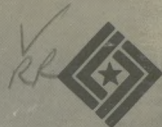


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MONTHLY LABOR REVIEW

U.S. Department of Labor  
Bureau of Labor Statistics

October 1984

NOV 05 1984

*In this issue:*

Occupational mobility and job tenure







**U.S. DEPARTMENT OF LABOR**  
**Raymond J. Donovan, Secretary**  
**BUREAU OF LABOR STATISTICS**  
 Janet L. Norwood, *Commissioner*

The Monthly Labor Review is published by the Bureau of Labor Statistics of the U.S. Department of Labor. Communications on editorial matters should be addressed to the Editor-in-Chief, Monthly Labor Review, Bureau of Labor Statistics, Washington, D.C. 20212. Phone: (202) 523-1327.

Subscription price per year—\$24 domestic; \$30 foreign. Single copy \$4, domestic; \$5 foreign. Subscription prices and distribution policies for the Monthly Labor Review (ISSN 0098-1818) and other Government publications are set by the Government Printing Office, an agency of the U.S. Congress. Send correspondence on circulation and subscription matters (including address changes) to: Superintendent of Documents, Government Printing Office, Washington, D.C. 20402

Make checks payable to Superintendent of Documents.

The Secretary of Labor has determined that the publication of this periodical is necessary in the transaction of the public business required by law of this Department. Use of funds for printing this periodical has been approved by the Director of the Office of Management and Budget through April 30, 1987. Second-class postage paid at Washington, D.C. and at additional mailing addresses.

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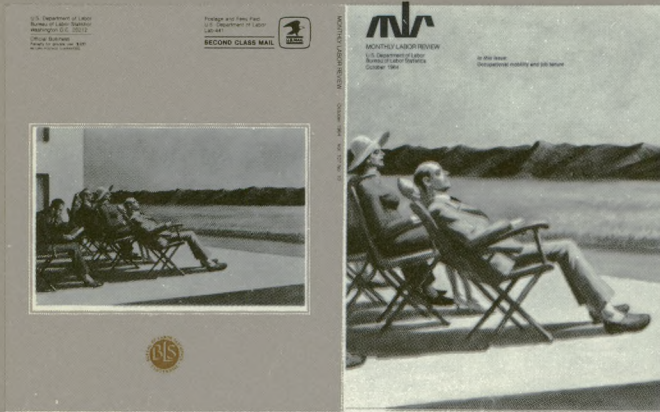
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**October cover:**

Detail from "People in the Sun," an oil painting by Edward Hopper, photograph courtesy National Museum of American Art, Washington, D.C.

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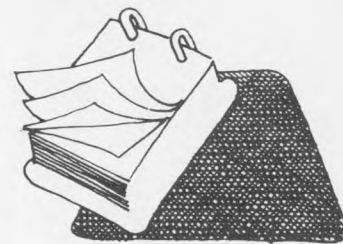
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# Labor Month In Review



**TECHNOLOGICAL CHANGE.** What effect does changing technology have on employment? At an August 21 seminar in Ixtapan de la Sal, Mexico, Associate Commissioner Jerome A. Mark of the Bureau of Labor Statistics offered some observations on this and related questions, based on BLS research. Excerpts:

**Pace quickens.** The pace of introduction of new technology appears to be increasing as U.S. industries modernize to reduce costs to compete more effectively in domestic and overseas markets. Advanced electronic computers, robots, flexible manufacturing systems, computer-aided design and computer-assisted manufacturing (CAD/CAM), and technologies to increase productivity in office tasks are being introduced extensively in such industries as steel, printing, motor vehicle manufacturing, metalworking, and banking.

However, the pace of change varies by industry and by firm within an industry—not all of which have the funds nor the volume of business that support adoption of the latest, advanced technologies. Although robots, computers, and other technologies receive the most media coverage, conventional changes such as materials handling mechanization, larger capacity equipment, and machines with faster speeds often are major developments with implications for productivity, employment, and job skills.

**Displacement.** Following technological changes, dislocation takes place more frequently than displacement. The introduction of new technology can be consistent with higher levels of employment and minimal displacement when the economy is strong. In addition, investment in new technology generally takes place during periods of economic expansion, when there is also growth in employment. To minimize adverse effects on workers, firms report using ad-

vance notice, retraining, and reassigning displaced employees to other jobs.

**Productivity increases.** Industries that lead in the adoption of new technology generally have above-average rates of productivity growth. Although the specific contribution of an innovation to productivity growth cannot be isolated from other factors and measured precisely, technology is widely regarded as a major source of productivity gains, with a reduction in unit labor requirements frequently associated with the introduction of robots, CAD/CAM, and other technological advances.

**Occupations affected.** The structure of occupations is undergoing change and the technologies being introduced in plants and offices are major factors in these shifts. Professional and technical workers, computer systems analysts, and programmers are examples of occupational groups growing in importance. In contrast, the growth rate in the number of operatives and laborers is slowing, as advanced machine tools, robots, computer process control, and advanced materials handling systems increase output per employee in key tasks. In offices, new and improved technologies to process and transmit data also are slowing the growth rate in the number of clerical workers—a group comprising about 19 million workers.

Moreover, the content of jobs is being modified by technological change. Although job titles frequently remain the same as innovation occurs, there is a general trend towards less demand for manual dexterity, physical strength for materials handling, and traditional craftsmanship. In the printing industry, for example, electronic composition methods have replaced longstanding craft skills, and the employment of compositors and typesetters has declined sharply.

On the factory floor, manual tasks are

being eliminated by computer process control, advanced materials handling equipment, and other innovations, with workers increasingly becoming monitors of highly mechanized production lines. The reduction in menial, repetitive tasks is welcomed, but the isolation and constant monitoring associated with advanced technology in some instances can create new stresses.

**Easing transition.** Measures can be undertaken to facilitate the orderly introduction of new technology. Advance notice to affected employees and training programs to provide employees with the skills required for new and modified jobs have cushioned the impact of change. The extent to which these measures are successful varies, of course, and depends upon the nature and extent of change, the industry involved, and the climate of labor-management relations.

Three measures emerge as important:

- Provide advance notice to workers affected by new technology. Advance notice is essential to assist orderly changeover to new methods. It provides time for individuals and unions, if the facility is organized, to formulate plans and to weigh carefully alternative jobs or layoff arrangements.
- Coordinate labor adjustment with technical planning. This technique increases the likelihood that attrition can be used to reduce the labor force, thereby avoiding the hardship of sudden layoffs and the loss of skilled and productive employees.
- Undertake training to provide employees with new skills associated with modern technology and retrain those displaced for other work. With the computer and similar complex equipment, training is becoming more formal, continuous, and costly but is essential to keep the work force up-to-date and flexible. □



# Effects of strong dollar, economic recovery apparent in first-half import and export prices

*Small price rises for imports continued to help dampen domestic inflation during the first half, but exporters encountered some difficulties as the powerful dollar drove up the prices of their goods in world markets and other nations failed to keep pace with the U.S. recovery*

MARK JOHNSON and PATRICIA SZAREK

U.S. import prices rose 1.0 percent in the first half of 1984, after falling 2.5 percent during all of 1983. (See table 1.) The increase in import prices was led by prices for food and miscellaneous manufactures, which were partially offset by stable crude oil prices. The vigorous U.S. economic recovery boosted demand for imported products—the Nation imported a record \$160.2 billion of merchandise during the first half<sup>1</sup>—while the strong dollar served to moderate price increases. The small rise in import prices was an important factor in the continued slowdown of domestic inflation as measured by the Consumer Price Index and the Producer Price Index.

U.S. export prices rose 2.0 percent in the first half. (See table 2.) This price index was published for the first time with the release of fourth-quarter 1983 data, and has risen 1.5 percent since that period. Higher prices for crude materials and fats and oils led the first-half increase in export prices. For raw materials, price increases were generally larger in the second quarter than in the first, reflecting rising prices for soybeans and fats and oils. Price increases for manufactured articles were smaller in the second quarter than in the first and rose only slightly during the entire first

half, a development that dampened the upward movement in U.S. export prices. The strong dollar and reduced demand for U.S. products by developing nations with heavy international debt loads placed downward pressure on export prices for these articles, which include machinery and transport equipment, chemicals, intermediate manufactures, and miscellaneous manufactures.

The price indexes discussed in this article are not seasonally adjusted and are based on transaction price information provided by a sample of U.S. importers and exporters. They represent 100 percent of the value of all imported and exported products. Indexes are published for detailed and aggregate categories of imports and exports.<sup>2</sup>

## General trends in trade

Because energy prices account for approximately one-third of the weight of the all-import price index, their 0.5-percent rise during the first half was a major factor moderating increases in import prices. When energy products are excluded, U.S. import prices rose 1.3 percent in the first half. (See table 1.) In all of 1983, U.S. import prices excluding energy rose 2.1 percent.

The dollar's appreciation against the currencies of our major trading partners in recent years has had a major impact on U.S. export and import prices. From its low in July 1980

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to June 1984, the dollar's trade-weighted exchange rate rose 36.0 percent.<sup>3</sup> (See chart 1.) Over the same 4-year period the dollar rose 748.3 percent against the Mexican peso, 107.5 percent against the French franc, 56.8 percent against the Deutschemark, and 13.1 percent against the Canadian dollar.<sup>4</sup> Also by mid-1984, the dollar stood at record highs against the British pound. This appreciation made imports less expensive while driving up the price of U.S. exports in foreign markets.

Furthermore, the strong U.S. economic expansion of 1983 broadened and continued in 1984, boosting demand for imports. The recovery, fueled in 1983 by consumer spending, spread to the capital goods markets in 1984, while consumer spending continued to grow. Concurrently, capacity utilization in the Nation's mines, factories, and utilities rose to 82.0 percent in June from 74.9 percent a year earlier.<sup>5</sup> U.S. auto production also continued to recover from depressed 1982 levels; during the first half of 1984, domestic manufacturers produced 29 percent more autos than in the first half of 1983, and 60 percent more than in the first half of 1982. Moreover, first-half housing starts were up 14 percent from the same period in 1983 and 102 percent from the first half of 1982.<sup>6</sup>

This increased economic activity sharply stimulated demand for a host of related consumer and capital goods, many of them imports. (See chart 2.) For example, expanding auto production spurred demand for such imported items as steel, aluminum, rubber, and engines, while the increase in business investment boosted sales for foreign suppliers of machine tools, building materials, and electrical equipment.

In contrast, activity in many major U.S. export markets

remained at reduced levels in the first half, and merchandise exports totaled only \$108.3 billion.<sup>7</sup> (Although this represents a 10.5-percent increase over the first half of 1983, it was less than the \$112 billion exported in first-half 1982 and was substantially below the \$122 billion exported in first-half 1981.) Economic growth in Western Europe was much slower than in the United States: Industrial production growth for OECD Europe was less than 4 percent between first-quarter 1983 and first-quarter 1984, compared with increases for North America (Canada and the United States) and Japan of 15 and 11 percent, respectively. (See table 3.)

Many developing nations, including several in Latin America, experienced debt problems that forced them to cut back on imports. (See chart 3.) For example, Mexico, our third largest trading partner, purchased only \$5.7 billion of U.S. goods in the first half. Although this was up from the \$4.4 billion exported in the first half of 1983, it was still well below the \$7.2 billion recorded for the same period in 1982.<sup>8</sup> Other important U.S. trading partners with debt problems are Argentina, Brazil, and Chile. Several OPEC nations, in particular Nigeria, also curbed imports, as oil revenues fell. The low level of U.S. merchandise exports was a key factor in the record \$51.9 billion merchandise trade deficit for the first half of this year.<sup>9</sup>

Along with the strong dollar, the growth in U.S. demand for imports widened the merchandise trade gap as the Nation led the recovery from the worldwide economic slump of 1980-83. First-half merchandise imports were \$160.2 billion, 31 percent more than in the first 6 months of 1983. Petroleum imports rose to \$28.7 billion from \$23.6 billion in first-half 1983, and nonoil imports rose sharply, by 33.4

**Table 1. Change in selected import price indexes in the first half of 1984, and share of total 1980 trade value**

Commodity	Share of total 1980 trade value	Percent change in—			Commodity	Share of total 1980 trade value	Percent change in—		
		First half	First quarter	Second quarter			First half	First quarter	Second quarter
All commodities <sup>1</sup>	100.000	1.0	0.7	0.3	Intermediate manufactured products	13.520	1.7	0.2	1.5
All commodities, except fuels and related products <sup>1</sup>	67.223	1.3	0.8	0.5	Iron and steel	3.127	3.6	-0.8	4.4
Fuels and related products	32.776	0.5	0.8	-0.3	Nonferrous metals	3.123	1.6	0.2	1.4
Crude petroleum	25.799	0.0	-0.4	0.4	Silver and metals of the platinum group	1.037	-1.2	1.4	-2.6
Food	6.554	3.1	2.1	1.0	Copper	0.581	-0.1	-3.1	3.1
Fruits and vegetables	0.838	8.6	8.9	-0.2	Zinc	0.135	14.6	6.5	7.6
Vegetables, fresh chilled or frozen	0.183	18.4	20.0	-1.3	Cork and wood manufactures	0.486	-2.7	-3.4	0.7
Fruits and nuts, fresh or dried	0.347	-0.8	2.2	-2.9	Plywood and veneers	0.267	-1.9	-1.1	-0.8
Coffee, tea, and cocoa	2.241	4.7	3.0	1.6	Wood manufactures, not elsewhere specified	0.207	-3.7	-6.0	2.4
Coffee	1.644	3.9	2.9	1.0	Paper and paper products	1.475	2.3	0.7	1.6
Tea	0.054	9.2	9.1	0.1	Machinery and transport equipment	25.442	0.0	0.0	0.1
Fish	1.088	-1.3	-2.4	1.1	Road vehicles and parts	10.887	0.8	-0.5	1.3
Fresh fish	0.477	-0.9	0.0	-0.9	Passenger automobiles	7.201	1.1	-0.9	2.0
Shellfish	0.459	-2.1	-4.8	2.8	Metalworking machinery	0.755	-1.9	-1.5	-0.4
Crude materials	4.275	4.1	4.7	-0.6	Machine tools	0.540	-1.8	-1.1	-0.7
Pulp and waste paper	0.708	18.8	8.3	9.7	Electric machinery and equipment	3.396	-4.9	-1.8	-3.2
Sulphate wood pulp	0.563	19.9	9.0	10.0	Miscellaneous manufactured goods	9.794	1.5	0.6	0.9
Crude natural rubber	0.344	-5.0	3.1	-7.9	Clothing	2.660	3.1	1.3	1.8
Wood	0.865	-3.7	7.1	-10.1	Footwear	1.232	3.5	0.6	2.9
Crude minerals	0.303	-3.8	0.0	-3.8	Photographic apparatus and supplies, optical goods, watches, and clocks	1.162	2.4	-1.1	3.6
					Photographic apparatus and equipment	0.258	3.4	0.3	3.1
					Optical elements, lenses, prisms	0.125	6.4	-1.5	8.1
					Watches, watch movements, and cases	0.310	10.3	0.8	9.4

<sup>1</sup>This category includes indexes in addition to those shown here. For all of the indexes available in each category, see *U.S. Import and Export Price Indexes*, USDL-84-336 (Bureau

of Labor Statistics), Aug. 2, 1984.

**Table 2. Change in selected export price indexes in the first half of 1984, and share of total 1980 trade value**

Commodity	Share of total 1980 trade value	Percent change in—			Commodity	Share of total 1980 trade value	Percent change in—		
		First half	First quarter	Second quarter			First half	First quarter	Second quarter
All commodities <sup>1</sup>	100.000	2.0	0.6	1.4	Intermediate manufactured products—Continued:				
Grain and grain preparations	8.341	1.7	-2.7	4.6	Nonferrous metals	2.280	-1.0	0.4	-1.4
Wheat	2.943	2.6	-2.1	4.8	Silver and platinum metals	0.772	3.7	1.6	2.1
Yellow corn	3.956	1.9	-3.3	5.4	Copper	0.204	2.3	0.2	2.1
Barley	0.094	2.8	-5.9	9.2	Aluminum	0.919	-4.4	0.0	-4.4
Grain, other	0.522	(2)	(2)	(2)	Machinery and transport equipment	35.261	1.8	1.1	0.6
Yellow sorghum	0.498	1.0	-4.8	6.0	Road vehicles and parts	6.726	1.9	1.1	0.8
Animal feeds, excluding unmilled cereals	1.332	-15.8	-8.9	-7.6	Passenger automobiles	1.861	-0.3	0.2	-0.5
Crude materials	10.948	5.4	0.3	5.2	Parts for motor vehicles	3.499	2.7	1.6	1.2
Raw hides and skins	0.482	14.4	7.7	6.3	Other transport equipment, excluding military and commercial aircraft	2.718	4.7	2.1	2.5
Hides	0.320	15.0	7.8	6.7	General aviation aircraft	0.479	4.1	3.8	0.3
Furskins	0.162	11.7	7.3	4.1	Parts for aircraft and spacecraft	1.641	5.9	2.0	3.8
Oilseeds	3.024	7.7	-3.0	11.1	General industrial machinery, parts not elsewhere specified	4.939	2.1	1.9	0.3
Soybeans	2.716	5.6	-3.8	9.8	Heating and cooling equipment	1.087	0.1	0.7	-0.6
Pulp and waste paper	0.954	15.2	6.1	8.5	Cooling equipment	0.685	-0.7	0.1	-0.7
Sulphate wood pulp	0.497	25.1	7.9	15.9	Heating equipment	0.281	3.1	3.0	0.1
Textile fibers	1.813	2.0	-2.1	4.2	Pumps for liquids and parts	0.478	0.8	0.3	0.5
Cotton	1.341	4.9	-0.3	5.2	Pumps, compressors, blowers, centrifuges, filtering apparatus and parts	0.783	9.2	8.6	0.6
Fats and oils	0.911	34.8	6.4	26.7	Taps, cocks, and valves	0.382	2.5	1.8	0.7
Animal fats and oils	0.356	35.0	12.3	20.2	Ball, roller, and needle roller bearings	0.170	-0.4	-0.6	0.2
Vegetable oils	0.506	36.4	3.0	32.4	Packaging and weighing machinery and parts	0.414	2.4	1.8	0.6
Soybean oil	0.307	32.3	4.4	26.7	Power generating machinery and equipment	3.943	1.6	2.6	-0.9
Chemicals	9.578	1.1	2.8	-1.7	Machinery specialized for particular industries	5.784	1.1	0.8	0.3
Intermediate manufactured products	10.544	1.3	1.0	0.3	Electrical machinery and equipment	4.738	2.6	0.4	2.2
Paper and paperboard products	1.300	6.3	3.2	3.0	Office machines and automatic data processing equipment	3.990	-1.0	-1.1	0.1
Printing and writing paper	0.122	5.6	1.9	3.6					
Kraft paper and paperboard	0.442	15.6	7.6	7.4					

<sup>1</sup>This category includes indexes in addition to those shown here. For all of the indexes available in each category, see *U.S. Import and Export Price Indexes*, USDL-84-336 (Bureau of Labor Statistics), Aug. 2, 1984.

<sup>2</sup>Data are not available.

percent, to \$131.5 billion.<sup>10</sup> Moreover, the U.S. current account, which incorporates the balances on both merchandise trade and services (including payments and receipts of interest and dividends on international investments) set a record deficit of \$44.1 billion in the first half, compared with a deficit of \$12.5 billion for the same period a year earlier.<sup>11</sup>

In recent years, the nations of the Far East have carried on an increasing volume of trade with the United States. Several of these nations, such as Japan, South Korea, and Taiwan, have posted high economic growth rates, in part attributable to the strength of U.S. demand for imports. In 1983, the nations of the Far East enjoyed greater combined gross trade (merchandise imports and exports in dollars) with the United States than did those of Western Europe.<sup>12</sup> During that year, 28.5 percent of U.S. gross foreign trade was carried on with the nations of the Far East, compared with 20.8 percent in 1976.<sup>13</sup>

Gross trade as a percentage of U.S. final goods production is a measure of the importance of foreign trade to the goods sector of the economy.<sup>14</sup> Since 1970, this measure has increased substantially from 15.9 percent to 28.1 percent by 1983.<sup>15</sup>

### Import price developments

*Fuels and related products.* Import prices for fuels and related products rose 0.5 percent in the first half, after falling 11.8 percent during 1983. The first-half price increase was the result of rising prices for petroleum products, unchanged

crude oil prices, and a 2.0-percent decline in natural gas prices. The drop in petroleum prices in recent years reflects sluggish world economic growth, increased substitution of other forms of energy for crude oil, and stepped-up conservation in the major industrialized nations. During the first half, spot prices for many crudes were below the official OPEC prices, as several OPEC members attempted to maintain revenues by discounting prices and making sales in excess of their quotas.

Contrary to expectations, the Iran-Iraq conflict seems to have helped depress world oil prices. It appears that attacks by those two nations on oil-bearing traffic in the Persian Gulf induced other OPEC members to boost their output, which more than compensated for the curtailments in shipments resulting from the attacks.<sup>16</sup> In addition, plentiful oil stockpiles in the United States, Japan, and Western Europe acted as insurance against disruption of supplies and helped to ease speculation.

Even so, the U.S. economic recovery stimulated demand for petroleum products, reversing a 5-year decline. The Nation's consumption of oil products was up about 7 percent from the first half of 1983, while domestic production, spurred by decontrol, had risen 0.4 percent. The resulting shortfall in oil supplies was met by imports, which were up 21 percent over first-half 1983 levels.<sup>17</sup>

Early in 1984, heating oil demand and prices rose sharply as a result of the unusually cold weather in the northeastern United States. By June 1984, the U.S. average price for



heating oil was \$1.13 per gallon, compared with \$1.06 in June 1983.<sup>18</sup> Imports of heating oil surged to meet the increased demand, and domestic refiners increased production of distillate fuel. As a result of the latter development, gasoline supplies expanded sharply, because refineries produce gasoline and heating oil simultaneously, regardless of the season. U.S. consumers reaped a windfall from the unexpected increase in gasoline supplies; in June 1984, the average U.S. gasoline price (all types) was \$1.21 per gallon, down slightly from \$1.26 per gallon in June 1983.<sup>19</sup> When the improved fuel efficiency of the Nation's auto fleet is taken into account, gasoline costs per mile driven for U.S. consumers have declined substantially since 1980.

The strong dollar also had a major effect on world crude oil prices in the first half. Specifically, the dollar's appreciation against the currencies of our major trading partners meant that those nations did not reap the full benefit of the cuts in posted dollar prices for oil. In fact, buyers in several nations found that oil prices in their own currencies actually rose in the first half, because of the depreciation of those currencies against the dollar. This phenomenon further depressed world oil demand.

U.S. oil imports continued to be predominately from non-OPEC sources, as more oil was imported from sources in the

Americas, such as Mexico and Canada, and from other non-OPEC suppliers—primarily the United Kingdom, Norway, and Egypt—which have brought increasingly large amounts of crude to world markets in recent years. During the first half, the United States purchased 38 percent of its imported crude oil and petroleum products from OPEC sources, compared with 37 percent in 1983, 42 percent in 1982, and 70 percent in 1977—the year of the greatest volume of oil imports.<sup>20</sup> Leading suppliers in first-half 1984 were Mexico, at 730 thousand barrels per day (bpd), Canada (647 thousand bpd), Venezuela (526 thousand bpd), Saudi Arabia (359 thousand bpd), and the United Kingdom (357 thousand bpd).<sup>21</sup>

The decrease in natural gas prices reflects lower prices for imports from Canada, which supplies approximately 90 percent of total U.S. imports of natural gas. Prices for Mexican pipeline gas and liquified natural gas shipments from Algeria were unchanged during the first half.

*Food.* The food index represents 6.6 percent of the all-import price index. Imported food prices increased 3.1 percent in the first half, with almost 70 percent of the gain occurring in the first quarter. The food index is one of the most volatile components of the all-import price index because of uncertainties in production and climatic conditions,

**Chart 1. Trade-weighted exchange rate index for the U.S. dollar, quarterly averages, 1970—second-quarter 1984**



SOURCE: International Economics Department, Morgan Guaranty Trust Co., and the Bureau of Labor Statistics.

and difficulties involved in shipping perishable products. However, the first half of 1984 saw a continuation of an upward trend which began in mid-1982; the food index climbed 13.1 percent from June 1982 through June 1984, with a rise of 1.24 percent during the first 6 months of 1983. An important factor in the strong gain in first-half 1984 was the harshness of the past winter, which reduced domestic supplies and greatly stimulated import demand. Import prices for the fruits and vegetables food group jumped 8.6 percent during the first 6 months of 1984. Rises in import prices for coffee, tea, and cocoa also contributed to the upward movement in the food index, which was only partially dampened by lower prices for fish.

The 8.6-percent increase in prices of fruits and vegetables contributed significantly to the food index's upward movement in the first 6 months of 1984. This jump resulted from a 20-percent rise in fresh vegetable prices in the first quarter, partially attributable to low U.S. supplies during the winter months. Moreover, killing frosts in Florida and Texas in December 1983 and continued cold weather in early 1984 damaged U.S. crops, especially citrus fruits, and resulted in extremely strong import demand. Tight supplies and growing world demand for citrus fruits and juices continued throughout the first half of 1984, while U.S. supplies of tomatoes and green vegetables made a relatively quick comeback from winter damage. Although the vegetable group's price index increased 20 percent in the first quarter, it showed a 1.3-percent decrease in the second quarter. Price declines are typical during the spring months, during which domestic supplies are abundant. World vegetable production was also up in the second quarter. Lime prices fell this spring as normal Mexican export flow resumed, following the lifting of a February 1984 temporary ban by the United States on imports of *Veracruz* citrus because of citrus canker.<sup>22</sup>

Prices for coffee, tea, and cocoa rose 4.7 percent during the first half. Imported coffee prices increased 3.9 percent in the first 6 months of 1984, following a 7.9-percent gain in all of 1983. World coffee prices in the first half of 1984 moved above the established range preferred by members of the International Coffee Organization (ICO). (The ICO is an organization of 73 coffee producing and consuming na-

tions which uses export quotas to stabilize global prices.) World coffee demand was strong in the first 6 months of the year, with the result that imports were about 38.4 million bags for the period from October 1983 through May 1984, compared with 36.5 million bags for the same period in the previous year.<sup>23</sup> Quota increases by the ICO during the first half failed to dampen the price climb until a price peak was reached on June 1, 1984. Conditions that spurred prices despite the larger export quotas included: a fear of frost in Brazil; a West African crop that was less than anticipated; reductions in export shipments from Brazil and Columbia early in the half; and the poor quality of last year's Brazilian and West African crops.<sup>24</sup> Additionally, a U.S. crackdown on coffee smugglers which began in 1983 continued into the new year, further shifting demand to legal sources.<sup>25</sup>

Reduced production and increased speculation continued to boost cocoa prices in 1984. Production of cocoa in West African countries was down substantially during the first half because of a severe, prolonged drought in the first quarter. The size of Brazil's crop was also reduced by dry weather. A new international cocoa agreement aimed at stabilizing prices was discussed by the International Cocoa Council but not concluded during the first half of the year.

The continued upsurge in tea prices was due in large part to tight supplies of raw teas. Prices of tea imported by the United States jumped 9.2 percent in the first 6 months of 1984, for a gain since June 1982 of 63 percent. Shortages of raw tea reflect stagnant production over the last 5 years, even while tea consumption rose steadily, particularly in India, the Soviet Union, and West Asia.<sup>26</sup> Another supply-limiting factor during the first half of 1984 was the Indian Government's December 1983 ban on exports of certain types of teas to ensure adequate domestic supplies. In Sri Lanka, favorable weather conditions tempered the effects of a strike by plantation workers and tea output was not affected to any substantial degree.<sup>27</sup>

Fish prices declined by 1.3 percent, moderating the upward movement of the food index during the first half. A 2.4-percent price decrease occurred in the first quarter, although the index subsequently moved up by 1.1 percent in the second quarter. Abundant supplies of fresh fish resulted in a 0.9-percent decrease in price for that commodity in the second quarter. The 4.8-percent first-quarter drop in shellfish prices reflected increased shrimp supplies from Ecuador and Panama. Rock lobster tails also fell in price early in 1984.

*Crude materials.* The crude materials index comprises product groups such as wood, crude rubber, and metal scrap that are used extensively as raw materials in manufacturing or construction. The product principally responsible for the 4.1-percent increase in crude materials import prices for the first half of 1984 was sulphate wood pulp, the most commonly used pulp in the world market, for which import prices rose 20 percent in the first 6 months of the year. Sulphate wood pulp is primarily used to produce packaging

**Table 3. Quarterly indexes of industrial production for selected groups of OECD member nations, 1983 and 1984**

Area	Percent of 1980 total	1983				1984		Percent change, I 1983 to I 1984
		I	II	III	IV	I	II	
OECD total . . .	100.0	96.3	98.0	100.6	102.7	105.0	( <sup>1</sup> )	9.0
North America <sup>2</sup> . . .	36.0	93.9	97.8	102.7	105.3	108.0	110.1	15.0
OECD Europe . . .	47.0	96.6	96.8	97.4	98.3	100.4	( <sup>1</sup> )	3.9
Japan . . . . .	15.4	101.4	102.9	106.1	109.0	112.6	( <sup>1</sup> )	11.0

<sup>1</sup>Data not available.

<sup>2</sup>The United States and Canada.

SOURCE: *Main Economic Indicators* (Organization for Economic Cooperation and Development, Department of Economics and Statistics), February, June, and August 1984, p. 11.



materials, which are in great demand as the result of robust growth in the U.S. manufacturing sector. Imports were important in meeting the surging demand for sulphate wood pulp, as U.S. pulp and paper industries approached full capacity utilization toward the end of the first half. Some shortages occurred as sulphate pulp supplies from Canada were reduced because of labor disputes. Furthermore, U.S. supplies were disrupted during the first quarter when severe weather conditions hampered production and transportation. Declining prices for other product groups, including crude rubber, wood, and crude minerals, partially offset the price gain for sulphate wood pulp in the crude materials index.

*Intermediate manufactures.* Prices for intermediate manufactures rose 1.7 percent in the first half, after rising 3.7 percent during all of 1983. These products include nonferrous metals, wood and cork manufactures, textiles, iron and steel, glassware, paperboard, and many other basic inputs to manufacturing processes. The United States imported \$22.3 billion of these products in the first half, up from \$16.2 billion in first-half 1983, as the U.S. economic recovery spurred demand.<sup>28</sup> Rising prices for iron and steel, nonferrous metals, and paper and paperboard were major contributors to the increase in import prices for intermediate manufactures.

The 3.6-percent hike in imported iron and steel prices led the rise in the intermediate manufactures index. Although the major U.S. integrated steel firms began to recover in the first half from recordbreaking losses during 1982-83, their gains were slowed by an unprecedented surge of imported steel. U.S. demand for sheet steel was buoyed by increased sales of autos and appliances, but production of heavier items such as plate, structural, and bar steels continued at low levels. Fully integrated U.S. steelmakers, who generally have higher production costs than foreign producers, continued to heavily discount posted prices to gain orders.<sup>29</sup>

While domestic production was up 28 percent from the first half of 1983, import penetration of the U.S. steel market in first-half 1984 was 25 percent, up from 20 percent in the year-earlier period. A significant portion of the increase in steel imports came from Third World nations.<sup>30</sup> Many Third World suppliers can deliver steel at prices well below the discounted prices offered by U.S. firms. During the first half, steel supplies from Japan and the European Community (EC) continued to be limited by trade agreements negotiated in 1982.

The debt situation of several nations which are steel producers has been a major factor in the increased shipments of Third World steel in recent years. In particular, Mexico, Argentina, and Brazil—all major steel suppliers—have aggressively sought U.S. sales to obtain foreign exchange for servicing their international debts.

To reduce the volume of imports, the U.S. steel industry petitioned the U.S. International Trade Commission (ITC) for relief during the first half of the year. In June, the ITC

**Chart 2. Quarterly imports of capital and consumer goods, 1981—second-quarter 1984**



¹ Excluding food and autos.  
² Excluding autos.

NOTE: Data for the second quarter of 1984 are preliminary. All data are on a customs value basis.

SOURCE: *Highlights of Export and Import Trade*, FT-990 (Bureau of the Census), table 1-7.

ruled that the domestic industry was being injured by imports in five product groups accounting for approximately 70 percent of the value of all steel imports.<sup>31</sup> The Commission recommended 5 years of import quotas and additional tariffs to aid the domestic steel industry, conditional on cost-cutting and modernization steps by U.S. producers.<sup>32</sup> Some foreign steelmakers stepped up shipments during the first 6 months of the year in anticipation of quotas or tariffs. Others, fearing that they would be charged with selling steel below cost, raised their prices to the United States.

The major U.S. steelmakers are also losing market share to domestic minimills. Using modern equipment, minimills convert steel scrap and semifinished slabs into products such as bars, rods, and light structurals. Their production costs, including labor and materials, are approximately one-third less than those of integrated plants. Minimills now supply about 20 percent of all domestic steel shipments, and their share is rising. Most minimills are located in Southern or Border States.<sup>33</sup>

Other factors have curbed demand for steel in this country. Significantly higher spending on foreign-made capital

goods continues to erode domestic steel consumption, while other metals, such as aluminum, have taken over many of steel's traditional markets.

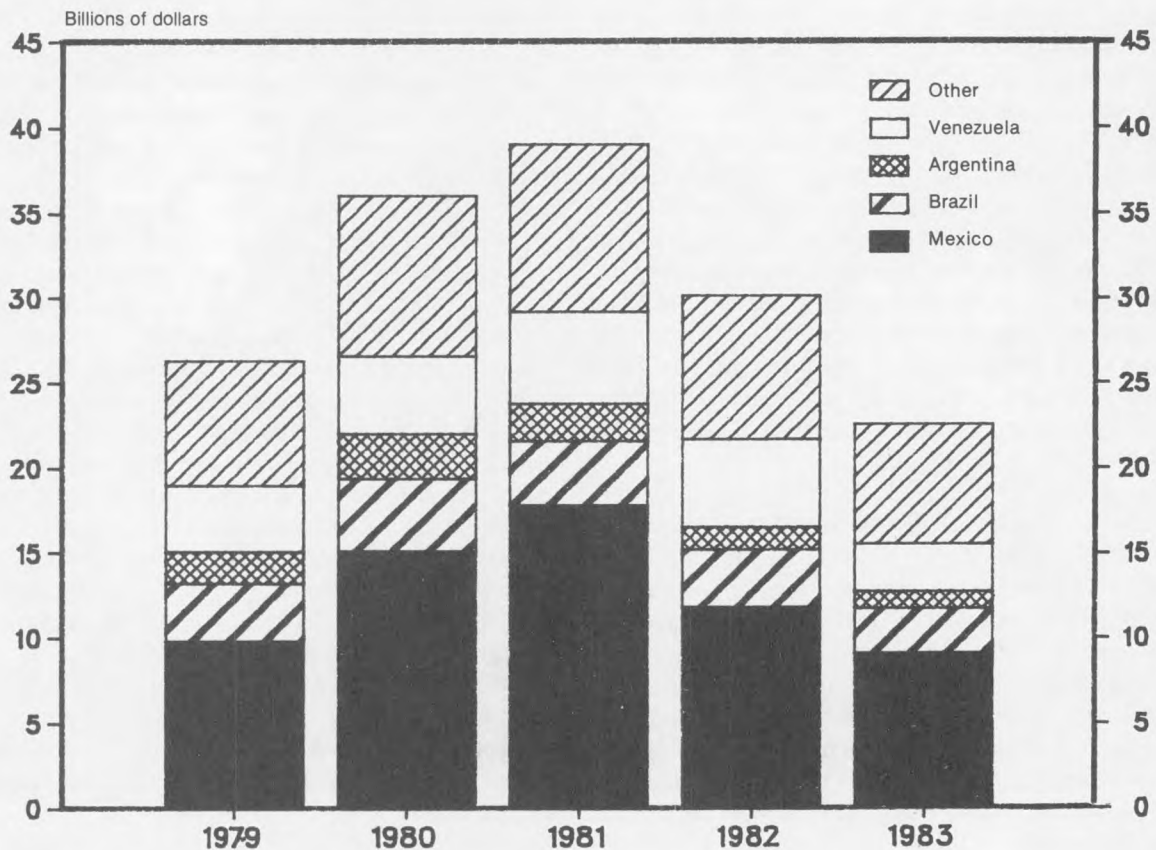
To compete more effectively with imports, the major U.S. steel firms have increasingly sought mergers with domestic partners. In March, the Justice Department gave approval to the proposed merger of Republic Steel and LTV Corporation. The company formed by the merger, LTV Steel Company, will be the Nation's second largest steel producer. It plans to achieve production economies by consolidating the best parts of the two firms and discarding less-efficient divisions. It should be noted, however, that when U.S. Steel and National Steel announced a planned merger in the first half, the Justice Department vetoed this action for antitrust reasons.<sup>34</sup>

Import prices for nonferrous metals increased 1.6 percent in the first half of 1984, led by rising prices for zinc and cobalt. Imports of these metals (in dollar value) were up 16 percent in the first half from the same period in 1983.<sup>35</sup> Falling silver and copper prices partially offset these in-

creases. Because nonferrous metals, which also include nickel, lead, and molybdenum, are used extensively as basic inputs in many major manufacturing processes, their prices are heavily affected by the level of general economic activity. The buoyant U.S. economic recovery also had a positive effect on prices of those metals, such as zinc, which are used principally in the production of such consumer products as housing and autos. However, metals for which demand is dependent on the level of capital spending (such as copper) or speculation (silver) did not fare as well. Prices for nonferrous metals also were affected by the strong dollar and user resistance to higher prices. Dollar-denominated metal prices have been eroded by the rise of the dollar, while metal users, instead of passing along higher raw material costs in the form of higher prices, are increasingly reacting to price increases by cutting consumption or switching to substitute materials.

Zinc prices rose 14.6 percent in the first half. In March, prices on world markets reached near-record levels of more than 50 cents per pound before declining slightly.<sup>36</sup> As in-

**Chart 3. Annual U.S. exports to Latin America, by country of destination, 1979-1983**



NOTE: Data are on a free-alongside-ship (FAS) value basis.

SOURCE: *Highlights of Export and Import Trade*, FT-990 (Bureau of the Census), table E-3.



icated earlier, zinc demand was boosted by increased activity in the auto and housing industries. Import prices for cobalt rose 49 percent in the first half of 1984 due to a new marketing strategy by which Zaire and Zambia joined to restrict supplies of cobalt for export. Together, these two countries supply two-thirds of U.S. cobalt imports. This action, in combination with growing U.S. demand for cobalt, caused the run-up in prices.

The domestic copper industry had a particularly difficult time dealing with a flood of low-cost copper imports from Chile, Zaire, and Zambia. With this industrial metal in abundant supply on world markets, prices remained depressed: U.S. producer prices fell to an average of 65 cents per pound by June, down 15 cents from a year earlier. Production costs for some U.S. producers ranged between 75 and 85 cents per pound, while production costs in Chile, the world's largest copper producer, were around 46 cents per pound.<sup>37</sup> Domestic producers also use a lower grade of ore than that available in other major producing nations, yielding one-third or less copper. During the first half, the ITC ruled favorably on the U.S. copper producers' petition for import relief, recommending either the imposition of quotas or higher tariffs on imported unwrought copper.<sup>38</sup>

A 2.7-percent decline in import prices for cork and wood manufactures moderated the increase in prices for the intermediate manufactures group. The decrease in cork and wood manufactures prices resulted from a 3.7-percent drop in prices for miscellaneous wood manufactures and a 1.9-percent decline in prices for plywood and veneers. Products from Southeast Asia account for most of the weight in the index for plywood and veneers. Formerly, Indonesia had been a major supplier of logs to mills in Korea, Taiwan, and the Phillipines, which in turn exported finished products such as plywood to the United States. However, Indonesia has constructed additional mills in recent years, and now is exporting the finished products. The resulting price competition between Indonesia and the other nations of Southeast Asia boosted supplies and contributed to lower prices in 1984.

*Machinery and transport equipment.* This index, which accounts for 25.4 percent of the weight of the all-import price index, was unchanged during the first half, after rising 2.4 percent in 1983. Some \$58.5 billion of this merchandise was imported during the first half, up 44 percent from \$40.5 billion in the first half of last year, as the economic recovery fueled demand.<sup>39</sup> This substantial increase was a major factor in widening the first-half U.S. merchandise trade deficit.

Approximately half of the dollar value in this index consists of consumer products such as autos, videocassette recorders, and household appliances. As consumer spending grew, purchases of these types of items rose. The index also includes many important components of manufacturing processes, such as electric motors, air pumps, compressors, valves, and roller bearings, for which demand grew with U.S. manufacturing output. However, the continued appre-

ciation of the dollar served to moderate price increases.

Import prices for automobiles rose 1.1 percent in the first half, after rising 4.8 percent for all of 1983. Surging first-half 1984 U.S. auto sales and the Japanese Government's voluntary quotas on auto exports to the United States were factors affecting import prices. Buoyant consumer confidence, higher levels of employment, stable gasoline prices, and the improving economy boosted first-half retail auto sales to 5.5 million from 4.6 million in the 1983 first half.<sup>40</sup> Import penetration of the U.S. market was 22.5 percent (in units), down from 26.7 percent from the same period a year earlier.<sup>41</sup> Retail sales were restrained by short supplies of both imported and domestic autos: Supplies of imported Japanese cars were held down by the quotas, while dealer inventories of domestic autos stood at 48 days of sales on June 15, the lowest level in 10 years.<sup>42</sup> Sales of larger cars were especially brisk and shortages developed for many domestic car models.

In April, the quotas on Japanese auto shipments to the United States were raised to 1.85 million units per year from 1.68 million. The quotas, scheduled to expire in April 1985, have been a source of upward pressure on prices of Japanese cars. In the first half, Japanese autos accounted for 17 percent of all U.S. new car sales, down from 22 percent in first-half 1983.<sup>43</sup> Because of the quotas, Japanese automakers were unable to maintain or increase their market share and fully exploit a cost advantage estimated at \$1,500 to \$2,000 per car. Instead of competing on price, Japan's car-makers concentrated on selling higher-valued, option-laden cars in the United States—in effect providing a pricing floor for the domestic industry.<sup>44</sup> As a result of this change in the mix of imported automobiles, the unit value index for automobiles increased at a much sharper rate than did the price index. (See chart 4.) The price index adjusts for quality changes and maintains a constant mix of goods; price is the only fluctuating variable. The unit value index reflects the shift to higher valued top-of-the-line models, as well as 'pure' price changes. With supply restricted by the quotas, inventories of Japanese cars dropped to 16 days of sales on June 30, 1984, compared with 27 days of sales on the same date in 1981, the first year of the quotas.<sup>45</sup>

After 4 years of cost cutting which lowered their break-even point substantially, U.S. automakers posted record combined profits in the first half of 1984. U.S. firms also benefitted from an increase in demand for midsize and large cars. Sales of subcompact models were down slightly from first-half 1983 levels, due to shortages of Japanese models and consumer preference for larger cars.<sup>46</sup> Several European carmakers, selling higher-valued models, set sales records during the first half.

The trend toward internationalization of automobile production persists. In particular, some Japanese auto firms further developed production facilities in North America to ensure continued access to the prosperous U.S. auto market. U.S. firms also continued to make plans for joint production of subcompact cars with Japanese and South Korean part-

ners.<sup>47</sup> Most notably, General Motors and Toyota received permission from the Federal Trade Commission to proceed with their joint venture to produce small cars in California. Ford and Mazda also announced their intention to build an assembly plant in Mexico to manufacture cars for the U.S. market.

The price index for metalworking machinery was heavily affected by large supplies of imports, falling 1.9 percent in the first half. The bulk of the value in this index consists of machine tools—power-driven devices used to cut, shape, or form metal in the production of durable goods.

The 1983 U.S. trade deficit in machine tools was \$540 million. While this compared favorably with the \$638 million deficit in 1982, it was quite large in historical terms and occurred despite sluggish domestic demand.<sup>48</sup> In recent years, U.S. machine tool makers have had an increasingly difficult time matching the prices offered by competitors in Japan, West Germany, Taiwan, the United Kingdom, and Switzerland. During the first half, U.S. producers began to recover from the worst downturn many had endured since the 1930's. Because of recession and foreign competition, shipments of U.S.-made machine tools dropped almost two-thirds between 1981 and 1983.<sup>49</sup>

Japanese imports accounted for nearly half of the 36-percent share of the U.S. market taken by imports last year, up from 28 percent in 1982, and their penetration in advanced machine tools is much greater. For example, during the first half of 1983, some 78 percent of the machining centers sold in the United States were Japanese-made.<sup>50</sup>

The intense foreign competition continued to force major changes in the structure of the U.S. machine tool industry throughout the first half of 1984, as firms withdrew, merged, entered joint ventures with foreign producers, or moved operations offshore to cut costs. Domestic firms continued to seek relief from lower-priced imports, and as the first half ended, the National Machine Tool Builders' Association petition for import relief on the basis of national security under Section 232 of the 1972 Trade Expansion Act was still pending.

Import prices for electric machinery and equipment fell 4.9 percent, despite brisk demand for new appliances for residential housing and electronic components for military equipment. In 1980, the United States posted a trade surplus of \$2.2 billion for electric machinery and equipment, but in 1983, it registered an \$892.4 million trade deficit.<sup>51</sup> The decline in this index was keyed by falling prices for electronic components and electric circuit switching equipment. The price decrease in electric circuit switching equipment imported from Europe is partially attributable to the dollar's appreciation against such currencies as the franc, the Deutschmark, and the pound sterling. At the same time, Japan, Taiwan, and Korea have increased production of electronic components such as integrated circuits, transistors, and diodes. This increased production resulted in economies of scale and production efficiencies which tended to lower prices. Finally, component prices were further depressed because

technological advances have made metal oxide transistors competitive with bipolar transistors. Although prices of metal oxide transistors have fallen, they still remain approximately 40 percent above the cost of bipolar transistors. However, the higher quality of metal oxide transistors and their new, lower prices make them increasingly attractive to engineering designers.

*Miscellaneous manufactured goods.* The import price index for miscellaneous manufactured products increased 1.5 percent in the first half of 1984. This category comprises almost 10 percent of the all-import price index, and includes a wide variety of consumer goods such as clothing, footwear, clocks, watches, and photographic equipment. Higher prices for these products were the main force behind the upward movement in the index for miscellaneous manufactures. U.S. demand for these products was strong as high consumer spending levels during 1983 continued into the first half of 1984. This demand was increasingly met by imports, which surged from \$15.6 billion during the first 6 months of 1983 to \$21 billion in the same period this year.<sup>52</sup> This represented a 34.6-percent increase, compared to a first-half 1982-83 gain of only 11.4 percent.

During the first 6 months of 1984, imported clothing and footwear prices experienced similar increases of 3.1 percent and 3.5 percent, respectively. Clothing and shoes experienced high retail sales growth in the United States throughout 1983 and into 1984. During the first half of this year, consumer outlays for clothing and shoes averaged over \$139 billion (seasonally adjusted annual rate), compared with \$127.0 billion for all of 1983 and \$118.8 billion in 1982.<sup>53</sup>

Limited supplies of some apparel items contributed to higher price levels, in part because of Federal tightening of import controls and quotas and a crackdown on illegal and counterfeit imports of apparel.<sup>54</sup> (For footwear, the possibility of additional controls was lessened when the International Trade Commission determined in June 1984 that imports of nonrubber footwear were not causing serious injury to the domestic industry.<sup>55</sup>) Higher raw material costs experienced by foreign clothing and shoe manufacturers also were reflected in increasing prices during the half. These included steep hikes in the price of leathers over the past year, and moderate gains in the prices of cotton and man-made fabrics.

The index for photographic apparatus and supplies, optical goods, and watches and clocks moved up by 2.4 percent in the first half. Prices for photographic apparatus and equipment advanced 3.4 percent as strong consumer demand reversed a downward trend that began early in 1982 in response to product innovations. Optical lenses and watches also contributed to the increase in the index, with gains of 6.4 percent and 10.3 percent, respectively. Prices of these products had declined during 1981, 1982, and 1983 because of steep competition among suppliers and reduced production costs. The higher quality watch market showed particular strength this year.



**Export trends**

*Grain.* Export prices for grain rose 1.7 percent in the first 6 months of 1984 after a 16.8-percent advance in 1983. The price movement for the first half resulted when substantial price increases for wheat and feed grains in the second quarter dominated the more moderate price declines registered in the first quarter. Increases in market prices in May and June reflected unfavorable weather conditions in the United States and the Soviet Union. U.S. grain exports represent over 7 percent of the value of all U.S. merchandise exports, and consist primarily of wheat, corn, and sorghum. Grain exports totaled \$7.8 billion in the first 6 months of 1984, compared with \$7.4 billion for the same period in 1983.<sup>56</sup>

Prices for exported wheat edged upward by 2.6 percent in the first half of 1984. Severe flooding in the Midwest this spring resulted in erosion, planting, and transportation difficulties, and placed upward pressure on wheat prices despite huge U.S. stockpiles. Additionally, speculation in the grain market centered around a possible reduction in Soviet grain production as the result of a spate of bad weather in that country. Demand for U.S. wheat increased during the first half, in part because of severe drought in West African countries, but export price rises were moderated by increased production in other countries such as Canada, European Community countries, Australia, and India. Trade agreements concluded with the Soviet Union and the People's Republic of China in 1983 helped stabilize U.S. exports to these countries in 1984.<sup>57</sup>

The U.S. Payment-in-Kind (PIK) program, initiated in January 1983 to reduce surplus grain supplies and stabilize U.S. commodity prices, affected 1983 and 1984 soybean and corn prices much more than those for wheat. Huge wheat stockpiles were not greatly reduced by the program, partially because increases in yields per acre in 1983 kept output levels high. PIK benefits were reduced in 1984 and fewer farmers elected to enroll, with the result that 60 percent of grain acreage was included in surplus reduction programs, compared with 86 percent in 1983.<sup>58</sup> In a separate effort to draw down large wheat supplies, the U.S. Department of Agriculture announced a new program that provides wheat stocks on a competitive basis to private exporters for resale to drought-stricken African nations.

Corn prices moved up 1.9 percent during the first half of 1984, following a substantial 34.5-percent price gain in 1983. Surpluses of corn were reduced by the PIK program and the 1983 drought, and this year's spring floods in the Midwest disrupted the planting of new crops. Growing demand for high fructose corn syrup contributed to the upward trend in corn prices, as the U.S. beverage industry increasingly chose this corn product as a substitute for sugar.

Prices for other feed grains, including sorghum and barley, and for soybeans, also rose during the first 6 months of 1984. These commodities are substitutes for corn, and usually demonstrate similar price movements. Sorghum was

up slightly by 1 percent, barley prices rose 2.8 percent, and prices for exported soybeans (soybeans are included in the crude materials index) advanced 5.6 percent. The substantial gain in soybean prices in the first half reflected tight domestic supplies following the summer drought of 1983, and dry weather in Brazil in 1984. Even though soybean prices had risen more than 35 percent in 1983, strong demand for soybean oil in response to shortages of other vegetable oils pushed up prices even further during the first 6 months of this year.

Demand for soybean meal decreased over the same period, following a substantial price jump in the fall of 1983. The decline in prices of animal feeds, which are included in the food index, tended to moderate the first-half advance in that index.

*Crude materials.* The 5.4-percent price rise for crude materials contributed significantly to the increase in the all-export price index this half, as such materials represent almost 11 percent of the all-export index. Demand for these products, which are used in the early stages of production, increased sharply as worldwide industrial production began to pick up in the first half of 1984. U.S. exports of crude materials during that period were \$11 billion, an 18.2-percent increase over the \$9.3 billion exported during the same period in 1983.<sup>59</sup> A 14.4-percent jump in prices of raw hides and skins, a 15.2-percent surge for pulp and waste paper, and a 7.7-percent gain in oilseeds led the first-half increase in the crude materials index.

U.S. export prices for raw hides and skins have soared 52 percent since the beginning of 1983, following declines in 1981 and 1982. Droughts in 1982 and 1983 led to smaller herds and lower slaughter rates in New Zealand, Australia, and Argentina, which in turn created a strong world demand for U.S. hides during 1983 and the first half of 1984. In recent years, trends away from beef consumption in the industrial nations have also reduced available world supplies of cattlehides. It is estimated that worldwide cattleherds declined 2.5 percent in 1983, and will shrink by another 1 percent in 1984.<sup>60</sup>

Demand for U.S. hides by the major buyers in the Far East grew significantly as those countries' sales of finished leather goods to this country flourished with the economic upturn. Total U.S. exports of hides and furskins in the first 6 months of 1984 were 59 percent above those for the same period in 1983.<sup>61</sup> U.S. furskin sellers took advantage of a demand resurgence in Europe by raising prices on some grades. Exported furskin prices edged upward by 5.5 percent in the second half of 1983, and then jumped 11.7 percent during the first half of 1984 after dropping more than 30 percent from December 1980 to June 1983.

Export prices for pulp and waste paper advanced more than 15 percent this half, driven by a 25-percent leap in prices for sulphate wood pulp and moderated by declines in waste paper prices. The combination of strong domestic demand and additional purchases in the first half by China,

Japan, and some European nations caused the rapid price increases for sulphate wood pulp. The strong demand stemmed from increased manufacturing activity, because the primary use for sulphate pulp is for packaging items. U.S. exports of paper base stocks, including wood pulp, were 14 percent higher in the first 6 months of 1984 than in the same period in 1983.<sup>62</sup>

A 5-percent gain in cotton prices was the reason for the 2.0-percent rise in the textile fibers index, which continued an upward trend begun in early 1983. (U.S. export prices for cotton had already risen more than 30 percent from December 1982 through December 1983.) The advance in cotton prices reflects rapidly rising world consumption levels in the 1983-84 marketing year (season beginning in August) in the face of world production levels that have been declining since the 1981-82 marketing year. Consumption is up as the result of increased use of cotton in apparel, and because of sharp rises in the use of cotton products in China, India, Turkey, and Egypt.

Although cotton production had declined in the United States, surplus stocks were used in 1984 in order to help meet the strong world demand. U.S. exports were up 38 percent in the 1983-84 marketing year over those for the

same (August through April) period in the previous year.<sup>63</sup> The major buyers of U.S. cotton in the first half were Japan and the Republic of Korea. While almost all countries importing cotton from the United States increased their purchases in 1983 and 1984, some Asian nations, such as Hong Kong and Taiwan, did so at higher rates as their manufacture and export of clothing increased sharply in response to the economic upturn in this country and some European nations. Cotton price hikes were moderated by sharp production increases in Mainland China, and by smaller rises in Soviet and Mexican cotton output.

**Fats and oils.** Although the fats and oils export price index represents just under 1 percent of total U.S. exports, its 34.8-percent surge during the first half was responsible for 15 percent of the 2-percent rise in the all-export price index. The prices of soybean oil and animal fats and oils showed substantial gains in the second quarter of 1984. Prices were driven up when unfavorable weather conditions in the Midwest this spring caused shortages of U.S. soybean oil. Additionally, tight supplies of palm, coconut, and sunflower seed oil in the Far East and Malaysia placed upward pressure on prices, because soybean and animal oils are close substitutes for these other vegetable oils. Prices for animal oils were further pushed up by growing demand for soaps and cosmetics, two products in which these oils are used.

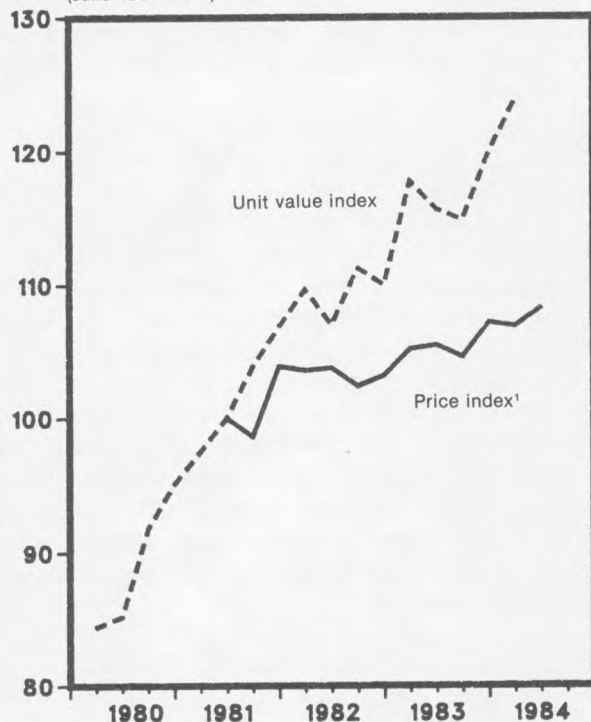
**Chemicals.** Export prices for chemicals rose 1.1 percent during the first 6 months of the year, reflecting higher prices for agricultural chemicals and medicinal and pharmaceutical products. U.S. exports of chemicals in the first half were above year-earlier levels, and the major U.S. chemical firms recorded much-improved profits for the same period, with several posting record second-quarter profits.

In domestic and overseas markets, first-half sales of agricultural chemicals such as fertilizers and pesticides were up sharply from year-earlier levels. Such factors as the continuing farm recovery in the United States, the curtailment of last year's P1K program that reduced acreage plantings, and good weather in major agricultural areas around the world were responsible for increased sales of pesticides. Exports to Europe were improved, as were sales in Pacific Rim nations such as China, New Zealand, and Indonesia. In recent years, U.S. firms have made significant advances in pesticides which have resulted in more effective, less toxic, and easier-to-apply products.<sup>64</sup>

The Nation has historically posted large surpluses in international trade of chemicals. In recent years, however, the surpluses have begun to shrink, falling from \$10.4 billion in 1982 to \$9.0 billion in 1983 and to \$4.2 billion in the first half of 1984.<sup>65</sup> This trend is attributable to the strong dollar and to increasing world chemical production capacity. Several Third World nations, especially those that are major oil exporters, have invested heavily in plants and equipment for chemical production. Oil producing nations have a comparative advantage in the production of petrochemicals, re-

**Chart 4. Quarterly unit value and price indexes for U.S. automotive imports, 1980—second quarter 1984**

(June 1981 = 100)



<sup>1</sup> First published for second-quarter 1981.

SOURCE: Bureau of Labor Statistics and Bureau of the Census.



sulting from the ready availability of low-cost petroleum feedstocks. In addition, many developing countries are exporting chemicals to the United States on a duty-free basis under the Generalized System of Preferences of the U.S. Trade Act of 1974. Such duty-free imports accounted for more than half of the Nation's total 1983 imports in the benzenoid intermediate category (in tons) and for 96 percent of imports of phthalic anhydride.<sup>66</sup>

*Intermediate manufactures.* Export prices for intermediate manufactured products rose 1.3 percent in the first half, after rising 1.8 percent in 1983. The first-half increase was paced by a 6.3-percent rise in export prices for paper and paperboard products, which was partially offset by a 1.0-percent decline in prices for nonferrous metals. In recent years, U.S. exports of intermediate manufactured goods have declined steadily. In 1983, the nation exported \$14.9 billion of these goods, down from \$16.7 billion in 1982 and \$22.3 billion in 1980.<sup>67</sup> The drop in export value is largely due to declining exports of iron, steel, and nonferrous metals.

