <sup>P</sup>	State	July 1981	June 1982	July 1982 <sup>P</sup>
Alabama	1,354.6	1,333.0	1,326.4	Montana	288.7	289.2	281.8
Alaska	192.0	194.2	199.4	Nebraska	624.3	617.2	605.7
Arizona	1,021.4	1,018.2	1,002.5	Nevada	418.3	418.3	417.4
Arkansas	736.2	721.9	714.6	New Hampshire	401.8	400.4	397.5
California	10,017.3	10,042.9	9,940.4	New Jersey	3,130.8	3,112.4	3,100.0
Colorado	1,282.5	1,292.0	1,279.1	New Mexico	475.9	474.5	471.8
Connecticut	1,432.7	1,429.4	1,406.4	New York	7,331.2	7,346.7	7,272.2
Delaware	264.6	259.2	261.4	North Carolina	2,347.4	2,350.0	2,289.1
District of Columbia	629.0	608.5	625.6	North Dakota	249.6	253.4	251.4
Florida	3,663.6	3,761.0	3,702.3	Ohio	4,326.0	4,256.2	4,203.1
Georgia	2,172.8	2,155.6	2,145.9	Oklahoma	1,186.4	1,218.0	1,202.2
Hawaii	408.9	402.6	404.6	Oregon	1,016.9	985.5	964.8
Idaho	325.5	317.1	311.1	Pennsylvania	4,749.7	4,587.6	4,497.2
Illinois	4,794.8	4,640.8	4,625.5	Rhode Island	394.0	394.4	384.7
Indiana	2,109.3	2,027.7	2,012.0	South Carolina	1,194.6	1,180.2	1,160.1
Iowa	1,078.4	1,051.7	1,030.7	South Dakota	238.2	237.8	231.3
Kansas	941.3	936.7	913.1	Tennessee	1,737.7	1,726.9	1,711.9
Kentucky	1,165.4	1,159.8	1,127.9	Texas	6,166.0	6,287.6	6,257.1
Louisiana	1,638.9	1,622.1	1,616.9	Utah	556.5	563.5	559.5
Maine	427.5	421.0	413.6	Vermont	202.7	200.9	201.3
Maryland	1,720.8	1,697.2	1,688.4	Virginia	2,171.9	2,180.9	2,167.5
Massachusetts	2,631.4	2,642.6	2,596.1	Washington	1,595.5	1,581.0	1,550.8
Michigan	3,366.2	3,230.7	3,195.6	West Virginia	642.5	605.3	605.1
Minnesota	1,758.8	1,736.4	1,703.6	Wisconsin	1,929.7	1,882.4	1,870.7
Mississippi	818.9	793.5	789.6	Wyoming	223.2	222.2	214.7
Missouri	1,972.9	1,970.6	1,953.9	Virgin Islands	38.4	34.8	35.9

p= preliminary.

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

[Nonagricultural payroll data, in thousands]

Industry division and group	Annual average		1981					1982							
	1980	1981	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July <sup>P</sup>	Aug. <sup>P</sup>
<b>TOTAL</b> .....	90,406	91,105	91,322	91,363	91,224	90,996	90,642	90,460	90,459	90,304	90,083	90,166	89,839	89,662	89,451
<b>PRIVATE SECTOR</b> .....	74,166	75,081	75,428	75,459	75,307	75,088	74,725	74,596	74,609	74,445	74,231	74,313	74,007	73,949	73,751
<b>GOODS-PRODUCING</b> .....	25,658	25,481	25,637	25,583	25,393	25,176	24,908	24,684	24,631	24,450	24,289	24,255	23,994	23,880	23,730
<b>Mining</b> .....	1,027	1,132	1,180	1,192	1,195	1,202	1,206	1,201	1,203	1,197	1,182	1,152	1,124	1,107	1,099
<b>Construction</b> .....	4,346	4,176	4,146	4,124	4,101	4,071	4,026	3,966	3,974	3,934	3,938	3,988	3,940	3,929	3,902
<b>Manufacturing</b> .....	20,285	20,173	20,311	20,267	20,097	19,903	19,676	19,517	19,454	19,319	19,169	19,115	18,930	18,844	18,729
Production workers .....	14,214	14,021	14,136	14,067	13,915	13,717	13,488	13,431	13,290	13,179	13,042	13,008	12,852	12,798	12,708
<b>Durable goods</b> .....	12,187	12,117	12,228	12,184	12,059	11,901	11,724	11,622	11,575	11,490	11,375	11,332	11,203	11,157	11,027
Production workers .....	8,442	8,301	8,389	8,345	8,218	8,061	7,885	7,793	7,759	7,685	7,576	7,553	7,443	7,420	7,309
Lumber and wood products .....	690.5	668.7	671	661	643	628	615	607	611	607	615	617	615	618	618
Furniture and fixtures .....	465.8	467.3	475	473	469	462	457	452	449	446	443	443	442	442	443
Stone, clay, and glass products .....	662.1	638.2	643	638	629	620	610	596	596	590	584	586	580	580	582
Primary metal industries .....	1,142.2	1,121.1	1,134	1,125	1,104	1,082	1,053	1,038	1,024	1,007	976	945	926	913	891
Fabricated metal products .....	1,613.1	1,592.4	1,610	1,604	1,577	1,553	1,529	1,515	1,505	1,496	1,481	1,472	1,452	1,447	1,432
Machinery, except electrical .....	2,494.0	2,507.0	2,532	2,539	2,532	2,511	2,486	2,459	2,446	2,419	2,389	2,377	2,322	2,276	2,247
Electric and electronic equipment .....	2,090.6	2,092.2	2,116	2,113	2,101	2,077	2,049	2,055	2,048	2,038	2,034	2,034	2,026	2,021	2,008
Transportation equipment .....	1,899.7	1,892.6	1,901	1,884	1,861	1,830	1,791	1,777	1,778	1,774	1,748	1,755	1,745	1,763	1,715
Instruments and related products .....	711.3	726.8	734	734	731	727	725	720	718	716	713	713	708	708	704
Miscellaneous manufacturing .....	418.0	410.7	412	413	412	411	409	403	400	397	392	390	387	389	387
<b>Nondurable goods</b> .....	8,098	8,056	8,083	8,083	8,038	8,002	7,952	7,895	7,879	7,829	7,794	7,783	7,727	7,687	7,702
Production workers .....	5,772	5,721	5,747	5,742	5,697	5,656	5,603	5,548	5,531	5,494	5,466	5,455	5,409	5,378	5,399
Food and kindred products .....	1,708.0	1,674.3	1,659	1,658	1,662	1,664	1,661	1,657	1,663	1,658	1,643	1,652	1,637	1,648	1,634
Tobacco manufactures .....	68.9	69.8	70	69	69	69	68	69	68	68	67	67	67	65	66
Textile mill products .....	847.7	822.5	829	827	814	804	794	780	777	760	773	759	741	741	734
Apparel and other textile products .....	1,263.5	1,244.0	1,253	1,253	1,243	1,235	1,222	1,201	1,201	1,186	1,165	1,165	1,161	1,129	1,161
Paper and allied products .....	692.8	687.8	691	695	685	681	677	674	670	668	664	661	658	659	655
Printing and publishing .....	1,252.1	1,265.8	1,271	1,274	1,276	1,276	1,276	1,275	1,276	1,278	1,274	1,274	1,269	1,266	1,267
Chemicals and allied products .....	1,107.4	1,107.3	1,107	1,110	1,107	1,103	1,100	1,095	1,093	1,088	1,082	1,079	1,073	1,069	1,071
Petroleum and coal products .....	197.9	215.6	216	216	215	215	214	210	208	207	206	207	205	205	207
Rubber and miscellaneous plastics products .....	726.8	736.1	752	746	734	725	716	712	708	703	706	708	704	700	698
Leather and leather products .....	232.9	233.0	235	235	233	230	224	222	215	213	214	211	212	205	209
<b>SERVICE-PRODUCING</b> .....	64,748	65,625	65,685	65,780	65,831	65,820	65,734	65,776	65,828	65,854	65,794	65,911	65,845	65,782	65,721
<b>Transportation and public utilities</b> .....	5,146	5,157	5,168	5,181	5,162	5,150	5,128	5,125	5,115	5,100	5,094	5,101	5,078	5,041	5,038
<b>Wholesale and retail trade</b> .....	20,310	20,551	20,650	20,660	20,654	20,623	20,524	20,630	20,670	20,655	20,584	20,652	20,595	20,613	20,531
<b>Wholesale trade</b> .....	5,275	5,359	5,387	5,383	5,380	5,375	5,357	5,346	5,343	5,336	5,323	5,331	5,307	5,298	5,279
<b>Retail trade</b> .....	15,035	15,192	15,263	15,277	15,274	15,248	15,167	15,284	15,327	15,319	15,261	15,321	15,288	15,315	15,252
<b>Finance, insurance, and real estate</b> .....	5,160	5,301	5,319	5,328	5,325	5,324	5,331	5,326	5,326	5,336	5,335	5,342	5,352	5,358	5,375
<b>Services</b> .....	17,890	18,592	18,654	18,707	18,773	18,815	18,834	18,831	18,867	18,904	18,929	18,963	18,988	19,057	19,077
<b>Government</b> .....	16,241	16,024	15,894	15,904	15,917	15,908	15,917	15,864	15,850	15,859	15,852	15,853	15,832	15,713	15,700
Federal .....	2,866	2,772	2,769	2,764	2,757	2,749	2,756	2,741	2,737	2,736	2,730	2,728	2,739	2,733	2,721
State and local .....	13,375	13,253	13,125	13,140	13,160	13,159	13,161	13,123	13,113	13,123	13,122	13,125	13,093	12,980	12,979

p=preliminary.

### 11. Hours and earnings, by industry division, selected years, 1950-81

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

Year	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings
	Private sector			Mining			Construction			Manufacturing		
1950	\$53.13	39.8	\$1.335	\$67.16	37.9	\$1.772	\$69.68	37.4	\$1.863	\$58.32	40.5	\$1.440
1955	67.72	39.6	1.71	89.54	40.7	2.20	90.90	37.1	2.45	75.30	40.7	1.85
1960 <sup>1</sup>	80.67	38.6	2.09	105.04	40.4	2.60	112.67	36.7	3.07	89.72	39.7	2.26
1964	91.33	38.7	2.36	117.74	41.9	2.81	132.06	37.2	3.55	102.97	40.7	2.53
1965	95.45	38.8	2.46	123.52	42.3	2.92	138.38	37.4	3.70	107.53	41.2	2.61
1966	98.82	38.6	2.56	130.24	42.7	3.05	146.26	37.6	3.89	112.19	41.4	2.71
1967	101.84	38.0	2.68	135.89	42.6	3.19	154.95	37.7	4.11	114.49	40.6	2.82
1968	107.73	37.8	2.85	142.71	42.6	3.35	164.49	37.3	4.41	122.51	40.7	3.01
1969	114.61	37.7	3.04	154.80	43.0	3.60	181.54	37.9	4.79	129.51	40.6	3.19
1970	119.83	37.1	3.23	164.40	42.7	3.85	195.45	37.3	5.24	133.33	39.8	3.35
1971	127.31	36.9	3.45	172.14	42.4	4.06	211.67	37.2	5.69	142.44	39.9	3.57
1972	136.90	37.0	3.70	189.14	42.6	4.44	221.19	36.5	6.06	154.71	40.5	3.82
1973	145.39	36.9	3.94	201.40	42.4	4.75	235.89	36.8	6.41	166.46	40.7	4.09
1974	154.76	36.5	4.24	219.14	41.9	5.23	249.25	36.6	6.81	176.80	40.0	4.42
1975	163.53	36.1	4.53	249.31	41.9	5.95	266.08	36.4	7.31	190.79	39.5	4.83
1976	175.45	36.1	4.86	273.90	42.4	6.46	283.73	36.8	7.71	209.32	40.1	5.22
1977	189.00	36.0	5.25	301.20	43.4	6.94	295.65	36.5	8.10	228.90	40.3	5.68
1978	203.70	35.8	5.69	332.88	43.4	7.67	318.69	36.8	8.66	249.27	40.4	6.17
1979	219.91	35.7	6.16	365.07	43.0	8.49	342.99	37.0	9.27	269.34	40.2	6.70
1980	235.10	35.3	6.66	397.06	43.3	9.17	367.78	37.0	9.94	288.62	39.7	7.27
1981	255.20	35.2	7.25	439.19	43.7	10.05	398.52	36.9	10.80	318.00	39.8	7.99
	Transportation and public utilities			Wholesale and retail trade			Finance, insurance, and real estate			Services		
1950				\$44.55	40.5	\$1.100	\$50.52	37.7	\$1.340			
1955				55.16	39.4	1.40	63.92	37.6	1.70			
1960 <sup>1</sup>				66.01	38.6	1.71	75.14	37.2	2.02			
1964	\$118.78	41.1	\$2.89	74.66	37.9	1.97	85.79	37.3	2.30	\$70.03	36.1	\$1.94
1965	125.14	41.3	3.03	76.91	37.7	2.04	88.91	37.2	2.39	73.60	35.9	2.05
1966	128.13	41.2	3.11	79.39	37.1	2.14	92.13	37.3	2.47	77.04	35.5	2.17
1967	130.82	40.5	3.23	82.35	36.6	2.25	95.72	37.1	2.58	80.38	35.1	2.29
1968	138.85	40.6	3.42	87.00	36.1	2.41	101.75	37.0	2.75	83.97	34.7	2.42
1969	147.74	40.7	3.63	91.39	35.7	2.56	108.70	37.1	2.93	90.57	34.7	2.61
1970	155.93	40.5	3.85	96.02	35.3	2.72	112.67	36.7	3.07	96.66	34.4	2.81
1971	168.82	40.1	4.21	101.09	35.1	2.88	117.85	36.6	3.22	103.06	33.9	3.04
1972	187.86	40.4	4.65	106.45	34.9	3.05	122.98	36.6	3.36	110.85	33.9	3.27
1973	203.31	40.5	5.02	111.76	34.6	3.23	129.20	36.6	3.53	117.29	33.8	3.47
1974	217.48	40.2	5.41	119.02	34.2	3.48	137.61	36.5	3.77	126.00	33.6	3.75
1975	233.44	39.7	5.88	126.45	33.9	3.73	148.19	36.5	4.06	134.67	33.5	4.02
1976	256.71	39.8	6.45	133.79	33.7	3.97	155.43	36.4	4.27	143.52	33.3	4.31
1977	278.90	39.9	6.99	142.52	33.3	4.28	165.26	36.4	4.54	153.45	33.0	4.65
1978	302.80	40.0	7.57	153.64	32.9	4.67	178.00	36.4	4.89	163.67	32.8	4.99
1979	325.58	39.9	8.16	164.96	32.6	5.06	190.77	36.2	5.27	175.27	32.7	5.36
1980	351.25	39.6	8.87	176.46	32.2	5.48	209.60	36.2	5.79	190.71	32.6	5.85
1981	382.18	39.4	9.70	190.95	32.2	5.93	229.05	36.3	6.31	208.97	32.6	6.41

<sup>1</sup> Data include Alaska and Hawaii beginning in 1959.



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

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

Industry division and group	Annual average		1981					1982							
	1980	1981	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July <sup>P</sup>	Aug. <sup>P</sup>
<b>PRIVATE SECTOR</b> .....	35.3	35.2	35.2	35.0	35.1	35.1	35.0	34.4	35.0	34.9	34.9	35.0	34.9	34.9	34.9
<b>MANUFACTURING</b> .....	39.7	39.8	39.9	39.4	39.5	39.3	39.1	37.6	39.4	39.0	39.0	39.1	39.2	39.3	39.0
Overtime hours .....	2.8	2.8	3.0	2.7	2.7	2.5	2.4	2.3	2.4	2.3	2.4	2.3	2.4	2.4	2.4
<b>Durable goods</b> .....	40.1	40.2	40.4	39.7	40.0	39.7	39.5	38.2	39.8	39.5	39.5	39.6	39.7	39.7	39.5
Overtime hours .....	2.8	2.8	3.0	2.7	2.6	2.4	2.3	2.2	2.2	2.2	2.2	2.2	2.3	2.2	2.3
Lumber and wood products .....	38.5	38.7	38.4	37.6	37.8	37.7	37.7	35.0	37.9	37.6	37.6	38.5	38.7	38.4	38.0
Furniture and fixtures .....	38.1	38.4	38.4	37.4	38.0	37.6	37.9	33.6	37.7	37.3	37.4	37.5	37.8	37.8	37.6
Stone, clay, and glass products .....	40.8	40.6	40.7	40.3	40.1	40.1	39.7	38.6	40.1	40.0	40.0	40.2	40.4	40.6	40.5
Primary metal industries .....	40.1	40.5	40.8	40.6	40.0	39.6	39.2	38.3	39.4	38.8	38.5	38.5	38.9	38.9	39.2
Fabricated metal products .....	40.4	40.3	40.4	39.6	40.0	39.7	39.5	38.1	39.7	39.5	39.4	39.5	39.4	39.5	39.2
Machinery, except electrical .....	41.0	40.9	41.1	40.3	40.8	40.7	40.4	39.3	40.7	40.2	40.1	39.8	39.6	39.9	39.6
Electric and electronic equipment .....	39.8	39.9	40.3	39.7	39.8	39.4	39.5	38.3	39.8	39.4	39.3	39.4	39.5	39.8	39.4
Transportation equipment .....	40.6	40.9	41.2	40.1	40.6	40.4	39.7	39.0	40.5	40.4	41.1	41.1	41.6	41.0	40.9
Instruments and related products .....	40.5	40.4	40.6	40.4	40.3	40.2	39.9	39.0	39.9	39.9	39.9	40.2	40.2	40.1	40.0
Miscellaneous manufacturing .....	38.7	38.8	38.9	38.4	38.9	39.0	38.5	37.3	38.6	38.6	38.5	38.7	38.6	38.7	38.6
<b>Nondurable goods</b> .....	39.0	39.1	39.2	38.9	38.9	38.7	38.6	36.8	38.9	38.5	38.4	38.5	38.6	38.7	38.4
Overtime hours .....	2.8	2.8	2.9	2.8	2.8	2.7	2.6	2.5	2.6	2.5	2.6	2.5	2.5	2.6	2.6
Food and kindred products .....	39.7	39.7	39.4	39.3	39.5	39.5	39.8	39.1	40.2	39.5	39.4	39.4	39.5	39.9	39.4
Textile mill products .....	40.1	39.6	39.8	38.8	39.0	38.7	37.8	32.3	38.3	37.6	37.7	37.9	37.8	37.8	37.8
Apparel and other textile products .....	35.4	35.7	35.9	35.2	35.5	35.5	35.1	31.4	35.5	35.0	34.7	34.8	35.1	35.2	35.1
Paper and allied products .....	42.2	42.5	42.5	43.0	42.4	42.0	41.8	41.3	42.3	41.8	42.1	41.8	42.0	42.1	41.6
Printing and publishing .....	37.1	37.3	37.3	37.1	37.1	37.1	37.1	36.9	37.4	37.1	37.1	36.8	37.1	37.0	36.7
Chemicals and allied products .....	41.5	41.6	41.7	42.2	41.5	41.2	41.3	41.0	41.2	40.7	40.7	41.0	41.0	40.9	40.5
Petroleum and coal products .....	41.8	43.2	42.9	43.1	42.2	42.5	42.7	44.3	43.5	43.5	44.0	44.1	44.1	43.3	44.3
Rubber and miscellaneous plastics products .....	40.0	40.3	40.5	39.7	39.9	39.6	39.4	37.9	40.0	39.6	39.8	39.9	40.1	40.1	39.6
Leather and leather products .....	36.7	36.8	36.7	36.2	36.7	36.5	36.1	34.1	35.6	35.8	35.6	35.6	35.7	35.9	35.7
<b>WHOLESALE AND RETAIL TRADE</b> .....	32.2	32.2	32.2	32.1	32.0	32.1	32.0	31.7	32.0	31.9	31.8	32.0	31.9	31.9	32.0
<b>WHOLESALE TRADE</b> .....	38.5	38.6	38.6	38.5	38.4	38.5	38.4	38.1	38.5	38.4	38.3	38.5	38.6	38.5	38.6
<b>RETAIL TRADE</b> .....	30.2	30.1	30.1	30.1	29.9	30.0	29.9	29.7	29.9	29.8	29.8	30.0	29.8	29.9	30.0
<b>SERVICES</b> .....	32.6	32.6	32.5	32.5	32.6	32.6	32.6	32.5	32.6	32.6	32.7	32.7	32.7	32.6	32.7

Note: The industry divisions of mining; construction; tobacco manufactures (a major manufacturing group, nondurable goods); transportation and public utilities; and finance, insurance, and real estate are no longer shown. This is because the seasonal component in these is small

relative to the trend-cycle, or irregular components, or both, and consequently cannot be precisely separated.  
p=preliminary.

**13. Hourly earnings, by industry division and major manufacturing group**

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

Industry division and group	Annual average		1981					1982							
	1980	1981	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July <sup>P</sup>	Aug. <sup>P</sup>
<b>PRIVATE SECTOR</b> .....	\$6.66	\$7.25	\$7.30	\$7.40	\$7.42	\$7.47	\$7.45	\$7.55	\$7.54	\$7.55	\$7.58	\$7.63	\$7.64	\$7.67	\$7.69
Seasonally adjusted .....	( <sup>1</sup> )	( <sup>1</sup> )	7.34	7.37	7.40	7.45	7.46	7.52	7.53	7.54	7.59	7.65	7.67	7.70	7.73
<b>MINING</b> .....	9.17	10.05	10.12	10.27	10.25	10.39	10.41	10.65	10.62	10.62	10.65	10.66	10.82	10.91	10.95
<b>CONSTRUCTION</b> .....	9.94	10.80	10.92	11.07	11.65	11.18	11.26	11.59	11.32	11.33	11.32	11.46	11.41	11.53	11.61
<b>MANUFACTURING</b> .....	7.27	7.99	8.03	8.16	8.16	8.20	8.27	8.42	8.34	8.37	8.42	8.45	8.50	8.55	8.51
<b>Durable goods</b> .....	7.75	8.53	8.59	8.70	8.73	8.77	8.83	8.92	8.89	8.91	8.94	9.01	9.06	9.11	9.09
Lumber and wood products .....	6.55	7.00	7.13	7.16	7.10	7.16	7.16	7.38	7.27	7.28	7.24	7.41	7.59	7.63	7.61
Furniture and fixtures .....	5.49	5.91	5.99	6.01	6.06	6.05	6.12	6.28	6.19	6.21	6.23	6.30	6.33	6.36	
Stone, clay, and glass products .....	7.50	8.27	8.41	8.53	8.50	8.54	8.56	8.70	8.62	8.65	8.72	8.80	8.86	8.93	8.92
Primary metal industries .....	9.77	10.81	10.99	11.22	10.97	11.10	11.08	11.23	11.20	11.15	11.24	11.23	11.31	11.38	11.45
Fabricated metal products .....	7.45	8.20	8.26	8.33	8.39	8.42	8.53	8.55	8.57	8.64	8.69	8.79	8.83	8.85	8.88
Machinery, except electrical .....	8.00	8.81	8.84	8.96	9.04	9.08	9.18	9.19	9.20	9.18	9.24	9.26	9.27	9.31	9.34
Electric and electronic equipment .....	6.94	7.62	7.73	7.75	7.80	7.83	7.90	7.98	7.96	8.01	8.03	8.05	8.09	8.18	8.25
Transportation equipment .....	9.35	10.39	10.37	10.49	10.74	10.74	10.76	10.79	10.82	10.89	10.89	11.08	11.21	11.26	11.21
Instruments and related products .....	6.80	7.43	7.55	7.59	7.60	7.68	7.81	7.93	7.94	8.00	8.07	8.16	8.23	8.30	8.36
Miscellaneous manufacturing .....	5.46	5.96	5.96	6.05	6.05	6.11	6.19	6.27	6.29	6.32	6.35	6.38	6.41	6.40	6.37
<b>Nondurable goods</b> .....	6.55	7.18	7.23	7.36	7.33	7.38	7.44	7.67	7.54	7.57	7.65	7.66	7.70	7.77	7.73
Food and kindred products .....	6.85	7.43	7.48	7.56	7.51	7.61	7.67	7.82	7.74	7.79	7.90	7.92	7.90	7.87	7.84
Tobacco manufactures .....	7.74	8.88	8.70	8.76	8.67	9.04	8.96	9.21	9.56	9.72	10.05	9.93	10.35	10.32	9.42
Textile mill products .....	5.07	5.52	5.65	5.69	5.72	5.73	5.72	5.76	5.76	5.76	5.79	5.79	5.79	5.81	5.82
Apparel and other textile products .....	4.56	4.96	4.96	5.04	5.05	5.04	5.04	5.18	5.13	5.15	5.18	5.16	5.18	5.18	5.19
Paper and allied products .....	7.84	8.60	8.67	8.95	8.82	8.89	8.96	9.06	8.99	9.03	9.11	9.14	9.28	9.40	9.40
Printing and publishing .....	7.53	8.18	8.25	8.37	8.40	8.42	8.48	8.58	8.56	8.59	8.59	8.61	8.66	8.72	8.76
Chemicals and allied products .....	8.30	9.12	9.19	9.38	9.37	9.42	9.53	9.68	9.68	9.71	9.81	9.83	9.95	10.01	10.01
Petroleum and coal products .....	10.10	11.38	11.32	11.55	11.47	11.58	11.59	11.91	12.29	12.32	12.50	12.52	12.53	12.40	12.39
Rubber and miscellaneous plastics products .....	6.52	7.16	7.23	7.29	7.30	7.31	7.38	7.51	7.49	7.45	7.52	7.56	7.64	7.67	7.63
Leather and leather products .....	4.58	4.99	4.97	5.09	5.09	5.11	5.15	5.19	5.22	5.24	5.32	5.32	5.36	5.31	5.38
<b>TRANSPORTATION AND PUBLIC UTILITIES</b> .....	8.87	9.70	9.87	9.95	9.94	10.05	10.06	10.10	10.13	10.07	10.14	10.17	10.20	10.26	10.41
<b>WHOLESALE AND RETAIL TRADE</b> .....	5.48	5.93	5.94	6.04	6.01	6.04	6.02	6.17	6.16	6.16	6.18	6.20	6.20	6.20	6.21
<b>WHOLESALE TRADE</b> .....	6.96	7.57	7.65	7.70	7.73	7.79	7.81	7.94	7.94	7.93	7.97	8.03	8.01	8.06	8.09
<b>RETAIL TRADE</b> .....	4.88	5.25	5.25	5.37	5.29	5.32	5.31	5.43	5.42	5.43	5.44	5.47	5.47	5.47	5.47
<b>FINANCE, INSURANCE, AND REAL ESTATE</b> .....	5.79	6.31	6.38	6.39	6.43	6.52	6.47	6.56	6.62	6.59	6.64	6.77	6.71	6.77	6.84
<b>SERVICES</b> .....	5.85	6.41	6.41	6.52	6.58	6.67	6.66	6.79	6.79	6.77	6.81	6.85	6.84	6.86	6.90

<sup>1</sup> Not available.

p=preliminary.

