

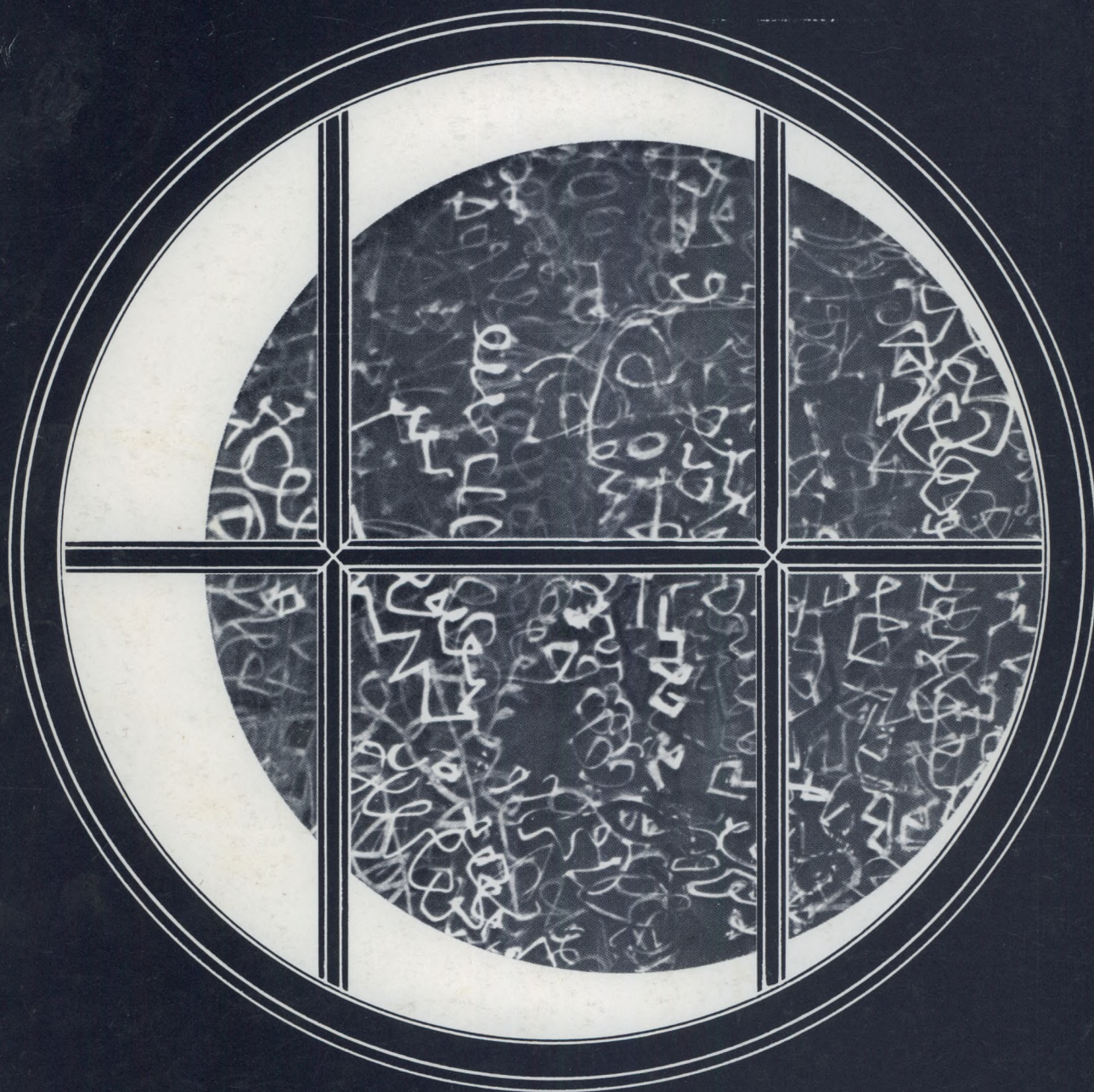


MONTHLY LABOR REVIEW

U.S. Department of Labor
Bureau of Labor Statistics
April 1984

In this issue:

Import and export prices, employment
in services, and surviving spouse's
pension benefits





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

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Labor Month In Review



KLEIN AWARDS. Lawrence R. Klein, now a resident of Tuscon, Ariz., presented the awards that bear his name at BLS honor award ceremonies, March 27, in Washington, D.C. Klein presented the award for the best original *Monthly Labor Review* article written by a BLS author and published during 1983 to three BLS economists:

Richard W. Riche of the Office of Productivity and Technology, Daniel E. Hecker of the Office of Economic Growth and Employment Projections, and John U. Burgan of the Office of Employment and Unemployment Statistics for "High technology today and tomorrow: a small slice of the employment pie," published in the November issue.

Other winners of Klein awards were authors of two articles written outside of BLS, Koji Taira of the University of Illinois for "Japan's low unemployment: economic miracle or statistical artifact?" published in the July issue, and Michele M. Hoyman of the University of Missouri and Lamont E. Stallworth of Loyola University for "Arbitrating discrimination grievances in the wake of *Gardner-Denver*," in the October issue.

Two BLS authors cited for honorable mention were George Ruben of the Office of Wages and Industrial Relations for "Collective bargaining in 1982: results dictated by the economy," in the January issue, and for "Developments in industrial relations" written for the *Review* throughout the year, and Philip L. Rones of the Office of Employment and Unemployment Statistics for "The labor market problems of older workers," in the May issue.

The Riche, Hecker, and Burgan article presents various concepts of high technology and considers its effects on

employment in the 1970's and through the mid-1990's. Their study indicates that:

- Employment in high tech industries increased faster than average industry growth during the 1972-82 period.
- High tech industries accounted for a relatively small proportion of all new jobs nationwide, but provided a significant proportion of all new jobs in some States and communities.
- About 6 out of 10 high tech jobs are located in the 10 most populous States.
- States with relatively high proportions of employment in high tech industries are generally small; most are in the Northeast.
- Through 1995, employment in high tech industries is projected to grow somewhat faster than in the economy as a whole.
- High tech industries, even broadly defined, will account for only a small proportion of new jobs through 1995.
- Scientific and technical workers, while critical to the growth of industry and the economy, will account for only 6 percent of all new jobs through 1995.

The Taira article finds that Japanese workers statistically move from employment to out of the labor force, bypassing unemployment and that their unemployment rates are comparatively low, even when the data are adjusted using U.S. concepts of unemployment. Taira examines the ways in which unemployment is defined and counted in Japan. Discussions of unemployment by sex and age, and labor redundancy are also included.

The Hoyman and Stallworth article empirically examines the state of

discrimination grievance arbitration in the aftermath of the Supreme Court's 1974 *Gardner-Denver* decision, as perceived by a sample of attorneys who typically represent either management or labor in grievance arbitration. The data from the authors' study indicate that "*Gardner-Denver* has had more of a procedural effect than a substantive effect of the arbitral process. Relitigation has not occurred in the majority of cases, and where it did occur in either the administrative or judicial forum, the determination of the arbitrator was rarely contradicted. If the frequency of relitigation and reversal is an indicator of the effect of *Gardner-Denver*, it seems reasonable to conclude that arbitration still serves as a viable dispute settlement device for the resolution of Title VII-related grievances."

Purpose of the award. The Klein Award Fund was established in honor of Lawrence R. Klein, editor-in-chief of the *Monthly Labor Review* for 22 years until his retirement in 1968. Instead of accepting a retirement gift, Klein donated it and matched the amount collected to initiate the fund. Since then, he has contributed regularly as have others. The purpose of the fund is to encourage *Review* articles that (1) exhibit originality of ideas or method of analysis (2) adhere to the principles of scientific inquiry, and (3) are well written. Since 1969, fund trustees have presented awards to the authors of 30 *Review* articles. Awards carry cash prizes of \$200 for each winning article.

Tax-deductible contributions to the Klein Fund may be sent to Ben Burdetsky, Secretary-Treasurer, Lawrence R. Klein Fund, c/o School of Government and Business Administration, The George Washington University, Washington, D.C. 20052. □

Robust growth and the strong dollar set pattern for 1983 import and export prices

Declining energy costs, the slower pace of recovery abroad, and developing nations' efforts to service heavy international debt loads were also important factors in price developments; a new all-commodities export price index was published for the fourth quarter

MARK J. JOHNSON

U.S. import prices, as measured by the International Price Program of the Bureau of Labor Statistics, fell 2.4 percent in 1983. (See table 1.) Declining energy prices and the continued appreciation of the dollar against other currencies pulled prices downward, although the robust U.S. economic recovery placed some upward pressure on prices. The drop in U.S. import prices was an important factor in the slowdown of domestic inflation in 1983, as measured by the Consumer Price Index and the Producer Price Index.

The U.S. all-commodities export price index, which was published for the first time with the release of fourth-quarter 1983 data, fell 0.4 percent during the last 3 months of the year. (See table 2.) The new all-export index provides full coverage of U.S. merchandise exports; services and military goods are not included. Key individual export price indexes showing increases in 1983 were those for grain and for machinery and transport equipment, while the index for bituminous coal exports declined 14.2 percent. Export prices were greatly influenced by the strong U.S. dollar, the relatively slow pace of economic recovery abroad, and reduced

demand for U.S. products by developing nations with heavy international debt loads.

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.¹

General import and export trends

Because energy prices account for approximately one-third of the weight of the all-import price index, their 11.3-percent decline during 1983 was a major factor in the drop in this index. When energy products are excluded, U.S. import prices rose 2.1 percent. This increase was led by the indexes for intermediate manufactures and for machinery and transport equipment, which rose 3.7 and 2.5 percent, respectively.

The strong U.S. economic recovery in 1983 also had a major impact on import prices. The recovery was fueled by consumer spending, as personal consumption expenditures rose 8.4 percent above 1982 levels.² Some of this increased spending was for imported goods. Of particular importance were sales of interest rate-sensitive items such as autos,

Mark J. Johnson is an economist in the Division of International Prices, Bureau of Labor Statistics.

Table 1. Change in selected import price indexes in 1983, and commodity shares 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—				
		All of 1983	First quarter	Second quarter	Third quarter	Fourth quarter			All of 1983	First quarter	Second quarter	Third quarter	Fourth quarter
All commodities	100.000	-2.4	-2.8	0.2	-0.3	0.5	Intermediate manufactured products	13.520	3.7	1.3	1.6	0.8	0.0
All commodities except fuels and related products	67.223	2.1	1.0	1.0	-0.4	0.5	Nonmetallic mineral manufactures	1.944	6.1	3.1	2.8	0.1	0.0
Food	6.554	3.8	1.1	0.1	1.3	1.2	Precious and semiprecious stones, and pearls	1.127	(¹)	(¹)	(¹)	(¹)	(¹)
Meat	0.977	-6.5	-1.0	-2.9	1.1	-3.8	Diamonds, cut and polished	0.937	11.9	3.9	6.3	2.6	-1.2
Meat of bovine animals	0.652	-1.1	2.8	3.6	-0.5	-6.7	Iron and steel	3.127	1.8	-2.0	-0.3	0.2	3.9
Other prepared or preserved meat	0.234	-13.0	-3.2	-11.0	1.7	-0.8	Nonferrous metals	3.123	10.2	6.9	5.8	2.2	-4.5
Sugar, sugar preparations, and honey	0.925	4.5	0.0	3.9	1.5	-0.8	Silver, platinum, and other metals of the platinum group	1.037	6.0	13.6	3.0	4.4	-13.3
Coffee, tea, and cocoa	2.241	17.8	2.2	1.7	4.0	9.0	Copper	0.581	6.3	7.6	8.2	-1.1	-7.7
Coffee and coffee substitutes	1.746	6.8	-2.5	0.7	0.9	7.7	Zinc	0.135	19.4	-1.2	0.1	7.2	12.6
Coffee	1.644	7.9	-2.8	1.3	0.7	8.7	Machinery and transport equipment	25.442	2.5	1.8	0.8	-1.2	1.2
Tea and mate	0.054	42.8	4.8	4.8	1.8	27.7	Office machines and automatic data processing (ADP) equipment	1.217	4.1	2.6	-0.2	-1.4	3.1
Tea	0.054	43.0	4.8	4.7	1.9	27.8	Parts for ADP equipment	0.431	10.7	5.9	0.0	-0.3	4.8
Fuels and related products	32.776	-11.3	-10.2	-1.6	-0.1	0.5	Telecommunications equipment	2.785	-1.2	0.6	0.5	-0.7	-1.7
Crude petroleum	25.799	-12.7	-10.8	-2.3	-0.5	0.7	Electrical machinery and equipment	3.396	-1.2	-0.5	1.9	-2.0	-0.5
Gas, natural and remanufactured	2.069	(¹)	(¹)	(¹)	(¹)	(¹)	Road vehicles and parts	10.887	4.1	1.7	0.4	-0.7	2.6
Natural gas and liquified natural gas	1.642	-11.2	-0.2	-10.2	-8.4	8.2	Passenger automobiles	7.201	4.9	1.3	0.6	-0.4	3.3

¹Data are not available.

housing, and consumer durables, which showed substantial increases over 1982 levels: 1983 auto sales were 15 percent above 1982 levels, and housing starts, up 60.3 percent over 1982, reached their highest level since 1979.³ This increased activity stimulated demand for a host of related commodities, many of them imports. For example, auto production spurred demand for such imported items as steel, aluminum, rubber, and engines, while the increase in housing starts boosted sales for foreign suppliers of lumber, copper, and appliances.

Recent years have seen a substantial appreciation of the dollar against the currencies of our major trading partners. From its low in July 1980 to December 1983, the dollar's trade-weighted exchange rate rose 33.5 percent.⁴ (See chart 1.) Over the same period, the dollar rose 617.2 percent against the Mexican peso, 106.7 percent against the French franc, 57.4 percent against the German Deutschmark, and 6.1 percent against the Japanese yen.⁵ This appreciation made imports less expensive while driving up the price of U.S. exports in foreign markets. (See chart 2.)

Worldwide economic recovery lagged that of the United States, further dampening demand for U.S. exports. U.S. merchandise exports were \$200.0 billion in 1983, down 5.3 percent from 1982.⁶ In particular, many developing nations

experienced debt problems that forced them to cut back on purchases of U.S. goods. For example, Mexico, our third largest trading partner, purchased only \$9.1 billion of U.S. goods in 1983, compared with \$11.8 billion in 1982 and \$18.2 billion in 1981.⁷ Other important U.S. trading partners with debt problems were Brazil, Argentina, and Bolivia. Several OPEC nations were forced to curb imports as oil revenues declined. Furthermore, many of our major trading partners in Europe, especially West Germany, Britain, and France, experienced little economic growth in 1983. The decline in U.S. merchandise exports was a key factor in the record \$60.6 billion 1983 merchandise trade deficit, which far surpassed the previous high of \$36.4 billion in 1982.⁸

Widening the merchandise trade gap was growth in demand for imports by U.S. consumers and producers as the Nation led economic recovery from the worldwide recession. U.S. 1983 merchandise imports were \$260.6 billion, 5.2 percent more than in 1982.⁹ Although crude oil imports fell to \$36.8 billion in 1983 (from \$45.9 billion in 1982), demand for nonoil imports rose sharply, by 10.9 percent, to \$206.8 billion.¹⁰ Moreover, the U.S. current account, which incorporates the balance on merchandise trade and the balance on services (including payments and receipts of

interest and dividends on international investments) set a record deficit of \$40.8 billion following a deficit of \$11.2 billion in 1982 and a surplus of \$4.6 billion in 1981.¹¹

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.¹² During 1983, this figure was 28.1 percent, down from 29.3 percent in 1982 and 32.2 percent in 1981. (The comparable figure for 1970 was 16.6 percent.)

Fuel leads import price decline

Fuels and related products. Import prices for fuels and related products fell 11.3 percent in 1983, paced by a 12.7-percent decline in crude oil prices and an 11.2-percent decline in natural gas prices. (See chart 3.) Crude oil prices fell 10.8 percent during the first quarter, in response to the March 1983 decision by the Organization of Petroleum Exporting Countries (OPEC) to cut its base price for a barrel of crude oil from \$34 to \$29. Pressure for this price cut had been building for 2 years in the form of excess supplies on world markets, increased substitution of other forms of energy for crude oil, stepped-up conservation in the major industrialized nations, and sluggish worldwide economic activity. However, the OPEC price cut did not restore stability to world oil markets. By year's end, spot prices for many crudes were again below the official OPEC prices, as several OPEC nations attempted to maintain revenues by discounting their posted prices and making sales in excess of their quotas. One method used was to offer buyers generous price reductions based on quality differentials between different grades of oil.

U.S. refiners' small profit margins on finished products forced them to be as stringent as possible on prices paid for crude oil supplies. And because they have excess refining capacity, including facilities for processing high-sulfur crudes, they had more flexibility in 1983 than in previous years regarding the source of their supplies, a fact which kept pressure on foreign producers to lower their prices. Mexico and Venezuela are chief U.S. suppliers of high-sulfur crude oil.

In 1983, U.S. consumption of petroleum products fell 0.7 percent in its fifth consecutive annual decline, outpacing the last previous extended decline during 1930-32.¹³ Conservation even in the face of the vigorous economic recovery was the primary factor behind the drop in consumption. Gasoline sales rose slightly in 1983, after three consecutive years of decline, as retail gasoline prices fell and the U.S. auto fleet became increasingly fuel efficient. At the pump, average retail gasoline prices dropped 1.6 percent over the year.¹⁴ When the improved efficiency of the U.S. auto fleet is taken into account, gasoline costs per mile driven for U.S. consumers have declined substantially since 1980.

Demand and prices for home heating oil and residual fuel also fell in 1983. The relatively warm 1983-84 winter, the continuing application of energy-efficiency techniques in homes, and the increased substitution of other fuel sources

such as electricity, natural gas, and solar heat contributed to reduced consumption of home heating oil. During 1983, the average retail price of home heating oil was \$1.17 per gallon, compared with \$1.21 in 1982 and \$1.25 in 1981.¹⁵ Residual fuel demand fell again in 1983 as utilities and industrial users continued to switch to other forms of power, such as coal, nuclear, and hydroelectric.

The strong dollar had a major effect on world crude oil prices in 1983. 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 currencies actually rose in 1983, because of the depreciation of their currencies against the dollar. This phenomenon acted to further depress world oil demand.

The composition of U.S. oil imports continued to shift away from OPEC sources during 1983. In recent years, several non-OPEC suppliers, primarily Britain, Mexico, Norway, the Soviet Union, and Egypt, have brought increasingly large amounts of crude oil to world markets. In 1983, the U.S. purchased 37 percent of its imported crude oil and

Table 2. Change in selected export price indexes in 1983, and commodity shares of total 1980 trade value

Commodity	Share of total 1980 trade value	Percent change in—				
		All of 1980	First quarter	Second quarter	Third quarter	Fourth quarter
All commodities	100.000	(¹)	(¹)	(¹)	(¹)	-0.4
Food	12.768	(¹)	(¹)	5.1	7.6	-3.9
Grain and grain preparations	8.341	16.8	7.2	6.8	7.7	-5.3
Wheat	2.943	-5.0	-1.0	0.2	1.8	-5.9
Barley	0.094	32.1	-0.6	13.0	21.6	-3.2
Yellow corn	3.956	34.5	13.1	11.2	12.8	-5.1
Yellow sorghum	0.498	18.3	10.0	11.2	0.8	-4.1
Crude materials	10.948	(¹)	(¹)	(¹)	14.5	-2.1
Oil seeds	3.024	35.8	-1.8	7.1	40.8	-8.3
Soybeans	2.716	36.8	-0.2	7.0	41.1	-9.1
Fuels and related products	3.691	(¹)	(¹)	(¹)	(¹)	0.8
Bituminous coal	2.088	-14.2	-2.6	-10.2	-1.7	0.2
Chemicals and related products	9.578	(¹)	(¹)	-3.6	0.6	1.6
Hydrocarbons and their derivatives	0.799	7.9	-0.8	3.1	3.2	2.2
Machinery and transport equipment	35.261	2.5	0.4	0.5	0.4	1.0
Metalworking machinery	0.829	1.6	0.8	0.5	-0.1	0.3
General industrial machinery and parts	4.939	1.6	0.8	0.3	0.3	0.3
Heating and cooling equipment	1.087	-0.1	0.3	0.1	-0.1	-0.4
Mechanical handling equipment	1.172	2.6	0.7	0.2	1.2	0.5
Telecommunications, sound recording and reproducing equipment	1.590	1.9	0.7	0.5	0.8	-0.1
Telecommunications parts and accessories	1.225	3.3	1.9	0.7	0.8	-0.1

¹Data are not available.

petroleum products from OPEC sources, compared with 42 percent in 1982 and 70 percent in 1977—the year of the greatest volume of oil imports.¹⁶ Leading suppliers in 1983 were Mexico, at 822 thousand barrels per day (bpd), Canada (542 thousand bpd), Venezuela (421 thousand bpd), and the United Kingdom (381 thousand bpd).¹⁷ Especially noteworthy was the drop in imports from Saudi Arabia, which in 1983 was the fifth-ranked U.S. supplier at 336 thousand bpd, compared with imports of 552 thousand bpd in 1982 and 1.1 million bpd in 1981.¹⁸

Natural gas import prices fell steeply during the year because of large world surpluses. Strong resistance to high prices by U.S. purchasers led to a sharp drop in import prices for Canadian natural gas and the termination of a major contract for liquified natural gas (LNG) imports from Algeria.

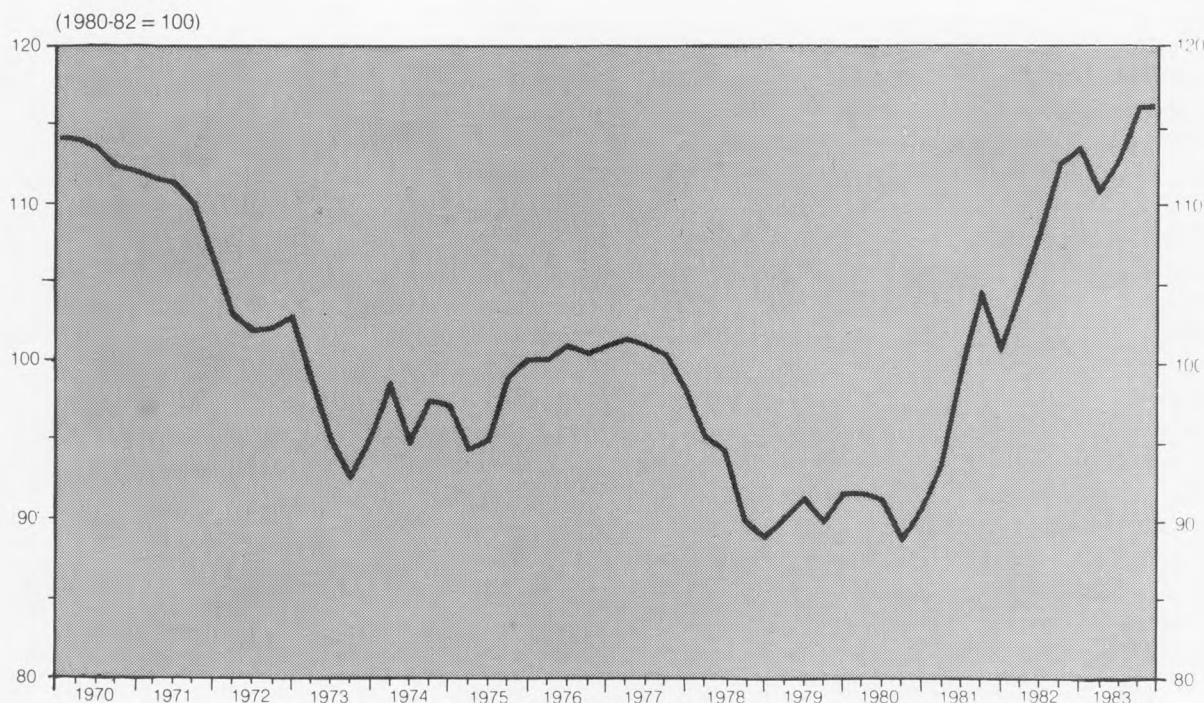
Food. The price index for food imports advanced 3.8 percent during 1983, led by a 17.8-percent increase in the index for coffee, tea, and cocoa and a 4.5-percent rise in the sugar and honey index. Partially offsetting these increases was a 6.5-percent decline in prices for imported meat. U.S. imports of food products were \$15.4 billion for the year, up from \$14.5 billion in 1982.¹⁹ The food index, which had risen 0.2 percent in 1982, is one of the most volatile components of the all-import index, reflecting the impact of

climatic conditions and the difficulties inherent in food production, transportation, and marketing.

The import index for coffee, tea, and cocoa rose 9.0 percent in the fourth quarter alone. Coffee prices, which advanced 7.9 percent for the year, gained 8.7 percent in the fourth quarter. The fourth-quarter hike in coffee prices resulted from a Federal Government crackdown on smugglers seeking to evade limits imposed by U.S. participation in the International Coffee Agreement, a strong seasonal pickup in demand by roasters, a depletion of stockpiles, and a shortage of high quality beans.²⁰ Cocoa price increases reflected the dry weather which slowed the growth of crops in Ghana, the Ivory Coast, and Nigeria. Tea prices rose 43.0 percent for the year, with 27.8 percent of the price increase occurring in the fourth quarter. Price hikes for imported tea were the result of strong seasonal demand in the summer and reduced exports by Sri Lanka and Indonesia, two major suppliers.

Meat prices fell 6.5 percent in 1983, after declining 0.4 percent the previous year. This index often registers volatile price movements. The 1983 decrease was heavily influenced by increases in input prices for feed grains, and the impact of weather conditions on herds. Beef and veal prices fell 4.3 percent during the year, reflecting sluggish demand, low wholesale beef prices, and large domestic slaughters in re-

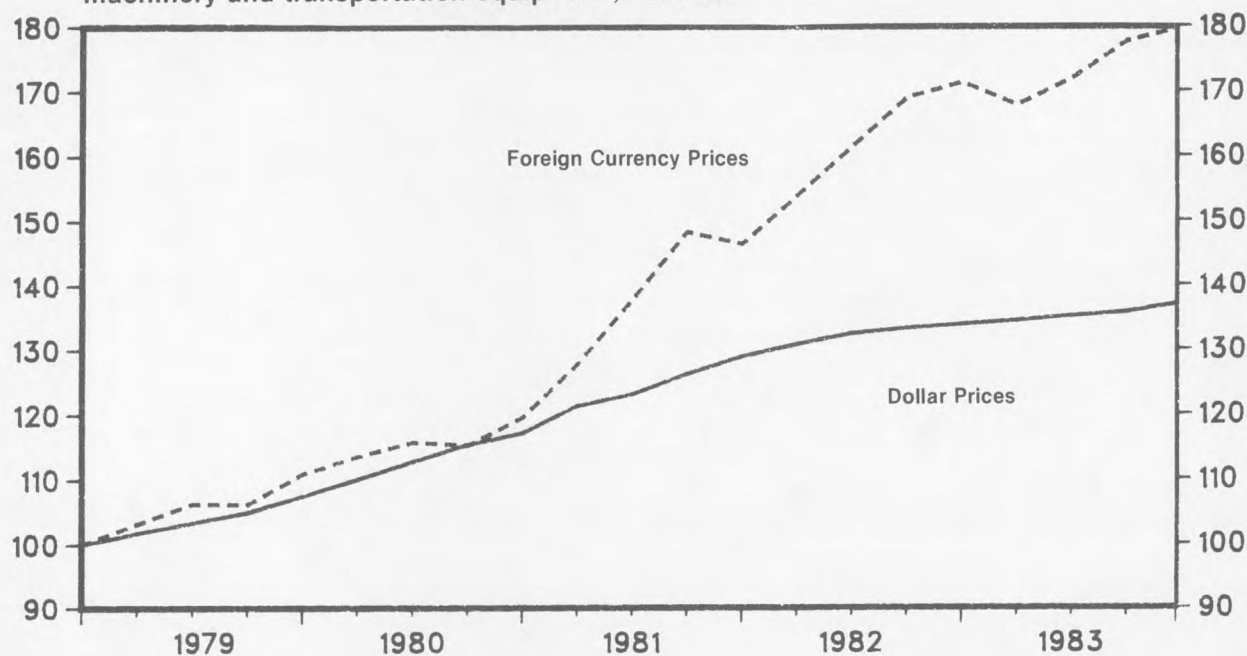
Chart 1. Trade-weighted exchange rate index for the U.S. dollar, quarterly averages, 1970-83



NOTE: Index is based on 1980 U.S. bilateral trade weights.

SOURCE: International Economics Department, Morgan Guaranty Trust Co.

Chart 2. Quarterly U.S. dollar and foreign currency price indexes for U.S. exports of machinery and transportation equipment, 1979-83



NOTE: The U.S. dollar index reflects dollar prices received by U.S. exporters. The foreign currency index is based on foreign currency prices paid for U.S. exports by foreign buyers.

SOURCE: Bureau of Labor Statistics, based on data from the Bureau and from the Morgan Guaranty Trust Co.

sponse to drought-induced feed shortages. The index for other prepared or preserved meat, which includes canned hams and shoulders, fell 13.0 percent for the year, as abundant supplies of pork continued to hold down prices worldwide. Pork prices also were affected by the scarcity of corn and feed grains, which precipitated greater domestic hog slaughters. In 1983, Denmark continued to increase its lead over Poland as the major supplier of pork products to the United States. In 1981, Denmark had exported 26 percent more ham and shoulders to the United States than Poland, but by 1983, Danish exports of such products were approximately double the Polish volume.²¹ Demand for, and prices of, imported chickens increased late in the year, as a deadly form of avian influenza decimated U.S. flocks.

Rising demand and limited supplies resulted in higher prices for imported sugar. Due to adjustments in Federal quotas on sugar imports, 10.5 percent less sugar was imported in 1983 than in 1982.²² This development, combined with an increase in demand, boosted sugar prices. Furthermore, imports of certain types of sugar-containing formulations, which had been entering the country through a loophole in the existing quotas, were banned in June, further cutting supplies. Moderating prices somewhat was the commercial introduction of the new low-calorie sweetener, aspartame, by several major soft-drink manufacturers. This

tended to dampen speculative activity in sugar, as the use of aspartame, a close sugar substitute, decreases sugar consumption.

Intermediate manufactured products. Prices for intermediate manufactures rose 3.7 percent in 1983. These products include nonferrous metals, wood, cork, textiles, iron and steel, glassware, paperboard, and many other basic inputs to manufacturing processes. The increase in the intermediate manufactures index was led by a 10.2-percent advance in nonferrous metals prices and a 6.1-percent price rise for nonmetallic mineral manufactures. Tempering these increases was a 1.8-percent increase in prices for imported iron and steel.

After rising 13.0 percent in the first half of 1983, the nonferrous metals index fell in the second half as silver and copper prices dropped on world markets. Because nonferrous metals, which also include aluminum, zinc, nickel, and lead, are used extensively as basic inputs in many manufacturing processes, their prices are heavily affected by the level of general economic activity. During 1982, a year of worldwide recession, prices for several of these metals (most notably copper, lead, zinc, and nickel) had remained extremely low. In 1983, the buoyant U.S. economic recovery had a large positive effect on prices of those metals which

are used heavily in the production of consumer goods, such as aluminum and zinc. However, metals for which demand is dependent on the level of capital spending (such as copper) or speculation (such as silver) did not fare as well; in the case of several, most notably copper, lead, and nickel, world prices remained below production costs for some producers.

The economic recovery's uneven effect on metals prices is especially evident when contrasting copper and aluminum. During 1983, import prices for copper rose 6.3 percent, while aluminum prices rose 21.2 percent. For most of the year, aluminum sold at a premium to copper, a marked reversal of the historical price relationship between the two metals.

Copper prices had sunk to low levels in 1982, but rose quickly on world markets in early 1983, as increased speculative activity led many users of the metal to purchase hedge stocks in anticipation of a strong pickup in consumption. However, world copper consumption in 1983 was slightly less than in 1982, and there was no significant increase in purchases by the U.S. capital goods sector, a major copper user. In the meantime, several Third World nations, especially Chile, Mexico, and Zambia, stepped up output in order to acquire foreign exchange, and 1983 world copper production rose slightly above 1982 levels. Throughout the year, there was a growing copper surplus on world

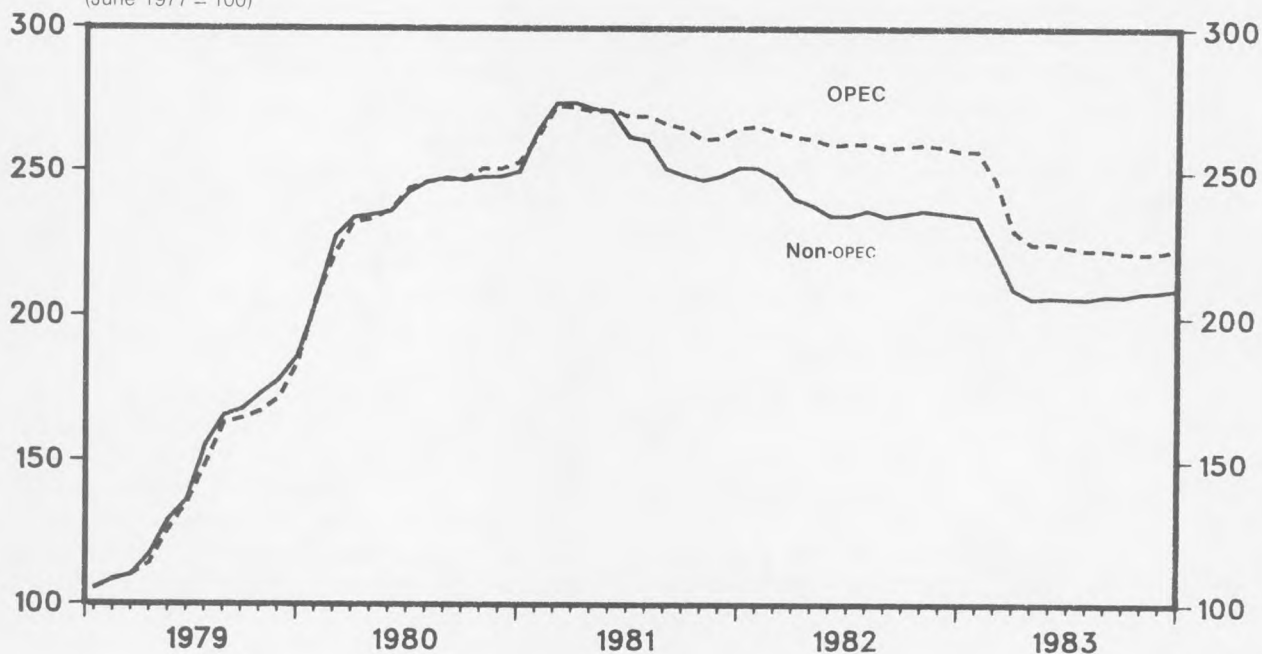
markets, such that, in November, inventories in London Metals Exchange warehouses were at their highest level in 5 years.²³ As a result of these factors, world copper prices fell to their 1982 levels by year's end.

In contrast, market prices for some aluminum products in late 1983 were double the discounted prices offered by aluminum firms during the preceding year. Demand for aluminum soared as consumers stepped up purchases of autos, homes, and appliances. As demand increased, U.S. imports of the metal also rose.²⁴ Zinc prices rebounded during 1983, advancing 19.4 percent for the year and 20.7 percent in the second half. U.S. zinc consumption was up strongly over the previous year's levels, reflecting increased use of galvanized steel by the auto industry. In addition, a tightening of supplies on world markets and a decrease in domestic primary zinc production capacity buoyed demand for imports. Slab zinc imports in 1983 were 33.8 percent above 1982 levels.²⁵

The import price index for silver and metals of the platinum group, which carries one-third of the weight of the nonferrous metals index, rose 6.0 percent in 1983, as silver prices fell 6.1 percent and platinum group prices advanced 23.2 percent. Early in the year, silver prices rose rapidly on world markets as the U.S. economy expanded and investors speculated heavily in the metal. However, as interest

Chart 3. Monthly OPEC and non-OPEC price indexes for U.S. imports of crude petroleum, 1979-83

(June 1977 = 100)



rates rose and oil prices fell, speculative activity in silver cooled, and industrial demand for silver did not increase appreciably over the year. As a result, world silver prices were lower at the end than at the beginning of the year. The 1983 price increase for the platinum metals group was led by sharply rising palladium prices, reflecting strong demand from manufacturers of computers, electronics, autos, and dental supplies. Furthermore, palladium supplies were tight as South Africa and the Soviet Union curbed exports. However, declining silver prices helped pull down platinum prices in the second half, when the abatement of silver speculation led to falling prices for platinum futures.

As with nonferrous metals, steel prices were heavily influenced by large supplies of imports. In 1983, the U.S. steel industry struggled to recover from its worst slump since the Great Depression, but production, while up from 1982 levels, remained depressed for the third straight year. 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 pending a revival of business capital spending. While imported steel (in tonnage) took 20.5 percent of the U.S. market in 1983, down slightly from 21.8 percent in 1982 (chart 4), a larger percentage of steel imports than in previous years came from Third World nations.²⁶ (See chart 5.) Supplies of steel from Japan and the European Economic Community (EEC) were limited by trade agreements negotiated in 1982.

Fully integrated U.S. steel firms faced stiff competition both at home and abroad, as they found it difficult to match the prices offered by foreign firms and by domestic mini-mills. A factor in the competitive problems of U.S. firms was their pace in adopting continuous casting, a process which improves product yield, cuts energy use, and boosts labor productivity. One-fourth of the Nation's steel output is continuously cast, compared with 86 percent in Japan and 61 percent in Europe.²⁷ Conventional U.S. firms have higher costs than producers in Europe, Japan, and the Third World, and many major integrated domestic firms also carried a surplus of high-cost, company-owned iron ore capacity. Finally, the subsidization of some foreign steel producers by their governments added to the competitive difficulties of U.S. steelmakers.