The export price index for paper and paperboard products often displays volatile movements, because demand for these products is closely tied to conditions in the packaging industry. As increased demand for packaging materials drove the capacity utilization rate in the U.S. packaging industry to 97 percent in the first half, prices for paper and paperboard products quickly rose.

The advance in export prices for paperboard and paperboard products was led by a 15.6-percent increase in the index for kraft paper and paperboard. World demand for these products was strong, and several U.S. producers posted record sales. Kraft is a heavy-duty paper which, in unbleached form, is used for shopping bags and many other applications. Price increases were recorded for all bleached and unbleached types during the first half.

Kraft paper and paperboard products are made from kraft pulp. During the first half, foreign demand for this type of pulp increased sharply. This, combined with a strike in the major producing region of Canada which reduced output and tightened supplies, served to drive up world prices. Because production of both kraft pulp and paper is highly capital intensive and is only efficient on a large scale, additional capacity cannot be brought on-line easily over a short period. Higher prices for kraft pulp raised input costs for U.S. producers of kraft products such as linerboard, packaging cartons, and shipping sacks.

Prices for printing and writing paper advanced 5.6 percent in the first half. Price rises were recorded for both coated and uncoated papers. Demand for printing papers was buoyed by advertising expenditures, particularly increases in magazine advertising, while the growing use of office and home automation products in the major industrialized nations boosted demand for both printing and writing papers.

The 1.0-percent drop in nonferrous metals prices in the

first half followed a 1.0-percent rise in this index for all of 1983. In recent years, exports of many of these metals have fallen in response to the availability of lower-cost foreign supplies, substitution of alternative materials, and decreased demand from basic industries. The decline in the index was led by a 4.4-percent drop in the aluminum index, which was partially offset by a 3.7-percent rise in silver export prices and a 2.3-percent increase in copper prices.

Aluminum prices fell as a result of a worldwide glut of ingots. Much of the world's aluminum supply is marketed in the form of basic ingots. At the start of 1984, the major U.S. producers were operating at near full capacity, but by midyear three of these firms cut production because of lower prices.<sup>68</sup> In recent years, aluminum has increasingly been used as an instrument of speculation. In Europe, aluminum is traded on the London Metals Exchange (LME), and beginning in December 1983, the Commodities Exchange in New York began to trade aluminum. Prices for the lightweight metal fell to 53 cents per pound by mid-1984, down from a September 1983 high of 73 cents. On the U.S. spot market, prices slipped to 61 cents per pound, down 11 cents from levels reached earlier in the year.<sup>69</sup> Growing world aluminum inventories fueled the ingot price decline, although prices for more expensive aluminum products fabricated from ingots remained firm. In May, U.S. producer inventories were 11 percent higher than in December 1983. U.S. aluminum exports, including mill products, ingots, and scrap, in the first 6 months of 1984 were 8.4 percent (measured in tonnage) below those recorded for the same period in 1983, while imports were up 41.4 percent.<sup>70</sup> The strong dollar was an important factor in both the drop in exports and the rise in imports.

Silver prices, normally very volatile, were relatively stable during the first half. Prices were heavily affected by the strong dollar and rising interest rates, which tended to shift speculative activity from silver to dollar-denominated investments. The other determinant of silver pricing, industrial usage, failed to increase appreciably during the first half. U.S. exports of the white metal during the first 5 months of 1984 were far below the 1983 pace, while imports continued to exceed exports by large amounts.

Lead prices and output continued at reduced levels during the first half. Lead exports for the period were less than half of first-half 1983 levels, while domestic production had fallen slightly. In recent years, world demand for lead has been curbed by the substitution of plastics, while use of the metal in storage batteries, solders, and gasoline has decreased significantly.

*Machinery and transport equipment.* Machinery and transportation equipment accounts for 35.3 percent of the value of all U.S. exports. Export prices for these products advanced 1.8 percent in the first 6 months of 1984, after rising 2.2 percent for all of 1983. Most major product groups within the machinery and transportation equipment index

showed moderate price gains and sales increases for the first half. The value of U.S. exports of machinery and transportation equipment was 6.6 percent greater than in the same period in 1983.<sup>71</sup> Some product groups, such as computers, electronic components, and telecommunications equipment, require a high degree of technical sophistication, and U.S. firms have a comparative advantage in their manufacture. However, in other product groups, such as metalworking, textile, and leather machinery, export sales and prices continued to be depressed by the strength of the dollar.

The export price index for road vehicles and parts is the largest component of the machinery and transportation equipment index. A 2.7-percent rise in prices for parts for motor vehicles was largely responsible for the index's 1.9-percent advance this half. A slight 0.3-percent decrease in the price of passenger motor vehicles partially offset this gain. The value of U.S. exports of road vehicles and parts surged from \$7.29 billion in the first 6 months of 1983 to \$9.15 billion for the same period in 1984.<sup>72</sup>

High levels of Canadian demand for vehicles and vehicle parts, combined with strong domestic demand, resulted in high capacity utilization in the U.S. automobile industry, thus influencing the price movement for the half. To stay competitive in the world market, the industry implemented various cost controls which moderated the price advance. Export demand for automobile parts was strengthened by the recent trend toward internationalization of automobile production, as additional parts were shipped to U.S. subsidiaries in Mexico and Canada during 1983 and 1984.

The "other transport" index, which excludes military and commercial aircraft, moved forward by 4.7 percent in the first half. The general aviation aircraft component rose 4.1 percent and prices of parts for aircraft and spacecraft were up 5.9 percent. The price increases in spacecraft parts reflect the highly sophisticated nature of these products, which limits the number of firms capable of supplying an expanding world market. The United States maintains technological superiority in the production of high quality aviation parts, and U.S. manufacturers, even while operating at near-capacity, were unable to fully meet the growing first-half export demand.

Price hikes in this index, in both the domestic and export markets, average 1 to 2 percent per quarter. U.S. parts manufacturers are able to pass on production cost increases because of the inelasticity of demand for aircraft and aerospace replacement parts. World demand continued to be depressed for general aviation aircraft, but a pick-up in domestic demand in 1984 and vitality in the export demand for turbojet aircraft led to higher prices.

General industrial machinery accounts for 14 percent of the machinery and transport equipment index. Prices for this product group increased 2.1 percent in the first half of 1984 after advancing 1.7 percent in 1983. The items primarily responsible for the upward movement included pumps and

compressors, for which prices jumped 9.2 percent, and packaging and weighing equipment, up 2.4 percent. Mild price declines occurred in cooling equipment, centrifuges, powered industrial trucks, and ball and roller bearings. Total exports of general industrial machinery were basically stable for the year, with first-half sales of nearly \$4.1 billion, compared with slightly more than \$4.05 billion for the same period in 1983.<sup>73</sup>

The economic upturn reached some areas of the capital goods sector in Canada, Europe, and the Far East, boosting demand for general industrial products. Expanded residential and commercial construction, especially in Japan and South Korea, increased demand for U.S.-made air compressors, pumps for liquids, valves and cocks, and heating and cooling equipment. All of these products had some price hikes during the half except for cooling equipment, for which a 0.7-percent decrease was recorded because of intense competition from Japan, West Germany, and Italy. Expansion of food processing facilities in Singapore, Malaysia, Thailand, and Indonesia stimulated demand for U.S. packaging and weighing equipment.

Nonetheless, U.S. manufacturers of general industrial machinery and parts continued to face strong competition from Japan and the Far East, and were adversely affected by the continued strength of the dollar. For example, export prices for ball and roller bearings edged downward by 0.4 percent in the half. Debt problems of purchasers Mexico and Brazil also acted to depress demand and prices for U.S. general industrial machinery. Moreover, slack demand for general industrial equipment in the European chemical and steel industries exerted downward pressure on U.S. export prices this half.

First-half price increases in other major product groups included a 1.6-percent gain in power generating machinery and equipment; a 1.1-percent rise for machinery specialized for particular industries; and a 2.6-percent advance for electrical machinery and equipment.

Office machines and data processing equipment were the only major product group in the machinery and transport equipment index to experience a price decline in the first half of 1984. Export prices fell 1.0 percent in the half, continuing a slide that began in mid-1981. Steadily declining prices for these products are due in part to the rapid technological advancement and resulting lower production costs for such items as typewriters, calculators, and computer terminals. Price cuts also reflect the fierce competition among domestic and foreign suppliers (particularly Japan) in these expanding markets. The introduction of new products placed further downward pressure on the prices of some competing older models.

While prices of office machinery and computers were declining, export sales boomed during the first half, rising 24 percent above the level recorded in the first 6 months of 1983.<sup>74</sup> □



## FOOTNOTES

ACKNOWLEDGMENT: The following economists in the Bureau's Division of International Prices assisted in the analysis of the various indexes discussed in this article: Brian Costello, Todd Darr, Mohamed Elitreby, David Friedman, Gerry Gribbons, Hans Jorgensen, Nicholas Peters, Mildred Tweedy, Paul Washburn, David Wawro, Loren Yager, and Peter Zaleski. Carol Burger and Peter Zaleski of the Division prepared the graphics.

<sup>1</sup> Amount indicated is on Balance of Payments basis. See *U.S. Department of Commerce News*, BEA 84-41 (Bureau of Economic Analysis), Aug. 6, 1984.

<sup>2</sup> Import price indexes are weighted by 1980 import values and are published on an f.o.b. (free-on-board) foreign port or c.i.f. (cost, insurance, and freight) U.S. port basis. Export price indexes are weighted by 1980 U.S. merchandise trade values and are published on an f.o.b. factory or f.a.s. (free-alongside-ship) U.S. port basis. See "International Price Program" (Bureau of Labor Statistics).

<sup>3</sup> *World Financial Markets* (New York, Morgan Guaranty Trust Company, International Economics Department), January 1984, pp. 12-13, and July 1984, p. 12.

<sup>4</sup> For details of the value of the dollar against individual currencies, see *Federal Reserve Bulletin*, July 1984, p. A64.

<sup>5</sup> "Capacity Utilization" (Board of Governors of the Federal Reserve System, Division of Research and Statistics), July 16, 1984.

<sup>6</sup> *U.S. Department of Commerce News*, CB 84-134 (Bureau of the Census), July 18, 1984.

<sup>7</sup> *U.S. Department of Commerce News*, BEA 84-41 (Bureau of Economic Analysis), Aug. 6, 1984.

<sup>8</sup> *Highlights of U.S. Export and Import Trade*, FT-990 (U.S. Department of Commerce, Bureau of the Census), June 1984 and June 1983, table E-3.

<sup>9</sup> For information on imports, exports, and trade deficits, see *U.S. Department of Commerce News*, BEA 84-41 (Bureau of Economic Analysis), Aug. 6, 1984.

<sup>10</sup> *Ibid.*

<sup>11</sup> *Summary of U.S. International Transactions* (U.S. Department of Commerce, Bureau of Economic Analysis), September 1984.

<sup>12</sup> *Highlights of U.S. Export and Import Trade*, FT-990 (U.S. Department of Commerce, Bureau of the Census), various issues, tables E-3 and I-6. The countries included as Far Eastern nations are: Japan, China (Mainland), Burma, Thailand, Laos, Kampuchea, Malaysia, Singapore, Indonesia, Brunei, Philippines, Macao, Southern Asia (n.e.c.), Republic of Korea, Hong Kong, and China (Taiwan).

<sup>13</sup> *Ibid.*

<sup>14</sup> The share of final good production that is accounted for by gross trade (merchandise imports plus merchandise exports) is calculated as:

$$\frac{\text{Merchandise imports} + \text{Merchandise exports}}{\text{Sales of final goods} + \text{Merchandise imports}} \times 100$$

It is computed using data from *Survey of Current Business*, various issues.

<sup>15</sup> *Ibid.*

<sup>16</sup> Youssef M. Ibrahim, "Persian Gulf War Helps Depress Oil Prices on Spot Market Instead of Raising Them," *The Wall Street Journal*, June 20, 1984, p. 3.

<sup>17</sup> *Monthly Energy Review* (U.S. Department of Energy, Energy Information Administration), May 1984, pp. 7, 43, and 52.

<sup>18</sup> See *Consumer Price Indexes for Fuel Oil, Consumer Price Index for All Urban Consumers*, USDL-318 (Bureau of Labor Statistics), July 24, 1984, table I.

<sup>19</sup> *Ibid.*, table 3.

<sup>20</sup> *Monthly Energy Review*, DOE/EI-0035 (U.S. Department of Energy, Energy Information Administration), May 1984, pp. 42-43.

<sup>21</sup> *Petroleum Supply Monthly* (U.S. Department of Energy, Energy Information Administration), August 1984.

<sup>22</sup> *Foreign Agriculture Circular-Horticultural Products*, FAS 7-84 (U.S. Department of Agriculture, Foreign Agricultural Service), July 1984, p. 14.

<sup>23</sup> *Foreign Agriculture Circular-Coffee*, FCOF 2-84 (U.S. Department of Agriculture, Foreign Agricultural Service), July 1984, p. 2.

<sup>24</sup> *Ibid.*, p. 5.

<sup>25</sup> Kathleen H. Hughes, "U.S. Crackdown on Coffee Smuggling Helps Bean Prices to High for 1983," *The Wall Street Journal*, Nov. 14, 1983, p. 46; and "Group May Consider Ending Restrictions on Export of Coffee," *The Wall Street Journal*, May 29, 1984, p. 47.

<sup>26</sup> *World Coffee and Tea*, Vol. 25, No. 2 (McKeand Publications), June 1984, p. 30.

<sup>27</sup> *Ibid.*, p. 32.

<sup>28</sup> *Highlights of U.S. Export and Import Trade*, FT-990 (U.S. Department of Commerce, Bureau of the Census), June 1983, p. A-9, table 4.

<sup>29</sup> Thomas F. O'Boyle, "Steel Firms' 2nd Period Profits Said to Be Best since 81; Recovery May Fizzle Soon," *The Wall Street Journal*, July 5, 1984, p. 4.

<sup>30</sup> "Even if Steel Gets Import Relief, Its Anxieties Won't Go Away," *Business Week*, June 25, 1984, p. 29.

<sup>31</sup> Eduardo Lachica and Thomas F. O'Boyle, "ITC Proposes Quotas, Tariffs on Steel Imports," *The Wall Street Journal*, July 12, 1984, p. 3.

<sup>32</sup> *Ibid.*

<sup>33</sup> See "The Steelworkers Dig in Against a Cleveland Minimill," *Business Week*, Jan. 23, 1984, p. 37; and "Steelworkers Keep on Tilting at Minimills," *Business Week*, Feb. 20, 1984, p. 33.

<sup>34</sup> "Steel Forges a Japanese Connection," *Business Week*, May 7, 1984, p. 30.

<sup>35</sup> *Highlights of U.S. Export and Import Trade*, p. C-6, table 2.

<sup>36</sup> "Raw Materials: A Case for Pessimism on Prices," *Business Week*, Mar. 12, 1984, p. 25.

<sup>37</sup> Allanna Sullivan, "Agency Decision on Copper-Import Curbs Could Recast Shape of a Sagging Industry," *The Wall Street Journal*, June 11, 1984, p. 36.

<sup>38</sup> Eduardo Lachica, "ITC is Divided on How to Aid Copper Industry," *The Wall Street Journal*, June 28, 1984, p. 16.

<sup>39</sup> *Highlights of U.S. Export and Import Trade*, p. A-8, table 4.

<sup>40</sup> *Ward's Automotive Reports*, July 9, 1984, p. 217.

<sup>41</sup> *Ibid.*

<sup>42</sup> *Ibid.*

<sup>43</sup> *Ibid.*

<sup>44</sup> Amal Nag, "High New Car Prices Keep Many Lookers Looking, Not Buying," *The Wall Street Journal*, Aug. 3, 1983, p. 8.

<sup>45</sup> *Ward's Automotive Reports*, July 16, 1984, p. 225, and July 20, 1981, p. 225.

<sup>46</sup> "Subcompacts: The Soft Spot in Auto Sales," *Business Week*, June 11, 1984, p. 43.

<sup>47</sup> "How Carmakers Are Trimming an Import Surplus," *Business Week*, Jan. 30, 1984, p. 36.

<sup>48</sup> *Statistical Report: U.S. Foreign Trade in Machine Tools 1983* (McLean, Va., National Machine Tool Builders' Association), Mar. 30, 1984.

<sup>49</sup> Ralph E. Winter, "Acme Cleveland Is Making Risky Changes to Survive In New Machine Tool Industry," *The Wall Street Journal*, May 17, 1984, p. 33.

<sup>50</sup> "A U.S. Toolmaker Cozies Up To Its Former Foes," *Business Week*, Apr. 16, 1984, p. 66.

<sup>51</sup> *Highlights of U.S. Export and Import Trade*, December 1983, pp. 26-27, table E-2, and pp. 62-63, table I-3.

<sup>52</sup> *Highlights of U.S. Export and Import Trade*, June 1984, table I-3.

<sup>53</sup> *U.S. Department of Commerce News—Personal Income and Outlays* (Bureau of Economic Analysis), July 20, 1984.

<sup>54</sup> Mark Hosenball, "'Operation Tripware' lights up scoreboard with new seizures," *Women's Wear Daily*, Feb. 8, 1984, p. 25; and "U.S. Tightens Rules on Apparel Imports due to Quota Abuse," *The Wall Street Journal*, Aug. 6, 1984, p. 20.

<sup>55</sup> *Nonrubber Footwear*, USITC Publication 1545 (U.S. International Trade Commission), July 1984, p. 1.

<sup>56</sup> *Highlights of U.S. Export and Import Trade*, FT-990 (U.S. Department of Commerce, Bureau of the Census), June 1983 and June 1984, table E-2.

<sup>57</sup> "U.S. Offers Soviets 10 Million More Tons of Grain This Year," *The Wall Street Journal*, Jan. 26, 1984, p. 48.

<sup>58</sup> *Outlook and Situation Report—Wheat* (U.S. Department of Agriculture, Economic Research Service), June 1984, p. 2.

<sup>59</sup> *Highlights of U.S. Export and Import Trade*, FT-990 (U.S. Department of Commerce, Bureau of the Census), June 1983 and June 1984, table E-2.

<sup>60</sup> *Council News*, Issue #84-22 (Washington, Tanners Council of America), June 1, 1984, p. 3.

<sup>61</sup> *Highlights of U.S. Export and Import Trade*, FT-990 (U.S. Department of Commerce, Bureau of the Census), June 1983 and June 1984, table E-2.

<sup>62</sup> *Ibid.*

<sup>63</sup> *Foreign Agricultural Circular—Cotton*, FC 7-84 (U.S. Department of Agriculture, Foreign Agricultural Service), June 1984, p. 16.

<sup>64</sup> Al Wyss, "Agricultural Rebound Enriches Chemical Earnings," *The Journal of Commerce*, Aug. 3, 1984, p. 1.

<sup>65</sup> *Highlights of U.S. Export and Import Trade*, June 1984, p. A-8, table 4, and p. A-4, table 2.

<sup>66</sup> Homer Starr, "A Big Trade Setback for U.S. Producers," *Chemical Week*, Feb. 29, 1984, p. 25.

<sup>67</sup> *Highlights of U.S. Export and Import Trade*, December 1983, table 2, pp. 10-11.

<sup>68</sup> "Alcoa and Kaiser To Cut Production, Price Drop Cited," *The Wall Street Journal*, June 21, 1984, p. 16.

<sup>69</sup> J. Ernest Beazley, "Reynolds Metals to Cut Output of Aluminum," *The Wall Street Journal*, July 25, 1984, p. 7.

<sup>70</sup> *The Aluminum Situation* (Washington, The Aluminum Association), August 1984.

<sup>71</sup> *Highlights of U.S. Export and Import Trade*, FT-990 (U.S. Department of Commerce, Bureau of the Census), June 1983 and June 1984, table E-2.

<sup>72</sup> *Ibid.*

<sup>73</sup> *Ibid.*

<sup>74</sup> *Ibid.*

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### Rents that mean eviction

At a neighborhood housing counseling center in Paris, walk-in clients include a bedraggled fellow wearing dark glasses, an elderly woman clad in a well-worn black dress, and a foreign woman with two children in tow. As they talk softly, often nervously, with their volunteer lawyers, their faces register anger mixed with resignation and fear. Their landlords have raised their rents, and they are here to learn about their rights. For them and for many of the others in the large meeting room, the question is whether they can afford to stay in their apartments—and if they cannot, then where they can afford to move. Around the room placards proclaim, "You fight for your salaries, fight for your housing too." "Easier said than done," sniffs a young man whose lease is up for renewal. "You must take what you can find."

—SANDY SOLOMON

"Urban Renovation:  
Rebuilding the Cities for Whom?"  
*Transatlantic Perspectives*,  
January 1981, p. 34.

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# Occupational mobility and job tenure in 1983

*In 1983, more than 1 worker in 3 aged 35 to 44 had been with the same employer 10 years or longer and almost the same ratio of workers 45 and older had worked for the same employer 20 years or more*

ELLEN SEHGAL

Intergenerational and intragenerational upward occupational mobility is an accepted part of American life. Also commonly accepted is a picture of the U.S. labor market in which workers are highly mobile in general. Numerous books and articles describe Americans' extensive "job hopping" and geographic mobility. American workers are seen as changing occupations and employers in far higher proportions than their counterparts in other industrial nations.<sup>1</sup>

This view of widespread job mobility is supported by a number of developments which tend to hold down the measures of average tenure in the United States, particularly in comparison with Japan and other industrial nations. These developments primarily are related to rapid increases in the U.S. population and labor force. For example, over the past decade, millions of American women have entered the labor force each year. Moreover, the American work force has been boosted by high rates of migration (both legal and illegal) into the United States. As a result, employment has grown by 20 million since the early 1970's. And with all of these new workers in the labor force, it is not too surprising that the overall measure of job tenure for the United States is relatively low.

Yet, a detailed look at the data on tenure shows that a large proportion of American workers apparently spend most of their "mature" worklife with the same employer and in

the same type of work.<sup>2</sup> Jobs held by middle-aged workers appear highly stable. New data from the Current Population Survey seem to support the contention that mature American workers, on average, show substantial job stability, thus making them not too unlike the workers of Japan.<sup>3</sup>

Of course, there is significant job movement among young workers, both in terms of employers and types of work. Still, once they settle into a career path, employees become considerably more stable in terms of their work than is generally thought. This is the picture which emerges from the most recent information on workers' tenure with their employer and in their current occupation. The information was gathered through special questions in the Current Population Survey on the work persons were doing in January 1983, whether it was the kind of work they did a year earlier, how long they had done that kind of work, and how long they had been working continuously for their current employer.

Among the principal findings:

- One worker in 6 has been with his or her employer for at least 15 years.
- Among workers aged 45 and over, nearly one-third have been with their current employer for 20 years or more.
- Tenure with one's employer is closely linked to occupational stability.
- The rate at which women change occupations has increased substantially over the past two decades, but for men there has been no trend.

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## Tenure with employer

As expected, the length of tenure with one's employer is strongly related to the age of workers. For example, the vast majority of teenagers working in January 1983 had held their jobs for 1 year or less. Workers aged 20 to 24 also had short tenure. Again this is not surprising, because most of these young adults are recent entrants into the labor force, their jobs being largely temporary in nature while they are in the process of searching for and establishing careers. In contrast, many older workers have become attached to a particular employer and a given occupation, and thus are far less mobile. Their longer attachment to a job usually provides wage increases and greater employment security as well as pension rights.

Among workers aged 35 to 44 in January 1983, more than one-third had been with the same employer for 10 years or more, and among workers 45 and over, nearly one-third had been at their jobs for at least 20 years. (See table 1.) This indicates a substantial employment stability among a large portion of American workers. While tenure among younger workers is obviously shorter, the observed pattern by age, if continued into the future, would indicate that about half of all workers aged 30 to 34 who have been with an employer for 10 to 14 years are likely to remain with that employer for a least another 10 years.<sup>4</sup> And for workers aged 25 to 29 the proportion would be almost 40 percent.

On average, men have longer job tenure than women. This is primarily because uninterrupted labor force participation has been common for men but is a more recent practice for women. As shown in table 1, among all workers 16 years of age and over, the proportion that had been with their employer 15 years or more was about 20 percent for men and 10 percent for women. Job tenure was longer for men than for women in part-time as well as full-time employment. Black women (who have had a high rate of labor force participation for many years) exceeded both white and Hispanic women in tenure with their 1983 employer.<sup>5</sup>

Young men and women have similar median years of job tenure. Tenure for men, however, becomes significantly longer than for women at ages 35 and older. As the following tabulation shows, in the 55-to-64 age group in January 1983, median tenure for men was 16.9 years, in contrast to 10.3 years for women.

Age	Median years		
	Total	Men	Women
Total, 16 years and over .....	4.4	5.1	3.7
16 to 24 years .....	1.5	1.5	1.5
25 to 34 years .....	3.5	3.8	3.2
35 to 44 years .....	5.8	7.7	4.6
45 to 54 years .....	10.2	13.2	6.9
55 to 64 years .....	13.6	16.9	10.3
65 years and over .....	13.2	14.9	11.9

**Table 1. Distribution of workers by age, sex, and years of tenure with current employer, January 1983**

[Numbers in thousands]

Age and sex	Number employed	Years with current employer (percent distribution)						
		Total	1 year or less	2 to 5 years	6 to 9 years	10 to 14 years	15 to 19 years	20 years or more
<b>Total</b>								
16 years and over .....	97,273	100.0	27.3	33.1	12.4	10.9	6.4	9.9
16 to 24 years .....	18,732	100.0	56.4	40.2	3.1	.3	—	—
25 years and over .....	78,541	100.0	20.3	31.3	14.6	13.5	7.9	12.3
25 to 34 years .....	27,805	100.0	30.0	43.0	16.8	9.2	.9	.1
35 to 44 years .....	21,169	100.0	20.0	31.2	15.1	16.8	11.7	5.0
45 years and over .....	29,567	100.0	11.5	20.5	12.0	15.1	11.8	29.1
45 to 54 years .....	15,549	100.0	13.0	22.8	13.1	15.6	12.3	23.4
55 to 64 years .....	11,224	100.0	9.7	17.9	10.8	14.9	11.9	34.8
65 years and over .....	2,794	100.0	10.2	18.8	10.6	13.7	8.6	38.1
<b>Men</b>								
16 years and over .....	54,415	100.0	24.7	30.2	12.2	11.7	7.5	13.7
16 to 24 years .....	9,641	100.0	56.1	39.6	3.9	.4	—	—
25 years and over .....	44,775	100.0	18.0	28.2	14.0	14.1	9.1	16.7
25 to 34 years .....	15,575	100.0	27.6	43.0	17.9	10.4	1.0	.1
35 to 44 years .....	11,924	100.0	16.8	26.2	14.8	20.0	15.4	6.9
45 years and over .....	17,276	100.0	10.2	16.3	9.9	13.2	12.0	38.3
45 to 54 years .....	9,003	100.0	11.1	17.3	10.9	14.3	13.5	32.8
55 to 64 years .....	6,590	100.0	8.9	14.5	8.4	12.3	11.2	44.7
65 years and over .....	1,683	100.0	10.1	18.3	10.5	11.3	7.5	42.4
<b>Women</b>								
16 years and over .....	42,858	100.0	30.5	36.7	12.5	10.0	5.0	5.2
16 to 24 years .....	9,092	100.0	56.7	40.9	2.3	.2	—	—
25 years and over .....	33,766	100.0	23.4	35.5	15.3	12.7	6.4	6.7
25 to 34 years .....	12,229	100.0	33.1	43.2	15.4	7.6	.7	—
35 to 44 years .....	9,245	100.0	24.3	37.7	15.6	12.7	7.1	2.7
45 years and over .....	12,291	100.0	13.2	26.5	14.9	17.8	11.4	16.1
45 to 54 years .....	6,546	100.0	15.5	30.3	16.1	17.3	10.6	10.3
55 to 64 years .....	4,634	100.0	10.8	22.8	14.4	18.6	12.8	20.7
65 years and over .....	1,111	100.0	10.3	19.6	10.8	17.3	10.3	31.6



The average length of tenure of workers with their employers does not vary greatly by major occupational group, particularly if one excludes "farming, forestry, and fishing." The workers in this occupational group have an unusually high median tenure because many are permanently self-employed and also because these are declining occupations which attract few newcomers. In all other occupational groups, the median years of tenure with employers do not show a wide dispersion from the overall averages for men and women. For example, median tenure for all men 25 and over is 6.9 years. When ranged by major occupational groups, the medians for these men varied from a high of 8.1 years for those in "executive, administrative, and managerial" jobs and "administrative support, including clerical" jobs, to a low of 4.1 years for those in service occupations other than private household and protective services. (See table 2.) For women 25 and over, the range of employer tenure is even smaller, with the medians for most occupational groups being closely clustered around 4.8 years for all women in this age group.

It should be noted that, historically, most research on tenure has been limited to male workers. Thus, the finding that many Americans spend much of their mature worklife with the same employer usually refers only to men. Yet, when observations on women are included, this remains true. There also is substantial job stability among older female workers; for example, almost half of women 45 and over in January 1983 had been with their current employer 10 years or more. Moreover, because increasing proportions of women are now permanent members of the work force, the gap in tenure between men and women should begin to narrow.<sup>6</sup>

**Table 2. Median years of tenure with current employer for employed civilians age 25 and over, by occupation and sex, January 1983**

[Numbers in thousands]

Occupation	Men		Women	
	Total employed	Median years of tenure	Total employed	Median years of tenure
Total, age 25 and over . . . . .	44,775	6.9	33,766	4.8
Executive, administrative, and managerial . . . . .	7,040	8.1	3,084	5.3
Professional specialty . . . . .	6,193	7.0	5,493	5.3
Technicians and related support . . . . .	1,256	5.2	1,196	4.5
Sales occupations . . . . .	4,845	5.8	3,576	3.5
Administrative support, including clerical . . . . .	2,506	8.1	10,140	5.0
Private household . . . . .	25	( <sup>1</sup> )	613	3.5
Protective service . . . . .	1,220	7.0	159	4.0
Service, except private household and protective service . . . . .	2,242	4.1	4,989	4.0
Precision production, craft, and repair . . . . .	9,251	6.9	701	5.8
Machine operators, assemblers, and inspectors . . . . .	3,334	7.8	2,740	5.8
Transportation and material moving . . . . .	3,084	6.5	295	5.3
Handlers, equipment cleaners, helpers, and laborers . . . . .	1,667	5.6	449	5.5
Farming, forestry, and fishing . . . . .	2,112	10.8	329	7.4

<sup>1</sup>Rate not computed where base is less than 75,000.

Has tenure been increasing or declining over time? Unfortunately, the question cannot be answered, as the measurements taken in 1983 are not fully comparable with previous ones. Median tenure did turn out to be considerably higher in 1983 than when last measured in 1981—4.4 versus 3.2 years for workers 16 years and over. Some of the increase may have reflected the reluctance of workers to change employers during a period of economic downturn, such as that which preceded the January 1983 survey. This reluctance was shown by the lower proportion of "job leavers" among the unemployed. The sharpening of the 1983 questions, as compared with those used in 1981 and previous surveys, also was probably responsible for much of the increase in tenure measurements.<sup>7</sup>

**Occupational tenure and shifts**

For certain purposes—such as the analysis of earnings differences between groups—it may be more appropriate to focus on the workers' length of experience in their occupation rather than on their length of service with their employer. Data on time spent in a given occupation—occupational tenure—also were gathered as part of the January 1983 survey. (See table 3.)

As with employer tenure, occupational tenure is closely associated with age. On average, men are also more likely to have spent a longer period of time in the same occupation than are women. White, black, and Hispanic men all had longer occupational tenure than their female counterparts.

The longer the attachment with an employer, the less likely the worker is to change occupations. Of the 26 million men and women 25 years and over who had been working for their 1983 employer for 10 years or more, only 658,000 or 2.5 percent, had changed occupations in the preceding year. In contrast, as shown in the following tabulation, nearly 1 of 3 persons working for their 1983 employer for 1 year or less had changed occupations in 1982.

Tenure with current employer	Employed in January 1982 and January 1983	Changed occupation during period	
		Number	Percent
Total employees, 25 years and over . . . . .	72,897	5,457	7.5
1 year or less . . . . .	11,141	3,602	32.3
2 to 4 years . . . . .	19,085	647	3.4
5 to 9 years . . . . .	16,465	550	3.3
10 or more years . . . . .	26,206	658	2.5

As shown above, about 8 percent of all workers 25 years and over in January 1983 were in occupations different from those held in 1982. Although the proportions of men and women moving into an occupation are similar for most occupations, their actual numbers vary widely.

The occupations "executive, administrative, and management" and "protective service" are two occupations which had a substantially higher proportionate entry by women than by men. The occupational mobility rate—which meas-

**Table 3. Occupational tenure of employed civilians age 25 and over, who were employed in both January 1982 and January 1983, by sex, race, and Hispanic origin**

[Numbers in thousands]

Occupational tenure	Total		White		Black		Hispanic origin <sup>1</sup>	
	Men	Women	Men	Women	Men	Women	Men	Women
Total, age 25 and over . . . . .	42,349	30,548	37,875	26,320	3,407	3,419	2,031	1,287
1 year or less . . . . .	3,487	3,157	3,086	2,785	303	298	215	135
2 to 4 years . . . . .	8,564	8,241	7,388	7,058	878	935	507	397
5 to 9 years . . . . .	9,464	8,120	8,424	6,949	796	923	554	391
10 or more years . . . . .	20,833	11,030	18,978	9,529	1,431	1,264	754	365

<sup>1</sup>It should be noted that the "Hispanic origin" category is not a racial classification. Persons in this group may appear in the white or black or other racial categories.

ures the proportion of workers who were employed both in 1983 and 1982, but in a different occupation<sup>8</sup>—was 10.9 percent for women versus 6.9 percent for men entering management, and 13.1 percent for women versus 6.4 percent for men entering protective service. (See table 4.) The high mobility rate for women into management is evidence of continued expanding employment opportunities for women in that occupation. While the absolute numbers are low, entry into protective service for women indicates movement into an occupation that is nontraditional for female workers.

Of those persons employed in both January 1982 and 1983 who changed occupations during that period, most moved within the same major occupational group, that is, the move was among very closely related occupations. Such mobility was high, for example, for both men and women in the professions.

Women were somewhat more likely than men to make a shift from one major occupational group to another. For example, more than 40 percent of men in executive, administrative, and managerial employment who had changed occupations during 1982–83 had made a shift within the management field, while a relatively high proportion of women who were managers in 1983 had been clerical work-

ers the previous year. Similarly, a somewhat larger percentage of women in sales in 1983 had been in clerical jobs in 1982. However, more men had made an intraoccupational move within sales during that period than any other type of occupational change. (See table 5.) These differences, however, may stem in part from errors made in reporting, recording, or classifying the data.

The rate at which women change occupations has increased substantially over the past two decades, unlike the situation for men. In 1966, the occupational mobility rate was markedly higher for men than for women. By 1978, and continuing to 1983, the situation was reversed. Over the 1966–83 period, the occupational mobility rate for women 18 and older and not in school increased from 6.8 to 9.9 percent, peaking at 11.7 percent in 1978. Over the same period, the rate for men did not show any definite trend; it rose during the 1970's but dropped off considerably in the early 1980's. The largest change over this 18-year period occurred for men and women 20 to 24. (See table 6.)

As measured in January 1983, the occupational mobility rate was slightly higher for Hispanic men than for white men, but considerably higher than for blacks. Black men had the lowest rate in almost every age group. The occupational mobility rate for black women was lower than those for both Hispanic and white women, and this difference appeared in almost all age groups.

A number of "push" and "pull" factors are involved in occupational mobility.<sup>9</sup> Among the pull factors, for example, are better pay and more appealing work. Push factors would include a forced change because of declining demand in one's preferred occupation. Much of women's recent occupational mobility may be attributed to pull factors. These are consistent with women's strong growth in the labor force, increased educational attainment, some slight improvements in earnings relative to men,<sup>10</sup> and broadened occupational opportunities. In contrast, because male work-

**Table 4. Men and women age 25 years and over, employed in January 1983, by current occupation and employment status in January 1982**

Occupation	Men employed in January 1983	Men employed in January 1982 and 1983			Women employed in January 1983	Women employed in January 1982 and 1983		
		Total	Changed occupations			Total	Changed occupations	
			Number	Percent			Number	Percent
Total, 25 years and over . . . . .	44,775	42,349	3,054	7.2	33,766	30,548	2,403	7.9
Executive, administrative, and managerial . . . . .	7,040	6,901	477	6.9	3,084	2,908	316	10.9
Professional specialty . . . . .	6,193	6,018	304	5.1	5,493	5,112	286	5.6
Technicians and related support . . . . .	1,256	1,198	79	6.6	1,196	1,106	77	6.9
Sales occupations . . . . .	4,845	4,649	441	9.5	3,576	3,064	308	10.0
Administrative support, including clerical . . . . .	2,506	2,392	219	9.2	10,140	9,358	786	8.4
Private household . . . . .	25	18	( <sup>1</sup> )	( <sup>1</sup> )	613	491	30	6.2
Protective service . . . . .	1,220	1,149	74	6.4	159	144	19	13.1
Service, excluding private household and protective service . . . . .	2,242	2,024	184	9.1	4,989	4,300	286	6.6
Precision production, craft, and repair . . . . .	9,251	8,573	544	6.3	701	629	46	7.4
Machine operators, assemblers, and inspectors . . . . .	3,334	3,112	289	9.3	2,740	2,489	170	6.8
Transportation and material moving . . . . .	3,084	2,816	192	6.8	295	263	21	7.9
Handlers, equipment cleaners, helpers, and laborers . . . . .	1,667	1,492	178	11.9	449	386	44	11.3
Farming, forestry, and fishing . . . . .	2,112	2,008	73	3.6	329	299	14	4.7

<sup>1</sup>Data not available.



**Table 5. Occupational distribution of employed civilians age 25 and over, who changed occupations between January 1982 and January 1983, by sex**

[Percent distribution]

Occupation	Different occupation in January 1982		Executive, administrative, and managerial	Professional specialty	Technicians and related support	Sales	Administrative support, including clerical	Protective service	Other service	Precision production, craft, and repair	Machine operators, assemblers, and inspectors	Transportation and material moving	Handlers, equipment cleaners, helpers, and laborers	Farming, forestry, and fishing
	Number (in thousands)	Percent												
<b>Men</b>														
Total, 25 years and over <sup>1</sup> . . . . .	3,054	100.0	14.2	10.1	3.2	11.0	7.9	1.8	5.9	18.7	10.3	8.3	5.6	3.0
Executive, administrative, and managerial . . . . .	477	100.0	41.4	12.5	5.0	12.3	6.6	.6	4.6	9.7	3.1	2.7	1.0	.5
Professional specialty . . . . .	304	100.0	13.3	44.0	7.9	5.1	4.3	.4	6.5	10.7	.9	3.1	1.8	2.0
Technicians and related support . . . . .	79	100.0	11.6	15.9	11.9	2.1	19.1	1.6	7.7	17.9	6.1	2.9	3.2	—
Sales occupations . . . . .	441	100.0	20.0	6.9	2.4	30.6	9.2	2.4	2.3	11.6	4.0	3.9	4.4	2.3
Administrative support, including clerical . . . . .	219	100.0	11.8	8.3	3.7	7.3	25.0	.3	5.0	17.4	5.6	6.7	7.6	1.1
<b>Women</b>														
Total, 25 years and over <sup>1</sup> . . . . .	2,403	100.0	10.1	12.6	2.4	12.5	34.6	.3	12.9	1.7	8.2	1.8	1.5	.4
Executive, administrative, and managerial . . . . .	316	100.0	25.4	15.1	2.5	14.1	30.3	.7	4.1	1.9	3.0	1.1	1.7	—
Professional specialty . . . . .	286	100.0	8.4	48.0	5.5	8.5	15.0	—	9.8	.1	3.0	.1	—	.1
Technicians and related support . . . . .	77	100.0	7.8	8.6	9.9	4.8	40.0	—	25.3	—	1.0	2.6	—	—
Sales occupations . . . . .	308	100.0	10.4	9.3	2.0	24.3	29.5	.7	12.5	1.8	4.9	1.4	.7	.7
Administrative support, including clerical . . . . .	786	100.0	9.0	6.3	1.6	9.3	59.1	.2	7.6	.7	3.2	2.6	2	—

<sup>1</sup>Includes other occupations, not shown separately.

ers predominated in industries sharply affected by the 1981–82 recession, some of them may have been pushed, at least temporarily, into occupations with lower earnings and lower status.

The factors associated with high occupational mobility generally parallel those given for low job tenure. The converse is also true. Thus, many mature workers reported both high job tenure and low occupational mobility. The occupational mobility rate for workers aged 45 and over in 1983 was only 4.0 percent.

<b>Table 6. Occupational mobility rates for employed civilians, by sex and age, 1965–83, selected years</b>					
[In percent]					
Sex and age	Occupational mobility rates <sup>1</sup>				
	1965–66	1972–73	1977–78	1980–81	1982–83
<b>Men</b>					
Total, 18 years and over . . . . .	9.9	9.2	11.6	10.1	9.3
18 to 19 years . . . . .	31.7	35.0	40.5	31.6	29.0
20 to 24 years . . . . .	28.5	25.0	27.3	23.8	21.3
25 to 34 years . . . . .	13.8	12.4	15.5	12.4	11.5
35 to 44 years . . . . .	7.4	6.2	8.1	7.4	6.7
45 to 54 years . . . . .	5.2	3.5	4.5	4.4	4.8
55 to 64 years . . . . .	3.8	2.6	3.4	3.5	3.1
65 years and over . . . . .	2.7	1.7	2.0	1.6	1.9
Total, 18 years and over not in school . . . . .	9.8	9.0	11.5	9.9	9.0
<b>Women</b>					
Total, 18 years and over . . . . .	6.9	8.4	12.0	11.7	10.1
18 to 19 years . . . . .	29.0	32.6	39.5	35.8	26.0
20 to 24 years . . . . .	14.9	18.9	22.9	22.8	20.1
25 to 34 years . . . . .	8.5	9.9	14.4	13.9	11.9
35 to 44 years . . . . .	5.3	6.3	9.3	8.9	7.8
45 to 54 years . . . . .	4.7	3.3	5.1	5.8	4.9
55 to 64 years . . . . .	2.4	2.4	3.6	2.7	3.8
65 years and over . . . . .	1.8	2.5	2.5	1.8	1.4
Total, 18 years and over not in school . . . . .	6.8	8.2	11.7	11.4	9.9

<sup>1</sup>Number of persons employed in a different occupation in the prior year as a proportion of the total employed in both years.

Differences in occupational mobility by age are much larger than differences by sex or race or ethnic group. For example, the 22-percent mobility rate for workers 16 to 24 was 15 percentage points higher than the rate for those 35 to 44.

Single workers, being generally younger, are more likely to change occupations than their married counterparts. But age has a strong effect on mobility even within the single-worker group. More than twice as many single workers between the ages of 18 and 24 had changed occupations during 1982 than those 25 and over (2,050 versus 803).

This relationship between age and occupational mobility is similar to that between age and employer change: Youth are far more likely to be occupationally mobile and to shift employers than are adult workers.<sup>11</sup> The extensive mobility attributed to American workers applies for the most part to young, not older, workers. □

—FOOTNOTES—

<sup>1</sup> See Masanori Hashimoto and John Raisian, "Employment Tenure and On-the-Job Training: Firm Size Differences in Japan and the United States," January 1984; and *The New York Times*, June 17, 1984, "America's Astounding Job Machine," quoting Orley C. Ashenfelter on the high mobility of American versus British workers. For a discussion on occupational mobility in Britain also see David Metcalf, *Low Pay, Occupational Mobility, and Minimum-Wage Policy in Britain* (American Enterprise Institute for Public Policy Research, 1981).

<sup>2</sup> More detailed data on job tenure and occupational mobility are available from the Office of Employment and Unemployment Statistics, Bureau of Labor Statistics.

<sup>3</sup> Robert E. Hall, "The Importance of Lifetime Jobs in the U.S. Economy," *American Economic Review*, September 1982. Hall also cites his earlier work based on data for older men from the National Longitudinal Survey of Work Experience, as well as related work, for example, George A. Akerlof and Brian Main (*American Economic Review*, December 1981) and Kazuo Koike (*Japanese Economic Studies*, Fall 1978). The Koike

article (as cited by Hall) concludes that tenure of 15 years or longer is more common in the United States than in Japan. For occupational mobility in Japan, see Herman Kahn, *The Emerging Japanese Superstate, Challenge and Response* (Prentice-Hall, Inc., 1970). Examining employment practices of large companies, such as the "lifetime contract" made by the employee with the firm, Kahn also notes the high mobility of workers within firms and between firms of a conglomerate, and observes that in terms of worker mobility the U.S. economy in many ways is much more rigid than the Japanese.

<sup>4</sup>The retention rate is computed by dividing the percent of workers aged 40 to 44 years with 20 to 24 years of tenure by the percent aged 30 to 34 with 10 to 14 years' tenure. (It assumes that job tenure at older ages in January 1983 can represent tenure of younger groups as they age over time.) Using similar procedures, Hall (see footnote 3) found that more than half of all male workers over age 30 are holding jobs which will last more than 20 years. Harvey R. Hamel (*Monthly Labor Review*, January 1967) also used such procedures but, in addition, his computation allowed for the loss of workers due to mortality. Hamel found, for example, that 46.9 percent of men aged 35 to 39 with over 10 years' service with their 1966 employer could be expected to remain with that employer an additional 10 years.

<sup>5</sup>It should be noted that the "Hispanic origin" category is not a racial classification. Persons in this group may appear in the white or black or other racial categories.

<sup>6</sup>Hall (see footnote 3) observes that while women on average have much shorter job tenure than men, the typical number of jobs held over a lifetime is almost the same.

<sup>7</sup>The 1983 questions relate specifically to tenure with the worker's "employer," whereas the 1981 questions relate to one's "job." Because workers may change jobs without changing employers, the measures are not exactly equivalent. (The relevant question in the 1983 survey was "How long has . . . been working continuously for the present employer (or as self-employed)?" In previous surveys, the comparable question was "When did . . . start working at his present job or business?")

<sup>8</sup>Occupational mobility is defined as a change in employment in a "3-digit" census occupation in January 1983 from the one reported for January 1982. The mobility rate measures the proportion of workers who held the January 1983 occupation, not the proportion leaving the 1982 occupation. Thus, it reflects the percentage of workers in an occupation who come from a different one, not the probability of workers leaving a given occupation.

The data on occupational mobility (as well as on occupational and job tenure) are subject to certain limitations, such as those stemming from differences in the way respondents report occupations from one year to another, and limitations resulting from retrospective bias. These may result in serious inconsistencies in response, and may lead to overstatements of mobility. Note, too, that because the survey asks for workers' occupation only in January 1983 and January 1982, any intermediate changes during the year are not included.

<sup>9</sup>This has been described as such in James J. Byrne, "Occupational mobility of workers," *Monthly Labor Review*, February 1975, pp. 53-59, reprinted as Special Labor Force Report No. 176. Other reports on occupational mobility appeared in the *Monthly Labor Review* of June 1967, December 1979, and September 1982. The last also included a section on job tenure. Other reports on job tenure were published in the *Monthly Labor Review* of January 1967, September 1969, January 1973, and December 1979. These articles were reprinted as Special Labor Force Report No. 84, No. 231, Bulletin 2162, Special Labor Force Report No. 77, No. 112, No. 172, and No. 235.

<sup>10</sup>See Earl F. Mellor, "Investigating the differences in weekly earnings of women and men," *Monthly Labor Review*, June 1984, p. 27.

<sup>11</sup>A study of labor mobility during 1940-50 found that job shifts of younger workers were more "complex" than those of older workers. A smaller proportion of older than younger workers changed employer, occupation, and industry at the same time; and employment shifts of older workers were more likely to involve only a change of employer. (Gladys L. Palmer, *Labor Mobility in Six Cities* (Social Science Research Council, 1954), p. 63.)

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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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# Pay differentials: the case of Japan

*In Japan, as in the United States, employees' investment in human capital cannot fully explain the tendency of larger firms to pay higher wages; idiosyncrasies of the labor market, such as the extensive payment of bonuses and practices related to lifetime employment, may account for much of the remaining gap*

ROBERT EVANS, JR.

In a review of industrial relations research conducted during the 1970's, James G. Scoville writes that, in both Japan and the United States, size-of-firm wage differentials are explained by differences in employees' human capital.<sup>1</sup> However, two recent studies suggest that human capital differences do not completely explain the differentials in this country. Using data for 1979, Wesley Mellow found that wages in firms of 1,000 or more workers were 8 percent greater than those in firms with fewer than 25 workers when a number of factors, including education and experience, were held constant.<sup>2</sup> Martin E. Personick and Carl B. Barsky, who studied pay at various experience and responsibility levels of professional, technical, and clerical occupations, reported size-of-firm differentials for all but 1 of 25 job levels. Typically, these were only for the largest corporations (more than 10,000 employees), where differentials were 10 to 15 percent for professionals and 20 percent for clerical and technical occupations over pay in firms with 500 or fewer employees.<sup>3</sup>

If elements of human capital do not completely explain size-of-firm differentials in the United States, is Japan a similar case? This article explores that issue, and suggests

an answer based on data from the *Chingin Kōzō Kihon Tōkei Chōsa* [Wage Structure Survey].<sup>4</sup>

## The employment decision in Japan

The model employment relationship in Japan is that of *Shūshin Koyō* [lifetime employment].<sup>5</sup> Under this system, workers are initially employed upon graduation from school. Once a worker is hired, the firm goes to great lengths to provide continuous employment until the individual retires, sometime between the ages of 50 and 60. In return for the understood employer commitment to long tenure, the employee is expected to devote himself fully to the firm and to allow management considerable flexibility as to the type and geographical location of work assignments.

Remuneration consists of a basic wage, various allowances, a semiannual bonus, and a number of fringe benefits. The basic wage depends upon the employee's education, age, and job abilities. It is increased annually based upon decisions made in collective bargaining. The annual increase consists of two parts, one of which recognizes an additional year of service to the firm, new job abilities, and merit, and another that is a general increase in the base wage.

Given the employment opportunities and wage patterns faced by the graduating student, what pecuniary variable should be used in making the employment decision? Clearly, it is some subjective assessment of the present value of

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future earnings with the various firms. Such a present value calculation would incorporate expected growth of the firm relative to the economy, the pattern of wages associated with long tenure, the pattern of wages if tenure is short because of voluntary mobility or the firm's economic difficulties, and so forth. For the observer trying to approximate such individual calculations, the most desirable data would be those on wages and bonuses by worker age, education, and length of service, and, for the question at hand, the size of the employing firm. Fortunately, these data are available in the annual Wage Structure Survey. It is thus possible to account for the principal elements of human capital that economists believe are important for wage determination, and to differentiate these among three size-of-firm categories. (Of course, the individual graduate also considers other, unquantifiable factors, such as his preference for risk, the prestige of the firm, and subjective probabilities of advancement, in making the final decision.)

### Differentials by size of firm

Table 1 presents monthly wage and wage-plus-bonus<sup>6</sup> relationships by size of firm and by workers' age and educational attainment for Japanese men who have been continuously employed by the same firm. (In 1980, about one-fourth of the regular private-sector labor force were employed by firms of 1,000 workers or more, and another one-fourth were in firms with 100 to 999 employees.) According to the table, compensation is generally less in the smaller companies, regardless of worker age or education. Monthly wages are about the same in the two smaller size classes until workers are in their forties, when those in the medium-size firms begin to receive more. When bonus payments are included as compensation, the differences between the largest and smallest firms become more dramatic. In general, the higher the level of education, the larger is the wage gap by size of firm.

To more fully illuminate these relationships, table 2 presents compensation relatives by industry for broad age categories of high school and college educated men. Data

underlying the estimates relate to individuals whose tenure suggests that they have been continuously employed by the same firm since graduation. Thus, only a few of all possible matched age-tenure pairs are shown, but these represent core groups in the economy. Two distributions are presented, one for monthly wages and one for monthly wages plus one-twelfth of annual bonus payments. Again, the inclusion of bonuses tends to increase the income differences among the three size-of-firm classes, and the benefits of working for the larger firms increase with age and tenure.

The pay relatives suggest little in the way of systematic variation by industry, although those for transportation and communications tend to be quite high in smaller firms while those in finance and insurance are comparatively low. The indices of each industry's differentials were ranked and compared to rankings by union penetration and proportion of total employment in large firms by industry. Neither comparison indicated any systematic relationship with size-of-firm differentials.

Except for occupations that require substantial training—airline pilots, construction crafts, and so forth—occupational distinctions are weakly, if at all, correlated with wages in Japan. Hence, while table 3 shows significant occupational wage differentials by size of firm, these results may be less meaningful than estimates based on other variables.

The data in table 2 do suggest that experience with the firm is seen as a specific human capital investment with its own rewards. Yet the greater opportunity to achieve long tenure which characterizes employment in large firms should also be seen as an additional benefit to such employment, unless the individual worker has a positive taste for risk.<sup>7</sup> New graduates are quite aware that their prospects for long tenure with a large firm are more promising than with a smaller firm. For example, in 1981, 79.4 percent of all college educated men age 45 to 49 who were employed in firms with 1,000 workers or more had worked 20 or more years for their current employer. The figure for those in firms with 100 to 999 workers was 54.5 percent, and for firms with 10 to 99 workers, it was 31.7 percent. Earnings

**Table 1. Monthly pay relatives for Japanese men, by firm size and worker's age and educational attainment, 1981**

[Firms with 1,000+ workers = 100]

Worker's age	Junior high school graduates				High school graduates				College graduates			
	Wage		Wage + bonus		Wage		Wage + bonus		Wage		Wage + bonus	
	100-999 workers	10-99 workers	100-999 workers	10-99 workers	100-999 workers	10-99 workers	100-999 workers	10-99 workers	100-999 workers	10-99 workers	100-999 workers	10-99 workers
18-19	94	97	97	87	95	93	93	91	—	—	—	—
20-24	93	98	90	89	95	97	93	91	99	97	97	93
25-29	98	106	96	96	93	97	91	92	91	95	85	88
30-34	96	100	100	92	91	94	89	87	88	94	85	86
35-39	94	94	94	87	89	88	86	81	86	89	82	80
40-44	96	95	95	85	87	83	82	75	83	83	78	75
45-49	94	85	85	78	87	83	81	72	85	79	79	69
50-54	92	77	77	72	91	79	86	69	88	80	80	70

NOTE: Data refer to men who have been continuously employed by the same firm.

SOURCE: 1981 Wage Structure Survey, vol. III, pp. 139-41.



data for 50- to 54-year-old high school educated men suggest that workers do not have to pay a compensation premium for the greater probability of long tenure: Among those with 30 or more years of tenure, wages plus bonuses in large firms are 17 percent higher than in middle-size firms and 31 percent higher than in small firms, while the comparable figures for similarly aged workers at all levels of tenure are 25 percent and 40 percent.

Employment opportunities for women, especially at high-level jobs and with the major employers, are markedly different from those for men, although there have been changes toward equality during the postwar years. In particular, men's wages increase more with age: In 1981, the 50- to 54-year-old high school educated male with 1 to 2 years of firm tenure had a monthly wage that was 56 percent higher than that of a similarly educated 18- to 19-year-old. Among women, the worker age 50 to 54 received only 17 percent more than her younger counterpart. Yet, firm-specific tenure appears to be relatively more valuable for older women than for older men. This is probably because women with brief tenure are likely to have been in the labor market for only a short time, which is not typically the case for men. Yet, when the compensation of high school educated workers with at least 30 years' tenure was compared by size of firm, the patterns for men and women were quite similar. Women's wages plus bonus in firms with 1,000 workers or more were 18 percent higher than in firms with 100 to 999 workers, and 26 percent higher than in small firms. Again, there is no compensation premium paid by workers for the probability of long tenure in larger firms: At ages 50 to 54 for all levels of tenure, wages plus bonus for women in the largest firms were 36 percent higher than in middle-size firms and 44 percent higher than in the smallest firms.

### The puzzle

It seems clear in Japan, as in the United States, that the standard human capital variables of education and experience do not completely explain, if ever they did, size-of-firm differentials. In addition, it is evident that the Japanese differential is much larger after age 40 or when bonus income is included. Any explanation, therefore, must be consistent with the age pattern demonstrated and the concentration of the differential in the bonus portion of compensation.

It is possible that a more exhaustive test of worker characteristics would reduce the size of the differential. We know, for example, that the most able students enroll in the very best schools, from which the larger, more successful corporations seek employees.<sup>8</sup> Yet it seems unlikely that such difficult-to-measure characteristics of employees could explain wage differentials of the magnitude shown in the tables.

*Widening differential with age.* Some recent studies of compensation by age include variables for implicit contracts, experience, risk, incentives, and so forth, that may explain the Japanese pattern. One approach incorporating a variety of these concepts was presented in a 1982 article by Milton Harris and Bengt Holmstrom.<sup>9</sup>

According to the authors, there are four possible reasons why compensation increases with age: a) firms learn about individual abilities and are better able to match workers to jobs; b) workers begin to pay employers lower implicit premiums to guarantee their ability to do acceptable work; c) employees learn productivity-enhancing skills; and d) pay levels are a particularly important means to motivate employees in a world of lifetime employment security. The first two of these, while consistent with a general widening

**Table 2. Monthly pay relatives by industry and size of firm for selected age and tenure groups of Japanese men, 1981**

[Firms with 1,000+ workers = 100]

Industry	Age 18 to 19 <sup>1</sup>				Age 30 to 34 <sup>2</sup>				Age 35 to 39 <sup>3</sup>				Age 50 to 54 <sup>4</sup>			
	Wage		Wage + bonus		Wage		Wage + bonus		Wage		Wage + bonus		Wage		Wage + bonus	
	100-999 workers	10-99 workers	100-999 workers	10-99 workers	100-999 workers	10-99 workers	100-999 workers	10-99 workers	100-999 workers	10-99 workers	100-999 workers	10-99 workers	100-999 workers	10-99 workers	100-999 workers	10-99 workers
All private . . . . .	93	89	91	88	91	91	88	84	88	79	84	71	86	79	79	60
Mining . . . . .	75	83	77	81	89	93	90	91	95	92	88	84	85	70	82	62
Construction . . . . .	111	102	112	100	90	92	88	83	85	97	84	90	82	82	77	68
Manufacturing . . . . .	90	87	90	86	93	95	91	88	89	93	86	83	82	82	78	68
Trade . . . . .	96	95	95	93	89		85	83	87	92	83	83	94	114	88	101
Finance and insurance . . . . .	110	94	106	95	74	90	72	67	80	79	76	75	87	76	80	63
Real estate . . . . .	105	116	100	111	91	85	84	78	92	79	87	70	91	98	80	86
Services . . . . .	101	93	99	92	92	90	91	84	94	93	90	84	88	85	81	73
Transportation and communication . . . . .	124	126	116	116	125	130	110	110	102	102	99	94	95	93	87	83
Utilities . . . . .	102	100	101	96	92	90	94	91	89	85	90	86	80	64	81	63

<sup>1</sup>Data for 18- to 19-year-olds are for those with less than 1 year of firm tenure, or approximately 59 percent of the total age cohort.