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

[1977=100]

Industry	Not seasonally adjusted					Seasonally adjusted						
	Aug. 1981	June 1982	July 1982 <sup>P</sup>	Aug. 1982 <sup>P</sup>	Percent change from: Aug. 1981 to Aug. 1982	Aug. 1981	Apr. 1982	May 1982	June 1982	July 1982 <sup>P</sup>	Aug. 1982 <sup>P</sup>	Percent change from: July 1982 to Aug. 1982
<b>PRIVATE SECTOR (in current dollars)</b>	140.0	147.6	148.5	149.1	6.5	140.5	146.3	147.7	148.1	148.8	149.7	0.6
Mining .....	149.5	159.6	161.6	162.0	8.3	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
Construction .....	133.6	139.1	140.7	141.6	6.0	132.8	138.7	139.9	139.7	140.5	140.7	.1
Manufacturing .....	142.9	152.4	153.3	153.4	7.3	143.5	150.8	151.8	152.5	153.3	154.0	.4
Transportation and public utilities .....	141.6	147.3	147.7	149.8	5.8	141.6	146.9	148.2	149.1	148.3	149.8	1.0
Wholesale and retail trade .....	139.1	144.9	145.2	145.6	4.7	139.7	143.7	145.1	145.2	145.4	146.2	.5
Finance, insurance, and real estate .....	139.7	146.9	148.2	149.8	7.3	140.1	144.9	148.0	147.2	148.5	150.3	1.2
Services .....	138.0	146.6	147.6	148.4	7.5	139.2	145.1	146.5	147.3	148.5	149.7	.8
<b>PRIVATE SECTOR (in constant dollars)</b>	91.9	92.4	92.3	( <sup>2</sup> )	( <sup>2</sup> )	92.5	93.7	93.7	93.1	92.9	( <sup>2</sup> )	( <sup>2</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> Not available  
p = preliminary.

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**15. Weekly earnings, by industry division and major manufacturing group**

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

Industry division and group	Annual average		1981					1982							
	1980	1981	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July <sup>P</sup>	Aug. <sup>P</sup>
<b>PRIVATE SECTOR</b>															
Current dollars	\$235.10	\$255.20	\$259.88	\$259.74	\$261.18	\$262.20	\$262.24	\$255.95	\$262.39	\$261.99	\$262.27	\$265.52	\$267.40	\$269.98	\$271.46
Seasonally adjusted	( <sup>1</sup> )	( <sup>1</sup> )	258.37	257.95	259.74	261.50	261.10	258.69	263.55	263.15	264.89	267.75	267.68	268.73	( <sup>1</sup> )
Constant (1977) dollars	172.74	170.13	170.64	168.88	169.49	169.71	169.30	164.70	168.31	168.37	167.80	168.16	167.33	167.90	168.82
<b>MINING</b>	397.06	439.19	447.30	450.85	456.13	461.32	466.37	456.89	463.03	465.16	454.76	454.12	463.10	465.86	458.81
<b>CONSTRUCTION</b>	367.78	398.52	408.41	396.31	419.62	414.78	417.75	385.95	406.39	419.21	415.44	429.75	427.88	439.29	437.70
<b>MANUFACTURING</b>															
Current dollars	288.62	318.00	320.40	322.32	323.95	325.54	329.97	312.38	326.93	327.27	325.85	329.55	334.05	333.45	( <sup>1</sup> )
Constant (1977) dollars	212.06	212.00	210.37	209.57	210.22	210.71	213.02	201.02	209.70	210.33	208.48	208.71	209.04	207.37	206.40
<b>Durable goods</b>	310.78	342.91	345.32	346.26	350.07	351.68	356.73	336.28	352.93	352.84	350.45	355.90	360.59	357.11	357.24
Lumber and wood products	252.18	270.90	278.07	271.36	271.22	269.93	272.80	248.71	272.63	273.73	270.05	285.29	297.53	292.99	293.75
Furniture and fixtures	209.17	226.94	231.21	226.58	233.92	230.51	238.07	204.10	231.51	233.50	230.39	231.76	238.77	234.21	240.41
Stone, clay, and glass products	306.00	335.76	344.81	346.32	344.25	345.87	343.26	325.38	337.90	344.27	347.93	355.52	361.49	362.56	363.94
Primary metal industries	391.78	437.81	442.90	457.78	435.51	440.67	438.77	431.23	443.52	434.85	434.99	430.11	436.96	438.13	443.12
Fabricated metal products	300.98	330.46	332.88	330.70	337.28	337.64	345.47	323.19	337.66	342.14	338.91	346.33	349.67	344.27	347.21
<b>Machinery except electrical</b>	328.00	360.33	359.79	361.98	367.93	372.28	381.89	360.25	374.44	370.87	367.75	367.62	367.09	364.95	366.13
Electric and electronic equipment	276.21	304.04	309.20	307.68	311.22	311.63	319.16	304.04	316.81	316.40	313.17	315.56	319.56	319.84	323.40
Transportation equipment	379.61	424.95	421.02	418.55	440.34	438.19	445.46	414.34	437.13	439.96	441.05	455.39	466.34	457.16	452.88
Instruments and related products	275.40	300.17	305.02	306.64	307.04	313.34	317.87	306.10	317.60	320.80	318.77	327.22	330.85	327.85	332.73
Miscellaneous manufacturing	211.30	231.25	231.84	234.14	237.77	241.35	242.03	229.48	241.54	244.58	242.57	245.63	247.43	244.48	245.88
<b>Nondurable goods</b>	255.45	280.74	284.86	287.78	286.60	288.56	291.65	277.65	291.04	289.93	291.47	294.14	297.99	299.92	298.38
Food and kindred products	271.95	294.97	298.45	300.89	296.65	302.88	309.87	302.63	307.28	303.81	306.52	312.05	312.05	314.80	312.82
Tobacco manufactures	294.89	344.54	354.09	352.15	341.60	350.75	341.38	332.48	366.15	362.56	367.83	369.40	397.44	385.97	365.50
Textile mill products	203.31	218.59	225.44	221.34	225.37	224.62	220.79	179.71	219.46	217.15	215.39	219.44	220.60	216.71	220.58
Apparel and other textile products	161.42	177.07	180.05	177.41	180.79	180.43	178.92	155.40	180.58	180.77	178.19	180.08	183.89	183.37	184.25
Paper and allied products	330.85	365.50	367.61	386.64	373.97	376.05	382.59	374.18	377.58	376.55	380.80	379.31	389.76	392.92	390.10
Printing and publishing	279.36	305.11	309.38	313.04	312.48	314.07	321.39	312.31	317.58	318.69	316.11	315.99	319.55	321.77	324.12
Chemicals and allied products	344.45	379.39	380.47	395.84	388.86	391.87	398.35	394.94	397.85	395.20	399.27	401.06	406.96	407.41	403.40
Petroleum and coal products	422.18	491.62	486.76	512.82	494.36	499.10	493.73	514.51	518.64	522.37	550.00	549.63	553.83	545.60	550.12
Rubber and miscellaneous plastics products	260.80	288.55	292.09	289.41	293.46	291.67	295.94	283.88	298.85	295.77	297.04	300.13	306.36	302.97	302.15
Leather and leather products	168.09	183.63	183.39	183.24	186.80	187.03	187.46	172.83	184.27	186.54	187.26	191.52	196.71	190.63	193.14
<b>TRANSPORTATION AND PUBLIC UTILITIES</b>	351.25	382.18	389.87	390.04	388.65	393.96	395.36	388.85	397.10	392.73	393.43	394.60	399.84	404.24	410.15
<b>WHOLESALE AND RETAIL TRADE</b>	176.46	190.95	194.83	194.49	192.32	192.68	194.45	191.89	194.66	194.66	195.91	197.78	199.02	202.12	203.07
<b>WHOLESALE TRADE</b>	267.96	292.20	296.06	296.45	298.38	300.69	302.25	300.13	303.31	303.72	304.45	308.35	309.19	311.92	313.08
<b>RETAIL TRADE</b>	147.38	158.03	162.23	162.17	157.64	158.54	160.89	157.47	159.35	159.64	161.02	163.01	164.65	167.93	168.48
<b>FINANCE, INSURANCE, AND REAL ESTATE</b>	209.60	229.05	232.23	230.04	232.77	236.02	234.21	237.47	239.64	239.22	240.37	245.75	242.23	245.75	248.98
<b>SERVICES</b>	190.71	208.97	210.89	211.25	213.85	216.78	217.12	219.32	220.68	220.03	221.33	222.63	224.35	227.07	228.39

<sup>1</sup> Not available.

p = preliminary.



## UNEMPLOYMENT INSURANCE DATA

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

### Definitions

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

Under both State and Federal unemployment insurance programs for civilian employees, insured workers must report the completion of at least 1 week of unemployment before they are defined as unem-

ployed. 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.

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.

Item	1981						1982						
	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July P
<b>16. Unemployment insurance and employment service operations</b>	[All items except average benefits amounts are in thousands]												
All programs:													
Insured unemployment .....	3,012	2,874	2,680	2,753	3,228	3,935	4,681	4,723	4,892	4,760	4,388	4,328	4,493
State unemployment insurance program: <sup>1</sup>													
Initial claims <sup>2</sup> .....	2,114	1,610	1,681	1,996	2,286	3,272	3,328	2,272	2,418	2,347	1,989	2,399	2,654
Insured unemployment (average weekly volume) .....	2,743	2,656	2,488	2,592	3,061	3,778	4,470	4,376	4,282	4,067	3,729	3,707	3,910
Rate of insured unemployment .....	3.1	3.0	2.9	3.0	3.5	4.3	5.1	5.0	4.9	4.6	4.3	4.3	4.6
Weeks of unemployment compensated .....	10,486	9,594	9,565	9,424	10,052	14,592	15,962	15,631	18,144	16,156	13,680	14,637	14,656
Average weekly benefit amount for total unemployment .....	\$103.47	\$105.94	\$107.39	\$108.92	\$110.52	\$112.83	\$114.83	\$116.95	\$117.10	\$117.51	\$118.07	\$118.50	\$117.27
Total benefits paid .....	\$1,061,899	\$1,004,864	\$1,001,020	\$997,757	\$1,080,810	\$1,592,546	\$1,764,206	\$1,781,830	\$2,072,642	\$1,848,260	\$1,573,461	\$1,689,079	\$1,679,416
Unemployment compensation for ex-servicemen: <sup>3</sup>													
Initial claims <sup>1</sup> .....	22	19	15	11	9	11	8	8	10	9	8	10	10
Insured unemployment (average weekly volume) .....	44	44	34	26	22	19	16	13	11	10	9	8	7
Weeks of unemployment compensated .....	203	190	153	116	91	93	65	49	48	37	31	29	25
Total benefits paid .....	\$22,785	\$21,425	\$17,144	\$12,952	\$10,043	\$10,155	\$7,098	\$5,304	\$5,141	\$4,029	\$3,395	\$3,310	\$2,821
Unemployment compensation for Federal civilian employees: <sup>4</sup>													
Initial claims .....	15	17	18	20	16	17	17	12	13	13	11	14	13
Insured unemployment (average weekly volume) .....	25	25	29	32	36	39	40	40	38	33	29	28	29
Weeks of unemployment compensated .....	105	102	100	112	127	174	162	154	172	147	120	123	120
Total benefits paid .....	\$10,805	\$9,543	\$10,495	\$11,719	\$13,491	\$18,891	\$18,040	\$17,517	\$19,677	\$16,821	\$13,526	\$13,907	\$12,445
Railroad unemployment insurance:													
Applications .....	41	13	15	21	13	19	22	11	9	5	5	36	68
Insured unemployment (average weekly volume) .....	28	29	34	40	44	54	75	67	65	57	44	44	55
Number of payments .....	32	63	74	86	83	117	153	140	154	130	95	93	100
Average amount of benefit payment .....	\$199.63	\$202.53	\$207.98	\$197.26	\$207.08	\$212.33	\$213.39	\$214.07	\$215.71	\$209.48	\$200.75	\$199.15	\$202.54
Total benefits paid .....	\$11,541	\$7,071	15,046	15,994	\$16,377	\$25,292	\$30,544	\$28,011	\$33,853	\$26,262	\$19,110	\$18,574	\$17,998
Employment service: <sup>5</sup>													
New applications and renewals .....	.....	.....	16,502	.....	.....	4,081	.....	.....	7,439	.....	.....	.....	10,965
Nonfarm placements .....	.....	.....	3,509	.....	.....	731	.....	.....	1,232	.....	.....	.....	1,902

<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 on claims and payments made jointly with State programs.

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

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

r=revised.

p=preliminary.

## 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. One index, a new CPI for All Urban Consumers, covers 80 percent of the total noninstitutional population; and the other index, a revised CPI for Urban Wage Earners and Clerical Workers, covers about half the new index population. The All Urban Consumers index includes, 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, doctor's and dentist's 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. Prices are collected from over 18,000 tenants, 24,000 retail establishments, and 18,000 housing units for property taxes 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

Beginning with the May 1978 issue of the *Review*, regional CPI's cross classified by population size, were introduced. These indexes will 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 will be published bimonthly. (See table 19.)

For further details about the new and the revised indexes and a comparison of various aspects of these indexes with the old unrevised CPI, see *Facts About the Revised Consumer Price Index*, a pamphlet in the Consumer Price Index Revision 1978 series. See also *The Consumer Price Index: Concepts and Content Over the Years*, Report 517, revised edition (Bureau of Labor Statistics, May 1978).

For interarea comparisons of living costs at three hypothetical standards of living, see the family budget data published in the *Handbook of Labor Statistics, 1977*, Bulletin 1966 (Bureau of Labor Statistics, 1977), tables 122-133. Additional data and analysis on price changes are provided in the *CPI Detailed Report and Producer Prices and Price Indexes*, both monthly publications of the Bureau.

As of January 1976, the Wholesale Price Index (as it was then called) incorporated a revised weighting structure reflecting 1972 values of shipments. From January 1967 through December 1975, 1963 values of shipments were used as weights.

For a discussion of the general method of computing consumer, producer, and industry price indexes, see *BLS Handbook of Methods for Surveys and Studies*, Bulletin 1910 (Bureau of Labor Statistics, 1976), chapters 13-15. See also John F. Early, "Improving the measurement of producer price change," *Monthly Labor Review*, April 1978, pp. 7-15. For industry prices, see also Bennett R. Moss, "Industry and Sector Price Indexes," *Monthly Labor Review*, August 1965, pp. 974-82.

**17. Consumer Price Index for Urban Wage Earners and Clerical Workers, annual averages and changes, 1967-81**

[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	116.8	5.8
1971	121.3	4.3	118.3	3.1	123.4	4.4	119.8	3.2	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	6.0	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

**18. 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 (revised)						
	1981	1982					1981	1982						
	July	Feb.	Mar.	Apr.	May	June	July	July	Feb.	Mar.	Apr.	May	June	July
All items	274.4	283.4	283.1	284.3	287.1	290.6	292.2	274.6	282.9	282.5	283.7	286.5	290.1	291.8
Food and beverages	268.9	275.8	275.6	276.5	278.1	280.2	280.8	269.4	276.0	275.9	276.8	278.4	280.5	281.2
Housing	297.0	307.3	306.7	309.4	313.8	317.5	319.2	297.0	306.7	306.2	309.2	313.7	317.5	319.3
Apparel and upkeep	184.7	188.0	191.1	191.9	191.5	190.8	189.7	185.5	187.3	190.5	191.2	190.6	189.6	188.7
Transportation	282.6	288.0	285.1	282.9	285.6	292.8	296.1	283.9	289.6	286.6	284.3	287.1	294.5	297.9
Medical care	295.6	316.2	318.8	321.7	323.8	326.4	330.0	295.4	314.9	317.4	320.2	322.3	324.8	328.1
Entertainment	221.1	231.2	232.8	233.9	234.4	235.6	236.6	218.7	228.1	229.5	230.5	231.1	232.3	233.5
Other goods and services	234.4	250.3	252.2	253.8	255.0	255.8	257.2	232.4	247.1	249.3	250.9	252.4	253.1	254.5
Commodities	255.0	259.5	258.8	258.9	261.5	265.1	266.5	255.7	259.9	259.1	259.2	261.7	265.4	266.9
Commodities less food and beverages	244.7	248.1	247.1	247.0	249.8	254.0	255.7	245.5	248.6	247.5	247.2	250.1	254.5	256.3
Nondurables less food and beverages	262.9	265.3	263.4	259.7	261.0	266.3	268.2	266.0	267.5	265.3	261.3	262.6	268.2	270.3
Durables	229.6	233.7	233.5	235.8	239.8	243.2	244.7	228.4	232.5	232.4	234.8	238.9	242.3	243.9
Services	308.8	325.3	325.5	328.4	331.8	334.9	337.0	309.6	325.5	325.8	329.1	332.4	335.7	337.9
Rent, residential	207.8	218.6	219.6	220.1	221.8	222.6	224.8	207.4	218.1	219.1	219.6	221.3	222.1	224.3
Household services less rent	374.8	393.7	392.5	397.3	403.0	407.7	409.4	379.4	397.7	396.6	402.3	408.2	413.3	415.3
Transportation services	275.0	287.6	288.8	290.3	291.3	294.7	297.2	273.8	286.7	287.9	289.0	290.0	293.2	295.7
Medical care services	319.2	342.4	345.1	348.0	350.2	353.0	357.3	318.5	340.6	343.0	345.8	348.0	350.7	354.7
Other services	237.6	253.0	254.0	255.3	255.9	257.0	258.0	236.8	251.3	252.4	253.8	254.4	255.5	256.6
Special indexes:														
All items less food	272.7	282.1	281.7	282.9	286.0	289.7	291.5	273.1	281.7	281.3	282.5	285.6	289.4	291.4
All items less mortgage interest costs	259.3	267.1	267.2	267.9	270.3	273.6	275.1	260.0	267.2	267.3	267.9	270.3	273.7	275.3
Commodities less food	242.6	246.0	245.2	245.0	247.8	251.9	253.5	243.5	246.6	245.6	245.3	248.1	252.4	254.1
Nondurables less food	257.5	260.1	258.4	255.0	256.2	261.2	263.0	260.4	262.2	260.2	256.6	257.8	262.0	265.0
Nondurables less food and apparel	297.8	300.5	296.6	291.4	293.4	301.0	304.3	299.8	302.0	297.8	292.3	294.4	302.4	305.8
Nondurables	267.1	271.7	270.7	269.3	270.7	274.4	275.7	268.7	272.8	271.6	270.1	271.5	275.4	276.8
Services less rent	328.1	345.7	345.7	349.1	352.8	356.5	358.5	329.3	346.3	346.4	350.2	353.8	357.7	359.9
Services less medical care	305.4	321.1	321.1	324.0	327.5	330.7	332.5	306.3	321.6	321.6	324.9	328.3	331.7	333.6
Domestically produced farm foods	259.5	265.1	263.8	264.5	267.1	270.3	270.7	259.0	264.0	262.7	263.5	266.0	269.2	269.7
Selected beef cuts	275.3	271.7	272.0	275.1	281.6	289.1	287.4	277.9	273.1	273.3	276.4	283.1	290.6	288.8
Energy	415.7	413.0	406.1	395.7	402.1	418.6	424.5	418.9	415.4	407.9	396.9	403.1	420.4	426.5
All items less energy	263.5	273.4	273.6	275.7	278.3	280.7	282.0	262.7	272.1	272.3	274.5	277.0	279.4	280.8
All items less food and energy	259.0	269.5	269.8	272.2	274.9	277.3	278.7	258.1	268.0	268.3	270.9	273.6	276.0	277.6
Commodities less food and energy	219.4	224.5	225.3	227.2	229.9	232.1	233.1	218.7	223.6	224.5	226.4	229.1	231.3	232.4
Energy commodities	451.3	440.1	424.5	406.6	410.2	430.8	438.2	451.9	440.7	425.0	406.9	410.5	431.6	439.0
Services less energy	304.9	321.9	321.5	324.5	327.2	329.9	331.8	305.7	322.2	321.8	325.2	327.9	330.6	332.6
Purchasing power of the consumer dollar, 1967 = \$1	\$0.364	\$0.353	\$0.353	\$0.352	\$0.348	\$0.344	\$0.342	\$0.364	\$0.353	\$0.354	\$0.352	\$0.349	\$0.345	\$0.343