A major factor in the increased shipments of Third World steel in 1983 was the debt situation of several nations which are steel producers. For example, Mexico, Argentina, and Brazil—all major U.S. steel suppliers in 1983—aggressively sought U.S. sales to obtain foreign exchange for servicing their international debts.

American steel firms continued to deal with their competitive difficulties *vis-à-vis* foreign producers by shedding excess capacity, cutting labor costs, and concentrating on profitable product lines. For example, U.S. Steel Corp. announced in December that it would close one-fifth of its steelmaking capacity. Domestic companies also continued to press the Federal Government for restrictions on low-

priced steel imports from Third World nations. No major restrictions were placed on imports from these nations during 1983, although in July, a 4-year system of quotas and tariffs was imposed on imports of certain specialty steels, most of which originate in European and other industrialized nations.²⁸

Many firms viewed mergers with other domestic firms or joint ventures with foreign firms as a way to remain competitive. In September, for example, LTV Corp. and Republic Steel Corp. announced plans to merge, thereby creating the second-largest U.S. steel firm. Both firms planned to achieve production economies by consolidating the best parts of their firms and discarding less-efficient divisions.²⁹ Several U.S. firms were also actively involved in foreign joint ventures that provided for the importation of lower-cost semifinished steel for finishing in domestic mills.³⁰

The rise in prices for nonmetallic mineral manufactures was led by an 11.9-percent increase in prices for cut and polished diamonds. During the 1981–82 recession, prices for large stones (those greater than one carat) fell more than those for small stones. With the recovery in 1983, shortages of several types of diamonds developed, and prices quickly rose for the larger stones. Price increases for larger stones were influenced by the market strategy of DeBeers (a South African firm that is the world's largest producer of diamonds), which consists of advertising such stones aggressively while holding down their production and distribution.³¹

Machinery and transport equipment. This index, which accounts for 25.4 percent of the weight of the all-import price index, rose 2.5 percent in 1983, after falling 1.3 percent during the preceding year. Some \$88.9 billion of merchandise in this category was imported during the year, compared with \$75.7 billion in 1982, as the economic recovery fueled demand.³² Much of the dollar value in this index consists of consumer end-use products such as autos, personal computers, and household appliances. As consumer spending increased, 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 appreciation of the dollar served to moderate price increases in the index.

Prices for imported autos rose 4.9 percent in 1983. The Japanese Government's voluntary self-restraint quotas, which limited auto exports to the United States to 1.68 million units per year, and the robust increase in U.S. retail auto sales in 1983 were factors which affected import car prices. Lower interest rates, higher levels of employment, the introduction of new models, stable gas prices, and the improving economy boosted 1983 U.S. retail auto sales to 9.2 million from 8.0 million in 1982. Import penetration of the U.S. market was 26.0 percent, down from 27.9 percent in 1982.³³ Retail sales were held down by short supplies of

both imported and domestic autos, the result of overly conservative production by the major U.S. automakers and the quotas on Japanese imports. Sales of larger cars were especially brisk. Having lowered their break-even output substantially since 1980, U.S. automakers posted record combined profits in 1983.

Import quotas for Japanese autos put upward pressure on the prices of these cars. During 1983, Japanese cars accounted for 20.9 percent of all U.S. new-car sales, down from 22.6 percent in 1982. Because of the quotas, Japanese automakers were unable to maintain or increase their market share by fully exploiting a cost advantage estimated at \$1,500 to \$2000 per car. Instead of competing on price, Japan's carmakers concentrated on selling higher-valued, option-laden cars in the United States, in effect providing a pricing floor for the domestic industry.³⁴ During 1983, the Japanese Government agreed to extend the quotas for another year, starting in April 1984. The new quota was set at 1.9 million cars per year, with the bulk of the cars being supplied by the five Japanese carmakers with extensive dealer networks in this country. Three Japanese firms which are not well-established in the United States were assigned much smaller export quotas.

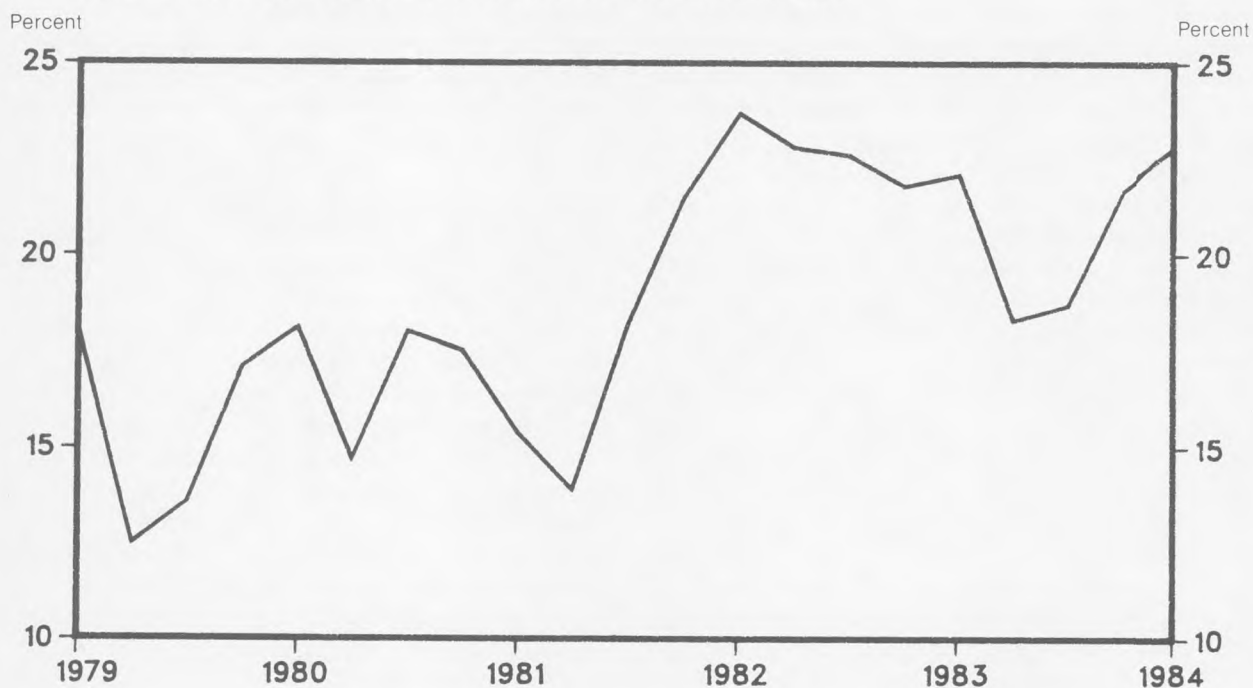
The quotas provided an incentive for many of the joint ventures undertaken by U.S. and foreign auto firms in recent years. The ventures were generally of two types. The first

is an agreement by which a domestic auto firm gains a license to sell a model built by its foreign venture partner in the United States. In the second case, an agreement is reached in which a U.S. firm and its overseas partner join forces to design, produce, and market a car.

Prices for imported electric equipment and machinery fell 1.2 percent in 1983. Prices for semiconductor materials and devices, such as silicon wafers and chips, led the decline in this index. Microcircuit prices dropped as competition among American, Japanese, and European producers intensified, and as technological advances and economies of scale lowered production costs. Additionally, weak expenditures for capital equipment and commercial construction in this country had a negative impact on the demand for many types of electric equipment. The recovery in the U.S. residential housing and appliance manufacturing industries helped to mitigate the downward movement of prices in this index, and growing sales of military equipment boosted demand for many types of electric and electronic components. In recent years, the U.S. trade balance for electrical machinery has steadily worsened: In 1980, the Nation posted a trade surplus of \$2.2 billion for these items, but in 1983, it registered an \$892.4 million trade deficit.³⁵

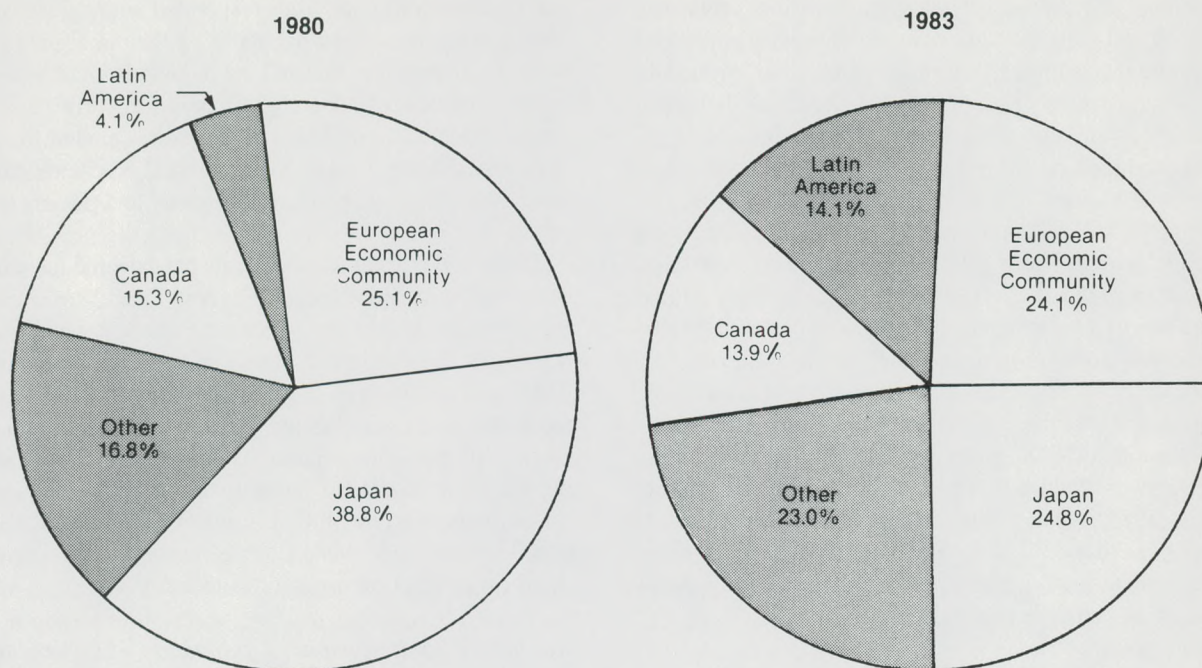
Import prices for office machines and automatic data processing (ADP) equipment rose 4.1 percent in 1983. Leading this increase was a 10.7-percent advance in the index for

Chart 4. Quarterly import share of U.S. steel market, 1979-83



SOURCE: American Iron and Steel Institute

Chart 5. U.S. imports of steel mill products by origin, 1980 and 1983



SOURCE: American Iron and Steel Institute.

parts for ADP equipment and office machines. This increase reflects the inelastic demand for many of these items. U.S. demand for computers, especially personal computers, remained at high levels throughout 1983. U.S. consumers had a wide range of personal computers to choose from as domestic and overseas firms placed an array of new models on the market. Aided by the strong dollar, foreign firms continued to erode the U.S. trade surplus in ADP equipment in 1983. To remain price competitive, many U.S. firms farmed out their manufacturing operations to overseas firms.

Import prices for telecommunications equipment fell 1.2 percent in 1983 after a 6.8-percent decline in 1982. Sales of imported video-cassette recorders (VCR's) boomed during the year as foreign firms cut prices. And although more than 98 percent of all U.S. households have at least one television set, increased sales of home computers gave a boost to sales of imported color sets, which may be used for video display of computer output.

Exports reflect strong dollar

Grain. Grain, which consists mainly of corn, wheat and sorghum, accounted for export sales of \$15.2 billion in 1983 against \$14.7 billion in 1982.³⁶ Export prices for grain rose 16.8 percent in 1983, after declining 7.3 percent during the preceding year. Prices for corn increased 34.5 percent, while soybean prices rose 36.8 percent and barley prices were up

32.1 percent. Wheat prices fell 5.0 percent, moderating the increase in the grain index. These results were greatly influenced by a blistering summer drought—the Nation's worst since the 1930's—in combination with the U.S. Payment in Kind (PIK) Program, which was implemented in January 1983. Under PIK, the government provided surplus wheat, corn, rice, cotton, and sorghum to farmers who agreed to reduce their plantings of the same commodities. The purpose of the program was to draw down surplus grain stockpiles.

Farmers took advantage of the PIK program to idle 46.6 million acres of cropland, more than twice the number anticipated. Together with other Federal programs, PIK brought about the retirement of about 82 million acres in 1983, the largest reduction ever.³⁷

While PIK induced farmers to reduce production, the severe drought ravaged many of the crops that were planted. The 1983 corn crop was less than half of the year-earlier output and the smallest since 1965.³⁸ The drought caught soybean plants at a crucial point in their growth cycle. As a result, the 1983 soybean harvest was 31 percent below 1982 levels, and 1983 soybean exports lagged those of the preceding year by 21 percent.³⁹ (Although soybeans were not directly covered by PIK, the program indirectly affected soybean surplus and export supply levels by curtailing supplies of corn.) With corn and soybeans in short supply, their prices were quickly bid up on world commodities markets.

Livestock farmers turned to barley and sorghum as substitute feed grains, and prices for these commodities also rose sharply. Wheat yields and prices were not heavily influenced by the drought. Although the number of acres planted in wheat was reduced by PIK, the 1983 harvest was down just 6.2 percent from the 1982 historical high because U.S. farmers produced record yields per acre. The huge wheat surplus in U.S. silos also held prices down.⁴⁰

During 1983, U.S. grain exporters faced stiff competition in foreign markets from producers in Canada, Australia, Argentina, and the EEC. However, U.S. exporters gained business through trade agreements reached during the summer with the Soviet Union and the People's Republic of China. Under the new U.S.-Soviet grain pact, which lasts through late 1988, the Soviet Union may buy as much as 12 million tons of U.S. grain per year. For its part, China lifted the restrictions it had placed on U.S. grain imports earlier in 1983, when textile trade talks between the two nations broke down, and resumed imports under a long-term agreement calling for purchases of 6 million tons of U.S. grain annually through 1984.⁴¹

Coal. Export prices for coal fell 14.2 percent in 1983, as world demand for coal continued to slacken. The drop in export prices and a 27.0-percent decline in the quantity of coal exported represented a double blow to U.S. coal producers' revenues.⁴²

Poland, South Africa, and Australia were major U.S. competitors in foreign coal markets. Because the mining industry in these nations is government-controlled, these nations were able to set their coal prices below U.S. "delivered-cost basis" prices. As a result, many U.S. firms were operating at or below break-even levels by year's end. In addition, most domestic producers were burdened by inland freight costs accounting for one-fourth to one-third of their export prices.⁴³ The failure of these freight costs to decline during the year further eroded the competitive position of U.S. coal exports.

Prices for bituminous coal used in the production of steel showed the greatest decrease. In the spring of 1983, Japanese buyers, who constitute the largest market, negotiated new contracts with U.S. firms that lowered existing prices by 12 to 20 percent.⁴⁴ Prices for metallurgical coal exported to other nations also fell, but by lesser amounts. Steam coal, used for generating electricity, also declined in price because of reduced worldwide demand for electricity and sharp competition from other coal-exporting nations.

Chemicals. The export price index for chemicals, which was first published in the second quarter of 1983, declined 1.4 percent over the last nine months of the year. Prices fell 3.6 percent in the second quarter, but rose during the third and fourth quarters. In 1983, U.S. firms exported \$19.75 billion of chemicals, down slightly from \$19.89 billion in 1982.⁴⁵ From late 1981 to early 1983, chemicals

prices dropped worldwide as the international economy entered a recession. U.S. firms responded with aggressive cost-cutting measures, shutting many of their marginal operations. Such strategies lowered the industry's break-even point from 75 percent of capacity utilization in early 1982 to 65 percent by the end of 1983. As a result, demand for chemicals rose quickly, and by year's end, U.S. chemicals firms were operating at 75 percent of capacity and posting healthy profits.⁴⁶

The world market for chemicals has become increasingly competitive in recent years. Several Third World nations, especially those that are major oil exporters, have invested heavily in chemical production capacity. Oil producing nations have a comparative advantage in production resulting from the ready availability of low-cost petroleum feedstocks. In particular, Saudi Arabia, Kuwait, and Mexico have greatly expanded capacity in recent years, and are competing strongly with U.S. firms in world chemicals markets.⁴⁷ Canada and several European nations have also added chemical production capacity in recent years.

Machinery and transport equipment. Machinery and transport equipment is the largest U.S. export group, accounting for 35.3 percent of the value in the all-commodities export price index. Many of the products in this group, 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.

Prices for machinery and transport equipment advanced 2.5 percent for the year, after rising 3.9 percent in 1982. Most aggregate indexes in this category showed only moderate 1983 price increases, as the strength of the dollar and continued slack demand abroad constrained both prices and sales volumes. Exports of machinery and transport equipment were \$82.58 billion, compared with \$87.15 billion in 1982.⁴⁸

An important component of the machinery and transport equipment category is general industrial machinery and parts. This subgroup includes heating and cooling equipment, air pumps and compressors, and pumps and valves for liquids. The index for this group registered a 1.6-percent increase in 1983, led by a 3.6-percent gain for pumps and compressors and a 2.7-percent rise for nonelectric parts and accessories of machinery.

U.S. manufacturers of general industrial machinery and parts export large portions of their output, and were hurt during the year by the strength of the dollar, the low rate of capital spending in major export markets, and the continued slump in the Third World economies. Export shipments in dollar value were off 19 percent from 1982 levels, and the rate of price increase in the export index between mid-1982 and December 1983 was considerably below that recorded for March 1979 to mid-1982.⁴⁹ The poor market reflected the implementation of austerity programs by France,

Brazil, Venezuela, and Mexico—all major importers of U.S. general industrial machinery and parts—and reduced purchases of heating and cooling equipment by several major oil-producing nations as oil revenues fell. Under these conditions, U.S. exporters were forced to compete aggressively on nonprice factors such as quality, service, and delivery time.

Export prices for telecommunications equipment rose 1.9 percent in 1983, paced by a 3.3-percent increase in the index for telecommunications parts and accessories. Overseas producers have a significant cost advantage in the manufacture of many consumer end-use items in the category, such as radios, VCR's, televisions, and tape recorders. Conversely, U.S. firms have a technological advantage in the production of many types of equipment for commercial use, including PBX's, large radio and television broadcasting equipment, and navigational equipment. The divestiture by The American Telephone and Telegraph Co. led several of its international competitors to market new types of telecommunications equipment in 1983, placing downward pressure on export prices.

The export price index for metalworking machinery rose 1.6 percent in 1983. 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. Because demand for machine tools is directly related to capital investment, price increases were moderated by weak levels of capital spending in foreign markets, coupled with strong competition from overseas suppliers. Capital spending in most major industrialized nations remained depressed

throughout 1983, although such spending in the United States began to rise in the fourth quarter.

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. Through October 1983, U.S. exports of machine tools totaled \$330.5 million, 39 percent below the level reported for the first 10 months of 1982.⁵⁰ Domestic producers led in the production of specialized machines, such as sophisticated numerically controlled machine tools and machining centers, but were at a disadvantage in the manufacture of standard machine tools, for which price is a more significant competitive factor. U.S. firms have also been hampered by an inability to generate enough capital from profits to invest in new plant and equipment. (Borrowing for capital improvement has not generally been a primary option for the U.S. machine tool industry because of its highly cyclical nature.)

Intense foreign competition continues to force major changes in the structure of the U.S. machine tool industry. These changes are designed not only to bolster the competitive position of exports, but also to stem the influx of imports into the domestic market. Imported machine tools captured an estimated 36 percent of the U.S. market in 1983, up from 28 percent during the preceding year and 3.1 percent in 1958.⁵¹ Throughout 1983, the domestic industry continued to become more highly concentrated as companies withdrew, merged, entered joint ventures with foreign producers, and moved operations offshore to cut costs. □

—FOOTNOTES—

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¹ 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).

² *National Income and Product Account Tables* (U.S. Department of Commerce, Bureau of Economic Analysis, January 1983), table 1.1.

³ *U.S. Department of Commerce News*, C20-8312 (U.S. Department of Commerce, Bureau of the Census), Jan. 8, 1984.

⁴ *World Financial Markets* (New York, Morgan Guaranty Trust Company, International Economics Department), January 1984, pp. 12-13.

⁵ For details of the value of the dollar against individual currencies, see *Federal Reserve Bulletin*, January 1984, p. A66.

⁶ For information on imports, exports, and trade deficits, see *U.S. Department of Commerce News*, BEA 84-06 (U.S. Department of Commerce, Bureau of Economic Analysis), Feb. 7, 1984, pp. 1-6.

⁷ For 1981 and 1982 data, see *Survey of Current Business*, June 1983, p. 44. For 1983 data, see *Highlights of U.S. Export and Import Merchandise Trade*, FT 990 (U.S. Department of Commerce, Bureau of the Census), December 1983, p. 32, table E-3.

⁸ See *U.S. Department of Commerce News* BEA 84-06 (U.S. Department of Commerce, Bureau of Economic Analysis), Feb. 7, 1984, p. 2.

⁹ *Ibid.*

¹⁰ *Ibid.*, p. 3.

¹¹ *Summary of U.S. International Transactions* (U.S. Department of Commerce, Bureau of Economic Analysis), March 19, 1983, p. 2.

¹² The share of final goods 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.

¹³ See Robert J. Beck, "U.S. Demand, Imports to Edge Down: Production Rising," *Oil and Gas Journal*, July 25, 1983, p. 114; and Beck, "Demand and Imports to Rise in '84, Production to Slip," *Oil and Gas Journal*, Jan. 30, 1984, p. 95.

¹⁴ See *Consumer Price Index for Gasoline, Consumer Price Index for All Urban Consumers*, USDL 84-25 (Bureau of Labor Statistics), Jan. 24, 1984.

¹⁵ Beck, "Demand and Imports," p. 102.

¹⁶ *Monthly Energy Review* (U.S. Department of Energy, Information Administration), December 1983, pp. 38-39.

¹⁷ *Ibid.*

¹⁸ *Ibid.*

¹⁹*Highlights of U.S. Export and Import Merchandise Trade*, p. 15, table 4.

²⁰Kathleen H. Hughes, "U.S. Crackdown on Coffee Smuggling Helps Boost Bean Prices to High for 1983," *The Wall Street Journal*, Nov. 14, 1983, p. 46.

²¹Data are from the U.S. Department of Agriculture, Foreign Agricultural Service.

²²*Outlook and Situation Report—Sugar and Sweetener* (U.S. Department of Agriculture, Economic Research Service), December 1983, p. 6.

²³"Copper Hits 1983 Low on Reports of Rises in Inventories, Output," *The Wall Street Journal*, Nov. 8, 1983, p. 46.

²⁴*Mineral Commodity Summaries 1984* (U.S. Department of the Interior, Bureau of Mines, 1984), p. 6.

²⁵*Ibid.*, p. 176. (Comparisons are based on preliminary estimates.)

²⁶*Apparent Supply Report* (Washington, American Iron and Steel Institute), Feb. 6, 1984.

²⁷"Time Runs Out For Steel," *Business Week*, June 13, 1983, p. 84.

²⁸"Metalworking Newsfront," *Iron Age*, July 22, 1983, pp. 13-16.

²⁹Thomas F. O'Boyle, "Other Steel Firms Consider Merging in Wake of LTV Offer for Republic," *The Wall Street Journal*, Nov. 9, 1983, p. 33.

³⁰Thomas F. O'Boyle, "Forging a Link: American Steelmakers Bring in Foreign Metal to Hold Down Costs," *The Wall Street Journal*, Dec. 20, 1983, pp. 1, 16.

³¹See D. Chase, "DeBeers Change Ad Track," *Advertising Age*, July 18, 1983, p. 42; and *Rappaport Diamond Report*, Aug. 26, 1983, p. 7.

³²*Highlights of U.S. Export and Import Merchandise Trade*, pp. 14-15, table 5.

³³For domestic auto sales figures, see *S-1 Report* (Detroit, Mich., Motor Vehicle Manufacturers' Association), Jan. 9, 1984. For imported auto sales figures, see *Ward's Automotive Reports*, Jan. 9, 1984.

³⁴Amal Nag, "High New Car Prices Keep Many Lookers Looking, Not Buying," *The Wall Street Journal*, Aug. 3, 1983, p. 8.

³⁵*Highlights of U.S. Export and Import Merchandise Trade*, pp. 26-27, table E-2, and pp. 62-63, table I-3.

³⁶*Ibid.*, p. 26 table E-2.

³⁷Jeffrey H. Birnbaum, "Some Farmers Like It, But Critics Call PDK a Major Miscalculation," *The Wall Street Journal*, July 19, 1983, p. 1.

³⁸*Outlook and Situation Report—Feed* (U.S. Department of Agriculture, Economic Research Service), November 1983, p. 1.

³⁹Figures are preliminary; comparisons are based on 1982-83 and 1983-84 marketing years. See *Foreign Agriculture Circular—Oilseeds and Products*, FOP 12-83 (U.S. Department of Agriculture, Foreign Agricultural Service), December 1983, p. 5.

⁴⁰*Outlook and Situation—Wheat* (U.S. Department of Agriculture, Economic Research Service), November 1983, p. 3.

⁴¹"U.S. Offers Soviets 10 Million More Tons of Grain This Year," *The Wall Street Journal*, Jan. 26, 1984, p. 48.

⁴²*International Coal Review* (Washington, National Coal Association and Coal Exporters' Association of the U.S.), December 1983.

⁴³Rosemary Brady, "Up in Smoke," *Forbes*, June 20, 1983, p. 88.

⁴⁴*Ibid.*

⁴⁵*Highlights of U.S. Export and Import Merchandise Trade*, pp. 10-11.

⁴⁶Austerity Will Pay Off For Chemical Makers," *Business Week*, Jan. 9, 1984, p. 53.

⁴⁷*Ibid.*, pp. 53-54.

⁴⁸*Highlights of U.S. Export and Import Merchandise Trade*, pp. 10-11, table 2.

⁴⁹*Ibid.*, pp. 28-29, table E-2.

⁵⁰*Statistical Report: U.S. Foreign Trade in Machine Tools* (McLean, Va., National Machine Tool Builders' Association), October 1983.

⁵¹For 1958 data, see *Foreign Industrial Targeting and Its Effects on U.S. Industries; Phase I: Japan*, Publication 1437 (U.S. International Trade Commission), October 1983, p. 203. For 1982 and 1983 data, see "Tool Orders Down In Month, Up In '83," *The New York Times*, Jan. 30, 1984, p. D4.

The employment shift to services: where did it come from?

Services did not gain all of its jobs from those lost in the agriculture and goods-producing sectors; employment growth stemmed largely from expansion of the labor force, particularly the increased participation of women

MICHAEL URQUHART

The decline in manufacturing employment associated with the recent recession, coupled with the continued growth of services, has renewed interest in the distribution of employment among the three major sectors—agriculture, goods-producing, and service-producing industries. While the U.S. economy has been a “service economy” for more than 30 years, the increasing shift from goods production to services has raised fears about a possible national “deindustrialization.”¹ These fears have been manifest in speculation on many aspects of employment policy, ranging from the impact on earnings and potential economic growth to the future of work.

Much of the current discussion has focused on the potential negative consequences of the continuing shift of employment to services, ignoring the fact that, in the past, such growth has been closely associated with economic progress and the rise in per capita GNP. This association has been so strong that the growth of the services sector often has been considered an indicator of the stage of economic development, and the relative importance of the three major sectors has been used to demarcate different stages of that development. Since the work of Allen Fisher and Colin Clark in the 1930’s, it generally has been assumed that economic development results in a shift of employment from agriculture to goods-producing industries and finally to services.²

Although the movement away from agricultural employ-

ment can be readily explained by the combination of rising productivity and limited appetites, the cause of the changing relationship between the goods-producing and service-producing sectors remains more complex and problematical.

Given the interdependence of the goods and services sectors, the growth of each is somewhat related to growth in the other. Thus, greater production and consumption of goods require the development of numerous services, from transportation to retail sales outlets, as well as repair services. Furthermore, many business or producer services provide inputs which contribute to the production of goods. Indeed, Ronald Shelp has argued that the “development of the service sector can and should encourage the growth in manufacturing.”³ To a degree, then, the growth of both sectors is complementary.

Suggested explanations for the faster growth of services employment include changes in the demand for goods and services as a result of rising incomes and relative price movements, slower productivity growth in services, the increasing participation of women in the labor force since World War II, and the growing importance of the public and nonprofit sector in general.⁴ But no consensus exists on the relative importance of the above factors in developing an adequate explanation of the sectoral shifts in employment.

In spite of the difficulties in explaining intersectoral shifts, there is a strong empirical correlation between economic progress as measured by the growth in per capita GNP and the services sector’s share of total employment.⁵ Maurice Lenglé has suggested a useful method for classifying coun-

Michael Urquhart is an economist in the Division of Employment and Unemployment Analysis, Bureau of Labor Statistics.

tries into different stages of economic development based on the rate of growth of the service sector and intersectoral shifts in employment. He argues that the industrial sector is the major source of employment growth in the service sector for the most advanced industrial societies. In the previous stage, agriculture had been the major contributor.⁶

It is important to note that Lengelle refers to *shifts* of workers from one sector to another. He clearly states that he is not referring to *actual* migrations but to *relative* or proportional changes in employment distributions. That is, the shift from goods to services is a result of the relative, rather than absolute, decline of employment in the goods sector. Based on this interpretation, Lengelle concluded that the U.S. economy reached the highest stage of economic development as early as the middle 1950's.⁷

This article examines intersectoral employment shifts since 1952. Component industries within the services sector are examined in some detail to determine which industries have contributed the most to its growth. The analysis is based primarily on data from the Current Population Survey, a national sample survey of 60,000 households conducted monthly by the Bureau of the Census for the Bureau of Labor Statistics.⁸

Because of the heterogeneous character of the services sector, the economic impact can vary considerably, depending on whether growth has been in industries comprising mainly labor-intensive and unskilled jobs, or in capital-intensive industries with highly skilled jobs. The actual causes of the employment shifts and their impact on GNP growth are beyond the scope of this article.

Three major sectors

While there has never been a consensus, many analysts divide the economy into three major sectors—agriculture, goods, and services. BLS generally uses a two-sector break, with agriculture either not included at all or included as part of goods. There is even more disagreement on the actual composition of the sectors. Discussion focuses on the lack of an adequate definition of services,⁹ but similar problems exist for the other two sectors. For instance, mining has often been combined with agriculture in a primary or extractive sector, and forestry and fisheries are sometimes placed in the services sector rather than in agriculture.

A more significant disagreement concerns the placement of the transportation, communications, and public utilities division. All or part of this division is often included in the goods-producing sector. Public employees sometimes are listed in a government division of the service sector and at other times are included in the industry in which they work (for example, public employees in construction would be included in the construction industry within the goods-producing sector).¹⁰

A major problem in determining the composition of the sectors is that certain features may not be shared by all industries in the sector. This is especially true of the services

Table 1. Distribution of employment by major sector, 1850–1982

[In percent]

Year	Agriculture	Goods-producing	Service-producing
1850	64.5	17.7	17.8
1860	59.9	20.1	20.0
1870	50.8	25.0	24.2
1880	50.6	25.1	24.3
1890	43.1	28.3	28.6
1900	38.0	30.5	31.4
1910	32.1	32.1	35.9
1920	27.6	34.6	37.7
1930	21.8	31.7	46.6
1940	18.3	33.1	48.6
1952	11.3	35.5	53.3
1957	9.8	34.3	56.0
1962	7.8	33.1	59.1
1967	5.3	34.7	60.1
1972	4.4	31.4	64.2
1977	3.7	29.7	66.6
1979	3.6	30.2	66.3
1982	3.6	27.2	69.2

sector, which has become more heterogeneous over time. For example, while services in general may be less capital intensive and have slower productivity growth than goods-producing industries, just the opposite is the case for many individual industries within the sector.¹¹

In the following analysis, the composition of the three sectors is based on the industrial classification used in the CPS and derived from the decennial census. Agriculture includes forestry and fisheries; the goods-producing sector includes mining, construction, and manufacturing; all remaining industries are included in services. Government employees are included in the industry in which they work, with only public administration listed separately as a division in the services sector.

Continuous growth in services

The sectoral distribution of employment over time is presented in table 1.¹² Since 1850 (the earliest available date for data on the service sector), agriculture's share of total employment has declined steadily, while the services sector has exhibited almost continuous increases. The services sector grew by more than threefold over the period, and accounted for about 70 percent of total employment in 1982. Agriculture declined from the major employment sector to only 4 percent of total employment in 1982. The goods sector increased its share of total employment through 1952; since then it has declined to about one-fifth of total employment in 1982.

While the goods sector has shown a relative decline over the past 30 years, actual employment in this sector increased through 1979, to about 30 million. During the 1980–82 period, employment decreased by almost 3 million, primarily a result of the 1980 and 1981–82 recessions. (Growth of the goods sector has resumed with the economic expansion in 1983.)

Between 1952 and 1982, the actual level of employment in agriculture declined by about 50 percent to 3.6 million, and employment in the goods sector showed a modest gain of about 25 percent. In spite of the goods sector's gain in employment, its share of total employment declined from 36 to 27 percent, as the services sector grew at a much faster rate, doubling to about 69 million to make up more than two-thirds of total employment. Not all industries in the services sector exhibited such spectacular growth. Transportation, communication, and public utilities grew rather modestly—at about the same rate as the goods sector—while trade and public administration increased at a somewhat greater pace. In contrast, employment in finance, insurance, and real estate nearly tripled over the period, and service division employment was up two and a half times.

Table 1 can be used to examine Lengelle's thesis that the proportional expansion of the service sector in recent years has primarily resulted from the relative decline in the goods sector, rather than in agriculture.¹³ This is done by comparing changes in each sector's share of total employment for different time periods. However, calculations of these relative shifts in employment are extremely sensitive to the actual years chosen for comparison. This is especially true for the goods sector because of the much greater cyclical movement in this series. Thus, while goods employment has generally been declining, relatively speaking, since the early 1950's, there have been short periods of growth during cyclical upswings in the economy. An examination by individual year shows that the goods sector's share of employment tended to fluctuate between 33 and 35 percent for much of the period from 1952 to 1967. The following tabulation shows relative shifts in employment in the major sectors for 5-year intervals between 1952 and 1982:

	<i>Agriculture</i>	<i>Goods</i>	<i>Services</i>
1952-57	-1.5	-1.2	2.7
1957-62	-2.0	-1.2	3.1
1962-67	-2.5	1.6	1.0
1967-72	-0.9	-3.3	4.1
1972-77	-0.7	-1.7	2.4
1977-82	-0.1	-2.5	2.6

While the relative decline in agriculture exceeded that of the goods sector for each of the three intervals from 1952 to 1967, the goods sector actually increased its share from 1962 to 1967.

There appears to be a sharp change in the late 1960's. Since 1967, the relative decline in the goods sector has surpassed that in agriculture by a substantial margin. This is a result of both the slower absolute growth of employment in the goods sector and the fact that the agricultural share of employment appears to have stabilized at a fairly minimal level.

It is reasonable, therefore, to divide the period into two sections. Prior to 1967, the employment shift to the services sector was primarily the result of the relative decline in agriculture. Since 1967, the relative decline of employment

in the goods sector has contributed the most to the shift. However, as noted, employment since 1980 has been significantly affected by the cyclical downturn in the goods sector. To avoid basing conclusions about long-term trends on the short-term effects of the business cycle, the analysis of the employment shift to services will exclude the 1980 and 1981-82 recessionary periods. From 1967 to 1979, the goods sector's share of employment declined 4.5 percentage points, compared with a decline of only 1.7 points for agriculture. This is in sharp contrast to the period from 1952 to 1967 when agriculture declined 6 points, versus a 0.8-point decline in the goods sector.

It is possible to quantify the extent of the shift to services by comparing the actual employment level in a sector for a particular year with the level that would have been required for the sector to account for the same share of total employment as it did in an earlier year. Industries which have grown faster than average (thus increasing their share of total employment) show a relative gain, while those which have grown slower than average show a relative loss, even if they experienced positive growth. This procedure yields an estimate of the size of relative employment gains and losses, which is not apparent from a simple comparison of growth rates. For instance, the level of employment in the goods sector was 21.7 million in 1952, or 35.5 percent of the total. If the sector had maintained its same share in 1967, employment would have grown to 26.4 million. Instead, employment increased only to 25.8 million, a relative "loss" of 0.6 million jobs. Similar calculations can be made for the other sectors. The relative gains and losses in millions of employees for the three sectors and two time periods are presented in the following:

	1952-67	1967-79
Agriculture	-4.5	-1.7
Goods-producing	-0.6	-4.5
Service-producing	5.1	6.1

It is possible that the calculations might overstate the extent of the shift to services because they are based solely on employment and do not take into account differences in hours worked in each sector. For instance, the more rapid growth of employment in the service sector might partly result from a decline in the average hours worked per employee. A correction for this effect can be made by using a Commerce Department series which converts part-time employees to full-time equivalents.¹⁴ An examination of this series confirms the trends discussed above. The percentage distribution of employment, adjusted for full-time equivalents, in 1952 and 1979 are presented below (the 1979 figures are fairly close to those in table 2):

	1952	1979
Total	100.0	100.0
Agriculture	9.9	3.4
Goods-producing	35.9	29.6
Service-producing	54.3	67.0

Table 2. Estimated employment shifts by sector and industry, 1967-79

(In thousands)

Sector and industry	1967 actual	1979 actual	1979 with 1967 distribution	Relative gain or loss
Total	74,375	98,824	—	—
Agriculture	3,927	3,508	5,218	-1,710
Goods-producing	25,781	29,797	34,252	-4,455
Mining	553	901	731	170
Construction	4,529	6,437	6,018	419
Manufacturing	20,699	22,459	27,503	-5,044
Service-producing	44,667	65,518	59,354	6,164
Transportation, communication, and public utilities	4,882	6,529	6,483	46
Transportation	2,811	3,770	3,736	34
Communication	987	1,403	1,314	89
Public utilities	1,084	1,354	1,443	-89
Trade	13,901	20,101	18,470	1,631
Wholesale	2,553	3,862	3,390	472
Retail	11,349	16,240	15,081	1,159
Eating and drinking establishments	2,250	4,235	2,994	1,241
Finance, insurance, and real estate	3,514	5,902	4,664	1,238
Finance	1,407	2,425	1,868	557
Insurance	1,338	1,871	1,779	92
Real estate	769	1,605	1,018	587
Services	18,169	27,835	24,143	3,692
Business and repair	2,063	3,717	2,737	980
Personal	4,439	3,894	5,900	-2,006
Entertainment and recreation	675	1,054	899	155
Professional services	10,992	19,170	14,606	4,564
Health	3,802	6,990	5,050	1,940
Education	5,178	7,974	6,878	1,096
Legal	349	701	464	237
Welfare and religious	746	1,563	988	575
Public administration	4,201	5,151	5,584	-433
Postal	726	687	968	-281
Other Federal	1,523	1,615	2,026	-411
State	603	927	800	127
Local	1,062	1,923	1,789	134

The relative shifts for the two time periods were also examined and found to confirm the finding that the relative decline of the goods sector exceeded that of agriculture only in the latter period. These general trends, therefore, appear to be independent of any changes in the hours worked.¹⁵

Analysis of employment shifts

Relative employment shifts for the 1967-79 period by industry are provided in table 2. The goods sector accounted for more than 70 percent of the shift to services during this period, having absorbed a relative loss of 4.5 million jobs, compared with a 1.7-million loss in agriculture. A more detailed analysis brings out several interesting points.