<sup>2</sup>Data for 30- to 34-year-olds are for those with 10 to 14 years of tenure, or about 26 percent of the total cohort.

<sup>3</sup>Data for 35- to 39-year-olds are for those with 10 to 14 years of tenure, or about 50 percent of the total cohort.

<sup>4</sup>Data for 50- to 54-year-olds are for those with 25 to 29 years of tenure, or about 38 percent of the total cohort.

**Table 3. Monthly pay relatives by occupation and size of the employing firm for Japanese men age 35 to 39 with 10 to 14 years of tenure, 1981**

[Firms with 1,000+ workers = 100]

Occupation	100-999 workers		10-99 workers	
	Wage	Wage + bonus	Wage	Wage + bonus
Department head . . . . .	92	86	—	—
Section head . . . . .	79	74	—	—
Systems engineer . . . . .	86	84	86	82
Programmer . . . . .	101	97	95	88
Chauffeur . . . . .	87	86	77	73
Truck driver . . . . .	90	89	87	84
Guard . . . . .	73	66	67	64
Chemical reaction worker . . . . .	97	96	92	90
Metal press operator . . . . .	86	85	80	76
Crane operator . . . . .	106	104	95	89
Lathe operator . . . . .	93	91	88	85
Machine assembler . . . . .	92	91	100	85
Mechanical draftsman . . . . .	94	91	95	89
Auto assembler . . . . .	93	92	82	78
Retail sales (except department stores) . . . . .	87	80	87	78

of the wage differentials over time, do not imply a rapid shift after the age of 40. The second two appear to be more relevant.

In the larger firms, there is more physical capital per worker, which could yield greater productivity, and thus justify higher wages. It also is probable that the interaction of higher quality employees with similar employees and with higher levels of physical capital generates greater increases in human capital in the larger firms. The development of productivity enhancing skills with additional tenure may well be an important element in the ability of large firms to pay high wages. Indeed, in the context of a technology-specific skills model, Hong Tan has argued that such gains over a working life are key determinants of Japanese wage patterns.<sup>10</sup> A somewhat similar argument was made by Kazuo Koike, who hypothesized that the more developed system of internal training in large firms provides a greater range of technologically related positions than is true in smaller firms, which in turn contributes to wage differentials by size of firm.<sup>11</sup> However, even if enhanced skills are an important factor, there remains the problem of timing. Why should so much of the differential be concentrated in the years after age 40?

The last element, motivational allowances, may best explain the time pattern.<sup>12</sup> As is well known by the organizers of games of chance, large prizes and prizes that are ever in the future seem to have disproportionate power to motivate participants when compared to their discounted value. Many of the new employees in major Japanese firms will not be there to collect their "prize" at older ages, but the promise of greater compensation is a constant motivating factor. Thus, the firm saves money compared to paying an annual motivational allowance to each employee. In a sense, the firm also has received an interest-free loan from the employee, who has tacitly agreed to defer a portion of compensation to later worklife. In a rapidly growing economy,

such an arrangement is highly advantageous to the firm, but even in less dynamic times an interest-free loan has value.

*Japanese institutions.* There are two institutional factors unique to Japan which also have significantly affected the time pattern of the differential and its size. The concept of a living wage based upon family needs has long been important in Japan.<sup>13</sup> It is rooted in the nation's history, but has become more prominent since World War I, and particularly since the economic difficulties of the post-World War II years. The concept provides that wages should increase over a worker's life to accommodate marriage, the birth of children, the high costs of private college, and savings for early retirement from the primary employer. The latter two factors would suggest significant wage increases after the age of 40.

The second institutional consideration is that the nature of the large corporation in postwar Japan is quite different than in prewar years. Formerly, corporations were uniquely capitalistic, owned and controlled by wealthy individuals. However, share ownership in postwar Japan has tended to be diluted into the hands of other firms and banks. There is a high proportion of capital in the form of loans and internally generated funds, and an almost complete absence of outside directors. These changes, in conjunction with Japanese historical patterns and moral visions, have persuaded many scholars that today's large firms are essentially collectives of employees who hire high risk-high gain capital from shareholders and low risk-fixed gain capital from banks. If the assumption that the Japanese corporation is a collective of employees which hires capital rather than a collective of owners of capital which hires workers (including senior managers) is valid, it is hardly surprising that economic rents are shared among the members of the collective—the employees.<sup>14</sup>

The extensive use of bonus payments as the mechanism to pay out significant portions of the higher income received by employees in large firms is more complicated to explain. The payment of a semiannual bonus is a very old Japanese practice which was intended to provide employees with sufficient funds to meet the extra needs associated with certain cultural and religious practices. The bonus also served to provide a measure of equity and motivation in the form of profit sharing. However, with the democratization of employment in the postwar years, a significant bonus, which to an extent had been reserved for white-collar and management employees, was extended to all workers.<sup>15</sup>

While extensively used by all Japanese employers, the bonus tends to be relatively larger in the larger firms, while smaller firms compete for labor on the basis of regular monthly wages. The emphasis small firms give to wages as opposed to bonuses seems to be attributable to two factors: First, the firm wants to provide a monthly wage to cover the necessities of life, and second, a somewhat less rosy employment future gives any "promised" bonus made by



a smaller employer less value than an equivalent promise by a large employer. Consequently, one would expect that smaller firms would first meet competitive levels in monthly wages, and only later meet those of the bonus.

**Patterns over time**

There is no simple measure of the degree of wage difference by size of firm because the wage ratios between alternative matched pairs do not all move together. To describe movements over time, I chose to examine wages for 35- to 39-year-old male high school graduates with 15 to 19 years of tenure who worked as production workers in manufacturing (table 4). In addition, data on wage dispersion are provided for selected years (table 5). According to table 4, size-of-firm differentials that were quite wide in 1955 closed somewhat, reaching near equality in 1964. The 1960's were a period of generally tightening differentials as the labor market became much more competitive, and the productivity levels of small firms approached those of large firms.<sup>16</sup> After 1967, the differential gradually widened until a second period of near equality occurred during the oil-shock years 1973-74. This second narrowing was undoubtedly related to inflation,<sup>17</sup> for employment growth in manufacturing had leveled off, turning negative by 1972.

The estimates in table 4, which have been standardized for industry, general type of work, age, sex, education, and firm tenure, suggest that size-of-firm wage differentials have remained relatively constant since 1975. However, the figures in table 5, which exclude bonuses and include data for

**Table 5. Median and interquartile range of current-dollar monthly wages in manufacturing for male production workers age 35 to 39, by size of firm, selected years**

[In thousands of yen]

Year	1,000+ workers		100-999 workers		10-99 workers	
	Median	Interquartile range	Median	Interquartile range	Median	Interquartile range
1954	22.6	.40	18.6	.51	13.7	.57
1960	31.6	.44	25.3	.49	19.4	.71
1967	54.0	.32	45.6	.63	40.0	.48
1974	131.3	.22	121.7	.30	109.9	.37
1981	214.8	.20	197.9	.25	190.7	.30

NOTE: The interquartile range, a common measure of dispersion, is the difference between the highest wage observation for the bottom 25 percent of the workers and the lowest observation for the top 25 percent.

workers at all levels of education and years of firm tenure, show a continuing narrowing of the dispersion of wages within the three size classes. Both tables imply that there has been a greater narrowing of differences between firms of 10 to 99 employees and those with 100 to 999 employees than between the latter and firms of 1,000 and more employees.

**A comparison with the United States**

Recent estimates of size-of-firm differentials in the United States, cited earlier, permit some limited comparisons. Wesley Mellow's estimate of an 8-percent pay advantage in firms of 1,000 workers or more over firms with fewer than 25 employees appears relatively modest compared to most of the differentials for Japanese men shown in tables 1 and 2. In the United States, as in Japan, the large-firm differential was greater when specific firm tenure was not considered, and the differential existed across all major industries, although the U.S. differential appeared to be greater in manufacturing than in nonmanufacturing.

Personick and Barsky's study of professional, technical, and clerical occupations revealed as typical 10- to 15-percent differentials for professionals and a 20-percent gap for clerical and technical occupations between firms of 10,000 or more employees and those with 500 or fewer employees. Although these estimates are for quite different firm-size classes, they do approximate the differentials reported in table 1 for younger Japanese high school and college graduates, but they are smaller than those for older college educated males. Interestingly, the U.S. size-of-firm differential seemed to be larger for workers with less than a college education. Also, the U.S. differentials were larger for entry-level positions than for higher levels of experience. Again, this is the opposite of the Japanese case, in which differentials widen at older ages. These differences between the two countries are consistent with a situation in which large firms pay above-market prices in order to pick and choose among applicants whose employment potential has not yet been established, but in which one economy embraces the norm of continuous tenure from graduation while the other anticipates considerable interfirm mobility at younger ages. □

**Table 4. Trends in pay relatives<sup>1</sup> by size of firm, 1955-81**

[Firms with 1,000+ employees = 100]

Year	Wage		Wage + bonus	
	100-999 workers	10-99 workers	100-999 workers	10-99 workers
1981	94	91	92	86
1980	92	88	91	81
1979	95	91	93	84
1978	96	91	93	84
1977	96	90	94	84
1976	95	90	93	82
1975	96	89	95	83
1974	100	90	100	86
1973	105	94	104	90
1972	98	88	96	82
1971	93	86	93	80
1970	92	83	93	79
1969	91	86	88	79
1968	92	82	89	75
1967	97	95	95	87
1966	97	95	93	85
1965	95	94	92	83
1964	99	93	101	—
1961	93	80	—	—
1960 <sup>2</sup>	96	80	—	—
1955 <sup>3</sup>	86	66	—	—

<sup>1</sup>Data are for male production workers in manufacturing who had at least a high school education, and who were age 35 to 39 with 15 to 19 years of tenure in the reference year.

<sup>2</sup>Data are for all 35- to 39-year-old male blue-collar high school graduates, regardless of tenure.

<sup>3</sup>Data are for all high school educated men with 15 to 19 years of tenure, regardless of age. In 1955, data were available for five employment size categories. The differentials shown here were estimated from the differentials of component size categories weighted by the number of employees in each.

<sup>1</sup>James G. Scoville, "A Review of International and Comparative Research in the 1970's," in Thomas A. Kochan, Daniel J. B. Mitchel, and Lee Dyer, eds., *Industrial Relations Research in the 1970's: Review and Appraisal* (Madison, Wis., Industrial Relations Research Association, 1982), p. 25.

<sup>2</sup>Wesley Mellow, "Employer Size and Wages," *Review of Economics and Statistics*, August 1982, pp. 495-501.

<sup>3</sup>Martin E. Personick and Carl B. Barsky, "White-collar pay levels linked to corporate work force size," *Monthly Labor Review*, May 1982, pp. 24-26.

<sup>4</sup>Published since 1954 and annually since 1964 by the Japanese Ministry of Labor.

<sup>5</sup>Ever since James Abbeglen coined the phrase "lifetime commitment" (translated into Japanese as *shūshin koyō* and then retranslated as lifetime employment), there has been a lively debate over the nature and extent of this system. Recently, the tendency has been to downplay the significance of lifetime employment for the Japanese economy; given the early ages of mandatory retirement (currently 55 to 60 years), the higher levels of mobility among those who work for smaller firms, and so forth, few individuals literally spend their entire working lives with a single employer. However, the impact of *shūshin koyō* should not be measured by the proportion of workers who do spend their entire lives in the employ of one firm. Perhaps the most important role of the system is to promote a concept of mutual commitment between employers and their workers that dominates the Japanese labor market and shapes practices even for those workers (including most women) who are not beneficiaries of the benefits which the system provides to workers more directly involved.

<sup>6</sup>In Japan, wages (including any overtime payments) are paid on a monthly basis, and that is the wage concept used in this study. In a world of continuous employment, hours of work for full-time workers are a condition of employment and not a variable which should be divided into wages. Use of average hourly rates would only expand the differences reported here: In 1981, average monthly hours worked by male employees were 197 in firms of 1,000 workers or more, 200 in firms of 100 to 999 workers, and 210 in firms of 10 to 99 workers. Middle school graduates worked more hours than did high school graduates, who worked more hours than college graduates, and for each educational level, the larger the firm, the fewer the hours.

The bonus data (technically special payments, of which bonuses are the principal part) for table 2 are available by sex, age, educational attainment, and size of employing firm, but not by length of tenure. Because bonuses

are bargained and expressed in monthly-wage equivalents, the average number of months of bonus for a given sex, age, education level, and size of firm times the monthly wage at the relevant tenure level divided by 12 has been added to the average monthly wage to obtain estimates of the monthly wage plus bonus.

<sup>7</sup>No doubt there are today some combinations of equity participation and employee compensation in small firms which will ultimately provide more income than a slow but steady progression in a large firm. The key would be to know which small firm in 1981 is the Sony or Honda of the future.

<sup>8</sup>Shigemi Wakamatsu, "Foreign Firms Compete for Local Talent in Japan," *The Asian Wall Street Journal*, Apr. 27, 1983, p. 8.

<sup>9</sup>Milton Harris and Bengt Holmstrom, "A Theory of Wage Dynamics," *Review of Economics and Statistics*, July 1982, pp. 315-33.

<sup>10</sup>Hon W. Tan, "Wage Determination in Japanese Manufacturing: A Review of Recent Literature," *Economic Record*, March 1982, pp. 56-57.

<sup>11</sup>Kuzuo Koike, "Workers in Small Firms and Women in Industry," in Taishiro Shirai, ed., *Contemporary Industrial Relations in Japan* (Madison, University of Wisconsin Press, 1983), pp. 99-100.

<sup>12</sup>Edward P. Lazear makes a similar point in "Agency, Earnings Profiles, Productivity and Hours Restrictions," *American Economic Review*, September 1981, p. 618.

<sup>13</sup>Naomichi Funahashi, "The Industrial Reward System," in Kazuo Ōkochi and others, eds. *Workers and Employers in Japan* (Tokyo, University of Tokyo Press, 1974), p. 362.

<sup>14</sup>Kenichi Ohmae, *The Mind of the Strategist* (New York, McGraw-Hill, 1982), p. 219; Naoto Sasaki, *Management and Industrial Structure in Japan* (London, Oxford-Pergamon Press, 1981), p. 63; and Gene Gregory, "The Logic of Japanese Enterprise," a paper presented at the International Productivity Symposium, Tokyo, May 1983, p. 38.

<sup>15</sup>For a history of the development of the bonus system, see Kōji Taira, *Economic Development and the Labor Market in Japan* (New York, Columbia University Press, 1971).

<sup>16</sup>Taishiro Shirai and Haruo Shimada, "Japan," in John T. Dunlop and Walter Galenson, eds., *Labor in the Twentieth Century* (New York, Academic Press, 1978), p. 307.

<sup>17</sup>The impact of inflation on differentials is discussed in Robert Evans, Jr., "Wage Differentials, Excess Demand for Labor and Inflation: A Note," *Review of Economics and Statistics*, February 1963, pp. 95-98.



# A comparison of youth unemployment in Australia and the United States

*Once remarkably low, youth joblessness in Australia has risen steadily with recession and the end of the long postwar period of labor scarcity; recent unemployment rates rival the high rates among U.S. youth*

ALLAN BOROWSKI

Neither Australia nor the United States has escaped the international "unemployment plague." In common with the other industrialized countries in the Organization for Economic Cooperation and Development area (the most notable exception being Japan), Australia and the United States are experiencing high rates of overall and youth unemployment. This article examines the comparative labor market situation of youth in both countries. It also reviews the most frequent explanations of the causes of youth unemployment, which relate to high labor costs, demography, and the general economic situation.

Youth unemployment rates are affected by the overall job market. Thus, the emergence of youth unemployment as a major problem in Australia and its growing seriousness in the United States cannot be understood independently of the general growth in unemployment.

## Overall unemployment

The beginning of the world economic recession in 1974, precipitated by steep price rises for Middle East oil in late 1973, marked the collapse of full employment in Australia and a deterioration in labor market conditions in the United States. Indeed, the world recession adversely affected the labor markets of virtually all of the industrialized nations.

By the end of 1981, the unemployment rate in the United Kingdom had reached 10.6 percent, the highest in the Western world. At the same time, the unemployment rate was 8.5 percent in Italy, 7.6 percent in the United States and Canada, 7.3 percent in France, 4.8 percent in Germany, and 2.2 percent in Japan.<sup>1</sup>

The Australian unemployment rate stood at 6.3 percent<sup>2</sup>—a relatively moderate rate compared with the American rate and prevailing international rates. With rare exceptions, these rates represented the highest incidence of unemployment in each country since World War II and the highest absolute number of unemployed workers since the Great Depression of the 1930's.

Recently, the progressive economic decline that began in 1974 accelerated quite sharply in Australia. Domestic demand flattened out in the fourth quarter of 1981 and began to deteriorate in the first half of 1982. The 3 previous years had seen some economic growth spurred on by investment in the mining and basic metal industries. The recent decline in the Australian economy has been such that in the first quarter of 1983 real gross nonfarm product—the measure of the industrial sector of the economy—represented the poorest economic performance in 8 years.

The recent accelerated decline of the Australian economy and the 1981–82 U.S. economic recession have led to sizable increases in the unemployment rate over a very brief period. The seasonally adjusted U.S. unemployment rate reached a 42-year peak of 10.7 percent in December 1982,<sup>3</sup>

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while the Australian unemployment rate peaked at 10.3 percent in March 1983.<sup>4</sup> These unemployment rates represented 12,036,000 unemployed Americans out of a total labor force of 112,794,000 and 714,000 unemployed Australians out of a labor force of 6,950,000.

There was modest improvement in Australia toward the end of 1983, but in January 1984 unemployment again stood at 10.3 percent. By May 1984, however, the overall unemployment rate (the most recent figure) was approximately 9 percent. By contrast, the U.S. unemployment rate has been slowly declining since January 1983 and by May 1984 had reached 7.5 percent.

Although Australia's 1983 unemployment rate was only marginally higher than that of the United States, the Australian rate represents a relatively more serious problem to that country. Even prior to the world economic recession, U.S. unemployment rates were high compared with Australia's. Rates in excess of 5 percent were experienced in 1949-50, 1954, 1958-64, 1971-72 and in each year since 1974.<sup>5</sup> In contrast, Australia's past employment performance has been impressive. At the end of 1950, the unemployment rate stood at 0.2 percent—the all-time low. Between 1945 and 1973, it exceeded 2 percent only in the recession years of 1952-53, 1960-62, and 1972. During most of this period, the labor force grew rapidly and the unemployment rate averaged between 1 and 1.5 percent.<sup>6</sup> Indeed, for more than 25 years following World War II, Australia's manpower problems were defined as labor *shortages* and the solution was massive immigration. For two decades, immigration contributed 40 percent of the annual growth in the Australian labor force.<sup>7</sup>

In view of Australia's postwar experience of nearly uninterrupted full employment, the labor market situation since 1974 represents a much more severe and rapid deterioration than that of comparable Western economies. Bettina Cass wrote in 1981 that Australian figures show a steeper decline in the rate of growth of employment and a higher rate of growth in unemployment in comparison with, for example, the United States and West Germany.<sup>8</sup>

### Labor force surveys

Australian and U.S. labor force survey data can be compared because the survey methods are similar: they are a central component of monthly population surveys involving interviews with members of a sample of representative households. The Australian population survey covers more than 33,000 households, while the U.S. sample survey covers approximately 60,000 households.

The definition of the labor force is fundamental to any labor force survey. Comparison between the labor force data of the two countries is facilitated by the similarity in the definitions of employed and unemployed persons, definitions which conform to the international standard definitions specified by the International Labor Organization. Revisions of the ILO definitions in 1982 specified that student job-

seekers should be classified as unemployed. However, even prior to 1982, the labor force survey data of Australia and the United States were comparable. This is because both countries departed from the practice of most others by including in their unemployment figures unemployed teenagers in full-time education who sought jobs during the school year.<sup>9</sup>

However, there are some differences between the definitions used in the labor force surveys. Although nominally covering all teenagers from age 15 to 19, the Australian data effectively cover 15- to 17-year-olds only. This is because the definition of students relates only to those enrolled full time at regular secondary schools, which few 18- or 19-year-olds attend. Excluded from the student work force figures are persons enrolled at colleges, universities, and trade and business schools. Because of these exclusions, as well as the exclusion of part-time students, the Australian proportion of the teenage student labor force is understated, compared with the U.S. measure.

Also, there is a difference between the two countries with regard to the lower limit of the youth segment of the labor force captured by the labor force surveys. The lower age limit is generally considered to be the age at which compulsory schooling ends and the age at which teenagers may enter the labor market on a full-time basis. This lower age limit is 15 in Australia and 16 in the United States. However, both countries define the upper age limit of the youth labor force as 24 years of age.

### Composition of the youth labor force

The labor force activity of students features prominently in American analyses of the dimensions of youth unemployment. A recent international study of unemployment observed that the working student is very much an American phenomenon, whereas young workers or jobseekers in other countries are mainly out-of-school youth.<sup>10</sup> In 1979, nearly 45 percent of U.S. teenage students held a job and, between 1967 and 1977, student labor force participation rates increased by about 5 percentage points for male teens and 13 percentage points for female teens.<sup>11</sup>

Yet the observation made by the international study is less true of Australia today than it was a decade ago. Australia experienced considerable growth in part-time youth employment during the 1970's and a substantial part was accounted for by the rising proportion of full-time students who were in the labor force—from 5 percent in 1971 to 27 percent in 1981.<sup>12</sup>

Students manifest a particular proclivity to frequently enter and exit the labor force because, as noted, they are typically employed in part-time (often casual) jobs. Consequently, student unemployment tends to magnify overall youth unemployment rates. Thus, while there appears to be a gradual confluence in Australian and American trends with regard to student labor activity, the higher U.S. student participation rate exerts a stronger upward pressure on youth



unemployment rates than does the comparatively lower Australian student participation rate.

Most countries have certain groups within the labor force that are more prone to unemployment than others. In the United States, blacks and Hispanics have fared far worse in the labor market than whites. Consequently, racial-ethnic distinctions characterize American labor force surveys. In contrast, the composition of the Australian labor force is primarily differentiated in terms of socioeconomic status. Thus, given the differences in the composition of the Australian and U.S. labor forces, youth unemployment is described only in terms of the common dimensions of sex and age.

### Youth unemployment rates by age and sex

Australian youth unemployment rates have steadily increased over the last decade or so. While youth unemployment rates hovered around 3 percent between the mid-1960's and early 1970's, 1974 marked a turning point. In that year, the youth unemployment rate reached 4.9 percent and grew steadily in succeeding years—9.7 percent in 1975, 10 percent in 1976, 12 percent in 1977, 12.6 percent in 1978, and 13 percent in 1979. U.S. youth unemployment rates also rose with the onset of the world economic recession, increasing by 4.3 points between 1974 and 1975 alone to 16.1 percent. The balance of the 1970's witnessed a slow decline in U.S. unemployment rates, but the 1979 rate of 11.7 percent was still as high as the 1974 rate.<sup>13</sup>

The turn of the decade saw the continued growth in Australian youth unemployment and a reversal of the slow decline in U.S. youth unemployment rates to the high levels reached in both countries by March 1983. (See table 1.)

The absolute numbers of unemployed Australian youth translate into youth unemployment rates of 24.3 percent for teenagers, 15.4 percent for young adults, and 19.1 percent for the youth segment of the labor force as a whole. The corresponding unemployment rates for the United States are 23.5 percent, 15.4 percent, and 18.1 percent. Clearly, teenagers in both countries are experiencing unemployment levels well in excess of young adult levels.

The male youth unemployment rate is higher than the female rate in both Australia (19.8 percent compared with

18.3 percent) and the United States (19.5 percent compared with 16.6 percent). However, when the male and female youth unemployment rates are further disaggregated by age (teenagers versus young adults), the Australian data indicate that the apparent labor market advantage of female youth is confined to the 20- to 24-year-old age group. Thus, for 15- to 19-year-olds the male unemployment rate was 23.2 percent while the female rate was 25.6 percent. This pattern is reversed in the 20- to 24-year-old age group where the male unemployment rate is 17.6 percent and the female rate is 12.5 percent. In the United States, female teenagers and female young adults fared better in the labor market than their male counterparts. Thus, the male teenage unemployment rate was 25.3 percent and the female rate was 21.5 percent while those for young adults were 16.6 percent (male) and 14.1 percent (female).

The figures on the incidence of youth unemployment in Australia and the United States underscore the gravity of the problem in both countries. Indeed, both are experiencing youth unemployment rates that are 2 to 3 times higher than adult unemployment rates. Part of this differential is because of the higher job mobility of students and of youth in general. Further, youth account for an acutely disproportionate share of the unemployed labor force—50.4 percent in Australia and 37 percent in the United States in March 1983.<sup>14</sup> As in 1980, Australia still probably shares with Britain and Italy the dubious distinction of having the highest proportions of youth among the unemployed in the Western industrialized countries.<sup>15</sup>

### Discouraged workers

The unemployment figures cited so far in this article actually understate the extent of the unemployment problem. This is because they exclude the individuals of working age who have been discouraged from seeking work because they believe there is none to be found.

Data on discouraged workers are gathered by Australia and the United States. Questions dealing with these workers were first included in the Australian labor force surveys in 1975 and data are collected twice a year—in March and September. U.S. data on discouraged workers, gathered on a quarterly basis, were first published in 1969.

Both labor force surveys use similar definitions of the discouraged worker, namely, unemployed persons who want a job but are not actively seeking work because they believe there is none to be found for any of the following reasons: (1) no jobs in their locality or line of work; (2) lack the necessary training, skill, or experience; (3) considered by employers to be either too young or too old; and (4) have personal or social handicaps such as language or racial difficulties.

In both countries, changes in the number of discouraged workers have generally paralleled cyclical changes in the overall unemployment rate.<sup>16</sup> In March 1983, there were 113,200 discouraged workers in Australia who represented

**Table 1. Youth unemployment rates in Australia and the United States by age and sex, March 1983, seasonally adjusted**

[In percent]

Age	Australia			United States		
	Men	Women	Both sexes	Men	Women	Both sexes
All youth . . . . .	19.8	18.3	19.1	19.5	16.6	18.1
Teenagers <sup>1</sup> . . . . .	23.2	25.6	24.3	25.2	21.5	23.5
Young adults <sup>2</sup> . . . . .	17.6	12.5	15.4	16.6	14.1	15.4

<sup>1</sup>Includes persons who are 15 to 19 years old in Australia and those who are 16 to 19 years old in the United States.

<sup>2</sup>Includes persons 20 to 24 years old for both countries.

15.5 percent of all unemployed persons.<sup>17</sup> At the same time, there were 1,871,000 discouraged U.S. workers.<sup>18</sup> The proportion of discouraged workers among America's unemployed was the same as Australia's.

American labor force surveys have shown large numbers of discouraged teenagers and young adults.<sup>19</sup> This contrasts markedly with the Australian situation. Thus, in March 1983, there were slightly more than a half million discouraged youthful workers in the United States, and they represented 11.6 percent of the approximately 4.5 million out-of-work American youth. Discouraged youthful Australian workers totaled a modest 15,800 or 4.4 percent of Australia's out-of-work youth.

### Labor costs

The cost of youthful labor has been advanced as an explanation of rising youth unemployment in the two countries. Although the theoretical foundations and posited effects are similar, American analysts have focused upon the price of youthful (mainly teenage) labor relative to the market-clearing wage, while Australian analysts have focused upon youths' wages in *direct* relation to adults' wages. The reasons for this difference are twofold: first, the institutional mechanisms for the determination of youth's wages differ in the two countries and, second, the trend in the ratio of youth wages relative to adult wages in Australia is opposite to that of the U.S. trend.

The United States and Australia, among other countries, have minimum wage laws. The United States passed its minimum-wage legislation in 1938 as part of the Fair Labor Standards Act. With the exception of an exemption introduced in 1961 permitting full-time students to be hired at a subminimum wage of 85 percent of the basic minimum wage (the Student Certification Program), a uniform minimum wage prevails. In contrast, the institutional mechanism for establishing wage levels (and some other working conditions) in Australia is the industrial tribunal. There are many Federal and State tribunals in that country covering a diversity of occupations and industries. The tribunals prescribe minimum, or "award," wages for "juniors" (that is, teenagers). Award wages for juniors are based on vague notions of need in relation to the cost of living and the work value of juniors in comparison with adults. However, in the main, they tend to vary according to changes in adult award wages. There are currently several thousand awards in existence.<sup>20</sup>

*United States.* The issue of the minimum wage has assumed considerable importance in discussions of youth unemployment in the United States because of the supposed negative correlation that exists between the level of the minimum wage and the level of employment of young people in minimum-wage jobs where they are disproportionately represented—44.2 percent of 16- to 19-year-olds in 1980.<sup>21</sup> In the standard competitive model, a minimum wage,

if it is to be effective in achieving any of its goals, must be established *above* the market-clearing wage leading firms to reduce the quantity of (demand for) labor. In view of their disproportionate representation among minimum-wage employees, teenagers are thought to be particularly vulnerable to minimum-wage hikes.

The minimum wage, however, can also affect the supply of labor: an increase in the going price of labor consequent to an increase in the minimum wage may produce a positive response on the supply side if the supply of labor is positively sloped,<sup>22</sup> that is, low-wage workers may be attracted to reenter the labor market in search of the higher remuneration represented by the improved minimum-wage level. In accounting for youth unemployment, analysts assume that the unemployment effects of a hike in the minimum wage (a decrease in the demand for youthful labor) will be stronger than the employment effect (an increase in the supply of labor) leading to an overall net reduction in employment.

Based on available studies of the effect of the minimum wage,<sup>23</sup> it would appear that while the minimum wage has been argued as a primary cause of youth unemployment in the United States, empirical evidence suggests that its contribution to youth unemployment is small. Clearly, the minimum wage is unable to account for the bulk of U.S. youth unemployment.

*Australia.* In Australia, the relationship of youth wages to adult wages has been seen as an important cause of youth unemployment. During the 1970's, Australia experienced tremendous upward pressure on wages and salaries in general. Many analysts have asserted that this produced a situation referred to in Australia as "wage overhang," which arises when earnings increases outpace productivity gains. This results in a rise in the cost of labor relative to the cost of capital, which serves as a disincentive to the use of labor as a factor of production. The high cost of labor is viewed by many Australians as a major cause of their country's high overall unemployment and inflation rates.

While young and older workers alike benefited from the improved wage levels in Australia, analysts have argued that the young worker benefited more. The progressive increase in youth unemployment since 1974 has been directly attributed to the higher price of young labor. Thus, employers tended to hire adult workers in preference to youth who could command similar wages.

By contrast, between 1967 and 1977, American youth experienced a decrease in their wages relative to adult wages despite upward adjustments in the minimum wage. Drawing on traditional supply-and-demand analysis, Richard B. Freeman and David A. Wise argue that the downward trend in youth wages relative to adult wages was the product of the increasing proportion of youth in the population.<sup>24</sup>

Just as the evidence provided by American studies on the impact of the minimum wage on youth unemployment is mixed, so is the evidence provided by Australian studies.



With regard to the trend in youth-adult wage relationships, one study found that youths' wages relative to adults' wages remained virtually static between 1966 and 1976<sup>25</sup> while another, focusing upon individual industries, found that wages in *some* jobs in a small number of industries had risen.<sup>26</sup>

Perhaps the most comprehensive study of the relationship between youth wages and employment was recently released by the Australian Bureau of Labor Market Research.<sup>27</sup> The Australian Bureau's study, which drew on the most current data available, found that a sudden compression in the wage spread between youth (juniors) and adults occurred during 1972 and 1975. Indeed, the compression in wages largely occurred *before* the onset of the recession in 1974. Junior award wages rose by 8 percent relative to those of adults between early 1972 and mid-1974, and both sexes experienced similar compressions in junior-adult wages. The compression was greatest for the youngest juniors (for example, a 13.6-percent compression for 17-year-olds), and declined with increasing age so that 20-year-olds experienced the least compression (5.2 percent). Market forces played some role in the compression in junior and adult wages between 1972 and 1974. While the economic forces of demand and supply have led to a downward trend in the wages of American youth relative to adult wages, these forces have failed to reverse the wage compression in Australia in the period since 1974.

What has been the impact of changes in youth-adult wages on the demand for and supply of youth labor? When the sudden compression in wage spreads between juniors and adults occurred, the youth labor force participation rate remained high while the youth unemployment rate steadily grew. But the Australian evidence on the precise influence of wages on youth labor demand and supply is sparse.

In reviewing the few earlier studies, the Australian Bureau of Labor Market Research found analytical deficiencies. The Bureau then undertook further research of its own and found that increases in youth wages relative to those of adults decreased employment and increased labor supply, thereby adding to unemployment. While youth unemployment levels rose, the Australian Bureau was unable to precisely quantify the magnitude of the effect.<sup>28</sup>

## Demography

A popular explanation for youth unemployment is the post-World War II baby boom experienced in both Australia and the United States. Analysts have asserted that the baby boom led to a bulge in the size of the youth population from the late 1950's to the early 1960's, and continuing into the 1970's. The surge in the youthful population, together with increased labor force participation by the young, resulted in supply exceeding demand and, other things being equal, higher youth unemployment rates.

In Australia, the youth population grew rapidly. During 1966–82, the teenage population grew by approximately 22 percent and the young adult population grew by about 52

percent, while the civilian population age 15 years or more grew by 39 percent.<sup>29</sup> However, Australian analysts have shown that the growth in the number of young people of working age arising from the baby boom had largely ceased well before the commencement of the recession in 1974.<sup>30</sup> Between 1976 and 1982, the male teenage population grew by only 3.7 percent and the female teenage population, by 1.3 percent,<sup>31</sup> suggesting that the labor market difficulties of teenagers in recent years have been less than they otherwise would have experienced had their population numbers continued to grow at earlier rates.

The United States also experienced a steady increase in the proportion of youth in the working-age population—from about 20 percent in the late 1950's to about 27 percent by the mid-1970's. The Congressional Budget Office estimated that the youth population bulge added perhaps 4 percentage points to the teenage unemployment rate and 1 percentage point to the unemployment rate for 20- to 24-year-olds. However, by the mid-1970's, the decline in the proportion of teenagers in the American population had already begun and in 1980, the decrease in 20- to 24-year-olds began.<sup>32</sup>

A surge in the size of the youth population of working age does not completely translate into an equivalent increase in the size of the youth labor force because not all working-age youth are either working or seeking employment. Over the last two decades, a higher proportion of Australian youth has entered the labor market than that of American youth; indeed, the only country with consistently higher youth participation rates than Australia is Great Britain. Relative to the United States, Australian youth participation rates have been historically high and have fluctuated by only a few percentage points. In contrast, U.S. teenagers and young adults have had progressively increasing rates over most of the past two decades. Thus, between 1960 and 1980, American youth participation rates rose by almost 12 percent from 56 to 68 percent. Over a slightly briefer period (1964 to 1980), Australian youth participation rates increased by only 2 percent—from 69 to 71 percent.<sup>33</sup>

The figures on labor force participation for all youth mask some pronounced differences in participation trends between teenagers and young adults. However, in Australia only the young adult participation rate rose; the teenage population manifested a long-run trend of falling activity. This downward trend has reversed itself though during the course of the recession. In the United States, participation rates for both groups steadily increased from 1960 to 1980.

The early 1980's have witnessed slow declines in teenage activity rates and increases in the number of young people in full-time education. Deteriorating labor market conditions have led youth to stay on at school longer. However, only about 35 percent of Australian students complete secondary school (compared with 70 to 90 percent in the United States).

Data for the United States, then, indicate that the working-age children of the baby boom and the steady increase in

their labor force participation may have contributed to high unemployment rates of youth. However, the effects of the baby boom in both countries had largely dissipated by the late 1970's. In Australia, it appears that the reversal (until recently) in the long-run trend of falling participation over a period when the economy had been in a state of protracted downturn played a more significant role in rising youth unemployment than the continuing, but decelerated, growth in youth population levels.

### Effects of recession

The business cycle has a major impact on unemployment in general and youth unemployment in particular. The argument that has received the widest acceptance (certainly in Australia) is that the dramatic increase in youth unemployment in Australia since 1974 is because of the malaise of the country's economy and this has dampened the demand for young workers more than it has for older workers. (This same view applies to the United States as well.)

A number of reasons have been advanced for the greater dampening in the demand for youthful labor during the recession. These include: a preference on the part of employers to hire mature, adult workers rather than the young during a period of excess labor supply because of the former's presumed greater productivity and the latter's job-changing proclivities; changes in industry structure; and deficiencies in the stock of youthful human capital. With regard to the last two reasons, many youth find their first employment in unskilled jobs. Yet many unskilled jobs are disappearing in both Australia and the United States and entry-level jobs are increasingly requiring some skills. Thus, the production of manufactured goods that may have formerly required a sizable, unskilled work force has either been curtailed in the face of both slackened demand and competition from imported products or now involves more sophisticated, capital-intensive processes than previously, in order to maintain a competitive edge. This situation has led to a mismatch between the skills demanded by employers and those available in the youth labor force.

### Conclusion

Each of the reasons advanced to explain why youth have borne a disproportionate share of the increase in unemployment during the recession certainly has merit. However,

high youth unemployment in Australia and the United States is by no means a recent development. On the contrary, youth unemployment rates in excess of adult rates and the high representation of youth among the unemployed are factors which emerged before the 1970's.

In Australia, above-average unemployment rates for youth appeared well before the watershed year of 1974. In 1969, for example, the adult male unemployment rate was 0.7 percent, and the female rate was 0.9 percent. The corresponding male and female rates for persons under 21 years of age were 1.7 percent and 2.3 percent—approximately 2½ times higher than the adult rates.<sup>34</sup> With regard to the share of unemployment borne by Australian youth, this began to rise for teenagers during 1953–54 and 1965–66 when their proportion increased from 13.5 to 38.2 percent. For young adults (20- to 24-year-olds), their share of unemployment rose most rapidly during 1965–66 and 1970–71—from 16 to 21 percent.<sup>35</sup>

As in Australia, the United States' youth unemployment rates have also been historically higher than those for adults, but the disparity between youth and adult rates appears to have been greater. Indeed, between 1966 and 1969, for example, the unemployment rate for both sexes combined for persons between age 16 and 19 was more than five times higher than the male unemployment rate, age 20 and over.<sup>36</sup>

The foregoing analysis of the causes of youth unemployment most frequently advanced by analysts in Australia and the United States bears testimony to the elusiveness of a consensus on the causes of youth unemployment and the futility of seeking a single-factor explanation. Logic would suggest that youth unemployment in its current dimensions is the product of the interplay of a number of factors with differing saliency. The analysis indicates that the labor market has long been adverse for youth, a situation that has been exacerbated by an economic recession accompanied by movements in youth labor costs and a changed demographic profile.

Perhaps the major distinguishing feature of youth unemployment today is the magnitude of the numbers of unemployed youth. Certainly within the Australian context, youth unemployment as a problem only began to receive the attention it had long deserved when the incidence of youth unemployment and the numbers of unemployed youth began a steady upward climb in 1974. □

### FOOTNOTES

<sup>1</sup> OECD *Economic Outlook* 32 (Paris, Organization for Economic Co-operation and Development, December 1982), p. 35.

<sup>2</sup> Australian Bureau of Statistics, *The Labour Force, Australia, December 1981* (Canberra, Commonwealth Government Printer, Catalogue No. 6203.0, January 1982), p. 9.

<sup>3</sup> *Employment and Earnings* (Bureau of Labor Statistics, April 1983), table A-1, p. 18.

<sup>4</sup> Australian Bureau of Statistics, *The Labour Force, Australia, July 1983*

(*Preliminary Estimates*) (Canberra, Commonwealth Government Printer, Catalogue No. 6202.0, August 1983), table 2, p. 5.

<sup>5</sup> *Employment and Earnings* (Bureau of Labor Statistics, April 1983), table A-1, p. 18.

<sup>6</sup> *Understanding Unemployment* (Melbourne, Australian Industries Development Association, 1978), p. 2.

<sup>7</sup> Bettina Cass, "The Numbers Games," *Australian Society*, August 1983, p. 21.



<sup>8</sup>Bettina Cass, "Employment: Causes, Consequences and Policy Implications," *Reports and Proceedings* (Sydney, Social Welfare Research Centre, No. 11, 1981), p. 2.

<sup>9</sup>Beatrice G. Reubens, "Foreign Experience," *The Teenage Unemployment Problem: What Are the Options?* (Washington, Congressional Budget Office, 1976), p. 54.

<sup>10</sup>*International Comparisons on Unemployment*, Bulletin 1979 (Bureau of Labor Statistics, 1978), p. 63.

<sup>11</sup>*Youth Unemployment: An International Perspective*, Bulletin 2098 (Bureau of Labor Statistics, September 1981), p. 19.

<sup>12</sup>Bureau of Labor Market Research, *Youth Wages, Employment and the Labour Force* (Canberra, Australian Government Publishing Service, Research Report No. 3, 1983), p. 8.

<sup>13</sup>*Youth Unemployment: An International Perspective*, Bulletin 2098 (Bureau of Labor Statistics, September 1981), table 1, p. 5.

<sup>14</sup>All Australian data for March 1983 are drawn from the following source: Australian Bureau of Statistics, *The Labour Force, Australia, March 1983* (Canberra, Commonwealth Government Printer, Catalogue No. 6203.0, March 1983).

<sup>15</sup>Keith Windschuttle, *Unemployment: A Social and Political Analysis of the Economic Crisis in Australia* (Ringwood, Victoria, Penguin Books, 1980), p. 44.

<sup>16</sup>For example, see Paul O. Flaim, "Discouraged workers and changes in unemployment," *Monthly Labor Review*, March 1973, pp. 8-16; and Carol M. Ondeck, "Discouraged workers' link to jobless rate reaffirmed," *Monthly Labor Review*, October 1978, pp. 40-42.

<sup>17</sup>The Australian data on discouraged workers are drawn from Australian Bureau of Statistics, *Persons Not in the Labor Force, Australia, March 1983* (Canberra, Commonwealth Government Printer, Catalogue No. 6220.0, August 1983).

<sup>18</sup>The U.S. data on discouraged workers are drawn from *Employment and Earnings* (Bureau of Labor Statistics, April 1983), tables A-52-A-55, pp. 63-66.

<sup>19</sup>Constance Sorrentino, "Youth unemployment: an international perspective," *Monthly Labor Review*, July 1981, p. 9.

<sup>20</sup>Bureau of Labor Market Research, *Youth Wages, Employment and the Labour Force* (Canberra, Australian Government Publishing Service, Research Report No. 3, 1983), pp. 35-37.

<sup>21</sup>*Report of the Minimum Wage Study Commission* (Washington, 1981), Vol. 1, table 1-1, p. 9.

<sup>22</sup>Robert Swidinsky, "Minimum Wages and Teenage Unemployment," *Canadian Journal of Economics*, February 1980, p. 158.

<sup>23</sup>E.G. West and M. McKee, *Minimum Wages: The New Issues in Theory, Evidence, Policy and Politics. A Study Prepared for the Economic Council of Canada and the Institute for Research on Public Policy* (Quebec, Canadian Government Printing Centre, 1980). Cited in "The Impact of Minimum Wages on Youth Employment," *The OECD Observer*, July 1982, p. 15.

The salience of the issue of the impact of minimum wages on youth

unemployment is reflected in the numerous empirical studies that have emerged in recent years. Virtually the entire literature is confined to analyses of experience in the United States and Canada. The evidence is mixed. Thus, of the 13 studies completed since 1970 and reviewed by E.G. West and M. McKee, nine reported reductions in employment, one found no significant effects, while the remaining three showed varying results for different labor force groups. The U.S. Minimum Wage Study Commission, established in 1977, sought to improve past studies through using more recent data and more sophisticated analytical techniques. The commission found lower minimum-wage effects than those previously obtained, and estimated that a 10-percent increase in the minimum wage lowers teenage employment by between 0.5 and 1.5 percent.

<sup>24</sup>Richard B. Freeman and David A. Wise, "The Youth Labor Market Problem: Its Nature, Causes and Consequences," in Richard B. Freeman and David A. Wise, eds., *The Youth Labor Market Problem: Its Nature, Causes and Consequences* (Chicago, Ill., The University of Chicago Press, 1982), pp. 10-11.

<sup>25</sup>Peter Sheehan, "Economic Aspects of Youth Unemployment," in Ronald F. Henderson, ed., *Youth Unemployment: Proceedings of the Second Academy Symposium* (Canberra, Academy of the Social Sciences in Australia, 1977), pp. H14-H15.

<sup>26</sup>National Institute of Labour Studies, *Australian Bulletin of Labour*, September 1977.

<sup>27</sup>Bureau of Labour Market Research, *Youth Wages, Employment and the Labour Force* (Canberra, Australian Government Publishing Service, Research Report No. 3, 1983).

<sup>28</sup>*Youth Wages, Employment and the Labour Force*, p. 96.

<sup>29</sup>Australian Bureau of Statistics, *The Labour Force, Australia, August 1982* (Canberra, Commonwealth Government Printer, Catalogue No. 6203.0, September 1982); Australian Bureau of Statistics, *The Labour Force, Australia, 1978* (Canberra, Commonwealth Government Printer, Catalogue No. 5204.0, 1979).

<sup>30</sup>Peter Stricker and Peter Sheehan, "Youth Unemployment in Australia: A Survey," *Australian Economic Review*, First Quarter 1978, pp. 16-18.

<sup>31</sup>See footnote 29.

<sup>32</sup>*Youth Unemployment: The Outlook and Some Policy Strategies* (Washington, Congressional Budget Office, April 1978), pp. 5-6.

<sup>33</sup>Constance Sorrentino, "International comparisons of labor force participation, 1960-81," *Monthly Labor Review*, February 1983, table 3, p. 29.

<sup>34</sup>Department of Labour and National Service, *An Analysis of Full Employment* (Melbourne, Labour Market Studies No. 2, 1970), p. 29. Cited by Adam Jamrozik and Marilyn Hoey, "Workforce in Transition: Implications for Welfare," *Reports and Proceedings* (Sydney, Social Welfare Research Centre, No. 8, 1981), p. 18.

<sup>35</sup>Peter Stricker and Peter Sheehan, "Youth Unemployment in Australia: A Survey," *Australian Economic Review*, First Quarter 1978, pp. 16-18.

<sup>36</sup>*Economic Report of the President* (Washington, U.S. Government Printing Office, 1982), table B-31, p. 269.

# Apparel stores display above-average productivity

*Output per hour of all persons rose an average of 2.9 percent annually in the retail apparel store industry between 1967 and 1983, with growth accelerating between 1977 and 1983*

BRIAN FRIEDMAN

Output per hour of all persons<sup>1</sup> in the retail apparel store industry increased at an average annual rate of 2.9 percent between 1967 and 1983, compared with an average annual rate of 1.2 percent for the total nonfarm business sector of the economy during the same period. This gain in productivity over the 16-year period reflects average annual increases of 4.5 percent in output and 1.5 percent in hours of all persons in the apparel store industry. (See table 1.)

Productivity trends can be divided into two periods, 1967-77 and 1977-83. During the first period, productivity rose at an average annual rate of 2.8 percent, and in the latter period, it accelerated to 3.6 percent, reflecting average growth in output and little increase in hours.

During the 1967-77 period, productivity advances were not steady; in 1972 and 1973, there were relatively large increases. In 1972, productivity rose 8.2 percent as output increased 6.3 percent and hours declined 1.8 percent. In 1973, output advanced 11.3 percent, while hours increased only 1.7 percent, resulting in a productivity increase of 9.5 percent. However, there were moderate productivity declines in 1967, 1970, 1974, 1976, and 1977. Output experienced only two declines during the period, falling in the recession years of 1970 and 1974. In 1969, 1976, and 1977, increases in hours exceeded increases in output, resulting in the productivity falloffs.

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During the 1977-83 period, there were no productivity declines, and only one small output decline in 1982. In 1978, output per hour rose 10.0 percent based on very strong growth in output of 13.4 percent and moderate gains in hours of 3.1 percent. Output recorded moderate growth in 1980 and above-average growth in 1981 (6.1 percent), while industry hours declined in 1980 and 1982. Productivity had above-average gains in 1980 and 1981.

## Trends in four subindustries

The retail apparel store industry<sup>2</sup> consists of several subindustries. In addition to productivity measures for the total industry, separate measures are presented for men's and boys' clothing and furnishing stores, women's ready-to-wear stores, family clothing stores, and shoe stores. (See table 2.)

*Men's and boys' apparel stores.* Productivity grew moderately in the men's and boys' apparel store industry, accounting for 15 percent of total sales and 11 percent of total employment in 1983. Output per hour grew at an annual average rate of 2.5 percent between 1967 and 1983, reflecting average annual growth in output of 1.8 percent and an average annual decline of 0.6 percent in hours.

Productivity grew at an annual rate of 3.8 percent between 1977 and 1983 compared with a 2.2-percent increase in 1967-77. This gain reflected a slowing of the increase in output from a rate of 2.9 percent between 1967 and 1977

to an average decline of 0.4 percent between 1977 and 1983. Hours declined at a rate of 4.1 percent from 1977 to 1983 compared with a small average gain of 0.7 percent in the preceding period. Among apparel stores, this subindustry alone showed a definite trend toward fewer number of stores.

Among the retail apparel subindustries, men's and boys' apparel stores had the slowest output growth between 1967 and 1983. This subindustry was also the most cyclical, experiencing output declines in 1970, 1974, and 1980-83.

*Women's ready-to-wear-stores.* This subindustry, the largest, accounting for 36 percent of sales and 33 percent of employment in 1983, experienced the highest gain in productivity among those measured. Output per hour rose at an average annual rate of 4.4 percent from 1967 to 1983 as output increased 5.5 percent and all person hours grew 1.1 percent annually.

Between 1967 and 1977, productivity increased at an average annual rate of 4.3 percent, while output grew 5.6 percent and hours 1.3 percent. In the 1977-83 period, productivity growth increased to 6.3 percent annually reflecting average annual output gains of 5.5 percent and an average hours decline of 0.7 percent.

Productivity showed declines in only 1976 and 1977. Output declined only in 1977 and showed no growth in 1980. Hours of all persons, however, declined in 1968, 1970, 1974, 1975, and 1980-82.

*Family clothing stores.* In 1983, family clothing stores accounted for 22 percent of retail apparel store sales and 18 percent of employment. Despite a strong overall increase in output, long-term productivity growth was moderate, reflecting above-average growth in employment. Output per hour grew at an average annual rate of 2.7 percent from

**Table 1. Total retail apparel (sic 56) indexes of output per hour of all persons and related data, 1967-83**

Year	Output per hour of all persons	Output	Hours of all persons	All persons
1967	82.1	70.2	85.5	80.0
1968	84.2	73.0	86.7	83.0
1969	83.4	74.3	89.1	85.5
1970	82.2	74.0	90.0	86.1
1971	84.6	78.3	92.6	88.9
1972	91.5	83.2	90.9	89.3
1973	100.2	92.6	92.4	90.9
1974	99.5	90.9	91.4	90.4
1975	105.3	95.0	90.2	89.5
1976	103.3	99.3	96.1	95.4
1977	100.0	100.0	100.0	100.0
1978	110.0	113.4	103.1	103.9
1979	112.0	118.6	105.9	107.8
1980	116.4	122.3	105.1	108.1
1981	122.0	129.8	106.4	109.6
1982	123.8	129.6	104.7	108.1
1983	125.2	133.5	106.6	110.7
Average annual rates of change (in percent)				
1967-83	2.9	4.5	1.5	2.1
1967-77	2.8	4.0	1.2	1.8
1977-83	3.6	4.5	0.8	1.4

**Table 2. Output per hour of all persons for the total retail apparel industry and subindustries, 1967-83**

Year	Total apparel stores	Men's and boy's clothing stores	Women's ready-to-wear stores	Family clothing stores	Shoe stores
1967	82.1	84.5	72.2	75.7	96.4
1968	84.2	85.4	74.4	78.7	99.1
1969	83.4	86.8	74.6	75.9	105.7
1970	82.2	83.8	77.5	76.0	96.5
1971	84.6	87.2	83.8	85.8	87.7
1972	91.5	97.8	87.2	95.1	95.6
1973	100.2	104.2	94.9	109.6	101.4
1974	99.5	98.2	96.9	107.7	88.8
1975	105.3	102.7	107.0	109.7	95.5
1976	103.3	97.6	104.9	107.4	97.6
1977	100.0	100.0	100.0	100.0	100.0
1978	110.0	105.4	111.3	96.4	108.7
1979	112.0	110.5	115.0	99.6	111.2
1980	116.4	110.0	116.2	109.6	107.7
1981	122.0	120.9	125.5	113.3	110.8
1982	123.8	121.3	139.0	116.2	106.0
1983	125.2	125.2	147.8	118.1	104.6
Average annual rates of change (in percent)					
1967-83	2.9	2.5	4.4	2.7	0.8
1967-77	2.8	2.2	4.3	4.3	-0.2
1977-83	3.6	3.8	6.3	3.6	0.3

NOTE: Indexes for all apparel stores are based on data for women's accessory and specialty stores, children's and infants' wear stores, furriers and fur shops, and miscellaneous apparel and accessory stores as well as the four clothing store subindustries discussed in this article.

1967-83 as output rose 5.2 percent and hours increased at a rate of 2.4 percent.

Productivity showed periods of both growth and decline. Between 1967 and 1973, productivity grew at an average annual rate of 5.9 percent with very strong growth in productivity and output in 1971, 1972, and 1973. During 1967-73, hours increased at an annual rate of only 0.1 percent. Between 1973 and 1978, productivity declined at an average annual rate of 2.5 percent as output grew 3.8 percent and hours soared to an average annual growth of 6.5 percent. In response to a strong demand for casual clothing, especially jeans, the number of family clothing stores increased during this period. Productivity declines were recorded in 1974, 1976, 1977, and 1978. Between 1978 and 1983, productivity rebounded with an average annual growth of 4.4 percent as output rose 4.6 percent and hours showed very little growth—0.1 percent. As the number of stores began to decrease, hours declined in 1979, 1980, and 1983.

*Shoe stores.* Shoe stores, which accounted for 17 percent of sales and 21 percent of all persons in the apparel store industry, posted the smallest productivity gain from 1967 to 1983 among the subindustries studied. Productivity grew at an average annual rate of only 0.8 percent between 1967 and 1983, reflecting output increases of 3.0 percent and hours increases of 2.2 percent.

During the 1967-77 period, output per hour declined at an average annual rate of 0.2 percent. There were strong productivity declines in 1970, 1971, and 1974. During this period, both output and hours had average annual gains of 1.3 percent and 1.5 percent, respectively.



During the 1977-83 period, productivity increased at an average annual rate of 0.3 percent, as output increased 3.3 percent per year and hours grew 3.0 percent annually. Much of this increase was due to the demand for athletic footwear. Output showed very strong gains in 1978 and 1979 and a large decline in 1982. Productivity declined in 1980, 1982, and 1983.

### Factors affecting productivity

Growth in apparel store productivity has been influenced by broad trends in general retailing. These trends include the growth of chain stores<sup>3</sup> within the industry, movement to better locations in shopping centers, more efficiently designed stores geared toward consumer self-selection, and the use of computers for store operations.<sup>4</sup>

*Changes in industry structure.* Most retail apparel stores are independents, not affiliated with chains. The number of chain stores and the proportion of chain stores within the retail apparel store industry increased between 1967 and 1983.

In 1967, 80.6 percent of all apparel stores were independents, accounting for 62.1 percent of sales. Chains accounted for 19.4 percent of establishments and 37.9 percent of sales. By 1977, the proportion of independent apparel stores had declined to 73.2 percent. The 26.8 percent of stores associated with chains had captured 50.2 percent of sales.

There is every indication that chain stores continued a strong growth pattern in the retail apparel store industry after 1977. These companies have grown by acquiring smaller chains and independents. Also, larger nonapparel retailing corporations have purchased apparel chain stores in their efforts to diversify.<sup>5</sup> In 1981, the leading 25 apparel chains alone increased their number of establishments by 12.1 percent, accounting for 8,771 stores.<sup>6</sup>

On average, stores associated with chains tended to be larger in terms of sales. In 1967, the average independent apparel store had annual sales of a little under \$117,000 per establishment, while the average chain store had sales of over \$295,000 per establishment. By 1977, the gap between independents and chains had widened with average sales per establishment of \$167,300 and \$476,400, respectively.

Chain stores also had higher sales per all persons than did the independents, although in 1967, the difference was not very large. However, by 1977, the sales per all persons of chains was not only higher than that for independents, but the gap in sales per person between chain and independents had widened markedly.<sup>7</sup>

Independents have always been a sizable portion of all apparel stores. These stores are generally more labor-intensive and emphasize personal service to generate regular clientele.<sup>8</sup> Through careful choice of location and catering to the needs of their customers, independents are able to compete with chains. The change in industry structure to-

ward more chain stores, however, has been a factor in promoting industry output-per-hour gains.

An important trend in apparel store industry structure has been the rapid growth of discount apparel stores. "Off-price" apparel stores sell moderate to higher price brand name clothing at a lower price than conventional stores. They are able to buy clothing at discount prices later in the selling season than conventional stores. They locate in small shopping centers, away from other types of apparel and department stores, which are the apparel manufacturers' main accounts. The middle 1970's through the 1980's saw a decline in the percentage of disposable income allotted for clothing.<sup>9</sup> It is believed that the average middle income consumer became much more cost-conscious. Consumers became more willing to delay their clothing purchases until sales were held in conventional stores, or they would shop at off-price stores.<sup>10</sup> The number of off-price apparel stores is estimated to have increased sharply, and their number is expected to continue to grow.<sup>11</sup>

The growth of "off-price" apparel stores has likely provided a boost to industry productivity gains in recent years. Stores are mostly affiliated with large major chains, although there are also small chains and some independents. Store layout is generally geared toward self-selection and central checkout.<sup>12</sup> Employees stock the shelves and racks and run the cash registers and provide little personalized service.<sup>13</sup>

Factory outlet apparel stores are quite similar to the "off-price" stores and also grew rapidly in recent years, probably aiding productivity in the industry. These stores are supplied with clothing from parent manufacturing companies at large discounts. They are often anchor stores in small shopping centers, and more recently, several different factory outlet stores have combined to form malls located away from conventional malls and shopping centers, where the parent manufacturers have their primary department store and conventional apparel store accounts.<sup>14</sup>

*Store location.* Store location is important. Accessibility and exposure to shopper traffic is a prime determinant of how well store capacity is utilized.

The strong growth in the number of malls and shopping centers in suburban locations between 1967 and 1983 has probably had a positive influence on productivity. Although there are no data pinpointing the type of apparel store by location, industry experts believe that mostly major chains and larger independents moved into the large shopping malls, which draw their customers from a wide area. Smaller chains and independents, however, moved into the many smaller shopping centers. This movement of independents into shopping centers probably helped their competitive position in an industry shifting toward corporate chain structure.<sup>15</sup>

*Competition and seasonality.* It is difficult for retailers to forecast product demand because fashion trends are highly seasonal and consumer tastes are somewhat unpredictable.