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

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers						Urban Wage Earners and Clerical Workers (revised)							
	1981	1982					1981	1982						
	July	Feb.	Mar.	Apr.	May	June	July	July	Feb.	Mar.	Apr.	May	June	July
<b>FOOD AND BEVERAGES</b> .....	268.9	275.8	275.6	276.5	278.1	280.2	280.8	269.4	276.0	275.9	276.8	278.4	280.5	281.2
<b>Food</b> .....	276.2	283.3	283.0	283.9	285.5	287.8	288.5	276.6	283.4	283.1	284.1	285.7	288.0	288.6
Food at home .....	271.6	278.0	277.1	277.9	279.8	282.6	282.8	271.1	277.0	276.2	277.0	278.8	281.6	281.9
Cereals and bakery products .....	272.4	280.9	281.3	281.7	283.3	283.6	284.3	271.5	279.8	280.0	280.4	282.0	282.3	283.0
Cereals and cereal products (12/77 = 100) .....	149.0	154.0	153.9	153.6	154.5	154.5	154.8	155.0	154.8	154.6	155.4	155.5	155.8	
Flour and prepared flour mixes (12/77 = 100) .....	139.5	139.1	139.2	139.7	141.8	142.1	143.5	141.9	139.6	139.6	140.1	142.1	142.5	144.0
Cereal (12/77 = 100) .....	153.4	164.8	165.2	165.4	165.7	166.1	166.3	154.8	166.8	167.2	167.4	167.8	168.2	168.5
Rice, pasta, and commmeal (12/77 = 100) .....	151.2	152.4	151.2	149.6	150.2	149.4	148.9	153.2	153.6	152.4	150.8	151.5	150.6	150.0
Bakery products (12/77 = 100) .....	142.5	146.8	147.1	147.5	148.3	148.6	149.0	141.4	145.7	146.0	146.3	147.2	147.4	147.8
White bread .....	236.4	243.8	242.3	242.8	243.8	242.4	246.1	233.9	240.0	238.3	238.8	240.0	238.3	241.9
Other breads (12/77 = 100) .....	140.6	143.7	145.1	145.2	146.3	145.6	145.1	142.9	145.5	147.0	147.1	148.2	147.5	147.0
Fresh biscuits, rolls, and muffins (12/77 = 100) .....	142.4	146.4	148.4	147.6	149.7	149.9	148.9	141.7	142.8	144.6	143.8	146.0	146.2	145.4
Fresh cakes and cupcakes (12/77 = 100) .....	142.7	147.0	148.0	148.4	149.0	149.2	148.9	141.4	145.8	146.4	146.8	147.4	147.5	147.2
Cookies (12/77 = 100) .....	143.0	149.2	149.4	150.2	150.5	150.7	150.0	142.6	150.1	150.2	151.2	151.4	151.5	150.9
Crackers, bread, and cracker products (12/77 = 100) .....	131.6	135.4	135.3	137.3	139.6	140.9	141.8	131.2	136.8	136.5	138.7	141.0	142.3	143.2
Fresh sweetrolls, coffeecake, and donuts (12/77 = 100) .....	143.9	147.0	146.3	146.8	147.3	148.9	148.5	142.8	149.3	148.7	149.3	149.9	151.5	151.1
Frozen and refrigerated bakery products and fresh pies, tarts, and turnovers (12/77 = 100) .....	147.2	151.5	153.5	153.4	153.6	156.3	156.2	140.9	144.8	146.8	146.5	146.7	149.4	149.2
Meats, poultry, fish, and eggs .....	254.1	256.8	256.9	258.3	261.0	266.0	268.5	254.1	256.4	256.4	257.8	260.7	265.8	268.3
Meats, poultry, and fish .....	260.7	261.2	262.1	264.2	268.2	274.3	276.2	260.5	260.7	261.5	263.6	267.7	273.9	275.8
Meats .....	259.6	260.2	261.2	263.6	269.7	277.2	278.8	259.7	259.7	260.6	262.8	269.0	276.5	278.2
Beef and veal .....	274.5	271.5	271.7	274.8	281.1	288.2	286.7	276.5	272.2	272.3	273.5	281.9	289.0	287.4
Ground beef other than canned .....	264.5	265.0	265.8	266.9	269.4	274.6	272.5	267.9	266.3	266.9	267.9	270.7	275.9	273.9
Chuck roast .....	283.5	285.8	284.3	285.4	287.2	295.4	296.2	295.5	295.0	293.1	294.1	296.2	304.9	305.3
Round roast .....	245.6	245.3	243.0	244.9	252.4	257.0	251.8	249.8	248.9	245.9	247.9	255.9	260.1	254.7
Round steak .....	258.9	256.1	258.8	262.8	269.2	278.8	271.2	257.0	254.4	256.4	260.8	267.8	277.2	269.4
Sirloin steak .....	284.3	257.1	260.6	271.1	282.3	294.1	295.6	285.6	257.8	262.2	272.4	283.8	295.5	298.0
Other beef and veal (12/77 = 100) .....	163.5	161.4	161.5	163.7	169.0	173.3	173.3	162.4	159.7	159.8	162.1	167.5	171.9	171.7
Pork .....	231.5	238.9	239.5	241.6	249.9	259.5	265.4	232.6	238.5	238.9	241.0	249.2	258.9	264.9
Bacon .....	228.1	245.6	249.6	255.9	267.7	280.7	283.9	230.5	249.3	253.3	259.7	271.9	285.3	288.7
Chops .....	221.8	222.1	216.3	223.4	230.0	241.2	248.9	222.4	220.2	214.7	221.7	228.2	239.6	247.3
Ham other than canned (12/77 = 100) .....	102.0	107.0	109.2	105.4	111.1	112.6	115.3	100.4	104.7	106.5	102.8	108.3	109.6	112.4
Sausage .....	289.7	300.0	305.8	305.7	313.3	326.3	331.9	293.4	301.0	306.6	306.3	314.2	327.2	332.9
Canned ham .....	233.0	246.1	247.6	245.6	249.9	253.2	255.3	234.4	249.9	251.2	248.9	253.2	256.4	258.7
Other pork (12/77 = 100) .....	133.6	133.8	132.6	135.2	138.9	145.4	150.3	134.5	133.1	131.7	134.5	138.2	144.7	149.5
Other meats .....	258.4	258.1	262.4	262.8	264.0	268.5	272.0	255.6	257.4	261.7	261.8	263.2	267.8	271.3
Frankfurters .....	251.8	258.0	260.5	259.5	262.7	268.8	274.2	251.9	257.1	260.0	258.4	261.8	268.3	273.4
Bologna, liverwurst, and salami (12/77 = 100) .....	145.9	146.1	149.2	150.2	150.7	154.6	156.5	144.6	146.2	149.4	150.3	150.7	154.6	156.6
Other lunchmeats (12/77 = 100) .....	129.1	131.7	133.7	133.2	134.3	135.5	137.3	126.5	129.7	131.7	131.2	132.3	133.4	135.1
Lamb and organ meats (12/77 = 100) .....	147.6	137.7	141.0	142.6	141.2	143.1	143.9	148.9	141.0	144.2	145.6	144.4	146.5	147.3
Poultry .....	204.8	195.7	194.7	193.3	196.0	197.5	199.6	203.1	193.8	192.8	191.5	194.1	195.8	197.8
Fresh whole chicken .....	206.9	196.3	195.1	194.1	196.8	199.1	201.2	202.9	194.4	192.8	192.0	194.7	197.0	198.8
Fresh and frozen chicken parts (12/77 = 100) .....	133.0	128.9	127.5	127.6	128.3	129.3	129.4	133.3	127.1	125.9	125.9	126.5	127.5	127.9
Other poultry (12/77 = 100) .....	130.0	123.2	123.9	121.3	124.3	124.6	127.3	129.3	122.6	123.3	120.8	123.9	124.3	126.9
Fish and seafood .....	356.9	373.8	376.3	382.0	366.3	365.2	370.2	353.5	373.2	375.5	381.4	365.0	364.2	368.7
Canned fish and seafood (12/77 = 100) .....	140.6	140.9	141.0	141.5	139.8	139.9	140.5	139.0	140.4	140.5	140.8	139.2	139.4	139.9
Fresh and frozen fish and seafood (12/77 = 100) .....	133.1	143.2	144.7	147.9	139.4	138.6	141.3	131.9	143.2	144.6	148.0	138.9	138.3	140.8
Eggs .....	174.2	205.1	195.2	186.9	172.3	162.5	173.6	175.0	206.1	196.3	187.9	173.4	163.4	174.7
Dairy products .....	244.2	246.5	246.5	247.5	247.0	246.3	247.5	243.9	245.8	245.9	246.8	246.3	245.7	246.8
Fresh milk and cream (12/77 = 100) .....	134.9	135.5	135.3	135.9	135.7	135.2	135.6	134.4	134.9	134.8	135.3	135.1	134.7	135.1
Fresh whole milk .....	220.7	221.5	221.7	222.2	222.0	221.3	221.6	219.9	220.5	220.8	221.3	221.1	220.4	220.7
Other fresh milk and cream (12/77 = 100) .....	134.9	135.8	135.1	136.2	135.7	135.4	136.2	134.5	135.5	134.6	135.7	135.2	134.9	135.7
Processed dairy products (12/77 = 100) .....	142.5	144.8	144.9	145.6	145.2	144.9	145.9	143.1	145.1	145.3	145.9	145.5	145.2	146.2
Butter .....	245.8	248.9	250.1	250.1	251.1	250.9	251.1	247.7	251.4	252.7	252.7	253.7	253.4	253.7
Cheese (12/77 = 100) .....	140.7	142.8	143.3	143.7	144.0	143.2	144.2	141.3	143.1	143.6	144.0	144.3	143.6	144.5
Ice cream and related products (12/77 = 100) .....	147.6	150.0	149.5	150.9	148.7	149.6	150.4	148.0	149.1	148.9	150.2	147.9	148.7	149.6
Other dairy products (12/77 = 100) .....	136.6	140.0	139.5	139.9	139.7	138.7	141.3	137.2	140.8	140.3	140.8	140.4	139.4	142.0
Fruits and vegetables .....	284.4	301.5	293.1	294.0	297.9	305.6	299.7	281.7	297.4	289.1	290.3	293.6	301.0	295.3
Fresh fruits and vegetables .....	294.0	319.6	302.1	304.1	311.7	325.9	313.8	290.2	313.4	296.1	298.9	305.1	318.6	307.1
Fresh fruits .....	292.1	291.2	297.8	306.7	318.8	340.8	332.4	285.5	280.1	287.3	295.5	306.9	327.0	320.5
Apples .....	251.9	279.5	288.7	287.5	299.8	321.4	331.8	253.1	279.9	288.5	287.8	300.1	321.9	333.3
Bananas .....	240.6	251.0	263.0	268.5	261.6	267.9	245.4	233.8	247.9	261.1	266.1	259.3	265.5	243.6
Oranges .....	327.8	313.1	316.3	330.8	362.1	406.8	438.2	307.0	281.1	285.9	300.2	328.3	367.5	399.9
Other fresh fruits (12/77 = 100) .....	160.4	154.5	157.2	163.4	168.2	177.1	161.6	158.9	149.0	151.8	157.6	162.4	170.3	156.1
Fresh vegetables .....	295.9	346.2	306.1	301.8	305.1	311.9	296.4	294.4	343.5	304.2	302.0	303.7	311.1	295.0
Potatoes .....	414.9	297.4	301.0	306.1	320.3	344.9	370.9	404.2	291.5	294.8	300.8	313.6	339.7	366.0
Lettuce .....	261.3	408.9	270.9	355.2	291.6	269.1	254.5	259.2	408.0	271.3	358.6	293.5	270.0	253.0
Tomatoes .....	194.0	288.5	258.1	220.5	226.5	275.6	270.2	195.5	293.2	261.8	224.9	230.6	279.9	274.9
Other fresh vegetables (12/77 = 100) .....	154.5	199.1	185.0	166.3	179.3	177.5	155.6	155.8	197.2					

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

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981		1982					1981		1982				
	July	Feb.	Mar.	Apr.	May	June	July	July	Feb.	Mar.	Apr.	May	June	July
<b>FOOD AND BEVERAGES—Continued</b>														
<b>Food—Continued</b>														
Food at home—Continued														
Fruits and vegetables—Continued														
Cut corn and canned beans except lima (12/77=100)	136.0	140.7	141.2	140.5	140.7	141.1	141.0	134.8	138.3	138.8	137.9	138.5	138.8	138.6
Other canned and dried vegetables (12/77=100)	134.6	134.1	134.8	135.0	134.6	135.2	135.4	132.8	132.6	133.3	133.5	133.2	133.8	134.1
Other foods at home	323.3	330.7	331.7	331.6	332.6	332.6	332.2	324.2	331.5	332.6	332.6	333.5	333.5	333.1
Sugar and sweets	360.0	364.2	365.5	365.3	365.7	366.8	369.5	362.8	364.1	365.4	365.2	365.6	366.9	369.7
Candy and chewing gum (12/77=100)	145.9	150.0	150.3	150.9	150.0	150.4	150.5	147.3	149.8	150.1	150.8	149.9	150.5	150.6
Sugar and artificial sweeteners (12/77=100)	164.6	160.0	161.0	159.9	160.5	161.4	164.6	166.6	161.3	162.4	161.1	161.8	162.8	166.1
Other sweets (12/77=100)	142.9	146.9	147.4	147.2	148.9	148.9	149.8	141.8	145.1	145.5	145.3	147.0	146.9	147.9
Fats and oils (12/77=100)	269.0	260.5	259.6	260.4	260.6	260.7	259.3	269.0	260.6	259.7	260.4	260.6	260.7	259.3
Margarine	255.9	256.7	256.7	259.6	259.7	261.2	258.4	256.6	256.1	256.1	259.1	259.3	260.8	258.0
Nondairy substitutes and peanut butter (12/77=100)	181.0	157.8	156.1	157.3	156.0	156.5	154.9	179.4	158.3	154.4	155.6	154.2	154.9	153.1
Other fats, oils, and salad dressings (12/77=100)	129.4	129.8	129.5	129.0	129.6	129.1	129.2	129.4	130.2	130.0	129.5	130.2	129.7	129.7
Nonalcoholic beverages	410.3	423.4	424.8	424.1	425.6	424.8	422.8	411.3	425.0	426.6	426.0	427.3	426.6	424.4
Cola drinks, excluding diet cola	294.7	304.6	306.6	304.9	306.1	305.9	302.9	290.8	302.0	303.8	302.4	303.6	303.3	300.4
Carbonated drinks, including diet cola (12/77=100)	139.6	143.8	143.4	143.4	144.3	143.1	143.3	138.3	141.7	141.4	141.5	142.3	141.2	141.1
Roasted coffee	351.4	364.4	366.6	369.6	369.3	365.1	364.3	346.6	359.9	362.2	365.0	364.3	360.1	359.3
Freeze dried and instant coffee	334.3	342.8	343.6	343.4	344.3	344.3	344.9	334.9	342.5	343.4	343.0	343.9	343.8	344.4
Other noncarbonated drinks (12/77=100)	134.2	138.4	138.9	138.7	138.9	140.0	139.2	134.0	138.6	139.1	138.9	139.1	140.2	139.5
Other prepared foods	256.3	265.3	266.5	266.6	267.5	267.8	268.0	257.9	266.9	268.1	268.3	269.3	269.5	269.8
Canned and packaged soup (12/77=100)	133.2	135.9	135.6	135.7	135.7	136.3	136.9	134.5	137.9	137.8	137.8	137.7	138.3	138.9
Frozen prepared foods (12/77=100)	143.7	146.2	147.0	147.2	147.8	147.3	146.7	142.3	145.6	146.5	146.7	147.3	146.8	146.0
Snacks (12/77=100)	147.5	153.4	153.4	152.9	153.5	153.2	152.7	150.0	155.2	155.4	155.0	155.6	155.2	154.8
Seasonings, olives, pickles, and relish (12/77=100)	142.0	151.3	153.2	153.6	152.8	153.3	152.7	141.4	150.3	152.2	152.7	151.9	152.4	152.1
Other condiments (12/77=100)	142.3	146.9	148.2	148.7	150.2	150.6	151.4	144.4	148.4	149.9	150.4	151.9	152.4	153.2
Miscellaneous prepared foods (12/77=100)	140.7	147.0	147.7	147.6	148.5	148.3	149.3	141.0	147.1	147.9	147.7	148.7	148.5	149.5
Other canned and packaged prepared foods (12/77=100)	139.0	143.0	143.2	143.3	143.5	144.5	144.6	139.8	144.5	144.5	144.6	144.9	145.8	145.9
Food away from home	292.4	301.2	302.4	303.6	304.8	305.9	307.6	295.2	304.2	305.4	306.7	307.8	309.0	310.7
Lunch (12/77=100)	142.6	146.6	147.0	147.5	148.2	148.9	149.6	143.6	148.2	148.6	149.1	149.8	150.5	151.2
Dinner (12/77=100)	141.3	145.2	145.7	146.3	147.1	147.4	148.1	143.0	146.8	147.3	147.9	148.8	149.1	149.8
Other meals and snacks (12/77=100)	141.6	146.9	147.9	148.6	148.5	149.2	150.5	142.7	147.6	148.7	149.3	149.2	149.9	151.1
<b>Alcoholic beverages</b>	200.5	205.6	206.6	207.4	208.0	208.4	209.2	202.8	207.6	208.8	209.5	210.1	210.4	211.3
Alcoholic beverages at home (12/77=100)	130.1	133.3	134.0	134.6	135.0	135.0	135.5	131.9	134.6	135.4	136.0	136.2	136.3	136.9
Beer and ale	201.8	207.4	209.2	210.5	210.3	210.6	211.4	202.4	206.5	208.3	209.6	209.4	209.6	210.5
Whiskey	143.7	146.8	147.0	147.2	148.2	148.3	148.9	144.7	147.7	147.8	148.0	149.0	149.1	149.8
Wine	227.5	234.2	235.3	236.4	236.9	235.3	236.5	236.9	241.6	243.3	244.4	244.9	242.7	245.0
Other alcoholic beverages (12/77=100)	116.3	117.8	118.1	118.2	119.0	119.7	119.6	115.9	117.8	118.0	118.0	118.9	119.6	119.6
Alcoholic beverages away from home (12/77=100)	134.1	137.6	138.2	138.4	139.1	140.3	140.8	134.0	139.1	139.7	139.9	140.6	141.6	142.1
<b>HOUSING</b>	297.0	307.3	306.7	309.4	313.8	317.5	319.2	297.0	306.7	306.2	309.2	313.7	317.5	319.3
<b>Shelter</b>	318.5	329.5	327.6	331.4	336.7	340.9	342.8	320.2	330.3	328.5	332.8	338.3	342.6	344.6
Rent, residential	207.8	218.6	219.6	220.1	221.8	222.6	224.8	207.4	218.1	219.1	219.6	221.3	222.1	224.3
Other rental costs	293.6	316.9	320.1	323.7	323.6	327.3	330.0	293.3	315.6	318.9	322.8	322.6	326.3	329.4
Lodging while out of town	318.3	335.9	340.9	346.6	346.6	352.2	356.5	316.3	333.0	337.9	343.9	344.0	349.4	354.2
Tenants' insurance (12/77=100)	133.3	143.5	144.1	144.9	144.4	145.5	145.6	133.7	143.6	144.3	144.7	143.8	144.8	144.8
Homeownership	358.0	368.7	365.7	370.6	377.4	382.8	384.5	361.2	370.8	367.9	373.6	380.5	386.0	388.0
Home purchase	271.4	270.4	269.2	272.3	279.3	285.6	287.7	271.2	268.3	267.1	270.5	278.1	284.4	286.8
Financing, taxes, and insurance	480.0	507.2	500.9	508.4	516.2	521.8	524.3	486.9	513.2	507.0	516.0	523.8	529.7	532.4
Property insurance	387.1	393.7	394.1	393.6	396.7	400.6	401.5	388.3	396.0	396.5	396.0	399.2	402.7	403.7
Property taxes	201.4	215.1	216.6	217.2	218.3	218.8	219.3	203.2	217.2	218.5	219.1	220.2	220.7	221.1
Contracted mortgage interest cost	630.1	666.1	655.5	667.1	678.5	686.7	690.4	632.6	666.6	656.4	670.2	681.4	690.0	694.0
Mortgage interest rates	229.4	243.9	240.7	242.1	240.2	238.3	237.3	230.3	245.4	242.3	244.4	242.1	240.2	239.2
Maintenance and repairs	319.3	328.2	327.2	331.6	334.5	336.1	334.7	316.2	324.6	323.7	328.3	330.9	332.4	331.5
Maintenance and repair services	349.0	359.4	357.8	363.6	367.0	369.1	366.9	350.5	360.1	358.6	365.0	368.0	370.0	368.1
Maintenance and repair commodities	249.3	254.6	255.0	256.2	257.8	258.3	258.7	242.4	248.2	248.6	249.7	251.3	252.1	252.9
Paint and wallpaper, supplies, tools, and equipment (12/77=100)	146.7	150.9	151.8	153.1	154.2	153.3	153.4	138.2	143.7	144.7	145.8	147.0	146.0	146.5
Lumber, awnings, glass, and masonry (12/77=100)	125.0	124.6	123.9	124.5	124.5	124.7	125.0	123.0	121.7	121.2	121.9	121.9	121.1	122.5
Plumbing, electrical, heating, and cooling supplies (12/77=100)	132.7	133.8	133.4	133.4	135.1	136.2	137.1	130.1	133.4	133.1	133.1	134.9	136.0	136.6
Miscellaneous supplies and equipment (12/77=100)	129.2	134.8	135.1	135.6	136.3	138.4	138.3	132.5	136.9	137.1	137.4	138.2	140.6	140.5
<b>Fuel and other utilities</b>	325.1	337.1	339.3	339.2	345.4	352.2	354.7	326.4	337.9	340.2	340.3	346.5	353.6	356.2
Fuels	417.2	427.6	430.5	428.2	438.0	448.4	452.0	417.0	426.8	429.9	427.8	437.4	448.3	451.9
Fuel oil, coal, and bottled gas	677.9	683.1	664.0	641.3	644.6	656.6	659.9	681.1	686.0	666.7	644.0	647.7	659.7	662.9
Fuel oil	711.0	713.8	692.3	666.2	670.6	684.8	688.6	713.8	716.3	694.4	668.4	673.3	687.5	691.1
Other fuels (6/78 = 100)	164.0	170.0	168.0	166.4	165.7	165.6	166.0	165.4	171.4	169.5	167.1	167.1	166.9	167.4
Gas (piped) and electricity	357.6	368.7	375.9	377.8	389.0	399.9	402.1	356.7	367.3	374.8	376.8	387.8	398.2	401.5
Electricity	306.2	306.8	313.3	312.8	314.9	327.5	330.5	306.2	305.3	312.3	311.8	314.4	327.7	330.8
Utility (piped) gas	418.6	450.8	458.6	465.3	494.6	497.2	500.2	415.8	448.7	456.6	463.6	490.8	493.8	496.9

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

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers						Urban Wage Earners and Clerical Workers (revised)							
	1982						1981	1982						
	July	Feb.	Mar.	Apr.	May	June	July	July	Feb.	Mar.	Apr.	May	June	July
<b>HOUSING—Continued</b>														
<b>Fuel and other utilities—Continued</b>														
Other utilities and public services	180.8	193.9	195.0	197.7	198.9	200.4	201.4	181.3	194.3	195.4	198.2	199.5	201.1	202.1
Telephone services	147.2	157.9	158.5	160.8	161.6	163.2	163.8	147.5	158.0	158.6	161.0	161.9	163.5	164.2
Local charges (12/77 = 100)	116.7	125.3	125.6	127.9	128.9	131.2	131.9	116.9	125.4	125.7	128.1	129.2	131.6	132.3
Interstate toll calls (12/77 = 100)	109.1	116.6	117.7	119.9	120.0	119.6	119.7	109.6	116.7	117.8	120.2	120.4	120.1	120.1
Intrastate toll calls (12/77 = 100)	101.5	109.1	109.0	108.9	109.3	109.8	110.0	101.3	108.8	108.7	108.7	109.0	109.4	109.6
Water and sewerage maintenance	294.0	313.3	316.9	320.7	323.5	324.9	327.7	295.8	315.7	319.7	323.6	326.7	328.0	330.8
<b>Household furnishings and operations</b>	222.4	230.2	231.6	232.6	233.4	233.7	234.1	219.1	226.7	228.0	229.1	230.0	230.4	230.9
Housefurnishings	186.0	191.4	192.7	193.8	194.7	194.7	194.7	184.1	189.3	190.4	191.7	192.5	192.6	192.7
Textile housefurnishings	202.9	216.0	217.7	218.7	220.9	220.2	218.6	206.2	218.5	219.9	221.4	223.9	223.3	221.1
Household linens (12/77 = 100)	123.3	131.0	134.7	135.8	135.4	134.6	131.9	126.0	132.1	135.6	137.0	136.8	135.9	133.3
Curtains, drapes, slipcovers, and sewing materials (12/77 = 100)	129.8	138.5	136.7	136.9	140.1	140.1	140.8	131.5	141.0	138.7	139.1	142.8	143.0	143.2
Furniture and bedding	206.0	209.4	212.1	214.7	215.1	214.4	214.2	202.3	205.5	208.2	211.0	211.3	210.9	210.5
Bedroom furniture (12/77 = 100)	135.0	140.5	140.8	142.3	144.5	143.0	144.8	130.7	137.1	137.2	138.9	140.7	139.7	141.2
Sofas (12/77 = 100)	117.6	116.4	118.0	119.3	119.1	117.5	117.7	116.2	116.5	118.2	119.6	119.4	118.2	118.1
Living room chairs and tables (12/77 = 100)	117.9	118.6	121.6	123.2	122.8	123.2	121.9	119.5	118.8	121.8	123.3	122.9	123.3	122.0
Other furniture (12/77 = 100)	136.2	138.1	140.5	142.3	141.6	142.3	140.9	132.9	133.4	135.8	137.9	137.0	137.7	136.3
Appliances including TV and sound equipment	147.1	149.9	150.1	150.6	151.4	151.4	151.6	146.3	149.6	149.7	150.3	151.1	151.2	151.5
Television and sound equipment (12/77 = 100)	108.8	109.2	109.1	108.7	108.8	108.6	108.7	107.7	108.4	108.2	107.7	107.9	107.7	107.8
Television	105.6	104.5	104.7	104.2	104.3	104.4	104.0	104.5	103.3	103.5	103.9	103.0	103.1	102.7
Sound equipment (12/77 = 100)	112.7	114.5	114.0	113.7	113.9	113.5	114.0	111.4	113.8	113.2	112.8	113.0	112.7	113.2
Household appliances	174.2	179.7	180.3	182.1	183.6	183.8	184.2	173.6	179.9	180.4	182.3	183.8	184.2	184.8
Refrigerators and home freezers	174.2	182.6	183.7	184.8	186.2	187.7	187.4	178.1	187.9	189.3	190.6	191.8	193.2	192.9
Laundry equipment (12/77 = 100)	128.1	133.5	133.3	136.4	136.6	136.7	137.3	128.3	133.8	133.5	136.6	136.8	136.9	137.5
Other household appliances (12/77 = 100)	119.6	121.6	122.2	122.9	124.3	123.9	124.4	117.1	119.7	120.0	120.7	122.3	122.3	123.0
Stoves, dishwashers, vacuums, and sewing machines (12/77 = 100)	119.2	121.0	121.9	122.3	123.7	123.1	123.3	117.1	118.9	119.3	119.7	121.4	121.6	122.2
Office machines, small electric appliances, and air conditioners (12/77 = 100)	120.1	122.4	122.5	123.5	124.9	124.8	125.6	117.1	120.5	120.7	121.8	123.3	123.0	123.9
Other household equipment (12/77 = 100)	131.2	136.7	137.3	137.8	138.3	139.0	139.6	129.8	134.7	135.3	135.6	136.0	136.9	137.5
Floor and window coverings, infants', laundry, cleaning, and outdoor equipment (12/77 = 100)	132.4	139.1	140.9	140.3	141.4	142.3	142.7	127.1	131.0	133.3	132.9	133.9	134.9	135.4
Clocks, lamps, and decor items (12/77 = 100)	125.0	129.8	129.0	130.2	131.4	132.2	132.3	122.9	126.0	125.4	126.5	127.4	128.2	128.3
Tableware, serving pieces, and nonelectric kitchenware (12/77 = 100)	139.5	143.3	143.1	145.0	144.4	145.6	145.9	136.4	139.5	139.0	140.6	139.8	141.4	141.9
Lawn equipment, power tools, and other hardware (12/77 = 100)	122.7	130.3	132.1	130.8	132.1	131.9	133.2	126.7	135.5	137.3	136.0	137.4	137.1	138.5
<b>Housekeeping supplies</b>	271.5	282.4	284.2	284.9	285.5	286.5	288.4	267.9	278.8	280.4	281.2	281.8	283.1	285.0
Soaps and detergents	266.5	278.0	279.5	280.0	278.8	280.8	281.4	263.1	274.4	275.7	276.3	275.2	277.0	277.6
Other laundry and cleaning products (12/77 = 100)	134.8	141.0	142.1	142.7	143.3	143.8	145.3	133.6	139.8	140.9	141.6	142.3	142.7	144.2
Cleansing and toilet tissue, paper towels and napkins (12/77 = 100)	138.8	145.7	145.7	146.4	146.0	146.5	147.7	139.0	145.6	145.4	146.2	145.6	146.1	147.4
Stationery, stationery supplies, and gift wrap (12/77 = 100)	126.6	130.4	130.7	131.4	132.0	132.5	134.3	127.9	133.4	133.8	134.6	135.3	136.0	137.8
Miscellaneous household products (12/77 = 100)	140.5	146.9	147.5	147.5	149.3	150.2	150.3	136.6	141.8	142.4	142.4	144.1	144.9	145.1
Lawn and garden supplies (12/77 = 100)	138.8	141.8	144.7	144.7	144.8	144.0	145.3	131.7	134.1	136.7	136.8	136.6	136.7	138.1
<b>Housekeeping services</b>	295.3	308.1	309.9	310.4	311.3	311.7	312.5	293.4	306.8	308.2	309.2	310.2	310.9	311.6
Postage	308.0	337.5	337.5	337.5	337.5	337.5	337.5	308.1	337.5	337.5	337.5	337.5	337.5	337.5
Moving, storage, freight, household laundry, and drycleaning services (12/77 = 100)	143.1	149.4	150.8	152.1	153.1	154.2	155.3	142.8	149.1	150.6	152.2	153.3	154.5	155.4
Appliance and furniture repair (12/77 = 100)	127.8	134.2	135.0	135.6	136.6	137.0	137.5	126.4	132.8	133.5	134.1	135.1	135.5	136.0
<b>APPAREL AND UPKEEP</b>	184.7	188.0	191.1	191.9	191.5	190.8	189.7	185.5	187.3	190.5	191.2	190.6	189.6	188.7
<b>Apparel commodities</b>	175.1	177.6	180.8	181.4	180.9	180.0	178.6	176.6	177.4	180.8	181.3	180.5	179.4	178.2
Apparel commodities less footwear	171.2	173.4	176.8	177.4	176.7	175.6	174.0	172.8	173.0	176.6	177.1	176.0	174.7	173.4
Men's and boys'	175.6	179.3	181.7	183.1	183.8	183.1	182.4	176.9	179.4	181.6	182.9	183.7	183.2	182.6
Men's (12/77 = 100)	110.3	113.0	114.5	115.5	115.9	115.4	114.9	111.6	113.5	114.7	115.7	116.2	115.8	115.4
Suits, sport coats, and jackets (12/77 = 100)	102.5	104.8	107.2	107.6	108.1	107.3	105.5	97.4	98.2	100.4	101.1	101.4	100.6	99.2
Coats and jackets (12/77 = 100)	96.7	95.8	98.1	99.1	99.9	99.5	98.2	100.8	97.2	99.7	100.7	101.5	101.1	99.8
Furnishings and special clothing (12/77 = 100)	129.6	134.7	136.8	138.2	138.7	138.0	138.7	124.8	131.1	133.1	134.5	135.3	134.7	135.3
Shirts (12/77 = 100)	115.5	119.3	119.9	121.3	121.2	121.5	121.6	118.8	121.8	122.3	123.4	123.1	123.8	123.6
Dungarees, jeans, and trousers (12/77 = 100)	106.5	108.6	108.6	109.7	110.3	109.7	109.5	113.2	114.1	114.2	115.1	115.6	115.2	115.0
Boys' (12/77 = 100)	115.1	116.0	117.8	118.3	118.8	118.5	118.6	113.6	114.3	116.1	116.5	117.1	116.9	116.9
Coats, jackets, sweaters, and shirts (12/77 = 100)	107.0	105.9	109.4	111.2	111.5	110.7	109.0	107.6	106.3	109.7	111.5	112.0	111.5	109.7
Furnishings (12/77 = 100)	124.5	128.2	128.7	130.3	131.2	131.9	132.1	120.6	124.2	124.7	126.0	127.2	128.0	128.2
Suits, trousers, sport coats, and jackets (12/77 = 100)	117.7	119.1	120.1	119.0	119.6	119.4	120.7	115.6	116.7	117.8	116.8	117.3	117.1	118.3
Women's and girls'	153.5	154.7	160.3	160.9	159.1	157.3	154.6	157.9	157.1	163.0	164.0	160.8	158.4	156.2
Women's (12/77 = 100)	101.2	102.9	106.8	107.1	105.7	104.4	102.1	104.5	104.8	109.0	109.1	107.1	105.4	103.5
Coats and jackets	153.9	156.4	162.0	163.4	158.3	156.4	154.9	159.0	163.1	173.1	172.9	165.7	162.9	161.8
Dresses	162.2	152.8	163.1	166.6	162.0	160.1	152.8	154.1	140.9	148.1	151.1	147.1	145.4	138.4
Separates and sportswear (12/77 = 100)	95.1	96.3	100.3	100.1	101.2	100.2	96.7	99.1	96.8	101.2	101.0	101.9	101.0	97.6
Underwear, nightwear, and hosiery (12/77 = 100)	120.0	126.2	127.1	127.4	128.1	127.9	127.7	120.1	126.0	126.9	127.3	127.9	127.6	127.4
Suits (12/77 = 100)	78.6	87.0	92.7	89.4	83.4	78.6	77.6	100.6	105.6	114.1	111.0	106.6	92.7	93.1
Girls' (12/77 = 100)	106.5	102.7	105.6	106.7	106.3	105.8	106.3	106.9	103.1	106.0	106.9	106.2	105.2	105.4
Coats, jackets, dresses, and suits (12/77 = 100)	100.0	92.6	98.2	98.8	96.9	95.1	98.8	98.9	91.5	97.2	97.6	95.0	92.4	96.0
Separates and sportswear (12/77 = 100)	106.1	103.4	104.6	105.4	105.9	106.0	103.6	108.9	106.0	106.9	107.6	108.0	107.7	104.1
Underwear, nightwear, hosiery, and accessories (12/77 = 100)	117.6	118.0	119.6	122.0	122.4	122.9	123.8	116.3	117.0	118.7	121.0	121.5	121.9	122.7