First, manufacturing accounted for the entire decline in the goods-producing sector, as both mining and construction posted increases. Mining, although accounting for a very small proportion of total employment, was among the fastest growing industries. And the relative loss of 5 million jobs in manufacturing occurred despite an actual increase of 2 million employees during this period.

There is also, as expected, considerable diversity among

the various industries in the service-producing sector. The relative loss of 2 million jobs in the personal service industry was greater than the total loss in agriculture. Other industries in the services sector which experienced a relative loss of jobs were public utilities (-0.9 million), postal employment (-0.3 million), and Federal public administration (-0.4 million). And the sizable increase in retail trade was due entirely to employment growth in eating and drinking establishments.

At the division level, the services industry was by far the most dynamic. In spite of the substantial relative decline in personal services, this division gained 3.7 million employees, equal to about 60 percent of the total shift to the services sector. Professional and related services alone gained about 4.6 million jobs. Its two biggest components, health and educational services, contributed the most to this growth, with welfare and religious organizations also showing a sizable gain.

Table 2 also illustrates that the contribution of an industry to intersectoral shifts in employment depends as much on its relative size as on its growth rate. Thus, educational services and State public administration both grew about 54 percent between 1967 and 1979, yet the former showed a relative gain of 1.1 million employees, while the latter gained only a modest 127,000. Legal services grew almost twice as fast as educational services and State public administration, but the small size of the industry limited its relative gain to only 237,000.

Seven industries gained at least a half million employees over the 1967-79 period: health services; eating and drinking establishments; educational services; business and repair services; real estate; welfare and religious organizations; and finance (banks, security and commodity brokers, and so forth). There are obviously considerable differences in the characteristics of these industries. In terms of broad functions, three provide mainly producer services (business and repair, real estate, and finance); three are social services (health, education, and welfare and religious organizations); and one is a distributive service (eating and drinking establishments). The diversity in these industries partly explains why there is no single causal explanation for the growth of the service sector. The growth of producer services is closely related to the changing needs of the industries they service, and at least partly reflects a substitution effect. Work previously done within a firm is now contracted out to companies specializing in those services. In contrast, the growth of social services has more to do with changing demographics and public policy, while the growth of distributive services has much to do with population increases and changes in family impacts on labor force participation patterns.

Role of public employment

The expansion in government employment has played a significant role in the development of the services sector. Table 3 provides a breakdown of public employment by

sector and industry for 1967 and 1979. Almost all of the increase in government employment during this period occurred at the State and local level, Federal employment being fairly stable. In 1979, 95 percent of all public employees worked in the services sector, up slightly from 92 percent in 1967. Furthermore, in 1979, three industries in the sector—health, education, and public administration—accounted for 83 percent of total government employment. Thus, while government expenditures might have a more diverse impact, the employment effect was highly concentrated. Outside of the services sector, government employment actually declined between 1967 and 1979, from about 900,000 to about 750,000.

Public employment has contributed to the shift to services, both by its growth in that sector and its decline in the rest of the economy. Its impact can be isolated by dividing total employment in each sector into its private and public components and calculating the relative gains and losses for each separately. In the services sector, government contributed about 1.2 million to the total relative gain of 6.2 million, or about 20 percent of the total shift. In the agriculture and goods sectors combined, the absolute decline in public employment resulted in a relative loss of about 500,000 jobs.

Of the three industries (health, education, and public administration) which account for most of public employment, public administration actually showed a relative loss of jobs

since 1967. Hence, any analysis of the government impact on the shift to services should focus on health and education. Interestingly, the public component of each industry has been growing at a slower rate than the private share. In the health industry, private employment almost doubled between 1967 and 1979, while public employment rose by a comparatively modest 50 percent. This was true, to a lesser extent, in education, where private employment growth was 70 percent, compared with 50 percent for public employment. It should be noted here that the private sector in both industries is heavily dependent on government expenditures and subsidies, which include government medical insurance programs (medicare and medicaid), subsidies to education, student loan programs, and similar expenditures. This makes it difficult to isolate the contributions of the public and private sectors.

The government has also had a major impact on welfare organizations. Government employment in this area increased twelvefold, from 45,000 to more than 600,000, and accounted for about two-thirds of the total increase in the welfare and religious organization group.

Origin of 'new' employment in services

The analysis thus far has examined changes in the relative strengths of the three sectors. This approach did not show the actual source of employment growth in the services sector. To examine the source, it is necessary to look at the movement of workers between the three sectors and from outside employment (either from outside the labor force or from unemployment status). These labor flows can be examined through the use of matched data from the March Current Population Survey. There are several problems associated with using matched data as a longitudinal data base. Of prime importance is the attrition in the sample from one year to the next. This can be the result of a variety of factors, such as change in residence, nonresponse, or death. Furthermore, persons who change answers to questions on which the match is keyed (such as race or sex) are also lost to the sample.¹⁶ Keeping these limitations in mind, with matched data, a person's status in one year can be compared with his or her status in the previous year, providing some measure of actual intersectoral employment shifts. More specifically, these flows can help to illustrate the actual source of "new" employees in the service sector, that is, whether they previously worked in the goods or agriculture sectors or did not work the previous year.

Table 4 summarizes data from a March 1978-79 matched file of the CPS that provides employment information for 1977-78. The total sample for this match was 37,348. The data show the percentage distribution of employment in 1978 by the sector of employment in 1977. For example, about three-fourths of those employed in agriculture in 1978 had worked in that sector in 1977, 5 percent had worked in the goods sector, 11 percent in services, and 9 percent did not work at all.

Table 3. Government employment by sector and industry, 1967 and 1979 annual averages

[Numbers in thousands]

Sector and industry	1967		1979	
	Number	Percent of industry employment	Number	Percent of industry employment
Total employment	74,375	100.0	98,824	100.0
Government employment	11,170	100.0	15,665	100.0
Agriculture	60	1.5	109	3.1
Goods-producing	834	3.2	651	2.2
Mining	0	0	1	0.1
Construction	618	13.7	513	8.0
Manufacturing	216	1.0	137	0.6
Service-producing	10,276	23.0	14,905	22.8
Transportation, communication, and public utilities	536	11.0	845	12.9
Trade	61	0.4	102	0.5
Wholesale	3	0.1	3	0.1
Retail	57	0.5	99	0.6
Finance, insurance, and real estate	84	2.4	133	2.3
Services	5,394	29.7	8,674	31.2
Business and repair	13	0.6	31	0.8
Personal	12	0.3	10	0.3
Entertainment and recreation	72	10.7	107	10.2
Professional and related	5,297	48.2	8,524	44.5
Health	1,107	29.1	1,625	23.3
Education	4,119	79.5	6,192	77.7
Welfare and religious	45	6.0	603	38.6
Public administration	4,201	100.0	5,151	100.0

Table 4. Employment status in 1978 by status in 1977

[Percent distribution]

1977 employment	1978 employment			
	Agriculture	Goods-producing	Service-producing	Did not work
Total (in thousands)	1,126	7,091	16,593	12,538
Percent	100.0	100.0	100.0	100.0
Agriculture	74.7	1.1	1.2	1.4
Goods-producing	5.0	80.0	4.5	3.2
Service-producing	11.1	14.5	85.6	10.2
Did not work	9.2	4.4	8.8	85.2
Men	100.0	100.0	100.0	100.0
Agriculture	80.8	1.2	1.4	2.6
Goods-producing	5.0	82.3	6.7	6.2
Service-producing	9.1	13.6	87.1	10.3
Did not work	5.1	2.9	4.8	81.0
Women	100.0	100.0	100.0	100.0
Agriculture	54.6	0.7	1.0	0.9
Goods-producing	5.0	73.3	2.6	2.1
Service-producing	17.6	17.3	84.2	10.2
Did not work	22.9	8.7	12.2	86.9

The table clearly illustrates the considerable movement between sectors and into and out of employment, although a majority of people maintained the same status in both years. Thus, at least 15 to 25 percent of the workers in each sector in 1978 were "new" workers, being previously employed in a different sector or not employed at all. The marginal contribution of agriculture as a source of "new" employees is also evident; it accounted for only about 1 to 2 percent of new employees in each of the other sectors. (Clearly, its contribution to the other two sectors was much greater earlier in the century.)

Of particular interest, therefore, is the contrast in the source of new employees for the goods and services sectors. In the goods sector, new employees were three times as likely to have worked in the services sector in the previous year than to have not been working. Just the opposite relationship holds for the services sector, where new employees were twice as likely to not have worked at all in the previous year than to have worked in goods producing.

The contrast between the two sectors is even greater when data for men and women are examined. Both men and women in the goods sector were more likely to have been employed the previous year in services than to have been not employed, although this tendency was stronger for men than for women. In the services sector, on the other hand, there was a clear difference between men and women, with men more likely to have been employed the previous year in the goods sector. This is in sharp contrast to the situation among women where, by a 6-to-1 ratio, they were more likely to have not worked at all in the year before.

The disproportionate contribution of the movement from not employed to employment in services can be illustrated by examining only those workers employed in 1978 who were not employed in 1977. The following tabulation shows the percentage distribution of these new workers by sector:

	Total	Agriculture	Goods	Services
Both sexes	100.0	5.5	16.8	77.7
Men	100.0	7.8	27.3	64.9
Women	100.0	4.6	12.3	83.2

Of the total new workers, about 78 percent found employment in the services sector, compared with only 17 percent in goods and 6 percent in agriculture. This tendency was even stronger among women, with about 83 percent finding employment in services, compared with about 65 percent for men. (Women accounted for three-fourths of all "new" employees.)

While no firm conclusions can be drawn from only one set of matched data, the above results are consistent with the conclusions based on historical data which show that the employment shift to services does not stem from an actual migration of workers from one sector to another but rather results from the expansion of the labor force and especially the increasing participation of women. Since 1967, women have accounted for about 60 percent of the total growth in the labor force.¹⁷

Recent trends

As mentioned earlier, employment trends since 1979 have been heavily influenced by the recessions of 1980 and 1981-82. The percentage change in the actual employment in each major sector and service division is shown in the following:

	Percent change, 1979-82
Total	0.7
Agriculture	1.8
Goods-producing industries	-9.2
Service-producing industries	5.1
Transportation, communications, and public utilities	0.4
Trade	3.3
Finance, insurance, and real estate	6.2
Services	8.1
Public administration	1.3

While employment in the goods sector declined 9.2 percent to 27.1 million, agricultural employment actually increased 1.8 percent to 3.6 million, and the services sector rose 5.1 percent to 68.9 million. As a result of these movements, the agricultural sector maintained its share of total employment at 3.6 percent, while the goods sector declined to 27.2 percent and services increased to 69.2 percent.¹⁸

Not all of the seven industries mentioned earlier that contributed greatly to the shift to services fared equally well during the 1980-82 period. Health services (up 11.7 percent), business and repair services (19.8 percent), eating and drinking establishments (11.6), and finance (14.9) all continued their rapid expansion. However, as a result of the recession and the decline in housing sales, employment in real estate posted a decline of 5.7 percent. Education and

welfare and religious organizations increased only marginally. Also of interest, when eating and drinking establishments are excluded, retail trade showed a slight decline.

The cyclical decline in employment in the goods sector in the 1979–82 period does not necessarily suggest that the U.S. economy has entered a new stage—one where the shift to services is based on an absolute, rather than relative, decline in the goods sector. That process has been called “deindustrialization.” The contrasting sensitivity to the business cycle of the goods and the services sectors affects employment patterns in the recovery as well as in the recession. The following tabulation provides average annual percent changes in employment for periods of expansion and contraction in the goods and services sectors from the cyclical peak in November 1948 through the peak of July 1981:¹⁹

	Expansion	Contraction
Goods-producing	3.33	-8.49
Service-producing	3.29	0.39

The major contrast is that during economic contractions, employment in services continued to expand. However, during economic expansions, employment growth has been at about the same pace in both sectors.

While the early years of the 1980’s have witnessed an

absolute decline in employment in the goods sector, fears about “deindustrialization” appear premature because the employment figures were dominated by the 1980 and 1981–82 recessions, which had a disproportionate impact on the goods sector. It is still too early in the current recovery to draw firm conclusions, but the goods sector increased 7 percent during the first 12 months of expansion since the recessionary trough in November 1982, compared with a 3-percent growth in the service sector. Given the past performance of the goods sector during economic recoveries, one can expect further absolute growth, although growth probably will not be sufficient to prevent a further relative employment shift to services.

THE SHIFT TO SERVICE EMPLOYMENT since the late 1960’s reflects primarily a relative decline in the goods sector rather than in agriculture. Between 1967 and 1979, there was a relative shift of more than 6 million jobs to the service sector, with almost three-fourths of the jobs coming from the goods sector.

Actual labor force flows indicate that despite this shift, there has been no real net migration of workers from the goods to the services sector. Rather, the primary source of new employees in the services sector was the employment of women who had previously not held jobs. □

—FOOTNOTES—

¹For more discussion of this topic, see James Cook, “You mean we have been speaking prose all these years?” *Forbes*, Apr. 11, 1983, pp. 142–49; and Barry Bluestone and Bennett Harrison, *The Deindustrialization of America* (New York, Basic Books, 1982).

²Colin Clark, *The Conditions of Economic Progress* (London, McMillan, 1940); and Allan G. B. Fisher, *The Clash of Progress and Security* (London, McMillan, 1935). For a dissenting view, see Joachim Singlemann, *From Agriculture to Services* (Beverly Hills, Sage Publications, 1978).

³Quoted in James Cook, “So what’s wrong with a service economy?” *Forbes*, Aug. 30, 1982, p. 66.

⁴For a discussion of these issues, see Victor Fuchs, *The Service Economy* (National Bureau of Economic Research, 1963); Thomas Stanback, Jr., *Understanding the Service Economy* (Baltimore, Md., Johns Hopkins University Press, 1979); Eli Ginsberg and George Vojta, “The service sector of the U.S. economy,” *Scientific American*, March 1981, pp. 48–55; and P. H. Mirvis and E. J. Hackett, “Work and the work force in the nonprofit sector,” *Monthly Labor Review*, April 1983, pp. 3–12.

⁵See Victor Fuchs, “Economic growth and the rise of service employment,” Reprint No. 257 (National Bureau of Economic Research, 1982).

⁶Maurice Lengelle, *The Growing Importance of the Service Sector in Member Countries* (Paris, Organization of Economic Cooperation and Development, 1966), pp. 8–9.

⁷However, Lengelle does not rule out the possibility that countries in this stage could also experience an absolute decline of employment in the goods sector, that at some point the continued growth of services could result in or be the cause of the “deindustrialization” of the economy.

⁸Data on the industrial distribution of employment are available from both the Current Population Survey of households (CPS) and the Current Employment Statistics program (CES, or establishment survey). While the CES provides a more detailed industrial breakdown of employment and has a longer history, it does not include agricultural employment or those workers who are self-employed. Because the following analysis will cover total employment in all three sectors, the primary source of data will be

the CPS.

⁹For more discussion of the problems in defining services, see Ronald Kent Shelp, *Beyond Industrialization: Ascendancy of the Global Service Economy* (New York, Praeger Publishers, 1981), pp. 10–13.

¹⁰Such differences in the composition of the sectors do not appear to have a serious impact on long-term trends. See, for example, Fuchs, “Economic growth,” p. 222.

¹¹For more discussion of these issues, see R. E. Kutscher and J. A. Mark, “The service-producing sector: some common perceptions,” *Monthly Labor Review*, April 1983, pp. 3–12; and J. A. Mark, “Measuring productivity in service industries,” *Monthly Labor Review*, June 1982, pp. 3–8.

¹²Data for 1850 through 1940 are from *Historical Statistics for the United States, Colonial Times through 1970* (U.S. Department of Commerce, 1975), Series D 152–166, p. 138. The industrial distribution for these years is based on the concept of “gainful work” rather than employment. For a discussion of the difference in these concepts see page 123. CPS data for the years 1952 through 1962 include 14- and 15-year-olds.

¹³Lengelle concluded that the United States belonged in group four as early as the mid-1950’s, but he excluded transportation from services. See Lengelle, *The Growing Importance*, p. 12.

¹⁴Full-time equivalents are calculated by multiplying the number of part-time employees by the ratio of the average weekly hours of part-time to full-time employees. If a full-time workweek is 40 hours and there are two employees working 20 hours, then they would equal one full-time equivalent, that is, $2 \times 20/40 = 1$. Computations of sectoral shifts from this series are based solely on civilian employment.

¹⁵Estimates of the relative shifts in employment from the persons engaged series are as follows:

	1952–67	1967–79
Agriculture	-3.7	-1.2
Goods-producing	-1.7	-3.5
Service-producing	5.5	4.7

Given the slight differences that exist in classification of industries, estimates from the two series are a fairly close match.

¹⁶For a discussion of the use of matched data, see Robert W. Bednarzik and Richard M. Devens, ed., *Using the Current Population Survey as a Longitudinal Data Base*, Report 608 (Bureau of Labor Statistics, 1980).

¹⁷Data from March 1975-76 and March 1980-81 matched files were also examined and supported the above analysis. For more on the contribution of women, see Fuchs, "Economic growth."

¹⁸For more on the performance of the manufacturing industries during

the period 1979 to 1982, see Diane Nilsen, "Employment in durable goods anything but durable," *Monthly Labor Review*, February 1984, pp. 15-24.

¹⁹The average annual percent changes were calculated as follows: the rate of change for an expansion is measured from a 3-month average centered on a trough to a 3-month average centered on the peak. The percentage change is divided by the number of months from trough to peak and multiplied by 12 to provide an annual average. A similar procedure is used for contractions.

ERRATUM

Because of a typographical error, a tabular entry is incomplete in Philip L. Rones' article, "Recent recessions swell ranks of the long-term unemployed," in the February issue. The full entry in table 3, p. 28, should read "Finance and services." A corrected version of the table appears below.

Table 3. The long-term unemployed by selected characteristics, June 1979 and June 1983, not seasonally adjusted

[Numbers in thousands]

Characteristic	Total unemployed		Unemployed 15 weeks or longer								Unemployed 27 weeks or longer							
	June 1979	June 1983	Total		Percent of unemployed		Percent of labor force		Percent distribution		Total		Percent of unemployed		Percent of labor force		Percent distribution	
			June 1979	June 1983	June 1979	June 1983	June 1979	June 1983	June 1979	June 1983	June 1979	June 1983	June 1979	June 1983	June 1979	June 1983		
	June 1979	June 1983	June 1979	June 1983	June 1979	June 1983	June 1979	June 1983	June 1979	June 1983	June 1979	June 1983	June 1979	June 1983	June 1979	June 1983		
Total	6,235	11,570	1,085	4,447	17.4	38.4	1.0	3.9	100.0	100.0	492	2,842	7.9	24.6	.5	2.5	100.0	100.0
Men	2,993	6,498	601	2,939	20.1	45.2	.9	4.6	55.4	66.1	288	1,934	9.6	29.8	.5	3.3	58.5	68.1
Women	3,242	5,072	484	1,507	14.9	29.7	1.1	3.1	44.6	33.9	204	908	6.3	17.9	.5	1.9	41.5	31.9
16 to 19 years	2,034	2,527	136	313	6.7	12.4	1.2	3.2	12.5	7.0	44	148	2.2	5.9	.4	1.5	8.9	5.2
20 to 24 years	1,441	2,478	233	814	16.2	32.8	1.5	4.9	21.5	18.3	91	458	6.3	18.5	.6	2.7	18.5	16.1
25 to 54 years	2,372	5,780	589	2,889	24.8	50.0	.9	4.0	54.3	65.0	284	1,938	12.0	33.5	.5	2.7	57.7	68.2
55 years and over	389	785	128	431	32.9	54.9	.9	2.9	11.8	9.7	73	299	18.8	38.1	.5	2.0	14.8	10.5
White	4,677	8,598	790	3,317	16.9	38.6	.9	3.4	72.8	74.6	329	2,104	7.0	24.5	.4	2.1	66.9	74.0
Black	1,421	2,599	273	997	19.2	38.4	2.6	8.3	25.2	22.4	119	657	8.4	25.3	1.1	5.5	24.2	23.1
Hispanic origin	432	896	70	240	16.2	26.8	1.4	3.8	6.5	5.4	26	155	6.0	17.3	.5	3.0	5.3	5.5
Construction	456	919	97	438	21.3	47.7	1.6	7.0	8.9	9.8	32	262	7.0	28.5	.5	4.2	6.5	9.2
Manufacturing	1,158	2,500	304	1,429	26.3	57.2	1.3	6.4	28.0	32.1	128	1,006	11.1	40.2	.6	4.5	26.0	35.4
Durable goods	611	1,602	182	993	29.8	62.0	1.3	7.5	16.8	22.3	84	703	13.7	43.9	.6	5.3	17.1	24.7
Primary metals	32	195	10	142	31.3	72.8	.8	14.0	.9	3.2	7	115	21.9	59.0	.5	11.4	1.4	4.0
Autos	54	137	18	91	33.3	66.4	1.3	8.4	1.7	2.0	7	73	13.0	53.3	.5	6.7	1.4	2.6
Nondurable goods	547	898	121	436	22.1	48.6	1.3	4.9	11.2	9.8	44	303	8.0	33.7	.5	3.4	8.9	10.7
Trade	1,304	2,243	195	816	15.0	36.4	1.0	3.8	18.0	18.3	71	448	5.4	20.0	.4	2.1	14.4	15.8
Finance and services	1,462	2,434	258	860	17.6	35.3	.8	2.4	23.8	19.3	134	542	9.2	22.3	.4	1.5	27.2	19.1
Job losers	2,096	6,135	577	3,314	27.5	54.0	—	—	53.2	74.5	265	2,173	12.6	35.4	—	—	53.9	76.5
Job leavers	823	748	143	231	17.4	30.9	—	—	13.2	5.2	61	143	7.4	19.1	—	—	12.4	5.0
Entrants	3,314	4,686	363	884	11.0	18.9	—	—	33.5	19.9	165	522	5.0	11.1	—	—	33.5	18.4

Surviving spouse's benefits in private pension plans

Most private pension plans offer a lifetime minimum annuity to surviving spouses of about two-fifths of a worker's accrued benefits; however, many spouses may receive a smaller share, or may not be covered, according to a BLS analysis of plans in 1981

DONALD BELL AND AVY GRAHAM

When an active worker or retired employee dies, what benefits does the spouse receive from employer contributions to a private pension plan? While the Bureau of Labor Statistics has no data on actual annuity payments and the number of beneficiaries receiving them, a representative sample of medium and large companies shows that, as required by law, the plans offer a surviving spouse a lifetime annuity. However, both eligibility requirements for this benefit and the size of monthly payments depend on when death occurs. If death is before retirement, the spouse usually is eligible for an annuity if the employee had sufficient age and service to qualify for early retirement benefits; the size of the annuity depends on the pension the worker would have received if he or she had opted for early retirement.¹ (See chart 1.) If the employee had retired, the typical plan would provide for a spouse's annuity equal to about two-fifths of the worker's accrued benefits.

A few pension plans offer "death benefits," as well as annuities. While annuities provide a lifetime income, death benefits are paid either in a lump sum or for a specified number of months. The most common lump-sum payment is \$1,000; monthly death benefits most often are paid for 5 years. However, if death occurs after retirement, the number

of monthly payments to the spouse is reduced by the number of pension payments already received by the retiree.

This article is based on data from the Bureau's 1981 survey of employee benefits in large and medium firms.² A sample of 1,505 establishments across most private industries yielded data on the detailed provisions in 914 pension plans. Results of this survey provide representative data for 21.5 million employees in 43,325 establishments. Eighty-four percent of the employees were covered by private pension plans—79 percent were under plans fully paid for by their employer, and 5 percent paid part of the cost.

ERISA requirements

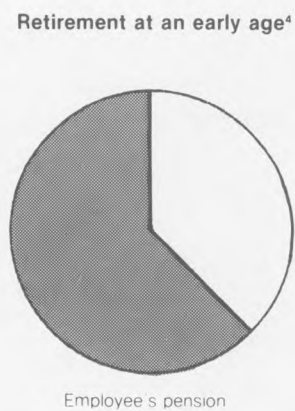
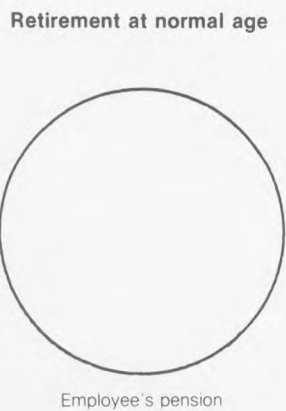
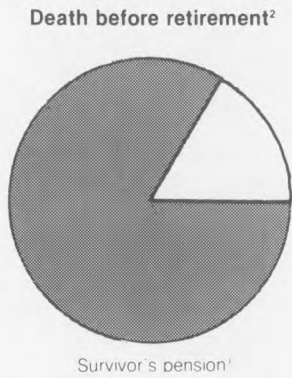
Spouse benefit provisions of private pension plans reflect the influence of the Employee Retirement Income Security Act of 1974 (ERISA). Pension plans are not required by law, but once established, ERISA requires that they provide for annuities to spouses of deceased employees. The requirements differ for death before and after retirement.

Pension plans must now include a "postretirement" annuity arrangement which pays a surviving spouse regular income equal to at least half of the pension paid to the retiree. To do this, the plan may reduce the pension paid to the retiree. This reduced annuity is called a "joint-and-survivor annuity." A married worker must be given an opportunity not to participate in a joint-and-survivor annuity—that is, not to accept a reduced annuity. However,

Donald Bell is a labor economist and Avy Graham is a social science research analyst in the Office of Wages and Industrial Relations, Bureau of Labor Statistics.

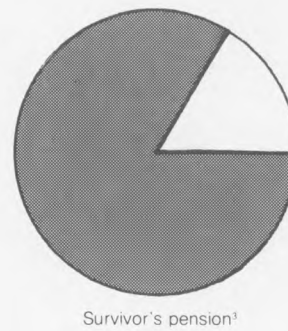
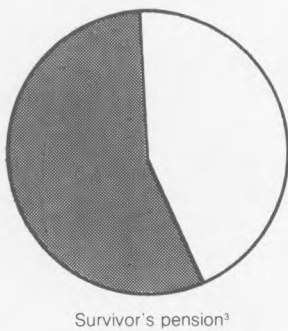
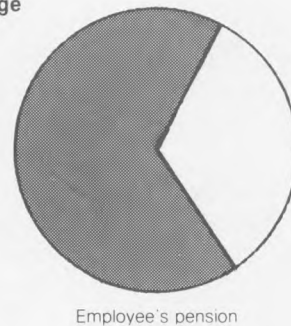
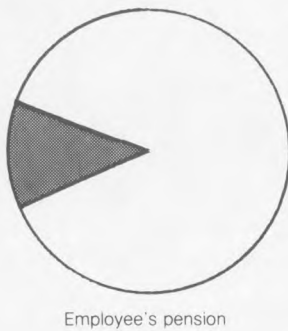
Chart 1. Proportion of normal pension typically paid under various options¹

 = pension paid



No survivor coverage

Joint-and-survivor annuity coverage



¹ A "normal" pension is that paid to an employee who retires at a plan's normal age and who elects not to take the joint-and-survivor annuity option. This is the maximum pension available to the employee for a specific length of service. This chart compares the amount typically paid under other options with this normal pension.

² Assumes employee dies 10 years before normal retirement age with 30 years of service and is eligible for survivor coverage.

³ Paid to spouse after death of employee, based on 50-percent option.

⁴ Assumes employee retires 10 years before normal retirement age with 30 years of service and pension is reduced 5 percent for each year.

if the participant fails to elect another form of annuity, the joint-and-survivor option automatically becomes effective. Under plans which do *not* reduce the retiree's annuity as the price of continuing payments to a surviving spouse, the survivor may be paid less than 50 percent of the retiree's annuity *provided* the rate does not produce a smaller proportion of the retiree's unreduced pension than that which would be achieved by a 50-percent joint-and-survivor option.

Prior to enactment of ERISA, most plans provided survivor annuities only if the employee voluntarily chose the option at a specified time, such as 1 year before retirement. If a retiree did not act, the surviving spouse was not eligible for an annuity. Also, ERISA prohibits discontinuance of payments if a spouse remarries—a frequent provision before the law's passage.

If an employee dies before retirement, ERISA requires that a "preretirement" survivor annuity be available if the pension plan gives employees the option of retiring before the normal retirement age with a reduced lifetime annuity. A preretirement spouse's annuity must be available if a deceased worker was eligible for early retirement, was within 10 years of the plan's normal retirement age, and had been married at least 1 year. The minimum annuity is the amount the spouse would have received if the worker had retired just before death with early retirement benefits and had elected a joint-and-survivor option. (The normal retirement age is the point at which the employee could retire and immediately receive a pension without reduction due to age. The normal pension is the annuity available at normal retirement age if the joint-and-survivor annuity is waived.)

The 1974 law has had a significant effect on potential protection accorded spouses of active workers. In the summer of 1970, 36 percent of 149 major pension plans provided for annuities to survivors of active workers³; virtually all pension plans studied in the 1981 survey offered a preretirement spouse annuity.⁴

Survivors of retirees

As required by the Employee Retirement Income Security Act, all of the pension plans studied provided for annuities to survivors of retirees. More than 90 percent offered these postretirement spouse benefits in the form of joint-and-survivor annuities.⁵ (See table 1.) While ERISA requires a plan to have a spouse annuity which pays at least 50 percent of the retiree's pension, other percentages also may be available. For example, 68 percent of the plans provided multiple joint-and-survivor options ranging from 25 to 100 percent of the pension paid prior to the retiree's death, with at least one option of 50 percent or more.

The smaller the percentage option selected, the less the reduction in the retiree's pension. For example, a 25-percent survivor benefit would require a relatively small reduction in the retiree's pension. (A few plans provided the 25-percent survivor benefit with no reduction in the retiree's

Table 1. Provision for postretirement survivor annuity in private pension plans, medium and large firms, 1981

Annuity	Plans	
	Number	Percent
Total	914	100
Joint-and-survivor annuity ¹	856	94
Surviving spouse receives:		
50 percent of joint-and-survivor annuity	202	22
More than 50 percent of joint-and-survivor annuity	33	4
Retiree's choice of multiple joint-and-survivor options ² ..	621	68
Share of retiree's pension ³	34	4
Joint-and-survivor annuity plus portion of retiree's pension ...	24	3

¹An annuity that provides income during the lifetime of both the retiree and the surviving spouse. The accrued pension will be reduced at retirement because of the longer time that payments are expected to be made. Upon the retiree's death, all or part of the reduced pension is continued to the surviving spouse for life.

²Includes at least one option that continues 50 percent or more of the retiree's reduced pension to the surviving spouse.

³These plans do not require a reduction of retiree's accrued pension when employee and spouse are the same age. Under their provisions, the spouse receives an average of 49 percent of the accrued pension. For 2 out of 3 plans in this group, the retiree's or spouse's benefit is reduced if there is significant age difference.

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

pension.) Multiple options thus provide alternatives which might meet the needs of a married couple for either a higher immediate benefit to the retiree and spouse or a higher benefit later to the surviving spouse. The former alternative might be suitable if an employee is in good health or if the spouse has a separate pension. While the 100-percent survivor benefit would require a greater reduction for the retiree, it might be a more desirable choice for an employee in poor health or with alternative income sources.

Although ERISA allows for a reduction in the retiree's pension to finance the survivor's annuity, 4 percent of the plans studied offered the survivor benefit without this reduction. Generally, these plans were in effect prior to the law's enactment and were continued because their provisions met or exceeded ERISA standards. Another small group of plans (3 percent) gave spouses a portion of the retiree's pension plus a joint-and-survivor benefit calculated on the balance of the pension.⁶

As discussed earlier, a joint-and-survivor annuity adjusts the retiree's pension downward to provide a lifetime benefit to the surviving spouse. Pension payments expected to be made during the lifetime of the retiree and the surviving spouse approximate the plan's total payments in a straight-life annuity to a single person.

If an employee in a plan with joint-and-survivor protection does not waive this coverage, the employee's pension is automatically reduced at retirement to allow for the spouse's benefit. The reduced pension is calculated in the following manner. An employee's accrued pension is first determined as if it were payable only during his or her lifetime. (The benefit formula usually calls for multiplying the number of years of service by either a percent of earnings or a flat dollar amount.) The accrued pension benefit is then adjusted

to pay for the survivor annuity. This adjustment takes account of the age and sex of the employee and spouse in 55 percent of the plans, and age alone in 45 percent. However, a recent Supreme Court decision prohibits discrimination in pension annuity payments based on sex. As a result, pension plans now may have to eliminate consideration of sex when adjusting the accrued pension to pay for a spouse's annuity.⁷

Actuarial and arithmetic adjustments. Of plans that made an adjustment, 8 percent used an arithmetic reduction method. Under this method, retirees retain a somewhat larger share of accrued pensions than under an actuarially reduced annuity. An arithmetic reduction is determined mainly by the difference in age of the retiree and spouse. A basic reduction, such as 10 percent, is taken to pay for a 50-percent spouse annuity if the spouse is at least as old as the employee; an additional reduction, such as 0.5 percent, commonly is applied for each year of age difference if the spouse is younger. Some plans use the same arithmetic reduction for all retirees with the joint-and-survivor option if the age difference is less than 10 years. Actuarial reductions, found in 92 percent of the plans with adjustments, are more closely linked to life expectancies of the employee and spouse; formulas are based on such factors as age and sex of the employee and spouse.⁸

Summaries of pension plan provisions illustrate the effects of actuarial and arithmetic adjustments. An airline's pension plan provides an example of the 50- and 100-percent joint-and-survivor options, with actuarial adjustments varying by age and sex.⁹ The following tabulation shows the percent of the employee's normal, straight-life pension that is paid in a joint-and-survivor annuity while both retiree and spouse are alive and after the retiree dies. It assumes retirement at age 65.¹⁰

	<i>Percent of normal pension paid under—</i>			
	<i>50-percent option</i>		<i>100-percent option</i>	
	<i>Surviving Employee</i>	<i>Spouse</i>	<i>Surviving Employee</i>	<i>Spouse</i>
Employee age 65 and—				
Wife age:				
65	85.5	42.75	74.7	74.7
60	81.9	40.95	69.3	69.3
Husband age:				
65	93.3	46.65	87.5	87.5
60	90.6	45.30	82.9	82.9

When a male employee and his spouse are both age 65 at retirement, the 50-percent option reduces the benefit to 85.5 percent of his computed normal pension; this provides the wife with an annuity of half that amount after his death. If the 100-percent option is elected, the employee's benefit is reduced an additional 10.8 percentage points (to 74.7 percent) to provide the wife with the same annuity as the retiree's after his death. However, if the wife is 5 years

younger, the employee's benefit is further reduced by 3.6 percentage points under the 50-percent option and 5.4 percentage points under the 100-percent option. In the same plan, the corresponding pensions for a female employee are larger because of the shorter life expectancy of men. In other words, the husband is less likely to outlive his wife and thus receive a spouse's pension.

After the retiree's death, the spouse continues to receive the same monthly annuity under the 100-percent option, but half of the monthly annuity under the 50-percent option. Because the normal pension was reduced to pay for the spouse's benefit, a wife who is 5 years younger than an employee retiring at age 65 with the standard 50-percent joint-and-survivor option can expect a spouse's benefit of 40.95 percent of the normal pension. A surviving husband, under similar conditions, would receive 4.35 percentage points more.

A large manufacturing company plan, with a 55-percent joint-and-survivor option, provides a typical example of an arithmetic adjustment varying only by age. When both the employee and spouse are age 65, the employee's pension is reduced by 10 percent to provide the spouse with an annuity of 55 percent of the reduced pension. Thus, the 55-percent option would yield a spouse annuity equal to 49.5 percent of the employee's normal, straight-life pension (90 percent × 0.55). However, if the spouse's age is less than that of the employee, the employee's pension is reduced an additional 0.5 percentage point for each year the spouse is younger than age 65. Therefore, a spouse 5 years younger than the employee would receive 48.125 percent of the employee's normal, straight-life pension (87.5 percent × 0.55). This plan's arithmetic adjustment is less than what would be required actuarially; on average, retired couples taking the joint-and-survivor option can expect to collect slightly more over their lifetimes than if they refuse the option.