Also, competition among the different types of apparel stores, as well as department stores, is very strong. During the 1970's, a substantial market share was lost to national department store chains.<sup>16</sup> In the late 1970's, discount department stores began to compete more vigorously with apparel stores.<sup>17</sup> The industries that sell retail apparel are "in a constant state of ferment, and competition is recognized as being more virulent in retailing than in any other branch of American industry."<sup>18</sup>

The strongly competitive nature of apparel retailing has led to periods of overexpansion followed by "shake-outs," when large numbers of marginal stores went out of business.<sup>19</sup> The lower level of capacity utilization which accompanies overexpansion probably caused downward pressure on productivity growth. The elimination of marginal stores probably boosted productivity.

Output per hour of all persons in apparel stores grew rather unsteadily, especially between 1967 and 1977. It is probable that the variability of productivity growth was caused, in part, by overexpansion and "shake-outs."

*Technology.* The major technological change within the apparel store industry has been the increased use of computers for retail operations. Electronic data processing is used in conjunction with point-of-sale technology. Through coding of merchandise, marketing information can be gathered as a by-product of merchandise sales. Point-of-sale technology can be used for inventory control, sales audits, automatic computer-generated stock purchasing, employment planning, sales forecasts, interstore transfers, accounts receivable, and credit verification.<sup>20</sup> This technology provides accurate, useful, and readily available information for use in both the operational and merchandising aspects of the industry. Surveys have shown that retailers who use point-of-sale technology report that it allows their stores to operate with reduced inventory while preventing out-of-stock situations. Product mix can be better targeted to customer needs with better marketing information. It saves employee hours in taking inventory and lowering prices because of overstocked or slow moving inventory.<sup>21</sup>

The amount of information that is gathered using point-of-sale technology and how much this information is used varies greatly throughout the industry. The use of some form of point-of-sale technology in the apparel store industry is fairly widespread. For example, electronic cash registers that can be used to gather some inventory information have been available for some time.

"Automated accounts receivable," is another technological innovation that is used in the industry. The riskiest delinquent accounts are flagged and computer-typed collection notices are sent automatically. This system reduces employee hours in the accounts collection department.<sup>22</sup> Other technological advances include marking systems and security surveillance systems that aid in the prevention of shoplifting.

Large electronic data processing systems and other forms of advanced technology are used primarily by large chains. The much larger operation of a major chain makes the use of electronic data processing almost a necessity. Independents and even small chains "are usually unable to afford such equipment, nor make cost-effective use of it."<sup>23</sup> Higher levels of sales per person recorded by chains, however, are probably caused to some extent by electronic data processing.

*Advertising.* Advertising has been important in increasing shopper traffic and sales in apparel stores. Recent trends indicate strong customer response to special sales and highly advertised products.<sup>24</sup> Retail apparel stores generally advertise in newspapers and on radio. Radio programming allows the apparel store industry to reach a target audience.<sup>25</sup> Also, some stores have sponsored sporting events to aid sales of their activewear.<sup>26</sup>

Some analysts believe that the growth in retail advertising has been designed in part as a substitute for personnel, especially skilled salesworkers, in retail industries.<sup>27</sup> Active selling is accomplished by educating the consumer through advertising, leading to more self-selection and, therefore, lower unit labor requirements in the stores.

### Employment changes.

The number of persons working in the apparel store industry has increased 38 percent from 786,600 in 1967 to 1,088,400 in 1983. This represents an average annual increase of 2.1 percent. Hours of all persons, however, have increased at a slower rate of 1.5 percent per year because of a steady decline in average weekly hours. This is especially true of nonsupervisory workers, whose average weekly hours declined from 32.5 in 1967 to 28.1 in 1983.

The apparel store industry is composed of partners and proprietors, nonsupervisory workers, and supervisory workers. Nonsupervisory workers make up the largest group, which includes salespersons, cashiers, stock workers, and nonsupervisory office workers. Nonsupervisory workers represented 79 percent of all persons in 1967 and 74 percent in 1983. The decrease in average weekly hours indicates an increase in part-time salespersons, often of school age, who work during weekends and evenings.

Self-employed partners and proprietors accounted for 10.5 percent of all persons in the industry in 1967 and 10.6 percent in 1982. The actual number of self-employed grew slowly, from 82,000 in 1967 to 129,000 in 1982. The number of self-employed typically declined in times of recession as the smaller, privately owned stores had more difficulty staying in business, although 1982 was an exception.

The number of self-employed as a proportion of all persons is lower for the four apparel subindustries than for the overall industry. The percentage of self-employed in the overall industry is influenced by the remainder of the apparel store industry, for which separate measures are not avail-

able. This portion of the industry has a higher than average proportion of self-employed because it includes many small independent specialty stores.

The number of supervisory workers—office supervisors, store managers, and assistant managers—has doubled from 1967 to 1983 in the total retail apparel store industry. The growth in supervisory workers goes hand in hand with the growth in chains, both corporate and privately owned.

Retaining experienced personnel is a major problem for all retail stores. Some studies show that retail employee turnover is as high as 60 percent per year.<sup>28</sup> The high turnover rate among nonsupervisory workers hinders gains in industry output per hour because new employees must undergo training and are not as productive during this period.

One factor contributing to a high incidence of employee turnover is the industry's low hourly earnings. For example, in 1980, average hourly earnings of nonsupervisory employees were 12 percent below the total retailing average and 41 percent below average hourly earnings of production workers in manufacturing industries.

### Productivity outlook uncertain

In terms of the number of stores and sales, the apparel store industry expanded during the 1960's and 1970's but may now begin to slow. The number of prime locations for

conventional apparel stores is decreasing, as the construction of shopping centers slows.<sup>29</sup> Competition is also increasing from national department store chains as well as discount department stores with both marketing some brand name clothing.

Because of new building and acquisition, chains will probably continue to grow in terms of the number of stores and as a proportion of total stores, but at a slower rate than in the 1970's.<sup>30</sup> Independents will probably remain a sizable portion of all stores because of the targeting of specific customers. "Off-price" stores will also probably continue to grow rapidly.

Management strategies to improve productivity within chains can be expected to continue, including increased use of computers, a fine tuning of product mix, and additional training of sales personnel.<sup>31</sup> Most efforts among chains to increase productivity, however, revolve around increasing sales per square foot in stores. In the near future, greater emphasis may be placed on customer service, including additional sales personnel and more convenient shopping hours.<sup>32</sup> This trend could have a dampening effect on future output per hour growth. However, personal computers, with software geared toward the small retailer, are becoming available as well as affordable and may have some effect on productivity in the independent segment of the industry. □

### FOOTNOTES

<sup>1</sup> All average rates of change are based on the linear least squares trends of the logarithms of the index numbers.

<sup>2</sup> The retail apparel industry is designated as Standard Industrial Classification (SIC) 56, which includes the following component industries: SIC 5611, men's and boys' clothing and furnishing stores; SIC 5621, women's ready-to-wear stores; SIC 5631, women's accessory and specialty stores; SIC 5641, children's and infant's wear stores; SIC 5651, family clothing stores; SIC 5661, shoe stores; SIC 5681, furriers and fur shops; and SIC 5691, miscellaneous apparel and accessory stores. Although included in the total apparel stores measure, productivity for SIC 5631, 5641, 5681, and 5691 cannot be measured separately.

<sup>3</sup> A chain consists of four or more retail stores in a firm and an independent, three or fewer stores. Most chains are owned by corporations and most independents by partnerships or proprietorships.

<sup>4</sup> It is difficult to document exact cause and effect relationships between factors influencing productivity and individual productivity changes in this industry. There is not a great deal of data available on a national basis for the apparel store industry. In addition, much of the data and information available relates to overall apparel retailing which also includes other industries, especially department stores. However, retail industry experts have indicated that the impact of technological and structural changes on productivity in overall apparel retailing had a similar effect on productivity in apparel stores.

<sup>5</sup> "Retailing," *Standard and Poor's Industry Survey*, Vol. 151, No. 12, Sec. 2, Nov. 25, 1982, pp. R112 and R124.

<sup>6</sup> *Ibid.* p. R112.

<sup>7</sup> Based on single-unit or multiunit sales and paid employee data published by the Bureau of the Census in the *Census of Retail Trade*. In the analysis, data for the number of self-employed and unpaid family workers (available from the *Statistics of Income* published by the Internal Revenue Service and Current Population Survey data) were also used.

<sup>8</sup> Barry Bluestone, Patricia Hanna, Sarah Kuhn, and Laura Moore, *The Retail Revolution* (Boston, MA, Auburn House Publishing Co., 1981), p. 28.

<sup>9</sup> "Apparel Including Footwear: Basic Analysis," *Standard and Poor's Industry Survey*, Vol. 151, No. 16, Sec. 2, Dec. 23, 1982.

<sup>10</sup> "Editorial," *Stores*, March 1981, p. 8; "Off-Price," *Stores*, March 1981, pp. 9-12.

<sup>11</sup> "Retailing," p. R125.

<sup>12</sup> "Off-price," *Stores*, March 1981, pp. 9-12.

<sup>13</sup> Some measured productivity gains may be overstated because of shifts to self-selection. The quality of service can be considered to change as consumer hours, which are unmeasured, replace industry employee hours included in the measure. (See appendix.)

<sup>14</sup> "Retailing," p. R125.

<sup>15</sup> Based on discussion with industry experts.

<sup>16</sup> "National chains" include Sears, Roebuck and Co., J. C. Penney, and Montgomery Ward.

<sup>17</sup> "Apparel including footwear."

<sup>18</sup> Bluestone and others, *The Retail Revolution*, p. 29.

<sup>19</sup> *Ibid.*

<sup>20</sup> "Making it Work—Retail Technology," *Stores*, Nov. 1980, p. 36; "Retail Office," *Stores*, July 1980, pp. 49-54.

<sup>21</sup> Randy L. Allen, *POS Trends in the 80's* (New York, Touche Ross and Co., 1982).

<sup>22</sup> "Managing Receivables," *Stores*, April 1982, p. 42.

<sup>23</sup> Bluestone and others, *The Retail Revolution*, p. 66.

<sup>24</sup> "Apparel including footwear."

<sup>25</sup> "Ad Dollars," *Stores*, September 1980, p. 37.

<sup>26</sup> "Action Fever," *Stores*, July 1980, pp. 43-48.

<sup>27</sup> Bluestone and others, *The Retail Revolution*, pp. 115-16.



<sup>28</sup> "People Business," *Stores*, March 1981, p. 42.

<sup>29</sup> "Retailing," p. R134.

<sup>30</sup> *Ibid.*, p. R125.

<sup>31</sup> "Slower Growth into the 1980's," *Stores*, August 1980, p. 20.

<sup>32</sup> *Retail Industry Trend Analysis*, Morgan Stanley and Co., Jan. 24, 1983, p. 6.

## APPENDIX: Measurement techniques and limitations

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

The preferred output index for retail trade industries would be obtained from data on quantities of the various goods sold by the industry, each weighted (that is, multiplied) by the employee-hours required to sell one unit of each good in some specified base period. This concept also embodies the services associated with moving the goods from the retail establishment to the consumer. Thus, those goods which require more retail labor are given more importance in the index.

Data on the quantities of goods sold usually are not available for trade industries, including retail apparel stores. Therefore, real output was estimated by removing the effects of changing price levels from the current dollar value of sales. Because an adjustment for changing price levels usually lowers the dollar value, such a series is usually referred to as a deflated value measure. Output measures based on deflated value have two major characteristics. First, shifts in sales can occur among products of different value which have the same unit labor requirements. (For example, if customers begin to purchase more store brands instead of "nationally advertised" brands, dollar sales will decrease if the store brand is priced lower.) Such a phenomenon can occur in times of economic recession, and the reverse may be true in times of economic prosperity. Thus, a change can occur in the output per hour index even if the labor required to sell the merchandise does not change.

Second, the sales level, both in current and constant dollars, reflects differences in unit values for identical products sold in different types of establishments. For example, the unit values associated with a product sold in a self-service "off-price" store may be lower than the unit value associated with the same product sold in a store that provides a number of sales clerks as well as delivery service. The output measure, therefore, reflects changes in the level of service provided to customers, insofar as differences in unit values reflect the difference in service among the various types of establishments.

In addition to the deflated value technique, the output measure for the total of the major group of retail apparel stores was compiled by combining output from the various component apparel industries using weights relating to labor importance (that is, all person hours). This procedure results in a total apparel store output index that is closer, conceptually, to the preferred output measure.

The index of hours for the retail apparel store industries is for all persons—that is, hours for paid employees, partners and proprietors, and unpaid family workers. As in all of the output per hour measures published by the Bureau of Labor Statistics, hours and employment in apparel stores are each considered homogeneous and additive. Adequate data are not available to weight the various types of labor separately.

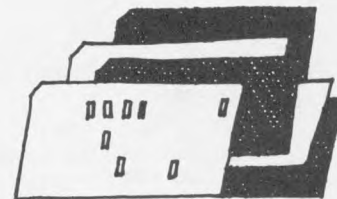
The indexes of output per hour relate total output to one input—labor time. The indexes do not measure the specific contribution of labor, capital, or any other single factor. Rather, they reflect the joint effect of many factors such as changes in technology, capital investment, capacity utilization,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

No explicit adjustments were made to the measures for apparel stores to take into account increases or decreases in some services provided to the consumer. With the growth of larger stores in the 1970's, there was a trend toward more self-service operations. This shifted some of the hours in retailing from employee to consumer. However, data are not available to measure the effect of this change. Adjustments for changes in product quality are made to the extent that changes in quality have been accounted for in the price indexes used to deflate the current dollar value of sales.

The basic sources for the output series for this measure consist of the total sales data and sales by merchandise line reported by the U.S. Department of Commerce. The deflators were developed using Consumer Price Indexes published by BLS.

The basic sources for the all-person-hour series consists of data on employment and hours published by BLS, supplemented by data reported by the Internal Revenue Service and special tabulations compiled for BLS by the Bureau of the Census.

# Research Summaries



## Occupational salary levels for white-collar workers, 1984

CARL PRIESER

Average salaries increased at the lowest rates in more than 10 years, according to the Bureau of Labor Statistics' March 1984 survey of pay for professional, administrative, technical, and clerical occupations in medium and large firms. Salary levels rose between 3 and 6 percent for most of the 25 occupations compared with the March 1983 survey. In contrast, occupational salary increases averaged about 7 percent yearly during the 1970's and rose to more than 9 percent in 1981 and 1982. (See table 1.) The annual survey is used in the pay comparability process for Federal white-collar employees.<sup>1</sup>

Although the survey focuses on individual occupations and work levels, it also permits a look at salary trends by skill level. In this connection, occupational work levels were grouped into three broad categories of skill levels comparable to grades 1 to 4, 5 to 9, and 11 to 15, respectively, of the Federal Government's General Schedule (GS). (See table 2 for identification of the survey job classifications by GS grade.) Cumulative percentage increases over the past 10 years have been largest for the higher levels (120.1 percent), and 8 to 9 percentage points more than for lower (111.1) and middle groups (112.1). In 1983-84, pay increases for the highest skill group also set the pace, averaging 5.3 percent, compared with 5.0 percent for the middle group and 3.6 percent for the lowest group.

A closer look at some individual job classifications reveals that the pay differential between many entry-level professionals and their experienced coworkers widened during the decade, as the latter generally recorded substantially larger salary increases. The following tabulation illustrates this point for 3 of 4 professional occupations. It shows average salaries for journeyman classifications (GS-11 equivalents) as a percent of the average paid to their corresponding entry levels (GS-5).<sup>2</sup>

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**Table 1. Percent increases in occupational pay levels, national survey of professional, administrative, technical, and clerical pay, March 1970 to March 1984**

Occupation	Average annual percent increases				
	1970 to 1980 <sup>1</sup>	1980 to 1981	1981 to 1982	1982 to 1983	1983 to 1984
Accountants	7.3	10.0	9.6	6.9	4.7
Chief accountants	7.9	9.5	11.4	4.2	5.7
Auditors	6.6	10.3	9.4	6.1	8.0
Public accountants	( <sup>1</sup> )	7.9	6.6	7.1	2.3
Job analysts	7.0	7.6	9.2	6.7	5.3
Directors of personnel	7.8	11.4	9.6	8.3	5.3
Attorneys	7.0	9.8	11.4	7.6	4.8
Buyers	7.0	9.8	9.4	6.2	5.3
Chemists	7.2	9.4	10.4	5.8	5.3
Engineers	7.0	10.9	10.2	7.1	5.2
Engineering technicians	7.2	10.2	9.4	5.9	4.9
Drafters	7.3	10.9	8.4	7.6	3.6
Computer operators	( <sup>1</sup> )	—	8.9	6.8	—
Photographers	( <sup>1</sup> )	—	9.7	8.1	6.9
Programmers/programmer analysts	( <sup>1</sup> )	—	—	6.5	—
Systems analysts	—	—	—	—	—
Accounting clerks	6.7	9.6	8.9	8.1	3.8
File clerks	6.9	8.0	7.2	6.4	2.1
Key entry operators	7.3	8.2	9.4	7.3	3.4
Messengers	6.7	9.7	6.4	9.2	2.9
Personnel clerks/assistants	( <sup>1</sup> )	—	10.2	9.7	5.4
Purchasing assistants	( <sup>1</sup> )	—	—	9.3	6.8
Secretaries	( <sup>1</sup> )	—	9.2	7.1	5.0
Stenographers	8.4	12.1	13.8	8.6	5.5
Typists	7.1	10.2	10.1	6.8	2.0

<sup>1</sup>Average was not computed when data were available for fewer than 8 years.

NOTE: Dashes indicate that data were not available for one or more years because the survey occupation was newly added or the definition was revised.

	1974	1984
Accountant	165	180
Auditor	169	190
Chemist	162	174
Engineer	151	149

It is noteworthy, however, that the pay relationship for engineers was essentially unchanged since 1974 because the strong demand for engineers had bolstered their starting salaries. This practice becomes evident when engineering salaries are compared with those of another technical profession—chemist. In 1984, the average salary for entry-level engineers was 21 percent higher than that for starting chemists, while at the journeyman level the difference was 4 percent (table 2). Ten years earlier, engineers I held a 12-percent pay advantage over chemists I, while the differential was 4 percent at the journeyman level.

**Table 2. Average salaries for selected occupations, national survey of professional, administrative, technical, and clerical pay, March 1984**

Occupational level and Federal GS grade equivalent	Number of employees <sup>1</sup>	Average annual salaries <sup>2</sup>	Occupational level and Federal GS grade equivalent	Number of employees <sup>1</sup>	Average annual salaries <sup>2</sup>
<b>Accountants and auditors</b>			Chemists VI (GS-13)	3,290	\$54,163
Accountants I (GS-5)	13,183	\$19,843	Chemists VII (GS-14)	1,122	63,072
Accountants II (GS-7)	23,559	24,325	Engineers I (GS-5)	27,872	26,163
Accountants III (GS-9)	38,763	28,721	Engineers II (GS-7)	67,872	28,899
Accountants IV (GS-11)	22,717	35,715	Engineers III (GS-9)	135,792	32,761
Accountants V (GS-12)	8,114	44,466	Engineers IV (GS-11)	145,728	39,005
Accountants VI (GS-13)	1,836	55,618	Engineers V (GS-12)	100,411	46,349
Chief accountants I (GS-11)	650	35,199	Engineers VI (GS-13)	49,013	53,749
Chief accountants II (GS-12)	1,383	44,128	Engineers VII (GS-14)	13,435	61,166
Chief accountants III (GS-13)	899	56,816	Engineers VIII (GS-15)	2,590	70,788
Chief accountants IV (GS-14)	176	69,838	<b>Technical support</b>		
Auditors I (GS-5)	1,362	19,671	Engineering technicians I (GS-3)	4,626	16,169
Auditors II (GS-7)	3,625	25,391	Engineering technicians II (GS-4)	19,229	18,733
Auditors III (GS-9)	4,607	30,209	Engineering technicians III (GS-5)	31,920	22,351
Auditors IV (GS-11)	2,421	37,378	Engineering technicians IV (GS-7)	39,016	26,362
Public accountants I (GS-7)	9,264	19,142	Engineering technicians V (GS-9)	22,702	30,084
Public accountants II (GS-9)	9,335	21,164	Drafters I (GS-2)	1,961	12,596
Public accountants III (GS-11)	7,067	24,702	Drafters II (GS-3)	10,126	16,120
Public accountants IV (GS-12)	4,345	29,663	Drafters III (GS-4)	19,886	19,098
<b>Attorneys</b>			Drafters IV (GS-5)	22,584	23,067
Attorneys I (GS-9)	1,186	28,918	Drafters V (GS-7)	17,358	29,057
Attorneys II (GS-11)	2,965	35,238	Computer operators I (GS-4)	8,955	13,068
Attorneys III (GS-12)	3,938	44,743	Computer operators II (GS-5)	30,855	16,337
Attorneys IV (GS-13)	3,340	55,462	Computer operators III (GS-6)	24,370	19,743
Attorneys V (GS-14)	1,827	70,478	Computer operators IV (GS-7)	8,816	23,107
Attorneys VI (GS-15)	541	87,568	Computer operators V (GS-8)	1,479	27,223
<b>Buyers</b>			Photographers I (GS-4)	144	17,348
Buyers I (GS-5)	6,234	20,225	Photographers II (GS-5)	720	21,738
Buyers II (GS-7)	17,840	24,675	Photographers III (GS-7)	724	25,974
Buyers III (GS-9)	18,285	30,610	Photographers IV (GS-9)	364	28,749
Buyers IV (GS-11)	5,941	37,843	<b>Clerical</b>		
<b>Programmers and systems analysts</b>			Accounting clerks I (GS-2)	27,873	11,704
Programmers/Programmer analysts I (GS-5)	13,339	19,801	Accounting clerks II (GS-3)	79,368	14,060
Programmers/Programmer analysts II (GS-7)	33,626	22,815	Accounting clerks III (GS-4)	58,863	16,527
Programmers/Programmer analysts III (GS-9)	42,777	27,158	Accounting clerks IV (GS-5)	17,286	20,244
Programmers/Programmer analysts IV (GS-11)	16,546	31,929	File clerks I (GS-1)	16,026	9,869
Programmers/Programmer analysts V (GS-12)	7,296	38,868	File clerks II (GS-2)	9,102	11,331
Systems analysts I (GS-9)	16,127	27,084	File clerks III (GS-3)	2,746	13,576
Systems analysts II (GS-10)	34,702	32,324	Key entry operators I (GS-2)	50,685	12,811
Systems analysts III (GS-12)	28,321	38,057	Key entry operators II (GS-3)	32,473	15,898
Systems analysts IV (GS-13)	10,375	44,748	Messengers (GS-1)	10,647	11,230
Systems analysts V (GS-14)	2,140	53,917	Personnel clerks/Assistants I (GS-3)	2,024	13,379
<b>Personnel management</b>			Personnel clerks/Assistants II (GS-4)	3,388	16,160
Job analysts II (GS-7)	474	22,845	Personnel clerks/Assistants III (GS-5)	2,896	18,268
Job analysts III (GS-9)	832	27,987	Personnel clerks/Assistants IV (GS-6)	1,222	21,830
Job analysts IV (GS-11)	610	34,880	Purchasing assistants I (GS-4)	4,426	15,629
Directors of personnel I (GS-11)	1,674	35,444	Purchasing assistants II (GS-5)	4,162	20,001
Directors of personnel II (GS-12)	2,288	42,620	Purchasing assistants III (GS-6)	1,080	26,916
Directors of personnel III (GS-13)	1,231	55,717	Secretaries I (GS-4)	58,242	15,296
Directors of personnel IV (GS-14)	452	65,874	Secretaries II (GS-5)	55,132	16,920
<b>Chemists and engineers</b>			Secretaries III (GS-6)	114,459	19,053
Chemists I (GS-5)	2,395	21,609	Secretaries IV (GS-7)	47,241	21,525
Chemists II (GS-7)	5,891	25,481	Secretaries V (GS-8)	18,627	24,700
Chemists III (GS-9)	9,777	30,441	Stenographers I (GS-3)	10,012	17,241
Chemists IV (GS-11)	9,996	37,643	Stenographers II (GS-4)	6,831	20,376
Chemists V (GS-12)	7,815	45,614	Typists I (GS-2)	24,405	11,793
			Typists II (GS-3)	13,951	15,150

<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, that is, the straight-time salary corresponding to employee's normal work schedule excluding overtime hours. Nonproduction bonuses are excluded, but cost-of-living ad-

justments and incentive earnings are included.

NOTE: The following occupational levels were surveyed but insufficient data were obtained to warrant publication: chief accountants V, directors of personnel V, job analysts I, chemists VIII, computer operators VI, systems analysts VI, personnel clerks/assistants V, and photographers V.



In 1984, the survey's highest salary average was for top-level (VI) corporate attorneys at \$87,568 a year; this was more than four times the average for most entry-level professional classifications studied. These extremes reflect the wide range of duties and responsibilities represented by all professional categories covered by the survey. In the clerical area, differing functions and skill levels also produce wide pay variations, although not as wide as for professionals. For example, annual pay averages for top-level secretaries (V) (\$24,700) and purchasing assistants (III) (\$26,916) were 2.5 times the average of clerks (\$9,869) doing routine filing. In contrast, the typical spread among job categories with equivalent levels of work, for example, accountants I and accounting clerks IV, was relatively narrow. (See table 2.)

The Bureau recently added two computer science occupations to the survey—programmers in 1982 and systems analysts in 1984. Programmer/programmer analyst trainees (level I) averaged \$19,801 a year; this was approximately half the average of level V workers who plan and direct large computer programming projects or solve unusually complex programming problems. Computer systems analysts I averaged \$27,084 a year. This level includes workers who are familiar with systems analysis procedures and are working independently on routine problems. Systems analysts V, the highest level for which data could be presented, averaged \$53,917 a year. At this level, analysts work as top technical specialists on extremely complex systems or are senior managers responsible for the development and maintenance of large and complex systems.

A 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 1984*, BLS Bulletin 2208, September 1984. It includes salary distributions by occupational work level, and relative employment and salary levels by industry division for the 25 occupations studied. □

—FOOTNOTES—

<sup>1</sup>The National Survey of Professional, Administrative, Technical, and Clerical Pay (PATC) is conducted by the Bureau of Labor Statistics, but survey occupations and coverage such as establishment size and the private sector industries to be included are determined by the President's Pay Agent—the Secretary of Labor and the Directors of the Office of Management and Budget and the Office of Personnel Management. The Agent has designated the industrial coverage and minimum size establishment as follows: manufacturing, 100 or 250 employees; mining and construction, 250 employees; wholesale trade, 100 employees; retail trade, 250 employees; finance, insurance, and real estate, 100 employees; and selected services, 50 or 100 employees. The pay-setting role of the PATC survey is described in George L. Stelluto's "Federal pay comparability: facts to temper the debate," *Monthly Labor Review*, June 1979, pp. 18–28.

<sup>2</sup>A similar pattern was found for the 1974–84 period in the salary relationship of recent law school graduates with bar membership (attorneys I, GS–9 equivalents) and attorneys with experience handling legal work with few precedents (attorneys III, GS–12 equivalents). The salary relatives were 148 in 1974 and 155 in 1984.

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. Classification of employees in the occupations and work levels surveyed is based on factors detailed in definitions which are available upon request.

# Major Agreements Expiring Next Month



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

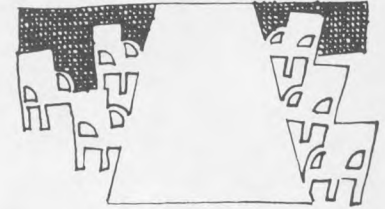
Employer and location	Industry	Labor organization <sup>1</sup>	Number of workers
Greater New York Milk Dealers Association (Interstate)	Food products	Teamsters (Ind.)	1,900
Keebler Co. (Interstate)	Food products	Bakery, Confectionery and Tobacco Workers	4,500
Pineapple Companies, factory and plantation production and maintenance (Hawaii) <sup>2</sup>	Food products	Longshoremen and Warehousemen	5,500
Rockingham Poultry Marketing Cooperative, Inc. (Virginia and West Virginia)	Food products	Food and Commercial Workers	1,000
Midtec Paper Corp. (Kimberly, WI)	Paper	Paper Mill Workers	1,100
National Sample Card Association, Inc. (New York, NY)	Printing and publishing	Graphic Communications	1,300
Martin Marietta Aerospace Co. (Florida and Maryland)	Fabricated metal products	Auto Workers	3,500
Gates Learjet Corp. (Wichita, KS)	Transportation equipment	Machinists	2,000
General Dynamics Corp., Ft. Worth Division, two agreements (Texas)	Transportation equipment	Office and Professional Employees; and Machinists	8,600
Norfolk Shipbuilding and Drydock Corp. (Norfolk, VA)	Transportation equipment	Boilermakers	3,500
Bic Pen Corp. (Milford, CT)	Miscellaneous manufacturing	Rubber Workers	1,100
Western Airlines, clerical/office (Interstate) <sup>3</sup>	Air transportation	Air Transport Employees (Ind.)	4,500
Western Airlines, ground service (Interstate) <sup>3</sup>	Air transportation	Teamsters (Ind.)	1,900
Carolina Telephone and Telegraph Co. (Tarboro, NC)	Communication	Communications Workers	3,100
General Telephone Company of Ohio (Ohio)	Communication	Electrical Workers (IBEW)	1,150
Columbia Gas Transmission Corp. and two others (Interstate)	Utilities	Oil, Chemical and Atomic Workers	1,000
New York City private sanitation contract (New York) <sup>2</sup>	Sanitary services	Teamsters (Ind.)	2,000
New York area laundry operators (Interstate) <sup>2</sup>	Services	Clothing and Textile Workers	6,000
Industrial launderers, cleaners association and linen companies (Michigan) <sup>2</sup>	Services	Textile Processors (affiliated with Teamsters-Ind.)	1,300
Apartment Building Owners and Managers Association of Chicago (Illinois)	Services	Service Employees	3,000
Chicago Real Estate Owners Council (Illinois)	Services	Service Employees	4,000
Johns Hopkins Hospital (Baltimore, MD)	Hospitals	Retail, Wholesale and Department Store	1,400
Youngstown Hospital Association (Ohio)	Hospitals	Service Employees	1,500
	<b>Government activity</b>	<b>Labor organization<sup>1</sup></b>	<b>Number of workers</b>
Arizona: Phoenix Salt River Project	Utilities	Electrical Workers (IBEW)	1,900
Illinois: Chicago Transit Authority	Transportation	Transit Union	11,000
District of Columbia: Police Department	Police protection	International Brotherhood of Police (Ind.)	3,300
Fire Department	Fire protection	Fire Fighters	1,200

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

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

<sup>3</sup>Information is from newspaper reports.

# Developments in Industrial Relations



## Retirement Equity Act of 1984 amends ERISA

President Ronald Reagan signed the Retirement Equity Act of 1984, which broadens the conditions under which spouses receive retirement benefits. Under the act, spouses of employees who die after attaining eligibility for pensions are guaranteed a benefit beginning at age 55; a prospective survivor must agree in a signed, notarized statement before a pension plan member can waive the option of providing a survivorship benefit (previously, the plan member had the sole right to decide); and the divorced spouse of a plan member is entitled to part of a pension, if stipulated in the separation papers or ordered by a judge.

Also, the new act:

- Requires employers to count all service from age 18 in calculating when an employee becomes vested (legally entitled to a pension, which usually requires 10 years of service). In computing the amount of benefits, all employee earnings from age 21 must be considered. (Previously, service accrual toward vesting began at age 22 and benefits were based on earnings from age 25.)
- Permits pension plan members to leave the work force for up to 5 consecutive years without losing pension credits.
- Allows plan members to take maternity or paternity leave of up to 1 year without loss of service credit for the period.
- Permits employees of companies that have thrift (savings) plans to join as early as age 21. These plans generally provide for employers to match some of the money the employee invests.
- Requires employers to explain to employees the tax consequences of taking lump-sum amounts from pension or profit-sharing plans.

Supporters praised the act, saying it "alters certain rules that in some cases allowed pension plans to ignore the changing needs of women and others in the work force."

The new provisions, which amend the Employee Retirement Income Security Act of 1974, are effective December 31, 1984. For pension plans established through collective bargaining, provisions take effect when the contract per-

taining to the pension plan expires, or January 1, 1987, whichever comes first.

## UPI workers accept pay-cutting contract

United Press International and the Wire Service Guild negotiated a 15-month "austerity program" designed to end a 20-year history of unprofitable operation exacerbated by an accelerating cash-flow problem in recent months. Luis G. Nogales, UPI's executive vice president and general manager, said the "stringent measures" would result in savings of \$12 million and enable the company "to build a foundation for sustained growth." William Morrissey, president of the Wire Service Guild, called the agreement the "worst . . . I have ever recommended to the membership" but said there was no choice "under the circumstances." Those circumstances included an estimated \$7 million deficit for 1984 and \$9 million owed to other companies providing service to UPI.

Under the accord, salaries of the 900 union members were cut 25 percent effective September 15, but the cut will be restored in steps and at the end of the agreement salaries will exceed the levels prior to the cut. The cut will be reduced to 15 percent on December 15, 1984, to 10 percent on April 12, 1985, and to 5 percent on July 1, 1985. On October 1, 1985, salaries will be restored to the pre-cut levels, followed by a 3-percent increase on December 15, 1985, and a 2-percent increase on January 1, 1986. Prior to the cut, the "top minimum" (payable after 5 years' service) was \$29,026 for reporters and some other employees.

The company also was permitted to postpone its payment to the pension plan for 1 year. When payment is made, it will be retroactive to the normal date.

In return for these changes, 6.5 percent of the parent Media News Corp.'s stock will be distributed to the employees in proportion to the amount each lost as a result of the pay cut. The Wire Service Guild, which is part of the Newspaper Guild, also gained a seat on UPI's board of directors.

UPI's 1,100 nonunion employees voted to accept wage and benefit changes similar to those for the union-represented workers. Many of UPI's financial difficulties have been attributed to the fact that the market for wire news

"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.



services is dominated by the nonprofit Associated Press, which serves 1,286 newspapers and 5,666 broadcast stations, compared with UPI's 802 newspapers and 3,298 broadcast stations. Also, several major newspapers have established wire news services in recent years.

### **West Coast pulp and paper workers settle**

Employees of three West Coast paper companies agreed to a 32-month contract containing terms the companies had unilaterally put into effect a month earlier, after a rejection by the workers. About 4,600 workers are covered by the settlement between the Association of Western Pulp and Paper Workers and the Pulp and Paper Bargaining Council, comprising Georgia-Pacific Corp., Boise Cascade Corp., and Weyerhaeuser Co. Based on past practice, the settlement was expected to influence the bargaining outcome for 9,500 employees of other West Coast firms where 40 contracts had expired. The union also represents 4,000 workers in the area whose contracts expire in 1985.

Wage terms included a \$1,000 immediate lump-sum payment to each worker, a 4-percent wage increase in the second year, and a 4.5-percent increase in the last year.

There were provisions for improvements in pension and life insurance benefits, as well as changes designed to hold down cost increases in the medical insurance plan. Also, workers will now pay part of their medical costs. Beginning January 1, 1985, they will pay an annual deductible of \$75 per person up to \$150 per family, with the respective figures rising to \$150 and \$300 in 1986. They will be subject to coinsurance payments of 20 percent of medical costs, up to \$750 per person and \$1,500 per family in 1985, rising to \$1,000 and \$2,000, respectively, in 1986.

The union also agreed to an employer proposal to eliminate mandatory shutdowns of operations on Christmas and Independence Day. This gives the company more operating flexibility and eliminates the expense of restarting production.

### **Electrical contract bans movement of operations**

In the electrical equipment industry, Allen-Bradley Co. and the United Electrical Workers agreed on a 3-year contract that included a ban on moving any operations out of Milwaukee through 1987. Another provision designed to protect the earnings of workers allows laid-off workers with recall rights to be reimbursed for 75 percent of tuition expenses for retraining, up to \$500 per year. About 1,000 workers are currently eligible for this benefit.

Instead of wage increases, the active employees will receive four lump-sum payments over the term. The first was \$200 payable immediately. The other three, payable in December of each year, will equal 3 percent of each worker's wage rate multiplied by the hours worked in the previous 12 months. According to the union, the average wage rate is \$10.55. The automatic cost-of-living pay adjustment for-

mula was revised by providing that in both the first and second years the formula will operate only if the Consumer Price Index rises 4 percent. If it does, adjustments will be calculated at the existing rate of 1 cent an hour for each additional 0.2-percent rise in the index. There is no "corridor" in the third year.

In a move to open jobs to laid-off workers, the accord provides that employees age 58 or older retiring during the balance of 1984 will receive an extra \$450 a month until age 62. Those 61½ years or older will be guaranteed 6 months of payments.

To minimize premium cost increases for Blue Cross medical coverage, employees will now pay deductible and coinsurance costs. Employees also will be permitted to select from among five other types of health insurance which, the union claimed, offer superior coverage and built-in cost controls.

### **Utility Workers end strike at Detroit Edison**

Members of the Utility Workers union employed by Detroit Edison Co. approved a 3-year contract after rejecting two earlier proposals, ending a 6-week strike, the longest in the history of the bargaining relationship. The new contract provides for specified wage increases, retention of the automatic cost-of-living pay adjustment formula, and higher employee costs for health insurance.

Hourly pay, which reportedly averaged \$13.23 under the old contract, was raised by average amounts of 39 cents an hour effective immediately; 34 cents on the first anniversary; and 39.5 cents on the second.

Under the new health care plan, employees will pay half the cost of any premium increase, up to 6 cents per hour each year, or a maximum of 18 cents per hour over the contract term. Deductibles were raised to \$125 for individuals and \$300 for families in the first year and to \$150 and \$350 in the second, from \$100 and \$250. The deductible for prescriptions also was raised to \$3, from \$2.

In a change in the savings plan, the limit on employee investment was raised to 6 percent of earnings, from 5 percent, with the utility company continuing to contribute 50 cents for each \$1. Other terms of the contract included early retirement at unreduced pension rates at age 61 (formerly 62); and a 13th paid holiday, beginning in 1986.

### **Dockworkers settle**

More than 9,000 dockworkers in California, Washington, and Oregon were covered by a 3-year accord between the Pacific Maritime Association and the International Longshoremen's and Warehousemen's Union. The agreement increased the basic straight-time hourly rate for longshoremen by 80 cents on June 30, 1984, and 85 cents on June 29, 1985, and June 28, 1986, bringing it to \$17.27. Although the three increases total \$2.50, the total is actually

\$2.81 per hour worked because most West Coast longshoremen are paid 6 hours a day at the straight-time rate plus 2 hours overtime at time-and-a-half rates. Comparable pay increases were negotiated for longshoremen paid according to other systems, as well as for clerks and other occupations.

Maximum creditable pension service was increased to 33 years, from 30, for employees retiring on or after July 1, 1984, and their benefit calculation rate for each year was raised to \$27 (from \$26) on July 1, 1984, \$28 on July 1, 1985, and \$29 on July 1, 1986. Resulting maximum monthly pensions were \$891, \$924, and \$957 on the three dates, compared with \$780 under the prior contract. Pensions for employees who retired prior to July 1, 1984, also were increased by \$1 a month for each year of service on each of the three dates, but there was no change in their maximum creditable service.

The employer obligation to the pay guarantee plan was increased to \$59.7 million over the contract term, from \$41.8 million under the previous contract. Maximum guarantees under the plan were increased to 38 hours' pay each week at the basic rate for regular employees and 28 hours' pay for others.

### **Acme increases its pension fund contribution**

Improving the financial condition of the pension fund was a feature of the settlement between 66 Acme Markets in the Philadelphia area and Local 1357 of the United Food and Commercial Workers. In return for a wage freeze during the first 5 months of the 3-year contract, Acme agreed to raise its payment to the pension fund to \$188 a month per full-time employee over the contract term, from \$109.38. For part-time workers, Acme's obligation was raised to \$47 a month, from \$33.45. A union official said that the financial health of the Tri-State Multiemployer Pension Fund would be assured if other food store chains agreed to similar increases in their obligation, noting that Acme had earlier agreed to a contract for 4,000 workers in New Jersey, Delaware, and Pennsylvania that provided for the same increase in pension fund payment in return for a first contract-year wage freeze.

Other terms of the Acme accord for the Philadelphia area included a \$57.53-a-month increase in the company's health and welfare obligation over the term, bringing it to \$306.74 on May 1, 1986, and for part-time workers, a \$32.44 increase, to \$122.49; 40-cent-an-hour wage increases (20 cents

for baggers and other customer service employees) on January 27, 1985, and January 26, 1986; an additional 70-cent increase over the term to 700 "between grades" workers who were moved to the next higher grade; time and one-half for Sunday work, instead of double time; and termination of Easter Monday as a holiday.

The contract, which covers 4,700 workers, expires on January 15, 1987.

### **Kroger settles, reopens stores**

The Kroger Co. agreed to reopen more than 40 of the 70 Eastern Michigan supermarkets it had closed a month earlier. About 2,800 of the 5,000 workers who had lost their jobs as a result of the store closings were expected to be rehired. Kroger said the shutdowns were necessary because compensation levels for store clerks and for meat cutters were not competitive with those at nonunion supermarkets in the area.

The approved settlement between the company and several United Food and Commercial Workers locals called for 5- to 13-percent pay cuts as well as cuts in paid vacation and sick leave days.

So far this year, Kroger had closed about 90 stores in Louisiana, Illinois, Ohio, and Pennsylvania, and compensation reduction negotiations were underway in Central Indiana. Kroger's 1983 profit fell 12 percent, to \$126 million, and the company dropped to number 2 in sales, behind Safeway Stores, even though its sales rose to \$15 billion, from \$12 billion.

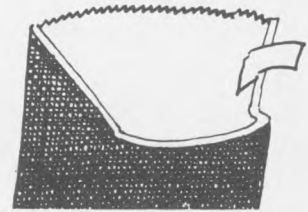
### **Pay adjusted in 'traditionally female' jobs**

The State of California and the California State Employees' Association negotiated a contract that provided for special pay adjustments for employees in jobs "traditionally" held by women. Despite this, the union said it would continue its U.S. Equal Employment Opportunity Commission case in which it asserted that jobs traditionally held by women paid less relative to jobs traditionally held by men.

Under the 1-year contract, most employees received an immediate 8-percent wage increase. In addition, a majority of clerical workers received an immediate 2-percent increase and a 3-percent increase on January 1, 1985. Employees in four other classifications, including registered nurses, librarians, licensed vocational nurses, and dental technicians, received the 8-percent general increase and an additional 3 percent on January 1, 1985. □

# Book Reviews

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## **Making the work ethic work**

*The New Achievers.* By Perry Pascarella. New York, The Free Press, 1984. 210 pp. \$17.95.

Over the past 100 years, there have been a number of important innovations and theories concerning the management of people at work. These have ranged from the management concepts of Frederick Taylor to a variety of sociopsychological theories of human development and motivation. Some theories, although born with great promise, have faded away. Others have remained an integral part of motivation theory and serve as the foundation for much of the current personnel management theory and practice.

In recent years, great concern has been expressed regarding the demise of America's work ethic. Researchers have explored the basis for this change, particularly as worker productivity declined beginning in 1969 and has continued to remain at very low levels. The author compares U.S. productivity with that of Japan and other countries, which have become increasingly more competitive in producing less expensive, high quality products, many of which had been almost totally within the trading domain of the United States.

This book explores the basis for the decline in the U.S. work ethic and its effect on productivity and product quality. It traces the evolution of work and workers from the early days of Christianity to the present. Religious, social, and economic institutions are examined to determine their effect on the work ethic and on worker attitudes in general. The author concludes that the church, family, schools, government, and business are all responsible in one way or other. Each has failed to consider or understand workers' needs, particularly as life at work and at home has become more complex. These changes and difficulties sometimes overwhelm individuals as they seek tranquility and satisfaction along with the need to gain some measure of control over their worklives.

The author places great emphasis on the need for more humanistic management. He says, "A great revolution is taking place." Workers are demanding to be heard and to be involved in decisionmaking. He envisions more freedom at work, more management concern as to the nurturing of people, and more employee participation as individuals seek to work independently as well as interdependently with oth-

ers. Involvement, participation, and freedom, says the author, will lead to more effective tools to deal with problems at home as well as at work.

The key words are "participative management." There is growing belief that worker participation in organization decisionmaking can help create healthy, productive work environments with trust and mutual respect. The author believes that the major deterrent to this change is the resistance of middle managers who fear the loss of authority and are not willing to share power. They see an erosion of their status as "boss."

Organized labor is another negative force. While there are a number of well-documented efforts of labor-management ventures towards participative management, these are relatively few in number. Labor leaders, particularly at the local level, are concerned that too much free and open cooperation between union members and management might weaken workers' perception of their need for union membership. Some labor leaders see a management effort to subvert unionism.

The author views American business as the key to true humanistic, participative management in the United States. He believes management is "headed towards a new state of mind" where autocratic management styles will cease and cooperation and sharing will help "unleash people power." Business will need to create an atmosphere of trust, honesty, and mutual respect. As work requirements change, business needs to initiate training programs. Job redesign, quality of worklife programs, quality circles, and a common value system must be installed cooperatively, with full and free worker participation. In this new relationship, management can become teacher, trainer, and developer of human potential.

Although this reviewer has observed workers and students over a long period of time, he has not noted any sparkling behavioral changes among either experienced or prospective workers, or among managers. Research in worker participation or quality of worklife programs is growing but is insignificant in comparison with the total picture. While a few of the more successful American firms have long demonstrated a concern for the individual worker and his need to be more involved in workplace decisionmaking, there are no apparent surges to replicate their management style. Nor is there evidence that students are becoming less interested



in a "good job," with adequate income and promotional opportunities.

It would be nice if the move towards true participative management would accelerate and expand throughout the workplaces of the United States. Although the author believes this is happening, more conclusive evidence is needed. It will be interesting to study worker participation schemes to determine if they are systemic in nature or if they are fads, passing in the night.

*The New Achievers* is an interesting and stimulating book, easy to read and comprehend. While nothing new is reported, this book will become an important part of the growing literature on the values and benefits of worker participation.

—BEN BURDETSKY  
Professor of Personnel  
and Labor Relations  
George Washington University

## Publications received

### Agriculture and natural resources

Duncan, Marvin and Marla Borowski, "Agricultural Policy: Objectives for a New Environment," *Economic Review*, Federal Reserve Bank of Kansas City, June 1984, pp. 20–36.

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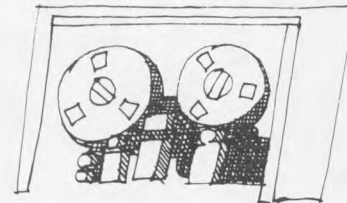
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# Current Labor Statistics



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## NOTES ON CURRENT LABOR STATISTICS

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

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

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

Seasonally adjusted labor force data in tables 3-8 were revised in the February 1984 issue of the *Review*, to reflect experience through 1983.

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 11, 13, and 15 were made in July 1984 using the X-11 ARIMA seasonal adjustment methodology. New seasonal factors for productivity data in tables 29 and 30 are usually introduced in the September issue. Seasonally adjusted indexes and percent changes from month to month and from

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

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

**Availability of information.** Data that supplement the tables in this section are published by the Bureau of Labor Statistics in a variety of sources. Press releases provide the latest statistical information published by the Bureau; the major recurring releases are published according to the schedule given below. More information from household and establishment surveys is provided in *Employment and Earnings*, a monthly publication of the Bureau. Comparable household information is published in a two-volume data book—*Labor Force Statistics Derived From the Current Population Survey*, Bulletin 2096. Comparable establishment information appears in two data books—*Employment 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 BLS statistical series**

Series	Release date	Period covered	Release date	Period covered	Release date	Period covered	MLR table number
Employment situation	October 5	September	November 2	October	December 7	November	1-11
Producer Price Index	October 12	September	November 9	October	December 14	November	23-27
Consumer Price Index	October 24	September	November 21	October	December 20	November	19-22
Real earnings	October 24	September	November 21	October	December 20	November	12-16
Major collective bargaining settlements	October 26	1st 9 months					36-37
Productivity and costs:							
Nonfarm business and manufacturing	October 29	3rd quarter					29-32
Nonfinancial corporations			November 28	3rd quarter			29-32
Employment Cost Index	October 30	3rd quarter					33-35
Occupational injuries and illnesses			November 14	1983			

## 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** include (1) all civilians who worked for pay any time during the week which includes the 12th day of the month or who worked unpaid for 15 hours or more in a family-operated enterprise and (2) those who were temporarily absent from their regular jobs because of illness, vacation, industrial dispute, or similar reasons. Members of the Armed Forces stationed in the United States are also included in the employed total. A person working at more than one job is counted only in the job at which he or she worked the greatest number of hours.

**Unemployed persons** are those who did not work during the survey week, but were available for work except for temporary illness and had looked for jobs within the preceding 4 weeks. Persons who did not look for work because they were on layoff or waiting to start new jobs within the next 30 days are also counted among the unemployed. The **overall unemployment rate** represents the number unemployed as a percent of the labor force, including the resident Armed Forces. The **unemployment**

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

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

### Notes on the data

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

Data in tables 2-8 are seasonally adjusted, based on the seasonal experience through December 1983.

**1. Employment status of the noninstitutional population, 16 years and over, selected years, 1950-83**

(Numbers in thousands)

Year	Noninstitutional population	Labor force										Not in labor force
		Number	Percent of population	Employed						Unemployed		
				Total	Percent of population	Resident Armed Forces	Civilian			Number	Percent of labor force	
							Total	Agriculture	Nonagricultural industries			
1950	106,164	63,377	59.7	60,087	56.6	1,169	58,918	7,160	51,758	3,288	5.2	42,787
1955	111,747	67,087	60.0	64,234	57.5	2,064	62,170	6,450	55,722	2,852	4.3	44,660
1960	119,106	71,489	60.0	67,639	56.8	1,861	65,778	5,458	60,318	3,852	5.4	46,617
1965	128,459	76,401	59.5	73,034	56.9	1,946	71,088	4,361	66,726	3,366	4.4	52,058
1966	130,180	77,892	59.8	75,017	57.6	2,122	72,895	3,979	68,915	2,875	3.7	52,288
1967	132,092	79,565	60.2	76,590	58.0	2,218	74,372	3,844	70,527	2,975	3.7	52,527
1968	134,281	80,990	60.3	78,173	58.2	2,253	75,920	3,817	72,103	2,817	3.5	53,291
1969	136,573	82,972	60.8	80,140	58.7	2,238	77,902	3,606	74,296	2,832	3.4	53,602
1970	139,203	84,889	61.0	80,796	58.0	2,118	78,678	3,463	75,215	4,093	4.8	54,315
1971	142,189	86,355	60.7	81,340	57.2	1,973	79,367	3,394	75,972	5,016	5.8	55,834
1972	145,939	88,847	60.9	83,966	57.5	1,813	82,153	3,484	78,669	4,882	5.5	57,091
1973	148,870	91,203	61.3	86,838	58.3	1,774	85,064	3,470	81,594	4,355	4.8	57,667
1974	151,841	93,670	61.7	88,515	58.3	1,721	86,794	3,515	83,279	5,156	5.5	58,171
1975	154,831	95,453	61.6	87,524	56.5	1,678	85,845	3,408	82,438	7,929	8.3	59,377
1976	157,818	97,826	62.0	90,420	57.3	1,668	88,752	3,331	85,421	7,406	7.6	59,991
1977	160,889	100,665	62.6	93,673	58.3	1,656	92,017	3,283	88,734	6,991	6.9	60,025
1978	153,541	103,882	63.5	97,679	59.7	1,631	96,048	3,387	92,661	6,202	6.0	59,659
1979	166,460	106,559	64.0	100,421	60.3	1,597	98,824	3,347	95,477	6,137	5.8	59,900
1980	169,349	108,544	64.1	100,907	59.6	1,604	99,303	3,364	95,938	7,637	7.0	60,806
1981	171,775	110,315	65.2	102,042	59.4	1,645	100,397	3,368	97,030	8,273	7.5	61,460
1982	173,939	111,872	64.3	101,194	58.2	1,668	99,526	3,401	96,125	10,578	9.5	62,067
1983	175,891	113,226	64.4	102,510	58.3	1,676	100,834	3,383	97,450	10,717	9.5	62,665

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

[Numbers in thousands]

Employment status and sex	Annual average		1983					1984							
	1982	1983	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
<b>TOTAL</b>															
Noninstitutional population <sup>1,2</sup>	173,939	175,465	176,122	176,297	176,474	176,636	176,809	177,219	177,363	177,510	177,662	177,813	177,974	178,138	178,295
Labor force <sup>2</sup>	111,872	112,646	113,799	113,924	113,561	113,720	113,824	113,901	114,377	114,598	114,938	115,493	115,567	115,636	115,206
Participation rate <sup>3</sup>	64.3	64.2	64.6	64.6	64.3	64.4	64.4	64.3	64.5	64.6	64.7	65.0	64.9	64.9	64.6
Total employed <sup>2</sup>	101,194	101,277	103,166	103,571	103,665	104,291	104,629	104,876	105,576	105,826	106,095	106,978	107,438	107,093	106,681
Employment-population rate <sup>4</sup>	58.2	57.7	58.6	58.7	58.7	59.0	59.2	59.2	59.5	59.6	59.7	60.2	60.4	60.1	59.8
Resident Armed Forces <sup>1</sup>	1,668	1,671	1,682	1,695	1,695	1,685	1,688	1,686	1,684	1,686	1,693	1,690	1,690	1,698	1,712
Civilian employed	99,526	99,606	101,484	101,876	101,970	102,606	102,941	103,190	103,892	104,140	104,402	105,288	105,748	105,395	104,969
Agriculture	3,401	3,392	3,449	3,308	3,240	3,257	3,356	3,271	3,395	3,281	3,393	3,389	3,403	3,345	3,224
Nonagricultural industries	96,125	96,214	98,035	98,568	98,730	99,349	99,585	99,918	100,496	100,859	101,009	101,899	102,344	102,050	101,744
Unemployed	10,678	11,369	10,633	10,353	9,896	9,429	9,195	9,026	8,801	8,772	8,843	8,514	8,130	8,543	8,526
Unemployment rate <sup>5</sup>	9.5	10.1	9.3	9.1	8.7	8.3	8.1	7.9	7.7	7.7	7.7	7.4	7.0	7.4	7.4
Not in labor force	62,067	62,819	62,323	62,373	62,913	62,916	62,985	63,318	62,986	62,912	62,724	62,320	62,407	62,503	63,089
<b>Men, 16 years and over</b>															
Noninstitutional population <sup>1,2</sup>	83,052	84,064	84,173	84,261	84,344	84,423	84,506	84,745	84,811	84,880	84,953	85,024	85,101	85,179	85,257
Labor force <sup>2</sup>	63,979	64,580	64,807	64,877	64,709	64,846	64,838	64,930	65,093	65,156	65,212	65,307	65,452	65,362	65,244
Participation rate <sup>3</sup>	77.0	76.8	77.0	77.0	76.7	76.8	76.7	76.6	76.8	76.8	76.8	76.8	76.9	76.7	76.5
Total employed <sup>2</sup>	57,800	58,320	58,607	58,828	58,950	59,389	59,580	59,781	60,147	60,290	60,293	60,629	60,923	60,607	60,661
Employment-population rate <sup>4</sup>	69.6	69.4	69.6	69.8	69.9	70.3	70.5	70.5	70.9	71.0	71.0	71.3	71.6	71.2	71.2
Resident Armed Forces <sup>1</sup>	1,527	1,533	1,538	1,549	1,543	1,534	1,537	1,542	1,540	1,542	1,548	1,545	1,545	1,551	1,563
Civilian employed	56,271	56,787	57,069	57,279	57,407	57,855	58,043	58,239	58,607	58,748	58,745	59,084	59,378	59,056	59,098
Unemployed	6,179	6,260	6,200	6,049	5,759	5,457	5,258	5,149	4,946	4,867	4,919	4,678	4,529	4,756	4,583
Unemployment rate <sup>5</sup>	9.7	9.7	9.6	9.3	8.9	8.4	8.1	7.9	7.6	7.5	7.5	7.2	6.9	7.3	7.0
<b>Women, 16 years and over</b>															
Noninstitutional population <sup>1,2</sup>	90,887	91,827	91,949	92,036	92,129	92,214	92,302	92,474	92,552	92,630	92,709	92,789	92,873	92,958	93,039
Labor force <sup>2</sup>	47,894	48,646	48,992	49,047	48,852	48,874	48,986	48,971	49,283	49,442	49,725	50,186	50,115	50,273	49,963
Participation rate <sup>3</sup>	52.7	53.0	53.3	53.3	53.0	53.0	53.1	53.0	53.2	53.4	53.6	54.1	54.0	54.1	53.7
Total employed <sup>2</sup>	43,395	44,190	44,559	44,743	44,715	44,902	45,049	45,094	45,429	45,536	45,802	46,350	46,515	46,486	46,020
Employment-population rate <sup>4</sup>	47.7	48.1	48.5	48.6	48.5	48.7	48.8	48.8	49.1	49.2	49.4	50.0	50.1	50.0	49.5
Resident Armed Forces <sup>1</sup>	139	143	144	146	152	151	151	144	144	144	145	145	145	147	149
Civilian employed	43,256	44,047	44,415	44,597	44,563	44,751	44,898	44,950	45,285	45,392	45,657	46,205	46,370	46,339	45,871
Unemployed	4,499	4,457	4,433	4,304	4,137	3,972	3,937	3,876	3,855	3,905	3,924	3,836	3,600	3,787	3,943
Unemployment rate <sup>5</sup>	9.4	9.2	9.0	8.8	8.5	8.1	8.0	7.9	7.8	7.9	7.9	7.6	7.2	7.5	7.9

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

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

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

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

<sup>5</sup>Unemployment as a percent of the labor force (including the resident Armed Forces).