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

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981	1982						1981	1982					
	July	Feb.	Mar.	Apr.	May	June	July	July	Feb.	Mar.	Apr.	May	June	July
<b>APPAREL AND UPKEEP—Continued</b>														
<b>Apparel commodities—Continued</b>														
Apparel commodities less footwear—Continued														
Infants' and toddlers' .....	259.8	262.2	264.7	267.0	269.0	268.7	268.8	272.9	271.4	275.4	278.2	279.3	278.2	277.8
Other apparel commodities .....	212.4	214.3	212.7	210.8	209.7	209.9	209.7	204.8	202.8	201.6	199.5	198.8	198.9	198.7
Sewing materials and notions (12/77 = 100) .....	115.3	117.6	118.1	118.5	119.3	119.2	120.0	113.6	115.9	116.5	116.9	117.7	117.6	118.5
Jewelry and luggage (12/77 = 100) .....	146.6	147.4	145.7	143.8	142.5	142.8	142.2	141.0	138.1	136.7	134.5	133.5	133.6	133.1
Footwear .....	199.0	202.8	204.9	205.6	206.5	206.6	206.4	199.2	203.3	205.2	206.1	206.9	206.7	206.7
Men's (12/77 = 100) .....	128.0	130.7	132.5	132.3	132.4	132.1	132.3	129.5	132.6	134.5	134.4	134.5	134.1	134.3
Boys' and girls' (12/77 = 100) .....	130.1	129.5	129.2	130.4	131.5	132.1	131.7	128.7	132.3	132.1	133.6	134.6	134.8	134.4
Women's (12/77 = 100) .....	118.7	122.7	124.7	125.1	125.8	125.8	125.6	117.8	119.0	120.8	121.1	121.6	121.6	121.5
Apparel services .....	258.9	269.4	271.3	273.4	274.7	275.3	276.6	256.3	267.2	269.0	271.0	272.3	273.0	274.3
Laundry and drycleaning other than coin operated (12/77 = 100) .....	153.8	161.4	162.4	163.5	164.4	164.8	165.4	153.1	159.9	160.9	162.0	162.8	163.3	163.8
Other apparel services (12/77 = 100) .....	136.7	139.8	141.1	142.5	142.9	143.1	144.1	135.1	140.3	141.5	142.7	143.1	143.4	144.6
<b>TRANSPORTATION</b>														
<b>Private</b> .....	279.6	284.5	281.3	278.8	281.5	288.9	292.3	281.6	286.9	283.7	281.2	284.0	291.6	295.1
New cars .....	192.5	195.5	194.4	196.0	197.5	198.1	198.6	192.9	195.3	194.2	195.9	197.3	197.9	198.5
Used cars .....	260.3	279.7	280.9	285.1	291.4	298.2	302.4	260.3	279.7	280.9	285.2	291.4	298.2	302.4
Gasoline .....	412.9	399.1	383.9	366.7	370.4	392.3	400.3	414.0	400.6	385.4	367.9	371.7	393.8	401.6
Automobile maintenance and repair .....	293.5	307.7	310.2	311.9	313.6	316.0	318.0	293.4	308.4	311.1	312.8	314.4	316.8	318.7
Body work (12/77 = 100) .....	144.1	153.7	154.5	155.0	155.7	156.3	157.5	143.3	152.1	152.7	153.3	154.0	154.7	156.0
Automobile drive train, brake, and miscellaneous mechanical repair (12/77 = 100) .....	139.9	146.5	148.7	149.5	150.8	151.6	151.9	141.4	150.2	152.8	153.7	154.9	155.7	156.1
Maintenance and servicing (12/77 = 100) .....	137.4	142.7	143.9	144.5	145.0	146.8	147.9	137.3	142.3	143.4	144.0	144.4	146.2	147.3
Power plant repair (12/77 = 100) .....	139.9	147.3	148.0	149.1	150.1	150.8	151.7	139.1	146.8	147.5	148.6	149.6	150.3	151.2
Other private transportation .....	242.9	253.4	254.5	255.1	255.7	258.7	260.8	246.0	256.8	257.8	258.2	258.8	261.8	264.0
Other private transportation commodities .....	208.8	214.8	215.6	214.9	216.9	217.5	216.3	210.8	217.3	218.2	217.3	219.4	220.0	218.8
Motor oil, coolant, and other products (12/77 = 100) .....	144.8	149.3	150.2	150.7	149.9	150.7	151.5	143.4	147.8	148.7	149.2	148.4	149.0	150.3
Automobile parts and equipment (12/77 = 100) .....	133.6	137.4	137.9	137.2	138.8	139.2	138.2	135.2	139.4	139.9	139.2	140.9	141.2	140.1
Tires .....	185.6	191.3	191.7	190.1	192.3	192.8	191.8	188.4	195.1	195.5	193.7	196.0	196.4	195.5
Other parts and equipment (12/77 = 100) .....	131.7	134.6	135.7	136.2	138.0	138.3	136.6	132.2	134.9	135.9	136.6	138.4	138.6	136.8
Other private transportation services .....	254.3	266.1	267.2	268.2	268.4	272.2	275.1	257.7	268.8	270.8	271.6	271.8	275.5	278.5
Automobile insurance .....	259.8	268.1	269.8	270.4	271.6	274.0	275.4	259.6	268.0	269.6	270.2	271.3	273.5	274.9
Automobile finance charges (12/77 = 100) .....	180.9	188.9	188.9	187.2	186.3	192.0	193.6	179.9	188.3	188.2	186.7	185.9	191.2	192.6
Automobile rental, registration, and other fees (12/77 = 100) .....	118.0	128.9	129.7	133.3	133.3	133.3	137.4	118.4	129.5	130.1	133.7	133.7	133.8	138.4
State registration .....	147.9	167.1	168.5	174.2	174.2	174.3	183.6	147.9	166.5	167.8	173.8	173.8	173.9	183.2
Drivers' licenses (12/77 = 100) .....	105.9	121.7	122.9	123.0	127.7	127.7	132.8	105.6	121.7	123.0	123.0	127.9	127.9	133.1
Vehicle inspection (12/77 = 100) .....	128.6	129.3	129.3	129.0	126.7	126.7	128.5	129.3	130.6	130.6	130.4	128.3	128.3	129.9
Other vehicle-related fees (12/77 = 100) .....	136.6	144.8	145.3	149.5	149.2	149.3	151.0	143.1	152.4	152.5	156.4	156.2	156.3	158.7
<b>Public</b> .....	323.1	336.8	336.7	339.3	342.1	345.6	347.2	317.7	331.0	331.0	333.3	335.1	337.9	339.8
Airline fare .....	367.3	379.3	379.0	382.7	388.9	396.0	397.4	365.6	376.3	376.3	379.8	385.2	392.4	393.2
Inter-city bus fare .....	343.5	365.7	365.6	367.0	366.0	363.7	368.3	343.6	367.4	367.0	368.7	367.5	365.4	370.6
Intracity mass transit .....	290.7	306.7	306.6	308.1	308.3	309.2	311.0	291.0	305.8	305.7	307.2	307.1	307.9	310.3
Taxi fare .....	287.1	296.7	297.2	297.6	297.6	298.0	299.3	295.7	306.1	306.6	307.3	307.2	307.6	308.7
Inter-city train fare .....	304.6	314.0	314.1	332.1	337.9	338.2	338.4	304.9	314.5	314.5	332.1	337.9	338.2	338.4
<b>MEDICAL CARE</b> .....	295.6	316.2	318.8	321.7	323.8	326.4	330.0	295.4	314.9	317.4	320.2	322.3	324.8	328.1
<b>Medical care commodities</b> .....	187.7	197.7	200.0	202.4	204.1	205.6	206.5	189.2	198.3	200.6	203.0	204.8	206.3	207.1
Prescription drugs .....	173.7	183.7	186.1	188.8	190.4	191.8	193.4	175.0	184.7	187.0	189.7	191.4	192.7	194.4
Anti-infective drugs (12/77 = 100) .....	133.9	138.4	139.3	140.9	142.5	143.3	144.2	135.8	140.4	141.1	142.5	144.1	145.1	146.0
Tranquilizers and sedatives (12/77 = 100) .....	138.4	146.8	148.6	152.0	153.8	154.9	156.1	137.6	146.5	148.3	151.8	153.8	154.7	155.8
Circulatory and diuretics (12/77 = 100) .....	126.5	134.0	135.7	136.7	137.0	138.4	139.3	127.9	134.0	135.6	136.6	136.8	138.2	139.1
Hormones, diabetic drugs, biologicals, and prescription medical supplies (12/77 = 100) .....	158.1	168.4	170.8	173.3	175.4	177.2	179.6	158.2	169.7	172.0	174.6	176.9	178.6	181.1
Pain and symptom control drugs (12/77 = 100) .....	139.1	148.8	150.8	153.1	153.7	154.6	155.4	141.8	150.3	152.3	154.6	155.2	156.0	157.1
Supplements, cough and cold preparations, and respiratory agents (12/77 = 100) .....	131.8	139.9	142.7	144.7	145.9	146.3	147.9	132.5	139.9	142.7	144.8	146.0	146.4	148.1
Nonprescription drugs and medical supplies (12/77 = 100) .....	134.5	141.1	142.5	143.9	145.1	146.3	146.4	135.8	141.6	143.2	144.6	145.9	147.1	147.1
Eyeglasses (12/77 = 100) .....	125.8	128.9	129.5	130.1	130.9	131.6	131.6	125.0	127.6	128.1	128.7	129.7	130.4	130.4
Internal and respiratory over-the-counter drugs .....	213.1	225.1	228.1	231.1	233.4	235.2	234.9	215.4	226.4	229.6	232.5	235.0	236.8	236.2
Nonprescription medical equipment and supplies (12/77 = 100) .....	129.9	137.1	138.1	138.9	139.5	141.1	142.2	132.2	137.7	138.8	139.7	140.4	142.0	143.2
<b>Medical care services</b> .....	319.2	342.4	345.1	348.0	350.2	353.0	357.3	318.5	340.6	343.0	345.8	348.0	350.7	354.7
Professional services .....	280.4	294.2	295.8	297.8	299.2	301.2	302.8	280.8	294.3	295.9	297.9	299.3	301.3	302.9
Physicians' services .....	300.7	318.8	320.3	322.2	324.0	326.4	328.7	304.7	321.7	323.2	325.2	327.0	329.4	331.6
Dental services .....	266.5	276.8	278.6	281.1	282.1	283.9	284.8	264.6	274.9	276.6	279.2	280.3	282.1	282.9
Other professional services (12/77 = 100) .....	136.8	141.5	142.4	142.5	143.4	143.8	144.8	132.7	138.5	139.4	139.4	140.2	140.7	141.5
Other medical care services .....	366.1	400.8	404.7	408.7	411.9	415.7	423.2	364.6	398.0	401.6	405.4	408.5	412.1	419.4
Hospital and other medical services (12/77 = 100) .....	151.7	167.1	168.5	169.8	170.6	171.6	174.7	150.3	165.7	166.9	168.3	169.1	170.0	172.9
Hospital room .....	478.0	533.8	538.5	542.2	543.8	546.8	557.8	472.2	527.0	531.0	535.2	536.7	539.4	549.7
Other hospital and medical care services (12/77 = 100) .....	150.4	163.8	165.2	166.4	167.6	168.5	171.2	149.4	163.0	164.2	165.5	166.6	167.5	170.0

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

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981	1982						1981	1982					
	July	Feb.	Mar.	Apr.	May.	June	July	July	Feb.	Mar.	Apr.	May	June	July
<b>ENTERTAINMENT</b> .....	221.1	231.2	232.8	233.9	234.4	235.6	236.6	218.7	228.1	229.5	230.5	231.1	232.3	233.5
<b>Entertainment commodities</b> .....	225.5	234.3	236.6	238.0	238.8	239.6	241.1	221.1	228.9	230.8	232.0	232.8	233.8	235.5
Reading materials (12/77 = 100) .....	136.0	144.1	146.1	146.8	148.5	149.4	150.4	135.9	143.3	145.3	146.1	147.7	148.6	149.7
Newspapers .....	265.0	273.1	276.4	280.1	281.6	283.9	285.9	265.0	272.8	276.0	279.7	281.2	283.4	285.6
Magazines, periodicals, and books (12/77 = 100) .....	137.3	149.9	152.4	151.6	154.4	155.0	156.1	137.4	149.7	152.2	151.4	154.2	154.8	156.0
Sporting goods and equipment (12/77 = 100) .....	127.0	131.5	132.3	132.9	132.8	132.7	132.8	120.6	123.9	124.3	124.7	124.9	125.3	125.7
Sport vehicles (12/77 = 100) .....	129.9	133.9	135.4	136.1	135.4	135.7	135.4	118.5	121.9	122.5	122.8	122.6	123.9	124.1
Indoor and warm weather sport equipment (12/77 = 100) .....	117.7	119.6	119.9	120.4	121.0	119.6	120.3	117.0	117.7	118.1	118.6	119.2	117.1	118.0
Bicycles .....	191.0	197.3	197.6	198.9	199.4	197.6	198.3	192.1	198.9	198.9	200.2	200.7	198.8	199.4
Other sporting goods and equipment (12/77 = 100) .....	122.7	127.0	125.6	126.3	127.6	127.9	129.4	122.9	127.4	126.0	126.5	127.9	128.3	129.8
Toys, hobbies, and other entertainment (12/77 = 100) .....	129.3	133.2	134.5	135.4	135.5	136.1	137.3	128.5	132.3	133.5	134.3	134.4	134.9	136.1
Toys, hobbies, and music equipment (12/77 = 100) .....	127.9	131.7	133.4	134.1	134.8	135.9	137.2	125.3	128.6	130.2	130.7	131.4	132.4	133.7
Photographic supplies and equipment (12/77 = 100) .....	125.7	126.9	128.3	129.8	130.0	130.3	130.8	127.0	127.9	129.5	131.0	131.2	131.5	131.9
Pet supplies and expenses (12/77 = 100) .....	134.5	140.6	140.8	141.9	141.0	140.6	142.0	135.1	141.6	141.7	142.7	141.8	141.5	143.0
<b>Entertainment services</b> .....	215.2	227.1	227.8	228.5	228.7	230.5	230.8	215.8	227.8	228.4	229.2	229.2	230.9	231.3
Fees for participant sports (12/77 = 100) .....	131.6	140.9	141.9	142.0	141.6	142.5	141.8	131.6	142.5	143.5	143.7	142.9	143.8	143.0
Admissions (12/77 = 100) .....	125.9	131.6	131.2	132.2	133.0	133.5	135.5	125.7	130.6	130.3	131.2	132.1	132.6	134.6
Other entertainment services (12/77 = 100) .....	121.7	125.0	125.1	125.2	125.7	127.9	127.8	123.2	125.9	125.9	125.9	126.4	128.7	128.8
<b>OTHER GOODS AND SERVICES</b> .....	234.4	250.3	252.2	253.8	255.0	255.8	257.2	232.4	247.1	249.3	250.9	252.4	253.1	254.5
<b>Tobacco products</b> .....	219.3	230.7	234.1	235.1	237.4	237.8	239.2	218.4	229.8	233.2	234.0	236.6	237.0	238.3
Cigarettes .....	221.6	233.6	237.3	238.0	240.4	240.7	242.2	220.7	232.7	236.3	236.9	239.6	239.9	241.3
Other tobacco products and smoking accessories (12/77 = 100) .....	132.5	136.8	138.1	139.9	141.0	141.8	142.1	133.4	136.9	138.2	140.1	141.1	142.0	142.2
<b>Personal care</b> .....	233.4	242.3	243.7	245.9	246.5	247.8	249.4	231.2	240.4	241.8	244.1	244.7	246.0	247.5
Toilet goods and personal care appliances .....	228.7	238.5	240.6	243.8	244.5	246.3	247.7	228.4	239.2	241.5	244.7	245.4	247.0	248.6
Products for the hair, hairpieces, and wigs (12/77 = 100) .....	133.9	138.4	140.8	142.9	142.1	143.2	145.0	131.7	137.8	140.0	142.3	141.7	142.6	144.2
Dental and shaving products (12/77 = 100) .....	139.0	145.6	148.0	149.0	150.1	150.5	150.9	137.1	144.2	146.6	147.6	148.6	148.9	149.5
Cosmetics, bath and nail preparations, manicure and eye makeup implements (12/77 = 100) .....	127.7	135.0	135.1	136.5	137.6	139.6	139.9	128.3	135.8	136.1	137.5	138.5	140.1	140.5
Other toilet goods and small personal care appliances (12/77 = 100) .....	133.0	137.0	137.4	140.3	140.5	140.8	141.8	135.9	140.2	140.7	143.5	144.0	144.4	145.4
Personal care services .....	238.4	246.5	247.3	248.7	249.2	250.1	251.8	234.4	241.8	242.6	244.0	244.4	245.4	246.9
Beauty parlor services for women .....	240.5	247.7	248.9	250.7	251.3	252.3	254.4	235.1	241.3	242.5	244.3	245.0	245.9	247.9
Haircuts and other barber shop services for men (12/77 = 100) .....	132.7	138.4	138.4	138.8	138.9	139.4	139.8	131.8	137.2	137.2	137.6	137.7	138.2	138.5
<b>Personal and educational expenses</b> .....	259.2	289.2	290.4	291.9	292.8	293.3	294.5	260.1	290.2	291.7	293.5	294.6	295.2	296.4
Schoolbooks and supplies .....	231.3	262.9	263.3	263.8	264.2	264.6	264.8	235.2	267.1	267.5	268.0	268.4	268.8	269.0
Personal and educational services .....	265.8	295.8	297.1	298.7	299.8	300.3	301.7	266.4	296.3	298.0	300.0	301.4	302.0	303.4
Tuition and other school fees .....	133.5	150.6	151.1	151.4	151.4	151.5	152.0	133.7	150.9	151.7	152.0	152.0	152.1	152.5
College tuition (12/77 = 100) .....	133.0	150.1	150.7	151.0	151.0	151.2	151.8	132.9	149.8	150.9	151.3	151.3	151.4	152.0
Elementary and high school tuition (12/77 = 100) .....	135.3	152.2	152.2	152.2	152.2	152.2	152.2	135.4	152.9	152.9	152.9	152.9	152.9	152.9
Personal expenses (12/77 = 100) .....	147.9	156.1	157.4	160.9	163.6	164.5	166.0	146.6	155.3	156.7	160.5	163.6	164.6	166.1
<b>Special indexes:</b>														
Gasoline, motor oil, coolant, and other products .....	407.1	393.9	379.3	362.6	366.1	387.3	395.0	408.0	395.3	380.6	363.7	367.2	388.6	396.2
Insurance and finance .....	402.7	424.8	420.9	426.3	431.5	436.5	439.1	402.4	423.5	419.9	425.9	430.9	436.0	438.8
Utilities and public transportation .....	286.5	299.1	302.7	305.1	311.0	316.6	318.7	285.6	297.7	301.5	304.0	309.8	315.6	317.8
Housekeeping and home maintenance services .....	332.3	344.0	344.0	347.5	349.8	351.2	350.3	332.8	344.2	344.0	348.2	350.4	351.8	351.0

1 Not available.

r = revised.

c = corrected.

**19. 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)		
	1982			1982			1982			1982		
	Feb.	Apr.	June	Feb.	Apr.	June	Feb.	Apr.	June	Feb.	Apr.	June
<b>Northeast</b>												
<b>EXPENDITURE CATEGORY</b>												
All items .....	144.2	143.6	147.7	150.7	150.0	155.5	158.1	158.6	163.5	151.4	151.9	156.9
Food and beverages .....	143.3	143.7	145.9	142.7	142.2	144.1	145.7	147.4	148.8	140.4	140.4	142.9
Housing .....	146.0	144.5	151.6	155.7	155.3	165.2	172.5	173.3	182.1	159.5	160.5	169.3
Apparel and upkeep .....	117.0	119.1	118.6	120.5	122.5	122.8	123.1	127.4	128.3	119.9	125.1	123.4
Transportation .....	156.5	153.7	157.2	164.2	160.0	164.6	161.6	158.6	162.2	161.7	158.1	161.2
Medical care .....	145.1	146.4	147.5	147.0	148.9	150.2	148.7	150.4	152.7	144.8	151.5	155.4
Entertainment .....	133.3	135.5	136.5	132.4	136.2	137.5	136.1	135.8	136.4	137.6	139.0	141.1
Other goods and services .....	136.9	139.0	139.8	140.6	141.1	142.1	142.9	145.3	146.7	140.6	142.9	144.0
<b>COMMODITY AND SERVICE GROUP</b>												
Commodities .....	142.1	140.8	144.6	147.9	146.6	151.5	150.1	149.6	153.8	147.6	146.5	150.6
Commodities less food and beverages .....	141.4	139.0	143.8	150.5	148.7	155.1	152.2	150.6	156.2	151.0	149.4	154.3
Services .....	146.9	147.4	151.8	155.1	155.4	161.9	171.0	173.4	179.1	157.3	160.4	166.8
<b>North Central region</b>												
<b>EXPENDITURE CATEGORY</b>												
All items .....	153.6	155.2	159.6	151.9	155.1	155.3	149.1	151.2	155.2	151.0	153.3	156.4
Food and beverages .....	141.6	141.9	144.1	140.8	141.7	142.8	143.1	145.0	144.7	144.7	146.2	148.7
Housing .....	164.9	168.8	175.1	159.9	167.2	163.3	152.7	157.2	162.1	155.5	160.7	164.0
Apparel and upkeep .....	112.7	114.8	114.0	121.1	122.7	123.0	121.8	125.8	124.7	119.5	123.5	120.5
Transportation .....	161.1	158.7	165.1	159.7	156.9	163.2	161.0	158.4	165.7	160.3	157.2	163.1
Medical care .....	148.4	150.9	153.0	150.8	152.8	155.2	150.3	153.8	155.6	154.5	157.0	158.3
Entertainment .....	137.1	137.0	137.1	126.4	130.3	129.5	136.1	138.1	139.2	132.5	130.9	131.5
Other goods and services .....	138.8	140.3	141.4	145.1	146.5	152.5	137.3	139.0	141.2	144.6	146.4	148.3
<b>COMMODITY AND SERVICE GROUP</b>												
Commodities .....	145.2	145.4	149.4	145.4	146.4	148.5	143.5	144.3	148.8	142.1	143.7	147.9
Commodities less food and beverages .....	146.9	147.0	151.9	147.3	148.3	150.9	143.6	144.8	150.5	141.0	142.6	147.6
Services .....	166.1	169.8	174.8	162.6	169.3	166.2	158.4	162.4	165.6	165.0	168.7	169.8
<b>South</b>												
<b>EXPENDITURE CATEGORY</b>												
All items .....	152.6	152.9	156.3	157.2	155.7	158.4	154.0	152.3	157.6	152.3	153.5	156.5
Food and beverages .....	144.2	145.0	146.7	144.8	144.9	146.9	144.1	144.0	146.0	146.1	145.9	147.7
Housing .....	160.2	161.1	165.2	168.3	165.2	167.2	162.7	159.1	167.0	158.8	161.5	164.6
Apparel and upkeep .....	122.6	125.6	124.9	121.1	124.3	123.6	117.0	120.2	118.6	105.7	111.1	109.4
Transportation .....	161.5	157.5	163.4	162.8	159.7	167.0	160.7	157.1	165.1	159.9	155.8	163.3
Medical care .....	145.9	149.5	152.8	150.5	152.3	154.5	155.4	160.1	162.5	162.5	165.1	166.6
Entertainment .....	129.3	130.1	132.0	140.0	141.2	143.1	140.4	141.1	142.7	140.4	145.7	145.2
Other goods and services .....	141.2	142.8	144.1	140.7	142.4	143.3	142.0	143.7	144.5	147.9	150.2	150.4
<b>COMMODITY AND SERVICE GROUP</b>												
Commodities .....	146.8	146.3	149.1	148.4	147.6	150.9	146.0	144.3	149.2	145.0	146.0	149.7
Commodities less food and beverages .....	148.0	146.9	150.1	149.9	148.8	152.6	146.8	144.5	150.6	144.6	146.0	150.5
Services .....	160.7	162.1	166.5	170.4	167.8	169.8	166.3	164.5	170.6	163.3	164.8	166.8
<b>West</b>												
<b>EXPENDITURE CATEGORY</b>												
All items .....	157.9	158.5	160.8	157.1	157.0	158.6	150.2	151.1	149.7	153.3	157.9	159.9
Food and beverages .....	143.9	144.5	146.4	147.9	147.6	148.9	143.4	143.5	145.1	148.1	148.5	149.9
Housing .....	167.2	168.1	170.1	164.9	164.8	165.6	154.4	156.3	150.3	153.9	163.5	165.5
Apparel and upkeep .....	121.7	120.6	120.0	126.4	126.6	125.2	118.8	119.7	122.3	131.9	140.4	140.5
Transportation .....	164.2	162.9	167.7	163.6	161.7	165.9	160.9	158.3	163.5	164.5	160.5	162.8
Medical care .....	157.8	160.7	164.4	153.7	156.0	159.5	154.8	157.3	159.6	157.9	162.4	166.2
Entertainment .....	135.1	137.7	138.5	135.5	136.8	139.4	130.4	133.9	134.2	147.8	148.9	150.6
Other goods and services .....	144.5	147.5	147.0	145.3	148.9	149.1	137.1	139.5	139.9	147.6	149.8	153.3
<b>COMMODITY AND SERVICE GROUP</b>												
Commodities .....	146.0	145.5	147.8	148.4	148.1	149.5	145.2	146.4	147.5	147.5	148.9	151.3
Commodities less food and beverages .....	146.9	145.9	148.4	148.6	148.3	149.7	145.9	147.5	148.5	147.3	149.1	152.0
Services .....	173.7	175.9	178.1	169.1	169.3	171.1	157.3	157.9	152.8	161.8	171.2	172.5