Restoration to full pension. Under most plans, the retiree's benefit is permanently reduced to provide a spouse's benefit—even if the spouse dies first. Only about 3 percent of plans with joint-and-survivor benefits provided for a "pop-up" or restoration of all or part of the amount of reduction. Most of these restorations followed the pattern negotiated by the United Auto Workers, in which the "pop-up" benefit consists of a restoration to 100 percent of the straight-life annuity upon the spouse's death. Other plans provided a schedule of restorations based on the length of time between retirement and death of the spouse, for example, complete restoration if the spouse's death is within 1 year of retirement, but decreasing the restored amounts over the next 3 years until a 25-percent restoration is reached.

Survivors of active workers

Annuity provisions for spouses of employees who die while still at work differ from those applicable to survivors

of retired employees. A pension plan's preretirement spouse's benefit gives a surviving husband or wife a part of the annuity earned by an active employee at the time of death. Although provision for this benefit was found in virtually all of the plans studied (909 of 914 plans), survivors were protected only if the employee had attained the required age and had the necessary length of service at the time of death (and had elected this coverage if, as described below, there was an extra employee cost for this protection). In most plans, employees had to qualify for early retirement (generally age 55 with 10 or 15 years of service) before their spouses were eligible for survivor's coverage. However, minimum age requirements at times were more liberal than for early retirement.

The following tabulation shows the number and percent of plans and the minimum age requirement for active workers before surviving spouses could receive benefits:

	Number	Percent
Plans specifying a minimum age requirement	909	100.0
Younger age than for early retirement	198	21.7
Same age as for early retirement	688	75.6
Older age than for early retirement	19	2.1
No provision for early retirement	4	.4

A plan with more liberal age requirements than for early retirement may, nevertheless, require the same length of service as for early retirement. For example, a plan may provide a spouse's pension if death occurs at any age with 10 years of service, although early retirement is at age 55 with 10 years of service. A small number of plans had age requirements for the spouse's benefit more stringent than those for early retirement. These plans permitted retirement more than 10 years before the normal age but limited the spouse's annuity coverage to persons whose age was within 10 years of normal retirement, as allowed by ERISA.

Method of calculating benefits. The basis for determining the amount of the preretirement spouse's annuity differed substantially among plans. (See table 2.) The dominant method, found in 73 percent of the plans, was derived from the joint-and-survivor mode of payment. Three-fifths of the plans provided the spouse with 50 percent of the early retirement joint-and-survivor annuity. Although the reduction for early retirement varied widely, a reduction of 4 to 6 percent a year was common. Thus, the accrued pension of an employee who dies 10 years before normal retirement could be reduced by 40 to 60 percent before the spouse's benefit is computed. The net effect of (1) fewer years of service due to an early death, (2) reduction in benefits due to extended years of payment associated with early retirement, (3) a further reduction because of the joint-and-survivor-based annuity, and (4) taking half of the resultant benefit as the survivor's share leaves the spouse with a small portion of the normal straight-life pension. Ten percent of the plans gave the spouse more than 50 percent of the early

Table 2. Provision for preretirement survivor annuity in private pension plans, medium and large firms, 1981

Annuity ¹	Plans	
	Number	Percent
Total	914	100
Preretirement survivor annuity provided	909	99
Joint-and-survivor-type annuity ²	667	73
Based on early retirement benefit ³	634	70
Surviving spouse receives:		
50 percent of employee pension	547	60
At additional employee cost ⁴	198	22
51 to 99 percent of employee pension	35	4
At additional employee cost ⁴	2	(5)
100 percent of employee pension	52	6
At additional employee cost ⁴	5	1
Based on normal retirement benefit ⁶	33	4
Surviving spouse receives:		
50 percent or less of employee pension	33	4
At additional employee cost ⁴	9	1
Portion of accrued employee benefit	228	25
Reduced for early retirement	121	13
Unreduced for early retirement	88	10
Based on service projected to normal retirement age	19	2
Other annuity ⁷	14	2
No preretirement survivor annuity provided ⁸	5	1

¹Many plans offer an elective preretirement spouse option. If the elective provision was the only option, it was tabulated; if it was in combination with an automatic preretirement spouse option, only the automatic provision was tabulated.

²The spouse annuity is computed as if the employee had retired with a joint-and-survivor annuity; that is, the accrued pension is first reduced because of the longer length of time that payments were expected to be made to both the retiree and the surviving spouse. The spouse's share is then the specified percent of the reduced amount.

³Survivor annuity is based on the benefit the employee would have received if early retirement had occurred on the date of death.

⁴Plan reduces the accrued employee pension benefit for each year survivor protection is in force.

⁵Less than 0.5 percent.

⁶Survivor annuity is based on the benefit the employee would have received if eligible for normal retirement on the date of death.

⁷Includes annuity based on a percent of average monthly earnings, or a flat dollar amount.

⁸A preretirement survivor annuity is required by ERISA only if plans allow the payment of retiree benefits prior to the plan's normal retirement age.

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

retirement joint-and-survivor annuity, with 6 percent providing all of the reduced benefit. Another small group of plans (4 percent) with joint-and-survivor-based annuities made no reduction for early receipt of benefits, even if the employee died prior to the normal retirement age.

The airline plan discussed earlier is an example of a plan giving the spouse 50 percent of the early retirement joint-and-survivor annuity for which the employee was eligible on the date of death. This plan's early retirement formula reduces benefits arithmetically for each year that retirement precedes age 62, using three age brackets and reductions ranging from 2.4 percent to 6.6 percent per year. For example, an employee's early retirement benefit at age 55 is 59.8 percent of the pension payable at age 62 with the same years of service. This pension is further reduced by 10.1 percent to pay for the joint-and-survivor option. As a result, an employee retiring at age 55 with a 50-percent joint-and-

survivor annuity would receive a pension equal to 59.8 percent \times 0.899, or 53.7 percent of the accrued pension. Therefore, if that active employee died at age 55, the spouse's monthly annuity would be half of 53.7 percent, or 26.9 percent of the straight-life pension that the employee had accrued, and a smaller percent of the normal pension. This benefit would be further adjusted up or down for any differences in ages between employee and spouse.

One-fourth of the plans provided a preretirement survivor benefit calculated as a portion of the employee's accrued pension benefit, but with no reduction for joint-and-survivor coverage. These plans, however, varied in method of determining accrued pension benefits. The largest group reduced the employee's accrued benefit for early retirement, as if retirement had occurred on the date of death. Another group made no reduction for early retirement and computed benefits as if the employee qualified for normal retirement benefits on the date of death. A few plans based benefits on the years of service the employee would have accumulated had he or she lived to normal retirement age.

The more generous methods of determining accrued benefits, however, typically used smaller percentages to calculate the spouse's share of the pension. Formulas based on the employee's actual years of service, reduced for early retirement, on average, paid spouses 55 percent of the accrued employee benefit. Those based on actual years of service but with no early retirement reduction averaged 53 percent, while formulas that projected service to the normal retirement age averaged 46 percent. Nevertheless, the surveyed plans with more liberal approaches to calculating accrued benefits generally provided higher annuities to the spouse. Except for employees who die within a year or two of normal retirement age, the effect of higher calculated accrued benefits outweighed the relatively small reductions in the spouse's share of employee pensions.

Plans paying a designated portion of the accrued employee benefit to the surviving spouse also were less likely to adjust the benefit because of differences in age between the employee and spouse. While the joint-and-survivor-based formulas almost always reduced the pension actuarially for even small differences in age, two-fifths of the plans with other formulas made no adjustment at all. Many of the remainder used an arithmetic approach, reducing the payment by less than the actuarial techniques; frequently, these plans only made a reduction if the age difference was more than 3 to 5 years.

Twenty-one percent of the plans studied offered a second method of calculating preretirement survivor's annuities. In a limited number of plans (3 percent), spouses who qualified under the second formula received an annuity equal to the sum of the amounts calculated under both formulas. In the majority of cases, the secondary method of calculation was an alternative formula, to be used if it offered a higher benefit than the primary formula. In some cases, the alternative formulas were in effect prior to enactment of ERISA

and provided a higher benefit to persons with longer service. Other alternative formulas offered a higher benefit at employee cost as a substitute for the automatic coverage.¹¹

Some examples of alternative preretirement spouse benefit provisions are:

- Instead of automatic 50-percent joint-and-survivor-based coverage, an employee may choose and pay for a larger portion of his or her accrued benefit.
- When an employee reaches a specified age such as 60, the spouse's annuity is computed based on a normal, rather than early, retirement formula.
- Surviving spouses of employees covered by the pension plan prior to enactment of ERISA in 1974 may choose a formula based on the employee's accrued pension.
- When an employee dies with few years of service, the surviving spouse receives a minimum annuity of 20 percent of the last month's pay.

The first three examples are common; the fourth is rare.

Cost to employees. Under ERISA, the cost of the preretirement survivor annuity may be borne by participants; the pension benefit they would otherwise have received at early or normal retirement may be reduced for each year spouse's protection is in effect. When this charge is levied, coverage is not automatic. In this instance, unlike postretirement survivor annuities, workers desiring the coverage must elect it. Plans may require a choice no later than 2 years prior to its effective date, thus avoiding disproportionate use by employees with terminal illnesses.

Twenty-four percent of the plans levied this charge; they permanently reduced the pension benefits ultimately paid to either a surviving spouse or retiree if preretirement survivor protection was elected by the employee. A typical cost is 0.6 percent of accrued benefits for every year the survivor annuity provision is in effect prior to the employee's death or retirement. If an employee who chose to provide preretirement survivor coverage at age 55 retires at age 65, the pension is automatically reduced by 6 percent (10×0.6 percent). If the employee dies at age 60 with the survivor provision in effect, the spouse's pension is reduced by 3 percent.

Lump-sum and limited payments

As noted, substantially all of the pension plans studied provided for both preretirement and postretirement lifetime survivor annuities. A minority of the plans (27 percent) included death benefit provisions for surviving spouses—lump-sum payments and monthly payments for a limited time period. Twelve percent of the plans gave death benefits to spouses of active workers; 21 percent covered those of retired workers. Plans negotiated under collective bargaining agreements, which accounted for nearly a third of the sample, had death benefit provisions more frequently than nonnegotiated plans. (See table 3.) For active workers, ne-

Table 3. Collective bargaining status of private pension plans with death benefits, medium and large firms, 1981

Benefit	Covered by collective bargaining agreements		Not covered by collective bargaining agreements	
	Number	Percent	Number	Percent
Postretirement plans	282	100	632	100
Death benefits	99	35	89	14
In addition to survivors' annuities	31	11	45	7
In lieu of survivors' annuities	68	24	44	7
No death benefits	183	65	543	86
Preretirement plans	282	100	632	100
Death benefits	50	18	58	9
In addition to survivors' annuities	13	5	14	2
In lieu of survivors' annuities	37	13	44	7
No death benefits	232	82	574	91

gotiated plans were twice as likely to have this benefit (18 compared with 9 percent); the ratio was even higher for retired workers (35 compared with 14 percent).

The majority of plans with death benefits offered such benefits as alternatives to an annuity—9 percent of the plans gave this option to spouses of deceased active workers and 12 percent to survivors of retirees. (See table 4.) A few examples are:

- The surviving spouse of a worker eligible for early retirement benefits can choose either a small monthly annuity for life or a much larger monthly payment for 5 years.
- The surviving spouse of a worker not yet eligible for early retirement automatically receives the death benefit.
- The surviving spouse of a retiree who waived a joint-and-survivor annuity still receives a lump-sum benefit.

The remaining plans with death benefits provided such ben-

Table 4. Type of benefit in private pension plans with death benefits, medium and large firms, 1981

Benefit	Preretirement benefit		Postretirement benefit	
	Number	Percent	Number	Percent
Total plans	914	100	914	100
Plans with death benefits	108	12	188	21
Death benefits in addition to survivor annuity	27	3	76	8
Lump sum	22	2	53	6
Specified period of monthly benefits ¹	5	(²)	23	3
Death benefit in lieu of survivor annuity	81	9	112	12
Lump sum	39	4	16	2
Specified period of monthly benefits ¹	42	5	96	11
Plans without death benefits	806	88	726	79

¹For the postretirement benefit, the number of annuity payments already received by the employee is counted in the specified period, potentially leaving the spouse with no death benefit. For the preretirement benefit, the value of the monthly payments may be taken in a lump sum in a minority of plans.

²Less than 0.5 percent.

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

efits in addition to an annuity—persons not eligible for an annuity receive only the death benefit. Three percent of the plans studied provided both a death benefit and an annuity for preretirement, and 8 percent provided for postretirement benefits. The majority of these plans paid a lump sum.

Eligibility for benefits. Death benefit eligibility requirements differed for deaths before and after retirement. Spouses usually qualified for a postretirement death benefit if the retiree had met the plan's minimum requirements for a pension. Three percent of the plans, however, had a more restrictive requirement; they specified minimum age and service requirements, commonly age 55 with 10 years of service. (These plans did not contain a minimum normal retirement age, allowing retirement at any age after, for example, 30 years of service.)

Age and service eligibility requirements for preretirement death benefits varied widely; most plans paid benefits to a surviving spouse even if the employee did not meet requirements for providing a survivor annuity. Frequently, the death benefit was paid regardless of age or years of service. The following tabulation shows age and service eligibility requirements for preretirement death benefits:

	Number	Percent
Total	108	100
Less age or service or both than for earliest pension	81	75
No requirement	38	35
With requirement	43	40
Same age and service as for earliest pension	17	16
More age or service or both than for earliest pension	10	9

Plans with lower age and service requirements than those for the earliest pension most frequently provide a death benefit if the employee dies after 10 years of service, regardless of age.

Amount of benefits. The value of the death benefits differed sharply among the plans in the sample. Most of the lump-sum benefits were specified as flat dollar amounts. The most common amount was \$1,000, although some plans paid as much as \$10,000. The amount varied by type of benefit, averaging slightly higher for preretirement than for postretirement death benefits, and higher for benefits in addition to, rather than in lieu of, survivor annuities. Not all plans specified a flat lump-sum amount: a few called for paying a specified amount for each year of service, averaging \$48 per year (or less than \$1,000 for 20 years of service). Eight plans provided a percent of average annual earnings, typically 35 percent (for example, \$5,250 for average earnings of \$15,000).

If, instead of lump-sum payments, death benefits are distributed in the form of monthly payments, each payment is larger than that provided by a survivor's annuity; monthly

death benefits equal the full monthly pension payment to which an active worker or retiree was entitled. However, monthly death benefits are paid for a limited period. Among the plans surveyed, surviving spouses of active workers receive the payment for an average of 71 months. Survivors of retirees also receive payments for an average of 71 months when the monthly payment is offered in lieu of a spouse's annuity, but 66 months when it is in addition to an annuity. For retirees, however, the number of monthly pension payments that have been made during the retiree's lifetime was deducted from the specified number of death benefit payments. Thus, if the retiree lives longer than the specified period and the death benefit was chosen in lieu of an annuity, the spouse would receive no payment. If the death benefit is in addition to the spouse's annuity, the survivor's payment is not reduced to the spouse's share of the worker's pension until all of the specified death benefit payments have been made.

Other survivor's benefits

Although only a minority of the pension plans provided lump-sum or monthly death benefits, most of the firms covered by the study provided similar protection to survivors of active workers through life insurance. In 1981, 96 percent of the employees in these firms had a life insurance policy paid at least in part by the employer—81 percent had plans fully paid by the employer. Three-fifths of the employees with life insurance had coverage based on earnings—benefits usually equaled one or two times earnings. Most of the remaining employees had a flat dollar amount of life insurance, seldom over \$15,000 and frequently under \$5,000. Production workers were more likely than white-collar employees to have flat dollar coverage. Retirees also frequently had employer-provided life insurance coverage. Three-fifths of the employees were in life insurance plans that continued to provide coverage after retirement, although almost always for a reduced amount.¹²

Social security is another source of income for many surviving spouses. If there are no dependent children, a

surviving spouse age 65 or older can receive 100 percent of the employee's social security benefits. Benefits may begin as early as age 60, but are reduced 5.7 percent for each year under age 65. Because social security does not pay dual benefits, survivors may not draw on their own accounts and also receive survivor's benefits from the system, but must choose one of the payments. Regardless of age, a surviving spouse with dependent children can receive 75 percent of the employee's social security benefit until the youngest child reaches age 18 or marries. Each dependent child also receives 75 percent of the employee's benefit to age 18, or 22 if in school, subject to family maximums. Benefits are curtailed if the spouse remarries.¹³

Added protection proposed

Since the enactment of the Employee Retirement Income Security Act of 1974, all private pension plans have included some type of provision for survivor's benefits. All plans now offer postretirement survivor protection and nearly all offer preretirement protection. But the surviving spouse can lose these benefits if: (1) the active worker dies prior to reaching eligibility for the spouse's benefit, (2) the active employee had not elected a preretirement spouse's annuity offered at additional employee cost, (3) the couple does not meet the 1-year marriage requirement, or (4) the joint-and-survivor annuity was waived by the employee at retirement.

A bill approved by the Senate in 1983 would provide added protection for surviving spouses of retirees by prohibiting the employee from waiving a joint-and-survivor annuity option unless the spouse approved.¹⁴ The 21-percent of the plans studied that provide postretirement death benefits partially fill the gap left by a waiver of the spouse's annuity, but the degree of protection may be limited. This bill also affects survivors of active employees: a key provision would require the payment of survivor's benefits to a spouse if a worker age 45 had at least 10 years of service. However, in some cases, only a small vested pension may have accrued and, after actuarial adjustment, a surviving spouse would receive minimal monthly payments. □

FOOTNOTES

¹The Employee Retirement Income Security Act of 1974 (ERISA) requires that if an employee made contributions to a pension plan, the plan must provide for returning the participant's accumulated contributions, with interest, if death occurs before retirement.

²The survey is conducted in a sample designed to represent all private sector establishments in the United States, excluding Alaska and Hawaii, employing at least 50, 100, or 250 workers, depending on the industry. Industry coverage includes mining; construction; manufacturing; transportation, communications, electric, gas, and sanitary services; wholesale and retail trade; finance, insurance, and real estate; and selected services. For additional details on the survey, see *Employee Benefits in Medium and Large Firms, 1981*, Bulletin 2140 (Bureau of Labor Statistics, 1982). See also Robert Frumkin and William Wiatrowski, "Bureau of Labor Statistics takes a new look at employee benefits," *Monthly Labor Review*, August 1982, pp. 41-45.

³Derived from pension plan summaries in *Digest of Selected Pension*

Plans, 1970 Edition (Bureau of Labor Statistics, 1971).

⁴*Employee Benefits*, table 41. ERISA is not the only source of legal requirements concerning survivor benefits. Internal Revenue Service rulings limit favorable tax treatment to pension plans in which death benefits are incidental to their primary purpose. For additional detail, see Everett T. Allen, Jr., Joseph V. Melone, and Jerry S. Rosenbloom, *Pension Planning*, 4th Edition (Homewood, Ill., Richard D. Irwin, Inc., 1981), pp. 83-89; and Dan M. McGill, *Fundamentals of Private Pensions*, 4th Edition (Homewood, Ill. Richard D. Irwin, Inc., 1979), pp. 124-26 and 149-61.

⁵It should be noted that some pension plans provide benefits to both the spouse and minor children or, in the absence of a spouse, to minor children or other dependents. Such benefits for children generally end at age 18 or 21.

⁶These plans, found in the steel industry, provide the survivor with 50 percent of the retiree's pension less 50 percent of the spouse's social

security benefit, plus an amount equivalent to a 50-percent spouse benefit based on a joint-and-survivor annuity computed on the remaining half of the retiree's pension. Minimum payments are provided for the latter calculation.

⁷In a July 1983 decision (*Nathalie Norris vs. State of Arizona*), the Supreme Court prohibited employer-provided pension plans from adjusting annuity payments on the basis of sex. Although this decision requires use of a single actuarial table to compute unreduced monthly annuities for male and female employees, its rationale may also apply to annuity reductions to pay for survivor benefits. See "Developments in Industrial Relations," *Monthly Labor Review*, September 1983, p. 36.

⁸Efforts to eliminate consideration of sex in actuarial adjustments involves the three branches of government. In addition to the recent Supreme Court decision, there have been proposals for legislative changes. For example, a bill which prohibits sex discrimination in both pensions and insurance has been reintroduced in the House of Representatives; a counterpart bill has been reintroduced into the Senate. The U.S. Department of Justice recently stated in a brief filed with the Supreme Court that pension benefits based on sex are discriminatory.

⁹Summary plan descriptions used here for illustrative purposes are available from the Labor Department's Labor Management Services Administration file in Washington, D.C., in accordance with the requirements of ERISA. The plans used here were current as of March 1982.

¹⁰Employees in the plan can retire with unreduced benefits at age 62. However, age 65 is used in the example for comparison with the subsequent summary of a plan from a manufacturing firm.

¹¹Tabulations of the types of secondary formulas and their age and service requirements are available from the authors.

¹²*Employee Benefits*, tables 1, 28, 29, 30, and 31.

¹³For a more detailed description of social security's survivor benefits see *Social Security Programs in the United States* (SSA) 73-11915 (U.S. Department of Health, Education, and Welfare, Social Security Administration, 1973).

¹⁴This proposed bill, "The Retirement Equity Act," H.R. 2769, would place several more stringent requirements on pension plans. In addition to those mentioned in this article, the bill addresses such topics as eligibility for participating in a pension plan, vesting, and breaks in service.

The future of marriage

If women move into the labor force in increasing numbers and gain a more favored position in the occupational structure, this will tend to undermine the traditional division of labor within the household and the interdependence this specialization implies. Marriages based on economic considerations alone will give way. The utilitarian basis of marriage will be eroded, and love, companionship, and perhaps children, will become the only reasons for maintaining a particular relationship. These marriages are likely to be less stable than marriages in the past, although those that do endure will probably provide greater satisfaction to the participants than economically motivated and socially constrained alliances.

—KRISTIN A. MOORE AND ISABEL V. SAWHILL,

"Implication of Women's Employment for Home and Family Life,"
in Patricia Voydanoff, ed., *Work and Family: Changing Roles of Men
and Women* (Palo Alto, Calif., Mayfield Publishing Co., 1984), p. 156.

'Lifetime earnings' in Japan for the class of 1955

*Those who followed a 'lifetime' employment pattern
have received higher earnings than job changers
despite the decline in returns for
education and tenure during economic growth*

ROBERT EVANS JR.

Japan's employment model has been that of *Shūshin Koyō* or "lifetime employment," especially for male college-educated workers.¹ Under such a system an individual becomes employed by a firm upon graduation, and remains in its employ until retirement some 33 or more years later. This is an idealized system which applies to perhaps 40 percent of the labor force, and with quite specific exceptions.² In particular, women and employees in small firms are less well represented. Still, it has remained the model employment relationship and, as such, has dominated Japanese thinking and employer practices.

This article seeks to provide some understanding of earnings in this world of lifetime employment by examining the experiences of male college graduates from the class of 1955.³ An ideal analysis would be based upon individual income records and would be done once the age cohort had completed its life cycle of work and had withdrawn from the labor market. No known data source allows completely for the first, and the second would relegate the analysis to the domain of economic history. Lacking more appropriate data, the article focuses upon that representative person, the average individual, as recorded once every 5 years in reports of the *Wage Structure Survey (Chingin Kōzō Kihon Tōkei Chōsa)*.⁴

Robert Evans Jr., Atran professor of economics, Brandeis University, was visiting professor at Keio Economic Observatory, Keio University, 1982-83.

Tenure versus mobility

The experience of those men who entered the labor force in 1955 has been unique. During that year, Japan's real per capita national income reattained its prewar level (1934-1936).⁵ There followed the 1960's with double-digit rates of real growth, and the 1970's with the oil shock and the first postwar year of negative growth (1974). In 1980, at the age of 47, these men had almost reached the peak of their real annual earnings, and many had attained their positions of highest rank and authority.

In a world whose model is lifetime employment, one would expect that the years of economic expansion following 1955 would have been characterized by increasing lengths of employee tenure. In 1955, college graduates then age 40 to 49 had an average tenure of 9.7 years, a number which certainly reflects the dislocations caused by the war. Twenty-five years later, the average tenure for 40- to 49-year-olds had nearly doubled to 18.9 years.⁶ Yet the pattern of long service in 1980 was not uniform across major industries. Overall, approximately 6 in 10 of those 45 to 49 years of age had worked between 20 and 29 years for their current employer. In public utilities and in finance and insurance the ratios were about 9 in 10, but in the business and personal service industries, it was 4.3 in 10, less than half the average.

The trend toward longer tenure has been experienced by all age cohorts. Ichirō Kitayama reported that the proportion of standard workers (lifetime employees) rose from 29.7

Table 1. Wage index for college-educated men age 45 to 49, and percentage with 20 to 29 years of service, by industry and firm size, 1980

Years of Service	Industry							Firm size		
	All industries	Manufacturing	Wholesale and retail trade	Finance and insurance	Public utilities	Service	Transportation and communication	1000 workers or more	100 to 999 workers	10 to 99 workers
1	72	73	62	45	48	89	115	57	90	76
2	82	79	85	62	88	88	81	75	94	92
3-4	79	79	67	67	85	97	81	86	101	72
5-9	83	75	73	97	82	104	85	84	94	90
10-14	90	88	76	93	75	114	88	93	106	90
15-19	88	90	83	85	80	95	92	90	97	90
20-29	100	100	100	100	100	100	100	100	100	100
Percentage employed with 20-29 years of service	59.6	65.8	50.7	86.7	88.5	42.6	81.9	78.3	53.2	25.2

NOTE: The premium for tenure equals 100 for 20 to 29 years of service.

percent of all workers in 1954 to 54 percent in 1978.⁷ In large firms (1,000 or more employees), the proportion of standard workers was 72.3 percent in 1978, but for small firms (10 to 99 employees), the share was only 30 percent. The proportion of standard workers was highest in finance and insurance, 83.8 percent, and lowest in mining, 28.3 percent. Yet all industries and firm sizes recorded increased proportions over the postwar years including the period after the 1973-74 oil shock.

As indicated in table 1, those in the 1955 cohort who have stayed with their original employer generally have higher salaries than others of the same age and educational background subsequently hired by the same employer. The premium for tenure is the excess value of money associated with consistent, lifelong employment. However, in the service industry, the premium received by those with lifetime employment was smaller compared with the premium of those with only 10 to 14 years of tenure, who joined firms which needed mid-career professionals during the 1960's, when the economy was growing most rapidly.

The premium of tenure was largest for employees of major firms. A newly employed college graduate, 45 to 49 years of age, earned 57 percent of what a similar employee who had been with the firm for 20 to 29 years would have received. Yet, only when long-service employees are compared with those who had changed jobs in the last 5 years,

is the premium for long tenure so high. For major firms, these last few years have been a time of slow growth and weak demand for new employees. As a general rule, the smallest premium for long tenure is paid by small firms which adhere least to the lifetime employment pattern. Mobility for employees in medium sized firms and firms in the service industries has been rewarded over tenure, especially during the years of rapid growth in Japan's economy.

Wage differentials

During 1955-80, the average real wage for the class of '55 has risen 7.38 times. (See table 2.) If bonuses are included, the increase has been 8.35 times.⁸ (For an American, the comparable real increase might be on the order of 2.75 times, or about one-third as much, approximately in line with the different rates of economic growth in the two countries.⁹)

The greatest gain in wages for the 1955 cohort occurred between the ages of 27 and 37. Specifically, wages increased about 70 percent during both 1960-1965 and 1965-1970, when per capita real growth in Japan's economy was 50 percent and 60 percent.

As can be seen in table 3, there was a distinct widening of wage differentials in the early years of postwar growth, 1955-60. Since that time there has been a marked reduction in wage differentials by age, especially during the years of

Table 2. Monthly real wages of the class of 1955, by industry, 1955-80

[In 1,000 of 1975 yen]

Age	Year	All industries		Manufacturing		Trade		Finance and insurance		Public utilities		Services		Transportation and communication	
		Wage	Wage and bonus	Wage	Wage and bonus	Wage	Wage and bonus	Wage	Wage and bonus	Wage	Wage and bonus	Wage	Wage and bonus	Wage	Wage and bonus
22	1955	37.9	148.1	40.4	...	35.4	...	38.3	...	...	...	...	...	36.8	...
27	1960	63.7	...	66.7	...	59.5	...	66.3	...	64.4	...	...	...	63.5	...
32	1965	109.7	139.4	106.7	130.8	102.7	134.6	108.5	153.1	101.1	136.3	...	...	100.0	131.9
37	1970	175.7	243.3	182.4	252.5	172.9	236.0	231.9	357.6	171.0	234.0	...	...	159.5	210.1
42	1975	236.3	339.6	242.2	355.7	237.4	351.6	259.8	396.7	247.5	342.5	232.5	323.5	208.5	291.1
47	1980	279.8	401.6	275.2	396.7	244.5	370.9	322.0	501.5	418.1	421.7	295.8	418.5	243.5	335.2

¹Assumes that the bonus/wage ratio of 1965 also applied in 1955.

SOURCE: *Chingin Kōzō Kihon Tōkei Chōsa [Wage Structure Survey]*, various years.

Table 3. Ratios of earnings of college-educated workers age 40 to 49 to those of similar workers age 25 to 29, by sex, selected years, 1955-80

Year	Men		Women	
	Wage	Wage and bonus	Wage	Wage and bonus
1955	1.81	(1)	1.75	(1)
1960	2.67	(1)	(2)	(2)
1965	2.41	2.64	(2)	(2)
1970	2.04	2.26	(2)	(2)
1975	1.89	2.04	1.69	1.73
1980	1.98	2.19	1.68	1.72

¹Data not available.
²Separate data for female college graduates were not available for 1960-1970.
 SOURCE: *Chingin Kōzō Kihon Chōsa [Wage Structure Survey]*.

rapid growth, 1960-75, and a modest widening during the following 5 years.

In the manufacturing firms, pay differentials between college-educated white-collar workers and high school-educated blue-collar workers have also declined. (See table 4.) In 1960, college graduates, ages 20 to 24, received about 10 percent higher wages than did similarly aged high school-educated blue-collar workers. By 1980, it was the blue-collar workers who received almost 10 percent more. Similarly, the educational premium, which at older ages had been more than 100 percent, declined significantly. Interestingly, the largest percentage declines occurred at older ages. It would appear that the slowdown in the economy after 1974 has also slowed the decline in educational ratios, but it did not, as was the case for the age premium, reverse them. These declines in the relative return to college educated workers may reflect the very large increase in the number of such workers.

While the size of birth cohorts age 20 to 24 generally declined after 1953,¹⁰ the number of graduates did not, because of the large increase in the number of students who continued their education beyond high school. In 1960, there were 17 college graduates for every 100 high school graduates; by 1980, the ratio was 48 to 100. This meant that there were 2.1 times as many college graduates (as a proportion of their age group), ages 25 to 34, compared with

those ages 45 to 54. In 1978, the United States had 1.4 times as many college graduates 25 to 34 as in 1960.

During the period of rapid growth, 1955-75, the Japanese labor market moved from conditions of relative surplus to relative shortage. The ratio of jobs available to job seekers at the Public Employment Offices rose from .22 in 1955 to more than 1 in 1967 and remained above 1 until 1975. This tightening in the labor market affected both the hiring and wage policies of companies. They became willing to hire midcareer employees as well as those just graduating from school. This increased competition for labor resulted in higher wages for those entering at the hiring ports. The relatively lower wages for older workers are a direct result of such pressure. At the same time, the premium for tenure also declined as midcareer employees' wages rose relative to those of continuing employees of similar age and education. In 1965, male college graduates ages 40 to 49 with 5 to 9 years of tenure received 65 percent of the wages of those with 20 to 29 years of service; in 1970, they received 76 percent and in 1981, 82 percent.

Given these large increases in the number of college educated workers, it is hardly surprising that the premium for a college education has declined. However, the largest percentage decline has occurred at older ages where the number of college graduates was relatively small, yet, in percentage terms, the increase in the number of college graduates at older ages had been more rapid.

Labor market for women

The labor market for Japanese women, even well educated ones, is quite distinct from that of men. Traditionally, Japanese society has considered marriage, household responsibilities, and the raising of children as a woman's central concern (though there are signs this view is changing). Thus, the employment of women extends from graduation until the birth of a first child, followed by withdrawal from the labor force and possible reentry some years later. Among female college graduates, ages 45 to 49 in 1980, only 22.2 percent had worked for the same firm for 20 to 29 years, compared with 51.6 percent for their male counterparts. As a consequence, most women have never been given the opportunity to progress to more responsible, higher-paid positions. In 1980, the average wage differential between male college graduates ages 45 to 49 and those 25 to 29 was 2.19, compared with 1.79 for women of similar ages and educational attainment. Yet, even when years of firm service are comparable, women's wages lag behind. In 1980, female college graduates 45 to 49 with 20 to 29 years of company service earned 71.6 percent of the male graduates' income including bonuses. The ratio was lower in large firms, 67 percent, and higher in middle-sized firms, 83.6 percent. The service and transportation and communication industries had greater ratios for women than those in manufacturing and trade. At younger ages, before the impact of more responsible jobs associated with tenure for

Table 4. Earnings of white-collar college graduates relative to those of blue-collar high school graduates by sex and age, selected years, 1960-80

Age	Men						Women
	No bonus		Bonus				
	1960	1965	1965	1970	1975	1980		1980
20-24	1.16	1.08	1.04	.95	.91	.92	1.05
25-29	1.14	1.09	1.14	1.08	1.08	1.04	1.45
30-34	1.32	1.23	1.33	1.28	1.19	1.19	1.92
35-39	1.58	1.44	1.60	1.51	1.42	1.34	2.62
40-44	—	—	—	1.84	1.68	1.59	2.58
45-49	—	—	—	2.17	1.98	1.87	2.52
40-49	1.98	1.78	2.10	1.97	1.79	1.63	2.55

NOTE: Data before 1980 for women not available. Dashes indicate data are not available.
 SOURCE: *Chingin Kōzō Kihon Tōkei Chōsa [Wage Structure Survey]*.

Table 5. Percent of college graduates in the U.S. and Japanese populations, by sex and age, 1978 and 1980

Age	Japan (1980)		United States (1978)	
	Men	Women	Men	Women
25 and under	15.3	2.9	20.4	13.9
25-34	25.2	6.9	27.7	20.0
35-44	17.2	3.2	24.4	15.0
45-54	11.8	1.3	19.7	10.6
55-64	6.3	.5	14.2	8.2
65 and over	4.8	.4	9.6	7.7

SOURCE: *Rōdō Hakusho [Labor White Paper]*, appendix, p. 118. The Japanese data are from the 1980 census and the U.S. data are from the Current Population Reports.

men is felt, the ratio of female to male wages is much higher, 91.0 percent for college graduates 20 to 24 years of age in 1980.

Some of these differences reflect divergent patterns of college attendance. Table 5 shows that the college graduation rate of Japanese women is much lower than that of men. The distribution of courses of study also varies by sex and may contribute to earnings differences: In 1980 the two principal majors for men were social science (47.9 percent) and engineering (24.6 percent), and for women, humanities (35.4 percent) and education (18.2 percent).

Returns for education: U.S. versus Japan

The recent interest in earnings of the U.S. baby-boom generation¹¹ has provided some data which may be compared with those for Japan. The following tabulation presents relatively equivalent income ratios for male college-educated workers in the two countries. The educational premium for workers ages 35 to 44 in the United States appears to have remained constant at about 50 percent, while in Japan that premium, initially about equal to that in the United States, has declined to about 20 percent. Both countries have experienced declining income ratios for younger men, but the Japanese decline has been more pronounced.¹²

College/high school	United States		Japan	
	1967	1979	1965	1980
Age 35-44	1.50	1.49	1.49	1.21
Age 25-34	1.32	1.20	1.24	1.09

The pattern of income-age ratios for the two countries over time is very different. For the United States, the ratio has widened; older college-educated workers now receive

relatively more than do younger college-educated workers. In Japan, that ratio has closed somewhat, although because it was initially large, older college-educated workers continue to earn relatively more than younger ones. There are several possible explanations.¹³ One is the difference between the two countries in the proportions of college-educated workers at different ages. A greater proportion of the highly educated males in the United States are found at older ages as compared with Japan.¹⁴ In the United States, college-educated workers, if they retain their health, may expect to maintain their high salaries into their 60's. In Japan, with nominal retirement between 55 and 60 years of age, a worker must either accept reemployment with the primary firm at lower wages or seek alternative employment, usually at lower wages. In 1980, Japanese college-educated workers 55 to 64 earned 15 percent less than did those 45 to 55. For those 60 to 64, the difference was 28 percent. In 1978, the earnings of U.S. male college graduates 60 to 64 were only 3 percent less than those of college graduates 45 to 49 years of age.¹⁵ Thus, in Japan, a greater proportion of lifetime earnings must be achieved in the middle years.

The premium for tenure

Although there are qualifications, it seems that in Japan those who have not been mobile have received the highest incomes.¹⁶ There are no exactly comparable data for the United States. In a recent article, George Borjas has argued that higher U.S. wages are associated with long tenure, not mobility. Using data from the National Longitudinal Survey for older men, he found that the least mobile men in 1964 had wages 37 percent higher than the most mobile ones. He explained this on the basis of their having obtained more on-the-job training experience.

THOSE GRADUATES WHO ENTERED the labor force in 1955 have seen their incomes rise dramatically, despite the fact that over most of their working lives, the relative returns to both education and experience have been declining.¹⁷ Their entry into the labor market came at a time when the pattern of long tenure was becoming stronger, and generally, it appears that those who have followed the practice of "lifetime employment" have benefited from it. With the exception of the boom years during 1960-70, the long service member of the 1955 cohort has done best. □

FOOTNOTES

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¹For a recent discussion of lifetime employment, see Robert E. Cole, *Work, Mobility and Participation* (Berkeley, University of California Press, 1979), pp. 11-32.