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

(Numbers in thousands)

Employment status	Annual average		1983						1984						
	1982	1983	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
<b>TOTAL</b>															
Civilian noninstitutional population <sup>1</sup>	172,271	174,215	174,440	174,602	174,779	174,951	175,121	175,533	175,679	175,824	175,969	176,123	176,284	176,440	176,583
Civilian labor force	110,204	111,550	112,117	112,229	111,866	112,035	112,136	112,215	112,693	112,912	113,245	113,803	113,877	113,938	113,494
Participation rate	64.0	64.0	64.3	64.3	64.0	64.0	64.0	63.9	64.1	64.2	64.4	64.6	64.6	64.6	64.3
Employed	99,526	100,834	101,484	101,876	101,970	102,606	102,941	103,190	103,892	104,140	104,402	105,288	105,748	105,395	104,969
Employment-population ratio <sup>2</sup>	57.8	57.9	58.2	58.3	58.3	58.6	58.8	58.8	59.1	59.2	59.3	59.8	60.0	59.7	59.4
Unemployed	10,678	10,717	10,633	10,353	9,896	9,429	9,195	9,026	8,801	8,772	8,843	8,514	8,130	8,543	8,526
Unemployment rate	9.7	9.6	9.5	9.2	8.8	8.4	8.2	8.0	7.8	7.8	7.8	7.5	7.1	7.5	7.5
Not in labor force	62,067	62,665	62,323	62,373	62,913	62,916	62,985	63,318	62,986	62,912	62,724	62,320	62,407	62,502	63,089
<b>Men, 20 years and over</b>															
Civilian noninstitutional population <sup>1</sup>	73,644	74,872	75,012	75,115	75,216	75,327	75,433	75,692	75,786	75,880	75,973	76,073	76,176	76,269	76,350
Civilian labor force	57,980	58,744	58,954	59,012	58,949	59,053	59,050	59,299	59,394	59,388	59,480	59,546	59,726	59,694	59,752
Participation rate	78.7	78.5	78.6	78.6	78.4	78.4	78.3	78.3	78.4	78.3	78.3	78.3	78.4	78.3	78.3
Employed	52,891	53,4897	53,804	53,947	54,140	54,457	54,658	54,999	55,266	55,368	55,385	55,685	55,970	55,789	55,899
Employment-population ratio <sup>2</sup>	71.8	71.4	71.7	71.8	72.0	72.3	72.5	72.7	72.9	73.0	72.9	73.2	73.5	73.1	73.2
Agriculture	2,422	2,429	2,475	2,431	2,376	2,336	2,374	2,356	2,409	2,364	2,453	2,451	2,469	2,455	2,392
Nonagricultural industries	50,469	51,058	51,329	51,516	51,764	52,121	52,284	52,643	52,857	53,004	52,932	53,234	53,501	53,344	53,507
Unemployed	5,089	5,257	5,150	5,065	4,809	4,596	4,392	4,300	4,128	4,020	4,095	3,861	3,755	3,906	3,853
Unemployment rate	8.8	8.9	8.7	8.6	8.2	7.8	7.4	7.3	7.0	6.8	6.9	6.5	6.3	6.5	6.4
<b>Women, 20 years and over</b>															
Civilian noninstitutional population <sup>1</sup>	82,864	84,069	84,224	84,333	84,443	84,553	84,666	84,860	84,962	85,064	85,168	85,272	85,380	85,488	85,581
Civilian labor force	43,699	44,636	44,896	45,062	44,936	44,953	45,024	44,981	45,258	45,459	45,703	46,222	46,101	46,261	46,082
Participation rate	52.7	53.1	53.3	53.4	53.2	53.2	53.2	53.0	53.3	53.4	53.7	54.2	54.0	54.1	53.8
Employed	40,086	41,004	41,298	41,550	41,570	41,738	41,843	41,798	42,138	42,315	42,517	43,098	43,146	43,088	42,819
Employment-population ratio <sup>2</sup>	48.4	48.8	49.0	49.3	49.2	49.4	49.4	49.3	49.6	49.7	49.9	50.5	50.5	50.4	50.0
Agriculture	601	620	627	581	597	638	653	625	640	574	619	610	623	573	563
Nonagricultural industries	39,485	40,384	40,671	40,969	40,973	41,100	41,190	41,174	41,498	41,741	41,898	42,487	42,523	42,515	42,255
Unemployed	3,613	3,632	3,598	3,512	3,366	3,215	3,181	3,182	3,120	3,144	3,186	3,124	2,955	3,173	3,264
Unemployment rate	8.3	8.1	8.0	7.8	7.5	7.2	7.1	7.1	6.9	6.9	7.0	6.8	6.4	6.9	7.1
<b>Both sexes, 16 to 19 years</b>															
Civilian noninstitutional population <sup>1</sup>	15,763	15,274	15,204	15,154	15,120	15,072	15,022	14,981	14,931	14,880	14,828	14,778	14,728	14,683	14,653
Civilian labor force	8,526	8,171	8,267	8,155	7,981	8,029	8,062	7,935	8,041	8,065	8,062	8,034	8,050	7,982	7,660
Participation rate	54.1	53.5	54.4	53.8	52.8	53.3	53.2	53.0	53.9	54.2	54.4	54.4	54.7	54.4	52.3
Employed	6,549	6,342	6,382	6,379	6,260	6,411	6,440	6,392	6,488	6,457	6,500	6,505	6,631	6,518	6,251
Employment-population ratio <sup>2</sup>	41.5	41.5	42.0	42.1	41.4	42.5	42.9	42.7	43.5	43.4	43.8	44.0	45.0	44.4	42.7
Agriculture	378	334	347	296	267	283	329	290	346	343	321	327	311	317	269
Nonagricultural industries	6,171	6,008	6,035	6,083	5,993	6,128	6,111	6,102	6,142	6,114	6,179	6,178	6,320	6,201	5,982
Unemployed	1,977	1,829	1,885	1,776	1,721	1,618	1,622	1,543	1,553	1,608	1,562	1,529	1,419	1,464	1,409
Unemployment rate	23.2	22.4	22.8	21.8	21.6	20.2	20.1	19.4	19.3	19.9	19.4	19.0	17.6	18.3	18.4
<b>White</b>															
Civilian noninstitutional population <sup>1</sup>	149,441	150,805	151,003	151,021	151,175	151,324	151,484	151,939	152,079	152,285	152,178	152,229	152,295	152,286	152,402
Civilian labor force	96,143	97,021	97,498	97,507	97,339	97,559	97,724	97,813	98,167	98,424	98,495	98,853	98,770	98,710	98,156
Participation rate	64.3	64.3	64.6	64.6	64.4	64.5	64.5	64.4	64.6	64.6	64.9	64.9	64.9	64.8	64.4
Employed	87,903	88,893	89,503	89,693	89,851	90,430	90,779	91,044	91,544	91,845	91,933	92,505	92,697	92,430	91,850
Employment-population ratio <sup>2</sup>	58.8	58.9	59.3	59.3	59.4	59.8	59.9	59.9	60.2	60.3	60.4	60.8	60.9	60.7	60.3
Unemployed	8,241	8,128	7,995	7,814	7,488	7,129	6,945	6,768	6,623	6,580	6,562	6,348	6,072	6,280	6,306
Unemployment rate	8.6	8.4	8.2	8.0	7.7	7.3	7.1	6.9	6.7	6.7	6.7	6.4	6.1	6.4	6.4
<b>Black</b>															
Civilian noninstitutional population <sup>1</sup>	18,584	18,925	18,966	18,994	19,026	19,057	19,086	19,196	19,222	19,248	19,274	19,302	19,330	19,360	19,386
Civilian labor force	11,331	11,647	11,724	11,720	11,565	11,623	11,650	11,660	11,881	11,867	11,934	12,008	11,962	12,076	12,176
Participation rate	61.0	61.5	61.8	61.7	60.8	61.0	61.0	60.7	61.8	61.7	61.9	62.5	61.9	62.4	62.8
Employed	9,189	9,375	9,408	9,504	9,449	9,563	9,582	9,707	9,958	9,896	9,923	10,105	10,168	10,041	10,226
Employment-population ratio <sup>2</sup>	49.4	49.5	49.6	50.0	49.7	50.2	50.2	50.6	51.8	51.4	51.5	52.4	52.6	51.9	52.8
Unemployed	2,142	2,272	2,316	2,216	2,116	2,060	2,068	1,953	1,923	1,972	2,011	1,903	1,795	2,035	1,950
Unemployment rate	18.9	19.5	19.8	18.9	18.3	17.7	17.8	16.7	16.2	16.6	16.8	15.8	15.0	16.9	16.0
<b>Hispanic origin</b>															
Civilian noninstitutional population <sup>1</sup>	9,400	12,771	9,690	9,700	9,745	9,677	9,735	9,778	9,906	10,080	10,072	10,026	9,824	9,738	9,785
Civilian labor force	5,983	8,119	6,145	6,262	6,165	6,232	6,267	6,336	6,292	6,484	6,378	6,332	6,298	6,293	6,271
Participation rate	63.6	63.6	63.4	63.9	63.3	64.4	64.4	64.8	63.5	64.3	63.3	63.2	64.1	64.6	64.1
Employed	5,158	6,995	5,350	5,392	5,398	5,463	5,540	5,627	5,652	5,751	5,643	5,666	5,669	5,626	5,600
Employment-population ratio <sup>2</sup>	54.9	54.8	55.2	55.6	55.4	56.5	56.9	57.6	57.1	57.1	56.0	56.5	57.7	57.8	57.2
Unemployed	825	1,124	795	810	767	769	727	708	639	733	735	666	629	667	672
Unemployment rate	13.8	13.8	12.9	13.1	12.4	12.3	11.6	11.2	10.2	11.3	11.5	10.5	10.0	10.6	10.7

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

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

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

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

[In thousands]

Selected categories	Annual average		1983					1984							
	1982	1983	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
<b>CHARACTERISTIC</b>															
Civilian employed, 16 years and over	99,526	100,834	101,484	101,876	101,970	102,606	102,941	103,190	103,892	104,140	104,402	105,288	105,748	105,395	104,969
Men	56,271	56,787	57,069	57,279	57,407	57,855	58,043	58,239	58,607	58,748	58,745	59,084	59,378	59,056	59,098
Women	43,256	44,047	44,415	44,597	44,563	44,751	44,898	44,950	45,285	45,392	45,657	46,205	46,370	46,339	45,871
Married men, spouse present	38,074	37,967	38,281	38,232	38,240	38,388	38,494	38,682	38,911	38,927	39,062	39,159	39,072	39,121	39,029
Married women, spouse present	24,053	24,603	24,905	24,921	24,953	25,057	25,140	24,947	25,212	25,239	25,457	25,722	25,786	25,716	25,764
Women who maintain families	5,099	5,091	5,096	5,124	5,172	5,236	5,254	5,293	5,346	5,444	5,491	5,668	5,688	5,662	5,507
<b>MAJOR INDUSTRY AND CLASS OF WORKER</b>															
<b>Agriculture:</b>															
Wage and salary workers	1,505	1,579	1,628	1,572	1,505	1,481	1,512	1,443	1,560	1,515	1,661	1,610	1,604	1,513	1,425
Self-employed workers	1,636	1,565	1,564	1,515	1,527	1,556	1,572	1,613	1,609	1,580	1,534	1,537	1,570	1,559	1,568
Unpaid family workers	261	240	240	236	227	224	265	233	232	198	207	246	212	230	208
<b>Nonagricultural industries:</b>															
Wage and salary workers	88,462	89,500	90,032	90,743	90,617	91,094	91,422	91,641	92,379	92,819	92,931	93,928	94,040	93,841	93,554
Government	15,562	15,537	15,671	15,560	15,578	15,585	15,481	15,535	15,822	15,813	15,784	15,761	15,685	15,604	15,782
Private industries	72,945	73,963	74,361	75,183	75,039	75,509	75,941	76,106	76,557	77,006	77,147	78,167	78,355	78,236	77,772
Private households	1,207	1,247	1,270	1,279	1,278	1,216	1,241	1,197	1,219	1,155	1,296	1,347	1,329	1,239	1,181
Other	71,738	72,716	73,091	73,904	73,761	74,293	74,700	74,909	75,339	75,851	75,851	76,820	77,026	76,997	76,591
Self-employed workers	7,262	7,575	7,641	7,656	7,695	7,800	7,734	7,936	7,849	7,755	7,834	7,707	7,828	7,717	7,829
Unpaid family workers	401	376	375	380	405	474	450	364	330	326	338	311	348	306	324
<b>PERSONS AT WORK<sup>1</sup></b>															
Nonagricultural industries	90,552	92,038	91,953	93,322	93,273	93,834	94,173	94,707	95,067	94,982	96,918	96,523	96,500	96,848	96,921
Full-time schedules	72,245	73,624	73,499	74,666	75,047	75,398	75,802	76,237	76,715	77,004	78,276	78,280	78,496	78,659	78,799
Part time for economic reasons	5,852	5,997	5,866	6,027	5,724	5,848	5,712	5,943	5,808	5,463	5,593	5,353	5,491	5,300	5,324
Usually work full time	2,169	1,826	1,742	1,771	1,617	1,719	1,672	1,771	1,611	1,472	1,530	1,549	1,654	1,589	1,749
Usually work part time	3,683	4,171	4,124	4,256	4,107	4,129	4,040	4,172	4,197	3,991	4,063	3,804	3,837	3,711	3,576
Part time for noneconomic reasons	12,455	12,417	12,588	12,629	12,502	12,588	12,659	12,527	12,545	12,515	13,049	12,889	12,514	12,889	12,797

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

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

[Unemployment rates]

Selected categories	Annual average		1983					1984							
	1982	1983	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
<b>CHARACTERISTIC</b>															
Total, all civilian workers	9.7	9.6	9.5	9.2	8.8	8.4	8.2	8.0	7.8	7.8	7.8	7.5	7.1	7.5	7.5
Both sexes, 16 to 19 years	23.2	22.4	22.8	21.8	21.6	20.2	20.1	19.4	19.3	19.9	19.4	19.0	17.6	18.3	18.4
Men, 20 years and over	8.8	8.9	8.7	8.6	8.2	7.8	7.4	7.3	7.0	6.8	6.9	6.5	6.3	6.5	6.4
Women, 20 years and over	8.3	8.1	8.0	7.8	7.5	7.2	7.1	7.1	6.9	6.9	7.0	6.8	6.4	6.9	7.1
White, total	8.6	8.4	8.2	8.0	7.7	7.3	7.1	6.9	6.7	6.7	6.7	6.4	6.1	6.4	6.4
Both sexes, 16 to 19 years	20.4	19.3	19.5	18.2	18.5	17.2	17.0	16.2	16.5	17.1	16.2	16.2	15.5	15.3	15.9
Men, 16 to 19 years	21.7	20.2	20.7	18.9	19.8	17.6	17.5	17.8	16.4	17.3	16.6	16.8	16.5	17.8	16.2
Women, 16 to 19 years	19.0	18.3	18.2	17.4	16.9	16.6	16.5	14.5	16.7	16.8	15.7	15.5	14.5	12.6	15.5
Men, 20 years and over	7.8	7.9	7.7	7.7	7.3	6.9	6.7	6.3	6.1	5.8	5.9	5.6	5.3	5.5	5.5
Women, 20 years and over	7.3	6.9	6.7	6.6	6.3	6.0	5.9	6.0	5.8	5.9	6.0	5.8	5.6	5.9	6.0
Black, total	18.9	19.5	19.8	18.9	18.3	17.7	17.8	16.7	16.2	16.6	16.8	15.8	15.0	16.9	16.0
Both sexes, 16 to 19 years	48.0	48.5	51.4	51.1	48.7	47.3	49.0	47.9	43.5	46.7	44.8	44.1	34.3	42.4	41.7
Men, 16 to 19 years	48.9	48.8	53.7	52.7	45.6	44.9	46.4	47.1	46.7	44.4	42.8	40.9	35.3	42.6	40.6
Women, 16 to 19 years	47.1	48.2	48.8	49.2	52.2	50.0	51.9	48.8	39.9	49.6	47.1	48.2	33.1	42.1	42.9
Men, 20 years and over	17.8	18.1	18.2	16.9	16.3	15.6	15.1	14.8	14.1	15.4	16.0	14.1	14.8	15.7	14.2
Women, 20 years and over	15.4	16.5	16.4	16.1	15.9	15.6	15.9	14.3	14.4	13.5	13.4	13.6	12.4	14.0	14.1
Hispanic origin, total	13.8	13.8	12.9	13.1	12.4	12.3	11.6	11.2	10.2	11.3	11.5	10.5	10.0	10.6	10.7
Married men, spouse present	6.5	6.5	6.3	6.1	5.7	5.5	5.2	5.0	4.9	4.7	4.7	4.5	4.5	4.6	4.4
Married women, spouse present	7.4	7.0	6.9	6.8	6.3	6.0	6.1	6.0	5.9	5.8	5.8	5.6	5.6	5.9	6.0
Women who maintain families	11.7	12.2	11.8	12.0	11.4	10.5	10.9	10.7	11.0	11.0	10.5	9.8	9.6	9.6	10.5
Full-time workers	9.6	9.5	9.3	9.1	8.7	8.2	8.0	7.8	7.5	7.5	7.6	7.2	6.7	7.2	7.2
Part-time workers	10.5	10.4	10.2	10.1	10.0	9.8	9.8	9.2	9.3	9.2	9.1	9.3	10.3	9.6	9.6
Unemployed 15 weeks and over	3.2	3.8	3.6	3.5	3.3	3.1	3.0	2.9	2.6	2.5	2.5	2.3	2.4	2.3	2.3
Labor force time lost <sup>1</sup>	11.0	10.9	10.7	10.5	10.0	9.7	9.4	9.2	8.9	8.8	8.9	8.5	8.3	8.7	8.5
<b>INDUSTRY</b>															
Nonagricultural private wage and salary workers	10.1	9.9	9.8	9.4	9.0	8.6	8.3	7.9	7.8	7.6	7.7	7.2	7.0	7.4	7.5
Mining	13.4	17.0	14.9	16.9	12.1	12.8	12.4	10.9	12.2	11.2	10.3	8.9	7.1	7.5	10.3
Construction	20.0	18.4	17.9	18.1	15.8	15.6	16.3	15.0	15.1	13.3	14.3	14.8	14.8	14.7	14.0
Manufacturing	12.3	11.2	11.2	10.2	9.6	8.9	8.3	8.4	7.5	7.5	7.7	7.1	7.2	7.5	7.5
Durable goods	13.3	12.1	11.7	10.9	10.2	9.0	8.3	8.0	7.3	7.8	7.5	7.0	7.2	6.7	6.9
Nondurable goods	10.8	10.0	10.5	9.3	8.7	8.7	8.2	8.9	7.8	7.2	8.0	7.1	7.3	8.6	8.3
Transportation and public utilities	6.8	7.4	7.7	7.4	7.2	6.7	6.5	5.1	5.9	5.0	5.4	5.5	5.2	6.1	6.2
Wholesale and retail trade	10.0	10.0	9.8	9.5	9.8	9.1	8.8	8.4	8.3	8.3	8.7	7.9	7.2	7.8	7.8
Finance and service industries	6.9	7.2	7.2	7.0	6.9	6.7	6.6	6.3	6.3	6.4	6.1	5.5	5.4	5.9	6.1
Government workers	4.9	5.3	5.1	5.0	5.1	4.9	5.0	5.0	4.5	4.4	4.4	4.7	4.1	4.5	4.3
Agricultural wage and salary workers	14.7	16.0	15.1	16.5	16.2	15.7	15.6	15.5	14.0	14.6	12.2	13.9	11.8	14.6	12.8

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

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

[Civilian workers]

Sex and age	Annual average		1983					1984							
	1982	1983	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
Total, 16 years and over	9.7	9.6	9.5	9.2	8.8	8.4	8.2	8.0	7.8	7.8	7.8	7.5	7.1	7.5	7.5
16 to 24 years	17.8	17.2	17.2	16.5	16.3	15.4	14.9	14.8	14.2	14.4	14.6	14.0	13.0	13.6	14.0
16 to 19 years	23.2	22.4	22.8	21.8	21.6	20.2	20.1	19.4	19.3	19.9	19.4	19.0	17.6	18.3	18.4
16 to 17 years	24.9	24.5	24.8	24.0	24.0	21.9	22.9	21.9	22.1	23.1	22.3	20.2	19.7	20.5	21.4
18 to 19 years	22.1	21.1	21.6	20.5	20.3	19.3	18.8	17.6	17.5	18.1	17.5	18.2	16.3	16.7	16.7
20 to 24 years	14.9	14.5	13.9	14.4	13.8	13.6	13.0	12.2	12.5	11.6	11.6	12.2	11.5	10.7	11.8
25 years and over	7.4	7.5	7.3	7.2	6.8	6.5	6.4	6.2	6.1	5.9	6.0	5.7	5.6	5.9	5.8
25 to 54 years	7.9	8.0	7.8	7.7	7.2	6.9	6.8	6.5	6.4	6.3	6.3	6.0	5.7	6.2	6.1
55 years and over	5.0	5.3	5.1	5.2	5.0	4.9	4.9	4.7	4.3	4.3	4.2	4.4	4.6	4.4	4.6
Men, 16 years and over	9.9	9.9	9.8	9.6	9.1	8.6	8.3	8.1	7.8	7.7	7.7	7.3	7.1	7.5	7.2
16 to 24 years	19.1	18.4	18.6	17.6	17.3	15.9	15.6	15.6	14.6	14.6	15.0	14.0	13.7	14.6	14.3
16 to 19 years	24.4	23.3	24.3	22.8	22.5	20.2	20.4	20.8	19.7	20.0	19.7	19.4	18.5	20.6	18.6
16 to 17 years	26.4	25.2	26.0	23.9	24.3	22.0	23.3	21.6	21.6	23.0	23.7	21.3	22.7	23.0	22.1
18 to 19 years	23.1	22.2	23.2	22.2	21.6	19.6	18.9	19.6	18.1	18.2	17.3	18.3	16.1	18.8	16.5
20 to 24 years	16.4	15.9	15.7	15.0	14.7	13.8	13.3	13.1	12.1	11.9	12.7	11.5	11.4	11.7	12.3
25 years and over	7.5	7.8	7.5	7.5	7.0	6.8	6.5	6.2	6.1	5.9	5.9	5.7	5.4	5.7	5.5
25 to 54 years	8.0	8.2	8.0	8.0	7.4	7.1	6.7	6.6	6.4	6.1	6.2	5.9	5.6	5.9	5.7
55 years and over	5.1	5.6	5.4	5.6	5.4	5.4	5.4	4.8	4.5	4.6	4.4	4.5	4.3	4.6	4.6
Women, 16 years and over	9.4	9.2	9.1	8.8	8.5	8.2	8.1	7.9	7.8	7.9	7.9	7.7	7.2	7.6	7.9
16 to 24 years	16.2	15.8	15.7	15.2	15.1	14.7	14.0	13.9	13.7	14.2	14.1	14.0	12.2	12.5	13.7
16 to 19 years	21.9	21.3	21.1	20.6	20.5	20.1	19.8	18.0	18.9	19.8	19.0	18.6	16.7	15.9	18.2
16 to 17 years	23.2	23.7	23.4	24.0	23.6	21.8	22.5	22.2	22.6	23.1	20.8	19.0	16.4	17.9	20.6
18 to 19 years	21.0	19.9	19.9	18.5	18.8	19.0	18.7	15.4	16.9	18.1	17.8	18.1	16.5	14.4	16.9
20 to 24 years	13.2	12.9	12.8	12.5	12.3	12.0	11.0	11.7	11.0	11.3	11.6	11.6	9.9	10.8	11.4
25 years and over	7.3	7.2	7.0	6.9	6.5	6.2	6.3	6.2	6.1	6.0	6.0	5.8	5.8	6.1	6.3
25 to 54 years	7.7	7.7	7.5	7.3	7.0	6.6	6.8	6.5	6.5	6.5	6.4	6.1	5.8	6.5	6.6
55 years and over	4.8	4.7	4.7	4.5	4.4	4.1	4.3	4.5	4.0	3.9	3.9	4.3	5.0	4.2	4.4

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

[Numbers in thousands]

Reason for unemployment	Annual average		1983					1984							
	1982	1983	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
Job losers	6,258	6,258	6,133	5,938	5,601	5,226	5,017	4,825	4,737	4,614	4,527	4,327	4,220	4,511	4,218
On layoff	2,127	1,780	1,660	1,562	1,392	1,321	1,283	1,238	1,272	1,254	1,108	1,192	1,166	1,164	1,152
Other job losers	4,141	4,478	4,473	4,376	4,209	3,905	3,734	3,588	3,465	3,360	3,419	3,134	3,055	3,346	3,066
Job leavers	840	830	799	858	866	868	855	809	772	756	781	804	800	865	835
Reentrants	2,384	2,412	2,479	2,362	2,322	2,250	2,246	2,192	2,153	2,208	2,308	2,178	1,968	2,091	2,322
New entrants	1,185	1,216	1,214	1,234	1,127	1,154	1,150	1,175	1,092	1,213	1,216	1,186	1,136	1,092	1,093
<b>PERCENT DISTRIBUTION</b>															
Total unemployed	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Job losers	58.7	58.4	57.7	57.1	56.5	55.0	54.1	53.6	54.1	52.5	51.3	50.9	51.9	52.7	49.8
On layoff	19.9	16.6	15.6	15.0	14.0	13.9	13.8	13.7	14.5	14.3	12.5	14.0	14.4	13.6	13.6
Other job losers	38.8	41.8	42.1	42.1	42.4	41.1	40.3	39.9	39.6	38.2	38.7	36.9	37.6	39.1	36.2
Job leavers	7.9	7.7	7.5	8.3	8.7	9.1	9.2	9.0	8.8	8.6	8.8	9.5	9.8	10.1	9.9
Reentrants	22.3	22.5	23.3	22.7	23.4	23.7	24.2	24.4	24.6	25.1	26.1	25.6	24.2	24.4	27.4
New entrants	11.1	11.3	11.4	11.9	11.4	12.1	12.4	13.1	12.5	13.8	13.8	14.0	14.0	12.8	12.9
<b>PERCENT OF CIVILIAN LABOR FORCE</b>															
Job losers	5.7	5.6	5.5	5.3	5.0	4.7	4.5	4.3	4.2	4.1	4.0	3.8	3.7	4.0	3.7
Job leavers	.8	.7	.7	.8	.8	.8	.8	.7	.7	.7	.7	.7	.7	.8	.7
Reentrants	2.2	2.2	2.2	2.1	2.1	2.0	2.0	2.0	1.9	2.0	2.0	1.9	1.7	1.8	2.0
New entrants	1.1	1.1	1.1	1.1	1.0	1.0	1.0	1.0	1.0	1.1	1.1	1.0	1.0	1.0	1.0

## 8. Duration of unemployment, seasonally adjusted

[Numbers in thousands]

Weeks of unemployment	Annual average		1983					1984							
	1982	1983	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.
Less than 5 weeks	3,883	3,570	3,633	3,740	3,504	3,328	3,382	3,233	3,359	3,386	3,438	3,238	3,174	3,462	3,555
5 to 14 weeks	3,311	2,937	2,951	2,784	2,725	2,616	2,504	2,556	2,484	2,539	2,493	2,433	2,294	2,490	2,333
15 weeks and over	3,485	4,210	4,078	3,889	3,655	3,527	3,369	3,201	2,984	2,873	2,855	2,851	2,619	2,689	2,606
15 to 26 weeks	1,708	1,652	1,597	1,383	1,372	1,337	1,284	1,166	1,173	1,114	1,111	1,186	1,008	1,100	1,113
27 weeks and over	1,776	2,559	2,481	2,506	2,283	2,190	2,085	2,035	1,810	1,759	1,744	1,664	1,611	1,589	1,493
Mean duration in weeks	15.6	20.0	19.9	20.2	20.1	20.2	19.6	20.5	18.8	18.8	18.5	18.4	18.6	18.1	17.3
Median duration in weeks	8.7	10.1	9.4	9.4	9.5	9.4	9.0	9.2	8.3	8.3	8.1	8.7	7.2	7.6	7.5



## 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 195,000 establishments representing all industries except agriculture. In most industries, the sampling probabilities are based on the size of the establishment; most large establishments are therefore in the sample. (An establishment is not necessarily a firm; it may be a branch plant, for example, or warehouse.) Self-employed persons and others not on a regular civilian payroll are outside the scope of the survey because they are excluded from establishment records. This largely accounts for the difference in employment figures between the household and establishment surveys.

### Definitions

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

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

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

in manufacturing (the only sector for which overtime data are available) and the effects of changes and seasonal factors in the proportion of workers in high-wage and low-wage industries.

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

**The Diffusion Index**, introduced in table 17 of the May 1983 issue, represents the percent of 185 nonagricultural industries in which employment was rising over the indicated period. One-half of the industries with unchanged employment are counted as rising. In line with Bureau practice, data for the 3-, 6-, and 9-month spans are seasonally adjusted, while that for the 12-month span is unadjusted. The diffusion index is useful for measuring the dispersion of economic gains or losses and is also an economic indicator.

### Notes on the data

Establishment data collected by the Bureau of Labor Statistics are periodically adjusted to comprehensive counts of employment (called "benchmarks"). The latest complete adjustment was made with the release of May 1984 data, published in the July 1984 issue of the *Review*. Consequently, data published in the *Review* prior to that issue are not necessarily comparable to current data. Unadjusted data have been revised back to April 1982; seasonally adjusted data have been revised back to January 1979. Unadjusted data from April 1983 forward, and seasonally adjusted data from January 1980 forward are subject to revision in future benchmarks. Earlier comparable unadjusted and seasonally adjusted data are published in a *Supplement to Employment and Earnings* (unadjusted data from April 1977 through February 1984 and seasonally adjusted data from January 1974 through February 1984) 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*, Bulletin 2134-1 (Bureau of Labor Statistics, 1982).

### 9. Employment, by industry, selected years, 1950-83

[Nonagricultural payroll data, in thousands]

Year	Total	Private sector	Goods-producing				Service-producing									
			Total	Mining	Construction	Manufacturing	Total	Transportation and public utilities	Wholesale trade	Retail trade	Finance, insurance, and real estate	Services	Government			
													Total	Federal	State	Local
1950	45,197	39,170	18,506	901	2,364	15,241	26,691	4,034	2,635	6,751	1,888	5,357	6,026	1,928	(1)	(1)
1955	50,641	43,727	20,513	792	2,839	16,882	30,128	4,141	2,926	7,610	2,298	6,240	6,914	2,187	1,168	3,558
1960 <sup>2</sup>	54,189	45,836	20,434	712	2,926	16,796	33,755	4,004	3,143	8,248	2,629	7,378	8,353	2,270	1,536	4,547
1964	58,283	48,686	21,005	634	3,097	17,274	37,278	3,951	3,337	8,823	2,911	8,660	9,596	2,348	1,856	5,392
1965	60,765	50,689	21,926	632	3,232	18,062	38,839	4,036	3,466	9,250	2,977	9,036	10,074	2,378	1,996	5,700
1966	63,901	53,116	23,158	627	3,317	19,214	40,743	4,158	3,597	9,648	3,058	9,498	10,784	2,564	2,141	6,080
1967	65,803	54,413	23,308	613	3,248	19,447	42,495	4,268	3,689	9,917	3,185	10,045	11,391	2,719	2,302	6,371
1968	67,897	56,058	23,737	606	3,350	19,781	44,160	4,318	3,779	10,320	3,337	10,567	11,839	2,737	2,442	6,660
1969	70,384	58,189	24,361	619	3,575	20,167	46,023	4,442	3,907	10,798	3,512	11,169	12,195	2,758	2,533	6,904
1970	70,880	58,325	23,578	623	3,588	19,367	47,302	4,515	3,993	11,047	3,645	11,548	12,554	2,731	2,664	7,158
1971	71,214	58,331	22,935	609	3,704	18,623	48,278	4,476	4,001	11,351	3,772	11,797	12,881	2,696	2,747	7,437
1972	73,675	60,341	23,668	628	3,889	19,151	50,007	4,541	4,113	11,836	3,908	12,276	13,334	2,684	2,859	7,790
1973	76,790	63,058	24,893	642	4,097	20,154	51,897	4,656	4,277	12,329	4,046	12,857	13,732	2,663	2,923	8,146
1974	78,265	64,095	24,794	697	4,020	20,077	53,471	4,725	4,433	12,554	4,148	13,441	14,170	2,724	3,039	8,407
1975	76,945	62,259	22,600	752	3,525	18,323	54,345	4,542	4,415	12,645	4,165	13,892	14,686	2,748	3,179	8,758
1976	79,382	64,511	23,352	779	3,576	18,997	56,030	4,582	4,546	13,209	4,271	14,551	14,871	2,733	3,273	8,865
1977	82,471	67,344	24,346	813	3,851	19,682	58,125	4,713	4,708	13,808	4,467	15,303	15,127	2,727	3,377	9,023
1978	86,697	71,026	25,585	851	4,229	20,505	61,113	4,923	4,969	14,573	4,724	16,252	15,672	2,753	3,474	9,446
1979	89,823	73,876	26,461	958	4,463	21,040	63,363	5,136	5,204	14,989	4,975	17,112	15,947	2,773	3,541	9,633
1980	90,406	74,166	25,658	1,027	4,346	20,285	64,748	5,146	5,275	15,035	5,160	17,890	16,241	2,866	3,610	9,765
1981	91,156	75,126	25,497	1,139	4,188	20,170	65,659	5,165	5,358	15,189	5,298	18,619	16,031	2,772	3,640	9,619
1982	89,566	73,729	23,813	1,128	3,905	18,781	65,753	5,082	5,278	15,179	5,341	19,036	15,837	2,739	3,640	9,458
1983	90,138	74,288	23,394	957	3,940	18,497	66,744	4,958	5,259	15,545	5,467	19,665	15,851	2,752	3,660	9,439

<sup>1</sup>Not available.

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

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

### 10. Employment, by State

[Nonagricultural payroll data, in thousands]

State	July 1983	June 1984	July 1984 <sup>p</sup>	State	July 1983	June 1984	July 1984 <sup>p</sup>
Alabama	1,332.0	1,359.5	1,351.4	Montana	269.0	280.9	272.4
Alaska	233.2	225.7	234.3	Nebraska	609.7	631.9	625.9
Arizona	1,044.0	1,124.7	1,109.3	Nevada	408.2	420.3	421.6
Arkansas	736.9	768.2	766.2	New Hampshire	417.4	431.8	434.8
California	9,896.0	10,387.7	10,328.5	New Jersey	3,202.8	3,317.5	3,312.6
Colorado	1,322.3	1,369.2	1,356.9	New Mexico	482.8	500.9	496.4
Connecticut	1,442.6	1,499.0	1,485.7	New York	7,304.3	7,545.2	7,501.2
Delaware	271.3	273.5	273.2	North Carolina	2,376.9	2,498.1	2,445.9
District of Columbia	613.1	602.2	617.0	North Dakota	251.7	254.2	251.9
Florida	3,847.0	4,119.3	4,078.6	Ohio	4,082.0	4,220.4	4,178.7
Georgia	2,273.2	2,411.9	2,407.5	Oklahoma	1,168.5	1,190.5	1,181.2
Hawaii	406.1	406.8	408.2	Oregon	963.1	1,004.6	980.9
Idaho	317.5	329.8	325.0	Pennsylvania	4,537.7	4,660.6	4,623.0
Illinois	4,532.7	4,588.6	4,588.8	Rhode Island	391.5	407.0	400.0
Indiana	2,011.7	2,060.8	2,065.7	South Carolina	1,177.6	1,243.2	1,240.3
Iowa	1,010.1	1,036.2	1,023.4	South Dakota	236.8	250.2	243.7
Kansas	911.6	943.9	930.5	Tennessee	1,717.3	1,824.5	1,823.9
Kentucky	1,137.6	1,199.8	1,179.1	Texas	6,172.7	6,353.4	6,340.2
Louisiana	1,565.9	1,581.0	1,573.4	Utah	564.1	600.2	596.1
Maine	430.3	440.8	445.0	Vermont	205.0	207.6	209.6
Maryland	1,712.0	1,769.2	1,757.9	Virginia	2,215.4	2,315.4	2,285.6
Massachusetts	2,670.7	2,762.7	2,729.4	Washington	1,585.9	1,652.9	1,633.9
Michigan	3,182.0	3,298.0	3,265.1	West Virginia	588.4	594.2	594.0
Minnesota	1,716.4	1,832.2	1,819.7	Wisconsin	1,854.4	1,927.9	1,918.3
Mississippi	788.2	800.4	794.8	Wyoming	203.3	213.1	209.1
Missouri	1,910.2	1,965.6	1,937.7	Virgin Islands	36.4	34.5	35.5

p = preliminary.

**11. Employment, by industry, seasonally adjusted**

[Nonagricultural payroll data, in thousands]

Industry division and group	Annual average		1983					1984							
	1982	1983	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July <sup>P</sup>	Aug. <sup>P</sup>
<b>TOTAL</b>	89,566	90,138	89,918	91,018	91,345	91,688	92,026	92,391	92,846	93,058	93,449	93,768	94,135	94,351	94,510
<b>PRIVATE SECTOR</b>	73,729	74,288	74,110	75,083	75,481	75,814	76,157	76,533	76,971	77,185	77,546	77,864	78,241	78,411	78,575
<b>GOODS-PRODUCING</b>	23,813	23,394	23,532	23,669	23,895	24,058	24,198	24,383	24,577	24,595	24,760	24,851	24,974	25,068	25,112
<b>Mining</b>	1,128	957	950	952	965	967	969	975	978	978	984	995	1,002	1,007	1,015
Oil and gas extraction	708	600	590	594	600	603	607	608	607	607	612	619	623	629	629
<b>Construction</b>	3,905	3,940	3,985	4,019	4,044	4,073	4,086	4,154	4,226	4,151	4,246	4,286	4,343	4,350	4,357
General building contractors	991	1,015	1,037	1,043	1,053	1,064	1,077	1,100	1,111	1,099	1,110	1,126	1,135	1,130	1,133
<b>Manufacturing</b>	18,781	18,497	18,597	18,698	18,886	19,018	19,143	19,254	19,373	19,466	19,530	19,570	19,629	19,711	19,740
Production workers	12,742	12,581	12,679	12,759	12,928	13,048	13,145	13,234	13,326	13,388	13,443	13,465	13,492	13,555	13,572
<b>Durable goods</b>	11,039	10,774	10,846	10,923	11,071	11,170	11,266	11,343	11,440	11,513	11,551	11,598	11,652	11,709	11,763
Production workers	7,311	7,151	7,224	7,289	7,421	7,511	7,585	7,643	7,718	7,769	7,799	7,826	7,860	7,910	7,959
Lumber and wood products	598	658	675	680	690	695	698	702	706	712	714	711	712	708	705
Furniture and fixtures	432	447	453	456	462	467	470	475	480	483	482	482	485	487	489
Stone, clay, and glass products	577	573	578	581	587	589	592	595	604	606	604	605	605	605	604
Primary metal industries	922	838	840	849	863	869	877	871	877	879	887	884	884	882	880
Blast furnaces and basic steel products	396	343	344	346	351	351	352	347	348	347	345	347	345	341	336
Fabricated metal products	1,427	1,374	1,384	1,389	1,408	1,420	1,431	1,440	1,447	1,456	1,459	1,469	1,479	1,490	1,493
Machinery, except electrical	2,244	2,038	2,051	2,058	2,077	2,106	2,122	2,137	2,151	2,166	2,189	2,203	2,226	2,244	2,255
Electrical and electronic equipment	2,008	2,024	2,022	2,062	2,086	2,109	2,132	2,152	2,175	2,202	2,212	2,228	2,237	2,253	2,266
Transportation equipment	1,735	1,756	1,776	1,780	1,820	1,832	1,855	1,876	1,898	1,905	1,905	1,906	1,917	1,928	1,957
Motor vehicles and equipment	699	758	779	783	810	823	843	858	865	863	857	848	855	860	889
Instruments and related products	716	695	694	698	702	705	707	711	715	718	719	722	723	726	728
Miscellaneous manufacturing	382	371	373	370	376	378	382	384	387	388	388	385	384	386	386
<b>Nondurable goods</b>	7,741	7,724	7,751	7,775	7,815	7,848	7,877	7,911	7,933	7,953	7,979	7,972	7,977	8,002	7,977
Production workers	5,431	5,430	5,455	5,470	5,507	5,537	5,560	5,591	5,608	5,619	5,644	5,639	5,632	5,645	5,613
Food and kindred products	1,636	1,622	1,621	1,624	1,624	1,629	1,631	1,638	1,637	1,638	1,648	1,643	1,644	1,654	1,641
Tobacco manufactures	69	69	66	68	68	66	67	66	65	66	67	67	67	66	62
Textile mill products	749	744	751	753	758	760	762	758	767	769	766	762	759	755	750
Apparel and other textile products	1,161	1,164	1,170	1,174	1,186	1,195	1,202	1,207	1,213	1,218	1,226	1,217	1,209	1,212	1,215
Paper and allied products	662	662	663	666	669	671	675	676	680	680	680	681	685	687	686
Printing and publishing	1,272	1,296	1,302	1,305	1,311	1,317	1,321	1,328	1,333	1,339	1,348	1,356	1,362	1,369	1,371
Chemicals and allied products	1,075	1,047	1,046	1,047	1,049	1,050	1,052	1,053	1,054	1,054	1,057	1,057	1,062	1,064	1,066
Petroleum and coal products	201	195	194	194	192	192	191	191	190	190	189	188	188	187	187
Rubber and miscellaneous plastics products	697	718	730	735	748	758	766	774	784	790	790	795	797	803	800
Leather and leather products	219	208	208	209	210	210	210	210	210	209	208	206	204	205	199
<b>SERVICE-PRODUCING</b>	65,753	66,744	66,386	67,349	67,450	67,630	67,828	68,008	68,269	68,463	68,689	68,917	69,161	69,283	69,398
<b>Transportation and public utilities</b>	5,082	4,958	4,369	5,046	5,053	5,043	5,055	5,095	5,105	5,112	5,129	5,144	5,163	5,173	5,182
Transportation	2,789	2,739	2,751	2,768	2,776	2,763	2,776	2,816	2,828	2,839	2,862	2,871	2,883	2,896	2,902
Communication and public utilities	2,293	2,219	1,618	2,278	2,277	2,280	2,279	2,279	2,276	2,273	2,267	2,273	2,280	2,277	2,280
<b>Wholesale trade</b>	5,278	5,259	5,277	5,301	5,322	5,344	5,371	5,406	5,438	5,457	5,473	5,492	5,502	5,527	5,559
Durable goods	11,039	10,774	10,846	10,923	11,071	11,170	11,266	11,343	11,440	11,513	11,551	11,598	11,652	11,709	11,763
Nondurable goods	7,741	7,724	7,751	7,775	7,815	7,848	7,877	7,911	7,933	7,953	7,979	7,972	7,977	8,002	7,977
<b>Retail trade</b>	15,179	15,545	15,626	15,671	15,737	15,805	15,857	15,914	15,980	16,030	16,095	16,166	16,245	16,278	16,298
General merchandise stores	2,184	2,161	2,169	2,171	2,179	2,195	2,189	2,210	2,211	2,230	2,251	2,273	2,295	2,291	2,280
Food stores	2,478	2,560	2,563	2,568	2,587	2,594	2,600	2,618	2,626	2,626	2,635	2,630	2,641	2,653	2,665
Automotive dealers and service stations	1,632	1,667	1,679	1,685	1,695	1,703	1,710	1,725	1,740	1,748	1,743	1,751	1,751	1,763	1,761
Eating and drinking places	4,831	5,007	5,043	5,058	5,071	5,082	5,095	5,111	5,121	5,136	5,154	5,183	5,199	5,210	5,230
<b>Finance, insurance, and real estate</b>	5,341	5,467	5,498	5,503	5,512	5,530	5,546	5,573	5,593	5,613	5,640	5,662	5,676	5,679	5,692
Finance	2,646	2,740	2,749	2,763	2,769	2,777	2,789	2,797	2,812	2,831	2,851	2,863	2,858	2,856	2,857
Insurance	1,714	1,721	1,724	1,725	1,725	1,728	1,730	1,737	1,741	1,742	1,742	1,746	1,752	1,760	1,766
Real estate	981	1,005	1,025	1,015	1,018	1,025	1,027	1,039	1,040	1,041	1,047	1,053	1,066	1,063	1,069
<b>Services</b>	19,036	19,665	19,808	19,893	19,962	20,034	20,130	20,162	20,278	20,378	20,449	20,549	20,681	20,686	20,732
Business services	3,286	3,539	3,599	3,636	3,672	3,703	3,758	3,798	3,845	3,875	3,912	3,979	4,014	4,031	4,058
Health services	5,812	5,973	5,988	6,003	6,007	6,016	6,026	6,030	6,040	6,052	6,062	6,073	6,064	6,078	6,045
<b>Government</b>	15,837	15,851	15,808	15,935	15,864	15,874	15,869	15,858	15,875	15,873	15,903	15,904	15,894	15,940	15,935
Federal	2,739	2,752	2,747	2,774	2,760	2,759	2,762	2,760	2,763	2,770	2,771	2,767	2,777	2,779	2,780
State	3,640	3,660	3,668	3,672	3,667	3,669	3,668	3,670	3,682	3,686	3,693	3,699	3,699	3,711	3,728
Local	9,458	9,439	9,393	9,489	9,437	9,446	9,439	9,428	9,430	9,417	9,439	9,438	9,418	9,450	9,427

p = preliminary.

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



## 12. Average hours and earnings, by industry 1968-83

[Production or nonsupervisory workers on nonagricultural payrolls]

Year	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings
	Private sector			Mining			Construction		
1968	37.8	\$2.85	\$107.73	42.6	\$3.35	\$142.71	37.3	\$4.41	\$164.49
1969	37.7	3.04	114.61	43.0	3.60	154.80	37.9	4.79	181.54
1970	37.1	3.23	119.83	42.7	3.85	164.40	37.3	5.24	195.45
1971	36.9	3.45	127.31	42.4	4.06	172.14	37.2	5.69	211.67
1972	37.0	3.70	136.90	42.6	4.44	189.14	36.5	6.06	221.19
1973	36.9	3.94	145.39	42.4	4.75	201.40	36.8	6.41	235.89
1974	36.5	4.24	154.76	41.9	5.23	219.14	36.6	6.81	249.25
1975	36.1	4.53	163.53	41.9	5.95	249.31	36.4	7.31	266.08
1976	36.1	4.86	175.45	42.4	6.46	273.90	36.8	7.71	283.73
1977	36.0	5.25	189.00	43.4	6.94	301.20	36.5	8.10	295.65
1978	35.8	5.69	203.70	43.4	7.67	332.88	36.8	8.66	318.69
1979	35.7	6.16	219.91	43.0	8.49	365.07	37.0	9.27	342.99
1980	35.3	6.66	235.10	43.3	9.17	397.06	37.0	9.94	367.78
1981	35.2	7.25	255.20	43.7	10.04	438.75	36.9	10.82	399.26
1982	34.8	7.68	267.26	42.7	10.77	459.88	36.7	11.63	426.82
1983	35.0	8.02	280.70	42.5	11.27	478.98	37.2	11.92	443.42
	Manufacturing			Transportation and public utilities			Wholesale trade		
1968	40.7	\$3.01	\$122.51	40.6	\$3.42	\$138.85	40.1	\$3.05	\$122.31
1969	40.6	3.19	129.51	40.7	3.63	147.74	40.2	3.23	129.85
1970	39.8	3.35	133.33	40.5	3.85	155.93	39.9	3.44	137.26
1971	39.9	3.57	142.44	40.1	4.21	168.82	39.5	3.65	129.85
1972	40.5	3.82	154.71	40.4	4.65	187.86	39.4	3.85	144.18
1973	40.7	4.09	166.46	40.5	5.02	203.31	39.3	4.08	151.69
1974	40.0	4.42	176.80	40.2	5.41	217.48	38.8	4.39	160.34
1975	39.5	4.83	190.79	39.7	5.88	233.44	38.7	4.73	183.05
1976	40.1	5.22	209.32	39.8	6.45	256.71	38.7	5.03	194.66
1977	40.3	5.68	228.90	39.9	6.99	278.90	38.8	5.39	209.13
1978	40.4	6.17	249.27	40.0	7.57	302.80	38.8	5.88	228.14
1979	40.2	6.70	269.34	39.9	8.16	325.58	38.8	6.39	247.93
1980	39.7	7.27	288.62	39.6	8.87	351.25	38.5	6.96	267.96
1981	39.8	7.99	318.00	39.4	9.70	382.18	38.5	7.56	291.06
1982	38.9	8.49	330.26	39.0	10.32	402.48	38.3	8.09	309.85
1983	40.1	8.83	354.08	39.0	10.80	421.20	38.5	8.54	328.79
	Retail trade			Finance, insurance, and real estate			Services		
1968	34.7	\$2.16	\$74.95	37.0	\$2.75	\$101.75	34.7	\$2.42	\$83.97
1969	34.2	2.30	78.66	37.1	2.93	108.70	34.7	2.61	90.57
1970	33.8	2.44	82.47	36.7	3.07	112.67	34.4	2.81	96.66
1971	33.7	2.60	87.62	36.6	3.22	117.85	33.9	3.04	103.06
1972	33.4	2.75	91.85	36.6	3.36	122.98	33.9	3.27	110.85
1973	33.1	2.91	96.32	36.6	3.53	129.20	33.8	3.47	117.29
1974	32.7	3.14	102.68	36.5	3.77	137.61	33.6	3.75	126.00
1975	32.4	3.36	108.86	36.5	4.06	148.19	33.5	4.02	134.67
1976	32.1	3.57	114.60	36.4	4.27	155.43	33.3	4.31	143.52
1977	31.6	3.85	121.66	36.4	4.54	165.26	33.0	4.65	153.45
1978	31.0	4.20	130.20	36.4	4.89	178.00	32.8	4.99	163.67
1979	30.6	4.53	138.62	36.2	5.27	190.77	32.7	5.36	175.27
1980	30.2	4.88	147.38	36.2	5.79	209.60	32.6	5.85	190.71
1981	30.1	5.25	158.03	36.3	6.31	229.05	32.6	6.41	208.97
1982	29.9	5.48	163.85	36.2	6.78	245.44	32.6	6.92	225.59
1983	29.8	5.74	171.05	36.2	7.29	263.90	32.7	7.30	238.71

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

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

[Production or nonsupervisory workers on private nonagricultural payrolls]

Industry	Annual average		1983					1984							
	1982	1983	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July <sup>P</sup>	Aug. <sup>P</sup>
<b>PRIVATE SECTOR</b> .....	34.8	35.0	35.0	35.2	35.2	35.2	35.2	35.4	35.3	35.3	35.4	35.3	35.3	35.2	35.2
<b>MANUFACTURING</b> .....	38.9	40.1	40.3	40.7	40.6	40.6	40.6	40.9	40.9	40.7	41.1	40.6	40.6	40.5	40.4
Overtime hours .....	2.3	3.0	3.0	3.2	3.3	3.3	3.4	3.5	3.5	3.5	3.7	3.3	3.3	3.3	3.2
<b>Durable goods</b> .....	39.3	40.7	40.8	41.4	41.2	41.3	41.3	41.6	41.7	41.4	41.8	41.3	41.2	41.2	41.1
Overtime hours .....	2.2	3.0	3.0	3.3	3.4	3.5	3.5	3.7	3.8	3.7	4.0	3.5	3.5	3.5	3.4
Lumber and wood products .....	38.0	40.1	40.2	40.4	40.5	40.0	40.0	40.6	40.4	40.1	40.4	39.6	39.4	39.2	39.3
Furniture and fixtures .....	37.2	39.4	39.7	40.0	39.8	39.8	40.1	40.0	39.9	39.6	39.7	39.7	39.1	39.7	38.8
Stone, clay, and glass products .....	40.1	41.5	41.7	42.0	41.8	41.8	41.9	42.1	42.5	41.9	42.3	42.1	41.8	41.9	41.3
Primary metal industries .....	38.6	40.5	40.9	41.2	41.6	41.7	41.8	41.9	42.0	41.8	42.2	42.1	41.7	41.6	41.4
Blast furnaces and basic steel products .....	37.9	39.5	40.1	40.5	40.8	40.8	41.2	41.0	41.3	41.2	41.0	41.6	41.1	40.1	40.3
Fabricated metal products .....	39.2	40.6	40.8	41.4	41.2	41.4	41.4	41.6	41.8	41.3	41.8	41.4	41.3	41.4	41.2
Machinery, except electrical .....	39.7	40.5	40.6	41.1	41.2	41.3	41.5	41.8	41.9	41.9	42.3	41.9	42.0	41.8	41.9
Electrical and electronic equipment .....	39.3	40.5	40.7	41.2	41.1	41.1	41.0	41.2	41.2	41.0	41.3	41.0	40.8	40.7	40.7
Transportation equipment .....	40.5	42.1	41.9	43.3	42.5	42.6	42.4	43.2	43.1	42.9	43.5	42.4	42.3	42.2	42.5
Motor vehicles and equipment .....	40.5	43.3	43.1	45.1	44.1	44.1	43.9	44.8	44.3	44.4	44.8	42.9	43.1	42.6	43.6
Instruments and related products .....	39.8	40.4	40.4	40.8	40.7	40.7	40.8	41.3	41.2	41.1	41.4	40.7	41.3	41.1	40.6
<b>Nondurable goods</b> .....	38.4	39.4	39.6	39.9	39.7	39.8	39.7	39.9	39.9	39.8	40.2	39.6	39.6	39.5	39.4
Overtime hours .....	2.5	3.0	3.1	3.1	3.1	3.1	3.2	3.3	3.3	3.3	3.4	3.1	3.2	3.1	3.0
Food and kindred products .....	39.4	39.5	39.6	39.8	39.6	39.6	39.5	39.7	39.7	39.8	40.1	39.7	39.8	39.6	39.6
Textile mill products .....	37.5	40.5	40.9	41.3	40.8	40.6	40.7	40.6	40.8	40.6	41.2	40.0	40.0	39.8	39.2
Apparel and other textile products .....	34.7	36.2	36.3	36.7	36.6	36.7	36.6	36.6	36.9	36.7	37.4	36.5	36.4	35.9	35.8
Paper and allied products .....	41.8	42.6	42.9	43.2	43.2	43.1	43.1	43.2	43.2	43.0	43.2	43.1	42.9	43.3	43.3
Printing and publishing .....	37.1	37.6	37.6	37.8	37.9	37.9	37.7	37.9	37.9	37.9	38.2	38.0	37.7	37.7	37.7
Chemicals and allied products .....	40.9	41.6	41.7	41.7	41.7	41.9	41.9	42.1	42.1	42.0	42.0	41.8	41.9	41.9	42.0
Petroleum and coal products .....	43.9	43.9	43.5	43.2	43.6	43.7	44.6	44.8	44.5	44.7	43.7	43.5	43.1	42.9	43.5
Leather and leather products .....	35.6	36.8	37.1	37.8	37.3	37.2	37.1	37.3	37.2	36.7	37.5	36.5	36.7	37.1	36.5
<b>TRANSPORTATION AND PUBLIC UTILITIES</b> .....	39.0	39.0	39.2	39.3	39.4	39.2	39.4	39.5	39.3	39.2	39.5	39.4	39.6	39.7	39.6
<b>WHOLESALE TRADE</b> .....	38.3	38.5	38.5	38.6	38.6	38.6	38.6	38.6	38.5	38.5	38.7	38.6	38.6	38.6	38.6
<b>RETAIL TRADE</b> .....	29.9	29.8	29.8	29.8	30.0	30.0	30.3	30.1	30.0	30.1	30.0	30.1	30.2	29.9	29.9
<b>SERVICES</b> .....	32.6	32.7	32.6	32.7	32.8	32.7	32.6	32.8	32.7	32.8	32.8	32.7	32.7	32.7	32.6

p = preliminary.

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

### 14. Average hourly earnings, by industry

[Production or nonsupervisory workers on private nonagricultural payrolls]

Industry	Annual average		1983					1984							
	1982	1983	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July <sup>P</sup>	Aug. <sup>P</sup>
<b>PRIVATE SECTOR</b>	\$7.68	\$8.02	\$7.95	\$8.12	\$8.16	\$8.16	\$8.16	\$8.26	\$8.24	\$8.24	\$8.29	\$8.28	\$8.29	\$8.32	\$8.30
Seasonally adjusted	( <sup>1</sup> )	( <sup>1</sup> )	8.00	8.09	8.13	8.14	8.17	8.21	8.23	8.25	8.31	8.29	8.33	8.35	8.35
<b>MINING</b>	10.77	11.27	11.25	11.33	11.33	11.40	11.41	11.54	11.49	11.60	11.62	11.56	11.57	11.57	11.53
<b>CONSTRUCTION</b>	11.63	11.92	11.86	12.04	12.06	11.91	12.02	12.08	11.99	11.97	11.95	11.99	11.94	11.95	12.01
<b>MANUFACTURING</b>	8.49	8.83	8.78	8.89	8.90	8.97	9.04	9.08	9.06	9.09	9.11	9.11	9.14	9.17	9.14
<b>Durable goods</b>	9.04	9.38	9.32	9.46	9.47	9.53	9.60	9.64	9.63	9.66	9.67	9.66	9.69	9.71	9.68
Lumber and wood products	7.43	7.79	7.82	7.87	7.86	7.79	7.80	7.88	7.88	7.87	7.89	7.92	8.04	8.01	8.06
Furniture and fixtures	6.31	6.62	6.67	6.74	6.71	6.73	6.78	6.76	6.75	6.76	6.76	6.80	6.84	6.88	6.90
Stone, clay, and glass products	8.87	9.27	9.30	9.42	9.38	9.41	9.41	9.42	9.38	9.40	9.51	9.54	9.58	9.64	9.66
Primary metal industries	11.33	11.34	11.29	11.34	11.28	11.32	11.35	11.38	11.49	11.44	11.51	11.49	11.46	11.46	11.44
Blast furnaces and basic steel products	13.35	12.89	12.74	12.79	12.68	12.71	12.71	12.76	13.10	12.97	13.12	13.09	13.02	13.04	13.01
Fabricated metal products	8.77	9.11	9.09	9.18	9.18	9.24	9.35	9.31	9.31	9.31	9.34	9.33	9.33	9.32	9.30
Machinery, except electrical	9.26	9.55	9.54	9.63	9.66	9.74	9.85	9.85	9.87	9.90	9.91	9.90	9.93	9.95	9.93
Electrical and electronic equipment	8.21	8.65	8.62	8.73	8.71	8.77	8.84	8.88	8.86	8.88	8.89	8.89	8.91	8.95	8.99
Transportation equipment	11.11	11.66	11.52	11.80	11.87	12.01	12.04	12.06	12.00	12.12	12.06	12.04	12.14	12.15	12.11
Motor vehicles and equipment	11.62	12.12	11.92	12.31	12.38	12.49	12.47	12.53	12.41	12.62	12.56	12.51	12.67	12.64	12.60
Instruments and related products	8.06	8.46	8.45	8.54	8.54	8.56	8.65	8.68	8.66	8.71	8.73	8.71	8.78	8.83	8.79
Miscellaneous manufacturing	6.42	6.80	6.79	6.83	6.84	6.84	6.95	7.00	6.97	6.97	6.97	6.99	6.98	7.02	7.02
<b>Nondurable goods</b>	7.74	8.08	8.06	8.11	8.12	8.18	8.24	8.27	8.24	8.27	8.29	8.30	8.33	8.39	8.36
Food and kindred products	7.92	8.20	8.15	8.17	8.16	8.26	8.36	8.41	8.37	8.39	8.43	8.43	8.44	8.41	8.36
Tobacco manufactures	9.79	10.35	10.26	9.90	9.65	10.77	10.19	10.77	11.13	11.29	11.43	11.55	11.92	11.54	11.04
Textile mill products	5.83	6.18	6.19	6.23	6.24	6.26	6.31	6.39	6.40	6.41	6.43	6.42	6.43	6.43	6.46
Apparel and other textile products	5.20	5.37	5.35	5.39	5.40	5.43	5.44	5.50	5.46	5.48	5.49	5.48	5.50	5.51	5.54
Paper and allied products	9.32	9.94	10.03	10.11	10.11	10.20	10.24	10.23	10.22	10.25	10.29	10.34	10.42	10.54	10.50
Printing and publishing	8.74	9.11	9.12	9.23	9.23	9.26	9.29	9.26	9.30	9.29	9.29	9.31	9.30	9.35	9.40
Chemicals and allied products	9.96	10.59	10.62	10.70	10.79	10.86	10.90	10.91	10.90	10.95	10.97	11.02	11.03	11.10	11.10
Petroleum and coal products	12.46	13.29	13.17	13.38	13.38	13.45	13.54	13.47	13.43	13.44	13.44	13.32	13.33	13.28	13.28
Rubber and miscellaneous plastics products	7.64	7.99	8.00	8.05	8.08	8.07	8.16	8.17	8.16	8.20	8.25	8.20	8.23	8.29	8.22
Leather and leather products	5.33	5.54	5.52	5.57	5.56	5.57	5.61	5.68	5.67	5.68	5.68	5.68	5.67	5.72	5.67
<b>TRANSPORTATION AND PUBLIC UTILITIES</b>	10.32	10.80	10.69	10.88	10.94	11.01	11.00	11.08	11.01	11.02	11.07	11.03	11.07	11.18	11.21
<b>WHOLESALE TRADE</b>	8.09	8.54	8.54	8.62	8.69	8.68	8.74	8.82	8.79	8.79	8.89	8.86	8.90	8.97	8.95
<b>RETAIL TRADE</b>	5.48	5.74	5.73	5.78	5.79	5.82	5.78	5.89	5.89	5.89	5.90	5.88	5.88	5.87	5.84
<b>FINANCE, INSURANCE, AND REAL ESTATE</b>	6.78	7.29	7.24	7.33	7.45	7.39	7.43	7.55	7.54	7.54	7.62	7.55	7.58	7.63	7.59
<b>SERVICES</b>	6.92	7.30	7.24	7.37	7.43	7.44	7.47	7.57	7.55	7.54	7.60	7.55	7.53	7.56	7.52

<sup>1</sup> Not available.

p = preliminary.