**20. 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 (revised)						
	1981	1982						1981	1982					
	July	Feb.	Mar.	Apr.	May	June	July	July	Feb.	Mar.	Apr.	May	June	July
U.S. city average <sup>2</sup>	274.4	283.4	283.1	284.3	287.1	290.6	292.2	274.6	282.9	282.5	283.7	286.5	290.1	291.8
Anchorage, Alaska (10/67=100)	246.1	...	260.0	...	263.8	...	263.6	241.7	...	254.5	...	258.0	...	259.1
Atlanta, Ga.	...	279.8	...	280.2	...	291.1	...	...	282.7	...	282.9	...	282.9	...
Baltimore, Md.	272.5	...	281.9	...	283.6	...	286.1	273.7	...	282.2	...	283.7	...	287.0
Boston, Mass.	266.3	...	269.8	...	272.5	...	279.2	266.5	...	269.8	...	272.0	...	278.7
Buffalo, N.Y.	...	259.9	...	258.3	...	265.8	...	...	258.0	...	256.4	...	264.1	...
Chicago, Ill.-Northwestern Ind.	272.7	274.9	276.4	280.2	287.7	291.8	293.1	271.7	275.4	276.5	280.0	287.0	291.5	292.7
Cincinnati, Ohio-Ky.-Ind.	273.3	...	284.9	...	288.7	...	293.3	276.3	...	287.2	...	291.2	...	295.9
Cleveland, Ohio	...	285.9	...	286.5	...	297.8	...	...	285.0	...	285.7	...	297.0	...
Dallas-Ft. Worth, Tex.	...	293.6	...	297.2	...	304.8	...	...	289.8	...	292.7	...	300.5	...
Denver-Boulder, Colo.	294.2	...	309.2	...	313.4	...	319.9	299.9	...	315.0	...	319.5	...	326.3
Detroit, Mich.	283.1	277.8	278.2	283.7	285.9	289.1	292.4	278.9	274.8	275.1	280.3	282.7	286.0	289.3
Honolulu, Hawaii	...	262.2	...	263.8	...	269.5	...	...	263.2	...	264.7	...	269.5	...
Houston, Tex.	...	304.1	...	304.9	...	313.9	...	...	300.3	...	302.1	...	310.9	...
Kansas City, Mo.-Kansas	...	276.0	...	274.0	...	281.6	...	...	274.1	...	272.1	...	280.1	...
Los Angeles-Long Beach, Anaheim, Calif.	272.2	285.6	286.6	286.8	287.1	290.1	289.3	276.3	289.4	290.4	290.5	290.6	293.9	293.0
Miami, Fla. (11/77=100)	146.1	...	155.1	...	155.7	...	155.1	147.3	...	156.4	...	157.0	...	156.9
Milwaukee, Wis.	285.6	...	289.3	...	292.9	...	296.5	291.2	...	292.5	...	296.0	...	299.6
Minneapolis-St. Paul, Minn.-Wis.	...	306.0	...	301.7	...	304.1	...	...	305.3	...	301.2	...	303.8	...
New York, N.Y.-Northeastern N.J.	262.5	269.0	267.4	268.2	270.9	276.7	277.3	262.3	267.8	265.9	266.5	269.4	275.3	276.1
Northeast, Pa. (Scranton)	266.0	...	267.2	...	270.2	...	275.1	269.0	...	268.4	...	272.1	...	277.3
Philadelphia, Pa.-N.J.	267.8	275.5	274.7	275.1	275.1	279.7	281.1	268.5	275.1	274.3	274.5	274.7	279.1	280.9
Pittsburgh, Pa.	...	278.6	...	275.3	...	285.1	...	...	280.0	...	276.7	...	285.9	...
Portland, Oreg.-Wash.	280.8	...	286.7	...	282.1	...	292.5	279.2	...	283.9	...	279.7	...	290.6
St. Louis, Mo.-Ill.	269.4	...	280.7	...	285.7	...	290.2	269.2	...	279.3	...	284.5	...	289.2
San Diego, Calif.	305.4	...	319.0	...	329.2	...	334.8	300.5	...	313.9	...	323.3	...	329.4
San Francisco-Oakland, Calif.	...	295.8	...	298.8	...	304.6	...	...	294.9	...	297.8	...	303.4	...
Seattle-Everett, Wash.	282.3	...	293.4	...	301.2	...	296.6	277.8	...	289.6	...	297.1	...	292.9
Washington, D.C.-Md.-Va.	267.1	...	278.8	...	278.4	...	281.3	271.4	...	283.8	...	283.3	...	286.3

<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.

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

[1967 = 100]

Commodity grouping	Annual average 1981	1981					1982							
		Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr. <sup>1</sup>	May	June	July	Aug.
<b>FINISHED GOODS</b>														
Finished goods .....	269.8	271.5	271.5	274.3	274.7	275.4	277.9	277.9	277.3	† 277.3	277.7	279.9	281.7	282.4
Finished consumer goods .....	271.3	273.0	273.1	275.1	275.2	275.8	278.3	278.6	277.7	† 277.3	277.6	280.0	282.0	282.7
Finished consumer foods .....	253.6	256.3	256.2	254.0	252.7	252.9	256.4	258.2	257.1	† 260.0	262.3	263.4	260.7	259.8
Crude .....	263.8	256.9	253.5	253.8	260.0	273.9	280.6	282.5	263.3	† 266.6	259.4	254.3	240.6	238.6
Processed .....	250.6	254.2	254.4	252.0	249.9	249.0	252.1	254.0	254.5	† 257.3	260.4	262.0	260.4	259.6
Nondurable goods less foods .....	319.6	322.1	324.2	324.3	325.4	326.3	329.3	330.3	328.8	† 325.7	324.1	328.1	334.7	336.7
Durable goods .....	218.6	218.3	215.8	224.5	224.7	225.4	226.2	224.0	223.9	† 224.1	224.7	226.2	227.0	227.7
Consumer nondurable goods less food and energy .....	208.8	210.4	211.8	212.6	213.6	213.9	217.4	219.6	220.5	† 222.3	222.9	222.9	223.3	224.0
Capital equipment .....	264.3	265.8	265.3	271.5	273.0	274.1	276.2	275.0	275.8	† 277.2	278.3	279.6	280.9	281.4
<b>INTERMEDIATE MATERIALS</b>														
Intermediate materials, supplies, and components .....	306.0	310.1	309.7	309.4	309.0	309.4	311.0	311.1	310.6	† 309.9	309.8	310.0	311.4	311.0
Materials and components for manufacturing .....	286.1	289.8	290.2	290.2	289.5	289.3	290.4	290.9	290.4	† 290.6	291.5	290.0	289.6	289.1
Materials for food manufacturing .....	260.4	261.0	254.6	250.9	246.8	245.6	250.7	252.8	252.0	† 254.4	260.0	260.9	260.0	258.3
Materials for nondurable manufacturing .....	285.8	291.0	291.2	290.9	289.4	288.8	289.0	289.3	288.8	† 287.6	288.1	285.8	283.6	282.9
Materials for durable manufacturing .....	312.1	316.0	317.1	316.7	314.9	314.0	313.6	313.1	310.9	† 311.0	310.6	307.3	308.2	307.2
Components for manufacturing .....	259.3	261.8	263.8	265.1	266.9	267.8	269.8	270.9	271.8	† 272.6	273.8	273.9	274.2	274.6
Materials and components for construction .....	287.6	290.7	290.0	290.1	290.2	291.1	292.0	293.0	293.3	† 294.0	293.4	294.2	294.0	293.3
Processed fuels and lubricants .....	595.4	607.8	601.4	596.9	595.1	598.1	604.4	596.8	593.0	† 579.9	569.9	581.2	601.6	603.8
Manufacturing industries .....	498.6	508.3	500.5	497.5	496.4	499.0	505.9	497.8	496.1	† 487.5	482.3	492.0	508.4	511.0
Nonmanufacturing industries .....	680.8	695.6	690.5	684.7	682.2	685.6	691.3	684.2	678.3	† 661.1	646.7	659.3	683.4	685.2
Containers .....	276.1	280.3	280.6	280.9	280.6	280.2	282.5	285.5	286.3	† 287.0	287.1	286.7	286.4	285.6
Supplies .....	263.8	266.1	266.1	266.6	267.2	268.3	269.8	270.4	270.6	† 272.1	273.6	273.6	273.5	272.9
Manufacturing industries .....	253.1	256.0	256.8	258.2	259.2	261.0	262.6	263.3	264.5	† 265.3	267.2	267.3	267.3	267.1
Nonmanufacturing industries .....	269.6	271.6	271.1	271.2	271.6	272.4	273.8	274.4	274.1	† 276.0	277.2	277.1	277.0	276.2
Feeds .....	230.4	229.1	221.3	215.9	212.0	214.6	214.8	212.0	208.1	† 213.1	214.2	213.1	211.1	203.7
Other supplies .....	276.4	279.3	280.7	282.3	283.7	284.1	285.7	287.3	287.9	† 288.9	290.2	290.4	290.7	291.3
<b>CRUDE MATERIALS</b>														
Crude materials for further processing .....	329.0	333.0	327.4	319.9	313.9	311.5	318.4	321.6	320.0	† 322.6	328.1	325.7	323.4	320.5
Foodstuffs and feedstuffs .....	257.4	261.8	253.4	245.7	238.3	233.7	242.6	248.3	247.9	† 254.4	262.3	259.8	255.5	250.7
Nonfood materials .....	482.3	485.3	486.0	479.2	476.3	478.6	481.5	479.3	475.2	† 469.9	470.4	467.9	470.0	471.1
Nonfood materials except fuel .....	413.7	413.9	410.2	404.1	397.8	396.2	399.5	394.8	387.1	† 378.8	376.6	370.0	369.1	369.6
Manufacturing industries .....	429.4	429.6	425.4	418.6	411.7	409.8	413.2	407.5	398.4	† 389.0	386.4	378.9	378.4	378.9
Construction .....	261.8	263.1	263.6	264.7	264.8	265.2	267.6	270.5	273.2	† 273.3	274.0	273.7	270.4	270.7
Crude fuel .....	751.2	766.7	788.7	779.0	792.5	813.0	812.9	824.5	839.7	† 851.2	866.1	885.2	903.1	906.9
Manufacturing industries .....	864.9	883.0	911.4	898.4	915.8	942.5	940.3	954.4	974.7	† 989.1	1,008.2	1,033.6	1,056.0	1,060.9
Nonmanufacturing industries .....	674.0	687.8	704.8	697.8	708.2	724.0	725.6	735.4	746.6	† 755.8	767.4	781.7	796.0	798.9
<b>SPECIAL GROUPINGS</b>														
Finished goods excluding foods .....	273.3	274.6	274.7	279.1	280.0	280.9	283.0	282.4	281.9	† 281.1	280.9	283.4	286.7	287.9
Finished consumer goods excluding foods .....	276.5	277.7	277.9	281.6	282.4	283.2	285.2	284.9	284.0	† 282.3	281.6	284.6	288.7	290.1
Finished consumer goods less energy .....	233.6	235.0	234.9	237.2	237.2	237.6	240.5	241.3	241.3	† 243.0	244.1	244.9	244.5	244.7
Intermediate materials less foods and feeds .....	310.1	314.5	314.6	314.6	314.5	314.9	316.4	316.4	316.0	† 315.1	314.6	314.8	316.4	316.3
Intermediate materials less energy .....	285.2	288.5	288.7	288.8	288.5	288.7	289.9	290.7	290.5	† 291.0	291.7	290.9	290.6	290.0
Intermediate foods and feeds .....	250.3	250.2	243.5	239.3	235.2	235.2	238.8	239.4	237.7	† 240.9	245.0	245.3	244.1	240.6
Crude materials less agricultural products .....	545.6	549.1	551.4	543.4	540.7	543.5	546.1	543.9	538.4	† 531.6	531.7	529.4	531.8	532.2
Crude materials less energy .....	254.0	258.0	250.4	243.2	235.8	231.6	239.1	243.4	242.8	† 247.3	252.5	248.6	245.0	241.5

<sup>1</sup> Data for April 1982 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.

**22. Producer Price Indexes, by commodity groupings**

[1967 = 100 unless otherwise specified]

Code	Commodity group and subgroup	Annual average 1981	1981					1982							
			Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr. <sup>1</sup>	May	June	July	Aug.
	All commodities	293.4	296.4	295.7	296.1	295.5	295.8	298.3	298.6	298.0	298.0	298.6	299.4	300.6	300.4
	All commodities (1957-59 = 100)	311.3	314.5	313.7	314.2	313.5	313.8	316.5	316.8	316.2	316.2	316.8	317.7	318.9	318.7
	Farm products and processed foods and feeds	251.5	254.2	250.3	246.0	242.5	241.0	246.0	248.4	247.5	251.6	255.6	255.3	252.5	250.1
	Industrial commodities	304.1	307.2	307.4	309.0	309.3	310.0	311.8	311.6	311.0	309.9	309.5	310.7	313.0	313.4
<b>FARM PRODUCTS AND PROCESSED FOODS AND FEEDS</b>															
01	Farm products	254.9	257.9	251.1	243.1	237.4	234.6	242.2	247.1	244.7	250.6	256.1	252.7	246.5	242.0
01-1	Fresh and dried fruits and vegetables	267.3	258.1	252.8	248.8	254.0	280.5	289.2	290.1	257.3	267.6	270.7	263.8	238.4	237.7
01-2	Grains	248.4	242.7	227.0	227.6	226.5	213.6	225.2	223.2	220.9	226.0	228.2	225.7	212.8	197.2
01-3	Livestock	248.0	262.0	257.3	244.5	231.1	225.0	236.8	251.2	255.6	267.6	282.9	277.5	270.3	268.4
01-4	Live poultry	201.2	210.3	196.7	185.7	175.0	171.4	186.8	197.3	197.7	186.2	192.7	207.2	212.5	189.3
01-5	Plant and animal fibers	242.0	232.5	206.5	211.7	198.5	188.4	198.2	193.5	199.5	207.4	214.1	203.1	220.8	207.5
01-6	Fluid milk	287.4	285.0	287.3	294.3	288.2	286.7	287.6	285.8	282.5	280.3	278.8	278.9	279.0	278.8
01-7	Eggs	187.1	180.7	193.2	193.8	209.7	195.5	187.0	200.6	204.0	192.1	164.3	159.3	171.7	171.7
01-8	Hay, hayseeds, and oilseeds	274.1	284.3	267.2	230.4	221.1	218.8	218.4	217.6	213.7	222.8	224.3	219.3	220.0	218.1
01-9	Other farm products	273.8	263.9	268.9	263.3	273.1	280.2	280.1	273.7	273.0	274.2	273.9	271.8	265.5	274.4
02	Processed foods and feeds	248.7	251.2	248.9	246.6	244.3	243.6	247.1	248.1	248.1	251.1	254.4	255.8	254.8	253.6
02-1	Cereal and bakery products	255.5	257.7	258.5	256.9	256.5	255.1	256.6	253.3	253.3	253.5	253.9	255.3	253.6	252.2
02-2	Meats, poultry, and fish	246.2	254.4	253.3	246.6	240.0	236.1	243.7	247.9	250.0	258.2	267.1	271.1	266.1	262.3
02-3	Dairy products	245.6	245.3	245.5	246.8	246.9	247.2	247.7	248.0	248.0	248.4	248.5	248.7	248.8	249.0
02-4	Processed fruits and vegetables	261.2	267.3	270.0	271.7	270.5	271.8	273.2	276.3	275.9	275.2	273.4	275.4	275.9	274.9
02-5	Sugar and confectionery	275.9	267.3	246.8	246.7	244.1	247.6	256.8	257.2	255.0	256.0	265.8	269.5	276.1	286.0
02-6	Beverages and beverage materials	248.0	249.4	249.0	250.0	251.4	251.9	253.9	255.1	256.4	256.6	256.7	256.5	256.7	257.3
02-7	Fats and oils	227.4	229.5	224.3	223.4	221.5	219.1	216.6	216.8	213.7	218.1	222.2	222.0	221.4	216.0
02-8	Miscellaneous processed foods	250.1	252.1	253.0	249.9	250.1	250.1	251.0	250.9	249.5	249.6	248.0	248.6	248.0	245.9
02-9	Prepared animal feeds	230.2	228.9	222.9	218.1	214.7	217.2	217.4	214.9	211.4	216.3	217.4	216.4	214.6	207.9
<b>INDUSTRIAL COMMODITIES</b>															
03	Textile products and apparel	199.7	202.4	202.9	204.0	203.6	203.4	205.0	205.6	205.0	205.4	205.1	204.5	204.1	203.9
03-1	Synthetic fibers (12/75 = 100)	156.3	161.2	161.0	162.7	161.6	161.5	162.9	163.2	161.3	163.0	164.3	163.8	162.4	163.1
03-2	Processed yarns and threads (12/75 = 100)	138.0	142.0	142.3	144.4	140.3	139.6	139.2	140.7	140.5	140.4	141.0	139.4	139.2	135.9
03-3	Gray fabrics (12/75 = 100)	146.8	149.0	149.1	148.0	147.4	147.2	148.2	147.3	146.6	146.3	145.5	145.8	144.8	144.5
03-4	Finished fabrics (12/75 = 100)	125.2	126.8	126.8	126.7	126.5	125.6	126.8	127.1	125.6	125.4	125.4	124.0	123.8	124.4
03-81	Apparel	186.0	187.8	188.0	186.9	190.8	191.0	192.7	193.2	193.4	194.1	192.7	193.0	193.1	193.5
03-82	Textile housefurnishings	226.7	228.8	232.2	233.0	233.4	233.6	237.6	240.8	241.4	241.8	246.4	244.4	243.0	240.7
04	Hides, skins, leather, and related products	260.9	261.3	261.7	260.0	259.8	260.7	261.8	261.6	260.6	263.4	263.4	262.7	261.3	263.2
04-2	Leather	319.8	313.7	313.2	313.7	311.3	312.3	319.0	317.7	313.3	310.6	309.5	306.7	307.4	304.7
04-3	Footwear	240.9	242.5	242.9	239.6	239.8	240.1	238.9	238.6	239.8	244.8	242.5	243.8	241.7	247.3
04-4	Other leather and related products	241.8	245.1	245.0	245.0	245.4	245.4	247.5	248.1	248.1	248.1	253.2	250.5	252.0	249.9
05	Fuels and related products and power	694.5	704.3	703.5	698.1	698.1	702.5	705.1	697.8	689.7	670.6	661.9	677.4	701.8	705.7
05-1	Coal	497.2	507.0	510.2	510.8	512.7	515.2	525.3	529.9	529.6	532.6	534.4	534.1	538.6	539.1
05-2	Coke	456.4	469.7	469.7	469.7	469.7	469.7	469.7	469.7	467.5	467.5	468.2	462.7	463.9	460.0
05-3	Gas fuels <sup>2</sup>	939.4	949.3	976.6	965.6	983.0	1,003.7	987.9	987.6	990.5	992.7	1,003.4	1,029.7	1,055.4	1,073.7
05-4	Electric power	367.2	385.8	383.8	378.4	378.3	384.2	392.8	392.9	403.7	406.3	405.5	406.6	416.9	415.3
05-61	Crude petroleum <sup>3</sup>	803.5	796.8	796.8	788.2	785.9	787.2	787.2	770.3	744.8	717.9	718.2	718.5	718.7	718.7
05-7	Petroleum products, refined <sup>4</sup>	805.9	813.4	806.1	802.3	798.3	798.6	801.9	789.7	770.6	733.5	712.7	738.5	777.1	781.8
06	Chemicals and allied products	287.6	293.3	293.3	292.4	292.0	291.8	292.9	293.6	294.6	294.3	296.2	293.5	291.6	291.6
06-1	Industrial chemicals <sup>5</sup>	363.3	371.5	371.8	367.9	363.7	362.8	362.9	362.2	361.4	357.8	358.1	352.9	349.7	349.7
06-21	Prepared paint	249.8	250.7	250.7	250.7	254.5	256.4	258.9	258.9	258.9	258.9	265.1	265.1	265.1	265.1
06-22	Paint materials	300.1	308.5	308.0	308.1	308.3	305.8	306.6	306.4	306.8	306.7	306.2	304.2	304.3	302.3
06-3	Drugs and pharmaceuticals	193.5	195.0	197.8	198.5	198.2	198.9	202.2	204.4	205.9	208.9	209.4	209.6	209.9	211.1
06-4	Fats and oils, inedible	295.6	305.6	285.6	277.7	282.5	280.4	272.8	274.2	290.1	282.6	288.4	287.5	278.2	254.2
06-5	Agricultural chemicals and chemical products	285.0	293.4	292.6	293.1	295.7	294.9	296.8	298.0	297.1	295.8	294.9	294.0	291.5	290.6
06-6	Plastic resins and materials	289.2	297.5	296.8	299.5	293.2	294.2	286.1	287.3	285.5	286.0	285.4	281.9	280.6	282.4
06-7	Other chemicals and allied products	254.2	257.3	257.4	256.9	259.9	260.0	263.8	264.9	268.5	270.0	275.9	279.0	270.7	271.8
07	Rubber and plastic products	232.6	234.1	235.7	237.3	238.0	238.3	237.3	239.3	240.8	241.1	242.9	243.3	243.1	243.6
07-1	Rubber and rubber products	256.2	256.9	260.3	262.9	264.4	264.6	262.5	266.0	266.7	266.6	271.2	271.5	271.6	272.5
07-11	Crude rubber	281.8	284.7	283.1	279.8	279.0	280.8	281.8	282.1	283.5	283.3	283.6	282.4	280.2	278.6
07-12	Tires and tubes	250.6	249.9	256.5	257.1	255.9	255.4	253.6	256.7	253.7	253.4	255.0	255.3	255.6	257.9
07-13	Miscellaneous rubber products	251.4	253.1	253.9	261.1	266.7	267.2	263.8	268.8	274.3	274.7	284.6	285.4	286.1	286.0
07-2	Plastic products (6/78 = 100)	128.5	129.8	129.9	130.3	130.3	130.6	130.5	131.0	132.3	132.6	132.3	132.6	132.1	132.3
08	Lumber and wood products	292.8	294.5	289.3	284.3	282.1	285.4	285.5	285.2	285.3	286.5	283.9	288.7	288.3	284.4
08-1	Lumber	325.1	329.9	320.2	311.7	306.6	309.9	310.0	308.1	308.2	312.4	309.2	315.2	319.2	312.7
08-2	Millwork	273.4	272.3	271.4	271.8	271.8	273.7	277.1	278.6	276.5	276.6	275.8	280.1	281.8	280.2
08-3	Plywood	245.7	245.6	240.8	234.3	233.5	239.7	237.4	235.1	236.5	234.0	230.6	238.9	232.4	229.3
08-4	Other wood products	239.1	239.8	240.5	239.9	239.3	239.4	238.2	238.7	238.6	237.7	237.3	237.1	236.0	235.8

See footnotes at end of table.