²Robert Evans, Jr., *The Labor Economies of Japan and the United States* (New York, Praeger Publishers, 1971), p. 39.

³Although data for a single year are illustrative, they may be too re-

strictive. The generation of the Great Depression or the one destroyed in Europe during World War I were each composed of several graduating classes. Even multiple year groupings have problems because of substitution across age classes.

⁴The survey has been conducted annually by the Ministry of Labor since 1954. The reports contain data by industry, firm size, education, tenure, and age in 5-year intervals. For the 5-year surveys, 1955, 1960, 1965, 1970, 1975, and 1980, the average age in the relevant age bracket is that of members in this class. In 1955, the average age for those 20 to 24 was a little higher, and the average age for those with less than 6 months of service has been used.

⁵William W. Lockwood, "Japan's New Capitalism," in William Lockwood, ed., *The State and Economic Enterprise in Japan* (Princeton, N.J., Princeton University Press, 1965), p. 449.

⁶For those 40 to 49 years of age, the average tenure was 17.3 years, an 80-percent increase.

⁷Ichiro Kitayama, "Chingin Kōzō Tōkei kara mita Nenkō Chingin to Shūshin Koyō" ["Seniority Wages and Lifetime Employment as seen in the Wage Structure Surveys"], *Rōdō Tōkei Chōsa Geppō* [Monthly Labor Statistics and Research Bulletin], September 1979, pp. 14–22. The meaning of "standard worker" in this article is a less strict definition of the number of years of tenure needed to be considered to have followed a lifetime employment pattern. In 1980, Kitayama's method would show that 75.8 percent of those in the class of 1955 were lifetime employees, but according to my approach, 59 percent followed lifetime employment. The difference is my exclusion of those with 15 to 19 years of tenure.

⁸This assumes that the bonus/wage ratio for 1965 also applied to 1955.

⁹The estimate is based upon movement from a level I position to the top position in the occupations accountant, auditor, job analyst, chemist, and engineer over the years 1955–1980, with the 1955 average being a backward projection. The comparison of growth rates is based upon those contained in *The Statistical Abstract of the United States*, 1981, p. 423.

¹⁰Japan had a short baby boom after the war. Live births, which had been 2.3 million in 1944, peaked in 1949 at 2.7 million, and remained above 2 million until 1953. Since that time, the number of births has exhibited a general pattern of stagnation or decline, with the exception of the years 1971–74, during which the 2-million mark was surpassed. In 1971, there were 12.5 million people 20 to 24 years old, but 10 years later there were only 8.1 million. The bulge appears in the 30-to-34 age range in 1981. This demographic bulge, at least for college graduates, does not seem to have been disproportionately affected by changes in the returns to education, although the dramatic inflation of the early 1970's and the slowdown in growth after the oil shock may mask some effects.

¹¹See, for example, Richard B. Freeman, "The Effect of Demographic Factors on Age Earnings Profiles," *Journal of Human Resources*, Summer

1979, pp. 289–318; and Finis Welch, "Effects of Cohort Size on Earnings, The Baby Boom Babies' Financial Bust," Part II, *Journal of Political Economy*, October 1979, pp. s65–s97.

¹²The U.S. source contained data for the period 1967–79. For comparison with the Japanese data, the closest years were used which also had been used for the class of 1955. For the United States, peak earners are those with 20 to 29 years of experience and new entrants have 1 to 5 years of experience. For Japan, the ratios are for earnings including bonuses of 40- to 49-year-olds for peak earners and 20- to 24-year-olds for new entrants. Also, the 1965 data for Japan for those age 35 to 44 are an estimate based upon a rate of 1.6 for 40- to 49-year-olds and 1.42 for those 35 to 39 years of age. See *Wage Structure Survey* [Chingin Kōzō Kihon Tōkei Chōsa]. Data on full-year workers are from the Current Population Reports, contained in a seminar paper presented by James Smith, Keio University, Tokyo, Nov. 4, 1982.

¹³U.S. age-income profiles are compared with those in Japan in Haruo Shimada, *Earnings Structure and Human Investment* (Tokyo, Kōdansha, 1981). See in particular the discussion on pp. 81–96.

¹⁴For example, 14.2 percent of men age 55 to 64 are college graduates in the United States compared with 6.3 percent in Japan. See *Rōdō Hakusho 1982* [Labor White Paper], appendix, p. 118.

¹⁵*Rōdō Hakusho 1982* [Labor White Paper], reference materials, p. 24.

¹⁶The statement is based upon data which indicate income by length of service with the employer. A worker could be at a disadvantage compared with long-service employees in the same firm and still be better off than if he had not changed jobs. In 1980, 16 percent of those college-educated men who changed jobs obtained at least a 10-percent wage increase. Another approximately 20 percent received up to a 10-percent increase in wages, but may have had lower income owing to a loss in bonuses. *Rōdō Hakusho 1982* [Labor White Paper], reference materials, p. 75.

¹⁷Some sense of how they have fared compared to older and younger college cohorts may be seen in Yoko Sano, "Nenreibetsu Chingin no Cōhōto Bunseki" ["Wage Analysis Based on Cohorts by Age"], *Mita Shōgaku Kenkyū* [Mita Business Review], February 1983, p. 182.

Meatpacking and prepared meats industry: above-average productivity gains

During 1967–82, industry restructuring brought on by the introduction of boxed beef and increases in capital expenditures per employee boosted productivity; labor requirements have been reduced by technological changes

RICHARD B. CARNES

New products and packaging have encouraged industry restructuring and new technology in the red meat products industry¹ and helped boost productivity. Between 1967 and 1982, productivity (as measured by output per hour) increased at an average annual rate of 2.8 percent and from 1976 forward, the rate accelerated to 3.2 percent. In contrast, the comparable figures for all manufacturing industries were lower, 2.4 and 1.6 percent. The productivity growth for the meatpacking and prepared meats industry resulted from an annual increase in output of 2.2 percent and a decline in employee hours of 0.6 percent. (See table 1.)

As with many industries, year-to-year changes in productivity are often closely associated with changes in output. For the red meat products industry, 5 of the 6 years in which output declined were also years in which productivity decreased. Similarly, when output jumped 21 percent in 1976 and 1977, there was an increase in productivity of more than 18 percent.

The two subindustries (meatpacking and prepared meats) examined in this study that make up the red meat products group have different underlying rates of change in productivity. (See table 2.) The meatpacking industry (sic 2011), which accounts for 67 percent of the persons employed in

red meat products and for 80 percent of the value of shipments, had a productivity growth rate of 3.2 percent between 1967 and 1982. This growth accelerated to 3.6 percent since 1975. Productivity in the prepared meats industry (sausages and other prepared meats, sic 2013) grew at a slower 1.9-percent annual rate during the study period, and advanced to 2.4 percent since 1975.

The output and hours of these two industries also showed different rates of growth from 1967 to 1982. Output in the prepared meats industry rose at an annual rate of 3.4 percent and hours increased 1.5 percent, while in meatpacking plants output grew only 1.7 percent and hours dropped 1.4 percent. Both industries experienced output declines in 1969, 1973, 1975, 1978, and 1982. However, these decreases in output had less adverse effect on productivity in meatpacking plants than for prepared meat processors, as meatpackers were better able to adjust their work force hours to meet demand changes. For example, in 1982 when output dropped more than 4 percent in both the meatpacking and prepared meat industries, productivity fell 4.1 percent for meat processors and rose 1.3 percent for meatpackers.

Productivity in meatpacking plants has benefited from increased mechanization resulting from the marketing of boxed beef (vacuum packaged subprimal cuts of beef). For the makers of sausages and other prepared meats, productivity trends reflect both strong demand and more gradual technological changes in batch processing equipment typical of this industry.

Richard B. Carnes is an economist in the Division of Industry Productivity Studies, Bureau of Labor Statistics. John L. Carey, project coordinator, assisted in developing the productivity measure.

Table 1. Productivity and related indexes for the red meat products industry, 1967-82

[1977 = 100]

Year	Output per employee hour	Output	All employee hours	Employees
1967	74.8	76.5	102.3	100.2
1968	76.6	77.3	100.9	100.7
1969	75.7	76.2	100.6	100.2
1970	77.3	78.3	101.3	100.2
1971	79.3	81.8	103.1	101.5
1972	85.0	84.9	99.9	99.5
1973	82.8	78.2	94.5	94.8
1974	84.5	85.2	100.8	99.5
1975	84.4	82.3	97.5	97.4
1976	93.4	92.8	99.4	98.4
1977	100.0	100.0	100.0	100.0
1978	98.7	97.0	98.3	98.8
1979	101.7	97.9	96.3	96.1
1980	107.0	101.4	94.8	95.4
1981	107.9	100.5	93.1	93.5
1982	107.7	96.3	89.4	90.2
Average annual rates of change (in percent)				
1967-82	2.8	2.2	-0.6	-0.5
1967-72	2.2	2.1	-0.1	0.0
1972-75	0.0	-0.1	-0.1	-0.2
1975-80	4.2	3.4	-0.7	-0.5
1980-82	0.3	-2.5	-2.9	-2.8

Subperiod productivity trends

In the red meat products industry, four distinct subperiod trends in productivity emerge. During 1967-72, output per hour advanced at an annual rate of 2.2 percent. Productivity fell in only 1 year, 1969, due to a drop in demand linked with a significant increase in retail meat prices. From 1972 to 1975, there was no productivity change as a result of output declines in 1973 and 1975. This period was marked by a protracted 17-month recession and sharply rising meat prices. During 1975-80, productivity showed its greatest gains. Output per hour rose at an annual rate of 4.2 percent, as output rose 3.4 percent and hours declined 0.7. During this period, consumer meat prices increased more slowly than other components of the Consumer Price Index, helping to keep output above its long-term rate of growth. From 1980 to 1982, there was little productivity gain as a result of 2 years of declining output associated with the economic recession.

Productivity for meatpackers and prepared meat processors showed similar variability in these four subperiods. Productivity in meatpacking establishments grew 2.9 percent annually from 1967 to 1972, rose 0.4 percent during 1972-75, climbed 3.7 percent from 1975 to 1980, and advanced 2.9 percent since 1980. In prepared meat processing plants, productivity grew marginally during 1967-72, dropped at an annual rate of 1.0 percent from 1972 to 1975, jumped 5.4 percent annually from 1975 to 1980, and declined 7.4 percent in 1981 and 4.1 percent in 1982.

Demand for red meat products

Output for meatpackers and prepared meat processors grew at an average annual rate of 2.2 percent from 1967 to 1982, which is similar to the 2.4-percent trend for manu-

facturing as a whole. Demographic factors have helped raise demand for meat products during this period and include rising living standards, population growth, and the larger number of working women. This last factor has led to increased consumption of higher valued prepared meats away from home. Per capita consumption of beef rose 20 percent from 1967 to 1976, but has fallen since then. Per capita consumption of pork has risen, while that of veal, lamb, and mutton have declined. The falloff in per capita consumption of red meat products and increased use of poultry items is expected to make the constant-dollar demand for red meat smaller between now and 1987, about 1.5 percent annually.²

For meatpackers, the trend has been away from marketing whole carcass beef shipped by rail to the shipment of boxed beef transported in trucks. In addition, the growing institutional market has increased the need for prepared meat products and the packaging of smaller portions. In the prepared meat industry, there has been a product shift to hams, sausages, and luncheon meat and away from franks, bologna, and bacon. Canned ham has declined in relative importance and has been replaced by more efficiently packaged, film-wrapped ham. The trend toward two-earner families and consequently to more eating out is expected to continue with an increasing demand for a larger variety of processed convenience meat. Current emphasis in the meat industry is on ways to produce more products which have lower caloric, salt, and fat content.

Small declines in employment

Despite increased production, employment in the red meat products industry dropped 0.5 percent annually, from 242,000 in 1967 to 218,000 in 1982. Employment trends have varied among the subindustries. The meatpacking industry work force declined at an average annual rate of 1.3 percent. Employment fell in every year except 1974, 1976, and 1977, which were marked by above-average output increases. In the prepared meats industry, employment trends were positive during 1967-82, growing at an annual rate of 1.6 percent, with employment falling in only 2 years. In 1975, employment declined following the 1974 recession and an industry falloff in demand; in 1979, employment dropped following a decrease in industry demand in the preceding year.

The red meat products industry is more labor-intensive than manufacturing, in general, and has a higher-than-average proportion of production workers. To produce an additional \$1 in value-added sales requires 27 percent more production worker hours than for all manufacturing. For meatpackers, whose labor costs average one-half of all operating expenses, 36 percent more production worker hours are required than for all manufacturing and in the prepared meat industry, 11 percent more labor time is needed. In the meatpacking industry, production workers make up 82 percent of the work force and in the prepared meats industry

they account for 74 percent, compared with 68 percent for all manufacturing. In meatpacking, additional production workers are needed because of the difficulties associated with processing carcasses that are not uniform in size or weight.

Women account for a relatively small but growing percentage of the work force in the red meat products industry. During 1967-82, their proportion increased from 18 to 22 percent, compared with a higher level for total manufacturing where female employment increased from 28 to 32 percent. In meatpacking plants, which have a higher number of physically demanding occupations, the proportion of women has increased from 14 to 18 percent, while in the prepared meats industry their proportion has remained at about 30 percent. Average hourly earnings for production workers in the red meat products industry averaged \$9.02 in 1982, compared with \$7.67 for the private nonfarm economy and \$8.50 for manufacturing as a whole.

Over the past decade, labor turnover has been relatively high in the meat products industry. For meatpackers, the accession rate, which includes new hires and recalls, averaged 4.8 per 100 employees each year, compared with 4.0 for all manufacturing. The separation rate, which includes quits and layoffs, was also higher, averaging 5 per 100 employees, compared with 4.1 for all manufacturing. In the prepared meats industry, the accession rate was similar to the average for all manufacturing, while the separation rate was about 10 percent higher. In the past several years, labor turnover rates have narrowed between meatpackers and meat processors but still remain high, relative to other manufacturing industries.

In meatpacking plants, slaughtering and the processing of cattle carcasses into boxed beef require extensive use of manual labor. Unlike processed meat manufacturing, many

of these tasks are not suitable for machine processing. Major work functions in both meatpacking and prepared meat product plants include cutting, curing, and smoking prepared sausages and other meats; packing and shipping; and cleaning and plant maintenance. Additionally, meatpacking plants have workers engaged in animal handling and slaughtering operations. In 1980, operatives made up nearly two-thirds of the industry's work force, while craftworkers and laborers each accounted for about 8 percent. White-collar employees had declined in relative importance, which is in contrast to an increasing trend in many other manufacturing industries. White-collar employees accounted for 15 percent of the work force, while service workers represented 5 percent.

For meatpackers, 40 percent of the work force is located in the Middle West, while in the prepared meat industry 30 percent of the work force is concentrated in the Great Lakes area. Slaughter and fabrication facilities tend to be at the same location and close to a source of cattle. Metropolitan areas accounted for 60 percent of the meatpacking work force and nearly 80 percent of the prepared meat work force. Multiplant companies make up about two-thirds of those employed in meatpacking compared with slightly less than half in prepared meat products. Establishments operated by multiplant companies are several times larger than single plant companies. In 1979, multiplant establishments averaged 475 employees in meatpacking and 190 employees in prepared meats, compared with single plants with 85 employees in meatpacking and 70 in prepared meats.³

Plant size

In 1977, the Bureau of the Census reported 2,590 meatpacking establishments and 1,345 prepared meat establishments. A small percentage of these accounted for the bulk of industry shipments. In meatpacking, nearly one-half of the establishments reported fewer than four employees and collectively accounted for only 1 percent of shipments. In contrast, 11 percent of meatpacking establishments average more than 100 employees and generated more than 80 percent of the industry value of shipments. Similarly, in the prepared meats industry, establishments averaging fewer than four employees made up 32 percent of total industry establishments but less than 1 percent of shipments. Fourteen percent of the establishments employed 100 workers or more and generated 72 percent of sales.

During 1967-77, there was little change in the number of establishments or the average number of employees per establishment for the meatpacking and prepared meats industry. However, the component industries showed different movements. In meatpacking, the number of establishments declined 4 percent and the number of employees per establishment fell from 63 to 56. In the prepared meats industry, there were 2 percent fewer establishments than in 1967, while the average number of employees per establishment rose from 40 to 48.

Since 1967, there has been a trend toward fewer large-

Table 2. Productivity indexes for the red meat products industry and two components, 1967-82

[1977 = 100]

Year	Red meat products	Meat-packing	Sausages and other prepared meats
1967	74.8	73.6	79.2
1968	76.6	76.1	78.9
1969	75.7	76.3	73.8
1970	77.3	78.7	72.8
1971	79.3	79.8	78.8
1972	85.0	87.1	80.2
1973	82.8	88.7	69.1
1974	84.5	88.1	76.7
1975	84.4	88.6	74.8
1976	93.4	97.5	84.2
1977	100.0	100.0	100.0
1978	98.7	100.9	93.6
1979	101.7	104.9	94.6
1980	107.0	109.1	101.8
1981	107.9	114.1	94.3
1982	107.7	115.6	90.4
Average annual rates of change (in percent)			
1967-82	2.8	3.2	1.9
1967-72	2.2	2.9	0.1
1972-75	0.0	0.4	-1.0
1975-80	4.2	3.7	5.4
1980-82	0.3	2.9	-5.8

scale cattle and hog plants but those remaining have increased their volume of operations. In 1975, 211 cattle plants accounted for 73 percent of commercial slaughter; by 1982, 134 plants made up 80 percent of such slaughter. Economies of scale in hog slaughtering have been similarly affected.⁴

Capital expenditures

Increases in capital expenditures are important and frequently contribute to advances in output per hour. During 1967–81, the annual rate of growth in new capital expenditures per employee averaged 8.9 percent in meatpacking and 10.2 percent in prepared meats. In comparison, the average for all manufacturing during this same period was 10.6 percent. In 1981, the level of capital expenditures per employee was less in meatpacking and prepared meats than for manufacturing in general. In 1981, meatpackers expended \$2,400 per employee and prepared meat processors, \$2,600 per employee for new capital expenditures, compared with \$3,900 for all manufacturers. In 1980, the most recent year for which data are available, meatpackers and prepared meat processors spent slightly more than 70 percent of their new capital expenditures on machinery and equipment, compared with 80 percent for all manufacturing. The remainder was used to finance new structures and plant additions.

Technological advances

The structure of the red meat industry has changed rapidly over the study period. For meatpackers, the low return on sales, relative to other manufacturing sectors, has encouraged volume operations. Because of increasing market demand for products such as boxed beef, rebound meat, and portioned packaging, there has been an ongoing need for new equipment and redesigned plant layouts. Technology has been introduced which has resulted in increased yields and improved product flow. Consumer demand for convenience products and smaller portions has encouraged the use of equipment capable of processing a larger variety of meat products with higher speed and product consistency.

In meatpacking plants, significant technological innovations were made in the 1960's and 1970's, which automated processing and helped reduce unit labor requirements. For beef slaughtering, carcasses are moved on an overhead rail system between cutting stations replacing the older "bed" system. To reduce steps, workers equipped with power knives and saws are positioned on moving platforms. These platforms, which are raised and lowered as the carcass passes, allow the operator to use a balanced power saw with a minimal need to alter the saw position.

For hide removal, skilled workers have largely been eliminated through the use of mechanical hide pullers. Labor requirements in rendering operations have been reduced in some cases to as few as one worker operating a central control panel.⁵ For hog slaughtering, similar labor-saving

technology has been introduced.

When beef is boxed, it goes through further fabrication as the carcass is processed into primal and subprimal cuts. This stage of processing requires extensive use of manual labor and has been difficult to automate except for the packaging and warehousing of boxed beef. After cutting, the beef is vacuum packed and placed in cartons according to specific market requirements. Boxed beef currently accounts for more than 50 percent of the federally inspected slaughter of steers and heifers. In the future, packers are expected to further fabricate meat into final retail cuts, which may lead to more automated cutting and packaging equipment.

In the prepared meats industry, portion-control steak cuts require more labor to fabricate than the processed meat products. Boneless steaks must be tenderized and individually portion-cut with powered meat slicers. These products are then wrapped, weighed, vacuum packaged, and blast frozen. In contrast, processed and shaped meats are prepared in batch and use more automated grinding and blending equipment. Production lines are centrally controlled with computers, which are used to monitor and control ingredients and the proportion of fat content.

Equipment used to process meat includes continuous vacuum sausage stuffers and vacuum packaging machines. Labor requirements have been reduced by the use of automatic sausage- and weiner-making equipment that provides a continuous filling, linking, and looping operation. Labor requirements have also been reduced by automatic deboning of meat, which is currently equaling yields obtained in manual boning. Slicing machines are being introduced in the prepared meats industry that make use of microprocessor technology to ensure portion-controlled cuts, high speed, and uniform stacking. In ham processing, a recent technological change is the cooking of ham in the finished package, which has lowered labor requirements.

Once meat is processed, the packaging and shipping stage is highly automated. Labor requirements have been reduced with high-speed packing equipment, conveyors, automatic palletizing machines, and storage and retrieval systems controlled by computer. In the shipping department, orders are placed in word processing equipment which activate computer-controlled cranes to move products to the loading docks. Plant storage and shipping include computerized robotics to automatically inventory and transfer boxed beef.

Unlike the semiautomated line operations of the volume packing and processing houses, small plants in the red meat products industry are often involved in a diversified and varied range of activity. It is not uncommon for a small plant to have a slaughter operation for beef, pork, lamb, veal, and goats; processing that includes cutting, wrapping, and freezing of fresh products; curing, including brine, stitch, or artery pumping, smokehouse operations, and aging and drying activity; locker rentals; portion-control cutting; custom processing; direct retail sales through service counters; and various seasonal production changes. This emphasis on

the further processing of meat products suggests that small plants will continue to be more labor intensive and less amenable to automation.

Industry trends

Declining employment and plant closings have resulted from the low-capacity utilization rates experienced in many meatpacking and prepared meat establishments.⁶ Many plants have become outdated and subject to competitive pressure from large production facilities capable of slaughtering and processing more than 5,000 cattle and 15,000 hogs per day. In the prepared meat industry, larger capacity plants are also becoming more common as is the trend toward a greater variety of "further processed" meat products. Pork processors have increased their size of operations and further diversified their production. Boneless, vacuum-packaged pork is available for retail display or in larger cuts which can be further processed by the butcher.

More and more prepared meat products are being marketed to fit the requirements of the expanding commercial and institutional market and also to meet consumer needs for convenience foods and smaller portions. Some processed meats, for example, wieners and lunch meats, have declined as a percent of the market but product variety has increased. New food products are being developed which will make use of nonmeat protein along with red meat protein. At

present some beef and lamb cuts are underutilized because of toughness and end up being sold as ground meat.

As technology improves, restructured meat will replace some of the beef currently marketed as ground products and intact muscle cuts. Restructured meat requires that muscles and large meat pieces be reduced in size and rebound into a desired shape such as steaks and roasts; flaking machines are needed to form and texture such meat. Restructured meat products now account for a small part of the retail meat sales but their proportion is expected to grow. Research is continuing to provide restructured meat products to the institutional meal market. Equipment is needed that will meet rigid portion control and composition control.⁷

AN INCREASE IN PRODUCTIVITY in the red meat products industry is expected during the 1980's as a result of more sophisticated equipment and further industry restructuring. Major technological changes have been made in slaughtering operations over the past 15 years and emphasis will probably shift to technology needed for the further fabrication of meat. Boxed beef production is continuing to influence plant size by encouraging volume operations. In the more capital-intensive prepared meat industry, batch processing is already highly mechanized but productivity should also grow as equipment is modified to meet the needs for new product development. □

FOOTNOTES

¹ The red meat products industry makes up part of meat products which is designated as sic 201 in the *Standard Industrial Classification Manual 1972* and its 1977 supplement, issued by the U.S. Office of Management and Budget. Meatpacking plants, sic 2011, are composed of establishments primarily engaged in the slaughtering, for their own account or on a contract basis for the trade, of cattle, hogs, sheep, lambs, and calves for meat to be sold or to be used on the same premises in canning and curing, and in making sausage, lard, and other products. Sausage and other prepared meat products plants, sic 2013, are composed of establishments primarily engaged in manufacturing sausages, cured meats, smoked casings, and other prepared meats and meat specialties from purchased carcasses and other materials. Sausage kitchens and other prepared meat plants operated by packing houses as separate establishments also are included in this industry.

² 1983 *U.S. Industrial Outlook* (U.S. Department of Commerce, Bureau

of Industrial Economics, 1983), p. 37-7.

³ *Industry Wage Survey: Meat Products, May 1979*, Bulletin 2082 (Bureau of Labor Statistics, 1980), p. 2.

⁴ *Meatfacts, 1983 Edition* (Washington, American Meat Institute, 1983), p. 13.

⁵ *Technology and Labor in Four Industries*, Bulletin 2104 (Bureau of Labor Statistics, 1982), pp. 1-8.

⁶ 1983 *U.S. Industrial Outlook*, pp. 37-4 to 37-6. See also "The Return of the Meatpackers," *Fortune*, May 2, 1983, p. 257; and Rod Bowling, "SWMPA Generates Ideas," *The National Provisioner*, Sept. 3, 1983, pp. 6-8.

⁷ Roger Mandigo, "Restructured beef products may help reverse market trends," *The National Provisioner*, Apr. 2, 1983 p. 56.

APPENDIX: Measurement techniques and limitations

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

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

In the red meat products industry, real output was estimated from data on both physical quantities and value adjusted for change in price. Physical quantity data on carcass beef, and primal and fabricated cuts of beef were obtained from the U.S. Department of Agriculture. The boxed beef component of this physical quantity was adjusted to reflect the additional labor required to fabricate and package this product. The other components of output for sic 2011 and 2013 were estimated using a deflated value technique. Changes in price levels were removed from current-dollar values of production by means of appropriate price indexes.

To combine segments of the output index into a total

output measure, employee hour weights relating to the individual segments were used, resulting in a final output index that is conceptually close to the preferred output measure.

The indexes of output per employee 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 factors such as changes in technology, capital investment, capacity uti-

lization, plant design and layout, skill and effort of the work force, managerial ability, and labor-management relations.

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

Mid-Air—1931 and 1984



Louis Lozowick's lithograph, "Mid-Air" (left picture), which appeared on the front and back covers of the October 1983 *Monthly Labor Review*, drew praise from art lovers but not from those conscious about safety on construction sites.

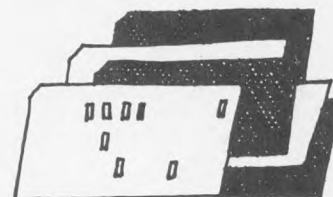
Thorne G. Auchter, then Assistant Secretary of Labor for Occupational Safety and Health, wrote the *Review* that, in 1931, "a construction worker riding to work on the ball and hook of a crane" may have been "a symbol of the American work-force—tough, fearless, and hard-working. But to the modern safety professional, this scene is another, more frightening kind of symbol. It illustrates deadly hazards that were common practices 50 years ago."

"Even today," Auchter added, "improper hoisting of personnel causes tragedies. Last spring, for example, four

workers were killed while being lifted by a crane during construction at a Florida football stadium."

Auchter provided a photograph (right picture) of a hoisting scene at a contemporary site. He reported that OSHA has prepared safety standards for hoists and has circulated them for public comment.





Federal Supplemental Compensation and Unemployment Insurance recipients

ARLENE HOLEN

In September 1982, the Federal Supplemental Compensation program was enacted to provide benefits to individuals who exhaust all of their rights to benefits under the regular and extended Unemployment Insurance programs. In States where extended benefits are not in effect, exhaustees of regular unemployment insurance immediately become eligible for Federal Supplemental Compensation. In States on extended benefits, an individual must exhaust those benefits before collecting Federal Supplemental Compensation. Originally, 6 to 10 additional weeks of benefits were provided by the Federal Supplemental Compensation program, depending on each State's insured unemployment rate and extended benefit status. Benefit duration was changed to 8 to 16 weeks in January 1983, and to 8 to 14 weeks in April.

From September through December 1982, relatively few Unemployment Insurance recipients went on to receive Federal Supplemental Compensation benefits—only 10 percent did so, and 45 percent of them had first received extended benefits. The age and sex distributions of Federal Supplemental Compensation recipients were quite similar to those of regular Unemployment Insurance recipients who did not receive Federal Supplemental Compensation benefits. (See table 1.) Two-thirds of both Federal Supplemental Compensation and Unemployment Insurance recipients were between the ages of 25 and 54, 20 percent were under age 25, and about 40 percent were women. However, 27 percent of Federal Supplemental Compensation recipients were non-white, compared with 18 percent of the regular Unemployment Insurance recipients.

Unemployment Insurance recipients who had worked in the cyclically sensitive manufacturing industries prior to their unemployment were less likely to go on to become Federal Supplemental Compensation recipients. However,

those from the service-producing industries (services; wholesale and retail trade; finance, insurance, and real estate; public administration; and transportation and public utilities) were more likely to become Federal Supplemental Compensation recipients. Forty-three percent of Federal Supplemental Compensation recipients were from manufacturing and 45 percent were from service-producing industries. In contrast, 53 percent of Unemployment Insurance recipients were from manufacturing and 33 percent were from service-producing industries.

Those Federal Supplemental Compensation recipients who first received extended benefits differed from those who did not with respect to sex, race, and industry: more were men, more were white, and more came from manufacturing. The industry difference occurred because the States that triggered onto extended benefits had higher unemployment rates and relatively more concentration in durable manufacturing, and extended benefits recipients going on to receive Federal Supplemental Compensation have longer durations of unemployment.

The majority of Federal Supplemental Compensation recipients had not provided the sole support for household dependents; 63 percent had either no dependents or a working spouse. The proportion married, 57 percent, was somewhat lower than for Unemployment Insurance recipients, but numbers of dependents were similar.

A significant portion (17 percent) of Federal Supplemental Compensation recipients were unemployed for reasons other than layoff, compared with regular Unemployment Insurance beneficiaries (13 percent). More than 10 percent of Federal Supplemental Compensation recipients had been fired from their last job, and 4 percent were not working because they had quit their last job over unsatisfactory work arrangements, had retired, or were involved in a labor dispute.

Although Federal Supplemental Compensation was enacted to provide assistance to those who suffered unemployment and benefit exhaustion associated with the recession, recipients were disproportionately from less cyclical industries such as services, in which employment was growing. Federal Supplemental Compensation recipients were less likely than Unemployment Insurance recipients to have been laid off from their previous job, but were more likely to have quit or to have been fired. In other words, Federal

Arlene Holen is an economist with the Office of Management and Budget. She was formerly with the U.S. Department of Labor, where this analysis was prepared.

Table 1. Selected characteristics of recipients of regular Unemployment Insurance and Federal Supplemental Compensation benefits, September through December 1982

(In percent)

Characteristic	Regular Unemployment Insurance beneficiaries (not receiving Federal Supplemental Compensation)	Federal Supplemental Compensation beneficiaries
Age:		
Under 22 years	10.9	8.3
22 to 24 years	11.3	11.7
25 to 54 years	65.6	67.2
55 to 64 years	10.3	11.3
65 years and over	1.9	1.6
Sex and race:		
Men	61.4	59.9
Women	38.6	40.1
White	82.0	73.3
Nonwhite	18.0	26.7
Industry:		
Agriculture, forestry, and fisheries	1.1	.9
Mining	1.2	1.0
Construction	12.0	9.5
Manufacturing	53.0	43.2
Durable	26.8	25.4
Nondurable	24.9	16.3
Miscellaneous	1.2	1.5
Transportation, communication, and public utilities	3.5	3.7
Wholesale trade	4.2	6.4
Retail trade	9.1	11.6
Finance, insurance, and real estate	1.8	4.0
Services	12.4	17.3
Public administration	1.5	2.1
Not covered	.3	.3

Supplemental Compensation recipients' joblessness was more often caused by factors other than the recession.

Recipients of Federal Supplemental Compensation under extended reachback provisions (those who had exhausted their regular and extended benefits more than 3 months before Federal Supplemental Compensation became effective) were less likely than other Federal Supplemental Compensation beneficiaries to have separated from cyclical industries such as durable manufacturing. Lower proportions of those recipients were on layoff than other Federal Supplemental Compensation recipients and higher proportions were fired or quit their previous job.

The survey of Federal Supplemental Compensation recipients was conducted by the U.S. Department of Labor, and covered the September through December 1982 period. Data are from the Continuous Wage and Benefit History project of the Unemployment Insurance Service, longitudinal records drawn from State Unemployment Insurance administrative files, and information from a questionnaire administered at the time of initial filing for Unemployment Insurance. About 28,000 Federal Supplemental Compensation recipients from 12 States (Georgia, Idaho, Missouri, Nevada, New Mexico, New York, North Carolina, Pennsylvania, South Carolina, Utah, Washington, and Wisconsin) were covered by the survey.¹ The 12 States combined closely resemble the Nation in their insured unemployment rates, industrial mix, and demographic characteristics. Thus,

the findings are likely to reflect the national situation.

A copy of the full study, *Characteristics of Recipients of Federal Supplemental Compensation*, is available from the U.S. Department of Labor, Assistant Secretary for Policy, Office of Research and Technical Support, Washington, D.C. 20210. □

—FOOTNOTE—

¹ Although the sample from these States is large, estimates are subject to sampling variability. It is possible that some of the differences in the report are not statistically significant.

The black population: a statistical view, 1970–82

Statistics from the recent Bureau of Census Population Surveys and the 1980 census show improvement in income levels of black married-couple families, educational attainment and school enrollment, and homeownership among blacks during the 1970's. But the data also reveal setbacks influenced by high black unemployment, sharply increased divorce and separation rates, and a rise in family households maintained by women.

Population growth and distribution

Between 1970 and 1980, the black population increased by 17.3 percent, from 22.6 million to 26.5 million. In 1980, blacks represented approximately 12 percent of the total population.

In 1980, blacks constituted more than 20 percent of the population in seven States—Mississippi (35 percent), South Carolina (30 percent), Louisiana (29 percent), Georgia (27 percent), Alabama (26 percent), Maryland (23 percent), and North Carolina (22 percent). Twelve States had black populations of 1 million or more, an increase of three States (Michigan, Ohio, and Virginia) from 1970.

New York had the largest black population of any city (1,784,337) in 1980, followed by Chicago (1,197,000), Detroit (758,939), Philadelphia (638,878), and Los Angeles (505,210).

Of the 100 cities with the largest black population, the city with the highest percentage was East St. Louis, Ill. (96 percent). In Washington, D.C. about 70 percent of the population was black in 1980, about the same as in 1970, although the total population in the city actually dropped during the decade.

The traditional large black migration from the South to points north and west appeared to end in the 1970 decade. Between 1975 and 1980, about 415,000 blacks moved to the South, whereas only about 220,000 left, thereby reversing the longstanding black exodus from the South. In 1980, the proportion of the black population residing in the South was 53 percent, the same as in 1970.

Some income gain, but poverty increases

While median income of black families continued to lag behind the median income of the general population, black married-couple families registered a 6.9-percent gain in real median income between 1971 and 1981, improving from \$18,370 to \$19,620 in constant dollars. The comparable figures for white married-couple families were \$25,130 in 1971 and \$25,470 in 1981.

While the income level for black married-couple families was climbing during the decade of the 1970's, the proportion that this group constituted of all black families dropped from 64 percent in 1972 to 55 percent in 1982.

In real terms, the 1981 median income for all black families (\$13,270) dropped 8.3 percent from 1971 and dropped 5.2 percent between 1980 and 1981. Median income for white families in 1981 was \$23,520, down only 2.7 percent from 1980 when adjusted for inflation.

In 1971, the median income for black families was 60 percent of the median income of white families—\$14,460 versus \$23,970. By 1981, this ratio fell to 56 percent.

According to the report, the decline in black family median income reflects, in part, the increase in the proportion of families maintained by women with no husband present and the lack of income gains for these families. Among blacks, such families totaled 2.6 million in 1982, or about 41 percent of all black families, up from 32 percent in 1972. The median income for families maintained by black female householders with no husband present was \$7,510 in 1981, about 38 percent of the median of black married-couple families (\$19,620).

Persistent inflation, a stagnant economy, and family breakup were reflected in the rising number of persons classified as poor between 1979 and 1981. During this period, the total number of persons in poverty increased by 5.4 million.

In 1970, about 8 million blacks (34 percent) and 17 million whites (10 percent) had incomes below the poverty level. By 1981, the number increased to 9 million for blacks (34 percent) and 22 million for whites (11 percent). (The poverty level for 1981 was \$9,287 for a family of four.)

During the 1970's, an increasing concentration of the poor in families maintained by women was especially evident among blacks. The number of poor black families with a female householder rose from 834,000 in 1970 to 1.4 million in 1981. These families accounted for 70 percent of all poor black families in 1981, substantially up from 56 percent in 1970.

Family statistics

Families maintained by black women increased during the decade. In 1970, about 28 percent of the 4.9 million black families were maintained by women. By 1982, however, almost 41 percent of the 6.4 million black families

were maintained by women. The comparable percentage for whites during this period increased from 9 to 12 percent. In 1982, the majority of black families were still maintained by married couples. However, since 1970, the percentage of all black families maintained by married couples has declined from 68 to 55 percent.

Among black women who maintained families in 1982, 32 percent had never married, compared to 11 percent for white families maintained by a woman.

The number of black children living with both parents dropped sharply between 1970 and 1982, while the percentage of black children living in one-parent situations increased from 32 to 49 percent. About 8 percent of the children lived with neither parent in 1982, but in most cases resided with another relative. White children living with one parent also increased, doubling from 9 percent in 1970 to 17 percent in 1982. Still, 81 percent of white children lived with both parents in 1982, compared with 42 percent of black children. Black children constituted just 15 percent of all children under 18 years of age in 1982, but represented 34 percent of all children living with only one parent.