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

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

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

Industry	Not seasonally adjusted					Seasonally adjusted						
	Aug. 1983	June 1984	July 1984 <sup>P</sup>	Aug. 1984 <sup>P</sup>	Percent change from: Aug. 1983 to Aug. 1984	Aug. 1983	Apr. 1984	May 1984	June 1984	July 1984 <sup>P</sup>	Aug. 1984 <sup>P</sup>	Percent change from: July 1984 to Aug. 1984
<b>PRIVATE SECTOR (in current dollars)</b>	154.9	159.8	160.5	160.1	3.3	155.4	159.9	159.6	160.3	160.8	160.6	-0.2
Mining	166.9	173.4	174.3	172.7	3.5	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
Construction	145.1	146.1	146.2	146.9	1.2	144.8	146.6	147.0	147.1	146.4	146.6	.1
Manufacturing	157.3	162.1	162.7	162.5	3.3	158.0	161.6	162.0	162.3	162.8	163.2	.3
Transportation and public utilities	155.5	160.6	161.7	162.3	4.4	155.6	161.3	160.9	162.1	162.7	162.4	-2
Wholesale trade	158.2	164.6	165.9	165.5	4.7	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
Retail trade	150.5	154.0	153.9	153.1	1.7	150.9	153.7	153.4	153.8	154.0	153.6	-3
Finance, insurance, and real estate	158.0	164.9	166.1	165.3	4.6	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
Services	155.3	161.6	162.4	161.4	3.9	156.6	162.3	161.4	162.5	163.6	162.5	-6
<b>PRIVATE SECTOR (in constant dollars)</b>	93.9	94.7	94.7	( <sup>2</sup> )	( <sup>2</sup> )	94.4	95.4	94.9	95.2	95.2	( <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.

p = preliminary.

<sup>2</sup> Not available.

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



**16. Average weekly earnings, by industry**

[Production or nonsupervisory workers on private nonagricultural payrolls]

Industry	Annual average		1983						1984						
	1982	1983	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	\$267.26	\$280.70	\$280.64	\$286.64	\$288.05	\$286.42	\$289.68	\$289.10	\$288.40	\$288.40	\$292.64	\$291.46	\$294.30	\$296.19	\$294.65
Seasonally adjusted	( <sup>1</sup> )	( <sup>1</sup> )	280.00	284.77	286.18	286.53	287.58	290.63	290.52	291.23	294.17	292.64	294.05	293.92	293.92
Constant (1977) dollars	168.09	171.37	170.08	172.99	173.42	172.44	174.40	173.32	172.59	172.59	174.71	173.18	174.45	174.85	( <sup>1</sup> )
<b>MINING</b>	459.88	478.98	479.25	488.32	489.46	489.06	495.19	499.68	492.92	496.48	499.66	499.39	505.61	499.82	503.86
<b>CONSTRUCTION</b>	426.82	443.42	450.68	456.32	449.84	432.33	442.34	438.50	443.63	439.30	448.13	458.02	460.88	461.27	462.39
<b>MANUFACTURING</b>															
Current dollars	330.26	354.08	352.96	362.71	362.23	365.98	372.45	368.65	368.74	369.96	372.60	369.87	372.91	369.55	368.34
Constant (1977) dollars	207.71	216.17	213.92	218.90	218.08	220.34	224.23	221.01	220.67	221.40	222.45	219.77	221.05	218.15	( <sup>1</sup> )
<b>Durable goods</b>															
Lumber and wood products	282.34	312.38	319.06	320.31	319.12	309.26	311.22	311.26	313.62	314.01	317.18	317.59	324.01	315.59	321.59
Furniture and fixtures	234.73	260.83	267.47	270.95	271.08	269.87	277.98	263.64	263.93	267.02	267.02	268.60	270.86	269.01	271.17
Stone, clay, and glass products	355.69	384.71	391.53	399.41	394.90	395.22	394.28	386.22	389.27	389.16	401.32	404.50	407.15	406.81	403.79
Primary metal industries	437.34	459.27	458.37	469.48	464.74	470.91	478.97	476.82	482.58	480.48	488.02	481.43	480.17	474.44	471.33
Blast furnaces and basic steel products	505.97	509.16	507.05	521.83	508.47	513.48	526.19	521.88	539.72	534.36	549.73	540.62	536.42	528.12	520.40
Fabricated metal products	343.78	369.87	369.96	379.13	379.13	384.38	395.51	385.43	386.37	384.50	387.61	386.26	388.13	381.19	382.23
<b>Machinery except electrical</b>	367.62	386.78	383.51	395.79	396.06	405.18	418.63	411.73	413.55	415.80	417.21	413.82	417.06	410.94	411.10
Electrical and electronic equipment	322.65	350.33	349.11	358.80	357.98	363.08	369.51	364.97	364.15	364.08	364.49	363.60	365.31	360.69	364.10
Transportation equipment	449.96	490.89	474.62	505.04	505.66	515.23	521.33	517.37	514.80	521.16	523.40	514.11	519.59	509.09	504.99
Motor vehicles and equipment	470.61	524.80	503.02	546.56	545.96	550.81	556.16	555.08	544.80	560.33	563.94	546.69	557.48	540.99	536.76
Instruments and related products	320.79	341.78	340.54	349.29	346.72	350.96	357.25	356.75	356.79	358.85	358.80	354.50	362.61	359.38	356.00
Miscellaneous manufacturing	246.53	265.88	264.81	269.10	272.23	272.23	278.00	272.30	276.01	276.01	275.32	274.71	273.62	273.08	275.18
<b>Nondurable goods</b>															
Food and kindred products	312.05	323.90	326.00	330.07	324.77	329.57	333.56	331.35	327.27	329.73	332.99	333.83	337.60	333.88	334.40
Tobacco manufactures	370.06	387.09	385.78	380.16	370.56	431.88	385.18	410.34	405.13	416.60	451.49	457.38	482.76	430.44	433.87
Textile mill products	218.63	250.29	254.41	258.55	256.46	256.66	258.71	257.52	259.84	258.96	260.42	257.44	259.77	252.70	255.17
Apparel and other textile products	180.44	194.39	195.81	198.35	198.72	199.82	199.65	198.55	200.38	201.12	202.03	200.02	202.40	198.91	199.99
Paper and allied products	389.58	423.44	429.28	439.79	437.76	440.64	448.51	440.91	438.44	437.68	442.47	443.59	449.10	455.33	453.60
Printing and publishing	324.25	342.54	343.82	350.74	350.74	352.81	356.74	347.25	349.68	353.02	353.02	351.92	349.68	351.56	355.32
Chemicals and allied products	407.36	440.54	439.67	448.33	449.94	457.21	462.16	458.22	457.80	458.81	460.74	460.64	463.26	462.87	462.87
Petroleum and coal products	546.99	583.43	572.90	592.73	586.04	590.46	603.88	594.03	584.21	585.98	590.02	580.75	579.86	576.35	577.68
Rubber and miscellaneous plastics products	302.54	329.19	329.60	337.30	338.55	338.94	345.98	343.14	342.72	341.94	347.33	341.94	344.84	342.38	339.49
Leather and leather products	189.75	203.87	207.00	209.43	206.83	207.76	209.25	208.46	208.66	205.05	210.16	209.59	213.76	213.93	209.22
<b>TRANSPORTATION AND PUBLIC UTILITIES</b>	402.48	421.20	422.26	428.67	432.13	432.69	436.70	434.34	429.39	429.78	435.05	432.38	440.59	446.08	447.28
<b>WHOLESALE TRADE</b>	309.85	328.79	329.64	333.59	336.30	335.92	339.99	338.69	335.78	336.66	342.27	342.00	344.43	348.04	346.37
<b>RETAIL TRADE</b>	163.85	171.05	174.77	172.82	173.12	173.44	178.02	173.17	173.17	174.34	175.82	176.40	178.75	180.21	178.70
<b>FINANCE, INSURANCE, AND REAL ESTATE</b>	245.44	263.90	261.36	264.61	271.18	266.78	268.97	275.58	274.46	273.70	278.13	274.07	275.15	280.02	276.28
<b>SERVICES</b>	225.59	238.71	238.92	241.00	242.96	242.54	243.52	246.78	246.13	245.80	248.52	246.13	247.74	250.24	248.16

<sup>1</sup> Not available.

p = preliminary.

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

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

[In percent]

Time span	Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Over 1-month span	1982	27.6	47.6	35.7	31.1	41.1	33.5	34.6	32.4	37.3	28.9	32.4	45.7
	1983	54.3	46.5	60.8	68.9	69.5	64.6	74.3	68.6	69.5	75.4	69.7	73.8
	1984	71.1	73.2	67.0	63.8	64.1	63.0	P60.8	P57.3	—	—	—	—
Over 3-month span	1982	25.1	27.8	27.8	27.3	27.6	28.6	23.5	24.1	26.5	25.9	27.8	41.6
	1983	46.8	57.3	64.1	75.1	75.7	77.8	74.1	81.6	80.8	78.9	79.5	77.6
	1984	82.2	80.5	76.5	71.1	68.4	P69.5	P65.1	—	—	—	—	—
Over 6-month span	1982	19.2	22.2	21.9	24.6	20.3	21.4	21.4	18.6	23.2	27.3	29.5	35.4
	1983	50.8	63.0	69.2	75.1	80.0	82.4	84.1	82.4	84.6	85.9	86.8	83.8
	1984	81.9	82.7	79.7	P75.4	P70.5	—	—	—	—	—	—	—
Over 12-month span	1982	21.6	21.4	17.6	18.1	16.2	18.1	21.1	21.1	25.1	31.6	34.1	40.3
	1983	49.5	54.3	61.9	71.1	77.3	79.5	83.8	88.1	86.8	87.3	85.4	87.3
	1984	P86.2	P82.7	—	—	—	—	—	—	—	—	—	—

p = preliminary.

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

are counted as rising.) Data are centered within the spans. See the "Definitions" in this section.

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

## 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 unemployed. Persons not covered by unemployment insurance (about 10 percent of the labor force) and those who have exhausted or not yet earned benefit rights are excluded from the scope of the survey. **Initial claims** are notices filed by

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

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

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

### 18. Unemployment insurance and employment service operations

[All items except average benefits amounts are in thousands]

Item	1983						1984						
	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July <sup>P</sup>
<b>All programs:</b>													
Insured unemployment	3,275	2,917	2,580	2,478	2,620	2,915	3,374	3,174	2,958	2,613	2,290	2,166	2,327
<b>State unemployment insurance program:<sup>1</sup></b>													
Initial claims <sup>2</sup>	1,803	1,668	1,381	1,522	1,757	2,105	2,356	1,529	1,433	1,429	1,370	1,389	1,731
Insured unemployment (average weekly volume)	3,049	2,766	2,449	2,358	2,508	2,805	3,249	3,056	2,843	2,515	2,215	2,111	2,270
Rate of insured unemployment	3.5	3.2	2.8	2.7	2.9	3.3	3.8	3.6	3.3	2.9	2.6	2.5	2.6
Weeks of unemployment compensated	10,957	11,581	9,383	8,417	9,301	10,168	12,232	11,622	11,339	9,695	9,304	8,228	8,428
Average weekly benefit amount for total unemployment	\$121.53	\$121.14	\$121.32	\$123.00	\$122.19	\$122.61	\$123.60	\$124.30	\$124.67	\$125.26	\$123.69	\$122.69	\$120.18
Total benefits paid	\$1,297,164	\$1,367,186	\$1,104,404	\$1,002,141	\$1,099,862	\$1,203,605	\$1,457,983	\$1,400,458	\$1,369,536	\$1,173,601	\$1,109,268	\$975,000	\$982,838
<b>State unemployment insurance program:<sup>1</sup> (Seasonally adjusted data)</b>													
Initial claims <sup>2</sup>	1,723	1,841	1,664	1,656	1,717	1,620	1,606	1,568	1,554	1,619	1,692	1,574	.....
Insured unemployment (average weekly volume)	3,303	3,026	3,088	2,617	2,677	2,721	2,486	2,416	2,505	2,612	2,324	2,432	.....
Rate of insured unemployment	3.8	3.5	3.6	3.1	3.1	3.2	2.9	2.8	2.9	3.0	2.7	2.8	.....
<b>Unemployment compensation for ex-servicemen:<sup>3</sup></b>													
Initial claims <sup>1</sup>	16	19	17	16	15	14	15	13	13	12	12	12	13
Insured unemployment (average weekly volume)	25	26	27	28	28	27	27	24	22	20	18	18	18
Weeks of unemployment compensated	95	110	106	107	116	113	112	96	89	78	79	72	72
Total benefits paid	\$12,134	\$14,082	\$13,531	\$14,074	\$15,121	\$14,815	\$14,532	\$12,540	\$11,813	\$10,349	\$10,577	\$9,633	\$9,664
<b>Unemployment compensation for Federal civilian employees:<sup>4</sup></b>													
Initial claims	12	11	11	15	13	13	16	10	9	13	9	11	12
Insured unemployment (average weekly volume)	23	22	22	25	27	29	32	31	28	23	20	19	20
Weeks of unemployment compensated	84	96	83	88	110	119	133	129	122	98	88	76	80
Total benefits paid	\$9,646	\$10,982	\$9,535	\$10,144	\$12,415	\$13,888	\$15,588	\$15,003	\$14,778	\$11,844	\$10,529	\$9,032	\$9,512
<b>Railroad unemployment insurance:</b>													
Applications	55	14	9	7	8	8	10	4	3	2	2	11	25
Insured unemployment (average weekly volume)	49	46	41	48	40	43	51	49	41	27	19	16	16
Number of payments	92	107	103	92	92	95	121	104	99	70	54	38	35
Average amount of benefit payment	\$199.87	\$214.21	\$214.77	\$211.41	\$212.36	\$213.71	\$210.73	\$209.56	\$208.96	\$196.32	\$188.45	\$187.37	\$189.06
Total benefits paid	\$17,551	\$21,789	\$20,239	\$19,531	\$19,536	\$19,870	\$23,866	\$23,228	\$20,112	\$13,356	\$10,233	\$7,039	\$6,691
<b>Employment service:<sup>5</sup></b>													
New applications and renewals	.....	.....	15,595	.....	.....	4,297	.....	.....	8,231	.....	.....	9,517	.....
Nonfarm placements	.....	.....	3,012	.....	.....	782	.....	.....	1,469	.....	.....	1,810	.....

<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.

p = preliminary.

r = revised.

## PRICE DATA

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

### Definitions

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

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

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

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

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

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

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

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

### Notes on the data

Regional CPI's cross classified by population size were introduced in the May 1978 *Review*. These indexes enable users in local areas for which an index is not published to get a better approximation of the CPI for their area by using the appropriate population size class measure for their region. The cross-classified indexes are published bimonthly. (See table 20.)

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

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

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

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



**19. Consumer Price Index for Urban Wage Earners and Clerical Workers, annual averages and changes, 1967-83**

[1967 = 100]

Year	All Items		Food and beverages		Housing		Apparel and upkeep		Transportation		Medical care		Entertainment		Other goods and services	
	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change
1967	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...
1968	104.2	4.2	103.6	3.6	104.0	4.0	105.4	5.4	103.2	3.2	106.1	6.1	105.7	5.7	105.2	5.2
1969	109.8	5.4	108.8	5.0	110.4	6.2	111.5	5.8	107.2	3.9	113.4	6.9	111.0	5.0	110.4	4.9
1970	116.3	5.9	114.7	5.4	118.2	7.1	116.1	4.1	112.7	5.1	120.6	6.3	116.7	5.1	115.8	5.8
1971	121.3	4.3	118.3	3.1	123.4	4.4	119.8	3.3	118.6	5.2	128.4	6.5	122.9	5.3	122.4	4.8
1972	125.3	3.3	123.2	4.1	128.1	3.8	122.3	2.1	119.9	1.1	132.5	3.2	126.5	2.9	127.5	4.2
1973	133.1	6.2	139.5	13.2	133.7	4.4	126.8	3.7	123.8	3.3	137.7	3.9	130.0	2.8	132.5	3.9
1974	147.7	11.0	158.7	13.8	148.8	11.3	136.2	7.4	137.7	11.2	150.5	9.3	139.8	7.5	142.0	7.2
1975	161.2	9.1	172.1	8.4	164.5	10.6	142.3	4.5	150.6	9.4	168.6	12.0	152.2	8.9	153.9	8.4
1976	170.5	5.8	177.4	3.1	174.6	6.1	147.6	3.7	165.5	9.9	184.7	9.5	159.8	5.0	162.7	5.7
1977	181.5	6.5	188.0	8.0	186.5	6.8	154.2	4.5	177.2	7.1	202.4	9.6	167.7	4.9	172.2	5.8
1978	195.3	7.6	206.2	9.7	202.6	8.6	159.5	3.4	185.8	4.9	219.4	8.4	176.2	5.1	183.2	6.4
1979	217.7	11.5	228.7	10.9	227.5	12.3	166.4	4.3	212.8	14.5	240.1	9.4	187.6	6.5	196.3	7.2
1980	247.0	13.5	248.7	8.7	263.2	15.7	177.4	6.6	250.5	17.7	287.2	11.3	203.7	8.5	213.6	8.8
1981	272.3	10.2	267.8	7.7	293.2	11.4	186.6	5.2	281.3	12.3	295.1	10.4	219.0	7.5	233.3	9.2
1982	288.6	6.0	278.5	4.0	314.7	7.3	190.9	2.3	293.1	4.2	326.9	10.8	232.4	6.1	257.0	10.2
1983	297.4	3.0	284.7	2.2	322.0	2.3	195.6	2.5	300.0	2.4	355.1	8.6	242.4	4.3	286.3	11.4

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

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers						
	1983		1984					1983		1984				
	July	Feb.	Mar.	Apr.	May	June	July	July	Feb.	Mar.	Apr.	May	June	July
<b>All items</b>	299.3	306.6	307.3	308.8	309.7	310.7	311.7	298.2	303.3	303.3	304.1	305.4	306.2	307.5
Food and beverages	284.7	294.2	294.3	294.5	293.6	294.3	295.3	285.0	294.4	294.5	294.7	293.7	294.3	295.3
Housing	324.5	331.0	331.5	333.2	334.6	336.2	338.1	324.2	322.9	322.7	325.2	326.2	328.7	
Apparel and upkeep	195.0	196.2	198.8	199.2	198.9	197.4	196.6	194.0	195.4	198.0	198.2	197.7	196.1	195.3
Transportation	300.4	305.8	306.9	309.6	312.2	313.1	312.9	301.9	307.7	308.9	311.9	314.6	315.5	315.2
Medical care	357.7	373.2	374.5	375.7	376.8	378.0	380.3	355.6	371.3	372.6	373.9	375.0	376.3	378.5
Entertainment	246.0	251.5	251.7	253.8	253.5	254.5	255.3	242.5	247.7	248.0	249.8	249.6	250.7	251.4
Other goods and services	287.5	301.5	302.1	302.8	304.4	304.4	306.5	286.4	299.2	299.7	300.4	300.8	302.1	304.5
<b>Commodities</b>	272.5	278.3	278.7	280.1	280.4	280.6	280.6	274.2	278.0	278.1	279.2	279.5	279.7	280.1
Commodities less food and beverages	262.3	266.0	266.6	268.7	269.7	269.6	269.0	264.9	266.2	266.4	267.8	268.7	268.7	268.8
Nondurables less food and beverages	273.5	274.0	274.2	275.7	276.1	275.4	274.3	275.7	276.0	276.1	277.5	277.9	277.2	276.2
Durables	252.9	260.9	262.2	265.2	267.0	267.8	267.8	254.8	256.9	257.1	258.5	259.8	260.3	261.3
<b>Services</b>	345.6	355.3	356.5	358.1	359.9	361.9	364.5	342.8	350.1	349.9	350.1	353.4	355.2	358.2
Rent, residential	237.1	243.6	244.8	246.4	247.2	248.4	249.7	236.5	242.9	244.1	245.7	246.5	247.7	249.0
Household services less rent of shelter (12/82 = 100)	104.8	105.7	105.8	106.2	107.4	108.5	109.7	...	...	...	...	...	...	...
Transportation services	302.3	314.4	315.4	315.8	317.7	319.6	321.4	298.4	310.6	311.6	312.1	313.9	315.7	317.4
Medical care services	387.2	404.4	405.3	406.3	407.1	408.4	410.9	384.4	401.8	402.7	403.9	404.7	406.1	408.6
Other services	276.3	289.1	290.4	291.3	292.3	293.6	294.2	274.2	286.1	287.6	288.3	289.4	290.9	291.5
<b>Special indexes:</b>														
All items less food	299.3	305.9	306.8	308.6	310.0	311.0	312.0	298.5	302.4	302.4	303.3	305.2	306.0	307.3
All items less homeowners' costs	102.3	104.8	105.1	105.5	105.9	106.2	106.5	...	...	...	...	...	...	...
All items less mortgage interest costs	...	...	...	...	...	...	...	285.3	290.9	291.3	292.4	293.2	294.0	294.9
Commodities less food	260.2	263.8	264.4	266.5	267.4	267.4	266.8	262.7	264.1	264.3	265.7	266.6	266.6	266.7
Nondurables less food	268.4	269.1	269.3	270.7	271.1	270.5	269.5	270.6	271.1	271.3	272.6	273.0	272.4	271.4
Nondurables less food and apparel	310.4	311.2	310.3	312.1	313.0	312.9	311.9	312.1	312.4	311.6	313.5	314.3	314.3	313.3
Nondurables	280.3	285.3	285.3	286.3	286.1	286.0	286.0	281.4	286.3	286.4	287.2	286.9	286.9	286.8
Services less rent of shelter (12/82 = 100)	103.1	106.3	106.5	106.8	107.5	108.3	109.0	...	...	...	...	...	...	...
Services less medical care	338.9	347.8	349.0	350.6	352.5	354.5	357.1	336.1	342.4	342.1	342.2	345.8	347.6	350.5
Domestically produced farm foods	269.6	280.7	279.9	279.4	277.4	278.0	279.0	268.5	279.4	278.6	278.1	276.0	276.4	277.4
Selected beef cuts	275.8	280.8	279.7	280.6	278.1	273.7	271.9	277.2	282.1	281.3	282.3	279.3	274.9	272.8
Energy	430.1	420.2	418.1	421.3	426.1	428.5	428.3	430.9	420.2	418.2	421.5	426.0	428.2	427.8
Energy commodities	423.4	414.5	410.7	414.2	416.3	414.4	408.9	424.5	414.7	411.3	414.8	416.9	415.0	409.5
All items less energy	289.2	298.2	299.2	300.5	301.1	301.9	303.1	287.4	293.8	294.0	294.6	295.7	296.3	297.8
All items less food and energy	286.8	295.5	296.7	298.3	299.3	300.2	301.3	284.9	290.4	290.7	291.3	293.0	293.6	295.1
Commodities less food and energy	242.7	248.5	249.9	251.8	252.5	252.8	253.0	243.8	246.6	247.2	248.4	249.1	249.3	250.1
Services less energy	337.9	349.5	350.7	352.2	353.3	354.7	356.8	334.5	343.6	343.3	343.3	346.1	347.2	349.7
Purchasing power of the consumer dollar, 1967 = \$1	\$0.334	\$0.326	\$0.325	\$0.324	\$0.323	\$0.322	\$0.321	\$0.335	\$0.330	\$0.330	\$0.329	\$0.327	\$0.327	\$0.325

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

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers						
	1983	1984						1983	1984					
	July	Feb.	Mar.	Apr.	May	June	July	July	Feb.	Mar.	Apr.	May	June	July
<b>FOOD AND BEVERAGES</b>	284.7	294.2	294.3	294.5	293.6	294.3	295.3	285.0	294.4	294.5	294.7	293.7	294.3	295.3
<b>Food</b>	292.0	302.1	302.2	302.3	301.4	302.0	303.2	292.1	302.1	302.1	302.3	301.2	301.8	302.8
Food at home	282.8	293.6	293.1	292.8	290.7	291.4	292.5	281.8	292.4	291.9	291.6	289.4	290.0	291.0
Cereals and bakery products	293.7	300.3	301.5	302.8	303.5	304.9	306.6	292.3	298.9	300.0	301.3	301.9	303.4	304.9
Cereals and cereal products (12/77 = 100)	158.3	160.3	161.9	162.5	163.4	164.2	164.5	159.2	161.0	162.6	163.1	164.1	164.8	165.2
Flour and prepared flour mixes (12/77 = 100)	142.8	143.4	144.6	143.8	144.6	146.2	147.2	143.3	143.8	145.1	144.1	144.8	146.5	147.5
Cereal (12/77 = 100)	176.7	180.4	182.3	183.9	185.1	185.7	185.7	178.8	182.5	184.4	186.1	187.3	188.0	188.0
Rice, pasta, and cornmeal (12/77 = 100)	146.5	147.2	148.8	149.2	150.0	150.1	150.3	147.7	148.4	150.0	150.4	151.1	151.2	151.4
Bakery products (12/77 = 100)	154.4	158.5	158.8	159.4	159.6	160.4	161.5	153.2	157.2	157.5	158.2	158.4	159.1	160.1
White bread	254.3	257.3	258.9	258.2	260.4	260.2	260.9	249.9	253.0	254.6	254.0	256.1	256.0	256.6
Other breads (12/77 = 100)	149.5	153.9	153.0	154.7	154.3	154.8	155.7	151.6	156.0	155.2	156.8	156.6	157.0	157.8
Fresh biscuits, rolls, and muffins (12/77 = 100)	153.2	158.7	158.8	159.2	158.5	158.7	158.7	149.6	154.7	154.9	155.1	154.3	154.5	154.6
Fresh cakes and cupcakes (12/77 = 100)	155.4	160.4	160.0	161.2	160.6	161.3	163.9	153.6	158.1	158.1	159.2	158.7	159.3	161.8
Cookies (12/77 = 100)	157.0	162.6	162.9	163.8	163.9	165.8	166.1	157.9	163.4	163.7	164.8	164.7	166.7	167.1
Crackers, bread, and cracker products (12/77 = 100)	150.3	152.3	153.9	156.6	155.4	157.9	160.7	151.8	153.6	155.2	158.1	156.6	159.2	162.0
Fresh sweetrolls, coffeecake, and donuts (12/77 = 100)	154.1	160.4	160.5	160.1	161.5	162.1	163.0	156.9	163.2	163.3	163.1	164.2	164.9	165.6
Frozen and refrigerated bakery products and fresh pies, tarts, and turnovers (12/77 = 100)	159.4	163.9	163.8	166.0	164.9	166.6	169.0	152.5	157.1	157.0	159.1	158.1	159.8	162.1
Meats, poultry, fish, and eggs	260.4	273.0	269.6	270.5	266.7	263.9	264.6	260.1	272.4	269.0	270.0	266.1	263.3	263.9
Meats, poultry, and fish	267.2	273.9	272.6	272.7	270.9	270.3	271.4	266.8	273.2	272.0	272.1	270.1	269.6	270.4
Meats	267.8	270.0	268.8	268.9	267.9	266.8	267.3	269.4	268.3	268.4	268.7	267.2	266.1	266.6
Beef and veal 1	275.8	280.9	279.9	280.8	278.3	274.2	272.1	276.5	281.6	280.8	281.7	278.8	274.6	272.4
Ground beef other than canned	261.4	261.1	260.9	262.7	259.7	255.1	253.0	262.0	261.9	262.1	264.0	260.6	256.3	253.7
Chuck roast	277.6	293.1	286.6	286.8	281.0	272.1	269.1	286.3	302.0	295.8	295.8	289.5	280.9	277.3
Round roast	240.7	253.5	251.2	250.9	246.5	238.3	231.4	243.8	257.3	254.5	254.7	250.2	242.6	235.1
Round steak	257.8	264.5	261.6	262.4	261.3	254.2	250.6	256.5	264.0	261.3	261.4	258.7	251.3	247.7
Sirloin steak	285.2	274.6	278.7	284.3	280.0	284.6	286.5	287.5	276.5	280.9	286.4	281.7	285.9	288.4
Other beef and veal (12/77 = 100)	168.8	172.3	172.2	172.1	172.0	170.9	170.5	167.4	170.8	171.0	171.0	170.7	169.3	169.1
Pork	251.2	250.6	248.6	247.7	248.0	250.5	255.5	250.8	250.1	248.0	247.2	247.4	249.9	254.8
Bacon	267.3	267.9	258.9	258.8	262.5	262.8	272.4	271.6	271.6	262.7	262.6	266.3	266.7	276.3
Chops	232.9	230.7	229.6	232.9	227.3	234.4	242.4	231.1	228.7	227.8	231.1	225.2	232.4	240.1
Ham other than canned (12/77 = 100)	108.3	109.8	112.2	109.2	110.2	110.7	111.4	105.5	107.0	109.1	106.3	107.4	107.6	108.3
Sausage	318.9	320.0	315.2	314.8	318.7	319.3	322.0	320.0	321.1	315.6	315.3	319.2	318.8	322.9
Canned ham	256.8	251.1	251.5	246.9	249.7	248.3	246.5	262.6	255.7	256.3	252.1	254.8	253.3	252.0
Other pork (12/77 = 100)	140.0	139.3	137.8	137.3	137.1	139.1	142.0	139.3	138.7	137.1	136.8	136.4	138.3	141.1
Other meats	266.9	265.0	265.1	264.6	265.7	267.5	268.0	266.6	264.4	264.6	263.9	265.1	267.1	267.5
Frankfurters	265.9	263.5	264.2	262.5	264.8	265.8	265.3	264.9	262.0	263.0	261.1	263.4	264.4	263.8
Bologna, liverwurst, and salami (12/77 = 100)	154.0	152.4	153.1	152.9	153.6	155.0	154.8	154.1	152.3	152.9	152.6	153.4	154.7	154.8
Other lunchmeats (12/77 = 100)	137.1	136.2	136.3	135.3	135.9	138.2	138.2	135.2	134.2	134.3	133.4	134.0	136.4	136.4
Lamb and organ meats (12/77 = 100)	138.4	138.2	137.2	138.9	138.5	137.1	139.0	141.6	141.6	140.5	142.1	141.7	140.3	142.0
Poultry	198.1	225.5	223.2	222.3	218.0	219.6	221.3	196.1	223.5	221.2	220.4	216.0	217.7	218.8
Fresh whole chicken	198.7	235.9	232.6	231.2	223.2	223.7	228.1	196.6	233.4	229.8	228.7	221.0	212.5	225.4
Fresh and frozen chicken parts (12/77 = 100)	129.6	152.2	150.7	150.1	145.9	147.6	146.6	127.7	150.2	148.7	148.3	143.9	145.7	144.4
Other poultry (12/77 = 100)	126.0	128.5	127.9	128.0	130.3	131.6	132.7	125.3	127.9	127.6	127.3	129.6	131.0	131.5
Fish and seafood	368.9	386.2	385.3	387.3	380.8	382.3	387.0	367.3	384.6	383.9	385.9	380.0	380.9	385.5
Canned fish and seafood	135.7	132.9	132.1	132.7	132.3	133.0	134.4	135.2	132.4	131.7	132.2	131.9	132.5	133.9
Fresh and frozen fish and seafood (12/77 = 100)	143.3	155.5	155.4	156.3	152.6	153.1	155.1	142.8	155.2	155.2	156.1	152.7	152.9	154.8
Eggs	177.9	270.3	237.2	249.6	218.9	185.8	182.7	178.7	271.8	238.7	251.0	220.0	186.7	183.7
Dairy products	249.8	250.9	250.8	251.5	251.0	251.7	252.2	249.0	250.1	249.8	250.5	250.1	250.6	251.1
Fresh milk and cream (12/77 = 100)	136.2	136.5	136.5	136.8	136.5	136.6	136.7	135.7	136.0	135.8	136.2	135.9	135.9	136.0
Fresh whole milk	222.8	223.3	222.9	223.7	223.0	223.2	223.3	222.0	222.0	222.0	222.2	222.0	222.1	222.2
Other fresh milk and cream (12/77 = 100)	136.4	137.0	137.3	137.3	137.3	137.3	137.5	135.8	136.4	136.7	136.6	136.6	136.6	136.8
Processed dairy products	148.2	149.3	149.2	149.6	149.4	150.2	150.8	148.5	149.5	149.4	149.8	149.7	150.5	151.0
Butter	253.3	253.4	254.4	252.4	254.2	254.1	261.2	255.8	255.9	256.9	254.9	256.8	256.7	263.8
Cheese (12/77 = 100)	146.9	146.8	146.3	146.6	146.2	147.4	147.9	147.3	147.1	146.6	146.9	146.5	147.8	148.2
Ice cream and related products (12/77 = 100)	151.6	155.6	155.3	156.4	156.6	156.6	155.8	150.7	154.4	154.3	155.3	155.5	155.5	154.8
Other dairy products (12/77 = 100)	144.5	146.2	146.9	148.2	146.8	148.5	148.3	145.1	146.7	147.4	148.7	147.3	148.8	148.6
Fruits and vegetables	298.7	321.0	323.2	315.3	310.2	318.1	320.0	294.7	317.2	319.4	311.2	305.6	313.1	315.1
Fresh fruits and vegetables	310.6	342.8	344.3	326.5	316.0	329.7	332.4	304.8	337.4	339.0	321.0	309.5	322.5	325.2
Fresh fruits	326.5	296.0	300.5	304.2	315.2	343.3	346.9	315.3	286.2	290.8	294.0	303.2	328.8	333.5
Apples	287.5	287.9	298.6	299.3	298.8	315.5	329.9	288.8	289.3	298.7	300.4	299.5	315.2	330.6
Bananas	325.2	263.2	264.1	275.2	251.1	277.9	271.8	323.1	260.7	262.2	273.1	248.8	275.5	269.5
Oranges	347.9	303.0	309.6	309.5	344.8	452.5	486.5	321.5	276.2	284.2	283.4	313.9	413.0	448.5
Other fresh fruits (12/77 = 100)	173.3	158.2	159.1	161.5	169.9	169.6	163.6	166.6	152.6	153.4	155.1	163.2	162.6	157.0
Fresh vegetables	295.8	386.6	385.4	347.4	316.8	317.1	318.8	295.5	383.8	382.7	345.4	315.4	316.8	317.8
Potatoes	320.7	359.6	363.5	367.3	372.1	391.4	455.6	318.2	353.2	357.7	360.1	366.0	387.6	451.1
Lettuce	280.5	278.5	290.5	244.4	234.1	262.6	246.0	280.6	280.2	292.6	247.1	236.4	264.6	246.2
Tomatoes	243.1	332.8	318.5	280.4	252.8	262.3	237.3	247.3	337.6	322.7	286.6	257.6	267.4	242.1
Other fresh vegetables (12/77 = 100)	167.6	252.1												

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

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers						
	1983		1984					1983		1984				
	July	Feb.	Mar.	Apr.	May	June	July	July	Feb.	Mar.	Apr.	May	June	July
Fruits and vegetables—Continued														
Processed vegetables (12/77 = 100)	139.0	144.6	144.9	145.6	146.0	146.5	147.2	137.9	143.3	143.6	144.3	144.8	145.3	146.0
Frozen vegetables (12/77 = 100)	151.7	154.2	153.5	156.0	155.4	155.6	155.1	153.3	155.8	155.2	157.7	157.1	157.2	156.7
Cut corn and canned beans except lima (12/77 = 100)	140.9	146.2	148.2	148.5	149.3	150.7	152.3	138.6	143.7	145.5	145.8	146.6	148.0	149.7
Other canned and dried vegetables (12/77 = 100)	131.7	138.8	138.8	138.9	139.5	139.8	140.6	130.2	137.1	137.1	137.2	138.0	138.1	138.9
Other foods at home	338.7	348.4	349.7	351.0	350.8	352.1	353.1	339.3	349.1	350.2	351.6	351.3	352.5	353.5
Sugar and sweets	376.1	381.2	384.8	387.7	390.0	391.2	391.8	376.0	380.7	384.5	387.3	389.4	390.5	391.1
Candy and chewing gum (12/77 = 100)	151.8	154.5	156.0	158.6	159.4	160.5	161.3	151.8	154.3	155.9	158.4	159.2	160.3	161.0
Sugar and artificial sweeteners (12/77 = 100)	169.7	171.8	172.5	171.8	172.4	172.4	171.0	171.0	173.0	173.7	173.0	173.6	173.6	172.2
Other sweets (12/77 = 100)	153.0	154.0	156.5	156.9	158.5	158.3	159.4	150.8	151.7	154.2	154.7	156.2	155.8	157.0
Fats and oils (12/77 = 100)	259.0	281.1	280.7	282.4	282.9	285.4	291.4	258.7	280.9	280.2	281.9	282.4	284.9	291.0
Margarine	259.5	280.5	280.1	280.5	282.7	285.6	293.2	257.6	278.8	278.1	278.5	280.3	283.2	291.1
Nondairy substitutes and peanut butter (12/77 = 100)	150.5	153.9	153.7	154.3	153.3	152.3	153.2	148.8	151.9	151.8	152.2	151.5	150.5	151.3
Other fats, oils, and salad dressings (12/77 = 100)	130.3	145.5	145.2	146.7	146.9	149.1	152.7	130.9	146.1	145.6	147.1	147.3	149.4	153.2
Nonalcoholic beverages	428.7	441.8	443.5	443.6	441.7	442.3	442.7	430.3	443.5	444.9	445.2	443.1	443.7	444.0
Cola drinks, excluding diet cola	310.3	318.3	319.1	320.8	316.2	317.1	315.1	307.8	315.8	316.1	318.0	313.5	314.5	312.4
Carbonated drinks, including diet cola (12/77 = 100)	145.1	152.6	153.2	151.3	150.9	150.1	150.5	142.6	150.3	150.7	149.0	148.5	147.6	148.1
Roasted coffee	356.6	364.3	367.6	368.6	368.9	372.8	374.8	351.7	358.9	362.0	363.0	363.4	367.1	369.0
Freeze dried and instant coffee	351.4	357.2	359.8	362.2	362.8	363.5	366.9	350.7	356.5	359.1	361.6	362.1	362.9	366.3
Other noncarbonated drinks (12/77 = 100)	140.4	144.5	144.9	144.7	146.0	146.2	147.4	140.7	144.8	145.2	144.9	146.4	146.4	147.7
Other prepared foods	276.8	281.4	282.1	283.8	283.9	285.3	285.4	278.4	283.0	283.7	285.4	285.4	286.9	287.0
Canned and packaged soup (12/77 = 100)	141.9	143.2	143.6	144.6	144.6	144.6	145.6	143.7	145.2	145.5	145.5	146.5	146.4	147.6
Frozen prepared foods (12/77 = 100)	154.4	156.8	156.0	159.3	158.3	160.4	159.1	153.5	156.1	155.1	158.4	157.3	159.6	158.3
Snacks (12/77 = 100)	159.3	162.8	163.3	163.0	164.7	165.1	166.0	161.3	164.9	165.4	165.2	166.9	167.4	168.3
Seasonings, olives, pickles, and relish (12/77 = 100)	158.5	162.3	162.9	163.5	162.7	163.8	163.8	157.5	161.4	161.9	162.4	161.7	163.0	162.9
Other condiments (12/77 = 100)	156.1	156.6	156.6	157.5	157.8	158.4	160.0	157.9	158.4	158.4	159.4	159.6	160.2	161.9
Miscellaneous prepared foods (12/77 = 100)	151.6	154.6	155.0	155.8	156.0	156.0	154.9	151.8	154.8	155.1	156.0	156.0	156.2	154.9
Other canned and packaged prepared foods (12/77 = 100)	146.8	149.7	151.6	151.7	151.3	152.1	151.6	148.0	150.9	152.8	153.0	152.4	153.2	152.8
Food away from home	319.8	328.5	329.8	330.9	332.6	333.1	334.4	323.0	331.7	333.0	334.1	335.9	336.3	337.7
Lunch (12/77 = 100)	154.9	158.5	159.0	159.6	160.5	160.7	161.5	156.5	160.1	160.6	161.2	162.0	162.3	163.0
Dinner (12/77 = 100)	153.4	158.1	158.9	159.6	160.2	160.3	161.0	155.1	159.9	160.8	161.3	162.0	162.0	162.8
Other meals and snacks (12/77 = 100)	158.6	162.9	163.4	163.7	164.8	165.3	165.5	159.1	163.4	163.9	164.2	165.3	165.8	166.0
<b>Alcoholic beverages</b>	217.2	219.9	220.7	221.3	221.5	222.4	222.5	219.8	223.0	223.8	224.6	224.8	225.6	225.8
Alcoholic beverages at home (12/77 = 100)	140.7	141.5	142.0	142.3	142.3	142.8	142.8	142.5	143.6	144.1	144.5	144.6	145.0	145.0
Beer and ale	224.8	227.7	228.7	229.9	230.6	231.2	231.5	223.6	226.8	227.8	228.9	229.7	230.2	230.6
Whiskey	152.1	153.2	153.6	153.1	153.3	153.8	153.5	152.6	153.5	153.8	153.7	153.7	154.1	153.9
Wine	237.1	232.4	233.6	233.4	231.4	234.0	232.5	245.2	239.8	241.5	241.7	239.3	241.8	240.1
Other alcoholic beverages (12/77 = 100)	121.7	122.8	122.8	122.8	122.3	122.5	122.7	121.8	122.6	122.8	122.7	122.3	122.4	122.4
Alcoholic beverages away from home (12/77 = 100)	146.1	152.0	152.6	153.6	154.2	154.8	155.5	147.1	153.2	153.9	154.8	155.3	155.9	156.6
<b>HOUSING</b>	324.5	331.0	331.5	333.2	334.6	336.2	338.1	323.1	324.2	322.9	322.7	325.2	326.2	328.7
<b>Shelter (CPI-U)</b>	345.3	354.0	355.5	357.8	358.9	360.2	362.7	...	...	...	...	...	...	...
Renters' costs	103.1	106.0	106.5	107.4	107.8	108.2	108.9	...	...	...	...	...	...	...
Rent, residential	237.1	243.6	244.8	246.4	247.2	248.4	249.7	...	...	...	...	...	...	...
Other renters' costs	352.3	362.5	364.5	371.2	371.3	371.5	375.7	...	...	...	...	...	...	...
Homeowners' costs	102.7	105.1	105.6	106.2	106.5	106.8	107.6	...	...	...	...	...	...	...
Owners' equivalent rent	102.7	105.1	105.5	106.2	106.3	106.8	107.7	...	...	...	...	...	...	...
Household insurance	102.7	107.1	107.1	106.1	106.6	106.6	106.7	...	...	...	...	...	...	...
Maintenance and repairs	346.1	353.5	355.3	356.3	357.3	358.9	360.3	...	...	...	...	...	...	...
Maintenance and repair services	383.3	400.9	405.9	408.1	409.6	409.8	411.6	...	...	...	...	...	...	...
Maintenance and repair commodities	262.6	260.4	259.3	259.2	259.7	262.2	263.1	...	...	...	...	...	...	...
<b>Shelter (CPI-W)</b>	...	...	...	...	...	...	...	344.1	343.7	342.0	341.3	344.2	344.6	347.9
Rent, residential	...	...	...	...	...	...	...	236.5	242.9	244.1	245.7	246.5	247.7	249.0
Other renters' costs	...	...	...	...	...	...	...	350.4	360.9	363.0	370.7	370.5	370.8	375.1
Lodging while out of town	...	...	...	...	...	...	...	370.7	377.9	381.3	393.8	393.5	393.9	400.6
Tenants' insurance (12/77 = 100)	...	...	...	...	...	...	...	153.8	161.1	161.1	159.8	159.8	160.1	160.4
Homeownership	...	...	...	...	...	...	...	382.5	379.4	376.6	374.9	378.5	378.8	382.7
Home purchase	...	...	...	...	...	...	...	303.3	294.4	292.5	291.7	291.9	291.7	294.9
Financing, taxes, and insurance	...	...	...	...	...	...	...	491.3	490.5	484.8	480.8	490.1	490.6	496.5
Property insurance	...	...	...	...	...	...	...	430.8	439.3	439.9	440.3	441.0	441.5	441.6
Property taxes	...	...	...	...	...	...	...	235.1	243.2	244.1	244.8	245.6	245.9	246.4
Contracted mortgage interest costs	...	...	...	...	...	...	...	622.5	617.2	607.9	601.6	615.5	616.0	624.9
Mortgage interest rates	...	...	...	...	...	...	...	203.8	207.7	205.4	203.9	208.4	209.3	210.1
Maintenance and repairs	...	...	...	...	...	...	...	342.0	351.9	353.8	354.2	355.0	356.0	357.3
Maintenance and repair services	...	...	...	...	...	...	...	381.4	396.8	400.3	401.0	402.6	403.1	405.2



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

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers						
	1983		1984					1983		1984				
	July	Feb.	Mar.	Apr.	May	June	July	July	Feb.	Mar.	Apr.	May	June	July
<b>Homeownership—Continued</b>														
Maintenance and repair commodities								258.0	257.4	256.3	255.9	255.6	257.2	257.1
Paint and wallpaper, supplies, tools, and equipment (12/77 = 100)								149.2	147.6	147.3	147.3	146.2	148.0	147.2
Lumber, awnings, glass, and masonry (12/77 = 100)								125.8	125.6	124.3	124.5	124.2	124.1	123.1
Plumbing, electrical, heating, and cooling supplies (12/77 = 100)								138.7	139.4	138.6	140.2	141.9	142.5	142.1
Miscellaneous supplies and equipment (12/77 = 100)								143.3	144.3	144.0	141.7	142.4	143.0	146.3
<b>Fuel and other utilities</b>	375.5	383.0	380.1	380.9	385.5	390.0	393.9	377.3	384.2	381.3	382.0	386.6	391.4	395.4
<b>Fuels</b>	477.7	479.6	475.2	476.0	483.5	490.7	496.5	477.9	479.1	474.7	475.4	482.6	490.4	496.1
Fuel oil, coal, and bottled gas	619.3	688.6	660.0	650.7	649.2	646.0	637.4	621.7	691.4	662.4	652.9	651.5	648.4	640.0
Fuel oil	627.2	705.0	671.6	660.9	659.9	656.2	646.2	629.5	707.6	673.9	663.1	662.1	658.6	648.8
Other fuels (6/78 = 100)	189.3	197.4	196.4	195.6	194.4	194.1	193.7	190.2	198.1	197.1	196.3	195.1	194.8	194.4
Gas (piped) and electricity	440.5	429.0	429.5	432.3	441.4	450.6	459.1	440.3	427.9	428.4	431.1	439.9	449.7	458.2
Electricity	341.1	334.2	335.8	338.9	343.0	358.6	358.7	341.6	333.3	335.1	338.0	342.2	358.7	369.0
Utility (piped) gas	593.0	573.6	571.4	573.2	591.7	585.9	589.7	589.5	570.1	567.9	569.8	587.2	581.6	585.1
Other utilities and public services	214.2	228.0	227.4	228.2	228.8	229.4	230.6	215.3	229.2	228.5	229.2	229.9	230.4	231.7
Telephone services	173.8	186.8	185.9	186.4	186.7	187.1	188.1	174.3	187.5	186.6	187.0	187.4	187.6	188.7
Local charges (12/77 = 100)	141.8	159.0	157.7	157.8	158.3	160.1	162.3	142.3	159.6	158.4	158.4	159.0	160.8	163.1
Interstate toll calls (12/77 = 100)	121.9	122.4	122.4	122.3	122.6	118.5	116.2	122.3	122.8	122.8	122.7	123.0	118.9	116.6
Intrastate toll calls (12/77 = 100)	118.2	122.1	122.0	123.7	123.1	124.8	125.9	118.2	122.1	122.0	123.6	122.9	124.6	125.7
Water and sewerage maintenance	353.5	369.0	369.5	371.4	373.9	374.6	376.6	357.7	373.2	373.9	375.7	378.2	378.9	381.0
<b>Household furnishings and operations</b>	238.9	240.4	241.2	242.3	242.4	242.3	241.9	235.8	237.4	238.0	238.9	239.1	238.9	283.3
<b>Housefurnishings</b>	198.1	197.6	198.3	199.9	199.8	199.1	197.9	196.1	196.0	196.7	197.7	197.7	196.9	195.6
Textile housefurnishings	227.3	232.0	236.1	235.2	236.6	234.7	232.9	231.1	235.5	240.0	238.6	239.9	238.4	236.4
Household linens (12/77 = 100)	134.4	137.4	140.1	139.0	140.8	138.2	136.6	135.6	138.5	141.2	139.9	141.6	139.4	137.7
Curtains, drapes, slipcovers, and sewing materials (12/77 = 100)	149.3	152.3	154.6	154.7	154.6	154.9	154.2	154.0	156.6	159.5	159.2	158.9	159.5	158.6
<b>Furniture and bedding</b>	220.5	216.7	218.4	222.8	223.8	223.3	222.1	217.6	213.7	215.3	218.9	220.1	219.5	218.7
Bedroom furniture (12/77 = 100)	156.5	148.7	149.1	154.2	154.3	154.1	151.5	153.0	145.3	145.9	149.6	150.2	149.6	148.1
Sofas (12/77 = 100)	117.7	118.5	119.8	121.2	121.1	121.3	121.9	118.0	118.3	119.7	121.3	121.1	121.6	122.1
Living room chairs and tables (12/77 = 100)	123.9	124.5	124.5	125.5	128.2	126.8	126.3	125.0	125.7	125.7	126.3	129.0	127.6	127.2
Other furniture (12/77 = 100)	141.1	139.7	142.1	144.6	144.7	144.8	144.7	137.1	135.9	137.9	140.2	140.4	140.4	140.2
<b>Appliances including TV and sound equipment</b>	150.9	151.1	150.5	150.1	149.8	148.8	147.2	151.2	152.2	151.9	151.4	151.3	150.1	148.4
Television and sound equipment	105.2	104.5	103.6	103.4	102.9	102.0	101.3	104.3	103.5	102.5	102.4	101.9	101.0	100.2
Television	100.1	98.1	97.9	96.7	96.5	95.9	94.5	99.0	96.7	96.5	95.3	95.1	94.5	93.0
Sound equipment (12/77 = 100)	110.8	111.2	109.7	110.3	109.5	108.4	108.2	109.8	110.2	108.6	109.3	108.5	107.4	107.2
<b>Household appliances</b>	188.6	190.7	191.0	190.4	190.6	189.7	187.1	189.0	192.1	192.8	192.0	192.3	191.0	188.4
Refrigerators and home freezers	192.7	196.2	197.2	195.8	196.2	196.8	194.2	199.2	201.9	203.1	202.2	202.5	202.5	199.8
Laundry equipment	143.0	145.9	147.4	146.7	146.7	145.0	145.5	143.5	147.1	148.6	147.6	147.6	145.8	146.0
Other household appliances (12/77 = 100)	125.6	126.4	126.2	126.1	126.2	125.4	123.2	123.6	125.3	125.2	124.9	125.2	124.2	121.4
Stoves, dishwashers, vacuums, and sewing machines (12/77 = 100)	124.0	127.2	127.1	126.3	126.9	127.0	121.7	122.6	126.4	126.4	125.4	126.2	125.8	120.0
Office machines, small electric appliances, and air conditioners (12/77 = 100)	127.3	126.1	125.8	126.2	125.7	124.4	124.9	124.8	124.0	123.8	124.2	124.1	122.4	122.9
<b>Other household equipment (12/77 = 100)</b>	142.0	141.7	141.6	143.2	142.1	142.2	142.1	139.7	139.5	139.2	140.7	139.4	139.6	139.5
Floor and window coverings, infants', laundry, cleaning, and outdoor equipment (12/77 = 100)	145.1	145.9	145.4	147.6	147.5	147.8	147.0	137.3	137.6	137.0	139.0	138.8	138.8	137.8
Clocks, lamps, and decor items (12/77 = 100)	133.6	132.0	132.8	137.4	136.1	134.3	135.5	129.3	128.1	128.5	132.9	131.5	129.7	130.7
Tableware, serving pieces, and nonelectric kitchenware (12/77 = 100)	149.1	148.2	148.2	149.2	147.2	147.9	147.2	144.9	144.1	144.2	145.1	143.0	143.9	143.3
Lawn equipment, power tools, and other hardware (12/77 = 100)	135.5	136.1	135.3	134.9	134.1	134.6	135.2	140.4	141.0	140.1	140.5	139.5	140.0	140.7
<b>Housekeeping supplies</b>	296.8	300.0	300.6	301.8	301.5	303.0	303.8	293.5	296.9	297.1	298.5	298.5	300.1	301.0
Soaps and detergents	294.6	296.5	296.1	297.1	298.2	299.3	299.8	290.3	292.3	291.7	292.8	293.7	294.8	295.3
Other laundry and cleaning products (12/77 = 100)	151.4	154.5	153.7	153.8	153.4	155.1	154.9	150.2	153.2	152.4	152.5	152.0	153.8	153.6
Cleansing and toilet tissue, paper towels and napkins (12/77 = 100)	148.1	148.8	149.3	151.6	151.7	152.9	153.7	148.2	149.0	149.4	151.6	151.7	152.9	153.7
Stationery, stationery supplies, and gift wrap (12/77 = 100)	140.3	141.7	141.7	142.0	142.5	143.5	143.7	143.2	145.0	144.7	145.1	145.7	146.7	147.1
Miscellaneous household products (12/77 = 100)	153.9	158.3	159.5	159.2	159.8	160.1	161.2	148.6	152.8	154.0	153.7	154.4	154.7	155.9
Lawn and garden supplies (12/77 = 100)	146.6	145.2	146.6	147.5	144.8	144.7	144.9	139.7	138.3	138.9	140.5	138.7	138.7	138.7
<b>Housekeeping services</b>	318.7	324.8	326.1	325.7	326.5	327.0	327.6	318.3	325.3	326.0	326.0	326.9	327.5	328.2
Postage	337.5	337.5	337.5	337.5	337.5	337.5	337.5	337.5	337.5	337.5	337.5	337.5	337.5	337.5
Moving, storage, freight, household laundry, and drycleaning services (12/77 = 100)	162.2	171.7	171.7	171.8	172.9	173.7	174.5	162.3	171.9	172.0	172.1	173.2	174.1	174.9
Appliance and furniture repair (12/77 = 100)	144.0	148.3	148.8	149.4	150.1	150.2	150.9	142.2	146.5	146.9	147.5	148.1	148.2	148.9
<b>APPAREL AND UPKEEP</b>	195.0	196.2	198.8	199.2	198.9	197.4	196.6	194.0	195.4	198.0	198.2	197.7	196.1	195.3
<b>Apparel commodities</b>	182.8	183.2	185.9	186.3	185.8	184.0	183.0	182.4	183.0	185.8	185.9	185.1	183.3	182.4
Apparel commodities less footwear	179.3	179.3	182.3	182.6	181.7	179.8	178.9	178.7	178.9	181.9	181.9	180.7	178.7	177.9
Men's and boys'	188.2	187.9	189.9	190.6	190.7	190.3	189.8	188.1	188.7	190.5	191.2	191.1	190.3	189.9
Men's (12/77 = 100)	118.3	118.1	119.4	120.2	120.4	120.0	119.3	118.7	118.9	120.1	121.0	121.1	120.3	119.6
Suits, sport coats, and jackets (12/77 = 100)	110.7	107.6	110.6	112.0	111.9	113.0	113.2	103.3	101.2	104.1	105.4	105.2	105.8	106.2
Coats and jackets	98.2	98.1	98.1	99.0	98.2	96.2	96.1	100.7	101.3	101.4	102.4	101.2	99.4	99.6
Furnishings and special clothing (12/77 = 100)	145.3	145.2	146.1	146.0	147.6	148.0	145.6	141.3	141.2	142.1	142.1	143.5	143.8	141.8