## 22. Continued—Producer Price Indexes, by commodity groupings

[1967 = 100 unless otherwise specified]

Code	Commodity group and subgroup	Annual average 1981	1981					1982							
			Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr. <sup>1</sup>	May	June	July	Aug.
<b>INDUSTRIAL COMMODITIES—Continued</b>															
09	Pulp, paper, and allied products	273.8	275.9	277.8	279.2	280.4	281.0	285.5	286.3	287.4	288.5	289.1	289.3	288.9	289.1
09-1	Pulp, paper, and products, excluding building paper and board	270.8	273.7	274.8	275.7	275.8	275.6	276.1	276.8	276.6	275.3	275.4	274.6	272.9	272.6
09-11	Woodpulp	397.1	394.2	394.2	402.3	413.7	413.7	410.3	410.3	411.6	389.9	398.2	390.3	370.5	369.2
09-12	Wastepaper	175.7	182.1	178.5	165.1	144.5	143.4	135.2	128.8	129.2	128.1	121.5	115.2	115.6	116.0
09-13	Paper	279.8	282.1	285.9	287.8	287.4	287.2	289.2	289.8	289.6	289.4	288.8	288.2	287.0	286.1
09-14	Paperboard	258.1	260.6	261.6	261.7	261.6	260.0	259.7	261.4	261.1	261.2	258.8	255.9	255.0	255.5
09-15	Converted paper and paperboard products	258.8	262.4	262.8	263.2	263.1	263.2	263.9	264.7	264.5	264.3	264.7	265.0	264.6	264.4
09-2	Building paper and board	231.7	234.2	234.2	233.3	232.1	233.8	233.8	231.4	239.6	239.6	239.5	239.4	239.2	240.3
10	Metals and metal products	300.4	304.1	304.9	305.3	304.2	303.3	304.7	304.2	302.9	303.1	303.4	300.1	300.2	300.2
10-1	Iron and steel	333.8	339.9	339.8	341.3	340.0	339.9	343.1	342.9	342.5	342.8	341.2	338.3	337.4	337.4
10-17	Steel mill products	337.6	344.9	345.3	348.7	348.6	348.9	350.6	350.3	350.5	352.2	352.1	349.9	349.1	348.7
10-2	Nonferrous metals	285.8	287.3	289.4	285.4	281.1	277.1	274.4	273.6	267.2	266.1	263.5	253.7	256.1	256.1
10-3	Metal containers	315.6	318.7	318.8	318.2	318.1	316.8	324.3	326.2	327.2	330.0	330.1	330.2	329.9	328.8
10-4	Hardware	263.2	265.3	267.8	269.5	271.5	272.0	274.1	274.8	278.2	278.5	276.7	277.9	278.9	280.3
10-5	Plumbing fixtures and brass fittings	267.5	271.2	271.6	272.9	273.1	274.0	274.6	276.4	279.1	280.3	281.0	282.5	283.0	274.7
10-6	Heating equipment	224.2	227.9	228.5	229.0	228.8	229.9	233.4	233.1	235.4	236.0	237.3	238.6	239.1	238.6
10-7	Fabricated structural metal products	295.5	299.3	300.0	302.6	303.2	303.0	303.4	304.0	304.5	305.2	304.8	305.2	303.8	304.4
10-8	Miscellaneous metal products	270.5	272.9	273.7	276.1	278.0	278.3	281.2	278.7	279.0	279.7	290.0	289.5	288.8	288.9
11	Machinery and equipment	263.3	266.2	268.1	269.3	270.4	272.0	274.1	275.4	276.2	277.6	278.1	278.4	279.4	279.7
11-1	Agricultural machinery and equipment	288.3	290.3	292.8	295.5	300.8	302.8	303.1	304.6	306.4	306.8	307.0	308.8	310.2	311.4
11-2	Construction machinery and equipment	320.8	325.0	326.5	328.3	329.6	332.0	337.0	337.9	339.2	341.5	343.4	343.7	346.1	346.4
11-3	Metalworking machinery and equipment	301.3	303.5	305.3	306.6	307.9	312.9	315.9	317.2	317.8	319.6	320.3	320.8	321.9	322.4
11-4	General purpose machinery and equipment	288.7	292.3	293.9	295.1	296.2	297.9	300.0	301.3	302.0	303.4	303.3	303.1	304.4	304.5
11-6	Special industry machinery and equipment	307.9	310.3	312.8	314.6	315.0	316.4	320.4	320.7	321.3	322.9	324.1	324.7	327.1	326.9
11-7	Electrical machinery and equipment	220.2	222.8	224.2	225.3	226.0	227.0	228.7	229.5	230.3	231.7	231.7	231.9	232.0	232.0
11-9	Miscellaneous machinery	252.6	256.0	258.5	259.0	259.8	260.4	261.4	264.0	264.9	266.1	267.2	268.0	268.9	270.3
12	Furniture and household durables	198.5	199.6	201.0	201.3	202.1	202.9	203.5	204.6	205.5	206.0	206.6	206.8	207.4	207.4
12-1	Household furniture	219.7	220.7	222.2	222.8	225.1	226.6	227.5	227.4	227.6	229.7	230.9	231.1	230.9	231.4
12-2	Commercial furniture	257.5	259.1	261.6	262.1	263.3	263.9	266.7	271.2	273.6	274.2	275.5	276.2	277.8	278.0
12-3	Floor coverings	178.7	181.9	181.7	180.9	182.3	181.4	180.3	180.6	180.6	181.1	180.5	180.7	180.1	179.4
12-4	Household appliances	187.3	189.1	190.1	190.8	190.9	191.3	193.4	195.3	197.3	197.8	197.8	198.5	199.3	200.1
12-5	Home electronic equipment	89.2	87.6	87.8	88.1	88.0	89.6	89.3	89.6	89.1	87.9	88.1	88.2	88.2	88.0
12-6	Other household durable goods	281.0	280.9	285.8	285.8	285.3	286.2	283.4	283.7	285.0	285.9	283.1	284.6	283.6	287.4
13	Nonmetallic mineral products	309.5	314.1	313.2	313.3	313.7	313.5	315.6	319.0	319.9	320.2	319.1	318.7	320.3	320.4
13-11	Flat glass	212.6	218.3	218.3	218.5	218.5	216.1	216.2	216.2	216.2	216.2	216.2	216.2	226.1	226.1
13-2	Concrete ingredients	296.3	298.0	298.5	298.4	298.5	298.7	306.2	308.4	309.8	309.5	310.7	310.9	310.6	311.7
13-3	Concrete products	291.2	293.4	292.9	293.3	293.4	293.6	295.5	295.9	296.3	297.7	297.1	297.9	298.2	298.3
13-4	Structural clay products, excluding refractories	249.8	250.9	255.3	256.2	256.5	257.5	257.5	257.7	257.7	258.1	258.1	258.4	258.8	258.8
13-5	Refractories	302.4	307.1	307.1	307.8	308.9	311.3	316.8	335.1	337.4	338.7	340.4	340.9	340.9	341.2
13-6	Asphalt roofing	407.5	420.9	401.6	402.9	410.2	405.6	401.3	400.4	394.4	386.7	384.0	388.8	392.3	392.5
13-7	Gypsum products	256.2	255.3	252.9	252.4	251.3	249.7	250.4	255.0	260.7	263.2	259.4	256.4	255.8	253.9
13-8	Glass containers	328.7	335.5	335.5	335.5	335.5	335.5	335.4	352.2	356.0	358.1	357.4	357.4	357.4	357.3
13-9	Other nonmetallic minerals	463.8	475.3	474.3	473.3	473.5	474.7	474.7	478.7	479.6	479.1	472.1	465.2	466.4	466.2
14	Transportation equipment (12/68 = 100)	235.4	235.9	231.8	244.5	246.3	246.8	248.6	245.2	245.2	245.8	247.2	249.6	250.4	251.2
14-1	Motor vehicles and equipment	237.6	238.4	232.8	247.8	248.9	249.5	250.8	246.8	246.8	247.2	248.7	251.5	252.5	253.3
14-4	Railroad equipment	336.1	338.7	338.7	338.7	341.3	340.1	345.8	345.8	346.3	343.5	349.6	349.6	349.3	354.7
15	Miscellaneous products	265.7	262.6	267.0	268.5	269.5	267.6	268.3	273.5	272.7	273.2	272.3	271.6	273.8	272.4
15-1	Toys, sporting goods, small arms, ammunition	211.9	212.7	213.6	213.0	212.7	213.3	218.4	220.1	220.7	221.0	222.7	222.9	222.9	224.4
15-2	Tobacco products	268.3	268.8	274.5	278.2	278.2	278.2	278.2	306.6	306.6	306.7	306.7	306.7	311.3	311.3
15-3	Notions	259.8	267.7	267.8	269.7	269.7	269.7	270.3	270.4	271.5	271.5	280.3	280.3	280.3	280.3
15-4	Photographic equipment and supplies	210.0	207.1	208.7	208.9	209.0	209.1	209.9	210.5	212.1	214.2	210.9	210.8	210.6	210.6
15-5	Mobile homes (12/74 = 100)	156.8	158.3	158.7	159.1	159.3	159.3	159.5	159.6	161.9	162.2	162.1	162.5	162.5	162.5
15-9	Other miscellaneous products	347.4	334.6	345.5	348.5	344.8	344.6	342.2	341.1	334.5	334.1	330.8	328.0	333.1	326.5

<sup>1</sup>Data for April 1982 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>2</sup>Prices for natural gas are lagged 1 month.

<sup>3</sup>Includes only domestic production.

<sup>4</sup>Most prices for refined petroleum products are lagged 1 month.

<sup>5</sup>Some prices for industrial chemicals are lagged 1 month.

r= revised.

**23. Producer Price Indexes, for special commodity groupings**

[1967 = 100 unless otherwise specified]

Commodity grouping	Annual average 1981	1981					1982							
		Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr. <sup>1</sup>	May	June	July	Aug.
All commodities — less farm products	295.7	298.7	298.5	299.5	299.4	300.0	302.0	301.9	301.4	300.9	301.1	302.3	304.1	304.3
All foods	251.8	253.7	251.7	249.1	247.4	247.6	251.6	253.2	251.6	<sup>r</sup> 254.7	257.9	259.0	356.8	255.9
Processed foods	252.1	255.0	252.8	250.0	247.6	246.5	250.5	251.9	252.1	<sup>r</sup> 255.1	259.0	260.9	259.8	258.9
Industrial commodities less fuels	263.7	266.1	266.4	268.7	269.0	269.4	271.1	271.5	271.7	<sup>r</sup> 272.3	272.8	272.5	272.7	272.7
Selected textile mill products (Dec. 1975 = 100)	135.8	137.2	138.1	138.2	138.4	137.9	139.3	139.7	139.0	<sup>r</sup> 139.0	138.9	138.1	137.5	137.6
Hosiery	134.3	135.3	135.5	136.5	136.5	136.7	136.9	136.9	137.5	<sup>r</sup> 138.0	138.5	138.5	138.5	138.5
Underwear and nightwear	203.4	204.7	204.7	204.7	205.7	206.3	213.9	215.6	215.9	<sup>r</sup> 215.9	216.3	217.8	218.0	218.1
Chemicals and allied products, including synthetic rubber and fibers and yarns	278.4	284.0	284.4	283.8	283.2	283.1	284.3	285.1	285.6	<sup>r</sup> 285.6	287.3	284.8	283.0	283.4
Pharmaceutical preparations	186.9	188.4	191.6	192.8	192.5	193.3	196.8	199.3	201.1	<sup>r</sup> 204.5	205.3	205.3	205.7	207.2
Lumber and wood products, excluding millwork	303.0	306.2	298.0	290.1	286.4	290.7	289.9	287.9	288.5	<sup>r</sup> 290.5	287.2	294.0	294.6	289.2
Steel mill products, including fabricated wire products	337.6	344.9	345.3	348.7	348.6	348.9	350.6	350.3	350.5	352.2	352.1	349.9	348.7	348.4
Finished steel mill products, excluding fabricated wire products	336.2	343.3	343.7	347.4	347.2	347.5	349.3	348.9	349.2	351.0	350.9	348.6	347.7	347.3
Finished steel mill products, including fabricated wire products	336.2	343.3	343.7	347.4	347.2	347.5	349.3	348.9	349.2	351.0	350.9	348.6	347.4	347.0
Special metals and metal products	279.4	281.9	280.1	286.7	286.8	286.6	287.9	286.0	285.3	<sup>r</sup> 285.6	286.4	285.8	286.3	286.6
Fabricated metal products	280.0	283.1	283.9	286.0	287.0	287.1	289.4	289.0	289.9	<sup>r</sup> 290.8	294.3	294.6	294.0	293.9
Copper and copper products	203.8	206.2	205.1	201.9	198.9	195.4	194.5	194.1	190.8	<sup>r</sup> 191.6	191.6	180.0	179.5	180.1
Machinery and motive products	256.7	258.6	257.7	264.3	265.8	266.9	268.9	268.1	268.5	<sup>r</sup> 269.6	270.5	271.8	272.8	273.3
Machinery and equipment, except electrical	288.5	291.7	293.8	295.0	296.4	298.4	300.7	302.3	303.1	<sup>r</sup> 304.6	305.2	305.7	307.2	307.7
Agricultural machinery, including tractors	297.3	298.2	301.6	305.7	312.5	314.7	315.1	316.0	318.4	<sup>r</sup> 319.0	318.2	319.8	320.5	321.5
Metalworking machinery	329.7	331.4	333.9	336.7	338.3	341.2	343.8	344.9	346.4	348.8	349.4	350.3	352.7	353.2
Numerically controlled machine tools (Dec. 1971 = 100)	239.3	241.8	241.8	241.8	242.2	242.0	240.1	239.8	239.9	<sup>r</sup> 239.9	240.3	240.3	239.6	239.6
Total tractors	324.7	327.8	330.7	338.3	342.2	342.3	346.9	346.9	349.1	<sup>r</sup> 352.4	352.4	353.2	354.2	354.8
Agricultural machinery and equipment less parts	289.8	291.1	294.0	297.6	303.5	305.8	306.5	307.4	309.7	<sup>r</sup> 310.3	309.6	311.0	311.8	312.5
Farm and garden tractors less parts	300.1	301.4	305.5	313.0	319.6	319.7	319.7	319.7	323.5	<sup>r</sup> 323.5	322.9	324.3	324.2	324.8
Agricultural machinery, excluding tractors less parts	295.2	295.8	298.7	299.9	303.5	310.9	311.6	313.2	314.6	<sup>r</sup> 315.6	314.7	316.5	317.7	319.0
Industrial valves	315.9	319.8	322.7	322.4	323.4	325.3	328.6	330.2	330.5	<sup>r</sup> 331.1	327.9	327.2	329.2	329.2
Industrial fittings	302.1	303.0	304.3	304.1	304.1	304.1	304.1	304.1	304.1	<sup>r</sup> 309.1	309.1	309.1	310.2	310.2
Construction materials	283.0	285.5	284.4	284.6	284.1	285.2	286.6	286.9	287.5	<sup>r</sup> 288.2	287.9	289.1	289.0	288.2

<sup>1</sup> Data for April 1982 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 durability of product**

[1967 = 100]

Commodity grouping	Annual average 1981	1981					1982							
		Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr. <sup>1</sup>	May	June	July	Aug.
Total durable goods	269.8	271.9	271.8	275.0	275.4	276.0	277.6	277.4	277.4	278.1	278.4	278.4	279.1	279.1
Total nondurable goods	312.4	316.2	315.0	312.8	311.4	311.4	314.7	315.4	314.2	<sup>r</sup> 313.6	314.5	316.0	317.7	317.3
Total manufactures	286.0	288.6	288.3	289.8	289.7	289.9	291.9	292.0	291.4	<sup>r</sup> 291.1	291.3	292.4	293.9	293.9
Durable	269.7	271.7	271.7	275.1	275.8	276.5	278.0	277.8	277.8	<sup>r</sup> 278.7	279.1	279.4	280.1	280.1
Nondurable	303.6	306.9	306.3	305.5	304.5	304.3	306.8	307.2	305.9	<sup>r</sup> 304.1	304.1	306.2	308.6	308.6
Total raw or slightly processed goods	330.7	335.8	332.7	326.4	323.3	323.6	328.9	330.6	329.7	<sup>r</sup> 331.9	334.9	333.6	333.3	331.8
Durable	271.2	275.9	270.4	263.7	253.4	247.8	253.8	253.7	250.1	<sup>r</sup> 245.3	238.4	225.2	225.0	225.7
Nondurable	334.0	339.1	336.3	330.0	327.4	328.2	333.4	335.2	334.5	<sup>r</sup> 337.2	340.8	340.6	340.2	338.6

<sup>1</sup> Data for April 1982 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.

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

[1967 = 100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1981	1981					1982							
			Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr. <sup>1</sup>	May	June	July	Aug.
<b>MINING</b>															
1011	Iron ores (12/75 = 100)	167.6	168.1	168.1	168.1	171.3	171.3	171.3	171.3	171.3	171.3	177.1	177.1	177.1	177.1
1092	Mercury ores (12/75 = 100)	346.0	365.4	364.5	354.1	354.1	343.7	313.7	325.0	327.0	308.3	307.5	306.2	287.5	
1211	Bituminous coal and lignite	493.7	503.4	506.0	506.2	507.8	510.3	520.9	525.8	524.9	<sup>r</sup> 527.9	529.4	529.8	534.7	
1311	Crude petroleum and natural gas	898.6	900.3	913.6	900.8	907.5	921.7	919.7	913.9	905.4	<sup>r</sup> 893.3	902.0	915.1	925.3	
1442	Construction sand and gravel	277.4	278.2	279.2	279.7	279.8	280.7	289.9	293.1	<sup>r</sup> 292.6	294.4	295.2	295.3	296.5	
1455	Kaolin and ball clay (6/76 = 100)	138.7	137.1	137.1	143.4	143.4	143.4	149.6	149.6	151.7	151.7	151.7	151.7	151.7	
<b>MANUFACTURING</b>															
2011	Meatpacking plants	243.1	250.9	252.7	244.1	237.0	234.1	237.6	244.4	247.3	<sup>r</sup> 254.0	264.3	265.7	258.4	253.0
2013	Sausages and other prepared meats	241.4	254.0	253.9	252.2	248.9	247.0	245.6	251.0	248.6	<sup>r</sup> 253.0	265.9	273.7	272.2	275.4
2016	Poultry dressing plants	192.0	201.2	188.8	175.5	172.8	166.7	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	( <sup>2</sup> )	
2021	Creamery butter	274.8	273.7	275.0	279.2	279.5	275.0	275.0	276.4	276.8	275.3	274.9	274.9	275.0	276.3

See footnotes at end of table.

25. Continued — Producer Price Indexes for the output of selected SIC industries

[1967 = 100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1981	1981					1982							
			Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr. <sup>1</sup>	May	June	July	Aug.
<b>MANUFACTURING — Continued</b>															
2022	Cheese, natural and processed (12/72 = 100)	215.7	214.5	215.0	215.4	215.9	218.4	218.6	217.9	216.7	<sup>1</sup> 216.5	217.1	217.9	218.6	218.8
2024	Ice cream and frozen desserts (12/72 = 100)	211.9	212.7	212.7	212.5	212.5	212.7	212.8	212.8	210.9	214.2	214.2	214.2	213.6	213.6
2033	Canned fruits and vegetables	248.5	252.9	254.3	257.0	256.4	258.9	260.8	262.6	262.4	<sup>1</sup> 262.3	262.3	264.6	265.5	263.2
2034	Dehydrated food products (12/73 = 100)	177.6	178.7	183.4	182.1	181.4	182.1	184.0	181.8	181.5	181.5	178.5	178.5	180.4	180.0
2041	Flour mills (12/71 = 100)	196.0	191.0	195.3	191.1	191.5	189.2	191.5	187.5	187.3	192.5	188.4	189.1	185.5	180.2
2044	Rice milling	277.2	284.3	268.2	247.3	235.4	215.1	205.9	192.2	183.5	177.9	183.0	180.3	177.6	183.0
2048	Prepared foods, n.e.c. (12/75 = 100)	124.5	124.8	119.6	117.3	116.4	116.0	116.0	115.9	114.6	115.4	116.7	115.7	115.4	113.3
2061	Raw cane sugar	273.5	254.6	212.3	219.9	224.3	230.8	247.6	245.1	233.0	242.9	269.2	286.7	311.5	318.1
2063	Beet sugar	314.3	287.5	270.7	250.3	230.4	250.5	266.4	272.2	272.2	<sup>1</sup> 269.7	280.2	280.2	290.5	297.4
2067	Chewing gum	309.8	303.2	303.2	303.2	303.2	303.2	303.3	303.3	303.3	303.4	303.4	303.4	303.3	307.4
2074	Cottonseed oil mills	199.0	206.0	182.3	172.0	167.2	182.4	184.9	170.5	158.1	<sup>1</sup> 164.7	167.9	170.2	174.6	173.1
2075	Soybean oil mills	245.8	245.8	234.2	229.7	221.2	221.9	223.1	220.4	216.6	<sup>1</sup> 225.8	232.0	226.4	224.1	205.5
2077	Animal and marine fats and oils	288.0	294.1	281.2	274.0	272.3	266.6	260.4	262.6	271.8	273.3	271.5	272.3	264.3	242.4
2083	Malt	282.5	286.1	275.4	275.4	275.4	275.4	267.1	267.1	267.1	259.1	259.8	259.8	259.8	259.8
2085	Distilled liquor, except brandy (12/75 = 100)	134.7	135.5	135.5	135.5	137.9	137.9	140.1	137.9	140.2	140.2	139.8	139.8	139.8	140.4
2091	Canned and cured seafoods (12/73 = 100)	187.8	188.4	188.8	188.2	188.3	188.5	187.2	187.0	187.7	188.2	188.0	188.4	187.8	184.3
2092	Fresh or frozen packaged fish	369.1	347.1	353.5	356.9	360.8	369.5	396.8	389.2	419.1	<sup>1</sup> 432.2	427.5	442.8	418.9	426.2
2095	Roasted coffee (12/72 = 100)	238.1	235.7	237.3	238.2	239.2	240.4	245.1	247.7	248.8	<sup>1</sup> 250.6	247.9	247.6	247.0	246.4
2098	Macaroni and spaghetti	252.0	259.5	259.5	259.5	259.5	259.5	259.5	259.5	259.5	259.5	259.5	259.5	259.5	259.5
2111	Cigarettes	277.7	278.3	284.2	288.4	288.4	288.4	288.4	319.7	319.7	<sup>1</sup> 319.8	319.8	319.8	324.9	324.9
2121	Cigars	170.0	169.7	174.5	174.5	174.5	174.5	174.5	178.6	178.6	<sup>1</sup> 179.6	176.6	176.6	176.6	176.6
2131	Chewing and smoking tobacco	320.7	321.3	325.3	326.1	326.1	326.1	326.1	349.4	349.4	353.5	353.6	358.3	358.3	358.3
2211	Weaving mills, cotton (12/72 = 100)	232.7	237.4	236.0	233.2	229.8	227.6	227.3	227.1	226.4	<sup>1</sup> 226.3	227.7	226.0	222.0	221.7
2221	Weaving mills, synthetic (12/77 = 100)	136.7	139.3	139.5	139.4	139.8	139.5	139.8	139.7	140.0	139.2	138.9	138.0	137.5	137.1
2251	Women's hosiery, except socks (12/75 = 100)	113.5	115.0	115.0	115.2	115.1	115.2	115.6	115.6	116.1	<sup>1</sup> 116.2	117.0	117.0	117.0	117.0
2254	Knit underwear mills	210.2	210.8	210.9	210.9	212.8	213.0	225.2	225.2	225.9	226.0	226.0	228.7	230.8	231.1
2257	Circular knit fabric mills (6/76 = 100)	110.9	112.0	111.9	112.0	112.4	111.8	112.4	113.2	110.7	110.2	109.7	108.2	108.6	108.7
2261	Finishing plants, cotton (6/76 = 100)	144.9	146.2	145.4	144.9	143.5	141.4	140.5	140.3	140.8	141.6	141.4	141.3	140.2	139.8
2262	Finishing plants, synthetics, silk (6/76 = 100)	126.5	127.8	129.0	129.1	129.1	128.6	129.4	129.9	128.5	<sup>1</sup> 128.5	128.2	127.2	126.7	128.7
2272	Tufted carpets and rugs	154.2	157.4	157.3	155.7	157.0	156.7	155.5	155.7	155.7	156.1	156.4	156.9	156.1	155.4
2281	Yarn mills, except wool (12/71 = 100)	221.7	225.4	223.8	222.4	219.9	217.2	216.3	215.7	215.4	<sup>1</sup> 214.4	214.9	214.0	213.7	213.2
2282	Throwing and winding mills (6/76 = 100)	139.3	146.8	148.0	154.5	145.6	146.0	145.7	150.3	150.0	<sup>1</sup> 151.0	152.6	149.3	149.0	140.4
2284	Thread mills (6/76 = 100)	151.4	151.1	154.8	157.0	157.0	156.8	156.8	156.8	156.8	156.7	156.6	156.5	156.5	158.0
2298	Cordage and twine (12/77 = 100)	134.8	134.3	139.3	139.3	139.3	140.7	141.0	141.0	141.0	141.0	141.0	141.0	141.0	141.0
2311	Men's and boys' suits and coats	224.0	226.2	226.5	227.4	228.4	230.5	233.7	233.6	233.8	<sup>1</sup> 234.4	234.6	235.3	237.2	239.8
2321	Men's and boys' shirts and nightwear	209.5	210.6	211.5	212.4	212.6	213.4	173.4	215.9	216.9	217.3	173.6	215.7	216.0	216.1
2322	Men's and boys' underwear	230.6	230.8	230.8	230.8	233.0	233.0	246.9	246.9	247.4	247.4	247.4	251.2	251.2	251.2
2323	Men's and boys' neckwear (12/75 = 100)	114.6	113.9	113.9	113.9	113.9	113.9	115.3	117.3	117.3	117.3	117.3	121.3	121.3	121.3
2327	Men's and boys' separate trousers	186.2	186.4	186.4	186.8	186.9	187.1	188.4	188.4	188.4	<sup>1</sup> 194.1	194.9	195.0	195.6	195.6
2328	Men's and boys' work clothing	248.6	251.1	251.2	253.1	253.2	253.3	252.5	254.2	254.9	<sup>1</sup> 255.2	253.7	254.1	252.9	253.1
2331	Women's and misses' blouses and waists (6/78 = 100)	120.6	121.2	121.3	126.4	126.7	126.7	126.5	126.5	126.5	<sup>1</sup> 126.5	123.7	123.7	123.6	123.8
2335	Women's and misses' dresses (12/77 = 100)	121.3	124.3	123.5	123.4	124.1	122.7	123.0	123.0	123.1	122.9	122.9	123.1	123.7	123.6
2341	Women's and children's underwear (12/72 = 100)	169.7	170.6	170.6	170.6	171.6	171.6	174.7	174.8	175.0	<sup>1</sup> 175.0	177.2	179.4	179.4	179.4
2342	Brassieres and allied garments (12/75 = 100)	136.7	138.8	138.8	138.8	138.9	140.1	145.1	148.8	148.8	<sup>1</sup> 148.8	148.5	148.5	148.4	148.4
2361	Children's dresses and blouses (12/77 = 100)	120.9	121.7	121.7	122.0	122.5	123.2	123.2	123.2	123.2	<sup>1</sup> 122.2	121.0	121.0	119.4	120.3
2381	Fabric dress and work gloves	289.3	289.2	289.2	289.2	289.2	289.2	293.8	297.4	295.5	295.5	294.5	294.5	288.2	288.2
2394	Canvas and related products (12/77 = 100)	132.0	133.1	134.6	137.6	137.6	139.7	144.9	144.9	147.2	<sup>1</sup> 145.7	146.5	143.8	143.8	143.8
2396	Automotive and apparel trimmings (12/77 = 100)	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0
2421	Sawmills and planing mills (12/71 = 100)	228.2	231.2	225.2	219.5	216.5	218.6	218.0	216.9	216.9	<sup>1</sup> 218.8	216.8	219.7	221.6	217.5
2436	Softwood veneer and plywood (12/75 = 100)	142.0	139.6	135.4	129.3	129.0	134.5	132.5	130.5	131.8	<sup>1</sup> 129.1	126.0	133.3	129.6	126.7
2439	Structural wood members, n.e.c. (12/75 = 100)	156.6	156.9	156.6	154.8	154.2	153.2	153.9	153.5	152.6	<sup>1</sup> 153.4	151.5	152.9	154.5	155.1
2448	Wood pallets and skids (12/75 = 100)	152.5	152.9	152.8	152.0	150.4	149.9	149.8	149.0	148.2	<sup>1</sup> 145.9	144.6	144.2	144.1	143.8
2451	Mobile homes (12/74 = 100)	156.9	158.3	158.7	159.2	159.3	160.3	160.4	160.5	162.7	<sup>1</sup> 163.0	163.1	163.4	163.4	163.4
2492	Particleboard (12/75 = 100)	173.6	173.6	170.5	168.0	166.9	170.3	172.6	170.7	177.7	<sup>1</sup> 178.2	176.7	176.9	175.4	174.5
2511	Wood household furniture (12/71 = 100)	197.4	199.2	200.1	201.0	202.0	202.8	203.6	204.3	205.1	<sup>1</sup> 207.4	207.3	207.6	208.1	208.0
2512	Upholstered household furniture (12/71 = 100)	174.0	175.1	175.3	175.6	179.5	182.1	184.4	179.3	193.3	<sup>1</sup> 181.8	185.1	185.1	184.1	185.5
2515	Mattresses and bedsprings	192.3	194.6	195.2	195.2	197.5	198.0	204.4	205.6	205.6	<sup>1</sup> 205.7	210.3	210.3	210.1	210.4
2521	Wood office furniture	254.2	254.7	257.1	257.1	257.0	257.6	261.9	270.7	270.8	<sup>1</sup> 270.8	271.9	271.9	272.0	272.4
2611	Pulp mills (12/73 = 100)	252.4	251.3	251.3	255.0	262.5	262.5	258.6	260.7	260.7	<sup>1</sup> 253.6	254.8	246.5	238.5	237.2
2621	Paper mills, except building (12/74 = 100)	156.2	157.4	158.8	159.8	159.7	159.6	162.0	162.0	162.0	<sup>1</sup> 161.3	160.5	160.8	160.7	159.9
2631	Paperboard mills (12/74 = 100)	151.7	152.4	153.7	153.6	153.5	152.7	152.5	153.4	153.0	<sup>1</sup> 152.8	151.5	150.0	149.1	149.4
2647	Sanitary paper products	343.4	344.3	344.3	344.0	344.1	344.6	344.6	344.6	344.5	<sup>1</sup> 344.5	344.7	347.3	346.4	349.2
2654															