The proportion of births occurring to unmarried mothers increased during the decade for both black and white women, in part due to declines in births to married women. In 1980, more than one-half of the births to black women (55 percent) occurred out of wedlock, up from 38 percent in 1970. The corresponding proportion for white women increased from 6.0 to 11.0 percent during the same period.

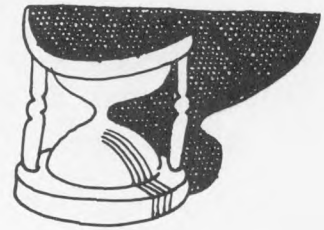
In contrast to the pattern noted above, the nonmarital fertility rate¹ for black women declined from 96 births per 1,000 unmarried women 15 to 44 years old in 1970 to 83 per 1,000 in 1980. The rate for white women increased from 14 to 18 per 1,000 during the same period.

This excerpt is adapted from the U.S. Bureau of the Census report, *America's Black Population: 1970 to 1982*,² Special Publication P10/POP-83-1, which is for sale by the Superintendent of Documents, U.S. Government Printing Office, Washington, D.C. 20402, or any U.S. Department of Commerce district office. The cost is \$3.50 per copy. □

FOOTNOTES

¹ Rate computed by relating total nonmarital births, regardless of age of mother, to unmarried women 15 to 44 years old.

² The full report includes data from the Bureau of the Census, the Bureau of Labor Statistics, the National Center for Health Statistics (NCHS), and the U.S. Department of Defense. The Census Bureau data, which cover a wide range of topics, were collected primarily in the 1980 Census of Population and in the monthly Current Population Survey (CPS). The BLS data on labor force are from the CPS; the NCHS data on vital statistics and mortality are from its registration system; and the data from the Department of Defense are from administrative records.



Major Agreements Expiring Next Month

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

Employer and location	Industry	Labor organization ¹	Number of workers
Allied Construction Employers Association, Inc. (Wisconsin)	Construction	Carpenters	3,200
Alterman Foods, Inc. (Interstate)	Retail trade	Food and Commercial Workers	3,000
Anthracite Operators (Pennsylvania)	Mining	Mine Workers (Ind.)	2,500
Associated Brick Mason Contractors of Greater New York, Inc. (New York, N.Y.)	Construction	Bricklayers	2,500
Associated General Contractors of America, Inc.: Detroit Chapter, 3 agreements (Michigan)	Construction	Carpenters; Iron Workers; Bricklayers; Plasterers and Cement Masons	13,200
Ohio Building Chapter, Cincinnati Division	Construction	Carpenters	3,500
Wisconsin Chapter	Construction	Carpenters	2,000
Associated Steel Erectors of Chicago, Illinois	Construction	Iron Workers	2,350
Building Trades Employers Association, 2 agreements (Rochester, N.Y.)	Construction	Carpenters; Laborers	3,400
Colonial Stores, Inc. (Interstate)	Retail trade	Food and Commercial Workers	1,750
Connecticut Light and Power Co. (Connecticut)	Utilities	Electrical Workers (IBEW)	1,900
Construction Industry Employers Association, 4 agreements (New York)	Construction	Carpenters; Iron Workers; Laborers; Operating Engineers	8,200
Council of Hawaii Hotels (Hawaii)	Hotels	Longshoremen's Association	4,750
Detroit Mason Contractors' Association (Michigan)	Construction	Bricklayers	3,300
Dow Chemical Company, Texas Division (Freeport, Tex.)	Chemicals	Operating Engineers	1,750
Electrical Contractors' Association of City of Chicago (Illinois)	Construction	Electrical Workers (IBEW)	6,500
Erwin Mills	Textiles	Textile Workers	1,200
General Telephone Company of the Northwest, Inc. (Washington)	Communication	Electrical Workers (IBEW)	4,200
Great Western Sugar Co. (Interstate)	Food products	Teamsters (Ind.)	3,900
Houston Lighting and Power Co. (Texas)	Utilities	Electrical Workers (IBEW)	4,500
Independent Employers-Mason Tenders of Greater New York (New York, N.Y.) ²	Construction	Laborers	4,000
Independent Non-Association Restaurant Employers (Seattle, Wash.) ²	Restaurants	Hotel Employees and Restaurant Employees	2,500
Illinois Regional Insulation Contractors Association (Illinois)	Construction	Asbestos Workers	1,200
International Paper Co., Androscoggin Mill (Maine)	Lumber	Paperworkers; Firemen and Oilers	1,000
Iron League of Chicago, Inc. (Illinois)	Construction	Iron Workers	1,000
Keystone Building Contractors Association, Inc. (Pennsylvania)	Construction	Carpenters	1,800
Kimberly-Clark Corp., Neenah Mill (Wisconsin)	Paper	Paperworkers	1,300
Kroger Company, Atlanta Division (Interstate)	Retail trade	Food and Commercial Workers	4,350
Longview Fibre Co. (Longview, Wash.)	Paper	Western Pulp and Paperworkers (Ind.)	1,500

See footnotes at end of table.

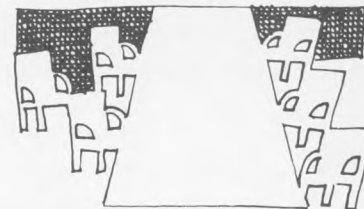
Continued—Major Agreements Expiring Next Month

Employer and location	Industry	Labor organization ¹	Number of workers
Macy's and Emporium Stores (San Francisco, Calif.)	Retail trade	Food and Commercial Workers	2,000
McDonnell Douglas Corp. (Missouri)	Transportation equipment	Machinists	11,000
Mid-America Regional Bargaining Association, 2 agreements (Illinois)	Construction	Operating Engineers	8,000
Mid-America Regional Bargaining Association (Illinois)	Construction	Laborers	12,000
Nestle Co., Inc. (Fulton, N.Y.)	Food products	Retail, Wholesale and Department Store	1,200
National Electrical Contractors Association:			
Detroit Chapter (Michigan)	Construction	Electrical Workers (IBEW)	3,500
Milwaukee Chapter (Wisconsin)	Construction	Electrical Workers (IBEW)	1,400
Orange County Chapter (California)	Construction	Electrical Workers (IBEW)	1,500
Niagara Mohawk Power Corp. (New York)	Utilities	Electrical Workers (IBEW)	7,600
Northern Indiana Public Service Co., 2 agreements (Indiana)	Utilities	Steelworkers	4,650
Owens-Corning Fiberglas Corp. (Newark, Ohio)	Stone, clay, and glass products	Glass, Pottery, Plastics and Allied Workers	14,000
Painting and Decorating Contractors of America, Inc., Detroit and Wayne Chapters (Michigan)	Construction	Painters	2,000
Panhandle Eastern Pipe Line Co. (Interstate)	Utilities	Oil, Chemical and Atomic Workers	1,400
Pennsylvania Electric Co.	Utilities	Electrical Workers (IBEW)	2,150
PPG Industries, Inc., Chemical Division (Louisiana)	Chemicals	Machinists	1,350
Printing Industries of Northern California (California)	Printing and publishing	Graphic Communications	1,000
San Francisco Electrical Contractors Association, Inc. (California)	Construction	Electrical Workers (IBEW)	1,200
Scott Paper Co., Packaged Product Division (Everett, Wash.)	Paper	Western Pulp and Paperworkers (Ind.)	1,300
Seattle Department Stores Association Inc. (Washington)	Retail trade	Food and Commercial Workers	1,250
Seattle Restaurant Association and Seattle Hotel Association (Washington)	Restaurant	Hotel Employees and Restaurant Employees	5,000
Sheet Metal Contractors Association (Illinois)	Construction	Sheet Metal Workers	5,200
SMACNA Metropolitan Detroit Chapter (Michigan)	Construction	Sheet Metal Workers	1,800
Television Videotape Agreement (Interstate) ²	Motion pictures	Musicians	5,000
Twin City Hospitals (Minnesota) ²	Hospitals	American Nurses Association (Ind.)	6,100
Wisconsin Association of Public Works Contractors and Independent Contractors (Wisconsin)	Construction	Laborers	1,300
Wisconsin Power and Light Co. (Wisconsin)	Utilities	Electrical Workers (IBEW)	1,750

¹Affiliated with AFL-CIO except where noted as independent (Ind.).

²Industry area (group of companies signing same contract).

Developments in Industrial Relations



Court says companies can alter contracts

Organized labor suffered a setback when the Supreme Court ruled that employers filing for reorganization in Federal bankruptcy court may temporarily terminate or alter collective bargaining agreements even before the judge has heard their case. The Court also held that the termination or alteration could be made permanent if the employer can demonstrate to the judge that the agreement "burdens" chances of recovery. In arriving at a decision, the bankruptcy judge should determine if the company has made a "reasonable" effort to negotiate a less burdensome contract, the Court said. If the negotiators are not able to arrive at a "satisfactory" solution, the judge still may cancel the contract.

Organized labor has contended that a company should not be permitted to take any contract cancellation action until it has persuaded a bankruptcy judge that the action is necessary for survival.

The case, *NLRB v. Bildisco & Bildisco*, began in 1980 when Bildisco, a building materials supplier in Avenel, N.J., filed for reorganization under Chapter 11 of the Bankruptcy Code, and immediately refused to pay wage increases and benefits to its employees, who were represented by the Teamsters union. The union then filed an unfair labor practices charge with the National Labor Relations Board, which ruled against the company. On appeal, Bildisco's action was upheld by the U.S. Court of Appeals for the Third Circuit, leading to the appeal to the Supreme Court.

The Supreme Court decision drew immediate expressions of shock and dismay from labor leaders and officials, who viewed it as a weapon to aid employers in ousting unions or pressuring them to accept unwarranted concessions on wages, benefits, and work rules. AFL-CIO President Lane Kirkland said, "We're disappointed in the decision and we will pursue a legislative remedy." Management officials hailed the decision.

William Winpisinger, president of the International Association of Machinists, described the decision as simply "outrageous." His union, along with the Air Line Pilots and the Flight Attendants unions, are engaged in an incon-

clusive strike against Continental Air Lines which erupted after the company filed for protection from creditors under Chapter 11 of the Bankruptcy Code, cut employee pay about 50 percent, and then resumed operations on a reduced route structure with a mixture of new employees and some strikers who returned to work. (See *Monthly Labor Review*, November 1983, p. 73.) This case drew a lot of attention to the contract abrogation issue. Another case involved Wilson Foods Corp., which also filed for protection under Chapter 11 and terminated its contract with the Food and Commercial Workers. The union then began a strike against the company that ended when the parties resumed negotiations and reached a contract that called for concessions by union members. (See *Monthly Labor Review*, September 1983, p. 40.)

There are a number of issues which could require further Court decisions for resolution. One was whether the *Bildisco* ruling could be extended to cover railroads and airlines where bargaining is regulated by the Railway Labor Act rather than the National Labor Relations Act. Prior to the *Bildisco* ruling, labor contracts had greater protection from abrogation than usual commercial contracts during bankruptcy proceedings, based on interpretations of the employee rights specified in the National Labor Relations Act.

Justice William H. Rehnquist, who wrote the *Bildisco* decision, said such greater protection for the union contracts was invalid because it "is fundamentally at odds with the policies of flexibility and equity" of the bankruptcy code. Continuing, he said, "The rights of workers under collective bargaining agreements are important, but favored treatment will interfere with the reorganization process." In aiding a company in distress, Rehnquist said, the bankruptcy court must consider the interests of the debtor, creditors, and employees, in terms of the "degree of hardship faced by each party but also any qualitative differences between the types of hardship each may face."

All of the justices assented on this part of the ruling, but there was a 5-to-4 split on the issue of whether an employer could terminate a labor contract immediately after filing for protection under Chapter 11. Justice Rehnquist said it would "undermine" the rest of the ruling to make contract abrogation an unfair labor practice at this earlier point in bankruptcy proceedings.

Justices William J. Brennan, Jr., Byron R. White, Thurgood Marshall, and Harry A. Blackmun disagreed with that

"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.

aspect of the decision. Justice Brennan said that troubled companies can seek expedited rulings from bankruptcy judges, that allowing unilateral contract terminations without such approval will "spawn precisely the type of industrial strife" the National Labor Relations Act was designed to prevent.

Construction unions act to aid jobless members

High levels of unemployment among unionized construction workers have led to several recent union moves to open jobs to their members.

At the national level, the Sheet Metal Workers announced the initial results of the "International Job Bank and Out-Of-Work List" it had instituted in October 1983. Union official Larry Cassidy said that as of December 31, 1983, the union had found jobs for 533 of the 2,302 members enrolled in the plan, which is comparable to a national hiring hall. Unemployed members enroll in the plan by informing local union officials of their qualifications and how far they are willing to travel to a job. This information is forwarded to the national union headquarters and matched with available jobs. The union plans to establish a computer network among its construction locals to expand and speed up this service.

If a laid-off member of the Sheet Metal Workers moves from one local that is party to a Stabilization Agreement for the Sheet Metal Industry to another covered local, he or she is eligible for a travel benefit of up to \$750. Also, the union provides financial aid to unemployed members facing loss of their homes if they were covered by a Stabilization Agreement. About 40,000 of the union's 100,000 members in the construction industry are covered by a Stabilization Agreement. Participation is negotiated locally; employees finance the agreement at a rate equal to 3 percent of wages.

In a move to assist retirees, the trustees of the Sheet Metal Workers national pension fund (which covers various industries) voted to compensate retired members for the 6-month legislated delay in the scheduled cost-of-living adjustment in social security benefits.

Building trades unions in the Buffalo, N.Y., area formed a nonprofit corporation employing only union members to compete with so-called "double breasted" firms which operate union and nonunion entities. Gene Adams, president of the Buffalo Building Trades Council, said formation of the corporation was necessary because, "We can deal with 100 percent union firms or 100 percent open shop firms, but we can't deal with dual shops." He claimed that the dual operations construction firms gain unwarranted profits because their bids are only slightly lower than those of firms that use only union labor, yet they use nonunion employees whose compensation is substantially lower than that of unionized workers. The new nonprofit Buffalo Building Trades Council Construction Corporation will attempt to counter the problem by offering to construct projects at cost. This means that bids will be based only on operating costs, in-

cluding union wage and benefit levels. The new corporation has not yet bid on any projects, but Adams said the construction trades would not hesitate to bring it into operation if contractors do not "sit down with us and work out double-breasting and economic problems."

Aerospace workers end long strike

A 17-week strike against McDonnell Douglas Corp. ended in February when members of Auto Workers Local 148 in Long Beach, Calif., accepted a contract similar to the Boeing Co. accord with the Machinists that led off the round of bargaining in the aerospace industry. (See *Monthly Labor Review*, December 1983, p. 55.) Initially, the walkout, which began on October 17, 1983, involved operations in Tulsa, Okla., and Melbourne, Ark., but employees there voted to return to work about 3 weeks before those at Long Beach. The major reasons for the length of the stoppage were employee objections to establishment of a two-tier pay system. Under the new system, new employees in less skilled jobs would be paid less than current employees in similar jobs and all employees in less skilled jobs (about 30 percent of all employees) would not receive automatic cost-of-living pay adjustments during the contract term. Also, employees objected to a proposed annual lump-sum payment to all employees equal to 3 percent of earnings during the preceding 12 months, instead of annual wage increases.

The union lost on these issues, as the strike weakened. An increasing number of the strikers returned to work before the stoppage officially ended, to some extent influenced by a company announcement that it would hire permanent replacements. This weakening was reflected in a statement by union negotiator Douglas Griffith, who told Local 148, "We have to face the reality that 2,500 of our members crossed the line and cost us some advantage." The Long Beach local also came under increasing pressure from the international union to end the strike, because it was "no longer serving a useful purpose."

Western mineworkers settle

The United Mine Workers (UMW) settled with several bituminous coal mining operations in the West, but the 3-year contracts were not expected to have a major influence on bargaining in the East, where the union's agreement with the Bituminous Coal Operators' Association expires September 30. Settlements in the two regions differ, primarily because the western mines are surface operations, require fewer workers, and are more productive than the underground mines that predominate in the East. The UMW represents about 2,000 workers in western mines, compared with 120,000 in eastern mines. (Some other western miners are represented by other unions.)

The first of the western settlements, with Gulf Oil Corp.'s Pittsburg & Midway Coal Mining Co. for 300 employees in Oak Creek, Colo., and Gallup, N. Mex., set a pattern for other settlements. The 3-year contract called for a \$1.20-

an-hour wage increase consisting of a 20-cent raise effective immediately, 30-cent raises in February of 1985 and 1986, and 10-cent raises in August of 1984 and 1985, and June and October of 1986. Under the previous contract, top rates for the various pay grades ranged from \$16.50 to \$16.91 an hour.

Pittsburg & Midway did not win its demand for institution of coinsurance and deductible provisions to reduce its cost for health insurance, but the union did agree to unspecified changes in work rules intended to increase productivity.

The accord also called for improvements in health insurance benefits; an increase in the company's payment into the pension fund; a \$20-a-month increase in pensions of current retirees; and establishment of a \$95-a-month pension for the surviving spouses of retirees.

Also settling on similar terms were Peabody Coal Co., for 900 workers at mines in Arizona, Montana, and Colorado; and North American Coal Co. for 50 workers in Zap, N. Dak. Bargaining was continuing at about eight other companies.

Bargaining concluded in aerospace

In the aerospace industry, Lockheed Corp. concluded its round of bargaining by settling with the Engineers and Scientists Guild for 2,400 employees in Los Angeles County. Earlier, Lockheed had settled with the Machinists for production workers in several States. (See *Monthly Labor Review*, January 1984, p. 40.)

During the first year of the 3-year contract, the engineers and scientists will receive varying merit pay increases, financed by a money pool, equal to 5 percent of payroll. In the second and third years, all employees will receive 2-percent pay increases and eligible employees will receive merit increases from 2-percent pools.

The contract, which expires on December 13, 1986, also includes a change in the health insurance plan requiring a second medical opinion for elective surgery, with the plan paying the cost of the second opinion.

Arbitrator resolves meatpacking dispute

A dispute in the meatpacking industry was resolved when an arbitrator ruled that George A. Hormel & Co. can implement wage and benefit cuts for 1,500 employees in Austin, Minn., but on a delayed basis. An official of Local P-9 of the Food and Commercial Workers said the decision was a partial victory for the union because the company had been pressing for the cut retroactive to October 1983. Hormel said the ruling will reduce its wage and benefit costs to about \$13 an hour, from the current \$21.

Under arbitrator George Fleischli's decision, the cut will become effective after the union settles with Oscar Mayer & Co., the last of the major companies still negotiating. The resulting wage and benefit terms of that settlement will be considered by the union in determining an "industry

average" settlement which will be applied to Hormel employees.

Early in 1982, all of the major companies had agreed to pattern contracts scheduled to run until August 31, 1985, but since then the industry has been beset with chaotic competitive conditions which have resulted in cuts in wage and benefit levels. The competitive pressures have been attributed to the entry of new firms with lower labor costs and more modern facilities and distribution methods.

Meatpackers take concessions to aid company

The Pierce Packing Co. of Billings, Mont., resumed some operations in January after members of Local 33 of the Food and Commercial Workers agreed to cuts in compensation. Pierce had filed a plan for reorganization of the meat processing and hog slaughtering operations under Chapter 11 of the Federal bankruptcy code and laid off its 500 employees in October 1983. Only about 125 workers were rehired to process meat when the plant reopened, but a union official said 100 more might be rehired if the company resumes hog slaughtering.

Under the 3-year contract, which superseded one scheduled to expire in August, wages were cut an average of 75 cents an hour, to \$6.75. This was about \$1.50 lower than the reduced level other companies have negotiated since 1982. Other terms included elimination of two of the nine annual paid holidays; elimination of dental and vision coverage (accompanied by a slight reduction in the employees' premium cost for all health insurance); continuation of existing pension rates; and an increase in life insurance.

The union members also aided Pierce by agreeing to accept 15 cents on the dollar for some \$750,000 they had lent the company through a 1-year, \$1.90-an-hour pay reduction.

Grocery workers win compensation increases

A 26-day strike against four grocery store chains in Northern New Jersey and parts of New York State ended when 7,000 delicatessen and meat department employees ratified a settlement. The accord provided for three 6.7-percent pay increases over the 41-month term and some improvements in benefits. Robert C. Wunderle, a vice president of Pathmark, one of the chains, said that he did not anticipate any price increases, "assuming we get the productivity increases we anticipate."

One change permits management to start meat department shifts between noon and 2 p.m. Previously, shifts started between 7 and 9 a.m., but more and more shoppers were coming into the stores in the evening, after the shifts ended. By evening, the meat counters were depleted and there were not enough meatcutters to replenish the counters.

The new shifts will be staffed primarily by new employees who will be paid less than current employees under a new "two-tier" pay structure. A union official said that the pay

difference is about \$25 a week. He also said that prior to the settlement, base pay was \$457 a week for meatcutters and \$507 for meat counter and delicatessen managers.

Other cost-control measures included a lower flat rate for Sunday work, rather than the previous double time-and-a-half pay, and elimination of 2½ hours of guaranteed weekly overtime for each employee.

The other three chains covered by the settlement are Shop Rite, Grand Union, and Foodtown. Overall, 334 stores were involved.

Bank employees offered incentives to retire

As part of a plan to close 120 of its 1,070 branches and eliminate 5,000 of 79,000 jobs by the end of 1984, the Bank of America offered an early retirement inducement to 3,200 workers under the normal retirement age of 65. The 1,100 employees expected to accept the offer before the March 15 deadline will receive half pay for 2 years or until age 65, whichever occurs first. In any case, they were guaranteed half pay for 6 months.

A bank official said that employees who do not accept the offer will be offered jobs in areas in which the firm is expanding, such as word processing and selling financial services. The bank's 15-percent attrition rate means that the cutback can probably be accomplished without laying off any employees.

New York City workers settle

In New York City, 25,000 employees of commercial buildings were covered by a 3-year accord which provided for wage increases of \$23 a week immediately, \$24 on the first anniversary, and \$23 on the second anniversary. Their pay is also subject to annual adjustments equal to 4 cents an hour for each percentage-point rise in excess of 8 points in the BLS Consumer Price Index for Urban Wage Earners and Clerical Workers during a 12-month period. The previous formula provided for adjustments to begin after the CPI rose 12 points. Average weekly pay was \$340 under the previous contract, which expired December 31, 1983.

Other terms included an \$80 increase (to \$400) in the monthly pension for workers with 25 years of service and increased major medical coverage.

Blue Cross establishes two-tier pay system

Blue Cross of Northern California and the Office and Professional Employees negotiated a contract that established a two-tier pay structure for employees in Sacramento and Fresno. Blue Cross had proposed a pay freeze for these employees, contending that their wages were higher than those of workers at other locations in the bargaining unit. The compromise on this issue provides that all new employees will be paid at 85 percent of the rates applicable to

incumbents. Under the previous agreement, starting rates ranged from \$6.30 to \$9.20 an hour and maximum pay after 2 years of service ranged from \$7.06 to \$10.35. Most of the 1,200 workers in the bargaining unit are claims processors and customer service clerks.

Other provisions of the 30-month contract included a 4-percent pay increase on January 1, 1984, 3 percent on January 1, 1985, and 1 percent on January 1, 1986; a clause permitting employees to follow their jobs if Blue Cross shifts operations to other areas; adoption of a casual pool of employees to fill temporary work assignments, with laid-off workers given preference; and an additional option for health care which, according to a company official, might be less expensive than the two existing options. The option—Prudent Buyer—is similar to a health maintenance organization, except that participating doctors are not located in one facility. The existing options are coverage by Blue Cross or by Take Care Insurance, an HMO operated by Blue Cross.

Police officers rally to avert layoffs

In Cincinnati, Ohio, police officers voted to give up \$388 of their annual equipment allowance to avert layoff of 42 officers until at least May 8. Residents will vote that day on a ballot proposal to increase taxes. If the increase does not pass, the officers will be immediately laid off and the \$388 will be deducted from the \$560 allowance scheduled to be paid in December 1984. If the proposal passes, the officers will retain their jobs and all 893 officers will receive the full allowance.

Major Arnold L. Bortz praised the action by the members of the Fraternal Order of Police and said that he hoped that other city employees would agree to similar actions to ease the city's budget difficulties. Bortz said the agreement to avert the layoff of police officers included a "clear understanding" that members of the union will work with the city administration toward passage of the tax increase. This might include having some out-of-uniform officers work in polling places.

Employees to suggest 'new ventures' for Kodak

The usual corporate approach to employee suggestions will be taken a step farther at Eastman Kodak Co. Under a new plan, an eight-member "venture board" will consider employee suggestions for entering businesses outside the company's current specialization in photography and chemicals. The board, headed by Herbert L. Rees, Kodak's vice president for corporate affairs, will evaluate the employees' ideas. If an idea is accepted, it will be financed and developed by Kodak. The company did not say how employees will be rewarded if their ideas are accepted; it has a system for rewarding employees for accepted suggestions regarding current businesses. □

Book Reviews



A mismatch of problems and solutions?

Industrial Crisis. Edited by Kenneth Dyson and Stephen Wilks. New York, St. Martin's Press, 1983. 283 pp. \$32.50.

This volume presents a series of analyses of the politics of industrial policy. Specifically, it describes the institutions of state and the process of decisionmaking on what might be called the downside of industrial policy—" . . . cases where failure of business corporations has given rise to serious collective discussion of exceptional action to circumvent the market." The first chapter, from which this useful definition of crisis is drawn, provides a general description of economic trends in the industrial countries and, more vitally, a reason for the analytical focus on failure: ". . . crises separate the flamboyant rhetoric that is so characteristic of the industrial policy field from the substance of policy."

Kenneth Dyson's own contribution constitutes the second chapter and the more valuable of the introductory essays. His survey of the cultural, ideological, and structural concepts underlying politics will prove especially valuable to readers, including this reviewer, whose training has often led them to disregard political factors.

The six case studies in crisis management are by European political scientists, and, therefore, the chapter on the United States has the refreshing perspective of an outsider. Martin Edmonds of the University of Lancaster is able to assure us that not only is there industrial policy in America, but there is a minimum of 51 industrial policies, State and Federal. (I would extend his insight into our system of federalism to include, at least conceptually, local governments empowered to legislate many elements of an industrial policy.) Edmonds, wisely, restricts his discussion to the Federal level.

The characteristics of American crisis management that emerge from this analysis are: pluralism—especially as manifested by "confrontation and competition," "bargaining processes and institutionalized backscratching," and belief "in the maximum freedom of economic manoeuvre and choice for private individuals"; specificity—the idea that each crisis should be judged on its individual economic and political merits; and conditionality—state intervention made contingent on stringently exacted concessions from all ben-

efiting parties. Although he seems surprised by the fact, Edmonds allows, "On balance, the system of separation of powers, political bargaining and selective intervention has worked well." Dyson and Wilks also make a positive evaluation of U.S. policy, stating in their concluding chapter:

Crisis management is successful to the extent that there is an industrial strategy that integrates discrete policies for industry around common principles and to the extent to which crisis management is integrated into that strategy. By reference to this criterion, the U.S.A. and West Germany have exhibited greatest consistency between crisis management and industrial strategy (at the Federal level). The principles of industrial policy, the "free market" in the U.S.A. and the "social market" in West Germany, are clearly evident and operate as guides for crisis management.

Despite these rather strong findings in favor of the American style of crisis management, especially in cases where the political culture stresses individual freedom and responsibility, the tone of many of the essays conveys some sense of indignation that the state is not more rigorously organized and thoroughly empowered to reshape national industrial structures. Edmonds charges that we Americans "slavishly" adhere to the separation of power, fragmentation of central power, and belief in freedom of economic and personal choice. The attitude is more pronounced by Wilks as he discusses Great Britain, where he claims ". . . although government is in part responsible for industrial success, it has no adequate intellectual framework or administrative machinery with which to discharge that responsibility," and complains that ". . . any idea that the state is "above" society with a national purpose and unique competence is anathema to British policy makers."

In my opinion, this zealous belief in the existence and efficiency of highly controlled, massively institutionalized, comprehensive governmental solutions to economic problems is a mild occupational hazard to political science, but it does not diminish the value of this volume in any significant way. Indeed, I highly recommend *Industrial Crisis* to anyone with a serious interest in industrial policy, comparative politics, and economic affairs.

—RICHARD M. DEVENS
Division of Employment and
Unemployment Analysis
Bureau of Labor Statistics

Exploring ways and means

Social Security: Perspectives on Preserving the System.

By Sylvester J. Schieber. Washington, D.C., Employee Benefit Research Institute, 1982. 302 pp. \$15.

This is a thorough and comprehensive study by the research director of the Employee Benefit Research Institute, who had previously served in leading positions within the Social Security Administration and in the Department of Health and Human Services with responsibility for program research and policy analysis. It was undertaken with a view to elaborating the factual background "for an evaluation of the status of the United States retirement income security system in general, and the Social Security system in particular" (from the book's back cover). It accomplished this purpose very well indeed, and in a most timely fashion, that is, concurrently with the labors of the Social Security Reform Commission (September 1981 to January 1983) toward a plan for "realistic . . . reforms . . . and . . . a bipartisan consensus" (from the Executive Order creating the Commission).

Despite the intricate nature and wide-ranging scope of the subject, and the multifaceted painstaking analyses undertaken, the book is readable and highly informative on any one aspect and on the totality of the complex problem. This is achieved by a clearly structured research design, a thoroughly cross-referenced presentation, and two compact overviews of the findings and their implications: an "Executive Summary" in the beginning and a concluding chapter titled "The Future of Social Security."

The report consists of four descriptive (historical-analytic) and four policy-oriented chapters. Thus, chapters I and II present facts and figures pertaining to the American retirement income fabric both under the (public) social security program proper and under other antecedent and complementary institutions (both public and private). The next two chapters clarify various concepts and measurements of "benefits" and "benefit levels" and their costs and financing methods within a changing demographic and a changeable economic setting over time.

Chapters V to VIII draw on the foregoing chapters, on the basis of which they develop and explore policy choices and their consequences: in the short run—notably financial; for the long run—in terms of a whole spectrum of dimensions; different goals and modalities with regard to the scope and components of the protective cover of old-age economic security; and, finally, broad-gauged questions of equity, taxation, and divergent philosophical departures that comprise a wide range of alternatives.

Two appendices offer a "Pension and Retirement Income Simulation Model," and an explanation of how social security benefits are calculated. Numerous graphs and tables enliven the text throughout.

This book can serve as a model of how to address a major public policy area in an analytical and, at the same time,

integrative manner. It is insightful and balanced, understanding of what has been wrought, yet thoroughly cognizant of deep-reaching changes in our society which may justify and, indeed, call for modifications in a system originally tailored to American society and its needs half a century ago.

In this spirit, it acquaints the reader with such radically dissident proposals as Peter Ferrara's "Family Plan" (*Social Security Reform, The Family Plan*, Washington, D.C., The Heritage Foundation, 1982; and *Social Security: The Inherent Contradiction*, San Francisco, CATO Institute, 1980), the proposal of "Personal Security Accounts" by Michael Boskin and associates ("Summary of Personal Security Accounts: A Proposal for Fundamental Social Security Reform," 1982), and the "Freedom Plan" by Haeworth Robertson, a former chief actuary of the Social Security Administration (*The Coming Revolution in Social Security*, McLean Va., Security Press, 1981). Given that Schieber's *opus* carries the subtitle "Perspectives on Preserving the System," one marvels at the author's broadmindedness in including the first two proposals which would, in effect, supersede the present system—"Phasing Out Social Security" as another chronicler of social security reform debate has aptly put it (Lawrence H. Thompson, "The Social Security Reform Debate," *Journal of Economic Literature*, December 1983). Robertson's highly original and thoughtful reform proposal, on the other hand, would seem well worth closer study.

If the reader of Schieber's solid work carries away just one lead for evaluating future reform proposals re social security, it should be, by all odds, the author's "four basic policy goals": (1) adequacy and (2) equity (these are policy criteria of long standing), to which he adds (3) solvency and (4) support. The latest public debate has driven home the wisdom and the realism of this fourfold gauge.

For completeness' sake—especially in viewing the book as an excellent tool for academic teaching in this subject area—one might have two regrets: the lack of a bibliography and the absence (due to the time of publication, if for no other reason) of even a short section relating to the Reform Commission's Report and the 1983 Amendments of the Social Security Act based thereon. If the book undergoes another edition, or even a new printing, an addendum of this sort would seem highly worthwhile.

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—GEORGE F. ROHRlich
Professor emeritus of
Economics and Social Policy
Temple University

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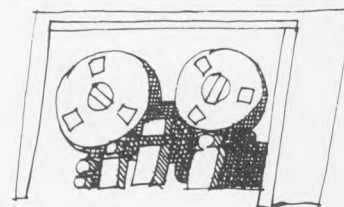
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NOTES ON CURRENT LABOR STATISTICS

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

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

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

Seasonally adjusted labor force data in tables 3-8 were revised in the February 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 1983 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	April 6	March	May 4	April	June 1	May	1-11
Producer Price Index	April 13	March	May 11	April	June 15	May	23-27
Consumer Price Index	April 24	March	May 22	April	June 22	May	19-22
Real earnings	April 24	March	May 22	April	June 22	May	12-16
Productivity and costs:							
Nonfarm business and manufacturing	April 26	1st quarter	.....	.....	.....	.....	29-32
Nonfinancial corporations . . . . .	.....	.....	May 29	1st quarter	.....	.....	29-32
Major collective bargaining settlements	April 27	1st quarter	.....	.....	.....	.....	36-37
Employment Cost Index	April 30	1st quarter	.....	.....	.....	.....	33-35

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.

Year	Noninstitutional population	Labor force									Not in labor force	
		Number	Percent of population	Employed						Unemployed		
				Total	Percent of population	Resident Armed Forces	Civilian			Number		Percent of labor force
							Total	Agriculture	Nonagricultural industries			
1950	106,164	63,377	59.7	60,087	56.6	1,169	58,918	7,160	51,758	3,288	5.2	42,787
1955	111,747	67,087	60.0	64,234	57.5	2,064	62,170	6,450	55,722	2,852	4.3	44,660
1960	119,106	71,489	60.0	67,639	56.8	1,861	65,778	5,458	60,318	3,852	5.4	46,617
1965	128,459	76,401	59.5	73,034	56.9	1,946	71,088	4,361	66,726	3,366	4.4	52,058
1966	130,180	77,892	59.8	75,017	57.6	2,122	72,895	3,979	68,915	2,875	3.7	52,288
1967	132,092	79,565	60.2	76,590	58.0	2,218	74,372	3,844	70,527	2,975	3.7	52,527
1968	134,281	80,990	60.3	78,173	58.2	2,253	75,920	3,817	72,103	2,817	3.5	53,291
1969	136,573	82,972	60.8	80,140	58.7	2,238	77,902	3,606	74,296	2,832	3.4	53,602
1970	139,203	84,889	61.0	80,796	58.0	2,118	78,678	3,463	75,215	4,093	4.8	54,315
1971	142,189	86,355	60.7	81,340	57.2	1,973	79,367	3,394	75,972	5,016	5.8	55,834
1972	145,939	88,847	60.9	83,966	57.5	1,813	82,153	3,484	78,669	4,882	5.5	57,091
1973	148,870	91,203	61.3	86,838	58.3	1,774	85,064	3,470	81,594	4,355	4.8	57,667
1974	151,841	93,670	61.7	88,515	58.3	1,721	86,794	3,515	83,279	5,156	5.5	58,171
1975	154,831	95,453	61.6	87,524	56.5	1,678	85,845	3,408	82,438	7,929	8.3	59,377
1976	157,818	97,826	62.0	90,420	57.3	1,668	88,752	3,331	85,421	7,406	7.6	59,991
1977	160,689	100,665	62.6	93,673	58.3	1,656	92,017	3,283	88,734	6,991	6.9	60,025
1978	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	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.
TOTAL															
Noninstitutional population ^{1,2}	173,939	175,891	175,169	175,320	175,465	175,622	175,793	175,970	176,122	176,297	176,474	176,636	176,809	177,219	177,363
Labor force ²	111,872	113,226	112,352	112,399	112,646	112,619	113,573	113,489	113,799	113,924	113,561	113,720	113,824	113,901	114,377
Participation rate ³	64.3	64.4	64.1	64.1	64.2	64.1	64.6	64.5	64.6	64.6	64.3	64.4	64.4	64.3	64.5
Total employed ²	101,194	102,510	100,836	100,980	101,277	101,431	102,411	102,889	103,166	103,571	103,665	104,291	104,629	104,876	105,576
Employment-population rate ⁴	58.2	58.3	57.6	57.6	57.7	57.8	58.3	58.5	58.6	58.7	58.7	59.0	59.2	59.2	59.5
Resident Armed Forces ¹	1,668	1,676	1,664	1,664	1,671	1,669	1,668	1,664	1,682	1,695	1,695	1,685	1,688	1,686	1,684
Civilian employed	99,526	100,834	99,172	99,316	99,606	99,762	100,743	101,225	101,484	101,876	101,970	102,606	102,941	103,190	103,892
Agriculture	3,401	3,383	3,415	3,386	3,392	3,374	3,479	3,499	3,449	3,308	3,240	3,257	3,356	3,271	3,395
Nonagricultural industries	96,125	97,450	95,757	95,930	96,214	96,388	97,264	97,726	98,035	98,568	98,730	99,349	99,585	99,918	100,496
Unemployed	10,678	10,717	11,516	11,419	11,369	11,188	11,162	10,600	10,633	10,353	9,896	9,429	9,195	9,026	8,801
Unemployment rate ⁵	9.5	9.5	10.2	10.2	10.1	9.9	9.8	9.3	9.3	9.1	8.7	8.3	8.1	7.9	7.7
Not in labor force	62,067	62,665	62,817	62,921	62,819	63,003	62,220	62,481	62,323	62,373	62,913	62,916	62,985	63,318	62,986
Men, 16 years and over															
Noninstitutional population ^{1,2}	83,052	84,064	83,720	83,789	83,856	83,931	84,014	84,099	84,173	84,261	84,344	84,423	84,506	84,745	84,811
Labor force ²	63,979	64,580	64,077	64,096	64,311	64,348	64,778	64,840	64,807	64,877	64,709	64,846	64,838	64,930	65,093
Participation rate ³	77.0	76.8	76.5	76.5	76.7	76.7	77.1	77.1	77.0	77.0	76.7	76.8	76.7	76.6	76.8
Total employed ²	57,800	58,320	57,321	57,423	57,589	57,744	58,369	58,592	58,607	58,828	58,950	59,389	59,580	59,781	60,147
Employment-population rate ⁴	69.6	69.4	68.5	68.5	68.7	68.8	69.5	69.7	69.6	69.8	69.9	70.3	70.5	70.5	70.9
Resident Armed Forces ¹	1,527	1,533	1,528	1,528	1,530	1,528	1,525	1,521	1,538	1,549	1,543	1,534	1,537	1,542	1,540
Civilian employed	56,271	56,787	55,793	55,895	56,059	56,216	56,844	57,071	57,069	57,279	57,407	57,855	58,043	58,239	58,607
Unemployed	6,179	6,260	6,756	6,673	6,722	6,604	6,409	6,248	6,200	6,049	5,759	5,457	5,258	5,149	4,946
Unemployment rate ⁵	9.7	9.7	10.5	10.4	10.5	10.3	9.9	9.6	9.6	9.3	8.9	8.4	8.1	7.9	7.6
Women, 16 years and over															
Noninstitutional population ^{1,2}	90,887	91,827	91,449	91,532	91,609	91,691	91,779	91,871	91,949	92,036	92,129	92,214	92,302	92,474	92,552
Labor force ²	47,894	48,646	48,275	48,303	48,335	48,271	48,795	48,649	48,992	49,047	48,852	48,874	48,986	48,971	49,283
Participation rate ³	52.7	53.0	52.8	52.8	52.8	52.6	53.2	53.0	53.3	53.3	53.0	53.0	53.1	53.0	53.2
Total employed ²	43,395	44,190	43,515	43,557	43,688	43,687	44,042	44,297	44,559	44,743	44,715	44,902	45,049	45,094	45,429
Employment-population rate ⁴	47.7	48.1	47.6	47.6	47.7	47.6	48.0	48.2	48.5	48.6	48.5	48.7	48.8	48.8	49.1
Resident Armed Forces ¹	139	143	136	136	141	141	143	143	144	146	152	151	151	144	144
Civilian employed	43,256	44,047	43,379	43,421	43,547	43,546	43,899	44,154	44,415	44,597	44,563	44,751	44,898	44,950	45,285
Unemployed	4,499	4,457	4,760	4,746	4,647	4,584	4,753	4,352	4,433	4,304	4,137	3,972	3,937	3,876	3,855
Unemployment rate ⁵	9.4	9.2	9.9	9.8	9.6	9.5	9.7	8.9	9.0	8.8	8.5	8.1	8.0	7.9	7.8

¹The population and Armed Forces figures are not adjusted for seasonal variation.