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

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers						Urban Wage Earners and Clerical Workers							
	1983	1984					1983	1984						
	July	Feb.	Mar.	Apr.	May	June	July	July	Feb.	Mar.	Apr.	May	June	July
<b>Men's—Continued</b>														
Shirts (12/77 = 100)	120.9	125.7	127.0	127.3	127.6	126.9	125.6	124.2	128.8	130.0	130.1	130.1	129.2	127.7
Dungarees, jeans, and trousers (12/77 = 100)	112.8	112.1	112.4	113.6	113.5	111.4	111.3	118.4	117.8	118.3	119.9	119.9	117.5	117.2
<b>Boys' (12/77 = 100)</b>	123.0	123.1	124.1	123.2	122.5	123.0	124.1	120.9	121.7	122.8	121.8	121.1	121.6	122.7
Coats, jackets, sweaters, and shirts (12/77 = 100)	114.9	118.4	119.7	119.7	119.4	118.2	120.8	115.5	120.7	122.0	122.0	121.8	120.4	123.1
Furnishings (12/77 = 100)	134.9	136.2	137.9	137.2	136.6	137.1	136.5	130.4	131.9	133.4	132.7	132.2	132.7	132.2
Suits, trousers, sport coats, and jackets (12/77 = 100)	124.6	121.6	122.1	120.3	119.3	121.2	121.8	121.6	119.0	119.6	117.6	116.6	118.4	119.0
<b>Women's and girls'</b>	158.8	159.0	163.3	163.2	161.8	157.9	156.2	160.8	160.7	165.3	164.5	162.7	159.2	157.4
<b>Women's (12/77 = 100)</b>	105.5	105.6	108.7	108.6	107.7	105.2	103.7	107.0	107.2	110.5	109.9	108.6	106.2	104.8
Coats and jackets	164.8	162.9	167.2	164.9	159.7	154.6	156.8	169.4	166.9	172.8	170.1	164.7	159.1	162.4
Dresses	161.4	166.5	175.9	175.0	176.1	172.1	163.7	147.2	153.7	162.9	160.6	162.9	160.5	153.1
Separates and sportswear (12/77 = 100)	96.3	93.0	92.5	92.8	93.4	91.1	88.2	96.9	93.3	93.0	93.5	93.9	91.4	88.6
Underwear, nightwear, and hosiery (12/77 = 100)	131.7	135.5	136.8	136.9	137.5	137.0	136.7	131.4	135.2	136.5	136.6	137.1	136.6	136.2
Suits (12/77 = 100)	81.0	75.2	85.0	85.1	77.3	71.3	74.4	99.8	95.0	106.4	104.2	92.7	85.8	97.1
<b>Girls' (12/77 = 100)</b>	106.2	106.4	108.0	108.2	107.2	104.3	104.6	106.6	105.6	107.4	107.6	106.4	104.3	104.0
Coats, jackets, dresses, and suits (12/77 = 100)	100.1	98.9	100.6	100.6	98.3	95.0	99.7	100.0	96.6	98.3	98.1	96.0	93.7	98.4
Separates and sportswear (12/77 = 100)	99.8	102.2	103.9	104.3	102.7	99.0	96.9	101.3	102.7	104.6	105.2	103.7	100.7	96.7
Underwear, nightwear, hosiery, and accessories (12/77 = 100)	127.7	126.3	128.0	128.1	129.7	129.3	127.1	126.8	125.2	126.9	126.9	128.2	127.8	125.7
Infants' and toddlers'	282.4	286.2	288.0	289.2	283.9	278.3	281.2	293.1	297.0	298.6	299.7	293.0	289.2	292.0
<b>Other apparel commodities</b>	215.9	216.1	217.2	217.6	216.8	217.7	218.0	204.6	204.4	205.3	205.5	205.0	205.7	206.0
Sewing materials and notions (12/77 = 100)	123.0	122.4	120.8	122.6	123.1	122.4	122.5	121.0	121.1	119.7	120.8	121.5	120.9	120.7
Jewelry and luggage (12/77 = 100)	146.7	147.0	148.8	148.3	147.4	148.5	148.8	137.4	137.2	138.7	138.4	137.6	138.5	138.9
<b>Footwear</b>	203.8	206.4	207.7	208.9	210.2	209.6	208.0	203.7	207.0	208.3	209.4	210.7	210.0	208.7
<b>Men's (12/77 = 100)</b>	132.8	135.0	135.2	135.8	137.1	136.7	137.5	134.7	136.9	137.1	137.9	139.2	138.7	139.6
<b>Boys' and girls' (12/77 = 100)</b>	128.9	131.4	131.2	131.4	132.4	132.1	131.0	131.0	133.9	133.8	133.9	134.7	134.5	133.7
<b>Women's (12/77 = 100)</b>	122.9	123.5	125.5	126.7	127.1	126.7	124.2	118.9	120.3	123.3	123.4	123.7	123.2	120.8
<b>Apparel services</b>	291.8	299.7	300.8	301.5	303.7	304.4	305.1	290.0	297.6	298.8	299.4	301.6	302.4	303.0
Laundry and drycleaning other than coin operated (12/77 = 100)	174.1	180.2	180.7	181.0	182.6	182.9	183.4	172.5	178.5	179.1	179.4	180.9	181.2	181.7
Other apparel services (12/77 = 100)	152.7	154.4	155.3	155.7	156.5	157.0	157.2	153.9	155.5	156.5	156.9	157.7	158.3	158.5
<b>TRANSPORTATION</b>	300.4	305.8	306.9	309.6	312.2	313.1	312.9	301.9	307.7	308.9	311.9	314.6	315.5	315.2
<b>Private</b>	296.0	300.8	301.9	304.8	307.4	308.1	307.5	298.6	303.9	305.2	308.3	311.0	311.7	311.2
<b>New cars</b>	201.4	207.2	207.2	207.4	207.6	207.7	208.1	201.0	206.7	206.7	206.9	207.1	207.1	207.6
<b>Used cars</b>	329.6	357.2	362.2	370.0	378.0	382.0	383.2	329.6	357.2	362.2	370.0	378.0	382.0	383.2
<b>Gasoline</b>	389.3	368.8	368.6	374.0	376.7	374.9	369.8	390.6	370.7	370.5	375.7	378.2	376.4	376.4
<b>Automobile maintenance and repair</b>	329.8	337.4	338.3	338.9	340.2	340.7	341.6	330.4	338.1	339.0	339.6	340.8	341.5	342.3
Body work (12/77 = 100)	166.6	170.3	170.7	171.4	172.3	172.6	172.6	165.6	169.0	169.3	170.1	170.9	171.3	171.6
Automobile drive train, brake, and miscellaneous mechanical repair (12/77 = 100)	158.3	164.4	165.1	165.1	165.8	166.2	166.5	162.2	168.4	169.1	169.2	169.8	170.2	170.6
Maintenance and servicing (12/77 = 100)	152.0	153.5	153.9	154.2	154.8	154.6	155.3	151.3	152.8	153.1	153.4	154.0	153.8	154.5
Power plant repair (12/77 = 100)	157.3	161.8	162.1	162.4	162.6	163.4	163.5	156.6	161.2	161.6	161.9	162.2	163.1	163.2
<b>Other private transportation</b>	258.6	267.7	268.3	269.0	270.4	271.5	272.4	259.4	268.5	269.1	269.9	271.3	272.4	273.4
<b>Other private transportation commodities</b>	209.6	202.8	201.3	202.4	201.7	202.0	200.6	212.1	205.2	203.5	204.8	204.2	204.5	202.9
Motor oil, coolant, and other products (12/77 = 100)	155.3	153.8	152.5	152.7	152.7	154.1	154.3	154.1	152.7	152.3	151.9	152.5	153.5	153.8
Automobile parts and equipment (12/77 = 100)	132.7	127.8	126.9	127.7	127.2	127.3	126.2	134.5	129.6	128.5	129.4	128.9	129.0	127.8
Tires	183.5	174.2	171.8	172.9	172.2	172.0	169.6	187.2	177.9	175.1	176.5	175.7	175.5	173.0
Other parts and equipment (12/77 = 100)	132.3	132.0	133.2	134.0	133.5	134.1	134.7	132.1	131.8	132.7	133.6	133.3	133.9	134.1
<b>Other private transportation services</b>	274.1	287.5	288.7	289.3	291.2	292.5	294.1	274.5	287.7	289.0	289.7	291.6	293.0	294.6
Automobile insurance	302.4	319.8	322.3	321.8	323.7	324.2	324.8	302.0	318.9	321.5	321.0	322.7	323.1	323.9
Automobile finance charges (12/77 = 100)	151.7	159.3	159.2	160.9	162.4	164.1	166.2	151.1	158.7	158.7	160.4	161.9	163.5	165.7
Automobile rental, registration, and other fees (12/77 = 100)	145.6	149.1	149.1	149.5	150.3	151.1	152.0	146.9	150.1	150.1	150.4	151.3	152.4	153.1
State registration	194.8	195.1	195.5	195.7	197.1	199.4	199.8	194.7	195.0	195.4	195.6	197.1	199.6	200.0
Drivers' licenses (12/77 = 100)	152.9	158.0	158.0	158.0	158.0	157.8	161.0	153.4	158.3	158.3	158.3	158.3	158.1	161.2
Vehicle inspection (12/77 = 100)	139.0	139.2	139.2	139.8	139.9	139.9	139.9	139.8	139.9	139.9	140.3	140.4	140.4	140.4
Other vehicle-related fees (12/77 = 100)	157.9	163.9	163.5	164.3	165.2	165.1	166.5	165.5	171.1	170.7	171.5	172.7	172.6	173.8
<b>Public</b>	363.2	377.4	377.4	377.1	379.8	385.2	389.3	354.4	370.1	370.2	370.0	372.2	377.4	380.7
Airline fare	418.8	429.5	429.0	427.7	433.8	442.0	450.1	415.9	425.5	424.9	423.5	430.0	438.2	446.6
Intercity bus fare	404.2	428.2	427.6	428.7	429.9	426.2	438.9	404.1	427.1	426.8	427.6	429.3	425.8	438.7
Intracity mass transit	322.6	341.4	342.0	342.3	342.3	346.5	346.6	320.7	341.3	341.8	342.1	347.1	346.5	346.6
Taxi fare	301.0	308.3	308.5	308.8	309.2	309.7	310.4	311.0	317.5	317.7	317.9	318.3	319.0	319.7
Intercity train fare	361.3	373.5	373.4	373.4	373.5	381.5	381.9	362.3	373.8	373.7	373.7	373.8	381.9	382.1
<b>MEDICAL CARE</b>	357.7	373.2	374.5	375.7	376.8	378.0	380.3	355.6	371.3	372.6	373.9	375.0	376.3	378.5
<b>Medical care commodities</b>	224.2	232.9	235.0	236.9	238.7	239.4	240.7	224.5	233.2	235.3	237.1	238.7	239.5	240.7
<b>Prescription drugs</b>	214.5	226.4	228.2	230.7	233.1	233.5	234.9	215.6	227.9	229.7	232.2	234.5	234.9	236.3
Anti-infective drugs (12/77 = 100)	157.2	163.4	163.9	164.8	165.8	164.9	166.1	159.2	165.8	166.3	167.3	168.3	167.3	168.3
Tranquilizers and sedatives (12/77 = 100)	177.6	193.0	195.5	198.4	202.8	204.0	205.1	177.2	192.9	195.4	198.3	202.7	204.0	205.1
Circulatories and diuretics (12/77 = 100)	154.0	164.7	164.7	166.1	167.4	169.0	170.4	153.9	164.4	164.3	165.5	167.3	168.3	169.5
Hormones, diabetic drugs, biologicals, and prescription medical supplies (12/77 = 100)	198.1	207.2	209.7	212.5	214.1	214.7	216.2	199.8	209.4	211.9	214.7	216.3	217.0	218.4

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

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers						Urban Wage Earners and Clerical Workers							
	1983	1984					1983	1984						
	July	Feb.	Mar.	Apr.	May	June	July	July	Feb.	Mar.	Apr.	May	June	July
Prescription drugs—Continued														
Pain and symptom control drugs (12/77 = 100)	175.1	183.8	185.5	187.7	188.7	188.3	189.7	176.8	185.9	187.7	190.0	191.0	190.3	191.7
Supplements, cough and cold preparations, and respiratory agents (12/77 = 100)	162.3	169.8	171.4	173.2	174.6	174.5	175.9	162.5	170.4	172.0	173.9	175.3	176.1	176.5
Nonprescription drugs and medical supplies (12/77 = 100)	155.9	159.6	161.2	162.1	162.8	163.5	164.3	156.7	160.6	162.1	163.0	163.7	164.4	165.1
Eyeglasses (12/77 = 100)	135.8	138.0	138.4	138.9	139.3	140.0	140.6	134.6	137.0	137.3	137.8	138.2	138.8	139.5
Internal and respiratory over-the-counter drugs	253.5	260.1	263.1	264.9	266.6	268.2	269.5	254.9	261.4	264.4	266.1	267.7	269.3	270.6
Nonprescription medical equipment and supplies (12/77 = 100)	150.3	154.6	155.8	156.5	156.5	156.4	157.0	151.3	155.7	157.5	158.0	158.0	157.9	158.4
<b>Medical care services</b>	<b>387.2</b>	<b>404.4</b>	<b>405.3</b>	<b>406.3</b>	<b>407.1</b>	<b>408.4</b>	<b>410.9</b>	<b>384.4</b>	<b>401.8</b>	<b>402.7</b>	<b>403.9</b>	<b>404.7</b>	<b>406.1</b>	<b>408.6</b>
Professional services	324.2	339.8	341.1	342.5	343.8	345.8	347.0	324.6	340.3	341.6	343.0	344.2	346.2	347.4
Physicians' services	353.9	370.4	372.2	373.5	375.2	377.1	378.1	357.6	374.4	376.1	377.5	379.0	381.1	382.1
Dental services	303.8	319.8	321.1	322.5	323.6	326.2	327.9	301.6	317.8	319.0	320.5	321.6	324.0	325.7
Other professional services (12/77 = 100)	153.0	158.7	158.8	159.5	159.7	159.9	160.1	149.6	155.0	155.8	156.0	156.1	156.1	156.4
Other medical care services	463.3	482.5	482.8	483.4	483.6	484.1	488.3	459.4	479.0	479.3	480.0	480.3	480.9	485.2
Hospital and other medical services (12/77 = 100)	193.8	206.4	207.0	207.5	207.9	208.4	210.9	191.9	204.4	204.9	205.6	205.9	206.3	208.9
Hospital room	619.1	657.9	659.4	660.3	660.7	662.0	672.9	611.2	650.4	651.7	652.9	653.3	654.4	664.6
Other hospital and medical care services (12/77 = 100)	189.9	202.7	203.3	204.2	204.8	205.2	207.0	188.4	201.0	201.5	202.4	203.0	203.4	205.4
<b>ENTERTAINMENT</b>	<b>246.0</b>	<b>251.5</b>	<b>251.7</b>	<b>253.8</b>	<b>253.5</b>	<b>254.5</b>	<b>255.3</b>	<b>242.5</b>	<b>247.7</b>	<b>248.0</b>	<b>249.8</b>	<b>249.6</b>	<b>250.7</b>	<b>251.4</b>
Entertainment commodities	246.7	250.7	250.6	253.4	252.2	252.4	253.3	241.4	245.3	245.3	247.7	246.8	246.9	247.8
Reading materials (12/77 = 100)	158.5	164.1	162.4	164.5	163.1	163.7	164.5	158.0	163.4	161.9	164.0	162.6	163.3	164.0
Newspapers	302.7	310.2	311.8	312.6	313.0	313.3	315.0	302.7	310.4	312.0	312.9	313.1	313.4	315.1
Magazines, periodicals, and books (12/77 = 100)	163.6	171.2	166.6	170.7	167.5	168.7	169.4	163.6	171.3	166.5	170.8	167.3	168.7	169.3
Sporting goods and equipment (12/77 = 100)	134.2	135.9	136.1	139.1	138.0	137.5	137.8	128.3	130.3	130.0	132.6	131.7	131.2	131.4
Sport vehicles (12/77 = 100)	137.1	139.5	139.9	144.6	143.0	142.2	142.9	127.8	130.7	130.4	134.1	133.0	132.2	132.6
Indoor and warm weather sport equipment (12/77 = 100)	118.6	117.4	117.1	117.5	117.3	117.7	117.7	116.4	115.3	115.1	115.6	115.5	116.0	115.9
Bicycles	199.8	201.5	201.5	201.1	200.8	201.1	200.2	200.7	202.4	202.5	202.2	201.7	202.0	201.2
Other sporting goods and equipment (12/77 = 100)	132.8	134.6	134.0	135.6	134.6	134.2	134.3	132.7	134.2	133.8	135.3	134.3	134.0	134.2
Toys, hobbies, and other entertainment (12/77 = 100)	139.0	139.8	140.5	141.0	141.0	141.1	141.7	137.7	138.7	139.5	140.0	140.0	140.1	140.7
Toys, hobbies, and music equipment (12/77 = 100)	137.7	137.3	138.6	139.3	139.2	138.8	139.3	134.0	133.8	135.2	135.8	135.8	135.5	135.9
Photographic supplies and equipment (12/77 = 100)	131.6	131.9	132.6	132.9	133.2	133.7	134.2	132.7	133.0	133.8	134.2	134.4	135.0	135.6
Pet supplies and expenses (12/77 = 100)	146.6	149.9	149.7	149.9	149.8	150.5	151.4	147.6	150.9	150.8	151.0	150.9	151.6	152.7
Entertainment services	245.6	253.1	253.8	254.9	255.4	258.1	258.5	245.8	253.2	253.9	254.7	255.8	258.5	258.8
Fees for participant sports (12/77 = 100)	151.8	158.6	158.5	159.5	159.6	159.7	159.7	152.8	159.2	159.2	160.1	160.3	160.7	160.4
Admissions (12/77 = 100)	146.4	148.3	148.9	149.4	151.3	155.3	156.0	145.4	147.2	147.8	148.3	150.2	154.3	155.0
Other entertainment services (12/77 = 100)	130.6	133.4	134.5	134.8	134.9	135.1	135.3	131.4	134.4	135.7	135.7	132.5	135.7	136.0
<b>OTHER GOODS AND SERVICES</b>	<b>287.5</b>	<b>301.5</b>	<b>302.1</b>	<b>302.8</b>	<b>303.2</b>	<b>304.4</b>	<b>306.5</b>	<b>286.4</b>	<b>299.2</b>	<b>299.7</b>	<b>300.4</b>	<b>300.8</b>	<b>302.1</b>	<b>304.5</b>
Tobacco products	294.6	305.4	305.6	305.9	305.9	308.1	313.2	294.3	305.1	305.2	305.6	305.6	307.8	312.9
Cigarettes	302.8	313.8	313.8	314.1	314.0	316.3	322.0	301.7	312.7	312.8	313.1	313.1	315.3	320.9
Other tobacco products and smoking accessories (12/77 = 100)	150.5	156.1	157.0	157.6	157.9	158.9	159.3	150.5	156.0	157.0	157.6	157.9	159.0	159.4
Personal care	261.3	267.9	267.8	268.9	269.5	270.6	271.8	259.4	266.1	265.7	266.9	267.5	268.5	269.7
Toilet goods and personal care appliances	262.3	267.9	265.9	267.3	267.4	268.5	270.2	263.0	268.7	266.6	268.1	268.3	269.3	270.9
Products for the hair, hairpieces, and wigs (12/77 = 100)	152.5	154.7	154.1	154.9	154.1	154.8	156.1	151.7	153.8	153.3	154.1	153.4	154.1	155.1
Dental and shaving products (12/77 = 100)	162.6	168.1	164.6	165.1	166.8	166.5	167.2	160.8	166.3	162.9	163.3	164.9	164.7	165.2
Cosmetics, bath and nail preparations, manicure and eye makeup implements (12/77 = 100)	148.8	150.6	150.0	151.8	151.5	153.0	154.0	149.5	151.7	150.8	152.7	152.7	154.0	155.1
Other toilet goods and small personal care appliances (12/77 = 100)	147.9	152.4	151.8	151.6	151.7	151.7	152.7	151.6	156.2	155.4	155.2	155.3	155.5	156.4
Personal care services	261.5	269.0	270.4	271.4	272.3	273.4	274.3	256.4	264.0	265.3	266.1	267.1	268.2	269.0
Beauty parlor services for women	264.3	272.3	273.4	274.4	275.0	276.4	277.3	257.5	265.7	266.6	267.5	268.0	269.3	270.2
Haircuts and other barber shop services for men (12/77 = 100)	145.1	148.7	149.9	150.4	151.4	151.7	152.1	143.9	147.5	148.6	149.2	150.2	150.5	150.9
Personal and educational expenses	327.2	354.4	356.4	356.9	357.4	357.9	358.6	329.4	356.4	359.2	359.7	360.3	360.7	361.3
Schoolbooks and supplies	294.2	317.2	317.1	317.6	317.8	318.5	318.8	298.3	321.7	321.6	322.2	322.4	323.1	323.4
Personal and educational services	335.1	363.3	365.7	366.1	366.7	367.1	367.9	337.3	365.2	368.6	369.0	369.7	370.1	370.8
Tuition and other school fees	168.0	183.2	184.3	184.4	184.4	184.4	184.5	168.5	183.5	185.2	185.3	185.3	185.4	185.6
College tuition (12/77 = 100)	167.8	183.0	184.5	184.7	184.7	184.8	185.2	167.9	182.9	185.4	185.5	185.5	185.5	186.0
Elementary and high school tuition (12/77 = 100)	168.9	183.9	183.9	183.9	183.9	183.9	183.9	169.9	184.9	184.9	184.9	185.6	185.0	185.0
Personal expenses (12/77 = 100)	187.9	199.6	201.2	202.0	188.0	204.2	205.0	188.3	200.2	202.1	202.8	204.3	204.8	205.6
<b>Special indexes:</b>														
Gasoline, motor oil, coolant, and other products	384.3	365.1	364.7	369.8	372.4	370.7	365.9	385.4	366.0	366.5	371.4	373.8	372.2	367.3
Insurance and finance								411.4	415.7	412.6	410.3	416.9	417.7	422.0
Utilities and public transportation	343.6	346.6	346.5	348.0	352.8	358.0	362.9	343.1	345.5	345.5	347.0	351.6	357.1	362.0
Housekeeping and home maintenance services	358.9	366.9	368.7	368.6	369.5	370.0	370.9	361.7	373.8	376.1	376.6	377.8	378.4	379.9



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

[December 1977 = 100]

Category and group	Size class A (1.25 million or more)			Size class B (385,000-1,250 million)			Size class C (75,000-385,000)			Size class D (75,000 or less)		
	1984			1984			1984			1984		
	Feb.	Apr.	June	Feb.	Apr.	June	Feb.	Apr.	June	Feb.	Apr.	June
<b>Northeast</b>												
<b>EXPENDITURE CATEGORY</b>												
All items	159.5	160.7	161.2	165.9	166.3	167.2	170.5	170.9	171.7	164.9	166.3	167.2
Food and beverages	152.4	152.7	153.0	151.8	151.5	151.0	155.0	155.2	156.0	152.4	152.4	152.6
Housing	164.3	165.3	165.9	176.9	175.7	177.3	183.7	183.0	184.0	170.1	172.9	173.4
Apparel and upkeep	121.1	123.8	122.2	124.0	128.5	125.5	128.7	131.8	131.1	132.6	133.6	136.4
Transportation	168.4	170.1	171.4	172.6	174.1	176.2	173.2	174.3	175.5	172.2	173.4	175.1
Medical care	171.8	173.2	174.0	175.1	177.6	179.2	176.5	176.9	177.7	181.1	182.5	183.0
Entertainment	146.6	148.1	146.6	140.3	143.8	143.8	149.9	152.8	152.3	152.4	152.3	153.6
Other goods and services	169.1	170.6	171.1	168.7	169.1	170.0	173.5	174.5	172.5	173.6	173.9	174.6
<b>COMMODITY AND SERVICE GROUP</b>												
Commodities	153.6	154.1	154.2	159.3	159.9	159.8	159.1	159.2	159.8	158.6	158.2	159.1
Commodities less food and beverages	154.0	154.7	154.6	162.5	163.5	163.7	160.7	160.8	161.5	161.1	160.4	160.8
Services	166.9	168.8	169.8	175.8	176.1	178.2	188.6	189.6	190.4	174.4	178.4	179.1
<b>North Central Region</b>												
<b>EXPENDITURE CATEGORY</b>												
All items	168.7	169.9	171.3	165.2	166.8	167.7	162.5	163.4	164.7	163.7	164.5	164.8
Food and beverages	149.4	149.4	149.0	148.0	148.6	148.5	148.6	148.8	149.1	155.9	156.9	156.9
Housing	186.2	187.7	190.7	173.4	175.2	176.7	169.9	169.1	171.6	167.0	167.3	166.4
Apparel and upkeep	116.7	118.2	117.8	126.6	132.8	130.8	129.0	132.6	128.3	123.0	126.1	124.6
Transportation	168.6	170.5	172.3	170.9	172.9	174.1	171.1	173.8	176.2	170.0	172.2	174.7
Medical care	176.2	177.4	178.5	176.9	177.2	179.4	170.2	172.7	172.7	183.2	182.9	184.0
Entertainment	144.6	145.1	145.7	135.7	140.6	140.7	148.3	151.0	152.9	144.2	141.3	140.5
Other goods and services	165.9	165.9	166.8	177.4	178.6	180.5	163.0	163.6	164.3	175.0	176.1	177.4
<b>COMMODITY AND SERVICE GROUP</b>												
Commodities	156.8	158.1	158.0	155.7	157.3	157.5	153.6	155.1	155.4	153.8	154.8	155.6
Commodities less food and beverages	160.0	162.1	162.2	158.6	160.9	161.1	155.7	157.9	158.3	152.7	153.8	155.0
Services	186.3	187.2	190.7	180.4	182.1	184.1	176.8	176.8	179.6	179.3	179.8	179.2
<b>South</b>												
<b>EXPENDITURE CATEGORY</b>												
All items	165.7	166.3	167.6	166.9	168.2	169.1	165.3	166.9	167.1	166.6	168.1	168.4
Food and beverages	156.3	156.3	152.6	154.8	155.6	155.3	153.2	153.0	152.5	157.5	156.6	156.1
Housing	172.4	172.3	174.5	172.0	173.7	174.7	170.7	173.2	172.6	174.2	176.4	176.4
Apparel and upkeep	129.9	131.3	132.2	129.6	128.1	128.3	124.8	127.5	126.4	110.9	114.7	113.6
Transportation	171.0	172.6	173.9	174.1	176.2	178.0	171.8	174.0	176.0	170.2	172.3	174.3
Medical care	176.2	177.1	179.1	177.0	178.5	180.4	186.7	187.5	188.0	193.3	193.7	193.4
Entertainment	142.9	145.2	144.7	157.7	159.6	160.0	151.4	153.2	152.8	148.5	150.5	150.7
Other goods and services	169.6	170.0	170.8	171.5	172.4	173.0	169.5	170.2	172.1	167.9	169.2	169.9
<b>COMMODITY AND SERVICE GROUP</b>												
Commodities	157.9	158.6	159.1	159.2	160.2	160.6	156.5	157.7	158.0	159.9	152.9	158.2
Commodities less food and beverages	158.1	159.4	160.2	160.7	161.8	162.7	157.7	159.7	160.5	156.1	158.1	159.0
Services	176.5	176.8	179.1	178.4	180.1	181.6	178.4	181.2	181.2	181.2	183.4	183.5
<b>West</b>												
<b>EXPENDITURE CATEGORY</b>												
All items	165.7	167.2	168.6	165.3	166.8	169.1	157.6	159.1	160.9	164.8	166.5	167.2
Food and beverages	155.8	155.3	154.6	158.4	158.6	158.8	153.7	155.0	154.5	160.3	160.3	161.6
Housing	171.7	173.7	176.3	168.4	170.4	174.3	154.6	155.8	158.7	165.2	168.0	167.3
Apparel and upkeep	123.8	124.3	121.4	124.9	126.9	127.2	123.8	123.9	122.7	141.2	142.9	142.9
Transportation	172.9	176.4	179.5	175.0	177.5	180.5	170.5	173.5	176.3	168.6	171.1	173.5
Medical care	181.2	182.6	183.3	178.2	179.8	181.5	184.5	185.9	187.5	183.8	184.6	186.6
Entertainment	144.3	144.1	149.9	148.1	148.9	148.9	151.8	154.4	154.8	161.4	160.6	162.0
Other goods and services	171.1	171.5	171.5	171.3	171.3	173.0	166.8	166.5	169.4	175.3	175.1	175.3
<b>COMMODITY AND SERVICE GROUP</b>												
Commodities	154.1	155.9	155.7	157.3	158.7	159.7	155.3	157.1	157.6	154.6	155.6	157.0
Commodities less food and beverages	152.9	156.1	156.3	156.2	158.4	159.9	155.3	157.4	158.8	151.5	153.2	154.6
Services	180.6	181.9	185.0	176.2	178.0	181.8	160.4	161.7	164.6	179.9	182.3	182.2

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

[1967 = 100 unless otherwise specified]

Area <sup>1</sup>	All Urban Consumers							Urban Wage Earners and Clerical Workers						
	1983	1984						1983	1984					
	July	Feb.	Mar.	Apr.	May	June	July	July	Feb.	Mar.	Apr.	May	June	July
U.S. city average <sup>2</sup>	299.3	306.6	307.3	308.8	309.7	310.7	311.7	298.2	303.3	303.3	304.1	305.4	306.2	307.5
Anchorage, Alaska (10/67 = 100)	265.8	...	274.4	...	275.3	...	275.5	257.5	...	265.9	...	265.7	...	266.8
Atlanta, Ga.	...	...	309.3	...	...	314.0	...	...	...	309.6	...	...	310.9	...
Baltimore, Md.	300.4	307.6	...	310.4	311.3	...	313.0	279.4	303.8	...	307.2	309.4	...	311.6
Boston, Mass.	289.8	296.6	...	302.0	303.1	...	304.9	288.7	294.4	...	298.2	300.6	...	300.8
Buffalo, N.Y.	...	290.5	...	293.0	...	292.5	...	...	285.9	...	286.6	...	287.3	...
Chicago, Ill.—Northwestern Ind.	299.6	305.0	305.4	306.7	306.9	310.0	310.8	296.4	296.9	296.0	296.3	296.3	298.3	299.0
Cincinnati, Ohio—Ky.—Ind.	312.4	...	320.0	...	321.9	...	323.3	308.0	...	313.8	...	312.3	...	314.4
Cleveland, Ohio	...	331.1	...	332.8	...	336.7	...	...	318.2	...	320.7	...	321.9	...
Dallas-Ft. Worth, Tex.	...	322.7	...	323.9	...	325.7	...	...	317.7	...	316.5	...	318.7	...
Denver-Boulder, Colo.	335.8	...	344.7	...	346.1	...	349.9	331.7	...	341.7	...	340.8	...	347.1
Detroit, Mich.	298.4	303.1	304.1	305.6	305.7	306.3	307.7	303.8	304.7	302.9	298.6	298.3	297.0	298.3
Honolulu, Hawaii	...	280.7	...	283.2	...	284.7	...	...	284.3	...	289.0	...	290.9	...
Houston, Tex.	...	323.6	...	325.7	...	330.5	...	...	323.5	...	324.9	...	329.5	...
Kansas City, Mo.—Kansas	...	306.4	...	309.1	...	310.8	...	...	296.6	...	299.7	...	299.9	...
Los Angeles-Long Beach, Anaheim, Calif.	294.5	300.2	300.7	302.8	305.4	305.6	305.9	293.2	299.0	297.9	298.9	303.1	303.4	300.3
Miami, Fla. (11/77 = 100)	160.8	...	165.6	...	166.4	...	167.0	162.8	...	166.3	...	167.2	...	168.0
Milwaukee, Wis.	309.8	...	316.8	...	320.5	...	321.3	324.8	...	335.3	...	338.2	...	341.6
Minneapolis-St. Paul, Minn.—Wis.	...	319.6	...	322.0	...	324.1	...	...	318.6	...	321.1	...	328.9	...
New York, N.Y.—Northeastern N.J.	289.1	299.0	299.9	300.9	300.8	301.6	302.9	286.1	290.5	289.9	291.2	291.6	293.0	294.7
Northeast, Pa. (Scranton)	283.4	...	293.0	...	294.7	...	297.3	286.5	...	294.0	...	295.5	...	295.9
Philadelphia, Pa.—N.J.	286.1	296.4	296.7	298.2	298.7	300.0	301.4	291.1	298.5	298.8	299.0	300.5	302.7	304.3
Pittsburgh, Pa.	...	315.5	...	318.6	...	319.7	...	...	299.6	...	301.5	...	301.4	...
Portland, Oreg.—Wash.	291.5	...	298.0	...	301.9	...	300.9	286.4	...	292.2	...	297.5	...	294.6
St. Louis, Mo.—Ill.	299.3	...	302.7	...	305.4	...	308.7	296.7	...	297.3	...	297.3	...	301.4
San Diego, Calif.	335.2	...	349.8	...	353.5	...	351.3	320.0	...	326.6	...	328.2	...	324.6
San Francisco-Oakland, Calif.	...	311.7	...	315.9	...	318.7	...	...	308.7	...	310.8	...	315.1	...
Seattle-Everett, Wash.	304.0	...	310.2	...	313.0	...	314.3	292.2	...	299.9	...	302.7	...	303.2
Washington, D.C.—Md.—Va.	297.1	...	305.1	...	305.7	...	308.3	300.3	...	308.2	...	308.9	...	310.8

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

used for New York and Chicago.  
<sup>2</sup>Average of 85 cities.

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

[1967 = 100]

Commodity grouping	Annual average 1983	1983					1984							
		Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr. <sup>1</sup>	May	June	July	Aug.
<b>FINISHED GOODS</b>														
Finished goods .....	285.2	286.1	285.1	287.6	286.8	287.2	289.5	290.6	291.4	<sup>r</sup> 291.2	291.5	291.2	292.6	291.8
Finished consumer goods .....	284.6	285.7	285.1	287.0	285.9	286.3	288.9	290.1	291.1	<sup>r</sup> 290.3	290.7	290.3	292.0	290.8
Finished consumer foods .....	261.8	260.7	263.0	263.7	261.9	264.3	272.2	274.7	276.6	<sup>r</sup> 274.3	272.3	270.8	275.6	274.2
Crude .....	258.7	259.9	267.4	287.3	270.4	266.0	306.9	313.6	323.7	<sup>r</sup> 299.0	279.7	282.6	275.1	278.9
Processed .....	260.0	258.7	260.5	259.5	259.0	262.0	266.9	269.0	270.2	<sup>r</sup> 269.9	269.4	269.3	273.4	271.6
Nondurable goods less foods .....	335.3	338.6	338.6	338.1	336.8	335.2	335.0	336.1	336.7	<sup>r</sup> 336.4	339.3	339.6	339.8	337.6
Durable goods .....	233.1	233.8	229.2	235.3	235.4	235.9	235.9	236.1	236.6	<sup>r</sup> 236.7	236.6	236.5	236.6	237.1
Consumer nondurable goods less food and energy .....	231.5	232.7	233.0	233.6	234.1	234.0	236.0	236.5	237.1	<sup>r</sup> 237.9	238.6	238.5	240.2	240.2
Capital equipment .....	287.2	287.7	285.1	289.9	<sup>r</sup> 290.0	290.4	291.6	292.3	292.3	<sup>r</sup> 294.5	294.3	294.2	294.8	295.1
<b>INTERMEDIATE MATERIALS</b>														
Intermediate materials, supplies, and components .....	312.3	314.0	315.5	315.6	315.5	315.7	316.3	317.6	319.7	<sup>r</sup> 320.3	320.8	321.6	321.7	321.1
Materials and components for manufacturing .....	293.4	294.7	296.7	296.4	296.5	297.6	298.9	299.8	301.8	<sup>r</sup> 302.9	303.0	303.1	303.0	302.3
Materials for food manufacturing .....	258.4	260.5	269.4	263.5	260.0	262.9	268.6	268.3	269.6	<sup>r</sup> 271.4	275.6	274.7	276.6	272.7
Materials for nondurable manufacturing .....	280.0	281.1	282.7	283.3	284.6	285.7	286.6	287.0	290.3	<sup>r</sup> 291.8	292.5	292.6	293.0	291.7
Materials for durable manufacturing .....	319.4	320.9	323.1	322.3	321.6	322.8	323.4	325.6	328.2	<sup>r</sup> 329.1	326.8	327.1	325.3	324.7
Components for manufacturing .....	280.4	281.5	281.8	282.6	283.0	283.5	284.5	285.2	285.6	<sup>r</sup> 286.2	286.6	286.9	287.2	287.8
Materials and components for construction .....	301.8	303.7	303.1	303.6	303.9	304.9	305.5	307.8	309.6	<sup>r</sup> 310.5	309.6	310.2	310.7	311.8
Processed fuels and lubricants .....	564.8	572.0	573.4	574.2	568.1	561.7	556.4	561.3	567.8	<sup>r</sup> 562.9	569.2	577.2	578.9	572.5
Manufacturing industries .....	479.0	485.1	487.2	490.5	484.9	478.8	474.2	477.9	483.4	<sup>r</sup> 480.6	488.1	493.5	494.5	489.3
Nonmanufacturing industries .....	640.0	648.0	648.8	647.2	640.6	634.0	628.0	634.1	641.4	<sup>r</sup> 634.5	639.5	650.1	652.3	645.0
Containers .....	286.6	286.3	287.1	288.1	289.3	289.9	292.3	294.8	297.3	<sup>r</sup> 299.4	301.3	302.2	303.0	304.1
Supplies .....	277.1	277.9	280.2	280.6	281.6	281.6	282.6	282.2	283.0	<sup>r</sup> 284.2	284.2	283.8	283.0	283.3
Manufacturing industries .....	269.9	270.5	270.8	271.8	272.2	273.3	274.5	276.0	276.4	<sup>r</sup> 277.8	278.3	278.9	279.1	279.7
Nonmanufacturing industries .....	281.1	282.0	285.3	285.3	286.7	286.1	287.0	285.7	286.7	<sup>r</sup> 287.8	287.6	286.7	285.4	285.4
Feeds .....	225.9	230.7	249.6	246.7	251.0	243.9	243.7	227.7	232.2	<sup>r</sup> 233.5	229.5	221.5	211.3	208.3
Other supplies .....	292.8	293.0	293.4	294.0	294.8	295.5	296.6	298.0	298.4	<sup>r</sup> 299.5	300.0	300.4	300.8	301.4
<b>CRUDE MATERIALS</b>														
Crude materials for further processing .....	323.6	327.1	328.5	324.8	324.0	327.5	333.5	332.6	338.8	<sup>r</sup> 339.4	338.5	333.2	334.5	329.3
Foodstuffs and feedstuffs .....	252.2	256.4	257.2	253.7	251.8	256.0	264.0	260.5	269.9	<sup>r</sup> 269.7	267.2	260.7	264.0	256.9
Nonfood materials .....	477.4	479.6	482.5	478.2	479.4	481.6	483.4	488.1	487.5	<sup>r</sup> 490.1	492.2	489.5	486.6	485.5
Nonfood materials except fuel .....	372.2	375.6	378.1	377.1	377.7	379.1	380.1	385.5	387.8	<sup>r</sup> 388.8	389.7	385.9	381.1	377.2
Manufacturing industries .....	381.9	385.7	388.3	387.4	387.9	389.4	390.4	395.5	398.8	<sup>r</sup> 399.5	400.2	395.7	390.3	386.6
Construction .....	270.6	271.0	272.5	270.5	272.1	272.7	273.7	280.3	276.5	<sup>r</sup> 279.2	281.1	281.7	281.9	277.5
Crude fuel .....	931.5	926.9	931.0	910.9	915.3	921.1	926.1	926.6	910.6	<sup>r</sup> 920.8	929.2	933.2	940.6	954.4
Manufacturing industries .....	1,094.5	1,088.9	1,093.9	1,067.1	1,071.8	1,079.0	1,086.5	1,086.3	1,064.8	<sup>r</sup> 1,079.6	1,089.3	1,095.5	1,104.4	1,121.7
Nonmanufacturing industries .....	816.3	812.5	816.1	801.1	805.3	810.1	813.2	814.2	802.6	<sup>r</sup> 809.1	816.6	818.6	825.0	836.3
<b>SPECIAL GROUPINGS</b>														
Finished goods excluding foods .....	290.8	292.5	290.3	293.4	293.0	292.6	292.9	293.6	294.0	294.6	295.7	295.7	296.0	295.3
Finished consumer goods excluding foods .....	291.4	293.5	291.4	293.9	293.2	292.5	292.5	293.1	293.6	<sup>r</sup> 293.5	295.1	295.3	295.4	294.4
Finished consumer goods less energy .....	249.9	250.2	249.7	252.1	251.7	252.6	256.1	257.2	258.2	<sup>r</sup> 257.8	257.3	256.7	259.0	258.7
Intermediate materials less foods and feeds .....	317.1	318.7	319.5	320.0	319.9	320.2	320.6	322.3	324.4	<sup>r</sup> 325.0	325.4	326.5	326.7	326.3
Intermediate materials less energy .....	295.2	296.5	298.1	298.2	298.5	299.4	300.5	301.5	303.3	<sup>r</sup> 304.4	304.4	304.6	304.5	304.3
Intermediate foods and feeds .....	247.9	250.9	263.2	258.2	257.4	256.9	260.7	255.1	257.5	259.1	260.6	257.4	255.3	251.7
Crude materials less agricultural products .....	538.6	540.0	542.9	538.8	540.3	543.2	546.3	552.0	550.0	<sup>r</sup> 553.0	554.0	552.3	550.0	549.4
Crude materials less energy .....	246.5	251.2	252.5	249.6	248.3	252.0	258.3	257.3	265.1	<sup>r</sup> 265.4	263.8	257.7	258.7	252.2

<sup>1</sup>Data for April 1984 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

r = revised.



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

[1967 = 100 unless otherwise specified]

Code	Commodity group and subgroup	Annual average 1983	1983					1984							
			Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr. <sup>1</sup>	May	June	July	Aug.
	<b>All commodities</b>	303.1	304.7	305.3	306.0	305.5	306.1	308.0	308.9	311.0	311.3	311.7	311.4	312.0	310.9
	<b>All commodities (1957-59 = 100)</b>	321.5	323.3	323.9	324.7	324.1	324.8	326.8	327.7	330.0	330.3	330.7	330.4	331.0	329.9
	<b>Farm products and processed foods and feeds</b>	253.9	255.5	259.1	257.5	256.0	257.9	264.4	263.4	267.9	267.3	266.3	262.7	265.2	261.6
	<b>Industrial commodities</b>	315.7	317.3	317.1	318.5	318.3	318.4	319.1	320.6	321.9	322.6	323.3	323.9	324.0	323.5
	<b>FARM PRODUCTS AND PROCESSED FOODS AND FEEDS</b>														
01	Farm products	248.2	253.5	256.4	255.2	251.0	254.0	263.4	261.6	267.4	265.4	260.8	257.1	258.6	253.2
01-1	Fresh and dried fruits and vegetables	262.1	270.4	276.0	308.1	275.2	276.1	291.2	312.2	308.0	263.8	251.1	272.9	281.2	293.3
01-2	Grains	240.4	251.8	258.0	253.7	257.5	243.6	245.5	235.3	250.9	262.1	256.2	257.8	248.9	236.9
01-3	Livestock	243.1	242.2	231.5	229.4	220.5	238.2	250.7	251.9	260.8	260.8	254.8	250.0	260.1	253.7
01-4	Live poultry	206.5	221.4	242.2	208.5	238.5	241.2	252.6	251.3	258.4	240.8	240.6	227.7	259.2	218.6
01-5	Plant and animal fibers	227.0	240.7	238.7	234.5	243.6	244.1	229.3	232.7	250.3	252.3	259.1	252.7	235.8	211.3
01-6	Fluid milk	282.0	281.7	284.4	284.1	283.2	281.4	279.1	275.7	274.2	272.7	271.7	271.8	273.9	276.8
01-7	Eggs	(2)	189.5	200.1	(2)	(2)	(2)	282.4	280.7	(2)	264.4	201.0	177.9	184.9	181.2
01-8	Hay, hayseeds, and oilseeds	246.8	262.8	297.8	288.8	287.6	282.2	287.3	265.4	281.4	282.1	297.0	272.4	245.8	242.6
01-9	Other farm products	282.1	285.7	287.3	283.7	283.5	276.9	280.2	278.9	277.7	279.7	288.0	279.0	277.4	284.1
02	Processed foods and feeds	255.9	255.5	259.6	257.8	257.6	259.0	263.8	263.4	267.1	267.2	268.3	264.8	267.7	265.2
02-1	Cereal and bakery products	261.0	262.8	263.6	264.6	265.2	265.1	266.6	267.1	267.4	268.3	268.6	271.5	272.2	271.8
02-2	Meats, poultry, and fish	249.0	243.2	242.9	237.0	234.7	242.3	255.8	254.6	264.4	261.7	260.6	248.5	260.6	253.8
02-3	Dairy products	250.6	250.4	250.6	251.3	251.4	248.9	248.4	248.8	248.8	248.9	248.9	249.4	251.4	251.0
02-4	Processed fruits and vegetables	277.4	278.3	278.6	281.1	280.9	282.9	287.7	292.8	295.4	295.1	297.4	298.2	296.5	296.4
02-5	Sugar and confectionery	292.8	298.9	300.2	298.0	297.7	297.5	299.9	300.5	301.1	301.9	303.6	304.0	305.3	304.1
02-6	Beverages and beverage materials	263.6	263.9	264.3	265.2	266.3	266.5	268.7	270.2	269.9	271.4	273.6	271.7	273.8	274.2
02-7	Fats and oils	238.8	245.6	303.5	281.7	274.5	271.7	278.3	273.3	286.2	293.4	325.8	326.5	312.7	306.8
02-8	Miscellaneous processed foods	254.8	252.7	258.4	262.1	264.8	266.2	266.8	275.4	275.2	276.3	275.5	278.4	280.4	279.6
02-9	Prepared animal feeds	228.8	233.0	249.3	248.6	252.1	245.6	245.2	231.1	235.3	236.3	232.6	225.5	216.3	214.0
	<b>INDUSTRIAL COMMODITIES</b>														
03	Textile products and apparel	205.1	206.0	206.2	207.0	207.7	207.8	208.2	209.6	209.9	209.9	210.5	210.3	210.8	210.5
03-1	Synthetic fibers (12/75 = 100)	156.7	157.5	158.0	160.5	159.3	158.1	159.2	161.4	160.7	160.7	160.8	160.5	160.1	159.9
03-2	Processed yarns and threads (12/75 = 100)	138.5	140.2	140.3	141.3	141.7	142.9	142.3	144.0	144.0	143.6	144.3	143.8	143.7	142.1
03-3	Gray fabrics (12/75 = 100)	147.0	146.7	147.3	149.4	151.4	152.0	151.1	152.8	153.2	153.0	153.6	154.3	154.1	154.4
03-4	Finished fabrics (12/75 = 100)	123.1	123.6	123.4	123.8	124.4	124.8	124.8	126.3	127.0	126.9	127.4	127.2	127.7	127.3
03-81	Apparel	197.4	198.7	198.7	198.8	199.4	199.0	200.1	200.5	200.7	200.7	201.2	200.7	201.9	201.8
03-82	Textile housefurnishings	235.1	234.5	235.3	234.5	234.4	235.3	236.6	237.6	238.1	239.1	239.3	239.2	239.2	239.7
04	Hides, skins, leather, and related products	271.1	274.7	274.4	273.7	277.0	277.3	279.1	283.3	286.7	286.8	289.2	290.3	290.2	290.2
04-2	Leather	330.7	343.4	339.4	336.6	340.5	344.1	346.2	362.0	378.0	386.7	387.2	383.5	384.7	379.7
04-3	Footwear	250.1	250.9	251.6	251.3	257.3	250.3	250.9	252.5	253.5	251.6	251.8	250.3	250.1	250.9
04-4	Other leather and related products	252.7	253.7	253.5	253.5	255.8	255.6	257.2	257.3	257.3	257.3	263.1	271.2	271.2	271.5
05	Fuels and related products and power	664.7	671.7	672.3	669.5	663.7	658.0	652.1	656.0	658.7	654.7	662.7	667.9	667.2	660.7
05-1	Coal	537.4	536.6	537.9	538.2	542.3	543.9	541.4	544.7	546.2	542.0	546.9	543.3	546.8	550.7
05-2	Coke	444.6	453.9	453.9	453.1	453.8	415.4	418.3	437.9	438.9	442.8	428.7	441.9	441.9	437.3
05-3	Gas fuels <sup>3</sup>	1,146.9	1,145.9	1,147.0	1,128.4	1,122.0	1,120.4	1,123.0	1,107.8	1,091.0	1,102.1	1,116.8	1,122.1	1,123.5	1,128.9
05-4	Electric power	417.9	427.2	427.9	423.6	418.7	417.3	420.5	424.4	426.7	431.5	433.5	446.5	453.9	457.1
05-61	Crude petroleum <sup>4</sup>	681.4	675.1	675.7	675.7	675.8	674.4	675.6	675.6	675.6	673.9	674.3	673.7	673.1	672.3
05-7	Petroleum products, refined <sup>5</sup>	684.3	694.9	695.3	695.3	688.2	678.3	663.2	669.8	680.2	667.0	678.9	681.1	674.6	657.3
06	Chemicals and allied products	293.0	294.4	295.9	295.5	296.4	297.7	298.1	296.5	300.1	302.0	302.5	302.5	302.6	301.4
06-1	Industrial chemicals <sup>6</sup>	342.9	347.6	345.6	344.9	346.2	349.2	347.4	337.6	344.7	345.4	344.8	345.5	345.7	341.7
06-21	Prepared paint	264.7	265.4	264.5	264.2	264.5	264.9	265.6	267.3	267.3	268.7	268.0	270.8	274.1	276.4
06-22	Paint materials	305.8	305.7	316.2	316.9	316.5	315.5	316.6	314.2	317.9	328.7	337.2	337.1	335.4	335.1
06-3	Drugs and pharmaceuticals	226.1	227.3	227.4	229.3	231.0	230.9	232.9	234.4	237.6	239.8	240.2	238.7	240.0	241.7
06-4	Fats and oils, inedible	285.6	278.1	329.0	318.6	321.6	318.8	334.2	349.0	366.7	383.2	398.8	414.2	378.4	350.5
06-5	Agricultural chemicals and chemical products	280.5	277.1	276.0	276.4	280.4	281.9	278.5	285.9	288.1	288.4	286.6	286.4	285.5	282.9
06-6	Plastic resins and materials	291.5	293.7	302.6	299.1	297.9	301.5	305.2	305.0	306.2	307.8	311.1	310.8	309.9	309.4
06-7	Other chemicals and allied products	273.6	274.2	274.3	274.4	273.8	273.6	274.9	273.3	275.2	277.0	277.2	276.3	277.5	278.4
07	Rubber plastic products	243.2	243.7	243.2	244.4	243.6	243.8	244.8	246.2	246.4	247.3	247.4	247.3	247.5	247.6
07-1	Rubber and rubber products	266.0	265.1	263.9	264.8	264.3	264.6	266.6	266.8	265.5	267.2	267.2	266.3	266.9	267.7
07-11	Crude rubber	280.8	284.6	284.4	284.3	282.7	282.2	282.9	282.8	283.0	282.3	277.5	277.1	275.9	273.2
07-12	Tires and tubes	245.3	242.8	242.5	242.6	242.4	242.3	244.1	243.7	241.7	243.5	244.5	243.5	244.1	244.1
07-13	Miscellaneous rubber products	284.8	284.5	281.6	283.8	283.5	284.6	287.1	288.4	287.4	289.8	290.0	289.1	290.3	293.4
07-2	Plastic products (6/78 = 100)	135.3	136.4	136.6	137.4	136.7	136.8	136.9	138.4	139.4	139.4	139.6	140.1	139.9	139.5
08	Lumber and wood products	307.1	313.9	305.6	305.6	304.9	308.7	309.1	315.7	316.8	315.1	308.8	307.1	304.3	304.5
08-1	Lumber	352.6	366.6	346.6	344.7	342.8	351.3	352.6	364.9	370.5	369.4	355.8	351.5	343.3	342.3
08-2	Millwork	302.3	306.6	305.9	307.4	307.9	308.5	308.6	308.8	309.9	307.2	305.4	305.2	305.7	306.1
08-3	Plywood	244.1	246.2	242.2	246.6	244.6	247.2	248.2	249.5	248.6	243.6	235.4	236.3	237.1	246.9
08-4	Other wood products	230.6	229.3	229.4	229.6	229.8	230.6	230.0	230.8	231.8	233.3	234.3	234.9	235.2	236.5

See footnotes at end of table.

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

[1967 = 100 unless otherwise specified]

Code	Commodity group and subgroup	Annual average 1983	1983					1984							
			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 . . . . .	298.1	298.8	299.9	302.2	303.6	304.0	309.1	312.0	314.0	<sup>1</sup> 316.3	317.0	317.6	319.2	320.0
09-1	Pulp, paper, and products, excluding building paper and board . . . . .	271.4	271.1	273.1	275.2	277.4	277.4	280.8	285.0	288.3	<sup>1</sup> 291.5	292.7	293.3	295.6	296.3
09-11	Woodpulp . . . . .	346.9	346.4	34.4	347.4	356.7	355.5	366.2	374.2	378.6	<sup>1</sup> 401.1	405.1	407.6	410.6	410.0
09-12	Wastepaper . . . . .	( <sup>2</sup> )	( <sup>2</sup> )	194.4	216.2	215.0	211.5	211.5	229.3	242.9	258.8	259.3	257.3	254.7	254.5
09-13	Paper . . . . .	282.0	280.9	286.0	287.2	288.5	289.3	294.2	296.6	299.8	<sup>1</sup> 300.4	301.3	301.4	307.9	306.9
09-14	Paperboard . . . . .	250.9	250.1	254.0	257.3	259.4	260.9	262.2	271.8	275.6	<sup>1</sup> 277.1	276.9	279.1	279.1	285.4
09-15	Converted paper and paperboard products . . . . .	265.3	264.7	265.0	266.5	267.9	268.0	270.6	273.7	276.5	<sup>1</sup> 279.1	280.6	280.8	281.9	282.4
09-2	Building paper and board . . . . .	250.0	252.1	252.8	254.7	254.7	250.4	251.9	255.1	258.6	<sup>1</sup> 263.8	265.2	265.1	262.9	258.4
10	Metals and metal products . . . . .	307.2	308.2	310.7	310.9	310.9	311.9	312.9	314.8	316.8	<sup>1</sup> 317.9	317.1	317.2	315.9	315.8
10-1	Iron and steel . . . . .	343.4	343.2	348.1	348.5	349.5	350.9	353.8	356.2	356.5	356.5	357.1	356.8	357.2	357.1
10-17	Steel mill products . . . . .	352.8	351.7	358.1	358.7	359.5	360.0	362.5	363.6	363.6	<sup>1</sup> 364.2	364.9	365.4	367.8	368.0
10-2	Nonferrous metals . . . . .	276.1	279.8	282.0	279.3	276.6	278.2	276.8	280.2	286.1	<sup>1</sup> 289.1	283.6	282.9	276.8	274.6
10-3	Metal containers . . . . .	335.4	336.6	338.5	338.3	338.2	340.3	344.1	344.8	345.4	<sup>1</sup> 345.3	348.1	348.2	348.4	352.4
10-4	Hardware . . . . .	290.7	292.2	292.5	292.7	293.1	293.5	293.3	294.0	294.4	<sup>1</sup> 294.6	294.1	295.0	295.8	296.7
10-5	Plumbing fixtures and brass fittings . . . . .	289.3	290.2	292.4	292.7	294.1	294.0	293.9	296.4	299.9	<sup>1</sup> 301.5	301.8	302.0	302.5	303.3
10-6	Heating equipment . . . . .	243.6	245.1	246.6	245.3	245.5	245.7	247.3	248.1	248.5	250.3	252.5	251.3	254.7	255.5
10-7	Fabricated structural metal products . . . . .	303.5	303.0	304.3	304.2	305.3	306.0	306.5	307.0	308.3	309.3	310.6	311.1	311.6	312.3
10-8	Miscellaneous metal products . . . . .	283.6	284.0	284.3	289.0	289.5	289.6	290.3	291.1	292.1	<sup>1</sup> 293.1	293.1	294.5	294.1	295.0
11	Machinery and equipment . . . . .	286.4	287.4	287.9	287.6	288.0	288.8	289.7	290.2	291.0	<sup>1</sup> 292.2	292.8	293.1	293.7	294.2
11-1	Agricultural machinery and equipment . . . . .	326.3	327.3	328.5	328.0	328.6	330.1	331.0	331.4	332.9	335.5	337.1	336.8	337.2	337.6
11-2	Construction machinery and equipment . . . . .	351.9	352.9	353.5	353.6	353.9	353.6	354.2	355.9	355.3	<sup>1</sup> 357.5	357.8	358.1	358.2	358.6
11-3	Metalworking machinery and equipment . . . . .	326.5	326.5	326.6	327.0	327.3	328.7	329.2	330.2	330.6	<sup>1</sup> 332.6	332.9	333.3	334.1	334.6
11-4	General purpose machinery and equipment . . . . .	308.2	307.9	308.1	307.8	308.6	309.8	310.7	310.9	311.7	<sup>1</sup> 313.1	313.3	313.6	314.9	315.4
11-6	Special industry machinery and equipment . . . . .	337.1	339.0	339.8	340.6	341.0	342.0	343.2	344.6	346.8	<sup>1</sup> 348.2	348.2	348.8	351.0	352.3
11-7	Electrical machinery and equipment . . . . .	240.1	241.7	242.9	242.6	242.8	243.8	244.7	245.7	246.7	<sup>1</sup> 247.7	247.5	248.4	248.5	248.7
11-9	Miscellaneous machinery . . . . .	274.1	275.3	274.5	273.3	273.7	273.9	275.5	274.3	274.5	<sup>1</sup> 274.6	277.2	275.7	275.6	276.1
12	Furniture and household durables . . . . .	214.0	214.9	215.4	215.3	215.7	215.7	216.8	217.2	217.4	<sup>1</sup> 218.2	218.9	219.2	218.7	218.9
12-1	Household furniture . . . . .	234.7	236.3	236.6	236.9	237.4	237.2	239.1	239.1	240.0	<sup>1</sup> 240.8	241.5	242.3	241.8	242.2
12-2	Commercial furniture . . . . .	286.3	286.5	287.3	287.4	289.9	289.5	293.4	294.7	294.7	<sup>1</sup> 296.1	297.6	297.0	297.9	298.4
12-3	Floor coverings . . . . .	185.4	188.9	189.5	189.5	189.3	189.4	188.2	188.4	188.3	<sup>1</sup> 188.2	191.1	191.6	191.4	191.3
12-4	Household appliances . . . . .	206.9	207.7	208.0	207.6	208.0	208.5	209.8	210.7	210.9	<sup>1</sup> 210.9	210.9	211.1	211.4	211.7
12-5	Home electronic equipment . . . . .	86.1	85.5	85.8	85.8	85.1	84.5	84.4	84.1	84.0	<sup>1</sup> 84.9	84.1	83.7	82.4	84.2
12-6	Other household durable goods . . . . .	313.1	313.9	314.5	314.0	315.1	315.2	318.0	316.8	316.7	<sup>1</sup> 319.1	321.0	322.1	320.4	316.3
13	Nonmetallic mineral products . . . . .	325.2	326.3	327.2	328.0	328.9	328.9	330.1	332.2	333.4	<sup>1</sup> 335.8	337.3	338.4	339.3	340.0
13-11	Flat glass . . . . .	229.7	229.7	229.5	229.6	230.1	229.9	229.5	229.9	229.1	<sup>1</sup> 230.2	226.4	227.3	227.4	217.8
13-2	Concrete ingredients . . . . .	313.3	316.4	317.2	316.7	314.8	314.6	315.6	319.9	324.2	<sup>1</sup> 324.3	326.9	326.3	327.2	329.0
13-3	Concrete products . . . . .	302.0	302.7	303.5	303.3	304.1	304.2	304.9	305.9	306.3	308.8	309.6	310.0	310.6	311.3
13-4	Structural clay products, excluding refractories . . . . .	277.8	282.4	282.4	283.5	284.1	284.2	284.3	283.7	284.3	<sup>1</sup> 285.0	285.0	285.6	285.7	287.5
13-5	Refractories . . . . .	341.3	339.4	340.2	344.7	353.3	353.3	353.9	356.0	361.1	<sup>1</sup> 361.8	362.9	362.9	362.9	362.7
13-6	Asphalt roofing . . . . .	384.0	383.4	387.2	387.9	387.8	384.2	385.0	392.3	385.6	<sup>1</sup> 396.2	396.8	392.3	392.6	405.6
13-7	Gypsum products . . . . .	286.0	289.3	297.8	312.8	315.1	322.6	328.6	339.4	339.6	<sup>1</sup> 353.0	360.9	360.3	360.6	352.9
13-8	Glass containers . . . . .	352.4	351.3	351.1	350.2	350.4	350.4	350.6	350.6	351.6	<sup>1</sup> 358.0	361.2	366.0	367.1	366.0
13-9	Other nonmetallic minerals . . . . .	480.2	481.9	482.5	483.2	487.4	486.8	486.4	488.1	490.8	<sup>1</sup> 491.3	495.0	499.7	507.1	512.0
14	Transportation equipment (12/68 = 100) . . . . .	256.7	256.8	250.4	260.6	260.5	260.7	261.5	262.2	262.4	<sup>1</sup> 263.4	262.7	262.6	262.8	263.1
14-1	Motor vehicles and equipment . . . . .	256.8	256.8	249.1	260.6	260.5	260.6	261.1	261.2	261.5	<sup>1</sup> 261.9	261.5	261.4	261.5	261.8
14-4	Railroad equipment . . . . .	350.2	351.0	350.7	348.6	348.6	350.5	351.5	351.5	352.0	<sup>1</sup> 380.8	361.2	361.2	363.4	364.6
15	Miscellaneous products . . . . .	289.6	292.0	291.4	291.7	291.7	292.8	294.5	294.9	294.9	<sup>1</sup> 294.6	294.3	295.6	297.1	297.9
15-1	Toys, sporting goods, small arms, ammunition . . . . .	225.2	224.5	224.8	225.9	225.2	225.3	227.4	227.8	227.6	<sup>1</sup> 226.5	226.7	226.4	226.4	226.9
15-2	Tobacco products . . . . .	365.4	376.7	376.9	376.8	377.0	377.1	389.4	390.3	390.4	390.4	390.6	400.2	407.9	407.6
15-3	Notions . . . . .	280.1	279.7	279.7	279.7	279.6	280.1	281.4	282.2	282.2	283.0	283.9	283.9	283.9	283.9
15-4	Photographic equipment and supplies . . . . .	215.7	216.6	216.6	216.8	216.8	216.8	( <sup>2</sup> )	217.9	212.7	<sup>1</sup> 213.6	213.5	213.5	213.7	214.1
15-5	Mobile homes (12/74 = 100) . . . . .	163.4	163.7	164.3	164.8	165.0	165.1	162.2	162.4	162.5	<sup>1</sup> 163.8	163.9	163.9	164.1	163.1
15-9	Other miscellaneous products . . . . .	351.8	352.9	349.6	349.2	349.3	353.2	350.8	350.5	354.2	<sup>1</sup> 351.9	350.0	349.6	349.8	352.8

<sup>1</sup>Data for April 1984 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>Not available.