25. Continued—Producer Price Indexes for the output of selected SIC industries

[1967=100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1981	1981					1982							
			Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr. <sup>1</sup>	May	June	July	Aug.
3021	Rubber and plastic footwear (12/71 = 100)	184.4	185.4	185.3	185.0	185.0	185.2	186.1	188.4	189.1	189.0	186.7	187.0	187.0	186.8
3031	Reclaimed rubber (12/73 = 100)	194.1	200.3	200.3	200.3	200.3	200.3	200.3	200.4	207.2	209.2	207.2	208.4	207.7	207.4
3079	Miscellaneous plastic products (6/78 = 100)	128.9	130.2	130.3	130.8	130.8	131.0	131.1	131.6	132.8	133.2	132.7	132.9	132.6	132.7
3111	Leather tanning and finishing (12/77 = 100)	150.7	148.5	148.3	148.2	146.8	147.5	150.8	149.3	147.9	146.8	147.3	146.9	147.5	146.5
3143	Men's footwear, except athletic (12/75 = 100)	169.3	171.4	170.9	170.5	170.6	171.3	173.1	172.2	173.5	174.9	175.1	175.2	171.6	175.5
3144	Women's footwear, except athletic	217.1	217.8	218.2	212.5	212.7	212.4	208.5	209.8	210.3	217.0	213.4	215.2	216.3	220.6
3171	Women's handbags and purses (12/75 = 100)	155.5	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.5	157.8
3211	Flat glass (12/71 = 100)	175.3	180.0	180.0	180.1	180.1	177.4	177.5	177.5	177.5	177.5	177.5	177.5	187.7	187.7
3221	Glass containers	328.6	335.4	335.4	335.4	335.4	335.4	335.3	352.1	355.8	358.0	357.3	357.3	357.3	357.2
3241	Cement, hydraulic	329.6	331.6	332.0	330.3	330.3	330.3	339.6	341.5	341.5	341.1	338.6	338.7	337.8	336.0
3251	Brick and structural clay tile	296.5	298.9	299.9	299.9	300.5	300.5	298.9	299.4	299.4	303.4	305.8	306.4	307.2	307.2
3253	Ceramic wall and floor tile (12/75 = 100)	133.4	132.1	140.4	140.4	140.4	140.4	140.4	140.4	140.4	140.6	138.0	138.0	138.0	138.0
3255	Clay refractories	310.2	312.3	312.5	313.9	315.2	319.9	329.6	354.4	355.6	355.2	357.2	357.1	357.2	357.7
3259	Structural clay products, n.e.c.	222.6	223.9	227.5	231.7	231.7	236.6	225.6	226.0	225.9	215.9	216.4	216.5	216.4	216.5
3261	Vitreous plumbing fixtures	254.9	259.6	259.0	259.0	259.3	260.1	261.1	260.6	260.8	261.8	265.4	265.5	264.2	263.9
3262	Vitreous china food utensils	335.0	336.6	336.8	336.8	344.7	344.7	347.7	347.7	347.3	346.5	345.2	349.8	348.8	349.8
3263	Fine earthenware food utensils	309.1	309.6	313.8	313.8	315.0	315.0	315.1	315.1	315.0	314.9	314.1	314.8	314.8	314.8
3269	Pottery products, n.e.c. (12/75 = 100)	160.1	160.7	161.8	161.8	163.7	163.7	164.3	164.3	164.2	164.0	163.6	164.8	164.7	164.7
3271	Concrete block and brick	270.4	274.0	274.2	274.3	274.2	275.1	274.9	276.4	276.4	276.0	276.6	277.0	277.1	277.4
3273	Ready-mixed concrete	298.7	300.0	299.2	299.5	299.4	299.6	301.9	301.9	302.5	303.9	303.9	304.7	305.4	304.8
3274	Lime (12/75 = 100)	172.5	173.9	173.7	173.7	173.5	173.8	178.8	183.7	185.7	186.3	188.1	188.4	188.1	188.3
3275	Gypsum products	256.9	258.9	252.9	251.5	252.5	250.6	250.9	253.9	260.5	262.5	258.8	256.2	256.5	254.3
3291	Abrasive products (12/71 = 100)	232.9	235.1	237.3	237.6	241.0	241.0	241.3	248.3	249.8	250.2	251.2	252.1	252.0	252.3
3297	Nonclay refractories (12/74 = 100)	185.3	189.7	189.7	189.7	190.2	190.3	191.2	198.3	200.4	202.3	203.2	203.9	203.8	203.8
3312	Blast furnaces and steel mills	342.8	350.0	350.3	353.1	353.0	353.3	354.7	354.4	354.4	356.1	355.9	353.6	352.9	352.8
3313	Electrometallurgical products (12/75 = 100)	121.8	121.5	121.4	125.4	125.4	125.3	125.3	123.4	120.3	120.3	120.3	120.4	120.4	121.4
3316	Cold finishing of steel shapes	316.2	325.7	326.4	326.4	326.4	326.7	327.0	327.0	327.0	327.1	327.8	325.6	325.2	326.6
3317	Steel pipes and tubes	341.5	350.6	350.5	362.0	362.3	363.0	363.7	364.1	365.8	365.9	365.8	365.7	364.0	361.6
3321	Gray iron foundries (12/68 = 100)	299.7	299.9	302.0	303.3	305.2	306.1	307.9	310.0	311.5	311.9	311.4	311.6	311.3	311.3
3333	Primary zinc	326.3	353.8	355.9	337.0	337.5	315.7	308.6	311.2	292.0	273.4	259.9	259.7	266.4	277.0
3334	Primary aluminum	333.1	334.4	333.6	333.5	332.5	332.8	324.1	320.2	320.8	312.4	313.8	308.4	305.7	308.0
3351	Copper rolling and drawing	212.3	212.9	214.1	212.3	209.2	207.1	204.8	203.9	198.4	196.4	197.5	189.8	189.2	190.1
3353	Aluminum sheet, plate, and foil (12/75 = 100)	175.8	177.4	178.0	179.9	180.2	180.8	181.8	181.7	181.2	179.9	178.7	178.0	178.2	177.1
3354	Aluminum extruded products (12/75 = 100)	180.1	181.3	181.2	181.3	181.4	181.1	180.8	180.8	180.5	180.2	180.2	180.1	179.5	178.9
3355	Aluminum rolling, drawing, n.e.c. (12/75 = 100)	159.1	157.2	157.7	163.0	166.2	166.1	166.1	166.5	166.3	162.9	163.0	165.4	164.7	164.5
3411	Metal cans	305.1	306.7	306.8	307.0	306.0	304.9	310.8	314.0	313.6	318.6	320.4	319.3	318.6	318.0
3425	Hand saws and saw blades (12/72 = 100)	201.4	204.2	206.4	204.8	205.0	206.0	211.6	214.8	214.9	215.3	220.8	220.9	221.0	221.2
3431	Metal sanitary ware	265.5	269.7	270.2	270.3	271.6	271.8	271.3	272.8	275.1	275.8	275.7	276.0	276.1	276.9
3465	Automotive stampings (12/75 = 100)	146.0	146.4	146.9	147.4	149.7	149.1	150.1	144.7	144.2	144.3	153.0	153.0	153.0	153.3
3482	Small arms ammunition (12/75 = 100)	159.0	159.9	159.9	159.9	159.9	163.9	167.5	167.5	167.5	166.3	171.9	175.9	175.9	175.9
3493	Steel springs, except wire	245.9	248.9	252.4	253.9	254.1	256.1	255.8	257.4	256.4	254.3	255.3	256.2	253.1	253.5
3494	Valves and pipe fittings (12/71 = 100)	248.9	251.0	252.7	252.9	253.5	255.7	257.7	258.9	259.1	260.3	259.2	259.0	260.1	260.1
3498	Fabricated pipe and fittings	361.3	370.0	375.1	377.7	378.6	379.3	378.6	377.7	379.8	385.5	385.4	385.4	383.8	385.6
3519	Internal combustion engines, n.e.c.	311.9	314.2	322.1	323.2	326.4	325.4	329.4	332.0	332.6	334.2	337.0	337.7	339.6	343.8
3531	Construction machinery (12/76 = 100)	156.8	159.5	160.1	161.0	161.6	159.7	162.5	162.4	163.3	164.3	165.2	165.3	166.5	166.7
3532	Mining machinery (12/72 = 100)	282.5	285.3	286.9	288.5	290.8	292.9	295.5	297.8	300.9	302.4	302.7	303.5	304.0	303.4
3533	Oilfield machinery and equipment	395.8	406.5	411.3	415.6	418.2	420.3	427.2	429.2	435.8	439.3	435.8	437.8	438.4	439.6
3534	Elevators and moving stairways	253.9	252.8	254.6	250.7	260.7	265.6	264.3	269.8	271.6	271.8	271.6	273.5	275.5	275.5
3542	Machine tools, metal forming types (12/71 = 100)	306.9	309.5	312.0	311.7	312.3	319.3	319.7	322.8	324.5	325.2	325.6	326.5	333.6	333.6
3546	Power driven hand tools (12/76 = 100)	147.3	148.4	148.6	149.5	149.5	150.0	153.3	153.2	153.9	154.7	156.1	156.4	157.4	157.5
3552	Textile machinery (12/69 = 100)	243.5	245.4	248.2	248.0	247.9	249.9	252.3	253.5	255.0	256.2	256.5	258.1	259.8	258.9
3553	Woodworking machinery (12/72 = 100)	225.0	225.4	228.9	228.9	229.1	229.1	233.7	232.9	233.4	234.7	234.4	230.0	230.0	230.6
3576	Scales and balances, excluding laboratory	226.2	226.6	226.1	226.2	226.3	226.5	228.3	228.8	229.8	229.6	229.5	230.6	231.9	231.9
3592	Carburetors, pistons, rings, valves (6/76 = 100)	178.0	181.3	182.1	185.4	187.2	187.3	185.3	189.6	190.4	192.8	195.2	195.7	196.6	197.2
3612	Transformers	209.9	212.8	214.5	217.3	222.0	222.0	220.5	222.2	222.4	223.3	224.7	224.8	224.7	226.0
3623	Welding apparatus, electric (12/72 = 100)	227.5	229.6	231.6	232.5	233.2	235.8	236.8	236.9	232.3	237.6	232.9	233.1	236.9	237.5
3631	Household cooking equipment (12/75 = 100)	141.2	141.5	141.6	141.6	141.9	142.6	146.0	146.8	147.2	146.2	146.8	146.9	148.2	150.4
3632	Household refrigerators, freezers (6/76 = 100)	132.8	135.5	136.4	137.8	137.9	137.9	140.1	141.1	142.3	142.5	143.2	144.3	145.5	145.9
3633	Household laundry equipment (12/73 = 100)	174.3	174.6	177.2	177.0	178.4	178.8	180.1	180.5	186.2	186.9	188.6	189.0	189.1	189.7
3635	Household vacuum cleaners	159.1	158.8	158.8	161.3	161.0	160.8	165.6	165.2	165.7	165.4	158.3	158.4	158.4	159.4
3636	Sewing machines (12/75 = 100)	146.8	153.8	153.8	156.0	156.0	156.0	155.8	155.8	155.8	154.3	153.7	153.7	153.7	153.0
3641	Electric lamps	277.3	280.0	283.1	285.9	284.8	281.3	282.1	286.1	283.6	296.6	294.5	293.9	291.9	291.9
3644	Noncurrent-carrying wiring devices (12/72 = 100)	249.6	253.8	258.5	258.7	262.1	262.1	257.9	259.0	258.1	260.0	263.0	261.1	260.7	260.3
3646	Commercial lighting fixtures (12/75 = 100)	154.8	155.5	157.6	158.9	159.3	159.2	159.2	161.1	162.4	163.5	167.5	167.2	166.5	165.9
3648	Lighting equipment, n.e.c. (12/75 = 100)	155.9	161.3	161.7	162.0	162.4	163.1	162.8	167.8	168.8	170.9	170.4	170.9	171.1	171.2
3671	Electron tubes receiving type	309.7	327.5	327.5	327.5	327.8	342.2	374.1	374.2	374.4	374.5	375.0	375.1	376.0	376.0
3674	Semiconductors and related devices	90.9	89.2	91.4	91.6	92.0	91.7	90.9	90.2	90.9	89.5	89.6	89.7	90.8	90.5
3675	Electronic capacitors (12/75 = 100)	170.3	178.8	172.4	171.5	168.1	166.6	167.4	169.7	168.4	167.6	166.6	166.8	166.7	166.2
3676	Electronic resistors (12/75 = 100)	141.4	142.5	142.7	142.7	143.0	142.8	143.7	144.0	143.4	144.4	145.2	144.9	144.4	144.6
3678	Electronic connectors (12/75 = 100)	154.9	155.8	156.5	156.8	155.8	155.8	155.9	156.2	156.7	156.4	158.1	158.3	157.6	160.9
3692	Primary batteries, dry and wet	182.2	182.7	182.7	182.7	182.7	182.7	182.0	184.3	190.5	195.5	194.9	195.8</		

## PRODUCTIVITY DATA

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

### Definitions

**Output** is the constant dollar gross domestic product produced in a given period. Indexes of **output per hour of labor input**, or labor productivity, measure the value of goods and services produced per hour of labor. **Compensation per hour** includes wages and salaries of employees plus employers' contributions for social insurance and private benefit 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 cost** measures the labor compensation cost required to produce one unit of output and is derived by dividing compensation by output. **Unit nonlabor payments** include profits, depreciation, interest, and indirect taxes per unit of output. They are computed by subtracting compensation of all persons from the current dollar gross domestic product and dividing by output. In these tables, **unit nonlabor costs** contain all the components of unit nonlabor payments except unit profits. **Unit profits** include corporate profits and inventory valuation adjustments per unit of output.

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

The use of the term "man hours" to identify the labor component of productivity and costs, in tables 26 through 29, has been discontinued. **Hours of all persons** is now used to describe the labor input of payroll workers, self-employed persons, and unpaid family workers. **Output per all-employee hour** is now used to describe labor productivity in nonfinancial corporations where there are no self-employed.

### Notes on the data

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

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

Beginning with the September 1982 issue of the *Review*, all of the productivity and cost measures contained in these tables are based on revised output and compensation measures released by the Bureau of Economic Analysis in July as part of the regular revision cycle of the National Income and Product Accounts. Measures of labor input have been revised to reflect results of the 1980 census, and seasonal factors have been recomputed for use in the preparation of quarterly measures. The word "private" is no longer being used as part of the series title of one of the two business sector measures prepared by BLS; no change has been made in the definition or content of the measures as a result of this change.

**26. Annual indexes of productivity, hourly compensation, unit costs, and prices, selected years, 1950-81**

[1977=100]

Item	1950	1955	1960	1965	1970	1974	1975	1976	1977	1978	1979	1980	1981
<b>Business sector:</b>													
Output per hour of all persons	50.4	58.3	65.2	78.3	86.2	'92.5	'94.5	97.6	100.0	100.6	99.6	98.9	100.7
Compensation per hour	20.0	26.4	33.9	41.7	58.2	78.0	85.5	92.9	100.0	108.6	119.1	131.4	144.1
Real compensation per hour	50.5	59.6	69.5	80.1	90.8	95.9	96.3	98.9	100.0	100.9	99.4	96.7	96.0
Unit labor cost	39.7	45.2	52.0	53.3	67.5	'84.4	'90.5	95.1	100.0	108.0	119.5	132.9	143.1
Unit nonlabor payments	43.4	47.6	50.6	57.6	63.2	'78.5	'90.4	94.0	100.0	106.7	112.8	119.3	135.2
Implicit price deflator	41.0	46.0	51.6	54.7	66.0	'82.4	'90.5	94.7	100.0	107.5	117.2	128.3	'140.4
<b>Nonfarm business sector:</b>													
Output per hour of all persons	56.3	62.8	68.3	80.5	86.8	'92.9	'94.7	97.8	100.0	100.6	99.3	98.5	99.9
Compensation per hour	21.8	28.3	35.7	42.8	58.7	78.5	86.0	93.0	100.0	108.6	118.8	130.9	143.6
Real compensation per hour	55.0	64.0	73.0	82.2	91.5	96.4	96.8	99.0	100.0	100.9	99.2	96.3	95.7
Unit labor cost	38.8	45.0	52.2	53.2	67.6	'84.5	'90.8	95.1	100.0	108.0	119.6	133.0	143.8
Unit nonlabor payments	42.7	47.8	50.4	58.0	63.7	'75.8	'88.5	93.5	100.0	105.3	110.3	119.1	134.8
Implicit price deflator	40.1	46.0	51.6	54.8	66.3	'81.6	'90.0	94.6	100.0	107.1	116.5	128.3	140.8
<b>Nonfinancial corporations:</b>													
Output per hour of all employees	( <sup>1</sup> )	( <sup>1</sup> )	66.6	80.2	85.7	91.7	94.8	97.8	100.0	101.0	101.2	100.8	102.7
Compensation per hour	( <sup>1</sup> )	( <sup>1</sup> )	36.2	43.0	58.3	77.6	85.5	92.5	100.0	108.6	119.2	131.6	144.4
Real compensation per hour	( <sup>1</sup> )	( <sup>1</sup> )	74.2	82.5	90.9	95.4	96.2	98.5	100.0	100.8	99.5	96.8	96.2
Unit labor cost	( <sup>1</sup> )	( <sup>1</sup> )	54.4	53.5	68.0	84.7	90.2	94.6	100.0	107.5	117.8	130.5	140.6
Unit nonlabor payments	( <sup>1</sup> )	( <sup>1</sup> )	54.6	60.8	63.1	75.6	90.8	95.0	100.0	104.2	106.9	117.7	134.8
Implicit price deflator	( <sup>1</sup> )	( <sup>1</sup> )	54.5	56.1	66.3	81.6	90.4	94.7	100.0	106.4	114.1	126.1	138.6
<b>Manufacturing:</b>													
Output per hour of all persons	49.4	56.4	60.0	74.5	79.1	90.8	93.4	97.5	100.0	100.9	101.5	101.7	104.5
Compensation per hour	21.5	28.8	36.7	42.8	57.6	76.3	85.4	92.3	100.0	108.3	118.9	132.8	146.4
Real compensation per hour	54.0	65.1	75.1	82.3	89.8	93.8	96.2	98.3	100.0	100.6	99.2	97.7	97.5
Unit labor cost	43.4	51.0	61.1	57.5	72.7	84.1	91.5	94.6	100.0	107.4	117.1	130.6	140.0
Unit nonlabor payments	54.3	58.5	61.1	69.3	65.0	69.3	87.3	93.7	100.0	102.5	99.9	97.1	108.8
Implicit price deflator	46.6	53.2	61.1	61.0	70.5	79.8	90.3	94.4	100.0	106.0	112.0	120.8	130.8

<sup>1</sup> Not available.

r = revised.

**27. Annual changes in productivity, hourly compensation, unit costs, and prices, 1971-81**

Item	Year											Annual rate of change	
	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1950-81	1960-81
<b>Business sector:</b>													
Output per hour of all persons	3.6	3.5	-2.6	-2.4	2.2	3.3	2.4	0.6	-0.9	-0.7	1.8	2.5	2.1
Compensation per hour	6.6	6.5	8.0	9.4	9.6	8.6	7.7	8.6	9.7	10.4	9.6	6.2	7.3
Real compensation per hour	2.2	3.1	1.6	-1.4	0.5	2.6	1.2	0.9	-1.4	-2.8	-0.7	2.4	1.8
Unit labor cost	2.9	2.9	5.3	12.1	7.3	5.1	5.1	8.0	10.7	11.2	7.7	3.6	5.0
Unit nonlabor payments	7.6	4.5	5.9	4.4	15.1	4.0	6.4	6.7	5.7	5.8	13.3	3.5	4.7
Implicit price deflator	4.4	3.4	5.5	9.5	9.8	4.7	5.6	7.5	9.0	9.4	9.5	3.6	4.9
<b>Nonfarm business sector:</b>													
Output per hour of all persons	3.3	3.7	2.4	-2.5	2.0	3.2	2.2	0.6	-1.3	-0.9	1.4	2.2	1.9
Compensation per hour	6.6	6.7	7.6	9.4	9.6	8.1	7.5	8.6	9.3	10.2	9.7	5.9	7.0
Real compensation per hour	2.2	3.3	1.3	-1.4	0.4	2.2	1.0	0.9	-1.7	-2.9	-0.7	2.1	1.5
Unit labor cost	3.2	2.9	5.0	12.2	7.5	4.7	5.2	8.0	10.7	11.2	8.1	3.6	5.0
Unit nonlabor payments	7.4	3.2	1.3	5.9	16.7	5.7	6.9	5.3	4.7	8.0	13.1	3.5	4.6
Implicit price deflator	4.5	3.0	3.8	10.2	10.3	5.0	5.7	7.1	8.8	10.2	9.7	3.6	4.9
<b>Nonfinancial corporations:</b>													
Output per hour of all employees	4.8	3.0	2.6	-3.4	3.4	3.2	2.3	1.0	0.2	-0.3	1.8	(1)	2.0
Compensation per hour	6.5	5.8	7.7	9.7	10.1	8.2	8.1	8.6	9.8	10.4	9.7	(1)	6.9
Real compensation per hour	2.1	2.5	1.4	-1.1	0.9	2.3	1.6	0.8	-1.3	-2.8	-0.6	(1)	1.4
Unit labor cost	1.6	2.8	4.9	13.6	6.5	4.9	5.7	7.5	9.6	10.7	7.8	(1)	4.8
Unit nonlabor payments	7.4	2.7	1.5	7.1	20.1	4.6	5.3	4.2	2.6	10.1	14.6	(1)	4.0
Implicit price deflator	3.5	2.8	3.8	11.4	10.9	4.8	5.6	6.4	7.2	10.5	10.0	(1)	4.5
<b>Manufacturing:</b>													
Output per hour of all persons	6.1	5.0	5.4	-2.4	2.9	4.4	2.5	0.9	0.7	0.2	2.8	2.6	2.7
Compensation per hour	6.1	5.4	7.2	10.6	11.9	8.0	8.3	8.3	9.7	11.8	10.2	5.8	6.9
Real compensation per hour	1.8	2.0	0.9	-0.3	2.5	2.1	1.8	0.6	-1.4	-1.6	-0.2	2.0	1.4
Unit labor cost	0.0	0.3	1.7	13.3	8.8	3.4	5.7	7.4	9.0	11.6	7.2	3.1	4.1
Unit nonlabor payments	11.2	0.8	-3.3	-1.8	25.9	7.4	6.7	2.5	-2.6	-2.7	12.0	2.1	2.7
Implicit price deflator	3.1	0.5	0.3	9.0	13.1	4.6	6.0	6.0	5.7	7.8	8.4	2.8	3.7

<sup>1</sup> Not available.

r = revised.