²Includes members of the Armed Forces stationed in the United States.

³Labor force as a percent of the noninstitutional population.

⁴Total employed as a percent of the noninstitutional population.

⁵Unemployment 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	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.
TOTAL															
Civilian noninstitutional population ¹	172,271	174,215	173,505	173,656	173,794	173,953	174,125	174,306	174,440	174,602	174,779	174,951	175,121	175,533	175,679
Civilian labor force	110,204	111,550	110,688	110,735	110,975	110,950	111,905	111,825	112,117	112,229	111,866	112,035	112,136	112,215	112,693
Participation rate	64.0	64.0	63.8	63.8	63.9	63.8	64.3	64.2	64.3	64.3	64.0	64.0	64.0	63.9	64.1
Employed	99,526	100,834	99,172	99,316	99,606	99,762	100,743	101,225	101,484	101,876	101,970	102,606	102,941	103,190	103,892
Employment-population ratio ²	57.8	57.9	57.2	57.2	57.3	57.3	57.9	58.1	58.2	58.3	58.3	58.6	58.8	58.8	59.1
Unemployed	10,678	10,717	11,516	11,419	11,369	11,188	11,162	10,600	10,633	10,353	9,896	9,429	9,195	9,026	8,801
Unemployment rate	9.7	9.6	10.4	10.3	10.2	10.1	10.0	9.5	9.5	9.2	8.8	8.4	8.2	8.0	7.8
Not in labor force	62,067	62,665	62,817	62,921	62,819	63,003	62,220	62,481	62,323	62,373	62,913	62,916	62,985	63,318	62,986
Men, 20 years and over															
Civilian noninstitutional population ¹	73,644	74,872	74,434	74,528	74,611	74,712	74,814	74,927	75,012	75,115	75,216	75,327	75,433	75,692	75,786
Civilian labor force	57,980	58,744	58,225	58,268	58,512	58,546	58,844	58,982	58,954	59,012	58,949	59,053	59,050	59,299	59,394
Participation rate	78.7	78.5	78.2	78.2	78.4	78.4	78.7	78.7	78.6	78.6	78.4	78.3	78.3	78.3	78.4
Employed	52,891	53,4897	52,508	52,673	52,830	52,963	53,492	53,765	53,804	53,947	54,140	54,457	54,658	54,999	55,266
Employment-population ratio ²	71.8	71.4	70.5	70.7	70.8	70.9	71.5	71.8	71.7	71.8	72.0	72.3	72.5	72.7	72.9
Agriculture	2,422	2,429	2,402	2,425	2,421	2,440	2,497	2,521	2,475	2,431	2,376	2,336	2,374	2,356	2,409
Nonagricultural industries	50,469	51,058	50,106	50,248	50,409	50,523	50,995	51,244	51,329	51,516	51,764	52,121	52,284	52,643	52,857
Unemployed	5,089	5,257	5,717	5,595	5,682	5,583	5,352	5,217	5,150	5,065	4,809	4,596	4,392	4,300	4,128
Unemployment rate	8.8	8.9	9.8	9.6	9.7	9.5	9.1	8.8	8.7	8.6	8.2	7.8	7.4	7.3	7.0
Women, 20 years and over															
Civilian noninstitutional population ¹	82,864	84,069	83,593	83,699	83,794	83,899	84,008	84,122	84,224	84,333	84,443	84,553	84,666	84,860	84,962
Civilian labor force	43,699	44,636	44,248	44,259	44,311	44,331	44,684	44,647	44,896	45,062	44,936	44,953	45,024	44,981	45,258
Participation rate	52.7	53.1	52.9	52.9	52.9	52.8	53.2	53.1	53.3	53.4	53.2	53.2	53.2	53.0	53.3
Employed	40,086	41,004	40,315	40,368	40,531	40,583	40,847	41,123	41,298	41,550	41,570	41,738	41,843	41,798	42,138
Employment-population ratio ²	48.4	48.8	48.2	48.2	48.4	48.4	48.6	48.9	49.0	49.3	49.2	49.4	49.4	49.3	49.6
Agriculture	601	620	640	632	621	605	634	613	627	581	597	638	653	625	640
Nonagricultural industries	39,485	40,384	39,675	39,736	39,910	39,978	40,213	40,510	40,671	40,969	40,973	41,100	41,190	41,174	41,498
Unemployed	3,613	3,632	3,933	3,891	3,780	3,748	3,837	3,524	3,598	3,512	3,366	3,215	3,181	3,182	3,120
Unemployment rate	8.3	8.1	8.9	8.8	8.5	8.5	8.6	7.9	8.0	7.8	7.5	7.2	7.1	7.1	6.9
Both sexes, 16 to 19 years															
Civilian noninstitutional population ¹	15,763	15,274	15,478	15,429	15,389	15,342	15,303	15,257	15,204	15,154	15,120	15,072	15,022	14,981	14,931
Civilian labor force	8,526	8,171	8,215	8,208	8,152	8,073	8,377	8,196	8,267	8,155	7,981	8,029	8,062	7,935	8,041
Participation rate	54.1	53.5	53.1	53.2	53.0	52.6	54.7	53.7	54.4	53.8	52.8	53.3	53.7	53.0	53.9
Employed	6,549	6,342	6,349	6,275	6,245	6,216	6,404	6,337	6,382	6,379	6,260	6,411	6,440	6,392	6,488
Employment-population ratio ²	41.5	41.5	41.0	40.7	40.6	40.5	41.8	41.5	42.0	42.1	41.4	42.5	42.9	42.7	43.5
Agriculture	378	334	373	329	350	329	348	365	347	296	267	283	329	290	346
Nonagricultural industries	6,171	6,008	5,976	5,946	5,895	5,887	6,056	5,972	6,035	6,083	5,993	6,128	6,111	6,102	6,142
Unemployed	1,977	1,829	1,866	1,933	1,907	1,857	1,973	1,859	1,885	1,776	1,721	1,618	1,622	1,543	1,553
Unemployment rate	23.2	22.4	22.7	23.6	23.4	23.0	23.6	22.7	22.8	21.8	21.6	20.2	20.1	19.4	19.3
White															
Civilian noninstitutional population ¹	149,441	150,805	150,187	150,382	150,518	150,671	150,810	150,959	151,003	151,021	151,175	151,324	151,484	151,939	152,079
Civilian labor force	96,143	97,021	96,238	96,265	96,450	96,472	97,235	97,255	97,498	97,507	97,339	97,559	97,724	97,813	98,167
Participation rate	64.3	64.3	64.1	64.0	64.1	64.0	64.5	64.4	64.6	64.6	64.4	64.5	64.5	64.4	64.6
Employed	87,903	88,893	87,367	87,530	87,854	88,004	88,836	89,260	89,503	89,693	89,851	90,430	90,779	91,044	91,544
Employment-population ratio ²	58.8	58.9	58.2	58.2	58.4	58.4	58.9	59.1	59.3	59.4	59.4	59.8	59.9	59.9	60.2
Unemployed	8,241	8,128	8,871	8,735	8,596	8,468	8,399	7,995	7,995	7,814	7,488	7,129	6,945	6,768	6,623
Unemployment rate	8.6	8.4	9.2	9.1	8.9	8.8	8.6	8.2	8.2	8.0	7.7	7.3	7.1	6.9	6.7
Black															
Civilian noninstitutional population ¹	18,584	18,925	18,796	18,823	18,851	18,880	18,911	18,942	18,966	18,994	19,026	19,057	19,086	19,196	19,222
Civilian labor force	11,331	11,647	11,561	11,573	11,651	11,645	11,718	11,741	11,724	11,720	11,565	11,623	11,650	11,660	11,881
Participation rate	61.0	61.5	61.5	61.5	61.8	61.7	62.0	61.8	61.7	61.7	60.8	61.0	61.0	60.7	61.8
Employed	9,189	9,375	9,272	9,249	9,245	9,277	9,339	9,443	9,408	9,504	9,449	9,563	9,582	9,707	9,958
Employment-population ratio ²	49.4	49.5	49.3	49.1	49.0	49.1	49.4	49.9	49.6	50.0	49.7	50.2	50.2	50.6	51.8
Unemployed	2,142	2,272	2,289	2,324	2,406	2,368	2,379	2,298	2,316	2,216	2,116	2,060	2,068	1,953	1,923
Unemployment rate	18.9	19.5	19.8	20.1	20.7	20.3	20.3	19.6	19.8	18.9	18.3	17.7	17.8	16.7	16.2
Hispanic origin															
Civilian noninstitutional population ¹	9,400	12,771	9,368	9,551	9,665	9,747	9,738	9,640	9,690	9,700	9,745	9,677	9,735	9,778	9,906
Civilian labor force	5,983	8,119	6,001	6,070	6,161	6,139	6,202	6,090	6,145	6,202	6,165	6,232	6,267	6,336	6,292
Participation rate	63.6	63.6	64.1	63.6	63.7	63.0	63.7	63.2	63.4	63.9	63.4	64.4	64.4	64.8	63.5
Employed	5,158	6,995	5,071	5,114	5,259	5,284	5,336	5,339	5,350	5,392	5,398	5,463	5,540	5,627	5,652
Employment-population ratio ²	54.9	54.8	54.1	53.5	54.4	54.2	54.8	55.4	55.2	55.6	55.4	56.5	56.9	57.6	57.1
Unemployed	825	1,124	930	956	902	855	866	751	795	810	767	769	727	708	639
Unemployment rate	13.8	13.8	15.5	15.7	14.6	13.9	14.0	12.3	12.9	13.1	12.4	12.3	11.6	11.2	10.2

¹The population figures are not seasonally adjusted.

²Civilian 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	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	
CHARACTERISTIC																
Civilian employed, 16 years and over	99,526	100,834	99,172	99,316	99,606	99,762	100,743	101,225	101,484	101,876	101,970	102,606	102,941	103,190	103,892	
Men	56,271	56,787	55,793	55,895	56,059	56,216	56,844	57,071	57,069	57,279	57,407	57,855	58,043	58,239	58,607	
Women	43,256	44,047	43,379	43,421	43,547	43,546	43,899	44,154	44,415	44,597	44,563	44,751	44,898	44,950	45,285	
Married men, spouse present	38,074	37,967	37,491	37,545	37,602	37,616	37,911	38,254	38,281	38,232	38,240	38,388	38,494	38,682	38,911	
Married women, spouse present	24,053	24,603	24,129	24,220	24,361	24,304	24,416	24,618	24,905	24,921	24,953	25,057	25,140	24,947	25,212	
Women who maintain families	5,099	5,091	5,016	5,093	4,969	4,991	5,029	5,071	5,096	5,124	5,172	5,236	5,254	5,293	5,346	
MAJOR INDUSTRY AND CLASS OF WORKER																
Agriculture:																
Wage and salary workers	1,505	1,579	1,617	1,558	1,578	1,588	1,624	1,631	1,628	1,572	1,505	1,481	1,512	1,443	1,560	
Self-employed workers	1,636	1,565	1,562	1,584	1,595	1,558	1,591	1,573	1,564	1,515	1,527	1,556	1,572	1,613	1,609	
Unpaid family workers	261	240	230	265	219	233	252	251	240	236	227	224	265	233	232	
Nonagricultural industries:																
Wage and salary workers	88,462	89,500	87,916	88,078	88,390	88,584	89,345	89,687	90,032	90,743	90,617	91,094	91,422	91,641	92,379	
Government	15,562	15,537	15,510	15,479	15,524	15,530	15,514	15,593	15,671	15,560	15,578	15,585	15,481	15,535	15,822	
Private industries	72,945	73,963	72,406	72,599	72,866	73,054	73,831	74,094	74,361	75,183	75,039	75,509	75,941	76,106	76,557	
Private households	1,207	1,247	1,222	1,234	1,221	1,238	1,295	1,276	1,270	1,279	1,278	1,216	1,241	1,197	1,219	
Other	71,738	72,716	71,184	71,365	71,645	71,816	72,536	72,818	73,091	73,904	73,761	74,293	74,700	74,909	75,339	
Self-employed workers	7,262	7,575	7,403	7,456	7,504	7,448	7,510	7,595	7,641	7,656	7,695	7,800	7,734	7,936	7,849	
Unpaid family workers	401	376	354	344	354	345	352	322	375	380	405	474	450	364	330	
PERSONS AT WORK¹																
Nonagricultural industries	90,552	92,038	90,726	90,450	92,233	91,070	90,913	92,126	91,953	93,322	93,273	93,834	94,173	94,707	95,067	
Full-time schedules	72,245	73,624	71,703	72,035	73,567	72,949	73,071	73,844	73,499	74,666	75,047	75,398	75,802	76,237	76,715	
Part time for economic reasons	5,852	5,997	6,362	6,169	6,077	5,965	5,886	5,700	5,866	6,027	5,724	5,848	5,712	5,943	5,808	
Usually work full time	2,169	1,826	2,059	1,934	1,888	1,748	1,777	1,781	1,742	1,771	1,617	1,719	1,672	1,771	1,611	
Usually work part time	3,683	4,171	4,303	4,235	4,189	4,217	4,109	3,919	4,124	4,256	4,107	4,129	4,040	4,172	4,197	
Part time for noneconomic reasons	12,455	12,417	12,211	12,246	12,589	12,156	11,956	12,588	12,629	12,502	12,588	12,659	12,527	12,545		

¹ 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	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	
CHARACTERISTIC																
Total, all civilian workers	9.7	9.6	10.4	10.3	10.2	10.1	10.0	9.5	9.5	9.2	8.8	8.4	8.2	8.0	7.8	
Both sexes, 16 to 19 years	23.2	22.4	22.7	23.6	23.4	23.0	23.6	22.7	22.8	21.8	21.6	20.2	20.1	19.4	19.3	
Men, 20 years and over	8.8	8.9	9.8	9.6	9.7	9.5	9.1	8.8	8.7	8.6	8.2	7.8	7.4	7.3	7.0	
Women, 20 years and over	8.3	8.1	8.9	8.8	8.5	8.5	8.6	7.9	8.0	7.8	7.5	7.2	7.1	7.1	6.9	
White, total	8.6	8.4	9.2	9.1	8.9	8.8	8.6	8.2	8.2	8.0	7.7	7.3	7.1	6.9	6.7	
Both sexes, 16 to 19 years	20.4	19.3	20.1	21.1	20.3	19.9	20.1	19.4	19.5	18.2	18.5	17.2	17.0	16.2	16.5	
Men, 16 to 19 years	21.7	20.2	21.4	22.6	21.4	20.4	20.4	20.3	20.7	18.9	19.8	17.6	17.5	17.8	16.4	
Women, 16 to 19 years	19.0	18.3	18.7	19.6	19.1	19.4	19.7	18.4	18.2	17.4	16.9	16.6	16.5	14.5	16.7	
Men, 20 years and over	7.8	7.9	8.8	8.5	8.5	8.4	7.9	7.7	7.7	7.3	6.9	6.7	6.3	6.1		
Women, 20 years and over	7.3	6.9	7.7	7.5	7.3	7.2	7.4	6.8	6.7	6.6	6.3	6.0	5.9	6.0	5.8	
Black, total	18.9	19.5	19.8	20.1	20.7	20.3	20.3	19.6	19.8	18.9	18.3	17.7	17.8	16.7	16.2	
Both sexes, 16 to 19 years	48.0	48.5	46.5	45.1	49.1	48.4	49.8	48.4	51.4	51.1	48.7	47.3	49.0	47.9	43.5	
Men, 16 to 19 years	48.9	48.8	47.2	46.5	48.6	52.1	50.7	48.3	53.7	52.7	45.6	44.9	46.4	47.1	46.7	
Women, 16 to 19 years	47.1	48.2	45.7	43.5	49.6	44.1	48.7	48.4	48.8	49.2	52.2	50.0	51.9	48.8	39.9	
Men, 20 years and over	17.8	18.1	18.8	19.1	20.0	19.5	18.9	18.6	18.2	16.9	16.3	15.6	15.1	14.8	14.1	
Women, 20 years and over	15.4	16.5	16.9	17.4	16.9	17.0	16.9	16.2	16.4	16.1	15.9	15.6	15.9	14.3	14.4	
Hispanic origin, total	13.8	13.8	15.5	15.7	14.6	13.9	14.0	12.3	12.9	13.1	12.4	12.3	11.6	11.2	10.2	
Married men, spouse present	6.5	6.5	7.2	7.1	7.1	7.0	6.7	6.2	6.3	6.1	5.7	5.5	5.2	5.0	4.9	
Married women, spouse present	7.4	7.0	7.6	7.5	7.4	7.4	7.6	7.0	6.9	6.8	6.3	6.0	6.1	6.0	5.9	
Women who maintain families	11.7	12.2	13.2	13.3	13.0	12.7	12.5	11.8	11.8	12.0	11.4	10.5	10.9	10.7	11.0	
Full-time workers	9.6	9.5	10.4	10.2	10.2	10.0	9.7	9.4	9.3	9.1	8.7	8.2	8.0	7.8	7.5	
Part-time workers	10.5	10.4	10.1	10.6	10.5	10.9	11.8	10.2	10.2	10.1	10.0	9.8	9.8	9.2	9.3	
Unemployed 15 weeks and over	3.2	3.8	4.2	4.1	4.0	4.1	4.0	3.9	3.6	3.5	3.3	3.1	3.0	2.9	2.6	
Labor force time lost ¹	11.0	10.9	11.9	11.7	11.5	11.5	11.1	10.7	10.7	10.5	10.0	9.7	9.4	9.2	8.9	
INDUSTRY																
Nonagricultural private wage and salary workers	10.1	9.9	10.8	10.7	10.5	10.4	10.1	9.7	9.8	9.4	9.0	8.6	8.3	7.9	7.8	
Mining	13.4	17.0	19.1	19.2	20.3	20.8	17.9	16.6	14.9	16.9	12.1	12.8	12.4	10.9	12.2	
Construction	20.0	18.4	19.9	20.2	20.0	20.0	18.4	18.0	17.9	18.1	15.8	15.6	16.3	15.0	15.1	
Manufacturing	12.3	11.2	13.1	12.8	12.5	12.3	11.6	10.7	11.2	10.2	9.6	8.9	8.3	8.4	7.5	
Durable goods	13.3	12.1	14.5	14.3	13.7	13.5	12.5	11.4	11.7	10.9	10.2	9.0	8.3	8.0	7.3	
Nondurable goods	10.8	10.0	11.0	10.8	10.8	10.6	10.2	9.7	10.5	9.3	8.7	8.7	8.2	8.9	7.8	
Transportation and public utilities	6.8	7.4	8.0	7.6	7.7	7.3	7.8	7.3	7.7	7.4	7.2	6.7	6.5	5.1	5.9	
Wholesale and retail trade	10.0	10.0	10.9	10.9	10.4	10.2	10.2	9.8	9.8	9.5	9.8	9.1	8.8	8.4	8.3	
Finance and service industries	6.9	7.2	7.4	7.3	7.3	7.5	7.2	7.3	7.2	7.0	6.9	6.7	6.6	6.3	6.3	
Government workers	4.9	5.3	5.8	5.7	5.8	5.6	5.1	5.4	5.1	5.0	5.1	4.9	5.0	5.0	4.5	
Agricultural wage and salary workers	14.7	16.0	16.3	15.9	16.8	16.8	16.5	15.0	15.1	16.5	16.2	15.7	15.6	15.5	14.0	

¹ 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	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	
Total, 16 years and over	9.7	9.6	10.4	10.3	10.2	10.1	10.0	9.5	9.5	9.2	8.8	8.4	8.2	8.0	7.8	
16 to 24 years	17.8	17.2	18.3	18.2	18.1	18.0	17.6	16.8	17.2	16.5	16.3	15.4	14.9	14.8	14.2	
16 to 19 years	23.2	22.4	22.7	23.6	23.4	23.0	23.6	22.7	22.8	21.8	21.6	20.2	20.1	19.4	19.3	
16 to 17 years	24.9	24.5	24.0	25.4	25.8	25.6	25.6	25.1	24.8	24.0	24.0	21.9	22.9	21.9	22.1	
18 to 19 years	22.1	21.1	21.8	22.6	21.9	21.3	22.3	20.8	21.6	20.5	20.3	19.3	18.8	17.6	17.5	
20 to 24 years	14.9	14.5	16.1	15.4	15.4	15.5	14.5	13.9	14.4	13.8	13.6	13.0	12.2	12.5	11.6	
25 years and over	7.4	7.5	8.2	8.1	8.0	7.9	7.9	7.4	7.3	7.2	6.8	6.5	6.4	6.2	6.1	
25 to 54 years	7.9	8.0	8.7	8.7	8.5	8.5	8.3	7.9	7.8	7.7	7.2	6.9	6.8	6.5	6.4	
55 years and over	5.0	5.3	5.4	5.4	5.5	5.3	5.5	5.3	5.1	5.2	5.0	4.9	4.9	4.7	4.3	
Men, 16 years and over	9.9	9.9	10.8	10.7	10.7	10.5	10.1	9.9	9.8	9.6	9.1	8.6	8.3	8.1	7.8	
16 to 24 years	19.1	18.4	19.8	19.4	19.5	19.5	18.6	18.4	18.6	17.6	17.3	15.9	15.6	15.6	14.6	
16 to 19 years	24.4	23.3	24.0	25.1	24.4	23.9	24.0	23.8	24.3	22.8	22.5	20.2	20.4	20.8	19.7	
16 to 17 years	26.4	25.2	24.4	26.3	26.9	26.7	26.0	27.3	26.0	23.9	24.3	22.0	23.3	21.6	21.6	
18 to 19 years	23.1	22.2	23.5	24.4	22.9	22.3	22.8	21.2	23.2	22.2	21.6	19.6	18.9	19.6	18.1	
20 to 24 years	16.4	15.9	17.6	16.6	17.0	17.3	15.9	15.8	15.7	15.0	14.7	13.8	13.3	13.1	12.1	
25 years and over	7.5	7.8	8.5	8.4	8.4	8.2	7.9	7.6	7.5	7.5	7.0	6.8	6.5	6.2	6.1	
25 to 54 years	8.0	8.2	9.0	9.0	8.9	8.8	8.4	8.1	8.0	8.0	7.4	7.1	6.7	6.6	6.4	
55 years and over	5.1	5.6	5.8	5.8	6.1	5.8	5.5	5.5	5.4	5.6	5.4	5.4	5.4	4.8	4.5	
Women, 16 years and over	9.4	9.2	9.9	9.9	9.6	9.5	9.8	9.0	9.1	8.8	8.5	8.2	8.1	7.9	7.8	
16 to 24 years	16.2	15.8	16.7	16.8	16.6	16.3	16.4	15.0	15.7	15.2	15.1	14.7	14.0	13.9	13.7	
16 to 19 years	21.9	21.3	21.3	21.9	22.3	22.0	23.1	21.5	21.1	20.6	20.5	20.1	19.8	18.0	18.9	
16 to 17 years	23.2	23.7	23.6	24.4	24.7	24.4	25.2	22.6	23.4	24.0	23.6	21.8	22.5	22.2	22.6	
18 to 19 years	21.0	19.9	19.9	20.6	20.7	20.2	21.7	20.5	19.9	18.5	18.8	19.0	18.7	15.4	16.9	
20 to 24 years	13.2	12.9	14.3	14.1	13.6	13.4	12.9	11.7	12.8	12.5	12.3	12.0	11.0	11.7	11.0	
25 years and over	7.3	7.2	7.8	7.7	7.5	7.5	7.8	7.1	7.0	6.9	6.5	6.2	6.3	6.2	6.1	
25 to 54 years	7.7	7.7	8.3	8.3	8.0	8.1	8.1	7.6	7.5	7.3	7.0	6.6	6.8	6.5	6.5	
55 years and over	4.8	4.7	4.9	4.8	4.6	4.7	5.5	5.1	4.7	4.5	4.4	4.1	4.3	4.5	4.0	

7. Unemployed persons by reason for unemployment, seasonally adjusted

[Numbers in thousands]

Reason for unemployment	Annual average		1983												1984	
	1982	1983	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	
Job losers	6,258	6,258	6,864	6,848	6,767	6,753	6,525	6,235	6,133	5,938	5,601	5,226	5,017	4,825	4,737	
On layoff	2,127	1,780	2,084	2,005	1,979	1,958	1,841	1,735	1,660	1,562	1,392	1,321	1,283	1,238	1,272	
Other job losers	4,141	4,478	4,780	4,843	4,788	4,795	4,684	4,500	4,473	4,376	4,209	3,905	3,734	3,588	3,465	
Job leavers	840	830	830	888	816	808	799	752	799	858	866	868	855	809	772	
Reentrants	2,384	2,412	2,505	2,460	2,491	2,404	2,436	2,415	2,479	2,362	2,322	2,250	2,246	2,192	2,153	
New entrants	1,185	1,216	1,188	1,182	1,251	1,246	1,412	1,229	1,214	1,234	1,127	1,154	1,150	1,175	1,092	
PERCENT DISTRIBUTION																
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	60.3	60.2	59.8	60.2	58.4	58.6	57.7	57.1	56.5	55.0	54.1	53.6	54.1	
On layoff	19.9	16.6	18.3	17.6	17.5	17.5	16.5	16.3	15.6	15.0	14.0	13.9	13.8	13.7	14.5	
Other job losers	38.8	41.8	42.0	42.6	42.3	42.8	41.9	42.3	42.1	42.4	41.1	40.3	39.9	39.6	39.6	
Job leavers	7.9	7.7	7.3	7.8	7.2	7.2	7.2	7.1	7.5	8.3	8.7	9.1	9.2	9.0	8.8	
Reentrants	22.3	22.5	22.0	21.6	22.0	21.4	21.8	22.7	23.3	22.7	23.4	23.7	24.2	24.4	24.6	
New entrants	11.1	11.3	10.4	10.4	11.0	11.1	12.6	11.6	11.4	11.9	11.4	12.1	12.4	13.1	12.5	
PERCENT OF CIVILIAN LABOR FORCE																
Job losers	5.7	5.6	6.2	6.2	6.1	6.1	5.8	5.6	5.5	5.3	5.0	4.7	4.5	4.3	4.2	
On layoff	.8	.7	.7	.8	.7	.7	.7	.7	.7	.8	.8	.8	.8	.7	.7	
Other job losers	4.9	4.9	5.5	5.4	5.4	5.4	5.1	4.9	4.8	4.5	4.2	4.0	3.9	3.6	3.5	
Job leavers	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	1.1	
Reentrants	2.2	2.2	2.3	2.2	2.2	2.2	2.2	2.2	2.2	2.1	2.1	2.0	2.0	2.0	1.9	
New entrants	1.1	1.1	1.1	1.1	1.1	1.1	1.3	1.1	1.1	1.1	1.0	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	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	
Less than 5 weeks	3,883	3,570	3,732	3,535	3,595	3,568	3,630	3,529	3,633	3,740	3,504	3,328	3,382	3,233	3,359	
5 to 14 weeks	3,311	2,937	3,169	3,173	3,139	3,012	2,950	2,841	2,951	2,784	2,725	2,616	2,504	2,556	2,484	
15 weeks and over	3,485	4,210	4,613	4,587	4,396	4,510	4,486	4,398	4,078	3,889	3,655	3,527	3,369	3,201	2,984	
15 to 26 weeks	1,708	1,652	1,928	1,861	1,691	1,774	1,593	1,794	1,597	1,383	1,372	1,337	1,284	1,166	1,173	
27 weeks and over	1,776	2,559	2,685	2,726	2,705	2,736	2,893	2,604	2,481	2,506	2,283	2,190	2,085	2,035	1,810	
Mean duration in weeks	15.6	20.0	19.1	19.2	19.2	20.2	21.4	21.3	19.9	20.2	20.1	20.2	19.6	20.5	18.8	
Median duration in weeks	8.7	10.1	9.8	10.4	10.8	11.9	10.8	10.1	9.4	9.4	9.5	9.4	9.0	9.2	8.3	

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 189,000 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 186 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 1983 data, published in the July 1983 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 1981; seasonally adjusted data have been revised back to January 1978. Unadjusted data from April 1982 forward, and seasonally adjusted data from January 1979 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 1983 and seasonally adjusted data from January 1974 through February 1983) 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 and retail trade			Finance, insurance, and real estate	Services	Government		
									Total	Wholesale trade	Retail trade			Total	Federal	State and local
1950	45,197	39,170	18,506	901	2,364	15,241	26,691	4,034	9,386	2,635	6,751	1,888	5,357	6,026	1,928	4,098
1955	50,641	43,727	20,513	792	2,839	16,882	30,128	4,141	10,535	2,926	7,610	2,298	6,240	6,914	2,187	4,727
1960 ¹	54,189	45,836	20,434	712	2,926	16,796	33,755	4,004	11,391	3,143	8,248	2,629	7,378	8,353	2,270	6,083
1964	58,283	48,686	21,005	634	3,097	17,274	37,278	3,951	12,160	3,337	8,823	2,911	8,660	9,596	2,348	7,248
1965	60,765	50,589	21,926	632	3,232	18,062	38,839	4,036	12,716	3,466	9,250	2,977	9,036	10,074	2,378	7,696
1966	63,901	53,116	23,158	627	3,317	19,214	40,743	4,158	13,245	3,597	9,648	3,058	9,498	10,784	2,564	8,220
1967	65,803	54,413	23,308	613	3,248	19,447	42,495	4,268	13,606	3,689	9,917	3,185	10,045	11,391	2,719	8,672
1968	67,897	56,058	23,737	606	3,350	19,781	44,160	4,318	14,099	3,779	10,320	3,337	10,567	11,839	2,737	9,102
1969	70,384	58,189	24,361	619	3,575	20,167	46,023	4,442	14,706	3,907	10,798	3,512	11,169	12,195	2,758	9,437
1970	70,880	58,325	23,578	623	3,588	19,367	47,302	4,515	15,040	3,993	11,047	3,645	11,548	12,554	2,731	9,823
1971	71,214	58,331	22,935	609	3,704	18,623	48,278	4,476	15,352	4,001	11,351	3,772	11,797	12,881	2,696	10,185
1972	73,675	60,341	23,668	628	3,889	19,151	50,007	4,541	15,949	4,113	11,836	3,908	12,276	13,334	2,684	10,649
1973	76,790	63,058	24,893	642	4,097	20,154	51,897	4,656	16,607	4,277	12,329	4,045	12,857	13,732	2,663	11,068
1974	78,265	64,095	24,794	697	4,020	20,077	53,471	4,725	16,987	4,433	12,554	4,148	13,441	14,170	2,724	11,446
1975	76,945	62,259	22,600	752	3,525	18,323	54,345	4,542	17,060	4,415	12,645	4,165	13,892	14,686	2,748	11,937
1976	79,382	64,511	23,352	779	3,576	18,997	56,030	4,582	17,755	4,546	13,209	4,271	14,551	14,871	2,733	12,138
1977	82,471	67,344	24,346	813	3,851	19,582	58,125	4,713	18,516	4,708	13,808	4,467	15,303	15,127	2,727	12,399
1978	86,697	71,026	25,585	851	4,229	20,505	61,113	4,923	19,542	4,969	14,573	4,724	16,252	15,672	2,753	12,919
1979	89,823	73,876	26,461	958	4,463	21,040	63,363	5,136	20,192	5,204	14,989	4,975	17,112	15,947	2,773	13,147
1980	90,406	74,166	25,658	1,027	4,346	20,285	64,748	5,146	20,310	5,275	15,035	5,180	17,890	16,241	2,866	13,375
1981	91,156	75,126	25,497	1,139	4,188	20,170	65,659	5,165	20,547	5,358	15,189	5,298	18,619	16,031	2,772	13,259
1982	89,596	73,793	23,907	1,143	3,911	18,853	65,689	5,081	20,401	5,280	15,122	5,340	19,064	15,803	2,739	13,064
1983	89,978	74,234	23,646	1,021	3,947	18,678	66,332	4,941	20,513	5,232	15,281	5,454	19,680	15,744	2,752	12,992

¹Data include Alaska and Hawaii beginning in 1959.

10. Employment by State

[Nonagricultural payroll data, in thousands]

State	January 1983	December 1983	January 1984 ^p	State	January 1983	December 1983	January 1984 ^p
Alabama	1,282.9	1,338.8	1,324.4	Montana	264.8	273.3	268.3
Alaska	189.5	206.2	198.7	Nebraska	593.3	617.4	605.7
Arizona	1,027.4	1,115.5	1,099.4	Nevada	385.3	416.6	412.2
Arkansas	707.6	760.4	750.9	New Hampshire	385.5	419.4	412.0
California	9,706.8	10,183.4	10,078.7	New Jersey	3,037.5	3,216.4	(¹)
Colorado	1,292.8	1,351.8	1,327.0	New Mexico	463.5	485.3	479.2
Connecticut	1,403.7	1,484.6	1,446.7	New York	7,109.5	7,440.7	7,269.1
Delaware	256.5	270.8	263.9	North Carolina	2,327.4	2,475.8	2,438.3
District of Columbia	585.8	598.5	589.1	North Dakota	241.0	252.3	244.8
Florida	3,788.7	4,056.4	4,050.9	Ohio	3,964.2	4,176.2	4,082.8
Georgia	2,192.3	2,341.3	2,308.8	Oklahoma	1,167.6	1,181.0	1,167.1
Hawaii	399.8	406.1	402.1	Oregon	929.7	976.4	966.2
Idaho	302.2	324.1	316.2	Pennsylvania	4,407.0	4,596.5	4,492.4
Illinois	4,429.1	4,541.6	4,448.2	Rhode Island	379.7	400.5	394.1
Indiana	1,953.3	2,037.7	2,001.8	South Carolina	1,138.9	1,214.2	1,193.6
Iowa	996.8	1,031.4	1,012.7	South Dakota	223.2	234.3	229.7
Kansas	895.5	928.6	916.2	Tennessee	1,660.7	1,766.6	1,746.8
Kentucky	1,131.1	1,186.4	1,159.0	Texas	6,115.7	6,281.9	6,223.7
Louisiana	1,550.8	1,580.7	1,560.3	Utah	551.1	586.7	577.3
Maine	401.3	424.6	408.8	Vermont	199.1	209.1	203.5
Maryland	1,654.5	1,733.4	1,689.3	Virginia	2,121.8	2,251.5	2,213.5
Massachusetts	2,576.1	2,741.6	2,651.2	Washington	1,526.0	1,601.4	1,570.4
Michigan	3,098.3	3,273.9	3,216.6	West Virginia	569.7	591.9	580.9
Minnesota	1,651.2	1,757.1	1,717.6	Wisconsin	1,798.1	1,889.9	1,845.5
Mississippi	769.6	805.1	793.0	Wyoming	200.7	202.4	196.4
Missouri	1,871.6	1,940.9	1,903.1	Virgin Islands	35.9	35.4	34.9

¹Data not available.

p = preliminary.