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

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

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

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

r = revised.

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

[1967 = 100 unless otherwise specified]

Commodity grouping	Annual average 1983	1983					1984							
		Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr. <sup>1</sup>	May	June	July	Aug.
All commodities—less farm products	306.6	308.0	308.3	309.2	309.1	309.4	310.7	311.9	313.6	314.2	314.9	314.9	315.4	314.7
All foods	257.5	257.1	260.7	260.5	258.0	260.2	268.3	270.2	272.9	<sup>r</sup> 270.6	269.8	267.6	272.1	270.1
Processed foods	258.7	257.6	260.9	258.6	258.0	260.4	266.2	267.0	271.2	<sup>r</sup> 270.9	272.4	269.2	273.4	270.5
Industrial commodities less fuels	279.3	280.4	280.0	281.8	282.2	282.9	284.3	285.5	286.7	<sup>r</sup> 287.8	287.8	287.9	288.1	288.2
Selected textile mill products (Dec. 1975 = 100)	138.2	139.0	139.1	139.4	139.8	140.1	140.0	141.3	141.7	<sup>r</sup> 141.7	142.7	142.6	142.9	142.7
Hosiery	144.7	145.6	145.6	145.6	145.6	145.6	145.8	147.3	147.4	147.4	147.4	147.4	147.8	147.8
Underwear and nightwear	223.8	223.5	224.5	224.7	224.6	225.4	228.6	229.8	229.8	229.8	229.9	229.0	229.5	230.2
Chemicals and allied products, including synthetic rubber and fibers and yarns	283.5	285.0	285.6	285.6	286.3	287.4	287.6	286.2	289.1	290.6	290.9	290.7	291.2	290.4
Pharmaceutical preparations	224.8	226.0	227.1	229.4	231.3	231.8	233.9	235.9	238.8	<sup>r</sup> 241.5	242.1	242.3	244.0	244.2
Lumber and wood products, excluding millwork	321.2	331.5	316.5	316.7	314.7	321.4	322.6	331.4	334.9	<sup>r</sup> 332.5	320.6	317.9	312.6	315.3
Steel mill products, including fabricated wire products	351.2	350.1	355.9	356.4	357.4	357.8	360.1	361.1	361.2	361.8	362.5	363.1	365.3	365.7
Finished steel mill products, excluding fabricated wire products	351.5	350.3	357.1	357.8	358.6	359.2	361.7	363.2	363.1	<sup>r</sup> 363.6	364.2	364.8	367.0	367.4
Finished steel mill products, including fabricated wire products	349.9	348.7	354.8	355.4	356.4	356.9	359.2	360.5	360.5	<sup>r</sup> 361.0	361.6	362.3	364.4	364.9
Special metals and metal products	292.6	293.5	291.5	296.4	296.3	297.0	297.8	299.0	300.3	<sup>r</sup> 301.2	300.6	300.6	300.0	300.0
Fabricated metal products	294.3	294.7	295.5	297.2	297.9	298.4	299.3	300.0	301.1	<sup>r</sup> 301.9	302.7	303.5	303.8	304.9
Copper and copper products	196.6	201.2	198.2	190.7	182.6	185.0	182.1	185.1	192.9	<sup>r</sup> 199.4	190.4	189.3	183.5	181.8
Machinery and motive products	279.8	280.4	277.7	282.2	282.4	283.0	283.9	284.5	285.0	<sup>r</sup> 286.2	286.2	286.3	286.7	287.1
Machinery and equipment, except electrical	313.6	314.2	314.3	314.1	314.6	315.3	316.3	316.5	317.1	<sup>r</sup> 318.5	319.6	319.4	320.3	321.0
Agricultural machinery, including tractors	341.5	342.8	344.0	343.6	344.0	346.4	347.1	347.5	349.3	352.9	355.0	354.6	355.4	355.9
Metalworking machinery	357.1	357.8	357.5	357.1	357.6	358.2	359.3	362.1	361.6	<sup>r</sup> 363.0	363.2	363.2	364.7	365.2
Total tractors	<sup>r</sup> 369.7	370.0	372.5	372.6	373.1	373.8	374.0	374.5	376.1	<sup>r</sup> 384.1	384.5	384.8	384.9	386.5
Agricultural machinery and equipment less parts	330.0	331.2	332.6	331.8	332.2	334.2	335.2	335.7	337.4	340.4	342.2	341.7	342.3	342.7
Farm and garden tractors less parts	347.2	347.5	350.6	350.7	350.9	352.0	352.2	352.9	355.1	362.1	362.4	362.8	362.9	364.9
Agricultural machinery, excluding tractors less parts	337.1	339.2	338.9	338.2	338.7	342.2	343.3	343.4	344.9	345.7	349.3	348.2	349.6	348.8
Construction materials	297.7	299.8	299.9	300.4	300.4	301.3	302.3	305.0	306.6	<sup>r</sup> 307.1	306.0	306.3	306.6	307.3

<sup>1</sup>Data for April 1984 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

r = revised.

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

[1967 = 100]

Commodity grouping	Annual average 1983	1983					1984							
		Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr. <sup>1</sup>	May	June	July	Aug.
Total durable goods	286.7	287.8	286.8	289.2	289.3	290.1	291.0	292.2	293.2	<sup>r</sup> 294.2	293.7	293.8	293.7	293.9
Total nondurable goods	315.7	317.8	319.7	319.1	318.1	318.4	321.2	321.9	324.8	<sup>r</sup> 324.7	325.6	325.1	326.3	324.0
Total manufactures	295.7	296.9	297.2	298.5	298.4	298.8	300.0	301.2	302.8	<sup>r</sup> 303.2	303.7	303.8	304.2	303.4
Durable	287.3	288.3	287.2	289.6	289.8	290.5	291.3	292.4	293.3	<sup>r</sup> 294.3	293.9	294.1	294.1	294.5
Nondurable	304.4	305.9	307.8	307.7	307.4	307.5	309.1	310.4	312.7	<sup>r</sup> 312.5	314.0	314.1	314.9	312.7
Total raw or slightly processed goods	339.8	343.8	345.9	343.6	340.6	341.8	348.4	347.6	352.4	<sup>r</sup> 352.4	351.7	349.0	350.8	348.1
Durable	249.3	256.8	260.7	259.8	258.5	263.3	267.4	275.2	278.7	<sup>r</sup> 280.6	277.2	273.0	264.8	259.6
Nondurable	345.4	349.1	351.0	348.6	345.6	346.5	353.3	351.8	356.7	<sup>r</sup> 356.5	356.1	353.5	356.0	353.5

<sup>1</sup>Data for April 1984 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

r = revised.



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

[1967 = 100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1983	1983					1984							
			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)	177.1	177.1	177.1	177.1	177.1	177.1	177.1	177.1	177.1	177.1	177.1	177.1	177.1	177.1
1092	Mercury ores (12/75 = 100)	269.7	231.2	243.3	283.3	287.5	277.0	275.8	245.4	250.0	267.9	273.7	271.6	264.6	249.1
1311	Crude petroleum and natural gas	921.4	915.8	920.0	907.2	909.4	909.4	914.3	913.0	902.7	909.2	914.9	919.2	922.2	929.4
<b>MANUFACTURING</b>															
2067	Chewing gum	326.8	327.3	327.3	327.3	327.5	327.5	328.0	328.1	328.7	328.8	329.0	329.0	329.1	329.2
2074	Cottonseed oil mills	204.1	220.6	262.9	253.5	233.1	223.3	229.2	201.7	212.7	222.6	244.1	242.9	223.2	210.3
2083	Malt	234.1	232.6	232.6	232.6	241.6	241.6	241.6	241.6	241.6	241.6	241.6	241.6	241.6	241.6
2091	Canned and cured seafoods (12/73 = 100)	174.1	169.4	169.8	170.2	169.2	169.7	169.0	168.8	168.6	167.0	169.4	168.9	167.8	167.9
2098	Macaroni and spaghetti	256.8	255.5	255.5	258.6	261.9	261.9	261.9	261.9	261.9	261.9	261.9	261.9	261.9	261.9
2298	Cordage and twine (12/77 = 100)	139.3	137.6	139.0	139.0	138.9	139.0	139.0	139.2	139.2	139.3	139.4	139.4	137.4	137.4
2361	Children's dresses and blouses (12/77 = 100)	116.6	117.0	117.0	117.0	117.0	117.0	118.2	117.8	117.8	118.6	118.5	118.5	118.6	118.6
2381	Fabric dress and work gloves	293.3	296.3	296.3	296.3	296.3	297.6	295.2	299.1	302.3	304.8	315.6	315.6	315.6	315.6
2394	Canvas and related products (12/77 = 100)	147.0	146.2	146.2	147.8	147.8	147.8	150.6	150.6	150.6	150.6	151.3	151.3	151.3	151.3
2448	Wood pallets and skids (12/75 = 100)	149.2	151.3	151.0	151.5	151.9	153.6	154.0	156.0	157.9	161.6	165.0	165.4	166.3	166.3
2521	Wood office furniture	281.3	283.6	283.6	283.6	283.6	283.6	285.1	289.1	289.1	289.2	290.3	290.3	290.3	290.3
2654	Sanitary food containers	266.1	267.1	267.8	269.0	269.0	269.0	269.1	273.4	278.4	280.6	282.3	282.3	282.3	282.3
2655	Fiber cans, drums, and similar products (12/75 = 100)	186.5	187.7	187.7	187.8	189.5	189.6	189.6	189.7	191.4	193.1	193.1	193.1	194.7	194.7
2911	Petroleum refining (6/76 = 100)	253.8	257.2	256.8	257.1	253.5	249.7	244.4	246.7	249.8	244.9	248.7	249.6	247.2	241.0
3251	Brick and structural clay tile	332.3	336.4	336.4	338.4	339.7	339.9	340.2	339.9	341.1	342.6	344.9	346.1	346.5	346.5
3253	Ceramic wall and floor tile (12/75 = 100)	146.0	149.6	149.6	149.6	149.6	149.6	149.6	149.6	149.6	149.6	146.8	146.8	146.8	150.5
3255	Clay refractories	355.6	354.4	355.9	364.3	366.6	366.5	367.2	367.7	369.3	371.5	373.5	373.7	373.7	373.4
3259	Structural clay products, n.e.c.	230.2	234.9	234.9	235.1	235.0	235.0	235.0	232.1	232.4	232.4	232.8	232.9	233.0	232.9
3261	Vitreous plumbing fixtures	278.1	277.0	281.3	283.7	284.5	285.4	285.6	287.0	290.1	290.4	290.8	292.5	293.1	293.9
3263	Fine earthenware food utensils	366.5	366.5	366.5	366.5	368.5	368.5	383.6	384.0	375.9	382.6	378.8	375.5	372.1	373.0
3269	Pottery products, n.e.c. (12/75 = 100)	187.1	186.6	186.6	186.6	189.9	189.9	191.9	192.2	191.9	192.2	192.3	192.2	192.1	192.1
3274	Lime (12/75 = 100)	185.7	187.6	186.3	185.9	182.4	182.5	182.8	184.4	183.9	184.1	184.2	183.4	180.4	179.8
3297	Nonclay refractories (12/74 = 100)	205.2	203.8	203.8	203.9	212.8	212.8	213.1	215.4	220.6	220.1	220.2	220.1	220.0	219.9
3482	Small arms ammunition (12/75 = 100)	180.5	181.6	181.6	181.6	181.6	181.6	190.3	190.3	190.3	190.3	196.6	196.6	196.6	196.6
3623	Welding apparatus, electric (12/72 = 100)	243.6	243.5	243.6	243.9	243.9	244.7	246.0	246.7	247.2	248.7	243.7	245.2	245.3	245.4
3648	Lighting equipment, n.e.c. (12/75 = 100)	172.8	173.4	173.5	173.7	173.9	172.6	173.5	173.5	184.9	185.0	185.6	185.7	186.4	188.2
3671	Electron tubes, receiving type	435.4	432.5	432.8	432.9	432.9	469.8	490.6	490.8	490.8	490.9	490.8	490.9	491.1	491.3
3942	Dolls (12/75 = 100)	137.5	137.7	137.7	137.7	137.7	137.7	137.6	137.8	137.7	131.6	133.1	133.3	133.3	133.3
3944	Games, toys, and children's vehicles	238.7	236.2	236.3	236.4	236.2	236.2	239.3	240.6	240.1	239.7	234.6	234.7	234.7	234.7
3955	Carbon paper and inked ribbons (12/75 = 100)	139.2	139.2	139.2	139.3	139.3	139.3	144.3	149.0	149.0	149.1	149.1	149.1	146.7	146.7
3995	Burial caskets (6/76 = 100)	153.5	155.4	155.4	156.0	156.0	156.0	156.0	157.2	157.3	158.8	158.8	158.8	158.8	158.8
3996	Hard surface floor coverings (12/75 = 100)	161.5	163.4	163.5	165.5	163.5	163.5	165.2	165.2	165.2	166.3	166.4	166.4	168.7	168.7

<sup>1</sup>Data for April 1984 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.

NOTE: Indexes which were deleted in the September issue may now be found in Table 4 of the BLS monthly report, *Producer Prices and Price Indexes*.

## PRODUCTIVITY DATA

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

### Definitions

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

**Multifactor productivity** measures the output per unit of combined labor and capital input. The traditional measure of output per hour reflects changes in capital per hour and a combination of other factors—such as, changes in technology, shifts in the composition of the labor force, changes in capacity utilization, research and development, skill and efforts of the work force, management, and so forth. The multifactor productivity measure differs from the familiar BLS measure of output per hour of all persons in that it excludes the effects of the substitution of capital for labor.

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

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

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

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

**hour** describes labor productivity in nonfinancial corporations where there are no self-employed. The **capital services** input index used in the multifactor productivity computation is developed by BLS from measures of the net stock of physical assets—equipment, structures, land, and inventories—weighted by rental prices for each type of asset. **Combined units of labor and capital input** are computed by combining changes in labor and capital inputs with weights which represent each component's share of total output. The indexes for capital services and combined units of labor and capital are based on changing weights which are averages of the shares in the current and preceding year (the Tornquist index-number formula).

### Notes on the data

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

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

The productivity and associated cost measures in the tables describe the relationship between output in real terms and the labor time and capital services involved in its production. They show the changes from period to period in the amount of goods and services produced per unit of input. Although these measures relate output to hours and capital services, they do not measure the contributions of labor, capital, or any other specific factor of production. Rather, they reflect the joint effect of many influences, including changes in technology; capital investment; level of output; utilization of capacity, energy, and materials; the organization of production; managerial skill; and the characteristics and efforts of the work force. For a more complete description of the methodology underlying the multifactor productivity measures, see Bulletin 2178, "Trends in Multifactor Productivity, 1948–81" (September 1983).

Beginning with the September issue of the *Review*, all of the productivity and cost measures in tables 29–32 incorporate revised output and compensation measures reported by the Bureau of Economic Analysis of the U.S. Department of Commerce. In addition, revised values for seasonally adjusting measures of employment and average weekly hours were introduced, data for employees of nonagricultural establishments were rebenchmarked to the most recent levels from unemployment insurance data, and improved estimates of employment levels in agricultural services were incorporated.

## 28. Annual indexes of multifactor productivity and related measures, selected years, 1948-82

[1977 = 100]

Item	1948	1950	1960	1970	1973	1974	1975	1976	1978	1979	1980	1981	1982
<b>PRIVATE BUSINESS SECTOR</b>													
Productivity:													
Output per hour of all persons	45.3	49.7	64.8	86.1	94.7	92.4	94.5	97.6	100.6	99.3	98.8	101.2	101.1
Output per unit of capital services	99.0	98.6	98.5	98.5	103.0	96.5	92.0	96.1	101.8	100.3	95.5	95.8	90.9
Multifactor productivity	60.0	63.6	75.4	90.2	97.5	93.8	93.6	97.1	101.0	99.7	97.7	99.3	97.5
Output	36.8	39.5	53.3	78.3	91.8	89.9	88.0	93.7	105.5	107.9	106.4	109.8	106.6
Inputs:													
Hours of all persons	81.3	79.5	82.2	90.9	96.9	97.2	93.1	95.9	104.9	108.6	107.7	108.4	105.4
Capital services	37.2	40.1	54.1	79.4	89.1	93.1	95.7	97.5	103.6	107.5	111.4	114.6	117.3
Combined units of labor and capital input	61.3	62.1	70.7	86.8	94.1	95.8	94.0	96.5	104.4	108.2	108.9	110.5	109.4
Capital per hour of all persons	45.7	50.4	65.8	87.4	92.0	95.8	102.8	101.6	98.8	99.0	103.4	105.7	111.3
<b>PRIVATE NONFARM BUSINESS SECTOR</b>													
Productivity:													
Output per hour of all persons	51.2	55.6	67.9	86.8	95.3	92.9	94.7	97.8	100.6	99.0	98.3	100.2	100.2
Output per unit of capital services	97.9	98.2	98.4	98.6	103.2	96.5	91.7	96.1	101.9	100.1	95.2	95.0	90.1
Multifactor productivity	64.6	68.1	77.6	90.6	97.9	94.1	93.6	97.2	101.1	99.4	97.3	98.4	96.6
Output	35.6	38.3	52.3	77.8	91.7	89.7	87.6	93.6	105.7	108.0	106.4	109.3	106.2
Inputs:													
Hours of all persons	69.6	69.0	77.0	89.7	96.2	96.6	92.5	95.7	105.1	109.0	108.2	109.0	106.0
Capital services	36.4	39.0	53.2	78.9	88.8	93.0	95.6	97.4	103.7	107.9	111.7	115.1	118.0
Combined units of labor and capital input	55.2	56.3	67.4	85.9	93.6	95.4	93.6	96.3	104.6	108.6	109.4	111.0	110.0
Capital per hour of all persons	52.3	56.6	69.0	88.0	92.3	96.3	103.4	101.8	98.7	99.0	103.2	105.5	111.2
<b>MANUFACTURING</b>													
Productivity:													
Output per hour of all persons	45.1	49.4	60.0	79.1	93.0	90.8	93.4	97.5	100.8	101.5	101.7	105.3	106.5
Output per unit of capital services	93.9	94.5	88.0	91.8	108.2	99.6	89.4	96.1	101.5	99.5	90.7	90.2	82.7
Multifactor productivity	56.1	59.9	67.0	82.3	96.8	93.0	92.2	97.1	101.0	101.0	98.7	101.2	99.9
Output	35.8	38.6	50.7	77.0	95.9	91.9	85.4	93.6	105.3	108.2	103.5	106.5	99.1
Inputs:													
Hours of all persons	79.4	78.2	84.4	97.3	103.2	101.2	91.4	95.9	104.5	106.6	101.8	101.2	93.0
Capital services	38.1	40.9	57.5	83.9	88.6	92.2	95.5	97.4	103.8	108.8	114.1	118.0	119.9
Combined units of labor and capital input	63.8	64.6	75.6	93.6	99.1	98.8	92.6	96.4	104.3	107.2	104.8	105.2	99.2
Capital per hour of all persons	48.0	52.3	68.2	86.2	85.9	91.1	104.4	101.5	99.3	102.1	112.1	116.7	128.8

## 29. Annual indexes of productivity, hourly compensation, unit costs, and prices, selected years, 1950-83

[1977 = 100]

Item	1950	1955	1960	1965	1970	1975	1976	1978	1979	1980	1981	1982	1983
<b>Business sector:</b>													
Output per hour of all persons	50.4	58.3	65.2	78.3	86.2	94.6	97.6	100.5	99.3	98.8	100.7	100.9	103.7
Compensation per hour	20.0	26.4	33.9	41.7	58.2	85.6	92.9	108.5	118.7	131.1	143.4	155.0	161.7
Real compensation per hour	50.5	59.7	69.5	80.1	90.8	96.4	98.9	100.8	99.1	96.4	95.5	97.3	98.4
Unit labor costs	39.8	45.2	52.1	53.3	67.5	90.5	95.1	108.0	119.5	132.6	142.4	153.6	156.0
Unit nonlabor payments	43.4	47.6	50.6	57.6	63.2	90.4	94.0	106.7	112.8	119.3	136.7	136.8	145.5
Implicit price deflator	41.0	46.0	51.6	54.7	66.0	90.4	94.7	107.5	117.2	128.1	140.4	147.9	152.4
<b>Nonfarm business sector:</b>													
Output per hour of all persons	56.3	62.8	68.3	80.5	86.8	94.8	97.8	100.6	99.0	98.3	99.8	100.0	103.4
Compensation per hour	21.9	28.3	35.7	42.8	58.7	86.1	93.0	108.6	118.4	130.6	143.1	154.5	162.0
Real compensation per hour	55.1	64.0	73.1	82.3	91.5	96.9	99.0	100.8	98.8	96.0	95.3	97.0	98.6
Unit labor costs	38.8	45.1	52.3	53.2	67.6	90.8	95.1	108.0	119.5	132.8	143.5	154.5	156.6
Unit nonlabor payments	42.7	47.8	50.4	58.0	63.8	88.5	93.5	105.3	110.4	118.6	135.0	136.9	147.0
Implicit price deflator	40.1	46.0	51.6	54.8	66.3	90.0	94.6	107.1	116.5	128.1	140.6	148.6	153.4
<b>Nonfinancial corporations:</b>													
Output per hour of all persons	(1)	(1)	68.0	82.0	87.4	95.5	98.2	100.8	100.6	99.7	101.6	102.6	106.1
Compensation per hour	(1)	(1)	37.0	43.9	59.4	86.1	92.9	108.4	118.6	130.8	143.1	154.6	161.0
Real compensation per hour	(1)	(1)	75.8	84.3	92.7	97.0	98.9	100.7	99.0	96.2	95.3	97.0	97.9
Unit labor costs	(1)	(1)	54.4	53.5	68.0	90.2	94.6	107.5	117.8	131.2	140.9	150.6	151.8
Unit nonlabor payments	(1)	(1)	54.6	60.8	63.1	90.8	95.0	104.2	106.9	117.4	135.1	138.1	149.1
Implicit price deflator	(1)	(1)	54.5	56.1	66.3	90.4	94.7	106.4	114.1	126.4	138.9	146.3	150.9
<b>Manufacturing:</b>													
Output per hour of all persons	49.4	56.4	60.0	74.6	79.2	93.4	97.6	100.9	101.6	101.7	104.9	107.1	111.6
Compensation per hour	21.5	28.8	36.7	42.8	57.6	85.5	92.3	108.3	118.8	132.7	145.2	158.0	163.4
Real compensation per hour	54.0	65.1	75.1	82.3	89.8	96.2	98.3	100.6	99.2	97.6	96.8	99.2	99.4
Unit labor costs	43.4	51.0	61.1	57.5	72.7	91.5	94.6	107.3	117.0	130.5	138.4	147.6	146.4
Unit nonlabor payments	54.3	58.6	61.1	69.4	65.1	87.3	93.9	102.7	99.9	97.9	111.6	110.5	128.8
Implicit price deflator	46.6	53.2	61.1	61.0	70.5	90.3	94.4	106.0	112.0	120.9	130.6	136.7	141.2

<sup>1</sup> Not available.



**30. Annual changes in productivity, hourly compensation, unit costs, and prices, 1973-83**

Item	Year											Annual rate of change	
	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1950-83	1972-83
<b>Business sector:</b>													
Output per hour of all persons	2.6	-2.4	2.2	3.3	2.4	0.5	-1.2	-0.5	1.9	-0.2	2.7	2.2	1.1
Compensation per hour	8.0	9.4	9.6	8.5	7.7	8.5	9.4	10.4	9.4	8.1	4.3	6.5	8.5
Real compensation per hour	1.6	-1.4	0.5	2.6	1.2	0.8	-1.7	-2.7	-0.9	1.9	1.1	2.0	0.2
Unit labor costs	5.3	12.1	7.3	5.1	5.1	8.0	10.7	11.0	7.3	7.9	1.6	4.2	7.3
Unit nonlabor payments	5.9	4.4	15.1	4.0	6.4	6.7	5.8	5.7	14.6	0.1	6.3	3.7	6.7
Implicit price deflator	5.5	9.5	9.8	4.7	5.6	7.5	9.0	9.3	9.6	5.3	3.0	4.1	7.1
<b>Nonfarm business sector:</b>													
Output per hour of all persons	2.4	-2.5	2.0	3.2	2.2	0.6	-1.5	-0.7	1.5	0.2	3.5	1.9	1.0
Compensation per hour	7.6	9.4	9.6	8.1	7.5	8.6	9.0	10.3	9.6	8.0	4.9	6.3	8.4
Real compensation per hour	1.3	-1.4	0.4	2.2	1.0	0.8	-2.0	-2.8	-0.7	1.7	1.6	1.8	0.2
Unit labor costs	5.0	12.2	7.5	4.7	5.2	8.0	10.7	11.1	8.0	7.7	1.4	4.3	7.4
Unit nonlabor payments	1.3	5.9	16.7	5.7	6.9	5.3	4.8	7.4	13.8	1.4	7.4	3.8	6.9
Implicit price deflator	3.8	10.2	10.3	5.1	5.7	7.1	8.8	10.0	9.8	5.7	3.2	4.1	7.2
<b>Nonfinancial corporations:</b>													
Output per hour of all employees	2.4	-3.7	2.9	2.9	1.8	0.8	-0.2	-0.9	1.9	1.0	3.3	(1)	1.1
Compensation per hour	7.5	9.4	9.6	7.9	7.6	8.4	9.4	10.3	9.4	8.0	4.2	(1)	8.3
Real compensation per hour	1.2	-1.5	0.4	2.0	1.1	0.7	-1.7	-2.8	-0.9	1.8	0.9	(1)	0.3
Unit labor costs	4.9	13.6	6.5	4.9	5.7	7.5	9.6	11.3	7.4	6.9	0.8	(1)	6.8
Unit nonlabor payments	1.5	7.1	20.1	4.6	5.3	4.2	2.6	9.8	15.1	2.3	7.9	(1)	7.1
Implicit price deflator	3.8	11.4	10.9	4.8	5.6	6.4	7.2	10.8	9.8	5.3	3.1	(1)	7.0
<b>Manufacturing:</b>													
Output per hour of all persons	5.4	-2.4	2.9	4.5	2.5	0.9	0.7	0.2	3.1	2.1	4.3	2.5	2.2
Compensation per hour	7.2	10.6	11.9	8.0	8.3	8.3	9.7	11.7	9.4	8.8	3.4	6.3	8.8
Real compensation per hour	0.9	-0.3	2.5	2.1	1.8	0.6	-1.4	-1.6	-0.9	2.5	0.2	1.9	0.6
Unit labor costs	1.7	13.3	8.8	3.4	5.7	7.3	9.0	11.5	6.1	6.6	-0.8	3.8	6.5
Unit nonlabor payments	-3.3	-1.8	25.9	7.5	6.5	2.7	-2.6	-2.1	14.1	-1.0	16.5	2.6	5.3
Implicit price deflator	0.3	9.0	13.1	4.6	6.0	6.0	5.7	7.9	8.0	4.7	3.3	3.4	6.2

1 Not available.

r = revised.

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

[1977 = 100]

Item	Annual average		Quarterly indexes										
			1981	1982				1983				1984	
	1982	1983	IV	I	II	III	IV	I	II	III	IV	I	II
<b>Business sector:</b>													
Output per hour of all persons	100.9	103.7	100.3	100.9	100.3	100.9	101.6	102.2	103.6	104.3	104.7	105.7	106.8
Compensation per hour	155.0	161.7	147.6	151.4	153.9	156.7	158.4	160.2	161.0	161.8	164.2	166.7	167.5
Real compensation per hour	97.3	98.4	95.4	96.9	97.2	97.3	98.0	99.0	98.5	98.0	98.4	98.6	98.2
Unit labor costs	153.6	156.0	147.1	150.0	153.4	155.3	155.9	156.8	155.4	155.1	156.8	157.7	156.9
Unit nonlabor payments	136.8	145.5	139.6	138.0	137.0	135.8	136.5	139.8	144.6	147.9	149.1	151.6	156.3
Implicit price deflator	147.9	152.4	144.6	145.9	147.9	148.7	149.3	151.0	151.7	152.7	154.2	155.6	156.7
<b>Nonfarm business sector:</b>													
Output per hour of all persons	100.0	103.4	99.2	99.8	99.4	100.3	100.5	101.6	103.6	104.1	104.4	105.2	106.4
Compensation per hour	154.5	162.0	147.3	151.0	153.2	156.0	157.9	160.1	161.5	162.4	164.0	166.5	168.0
Real compensation per hour	97.0	98.6	95.2	96.7	96.8	96.9	97.7	99.0	98.8	98.3	98.2	98.5	98.5
Unit labor costs	154.5	156.6	148.5	151.4	154.2	155.6	157.1	157.6	155.9	155.9	157.1	158.3	158.0
Unit nonlabor payments	136.9	147.0	138.5	136.9	137.5	136.8	136.4	140.6	146.4	149.4	151.4	152.2	155.8
Implicit price deflator	148.6	153.4	145.1	146.5	148.6	149.3	150.2	151.9	152.7	153.8	155.2	156.3	157.2
<b>Nonfinancial corporations:</b>													
Output per hour of all employees	102.6	106.1	101.3	102.2	102.1	103.3	103.2	104.0	105.8	107.2	107.2	108.1	108.6
Compensation per hour	154.6	161.0	147.1	151.1	153.5	156.2	157.7	159.2	160.6	161.8	162.6	164.8	165.8
Real compensation per hour	97.0	97.9	95.1	96.7	97.0	97.0	97.5	98.4	98.2	98.0	97.4	97.5	97.2
Total unit costs	154.3	155.2	148.7	151.5	154.0	154.7	157.0	156.7	155.2	154.4	154.7	155.0	155.3
Unit labor costs	150.6	151.8	145.2	147.9	150.3	151.3	152.9	153.1	151.7	150.9	151.7	152.5	152.7
Unit nonlabor costs	164.8	164.9	158.5	161.6	164.3	164.4	168.8	167.0	165.1	164.4	163.3	162.0	162.8
Unit profits	84.6	117.2	100.2	89.4	86.8	86.6	75.6	92.5	111.8	126.6	135.9	143.2	147.9
Implicit price deflator	146.3	150.9	143.1	144.3	146.3	146.9	147.7	149.4	150.2	151.2	152.6	153.6	154.5
<b>Manufacturing:</b>													
Output per hour of all persons	107.1	111.6	104.0	105.5	106.3	108.8	107.8	109.1	110.8	113.4	113.1	114.2	115.2
Compensation per hour	158.0	163.4	149.8	154.3	157.2	159.8	161.0	162.7	163.0	163.5	164.6	167.1	168.3
Real compensation per hour	99.2	99.4	96.8	98.8	99.4	99.2	99.6	100.6	99.7	99.0	98.6	98.9	98.7
Unit labor costs	147.6	146.4	144.0	146.2	148.0	146.9	149.3	149.1	147.0	144.1	145.5	146.4	146.1

1 Not available.

r = revised.

p = preliminary.

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

Item	Quarterly percent change at annual rate						Percent change from same quarter a year ago					
	IV 1982 to I 1983	I 1983 to II 1983	II 1983 to III 1983	III 1982 to IV 1983	IV 1983 to I 1984	I 1984 to II 1984	I 1982 to I 1983	II 1982 to II 1983	III 1982 to III 1983	IV 1982 to IV 1983	I 1983 to I 1984	II 1983 to II 1984
<b>Business sector:</b>												
Output per hour of all persons . . . . .	2.1	5.9	2.8	1.4	4.0	<sup>r</sup> 4.0	1.2	3.3	3.4	3.1	3.5	<sup>r</sup> 3.1
Compensation per hour . . . . .	4.4	2.2	2.0	6.1	6.2	<sup>r</sup> 1.9	5.8	4.6	3.3	3.7	4.1	4.0
Real compensation per hour . . . . .	4.1	-2.1	-2.1	1.6	1.2	<sup>r</sup> -1.7	2.1	1.3	0.7	0.3	-0.4	-0.3
Unit labor costs . . . . .	2.2	-3.5	-0.8	4.6	2.1	<sup>r</sup> -2.0	4.5	1.3	-0.1	0.6	0.6	<sup>r</sup> 1.0
Unit nonlabor payments . . . . .	10.2	14.5	9.5	3.1	7.0	<sup>r</sup> 12.9	1.3	5.5	8.9	9.2	8.4	<sup>r</sup> 8.1
Implicit price deflator . . . . .	4.6	1.9	2.5	4.1	3.7	2.7	3.5	2.6	2.7	3.3	3.0	<sup>r</sup> 3.3
<b>Nonfarm business sector:</b>												
Output per hour of all persons . . . . .	4.4	8.1	2.1	1.0	2.9	<sup>r</sup> 4.7	1.8	4.3	3.9	3.9	3.5	<sup>r</sup> 2.7
Compensation per hour . . . . .	5.7	3.5	2.2	4.1	6.1	<sup>r</sup> 3.7	6.0	5.4	4.1	3.9	4.0	4.0
Real compensation per hour . . . . .	5.4	-0.8	-1.9	-0.3	1.0	<sup>r</sup> 0.0	2.4	2.0	1.5	0.6	-0.5	-0.3
Unit labor costs . . . . .	1.3	-4.2	0.1	3.0	3.1	<sup>r</sup> -0.9	4.1	1.1	0.2	0.0	0.4	<sup>r</sup> 1.3
Unit nonlabor payments . . . . .	12.7	17.8	8.4	5.3	2.3	<sup>r</sup> 9.7	2.7	6.5	9.2	10.9	8.3	<sup>r</sup> 6.4
Implicit price deflator . . . . .	4.6	2.2	2.7	3.7	2.8	<sup>r</sup> 2.5	3.7	2.8	3.0	3.3	2.9	2.9
<b>Nonfinancial corporations:</b>												
Output per hour of all employees . . . . .	3.2	7.5	5.3	-0.2	3.6	<sup>p</sup> 1.7	1.8	3.7	3.8	3.9	4.0	<sup>p</sup> 2.6
Compensation per hour . . . . .	3.9	3.5	3.1	2.0	5.7	<sup>p</sup> 2.3	5.4	4.6	3.6	3.1	3.6	<sup>p</sup> 3.2
Real compensation per hour . . . . .	3.5	-0.8	-1.0	-2.4	0.7	<sup>p</sup> -1.3	1.7	1.3	1.0	-0.2	-0.9	<sup>p</sup> -1.0
Total units costs . . . . .	-0.7	-3.9	-2.0	0.8	0.6	<sup>p</sup> 1.0	3.5	0.8	-0.2	-1.5	-1.1	<sup>p</sup> 0.1
Unit labor costs . . . . .	0.7	-3.7	-2.1	2.1	2.0	<sup>p</sup> 0.6	3.5	0.9	-0.2	-0.8	-0.4	<sup>p</sup> 0.7
Unit nonlabor costs . . . . .	-4.1	-4.5	-1.7	-2.6	-3.2	<sup>p</sup> 2.1	3.3	0.5	0.0	-3.2	-3.0	<sup>p</sup> -1.4
Unit profits . . . . .	124.6	112.8	64.8	32.6	23.4	<sup>p</sup> 13.6	3.5	28.7	46.3	79.8	54.8	<sup>p</sup> 32.3
Implicit price deflator . . . . .	4.7	2.3	2.8	3.6	2.7	<sup>p</sup> 2.3	3.5	2.7	3.0	3.3	2.8	<sup>p</sup> 2.8
<b>Manufacturing:</b>												
Output per hour of all persons . . . . .	4.8	6.4	9.7	-1.0	3.7	<sup>r</sup> 3.6	3.4	4.3	4.3	4.9	4.7	<sup>r</sup> 4.0
Compensation per hour . . . . .	4.2	0.6	1.3	2.9	<sup>r</sup> 6.2	<sup>r</sup> 2.9	5.5	3.6	2.3	2.2	<sup>r</sup> 2.7	<sup>r</sup> 3.3
Real compensation per hour . . . . .	3.9	-3.5	-2.8	-1.5	<sup>r</sup> 1.1	<sup>r</sup> -0.8	1.8	0.3	-0.3	-1.0	<sup>r</sup> -1.7	<sup>r</sup> -1.0
Unit labor costs . . . . .	-0.5	-5.5	-7.7	3.9	<sup>r</sup> 2.3	<sup>r</sup> -0.7	2.0	-0.6	-1.9	-2.6	<sup>r</sup> 1.9	0.6

<sup>1</sup>Not available.

<sup>r</sup> = revised.

<sup>p</sup> = preliminary.

## WAGE AND COMPENSATION DATA

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

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

### Definitions

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

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

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

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

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

### Notes on the data

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

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

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

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

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



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

[June 1981 = 100]

Series	1982			1983				1984		Percent change	
	June	Sept.	Dec.	March	June	Sept.	Dec.	March	June	3 months ended	12 months ended
										June 1984	
<b>Civilian workers<sup>1</sup></b>	107.5	110.1	111.4	113.2	114.5	116.5	117.8	119.8	120.8	0.8	5.5
Workers, by occupational group											
White-collar workers	107.7	110.7	111.9	113.7	114.9	117.6	118.9	120.9	122.1	1.0	6.3
Blue-collar workers	107.1	109.2	110.5	112.3	113.6	114.8	115.8	117.7	118.6	.8	4.4
Service workers	108.3	110.8	112.4	114.3	115.1	116.7	119.1	122.0	122.1	.1	6.1
Workers, by industry division											
Manufacturing	107.2	109.3	110.4	112.5	113.5	115.0	116.0	117.9	119.1	1.0	4.9
Nonmanufacturing	107.7	110.5	111.8	113.5	114.9	117.2	118.6	120.7	121.6	.7	5.8
Services	109.2	113.5	115.0	116.6	117.1	121.1	122.6	125.0	125.5	.4	7.2
Public administration <sup>2</sup>	109.1	112.8	113.6	116.2	117.0	119.8	121.4	122.9	123.7	.7	5.7
<b>Private industry workers</b>	107.2	109.3	110.7	112.6	113.9	115.6	117.0	119.0	120.1	.9	5.4
Workers, by occupational group											
White-collar workers	107.2	109.5	110.8	112.8	114.2	116.5	117.9	119.9	121.4	1.3	6.3
Blue-collar workers	107.0	109.0	110.3	112.1	113.5	114.6	115.7	117.5	118.4	.8	4.3
Service workers	107.9	109.6	111.8	113.8	114.6	115.1	117.9	121.5	121.2	-.2	5.8
Workers, by industry division											
Manufacturing	107.2	109.3	110.4	112.5	113.5	115.0	116.0	117.9	119.1	1.0	4.9
Nonmanufacturing	107.1	109.3	110.8	112.6	114.2	116.0	117.5	119.6	120.7	.9	5.7
<b>State and local government workers</b>	109.3	114.3	115.1	116.5	117.1	120.8	122.0	123.9	124.4	.4	6.2
Workers, by occupational group											
White-collar workers	109.5	114.9	115.8	117.0	117.5	121.5	122.6	124.5	125.0	.4	6.4
Blue-collar workers	108.9	112.7	113.0	114.9	115.8	118.0	119.2	121.9	122.3	.3	5.6
Workers, by industry division											
Services	109.4	114.9	115.9	116.8	117.4	121.7	122.6	124.5	125.0	.4	6.5
Schools	109.1	114.8	115.8	116.6	116.9	121.9	122.6	124.5	124.7	.2	6.7
Elementary and secondary	109.5	115.6	116.6	117.2	117.4	123.3	123.9	125.4	125.7	.2	7.1
Hospitals and other services <sup>3</sup>	110.3	115.3	116.0	117.5	118.8	121.1	122.6	124.4	125.7	1.0	5.8
Public administration <sup>2</sup>	109.1	112.8	113.6	116.2	117.0	119.8	121.4	122.9	123.7	.7	5.7

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

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

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

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

[June 1981 = 100]

Series	1982			1983				1984		Percent change	
	June	Sept.	Dec.	March	June	Sept.	Dec.	March	June	3 months ended	12 months ended
										June 1984	
<b>Civilian workers<sup>1</sup></b>	107.3	109.7	110.9	112.2	113.4	115.3	116.5	117.9	118.8	0.8	4.8
Workers, by occupational group											
White-collar workers	107.6	110.4	111.4	113.0	114.2	116.7	117.9	119.3	120.4	.9	5.4
Blue-collar workers	106.7	108.6	109.8	110.8	112.0	113.1	114.0	115.3	116.1	.7	3.7
Service workers	107.9	110.1	111.8	113.2	113.9	115.1	117.4	120.0	119.8	-.2	5.2
Workers, by industry division											
Manufacturing	107.0	108.8	109.8	111.0	112.0	113.3	114.5	115.7	116.8	1.0	4.3
Nonmanufacturing	107.5	110.1	111.3	112.7	114.0	116.1	117.4	118.9	119.7	.7	5.0
Services	109.5	113.2	114.4	115.8	116.3	120.1	121.3	123.3	123.8	.4	6.4
Public administration <sup>2</sup>	108.4	111.9	112.6	114.6	115.4	118.2	119.4	120.4	121.3	.7	5.1
<b>Private industry workers</b>	107.1	109.0	110.3	111.6	112.9	114.5	115.8	117.2	118.2	.9	4.7
Workers, by occupational group											
White-collar workers	107.3	109.4	110.6	112.2	113.6	115.9	117.2	118.5	119.9	1.2	5.5
Professional and technical workers	109.4	111.8	112.9	114.8	115.9	119.9	120.4	122.2	123.8	1.3	6.8
Managers and administrators	107.2	108.5	109.3	112.0	114.0	114.8	115.7	118.0	119.2	1.0	4.6
Salesworkers	101.8	104.5	106.2	105.7	107.1	108.4	111.2	110.2	111.9	1.5	4.5
Clerical workers	108.3	110.3	111.6	113.4	114.6	116.7	118.3	119.8	120.7	.8	5.3
Blue-collar workers	106.6	108.5	109.7	110.7	111.9	112.9	113.9	115.1	115.9	.7	3.6
Craft and kindred workers	107.6	109.6	111.2	112.2	113.4	114.3	115.4	116.5	117.3	.7	3.4
Operatives, except transport	106.6	108.3	109.3	110.0	111.1	112.3	113.6	114.9	115.8	.8	4.2
Transport equipment operatives	104.1	106.0	106.9	108.0	110.3	110.7	110.2	111.7	112.7	.9	2.2
Nonfarm laborers	105.1	106.5	107.8	109.0	109.8	110.8	112.1	112.9	114.1	1.1	3.9
Service workers	107.9	109.3	111.4	112.9	113.5	113.7	116.5	119.8	119.3	-.4	5.1
Workers, by industry division											
Manufacturing	107.0	108.8	109.8	111.0	112.0	113.3	114.5	115.7	116.8	1.0	4.3
Durables	107.4	109.0	110.3	111.1	111.8	112.9	114.4	115.7	116.6	.8	4.3
Nondurables	106.3	108.5	109.1	110.9	112.3	113.9	114.6	115.8	117.1	1.1	4.3
Nonmanufacturing	107.1	109.1	110.5	112.0	113.4	115.2	116.5	118.0	119.0	.8	4.9
Construction	107.3	109.1	109.7	110.4	112.1	112.2	112.9	113.3	114.0	.6	1.7
Transportation and public utilities	106.9	109.5	111.1	112.9	114.7	115.7	116.8	118.5	119.3	.7	4.0
Wholesale and retail trade	105.8	106.5	107.2	108.5	110.8	111.5	112.3	114.3	116.0	1.5	4.7
Wholesale trade	108.9	109.0	109.8	111.8	114.1	115.7	116.5	118.2	120.0	1.5	5.2
Retail trade	104.5	105.5	106.1	107.2	109.4	109.9	110.6	112.8	114.4	1.4	4.6
Finance, insurance, and real estate	102.4	106.1	109.0	110.6	111.1	113.5	116.9	116.1	116.9	.7	5.2
Services	110.0	112.5	114.3	116.0	116.6	120.4	121.9	124.2	124.7	.4	6.9
<b>State and local government workers</b>	108.7	113.5	114.0	115.1	115.7	119.2	120.0	121.6	122.0	.3	5.4
Workers, by occupational group											
White-collar workers	108.9	114.2	114.6	115.6	116.1	119.8	120.6	122.2	122.5	.2	5.5
Blue-collar workers	107.9	111.5	112.0	113.3	114.3	116.4	116.9	119.1	119.6	.4	4.6
Workers, by industry division											
Services	108.8	114.2	114.6	115.5	115.9	119.8	120.6	122.2	122.5	.2	5.7
Schools	108.5	114.2	114.5	115.2	115.4	119.9	120.6	122.2	122.3	.1	6.0
Elementary and secondary	108.8	114.9	115.1	115.6	115.8	121.1	121.7	122.9	123.0	.1	6.2
Hospitals and other services <sup>3</sup>	109.5	114.3	114.9	116.5	117.7	119.7	120.6	121.9	123.1	1.0	4.6
Public administration <sup>2</sup>	108.4	111.9	112.6	114.6	115.4	118.2	119.4	120.4	121.3	.7	5.1

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

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

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

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

[June 1981 = 100]

Series	1982			1983				1984		Percent change	
	June	Sept.	Dec.	March	June	Sept.	Dec.	March	June	3 months	12 months
										ended	ended
	June 1984										
<b>COMPENSATION</b>											
Workers, by bargaining status <sup>1</sup>											
Union	108.4	110.6	112.3	114.5	116.0	117.8	118.8	120.6	121.7	0.9	4.9
Manufacturing	108.0	110.3	111.8	114.0	114.8	116.3	117.2	119.3	120.5	1.0	5.0
Nonmanufacturing	108.7	111.0	112.8	114.9	117.1	119.2	120.4	121.9	122.8	.7	4.9
Nonunion	106.5	108.5	109.7	111.5	112.8	114.4	115.9	118.0	119.2	1.0	5.7
Manufacturing	106.6	108.4	109.2	111.2	112.3	113.8	114.9	116.6	117.9	1.1	5.0
Nonmanufacturing	106.4	108.6	109.9	111.6	113.0	114.7	116.4	118.6	119.8	1.0	6.0
Workers, by region <sup>1</sup>											
Northeast			111.7	112.6	114.3	116.0	117.5	118.9	120.7	1.5	5.6
South			110.6	112.5	113.5	115.6	117.1	119.7	120.7	.8	6.3
North Central			108.6	110.9	112.5	113.9	114.7	117.2	117.9	.6	4.8
West			112.9	115.4	116.6	118.0	120.0	121.0	122.2	1.0	4.8
Workers, by area size <sup>1</sup>											
Metropolitan areas	107.2	109.4	110.9	112.9	114.2	116.0	117.4	119.4	120.6	1.0	5.6
Other areas	107.0	108.6	109.1	110.8	112.3	113.4	114.5	116.7	117.4	.6	4.5
<b>WAGES AND SALARIES</b>											
Workers, by bargaining status <sup>1</sup>											
Union	108.1	110.3	111.8	112.9	114.2	116.0	116.9	118.1	119.0	.8	4.2
Manufacturing	107.3	109.5	110.8	111.4	112.3	113.7	114.8	116.1	117.1	.9	4.3
Nonmanufacturing	108.8	111.1	112.7	114.3	116.0	118.3	118.9	120.1	120.7	.5	4.1
Nonunion	106.5	108.3	109.5	110.9	112.2	113.7	115.2	116.7	117.8	.9	5.0
Manufacturing	106.7	108.2	109.1	110.7	111.8	113.0	114.2	115.4	116.5	1.0	4.2
Nonmanufacturing	106.4	108.3	109.6	111.0	112.4	114.0	115.6	117.2	118.3	.9	5.2
Workers, by region <sup>1</sup>											
Northeast	106.7	109.7	111.5	112.0	113.6	115.3	116.6	117.4	118.9	1.3	4.7
South	107.4	108.8	109.8	111.4	112.5	114.3	115.7	117.9	119.0	.9	5.8
North Central	106.1	107.6	108.6	110.1	111.5	112.8	113.6	115.5	116.0	.4	4.0
West	108.6	110.7	112.0	114.1	114.9	116.5	118.5	118.8	119.6	.7	4.1
Workers by area size <sup>1</sup>											
Metropolitan areas	107.1	109.1	110.5	111.9	113.2	114.9	116.2	117.6	118.6	.9	4.8
Other areas	106.8	108.3	108.8	110.1	111.4	112.3	113.4	115.1	116.0	.8	4.1

<sup>1</sup>The indexes are calculated differently from those for the occupation and industry groups. For a detailed description of the index calculation, see BLS *Handbook of Methods*, Bulletin 1910.



**36. Wage and compensation change, major collective bargaining settlements, 1979 to date**

[In percent]

Measure	Annual average					Quarterly average									
	1979	1980	1981	1982	1983	1982			1983				1984 <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 . . . . .	9.0	10.4	10.2	3.2	3.4	2.6	6.2	3.3	-1.6	4.4	5.0	4.9	5.2	3.6	
Annual rate over life of contract . . . . .	6.6	7.1	8.3	2.8	3.0	2.1	4.7	4.8	1.4	3.6	4.3	3.1	4.8	3.1	
Wage rate changes covering at least 1,000 workers, all industries:															
First year of contract . . . . .	7.4	9.5	9.8	3.8	2.6	3.4	5.4	3.8	-1.2	2.7	3.7	4.2	3.1	2.3	
Annual rate over life of contract . . . . .	6.0	7.1	7.9	3.6	2.8	3.2	4.5	4.8	2.2	2.8	3.6	2.8	3.4	2.3	
Manufacturing:															
First year of contract . . . . .	6.9	7.4	7.2	2.8	0.4	1.8	5.1	4.1	-3.4	1.3	3.4	2.9	2.9	1.9	
Annual rate over life of contract . . . . .	5.4	5.4	6.1	2.6	2.1	1.7	3.9	4.5	.9	1.7	3.5	3.1	2.7	1.4	
Nonmanufacturing (excluding construction):															
First year of contract . . . . .	7.6	9.5	9.8	4.3	5.0	6.6	5.5	3.6	3.3	5.9	5.8	4.8	4.4	4.1	
Annual rate over life of contract . . . . .	6.2	6.6	7.3	4.1	3.7	6.1	4.8	5.2	5.3	5.2	4.3	2.7	4.8	4.0	
Construction:															
First year of contract . . . . .	8.8	13.6	13.5	6.5	1.5	6.2	6.3	3.4	.7	1.7	1.5	1.1	-3.7	.7	
Annual rate over life of contract . . . . .	8.3	11.5	11.3	6.3	2.4	6.3	5.9	2.9	2.4	2.1	2.9	2.6	-3.0	1.1	

p = preliminary.

**37. Effective wage adjustments in collective bargaining units covering 1,000 workers or more, 1979 to date**

Measure	Year					Year and quarter										
	1979	1980	1981	1982	1983	1982			1983				1984 <sup>P</sup>			
						II	III	IV	I	II	III	IV	I	II		
Average percent adjustment (including no change):																
All industries . . . . .	9.1	9.9	9.5	6.8	4.0	2.0	2.4	1.3	0.3	1.3	1.2	1.1	0.9	0.9		
Manufacturing . . . . .	9.6	10.2	9.4	5.2	2.7	1.0	1.7	1.5	-.5	1.1	1.2	.9	1.2	1.0		
Nonmanufacturing . . . . .	8.8	9.7	9.5	7.9	4.8	2.7	2.9	1.2	.9	1.5	1.2	1.2	.7	.9		
From settlements reached in period . . . . .	3.0	3.6	2.5	1.7	.8	.4	.5	.6	-.2	.3	.2	.6	.1	.1		
Deferred from settlements reached in earlier period . . . . .	3.0	3.5	3.8	3.6	2.5	1.4	1.3	.4	.4	1.0	.8	.3	.4	.7		
From cost-of-living clauses . . . . .	3.1	2.8	3.2	1.4	.6	.2	.6	.3	.1	.1	.2	.2	.4	.2		
Total number of workers receiving wage change (in thousands) <sup>1</sup>																
From settlements reached in period . . . . .	—	—	8,648	7,852	6,530	3,423	3,760	3,441	2,875	3,061	3,025	2,887	2,906	2,651		
Deferred from settlements reached in earlier period . . . . .	—	—	2,270	1,907	2,327	511	620	825	448	561	599	996	291	316		
From cost-of-living clauses . . . . .	—	—	6,267	4,846	3,260	1,594	2,400	860	812	1,405	1,317	669	1,043	1,231		
Number of workers receiving no adjustments (in thousands)	—	—	145	483	1,187	4,912	4,575	4,895	4,842	4,656	4,693	4,830	4,735	4,990		

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

p = preliminary.

## WORK STOPPAGE DATA

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

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

38. Work stoppages involving 1,000 workers or more, 1947 to date							
Month and year	Number of stoppages		Workers involved		Days idle		
	Beginning in month or year	In effect during month	Beginning in month or year (in thousands)	In effect during month (in thousands)	Number (in thousands)	Percent of estimated working time	
1947	270		1,629		25,720	—	
1948	245		1,435		26,127	.22	
1949	262		2,537		43,420	.38	
1950	424		1,698		30,390	.26	
1951	415		1,462		15,070	.12	
1952	470		2,746		48,820	.38	
1953	437		1,623		18,130	.14	
1954	265		1,075		16,630	.13	
1955	363		2,055		21,180	.16	
1956	287		1,370		26,840	.20	
1957	279		887		10,340	.07	
1958	332		1,587		17,900	.13	
1959	245		1,381		60,850	.43	
1960	222		896		13,260	.09	
1961	195		1,031		10,140	.07	
1962	211		793		11,760	.08	
1963	181		512		10,020	.07	
1964	246		1,183		16,220	.11	
1965	268		999		15,140	.10	
1966	321		1,300		16,000	.10	
1967	381		2,192		31,320	.18	
1968	392		1,855		35,567	.20	
1969	412		1,576		29,397	.16	
1970	381		2,468		52,761	.29	
1971	298		2,516		35,538	.19	
1972	250		975		16,764	.09	
1973	317		1,400		16,260	.08	
1974	424		1,796		31,809	.16	
1975	235		965		17,563	.09	
1976	231		1,519		23,962	.12	
1977	298		1,212		21,258	.10	
1978	219		1,006		23,774	.11	
1979	235		1,021		20,409	.09	
1980	187		795		20,844	.09	
1981	145		729		16,908	.07	
1982	96		656		9,061	.04	
1983	81		909		17,461	.08	
1983	January	1	3	1.6	38.0	794.8	.04
	February	5	7	14.0	50.4	844.4	.05
	March	5	10	10.5	54.9	1,131.5	.05
	April	2	9	2.8	52.4	789.5	.04
	May	12	17	24.9	34.2	488.5	.03
	June	16	25	63.3	81.2	689.1	.03
	July	10	23	64.5	99.8	1,270.1	.07
1984 <sup>p</sup>	January	6	12	28.9	43.0	507.3	.03
	February	2	12	8.7	37.2	365.5	.02
	March	2	9	3.0	14.6	284.2	.01
	April	7	13	28.5	38.1	651.0	.03
	May	5	15	8.1	39.2	581.2	.03
	June	5	14	23.7	45.7	754.8	.04
	July	7	19	65.0	100.7	1,211.3	.06

p = preliminary.

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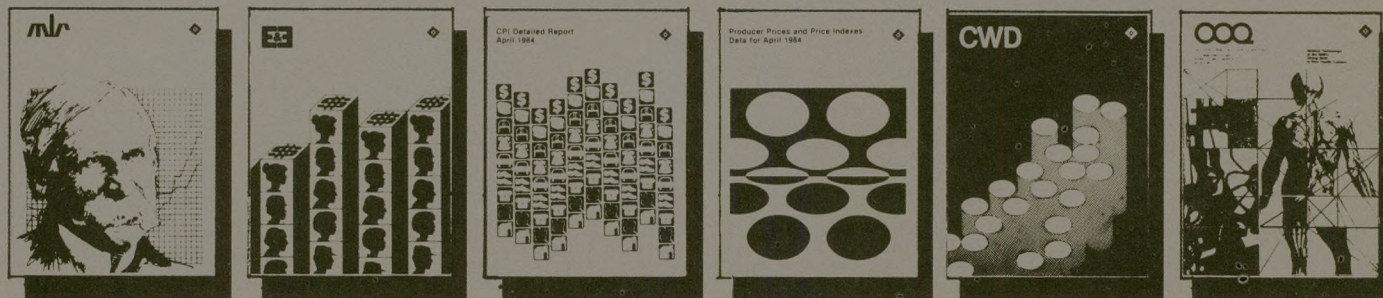
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