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

[1977 = 100]

Item	Annual average		Quarterly indexes										
			1979		1980				1981				1982
	1980	1981	IV	I	II	III	IV	I	II	III	IV	I	II
<b>Business sector:</b>													
Output per hour of all persons	98.9	100.7	99.1	99.3	98.2	98.9	99.3	100.7	100.7	101.0	100.2	100.0	100.3
Compensation per hour	131.4	144.1	123.0	126.7	130.0	133.1	136.1	140.0	142.5	145.6	148.2	150.9	153.4
Real compensation per hour	96.7	96.0	97.8	97.0	96.4	96.9	96.2	96.2	96.4	95.7	95.6	96.5	97.1
Unit labor cost	132.9	143.1	124.1	127.6	132.3	134.7	137.0	139.0	141.5	144.2	147.9	150.9	153.0
Unit nonlabor payments	119.3	135.2	113.2	116.0	116.2	120.6	124.6	131.8	133.4	137.4	138.3	136.4	137.3
Implicit price deflator	128.3	140.4	120.4	123.7	126.9	129.9	132.8	136.5	138.8	141.9	144.6	146.0	147.7
<b>Nonfarm business sector:</b>													
Output per hour of all persons	98.5	99.9	98.8	98.7	97.6	98.4	99.2	100.4	100.0	100.0	99.1	99.2	99.3
Compensation per hour	130.9	143.6	122.7	126.2	129.3	132.6	135.7	139.5	142.0	145.1	147.7	150.4	152.6
Real compensation per hour	96.3	95.7	97.6	96.6	96.0	96.5	95.9	96.0	96.0	95.4	95.3	96.3	96.6
Unit labor cost	133.0	143.8	124.1	127.8	132.5	134.7	136.8	139.0	141.9	145.1	149.0	151.6	153.7
Unit nonlabor payments	119.1	134.8	111.3	115.2	116.7	120.3	124.4	131.5	132.8	136.7	138.4	136.7	137.4
Implicit price deflator	128.3	140.8	119.8	123.6	127.2	129.9	132.7	136.5	138.9	142.3	145.5	146.6	148.2
<b>Nonfinancial corporations:</b>													
Output per hour of all employees	100.8	102.7	100.6	100.8	99.8	101.1	101.7	102.8	102.7	102.8	102.2	102.3	102.9
Compensation per hour	131.6	144.4	123.1	126.8	130.0	133.4	136.3	140.4	142.7	145.7	148.6	151.7	154.1
Real compensation per hour	96.8	96.2	97.9	97.0	96.4	97.1	96.3	96.5	96.5	95.8	95.9	97.1	97.5
Total unit costs	131.0	143.4	121.4	125.0	130.4	132.9	135.8	138.3	141.7	144.7	149.1	151.8	154.0
Unit labor cost	130.5	140.6	122.4	125.8	130.2	131.9	134.1	136.5	138.9	141.7	145.4	148.3	149.7
Unit nonlabor costs	132.5	151.4	118.7	122.7	131.0	135.7	140.7	143.4	149.6	153.1	159.6	161.8	166.2
Unit profits	87.9	101.6	84.1	91.1	81.9	87.8	90.5	104.7	98.8	105.2	97.6	86.1	82.4
Implicit price deflator	126.1	138.6	117.1	121.1	124.8	127.7	130.6	134.5	136.8	140.2	143.2	144.3	145.8
<b>Manufacturing:</b>													
Output per hour of all persons	101.7	104.5	101.9	102.6	100.4	100.3	103.6	105.2	105.0	105.0	102.8	102.1	102.2
Compensation per hour	132.8	146.4	122.6	127.1	130.9	135.2	138.4	142.6	144.9	147.3	150.7	154.7	157.6
Real compensation per hour	97.7	97.5	97.4	97.3	97.1	98.5	97.8	98.0	97.9	96.8	97.2	99.0	99.7
Unit labor cost	130.6	140.0	120.3	123.9	130.3	134.9	133.6	135.5	138.0	140.3	146.6	151.5	154.3

<sup>1</sup> Not available.

p = preliminary.

r = revised.



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

[1977 = 100]

Item	Quarterly percent change at annual rate						Percent change from same quarter a year ago						
	IV 1980 to I 1981	I 1981 to II 1981	II 1981 to III 1981	III 1981 to IV 1981	IV 1981 to I 1982	I 1982 to II 1982	I 1980 to I 1981	II 1980 to II 1981	III 1980 to III 1981	IV 1980 to IV 1981	I 1981 to I 1982	II 1981 to II 1982	
	<b>Business sector:</b>												
Output per hour of all persons	5.6	0.0	1.1	-2.9	-1.0	<sup>r</sup> 1.2	1.4	2.5	2.2	0.9	-0.7	<sup>r</sup> -0.4	
Compensation per hour	11.7	7.5	9.0	7.4	7.3	<sup>r</sup> 6.9	10.5	9.7	9.4	8.9	7.8	<sup>r</sup> 7.6	
Real compensation per hour	0.2	0.5	-2.6	-0.4	3.9	<sup>r</sup> 2.2	-0.7	-0.1	-1.3	-0.6	0.3	<sup>r</sup> 0.7	
Unit labor costs	5.7	7.5	7.8	10.6	8.4	<sup>r</sup> 5.6	8.9	6.9	7.1	7.9	8.6	<sup>r</sup> 8.1	
Unit nonlabor payments	25.0	4.9	12.5	2.9	-5.4	<sup>r</sup> 2.7	13.7	14.8	13.9	11.0	3.5	<sup>r</sup> 3.0	
Implicit price deflator	11.6	6.6	9.3	8.0	3.8	<sup>r</sup> 4.7	10.4	9.4	9.2	8.9	6.9	<sup>r</sup> 6.4	
<b>Nonfarm business sector:</b>													
Output per hour of all persons	4.9	-1.3	-0.3	-3.5	0.6	<sup>r</sup> 0.5	1.7	2.5	1.6	-0.1	-1.1	<sup>r</sup> -0.7	
Compensation per hour	11.8	7.1	9.0	7.3	7.7	<sup>r</sup> 6.0	10.6	9.8	9.4	8.8	7.8	<sup>r</sup> 7.5	
Real compensation per hour	0.4	0.1	-2.6	-0.5	4.3	<sup>r</sup> 1.4	-0.6	0.0	-1.2	-0.6	0.3	<sup>r</sup> 0.6	
Unit labor costs	6.6	8.6	9.3	11.2	7.1	<sup>r</sup> 5.5	8.8	7.1	7.7	8.9	9.0	<sup>r</sup> 8.3	
Unit nonlabor payments	24.9	4.0	12.1	5.1	-4.6	<sup>r</sup> 2.0	14.1	13.8	13.6	11.2	4.0	<sup>r</sup> 3.5	
Implicit price deflator	12.1	7.1	10.2	9.2	3.3	<sup>r</sup> 4.4	10.4	9.2	9.6	9.6	7.4	<sup>r</sup> 6.7	
<b>Nonfinancial corporations:</b>													
Output per hour of all employees	4.7	-0.4	0.3	-2.3	0.5	<sup>p</sup> 2.3	2.1	2.9	1.7	0.6	-0.5	<sup>p</sup> 2.3	
Compensation per hour	12.4	6.9	8.5	8.3	8.6	<sup>p</sup> 6.4	10.7	9.8	9.2	9.0	8.1	<sup>p</sup> 6.4	
Real compensation per hour	0.9	-0.1	-3.0	0.5	5.2	<sup>p</sup> 1.7	-0.5	0.1	-1.4	-0.5	0.6	<sup>p</sup> 1.7	
Total unit costs	7.5	10.2	8.6	12.8	7.4	<sup>p</sup> 6.0	10.6	8.7	8.9	9.8	9.7	<sup>p</sup> 8.7	
Unit labor costs	7.4	7.3	8.2	10.9	8.1	<sup>p</sup> 4.0	8.5	6.7	7.5	8.4	8.6	<sup>p</sup> 7.8	
Unit nonlabor costs	8.0	18.5	9.8	17.8	5.7	<sup>p</sup> 11.4	16.9	14.2	12.9	13.4	12.8	<sup>p</sup> 11.1	
Unit profits	79.5	-20.8	28.4	-25.9	-39.4	<sup>p</sup> -16.0	14.9	20.7	19.7	7.9	-17.8	<sup>p</sup> -16.6	
Implicit price deflator	12.3	7.1	10.2	8.9	3.0	<sup>p</sup> 4.4	11.0	9.6	9.7	9.6	7.3	<sup>p</sup> 4.4	
<b>Manufacturing:</b>													
Output per hour of all persons	6.3	-0.7	-0.1	-8.2	<sup>r</sup> -2.4	<sup>r</sup> 0.2	2.6	4.5	4.7	-0.8	<sup>r</sup> -2.9	<sup>r</sup> -2.7	
Compensation per hour	12.7	6.6	6.8	9.6	11.1	<sup>r</sup> 7.8	12.2	10.7	8.9	8.9	8.5	8.8	
Real compensation per hour	1.2	-0.4	-4.6	1.6	7.6	<sup>r</sup> 3.1	0.8	0.9	-1.7	-0.6	1.0	1.8	
Unit labor costs	6.0	7.3	6.8	19.4	<sup>r</sup> 13.9	<sup>r</sup> 7.7	9.3	5.9	4.0	9.8	<sup>r</sup> 11.7	<sup>r</sup> 11.8	

<sup>r</sup> Not available.

<sup>p</sup> = revised.

## 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 25, "The Employment Cost Index," of the *BLS Handbook of Methods* (Bulletin 1910), 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 periodical of the Bureau.

### 30. Employment Cost Index

[June 1981 = 100]

Series	1980			1981				1982		Percent change	
	June	Sept.	Dec.	March	June	Sept.	Dec.	March	June	3 months ended	12 months ended
										June 1982	
<b>Civilian nonfarm workers<sup>1</sup></b> .....	—	—	—	—	100.0	102.6	104.5	106.3	107.5	1.1	7.5
Workers, by occupational group .....											
White-collar workers .....	—	—	—	—	100.0	102.7	104.9	106.5	107.7	1.1	7.7
Blue-collar workers .....	—	—	—	—	100.0	102.3	104.1	105.7	107.1	1.3	7.1
Service workers .....	—	—	—	—	100.0	102.8	104.2	107.2	108.3	1.0	8.3
Workers, by industry division .....											
Manufacturing .....	—	—	—	—	100.0	102.1	104.0	106.0	107.2	1.1	7.2
Nonmanufacturing .....	—	—	—	—	100.0	102.8	104.8	106.4	107.7	1.2	7.7
Services .....	—	—	—	—	100.0	104.4	107.1	108.2	109.2	.9	9.2
Public administration <sup>2</sup> .....	—	—	—	—	100.0	104.3	106.0	108.1	109.1	.9	9.1
<b>Private nonfarm workers</b> .....	90.7	92.8	94.7	98.1	100.0	102.0	104.0	105.8	107.2	1.3	7.2
Workers, by occupational group .....											
White-collar workers .....	90.8	92.6	94.5	98.3	100.0	101.8	104.0	105.8	107.2	1.3	7.2
Blue-collar workers .....	90.5	93.0	94.9	97.8	100.0	102.2	104.0	105.6	107.0	1.3	7.0
Service workers .....	90.8	92.7	94.3	99.3	100.0	101.9	103.1	106.7	107.9	1.1	7.9
Workers, by industry division .....											
Manufacturing .....	90.5	92.6	94.7	98.0	100.0	102.1	104.0	106.0	107.2	1.1	7.2
Nonmanufacturing .....	90.8	92.9	94.7	98.2	100.0	102.0	103.9	105.7	107.1	1.3	7.1
<b>State and local government workers</b> .....	—	—	—	—	100.0	105.3	107.4	108.8	109.3	.5	9.3
Workers, by occupational group .....											
White-collar workers .....	—	—	—	—	100.0	105.7	107.8	109.1	109.5	.4	9.5
Blue-collar workers .....	—	—	—	—	100.0	104.2	105.9	108.2	108.9	.6	8.9
Workers, by industry division .....											
Services .....	—	—	—	—	100.0	105.8	107.9	109.0	109.4	.4	9.4
Schools .....	—	—	—	—	100.0	106.0	107.9	108.9	109.1	.2	9.1
Elementary and secondary .....	—	—	—	—	100.0	106.3	108.3	109.3	109.5	.2	9.5
Hospitals and other services <sup>3</sup> .....	—	—	—	—	100.0	105.0	107.8	109.5	110.3	.7	10.3
Public administration <sup>2</sup> .....	—	—	—	—	100.0	104.3	106.0	108.1	109.1	.9	9.1

<sup>1</sup>Excludes 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.

NOTE: Dashes indicate data not available.



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

[June 1981 = 100]

Series	1980			1981				1982		Percent change	
	June	Sept.	Dec.	March	June	Sept.	Dec.	March	June	3 months ended	12 months ended
										June 1982	
<b>Civilian nonfarm workers<sup>1</sup></b> .....	—	—	—	—	100.0	102.5	104.4	106.3	107.3	0.9	7.3
Workers, by occupational group											
White-collar workers .....	—	—	—	—	100.0	102.6	104.7	106.7	107.6	.8	7.6
Blue-collar workers .....	—	—	—	—	100.0	102.4	104.0	105.5	106.7	1.1	6.7
Service workers .....	—	—	—	—	100.0	102.5	103.6	106.8	107.9	1.0	7.9
Workers, by industry division											
Manufacturing .....	—	—	—	—	100.0	102.1	104.0	105.9	107.0	1.0	7.0
Nonmanufacturing .....	—	—	—	—	100.0	102.7	104.5	106.5	107.5	.9	7.5
Services .....	—	—	—	—	100.0	104.4	106.6	108.6	109.5	.8	9.5
Public administration <sup>2</sup> .....	—	—	—	—	100.0	103.8	105.5	107.5	108.4	.8	8.4
<b>Private nonfarm workers</b>	91.5	93.5	95.4	98.0	100.0	102.0	103.8	105.9	107.1	1.1	7.1
Workers, by occupational group											
White-collar workers	91.4	93.3	95.2	98.1	100.0	101.8	103.9	106.2	107.3	1.0	7.3
Professional and technical workers .....	90.8	93.2	95.3	98.2	100.0	103.3	105.5	108.0	109.4	1.3	9.4
Managers and administrators .....	92.0	93.5	94.7	98.6	100.0	101.6	102.8	105.8	107.2	1.3	7.2
Salesworkers .....	90.7	92.2	94.8	96.2	100.0	98.0	101.9	102.2	101.8	—	1.8
Clerical workers .....	91.9	93.8	95.7	98.6	100.0	102.7	104.2	107.0	108.3	1.2	8.3
Blue-collar workers	91.6	93.8	95.7	97.7	100.0	102.3	103.9	105.4	106.6	1.1	6.6
Craft and kindred workers .....	91.4	94.0	96.1	97.8	100.0	102.9	104.3	106.2	107.6	1.3	7.6
Operatives, except transport .....	91.5	93.6	95.5	97.8	100.0	102.1	104.1	105.4	106.6	1.1	6.6
Transport equipment operatives .....	92.2	93.5	95.3	96.8	100.0	101.0	102.7	103.2	104.1	.9	4.1
Nonfarm laborers .....	91.8	93.9	95.7	97.5	100.0	101.5	103.3	104.1	105.1	1.0	5.1
Service workers .....	91.9	93.4	94.8	99.2	100.0	101.8	102.7	106.7	107.9	1.1	7.9
Workers, by industry division											
Manufacturing .....	91.8	93.6	95.7	97.9	100.0	102.1	104.0	105.9	107.0	1.0	7.0
Durables .....	91.2	93.5	95.7	97.9	100.0	102.1	104.5	106.3	107.4	1.0	7.4
Nondurables .....	92.7	93.8	95.7	97.8	100.0	102.0	103.1	105.3	106.3	.9	6.3
Nonmanufacturing .....	91.3	93.4	95.2	98.1	100.0	102.0	103.8	105.9	107.1	1.1	7.1
Construction .....	91.9	94.5	95.9	97.6	100.0	103.0	104.3	105.9	107.3	1.3	7.3
Transportation and public utilities .....	90.2	93.1	95.6	97.7	100.0	102.0	103.6	105.7	106.9	1.1	6.9
Wholesale and retail trade .....	92.2	93.6	95.1	98.2	100.0	101.3	102.3	103.9	105.8	1.8	5.8
Wholesale trade .....	92.1	93.0	95.9	98.5	100.0	102.0	103.4	106.3	108.9	2.4	8.9
Retail trade .....	92.2	93.8	94.8	98.1	100.0	101.0	101.9	103.0	104.5	1.5	4.5
Finance, insurance, and real estate .....	89.4	91.2	93.1	95.7	100.0	98.3	102.3	103.7	102.4	—	1.3
Services .....	91.9	94.2	95.7	99.6	100.0	103.6	105.8	108.8	110.0	1.1	10.0
<b>State and local government workers</b> .....	—	—	—	—	100.0	105.0	107.0	108.2	108.7	.5	8.7
Workers, by occupational group											
White-collar workers .....	—	—	—	—	100.0	105.4	107.5	108.5	108.9	.4	8.9
Blue-collar workers .....	—	—	—	—	100.0	103.9	105.5	107.5	107.9	.4	7.9
Workers, by industry division											
Services .....	—	—	—	—	100.0	105.5	107.6	108.4	108.8	.4	8.8
Schools .....	—	—	—	—	100.0	105.7	107.7	108.3	108.5	.2	8.5
Elementary and secondary .....	—	—	—	—	100.0	106.0	107.9	108.7	108.8	.1	8.8
Hospitals and other services <sup>3</sup> .....	—	—	—	—	100.0	104.6	107.3	108.8	109.5	.6	9.5
Public administration <sup>2</sup> .....	—	—	—	—	100.0	103.3	105.5	107.5	108.4	.8	8.4

<sup>1</sup>Excludes 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.

NOTE: Dashes indicate data not available.

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

[June 1981 = 100]

Series	1980			1981				1982		Percent change	
	June	Sept.	Dec.	March	June	Sept.	Dec.	March	June	3 months ended	12 months ended
										June 1982	
<b>COMPENSATION</b>											
Workers, by bargaining status <sup>1</sup>											
Union .....	89.7	92.4	94.7	97.6	100.0	102.5	104.8	106.5	108.4	1.8	8.4
Manufacturing .....	—	—	—	—	100.0	102.3	104.6	106.3	108.0	1.6	8.0
Nonmanufacturing .....	—	—	—	—	100.0	102.7	105.0	106.8	108.7	1.8	8.7
Nonunion .....	91.1	92.8	94.6	98.4	100.0	101.7	103.5	105.3	106.5	1.1	6.5
Manufacturing .....	—	—	—	—	100.0	101.8	103.5	105.7	106.6	.9	6.6
Nonmanufacturing .....	—	—	—	—	100.0	101.7	103.5	105.2	106.4	1.1	6.4
Workers, by area size <sup>1</sup>											
Metropolitan areas .....	90.6	92.8	94.7	98.1	100.0	102.1	104.1	105.7	107.2	1.4	7.2
Other areas .....	90.3	91.9	94.2	98.1	100.0	101.8	105.2	106.2	107.0	.8	7.0
<b>WAGES AND SALARIES</b>											
Workers, by bargaining status <sup>1</sup>											
Union .....	90.8	93.5	95.8	97.4	100.0	102.7	105.0	106.5	108.1	1.5	8.1
Manufacturing .....	91.3	93.8	96.1	97.7	100.0	102.6	104.7	105.9	107.3	1.3	7.3
Nonmanufacturing .....	90.4	93.1	95.5	97.1	100.0	102.8	105.2	107.0	108.8	1.7	8.8
Nonunion .....	91.8	93.4	95.1	98.2	100.0	101.6	103.2	105.6	106.5	.9	6.5
Manufacturing .....	92.3	93.4	95.4	97.9	100.0	101.7	103.3	105.9	106.7	.8	6.7
Nonmanufacturing .....	91.5	93.4	95.0	98.3	100.0	101.6	103.2	105.5	106.4	.9	6.4
Workers, by region <sup>1</sup>											
Northeast .....	92.5	94.2	96.0	98.3	100.0	101.7	104.4	106.1	106.7	.6	6.7
South .....	91.4	93.2	94.9	98.0	100.0	101.9	102.8	105.7	107.4	1.6	7.4
North Central .....	91.6	93.3	95.3	98.1	100.0	101.6	103.3	104.7	106.1	1.3	6.1
West .....	90.4	93.5	95.3	97.9	100.0	103.2	105.1	107.9	108.6	.6	8.6
Workers, by area size <sup>1</sup>											
Metropolitan areas .....	91.4	93.5	95.4	97.9	100.0	102.1	104.0	105.9	107.1	1.1	7.1
Other areas .....	91.5	92.9	95.1	98.3	100.0	101.8	103.1	106.0	106.8	.8	6.8

<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.

**33. Wage and compensation change, major collective bargaining settlements, 1977 to date**

[In percent]

Measure	Annual average					Quarterly average								
	1977	1978	1979	1980	1981	1980			1981				1982 <sup>P</sup>	
						II	III	IV	I	II	III	IV	I	II
Total compensation changes covering 5,000 workers or more, all industries:														
First year of contract . . . . .	9.6	8.3	9.0	10.4	10.2	10.2	11.4	8.5	7.7	11.6	10.5	11.0	1.9	2.1
Annual rate over life of contract . . .	6.2	6.3	6.6	7.1	8.3	7.4	7.2	6.1	7.2	10.8	8.1	5.8	1.2	1.6
Wage rate changes covering at least 1,000 workers, all industries:														
First year of contract . . . . .	7.8	7.6	7.4	9.5	9.8	9.1	10.5	8.3	7.1	11.8	10.8	9.0	3.0	2.9
Annual rate over life of contract . . .	5.8	6.4	6.0	7.1	7.9	7.3	7.4	6.5	6.2	9.7	8.7	5.7	2.8	2.7
Manufacturing:														
First year of contract . . . . .	8.4	8.3	6.9	7.4	7.2	6.7	8.4	7.8	6.4	8.2	9.0	6.6	2.5	1.3
Annual rate over life of contract . . .	5.5	6.6	5.4	5.4	6.1	5.1	5.6	5.8	5.5	6.7	7.5	5.4	2.7	1.2
Nonmanufacturing (excluding construction):														
First year of contract . . . . .	8.0	8.0	7.6	9.5	9.8	10.3	9.5	8.2	8.0	11.8	8.6	9.6	2.6	6.5
Annual rate over life of contract . . .	5.9	6.5	6.2	6.6	7.3	8.5	5.9	6.8	7.3	9.1	7.2	5.6	2.1	5.7
Construction:														
First year of contract . . . . .	6.3	6.5	8.8	13.6	13.5	12.2	15.4	14.3	11.4	12.9	16.4	11.4	9.1	5.8
Annual rate over life of contract . . .	6.3	6.2	8.3	11.5	11.3	10.4	13.0	12.0	10.3	11.1	12.4	11.7	8.9	6.0

p=preliminary.

**34. Effective wage adjustments in collective bargaining units covering 1,000 workers or more, 1977 to date**

Measure	Year					Year and quarter								
	1977	1978	1979	1980	1981	1980			1981				1982 <sup>P</sup>	
						II	III	IV	I	II	III	IV	I	II
Average percent adjustment (including no change):														
All industries . . . . .	8.0	8.2	9.1	9.9	9.5	3.3	3.5	1.3	1.7	3.2	3.3	1.5	1.0	1.9
Manufacturing . . . . .	8.4	8.6	9.6	10.2	9.4	3.4	2.9	1.7	2.3	2.4	3.1	1.9	.9	.9
Nonmanufacturing . . . . .	7.6	7.9	8.8	9.7	9.5	3.2	4.0	1.1	1.2	3.8	3.4	1.1	1.0	2.6
From settlements reached in period . . . . .	3.0	2.0	3.0	3.6	2.5	1.0	1.7	.5	.4	1.1	.5	.4	.2	.3
Deferred from settlements reached in earlier period . . . . .	3.2	3.7	3.0	3.5	3.8	1.4	1.2	.3	.5	1.4	1.5	.4	.6	1.3
From cost-of-living clauses . . . . .	1.7	2.4	3.1	2.8	3.2	.8	.7	.6	.7	.7	1.2	.6	.3	.2
Total number of workers receiving wage change (in thousands) <sup>1</sup>														
From settlements reached in period . . . . .	—	—	—	—	8,648	—	—	—	3,855	4,701	4,364	3,225	2,955	3,359
Deferred from settlements reached in earlier period . . . . .	—	—	—	—	2,270	—	—	—	579	909	540	604	199	407
From cost-of-living clauses . . . . .	—	—	—	—	6,267	—	—	—	888	2,055	3,023	882	1,038	1,629
Number of workers receiving no adjustments (in thousands) . . . . .	—	—	—	—	4,593	—	—	—	2,639	2,669	2,934	2,179	1,960	1,496

<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 measures only the impact of larger strikes (1,000 workers or more). Formerly, these estimates measured the impact of strikes involving 6 workers or more; that is, the impact of virtually all strikes. Due to budget stringencies, collection of data on strikes involving 6 workers or more was discontinued with the December 1981 data.

35. 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 or year	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
1981: January	6	12	12.0	29.6	257.9	.01
February	7	10	10.7	20.9	118.5	.01
March	16	20	201.6	207.8	861.8	.04
April	17	27	48.0	223.5	4,085.2	.20
May	18	27	85.1	259.0	4,454.0	.24
June	30	43	200.1	415.1	2,618.3	.13
July	23	38	80.1	125.4	1,575.5	.08
August	9	17	36.2	86.6	1,017.9	.05
1982 <sup>p</sup> : January	2	4	6.1	11.4	199.9	.01
February	2	6	2.5	13.9	236.9	.01
March	3	8	8.3	21.3	352.2	.02
April	9	16	35.7	55.3	480.3	.02
May	14	21	43.7	60.3	636.1	.03
June	17	25	41.4	64.5	894.0	.04
July	11	22	37.3	63.2	851.9	.04
August	14	23	40.2	59.1	779.0	.04

p=preliminary.

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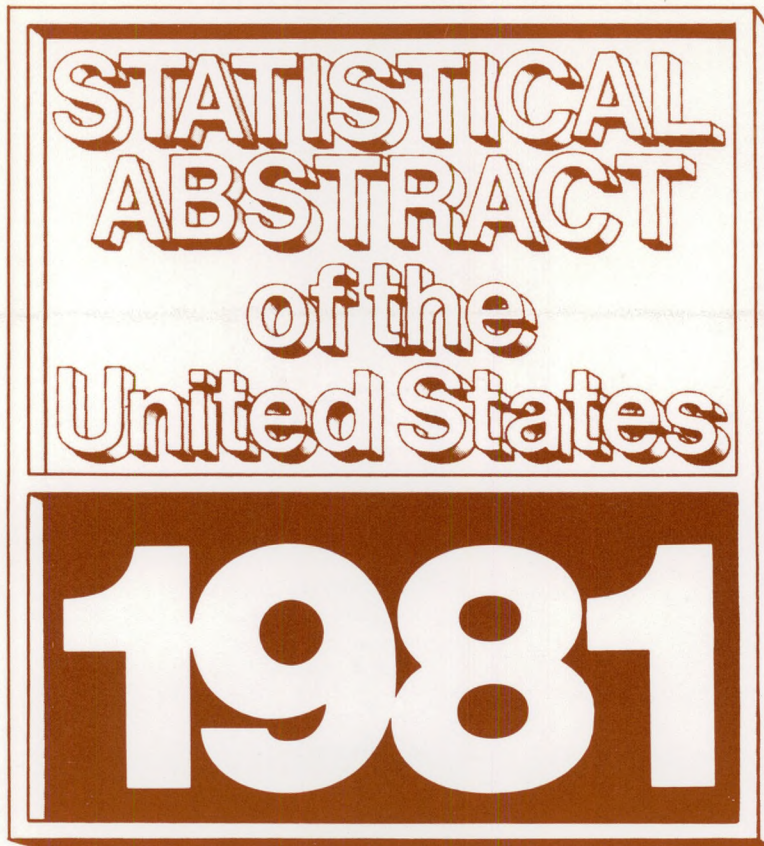


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