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

[Nonagricultural payroll data, in thousands]

Industry division and group	Annual average		1983										1984		
	1982	1983	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan. ^p	Feb. ^p
TOTAL	89,596	89,978	88,746	88,814	89,101	89,421	89,844	90,152	89,735	90,851	91,087	91,355	91,599	91,863	92,249
PRIVATE SECTOR	73,793	74,234	73,004	73,090	73,377	73,677	74,123	74,472	74,074	74,990	75,312	75,579	75,829	76,148	76,522
GOODS-PRODUCING	23,907	23,646	23,049	23,030	23,159	23,347	23,518	23,724	23,830	23,935	24,168	24,311	24,415	24,611	24,760
Mining	1,143	1,021	1,014	1,006	997	994	1,003	1,017	1,023	1,026	1,044	1,045	1,047	1,050	1,053
Construction	3,911	3,947	3,790	3,757	3,786	3,860	3,933	3,974	4,014	4,038	4,060	4,094	4,088	4,176	4,212
Manufacturing	18,853	18,678	18,245	18,267	18,376	18,493	18,582	18,733	18,793	18,871	19,064	19,172	19,280	19,385	19,495
Production workers	12,790	12,696	12,303	12,323	12,435	12,531	12,615	12,756	12,803	12,859	13,043	13,147	13,230	13,321	13,418
Durable goods	11,100	10,932	10,608	10,617	10,689	10,788	10,844	10,961	11,022	11,081	11,235	11,320	11,406	11,474	11,575
Production workers	7,350	7,246	6,949	6,961	7,035	7,115	7,169	7,278	7,329	7,378	7,522	7,601	7,665	7,726	7,813
Lumber and wood products	603	677	631	638	651	662	679	688	699	703	712	714	715	714	716
Furniture and fixtures	433	451	427	433	440	446	450	459	457	459	465	470	473	476	481
Stone, clay, and glass products	578	575	557	559	565	570	573	577	582	585	590	590	589	593	602
Primary metal industries	922	839	810	816	820	828	830	839	840	849	867	871	881	872	879
Fabricated metal products	1,435	1,396	1,364	1,362	1,369	1,379	1,384	1,391	1,410	1,411	1,430	1,438	1,449	1,459	1,466
Machinery, except electrical	2,267	2,088	2,042	2,030	2,031	2,064	2,066	2,094	2,109	2,115	2,131	2,158	2,172	2,188	2,202
Electric and electronic equipment	2,016	2,045	1,981	1,988	1,999	2,010	2,030	2,047	2,043	2,082	2,107	2,128	2,146	2,167	2,195
Transportation equipment	1,744	1,785	1,729	1,723	1,743	1,757	1,762	1,794	1,807	1,801	1,848	1,862	1,887	1,906	1,929
Instruments and related products	716	694	693	691	690	689	687	687	692	696	699	701	701	706	709
Miscellaneous manufacturing	386	382	374	377	381	383	383	385	383	380	386	388	393	393	396
Nondurable goods	7,753	7,747	7,637	7,650	7,687	7,705	7,738	7,772	7,771	7,790	7,829	7,852	7,874	7,911	7,920
Production workers	5,440	5,450	5,354	5,362	5,400	5,416	5,446	5,478	5,474	5,481	5,521	5,546	5,565	5,595	5,605
Food and kindred products	1,638	1,630	1,620	1,619	1,633	1,632	1,643	1,638	1,627	1,630	1,628	1,633	1,632	1,642	1,635
Tobacco manufactures	68	65	67	67	66	66	65	65	62	63	64	61	62	62	62
Textile mill products	750	744	726	730	733	736	745	746	752	753	759	758	759	766	762
Apparel and other textile products	1,164	1,169	1,148	1,143	1,149	1,153	1,159	1,180	1,175	1,177	1,191	1,199	1,206	1,210	1,210
Paper and allied products	662	659	652	652	654	656	657	658	659	662	665	666	670	670	674
Printing and publishing	1,269	1,283	1,265	1,269	1,274	1,276	1,281	1,284	1,289	1,290	1,297	1,301	1,303	1,309	1,313
Chemicals and allied products	1,079	1,059	1,056	1,056	1,058	1,058	1,056	1,059	1,056	1,060	1,061	1,061	1,064	1,065	1,066
Petroleum and coal products	201	196	199	199	199	198	198	197	195	195	193	193	192	192	192
Rubber and miscellaneous plastics products	701	727	691	699	707	716	721	732	739	742	753	762	769	777	787
Leather and leather products	221	216	214	216	214	214	213	213	217	218	218	218	217	218	219
SERVICE-PRODUCING	65,689	66,332	65,697	65,784	65,942	66,074	66,326	66,428	65,905	66,916	66,919	67,044	67,184	67,252	67,489
Transportation and public utilities	5,081	4,941	4,966	4,963	4,988	4,993	4,992	4,984	4,341	5,031	5,019	5,019	5,015	5,042	5,043
Wholesale and retail trade	20,401	20,513	20,343	20,350	20,329	20,356	20,494	20,529	20,580	20,612	20,666	20,718	20,781	20,846	20,914
Wholesale trade	5,280	5,232	5,181	5,176	5,180	5,197	5,222	5,229	5,249	5,274	5,287	5,291	5,313	5,341	5,356
Retail trade	15,122	15,281	15,162	15,174	15,149	15,159	15,272	15,300	15,331	15,338	15,379	15,427	15,468	15,505	15,558
Finance, insurance, and real estate	5,340	5,454	5,384	5,391	5,423	5,435	5,451	5,465	5,488	5,499	5,503	5,515	5,525	5,553	5,563
Services	19,064	19,680	19,262	19,356	19,478	19,546	19,668	19,770	19,835	19,913	19,956	20,016	20,093	20,096	20,242
Government	15,803	15,744	15,742	15,724	15,724	15,744	15,721	15,680	15,661	15,861	15,775	15,776	15,770	15,715	15,727
Federal	2,739	2,752	2,742	2,742	2,749	2,756	2,742	2,738	2,733	2,773	2,764	2,763	2,768	2,763	2,760
State and local	13,064	12,992	13,000	12,982	12,975	12,988	12,979	12,942	12,928	13,088	13,011	13,013	13,002	12,952	12,967

p = preliminary.

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

12. Hours and earnings, by industry division, selected years, 1950-83

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

Year	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings
	Private sector			Mining			Construction			Manufacturing		
1950	\$53.13	39.8	\$1.34	\$67.16	37.9	\$1.77	\$69.68	37.4	\$1.86	\$58.32	40.5	\$1.44
1955	67.72	39.6	1.71	89.54	40.7	2.20	90.90	37.1	2.45	75.30	40.7	1.85
1960 ¹	80.67	38.6	2.09	105.04	40.4	2.60	112.57	36.7	3.07	89.72	39.7	2.26
1964	91.33	38.7	2.36	117.74	41.9	2.81	132.06	37.2	3.55	102.97	40.7	2.53
1965	95.45	38.8	2.46	123.52	42.3	2.92	138.38	37.4	3.70	107.53	41.2	2.61
1966	98.82	38.6	2.56	130.24	42.7	3.05	146.26	37.6	3.89	112.19	41.4	2.71
1967	101.84	38.0	2.68	135.89	42.6	3.19	154.95	37.7	4.11	114.49	40.6	2.82
1968	107.73	37.8	2.85	142.71	42.6	3.35	164.49	37.3	4.41	122.51	40.7	3.01
1969	114.61	37.7	3.04	154.80	43.0	3.60	181.54	37.9	4.79	129.51	40.6	3.19
1970	119.83	37.1	3.23	164.40	42.7	3.85	195.45	37.3	5.24	133.33	39.8	3.35
1971	127.31	36.9	3.45	172.14	42.4	4.06	211.67	37.2	5.69	142.44	39.9	3.57
1972	136.90	37.0	3.70	189.14	42.6	4.44	221.19	36.5	6.06	154.71	40.5	3.82
1973	145.39	36.9	3.94	201.40	42.4	4.75	235.89	36.8	6.41	166.46	40.7	4.09
1974	154.76	36.5	4.24	219.14	41.9	5.23	249.25	36.6	6.81	176.80	40.0	4.42
1975	163.53	36.1	4.53	249.31	41.9	5.95	266.08	36.4	7.31	190.79	39.5	4.83
1976	175.45	36.1	4.86	273.90	42.4	6.46	283.73	36.8	7.71	209.32	40.1	5.22
1977	189.00	36.0	5.25	301.20	43.4	6.94	295.65	36.5	8.10	228.90	40.3	5.68
1978	203.70	35.8	5.69	332.88	43.4	7.67	318.69	36.8	8.66	249.27	40.4	6.17
1979	219.91	35.7	6.16	365.07	43.0	8.49	342.99	37.0	9.27	269.34	40.2	6.70
1980	235.10	35.3	6.66	397.06	43.3	9.17	367.78	37.0	9.94	288.62	39.7	7.27
1981	255.20	35.2	7.25	439.75	43.7	10.04	299.26	36.9	10.82	318.00	39.8	7.99
1982	266.92	34.8	7.67	459.23	42.6	10.78	426.45	36.7	11.62	330.65	38.9	8.50
1983	280.35	35.0	8.01	480.25	42.5	11.30	441.86	37.1	11.91	354.48	40.1	8.84
	Transportation and public utilities			Wholesale and retail trade			Finance, insurance, and real estate			Services		
1950				\$44.55	40.5	\$1.10	\$50.52	37.7	\$1.34			
1955				55.16	39.4	1.40	63.92	37.6	1.70			
1960 ¹				66.01	38.6	1.71	75.14	37.2	2.02			
1964	\$118.78	41.1	\$2.89	74.66	37.9	1.97	85.79	37.3	2.30	\$70.03	36.1	\$1.94
1965	125.14	41.3	3.03	76.91	37.7	2.04	88.91	37.2	2.39	73.60	35.9	2.05
1966	128.13	41.2	3.11	79.39	37.1	2.14	92.13	37.3	2.47	77.04	35.5	2.17
1967	130.82	40.5	3.23	82.35	36.6	2.25	95.72	37.1	2.58	80.38	35.1	2.29
1968	138.85	40.6	3.42	87.00	36.1	2.41	101.75	37.0	2.75	83.97	34.7	2.42
1969	147.74	40.7	3.63	91.39	35.7	2.56	108.70	37.1	2.93	90.57	34.7	2.61
1970	155.93	40.5	3.85	96.02	35.3	2.72	112.67	36.7	3.07	96.66	34.4	2.81
1971	168.82	40.1	4.21	101.09	35.1	2.88	117.85	36.6	3.22	103.06	33.9	3.04
1972	187.86	40.4	4.65	106.45	34.9	3.05	122.98	36.6	3.36	110.85	33.9	3.27
1973	203.31	40.5	5.02	111.76	34.6	3.23	129.20	36.6	3.53	117.29	33.8	3.47
1974	217.48	40.2	5.41	119.02	34.2	3.48	137.61	36.5	3.77	126.00	33.6	3.75
1975	233.44	39.7	5.88	126.45	33.9	3.73	148.19	36.5	4.06	134.67	33.5	4.02
1976	256.71	39.8	6.45	133.79	33.7	3.97	155.43	36.4	4.27	143.52	33.3	4.31
1977	278.90	39.9	6.99	142.52	33.3	4.28	165.26	36.4	4.54	153.45	33.0	4.65
1978	302.80	40.0	7.57	153.64	32.9	4.67	178.00	36.4	4.89	163.67	32.8	4.99
1979	325.58	39.9	8.16	164.96	32.6	5.06	190.77	36.2	5.27	175.27	32.7	5.36
1980	351.25	39.6	8.87	176.46	32.2	5.48	209.60	36.2	5.79	190.71	32.6	5.85
1981	382.18	39.4	9.70	190.62	32.2	5.92	229.05	36.3	6.31	208.97	32.6	6.41
1982	401.70	39.0	10.30	198.10	31.9	6.21	245.44	36.2	6.78	224.94	32.6	6.90
1983	421.59	39.0	10.81	207.03	31.9	6.49	264.26	36.2	7.30	237.40	32.7	7.26

¹ Data include Alaska and Hawaii beginning in 1959.

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

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

Industry division and group	Annual average		1983										1984		
	1982	1983	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan. P	Feb. P
PRIVATE SECTOR	34.8	35.0	34.5	34.8	34.9	35.1	35.1	35.0	35.0	35.2	35.3	35.2	35.3	35.5	35.4
MANUFACTURING	38.9	40.1	39.2	39.5	40.1	40.0	40.1	40.2	40.3	40.8	40.6	40.6	40.5	41.0	41.0
Overtime hours	2.3	3.0	2.4	2.6	2.9	2.7	2.9	3.0	3.1	3.3	3.3	3.4	3.4	3.5	3.6
Durable goods	39.3	40.7	39.7	39.9	40.5	40.4	40.6	40.8	40.8	41.5	41.2	41.2	41.1	41.7	41.7
Overtime hours	2.2	3.0	2.3	2.5	2.8	2.6	2.8	3.0	3.1	3.4	3.4	3.5	3.5	3.7	3.7
Lumber and wood products	38.0	40.0	39.5	39.5	40.0	39.8	40.0	39.9	40.2	40.5	40.3	39.7	39.7	40.7	40.2
Furniture and fixtures	37.2	39.4	37.9	38.3	39.3	39.2	39.6	39.7	39.7	40.1	39.8	39.7	40.1	40.3	39.9
Stone, clay, and glass products	40.0	41.4	40.5	40.6	41.0	41.2	41.6	41.7	41.7	42.1	41.7	41.7	41.6	42.1	42.5
Primary metal industries	38.6	40.5	39.1	39.4	39.9	40.3	40.3	40.8	40.9	41.2	41.7	41.6	41.8	41.7	42.0
Fabricated metal products	39.2	40.6	39.6	39.7	40.5	40.4	40.5	40.7	40.9	41.6	41.2	41.4	41.4	41.8	41.8
Machinery, except electrical	39.7	40.5	39.4	39.7	40.2	40.0	40.4	40.7	40.7	41.2	41.3	41.3	41.4	41.9	42.1
Electric and electronic equipment	39.3	40.5	39.5	39.8	40.4	40.3	40.5	40.8	40.7	41.1	41.1	41.1	40.9	41.3	41.3
Transportation equipment	40.5	42.1	41.2	41.7	42.3	41.6	41.9	42.0	41.8	43.5	42.5	42.5	41.9	43.3	43.1
Instruments and related products	39.8	40.4	39.7	40.0	40.5	40.4	40.1	40.7	40.4	41.0	40.7	40.6	40.7	41.3	40.9
Nondurable goods	38.4	39.4	38.5	39.0	39.5	39.4	39.6	39.5	39.5	39.9	39.7	39.7	39.7	40.0	40.1
Overtime hours	2.5	3.0	2.6	2.7	3.0	2.9	3.0	3.0	3.1	3.1	3.1	3.1	3.2	3.2	3.3
Food and kindred products	39.4	39.5	39.0	39.2	39.6	39.4	39.8	39.4	39.6	39.9	39.7	39.5	39.6	39.6	39.9
Textile mill products	37.5	40.4	39.0	39.6	40.6	40.4	40.7	40.7	40.9	41.3	40.7	40.7	40.7	41.0	40.7
Apparel and other textile products	34.7	36.2	35.2	35.6	36.2	36.1	36.1	35.8	36.2	36.8	36.5	36.4	36.5	37.3	37.1
Paper and allied products	41.8	42.6	41.4	42.1	42.4	42.7	42.8	42.9	42.9	43.3	43.2	43.0	43.0	43.2	43.5
Printing and publishing	37.1	37.6	37.1	37.4	37.7	37.4	37.6	37.7	37.5	37.8	38.0	37.9	37.6	37.8	37.9
Chemicals and allied products	40.9	41.6	41.0	41.2	41.5	41.6	41.9	41.8	41.6	41.7	41.7	41.8	41.9	42.2	42.1
Petroleum and coal products	43.9	43.9	44.4	44.9	43.5	43.6	43.8	43.7	43.5	43.2	43.5	43.6	44.5	45.6	45.7
Leather and leather products	35.6	36.8	34.9	36.0	37.0	36.8	36.8	37.4	37.2	37.7	37.5	37.2	37.0	37.1	37.0
TRANSPORTATION AND PUBLIC UTILITIES	39.0	39.0	38.6	38.8	38.8	38.9	38.9	38.9	39.3	39.4	39.4	39.2	39.4	39.6	39.4
WHOLESALE AND RETAIL TRADE	31.9	31.9	31.4	31.7	31.7	31.9	32.0	31.9	31.8	31.8	32.1	32.0	32.4	32.2	32.1
WHOLESALE TRADE	38.4	38.6	38.2	38.4	38.5	38.6	38.7	38.6	38.5	38.7	38.7	38.7	38.7	38.8	38.8
RETAIL TRADE	29.9	29.8	29.3	29.7	29.6	29.9	29.9	29.8	29.7	29.7	30.0	30.0	30.4	30.1	30.0
SERVICES	32.6	32.7	32.5	32.7	32.7	32.9	32.7	32.6	32.7	32.8	32.9	32.7	32.6	32.8	32.6

p - preliminary.

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

14. Hourly earnings, by industry division and major manufacturing group

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

Industry division and group	Annual average		1983												1984	
	1982	1983	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan. ^P	Feb. ^P	
PRIVATE SECTOR	\$7.67	\$8.01	\$7.92	\$7.90	\$7.94	\$7.97	\$7.97	\$8.00	\$7.94	\$8.11	\$8.15	\$8.16	\$8.16	\$8.25	\$8.24	
Seasonally adjusted	(¹)	(¹)	7.91	7.91	7.95	7.97	8.00	8.03	7.98	8.08	8.13	8.13	8.16	8.22	8.23	
MINING	10.78	11.30	11.25	11.19	11.28	11.20	11.25	11.29	11.28	11.35	11.35	11.43	11.44	11.54	11.46	
CONSTRUCTION	11.62	11.91	12.00	11.95	11.90	11.80	11.74	11.78	11.84	12.03	12.04	11.89	12.01	12.05	11.93	
MANUFACTURING	8.50	8.84	8.75	8.74	8.77	8.78	8.81	8.86	8.79	8.90	8.92	8.99	9.06	9.09	9.09	
Durable goods	9.06	9.40	9.31	9.29	9.31	9.34	9.37	9.40	9.34	9.48	9.49	9.56	9.63	9.66	9.66	
Lumber and wood products	7.46	7.79	7.72	7.68	7.74	7.78	7.85	7.82	7.83	7.88	7.87	7.80	7.80	7.86	7.90	
Furniture and fixtures	6.31	6.62	6.50	6.51	6.51	6.52	6.60	6.65	6.67	6.73	6.71	6.72	6.77	6.76	6.76	
Stone, clay, and glass products	8.86	9.28	9.10	9.13	9.16	9.20	9.28	9.34	9.31	9.43	9.39	9.41	9.41	9.43	9.42	
Primary metal industries	11.33	11.33	11.53	11.24	11.25	11.28	11.23	11.37	11.28	11.33	11.28	11.31	11.35	11.38	11.45	
Fabricated metal products	8.78	9.14	9.04	9.05	9.07	9.08	9.11	9.10	9.12	9.21	9.22	9.27	9.38	9.34	9.34	
Machinery, except electrical	9.29	9.63	9.44	9.46	9.48	9.59	9.63	9.65	9.61	9.71	9.74	9.81	9.91	9.91	9.93	
Electric and electronic equipment	8.21	8.67	8.56	8.60	8.60	8.60	8.63	8.69	8.64	8.75	8.73	8.78	8.86	8.90	8.88	
Transportation equipment	11.12	11.68	11.49	11.49	11.53	11.52	11.63	11.62	11.53	11.80	11.88	12.02	12.06	12.07	12.08	
Instruments and related products	8.10	8.54	8.48	8.47	8.46	8.48	8.48	8.57	8.53	8.61	8.60	8.62	8.70	8.73	8.69	
Miscellaneous manufacturing	6.43	6.82	6.73	6.75	6.76	6.82	6.81	6.82	6.81	6.85	6.85	6.86	6.97	7.05	7.03	
Nondurable goods	7.73	8.07	7.99	8.00	8.03	8.03	8.04	8.11	8.05	8.11	8.11	8.18	8.24	8.27	8.28	
Food and kindred products	7.89	8.17	8.11	8.16	8.20	8.18	8.17	8.17	8.14	8.14	8.13	8.23	8.33	8.38	8.41	
Tobacco manufactures	9.78	10.32	9.96	10.43	10.61	10.74	10.91	10.84	10.24	9.90	9.67	10.74	10.18	10.58	10.78	
Textile mill products	5.83	6.18	6.10	6.11	6.14	6.14	6.16	6.17	6.19	6.23	6.24	6.26	6.31	6.40	6.41	
Apparel and other textile products	5.20	5.37	5.33	5.33	5.35	5.33	5.36	5.35	5.35	5.39	5.43	5.45	5.46	5.51	5.49	
Paper and allied products	9.32	9.93	9.65	9.67	9.72	9.81	9.91	10.06	10.02	10.11	10.10	10.19	10.23	10.22	10.22	
Printing and publishing	8.75	9.12	8.99	9.03	9.03	9.05	9.06	9.10	9.14	9.25	9.24	9.27	9.31	9.28	9.30	
Chemicals and allied products	9.96	10.59	10.41	10.39	10.43	10.50	10.52	10.58	10.61	10.69	10.78	10.86	10.89	10.89	10.89	
Petroleum and coal products	12.46	13.28	13.25	13.28	13.27	13.17	13.17	13.20	13.16	13.36	13.36	13.44	13.57	13.42	13.28	
Rubber and miscellaneous plastics products	7.65	8.02	7.91	7.92	7.95	7.97	7.96	8.06	8.03	8.08	8.12	8.10	8.18	8.21	8.23	
Leather and leather products	5.32	5.53	5.50	5.52	5.52	5.51	5.49	5.52	5.50	5.56	5.55	5.56	5.60	5.69	5.68	
TRANSPORTATION AND PUBLIC UTILITIES	10.30	10.81	10.72	10.68	10.72	10.74	10.73	10.86	10.68	10.90	10.93	11.01	10.98	11.04	11.01	
WHOLESALE AND RETAIL TRADE	6.21	6.49	6.45	6.43	6.45	6.46	6.46	6.48	6.47	6.54	6.57	6.58	6.55	6.69	6.68	
WHOLESALE TRADE	8.02	8.41	8.28	8.27	8.34	8.36	8.35	8.42	8.41	8.48	8.54	8.54	8.60	8.67	8.63	
RETAIL TRADE	5.47	5.73	5.69	5.68	5.69	5.71	5.71	5.72	5.71	5.77	5.78	5.81	5.77	5.89	5.88	
FINANCE, INSURANCE, AND REAL ESTATE	6.78	7.30	7.22	7.19	7.23	7.31	7.26	7.30	7.25	7.33	7.45	7.39	7.43	7.58	7.58	
SERVICES	6.90	7.26	7.19	7.17	7.20	7.23	7.20	7.18	7.18	7.31	7.39	7.41	7.44	7.53	7.52	

¹Not available.
p = preliminary.

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

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

[1977 = 100]

Industry	Not seasonally adjusted					Seasonally adjusted						
	Feb. 1983	Dec. 1983	Jan. 1984 ^P	Feb. 1984 ^P	Percent change from: Feb. 1983 to Feb. 1984	Feb. 1983	Oct. 1983	Nov. 1983	Dec. 1983	Jan. 1984 ^P	Feb. 1984 ^P	Percent change from: Jan. 1984 to Feb. 1984
PRIVATE SECTOR (in current dollars)	153.7	157.6	158.8	158.6	3.2	153.4	156.8	156.9	157.6	158.2	158.2	0.0
Mining	165.1	170.1	170.7	169.9	2.9	(¹)	(¹)	(¹)	(¹)	(¹)	(¹)	(¹)
Construction	144.6	145.8	146.0	144.6	.0	145.0	145.1	144.6	145.2	145.9	145.5	-3
Manufacturing	157.3	160.5	161.1	161.2	2.5	157.3	158.9	159.7	160.1	160.7	161.2	.3
Transportation and public utilities	155.7	159.6	160.5	160.2	2.9	155.2	158.4	158.7	158.9	159.9	159.5	-2
Wholesale and retail trade	149.8	154.0	155.5	155.2	3.7	149.3	154.1	154.1	154.8	155.0	154.7	-2
Finance, insurance, and real estate	157.4	162.0	165.1	165.0	4.8	(¹)	(¹)	(¹)	(¹)	(¹)	(¹)	(¹)
Services	153.4	159.2	160.9	160.6	4.7	152.0	158.4	158.1	159.2	159.6	159.5	-1
PRIVATE SECTOR (in constant dollars)	95.5	94.9	95.2	(²)	(²)	95.1	94.4	94.3	94.7	94.7	(²)	(²)

¹This 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.

²Not available.

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

16. Weekly earnings, by industry division and major manufacturing group

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

Industry division and group	Annual average		1983												1984	
	1982	1983	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan. P	Feb. P	
PRIVATE SECTOR																
Current dollars	\$266.92	\$280.35	\$270.86	\$274.13	\$275.52	\$278.15	\$280.54	\$283.20	\$281.08	\$286.28	\$287.70	\$286.42	\$289.68	\$288.75	\$289.22	
Seasonally adjusted	(1)	(1)	272.90	275.27	277.46	279.75	280.80	281.05	279.30	284.42	286.99	286.18	288.05	291.81	291.34	
Constant (1977) dollars	167.87	171.15	168.24	169.85	169.55	170.33	171.37	172.37	170.35	172.77	173.31	172.44	174.40	173.11	(1)	
MINING	459.23	480.25	464.63	467.74	469.25	472.64	478.13	475.31	481.66	489.19	490.32	490.35	497.64	503.14	498.51	
CONSTRUCTION	426.45	441.86	424.80	434.98	436.73	441.32	444.95	450.00	449.92	455.94	449.09	431.61	441.97	437.42	440.22	
MANUFACTURING																
Current dollars	330.65	354.48	339.50	346.10	349.05	350.32	355.04	354.40	353.36	363.12	363.04	366.79	373.27	368.15	369.96	
Constant (1977) dollars	207.96	216.41	210.87	214.44	214.80	214.53	216.88	215.70	214.16	219.14	218.70	220.82	224.73	221.64	(1)	
Durable goods																
Lumber and wood products	283.48	311.60	299.54	302.59	308.05	312.76	320.28	313.58	319.46	320.72	318.74	308.88	310.44	308.90	312.05	
Furniture and fixtures	234.73	260.83	243.10	251.29	253.89	254.28	263.34	258.69	267.47	271.22	271.08	269.47	277.57	264.32	265.67	
Stone, clay, and glass products	354.40	384.19	358.54	368.85	374.64	380.88	390.69	391.35	391.95	399.83	395.32	395.22	394.28	384.74	389.99	
Primary metal industries	344.18	458.87	450.82	456.23	451.13	452.33	454.82	460.49	457.97	469.06	464.74	470.50	478.97	474.55	480.90	
Fabricated metal products	344.18	371.08	354.37	361.10	364.61	366.83	371.69	365.82	372.10	381.29	380.79	385.63	396.77	386.68	386.68	
Machinery except electrical	368.81	390.02	371.94	377.40	379.20	382.64	388.09	386.97	387.28	399.08	400.31	408.10	422.17	415.23	418.05	
Electric and electronic equipment	322.65	351.14	336.41	344.00	344.86	345.72	350.38	350.21	349.92	358.75	358.80	363.49	370.35	365.79	364.97	
Transportation equipment	450.36	491.73	469.94	480.28	484.26	482.69	491.95	484.55	475.04	505.04	506.09	515.66	522.20	516.60	517.02	
Instruments and related products	322.38	345.02	335.81	340.49	339.25	341.74	340.90	344.51	343.76	353.01	350.02	353.42	360.18	357.93	354.55	
Miscellaneous manufacturing	247.56	266.66	253.72	263.25	263.64	264.62	264.91	264.62	266.27	270.58	272.63	273.71	279.50	275.66	280.50	
Nondurable goods																
Food and kindred products	310.87	322.72	312.24	316.61	318.98	321.47	325.17	322.72	324.80	328.86	323.57	327.55	334.03	330.17	330.51	
Tobacco manufactures	369.68	385.97	339.64	378.61	395.75	401.68	420.04	398.91	386.05	380.16	370.36	431.75	384.80	396.75	387.00	
Textile mill products	218.63	249.67	236.07	242.57	246.83	248.67	253.18	248.03	254.41	257.92	256.46	256.66	258.71	257.28	258.96	
Apparel and other textile products	180.44	194.39	185.48	190.28	192.07	192.41	196.18	193.14	195.81	198.35	199.82	200.02	200.38	198.91	201.48	
Paper and allied products	389.58	423.02	396.62	406.14	410.18	415.94	425.14	429.56	428.86	439.79	436.32	440.21	448.07	440.48	440.48	
Printing and publishing	324.63	342.91	330.83	338.63	337.72	337.57	338.84	341.25	344.58	351.50	351.12	353.19	357.50	347.07	349.68	
Chemicals and allied products	407.36	440.54	425.77	428.07	432.85	435.75	440.79	440.13	439.25	447.91	449.53	457.21	461.74	457.38	456.29	
Petroleum and coal products	546.99	582.99	573.73	584.32	581.23	575.73	579.48	584.76	572.46	591.85	585.17	590.02	602.51	598.53	592.29	
Rubber and miscellaneous plastics products	302.94	330.42	314.03	321.55	326.75	327.57	328.75	329.65	330.84	338.55	340.23	340.20	347.65	345.64	347.31	
Leather and leather products	189.39	203.50	190.30	197.06	201.48	204.42	207.52	207.00	206.25	208.50	206.46	207.39	208.88	207.69	208.46	
TRANSPORTATION AND PUBLIC UTILITIES	401.70	421.59	411.65	413.32	413.79	415.64	419.54	425.71	421.86	429.46	430.64	432.69	435.91	432.77	431.59	
WHOLESALE AND RETAIL TRADE	198.10	207.03	199.31	201.90	203.18	205.43	207.37	210.60	209.63	209.28	210.24	209.90	214.19	211.40	211.09	
WHOLESALE TRADE	307.97	324.63	313.81	316.74	319.42	321.86	323.15	326.70	325.47	328.18	331.35	331.35	335.40	334.66	332.26	
RETAIL TRADE	163.55	170.75	163.30	166.42	167.29	169.59	171.87	175.03	174.16	172.52	172.82	173.14	177.72	173.17	172.87	
FINANCE, INSURANCE, AND REAL ESTATE	245.44	264.26	260.64	258.84	261.00	265.35	262.09	264.99	261.73	263.88	270.44	266.78	268.97	276.67	274.40	
SERVICES	224.94	237.40	232.96	233.74	234.72	236.42	236.88	237.66	237.66	239.04	242.39	241.57	242.54	245.48	244.40	

¹ 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

[In percent]

Time span	Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Over 1-month span	1982	28.5	45.4	36.0	39.0	47.6	32.8	38.4	37.1	34.1	29.3	32.0	42.2
	1983	56.5	45.7	62.4	69.1	71.0	64.5	68.5	68.0	60.8	70.7	64.5	64.0
	1984	P67.2	P70.2	—	—	—	—	—	—	—	—	—	—
Over 3-month span	1982	25.3	28.8	32.0	34.1	32.5	33.6	27.2	27.2	26.1	25.5	24.7	40.6
	1983	P78.5	55.1	65.6	75.8	76.1	77.2	73.9	79.6	79.6	74.2	72.0	P74.2
Over 6-month span	1982	20.2	23.7	25.3	29.8	26.1	26.1	23.4	19.1	21.2	26.1	26.6	35.8
	1983	50.5	63.2	73.4	76.3	79.3	83.6	82.5	80.4	82.0	P82.8	P82.8	—
Over 12-month span	1982	22.0	20.7	18.0	19.4	18.3	20.7	20.7	22.8	24.2	31.5	37.6	44.1
	1983	48.9	58.3	62.6	73.4	76.1	81.2	P84.9	P87.1	—	—	—	—

p = preliminary.

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

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

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
	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan. ^P
All programs:													
Insured unemployment	5,459	5,437	5,134	4,642	3,947	3,481	3,275	2,917	2,580	2,478	2,620	2,915	3,374
State unemployment insurance program: ¹													
Initial claims ²	3,143	2,065	2,075	1,874	1,666	1,740	1,804	1,668	1,381	1,522	^r 1,757	2,105	2,348
Insured unemployment (average weekly volume)	4,923	4,759	4,401	3,906	3,361	3,063	3,049	2,766	2,449	2,358	2,508	2,805	3,249
Rate of insured unemployment	5.6	5.5	5.0	4.5	3.9	3.5	3.5	3.2	2.8	2.7	2.9	3.3	3.8
Weeks of unemployment compensated	18,307	16,895	19,529	14,986	13,133	12,819	10,959	11,305	^r 9,383	8,417	^r 9,301	10,168	12,012
Average weekly benefit amount for total unemployment	\$124.29	\$124.47	\$125.47	\$124.85	\$124.49	\$123.44	\$121.59	\$121.42	\$121.36	^r \$123.00	^r \$122.19	\$122.61	\$123.16
Total benefits paid	\$2,205,551	\$2,052,415	\$2,367,752	\$1,816,539	\$1,587,888	\$1,549,758	\$1,298,189	\$1,337,442	\$1,104,362	\$1,002,141	\$1,099,862	\$1,203,605	\$1,426,697
State unemployment insurance program:¹ (Seasonally adjusted data)													
Initial claims ²	2,187	2,138	2,148	1,952	1,993	1,836	1,723	1,841	1,664	1,656	^r 1,717	1,620	1,601
Insured unemployment (average weekly volume)	3,980	3,979	3,884	3,774	3,538	3,301	3,303	3,026	3,088	2,617	2,677	2,721	2,486
Rate of insured unemployment	4.6	4.6	4.5	4.3	4.1	3.8	3.8	3.5	3.6	3.1	3.1	3.2	2.9
Unemployment compensation for ex-servicemen:³													
Initial claims ¹	21	16	18	15	14	16	16	19	17	16	15	14	15
Insured unemployment (average weekly volume)	37	37	34	30	26	25	25	26	27	28	28	27	27
Weeks of unemployment compensated	134	143	156	117	104	107	94	108	106	^r 107	^r 116	113	112
Total benefits paid	\$16,807	\$18,032	\$19,588	\$14,776	\$13,111	\$13,588	\$12,118	\$13,855	\$13,519	^r \$14,074	^r \$15,121	^r \$14,815	\$14,539
Unemployment compensation for Federal civilian employees:⁴													
Initial claims	16	10	11	10	9	13	12	11	11	15	13	13	16
Insured unemployment (average weekly volume)	35	33	31	26	22	21	23	22	22	25	27	29	32
Weeks of unemployment compensated	142	131	146	109	93	90	85	94	83	88	^r 110	119	131
Total benefits paid	\$16,045	\$15,083	\$16,871	\$12,422	\$10,603	\$10,272	\$9,640	\$10,760	\$9,522	^r \$10,144	^r \$12,415	\$13,888	\$15,318
Railroad unemployment insurance:													
Applications	20	7	8	94	4	30	55	14	9	7	8	8	10
Insured unemployment (average weekly volume)	102	72	65	79	90	49	49	46	41	48	40	43	51
Number of payments	219	158	169	172	183	123	92	107	103	92	92	95	121
Average amount of benefit payment	\$220.32	\$214.54	\$213.44	\$203.87	\$215.15	\$203.54	\$199.87	\$214.21	\$214.77	\$211.41	\$212.36	\$213.71	\$210.73
Total benefits paid	\$44,514	\$33,100	\$36,243	\$27,783	\$29,411	\$14,984	\$17,551	\$21,789	\$20,239	\$19,531	\$19,536	\$19,870	\$23,866
Employment service:⁵													
New applications and renewals			8,381			11,987			15,595			^P 3,775	
Nonfarm placements			1,184			1,921			3,012			^P 677	

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

²Excludes transition claims under State programs.

³Excludes data on claims and payments made jointly with other programs.

⁴Excludes data on claims and payments made jointly with State programs.

⁵Cumulative 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 products 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							
	Jan.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Jan.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.
All items	293.1	300.3	301.8	302.6	303.1	303.5	305.2	292.1	299.5	300.8	301.3	301.4	301.5	302.7
Food and beverages	280.7	284.9	285.3	285.7	285.3	286.5	291.6	281.1	285.1	285.6	285.9	285.6	286.8	291.9
Housing	317.9	324.8	326.4	326.8	327.0	327.4	327.4	317.0	324.3	325.3	325.2	324.5	324.2	324.7
Apparel and upkeep	191.0	197.3	200.4	200.7	200.7	199.3	196.4	190.0	196.3	199.3	199.8	199.7	198.1	195.3
Transportation	293.0	302.4	303.7	305.0	306.3	306.3	306.0	294.3	304.1	305.5	306.9	308.2	308.2	307.9
Medical care	347.8	360.0	361.2	362.9	364.9	366.2	369.5	345.3	357.9	359.2	360.9	362.9	364.3	367.5
Entertainment	241.5	246.6	247.5	249.1	249.5	249.5	249.5	237.7	243.1	244.1	245.4	245.7	245.8	246.2
Other goods and services	279.9	289.0	294.4	296.8	298.1	298.6	300.5	277.8	288.0	292.0	294.1	295.5	295.9	298.1
Commodities	267.2	273.4	274.5	275.0	275.2	275.5	276.8	268.0	275.1	275.9	276.1	276.2	276.3	277.3
Commodities less food and beverages	256.5	263.6	265.1	265.8	266.3	266.0	265.2	257.8	266.1	267.2	267.3	267.5	267.1	266.4
Nondurables less food and beverages	267.4	274.7	275.8	275.2	274.5	273.5	272.3	269.3	276.9	277.9	277.4	276.6	275.4	274.2
Durables	247.3	254.3	256.4	258.7	261.0	261.8	261.4	247.3	256.0	257.0	257.7	258.7	258.9	258.4
Services	337.9	346.8	349.0	350.2	351.0	351.6	353.9	336.9	344.8	346.9	348.1	348.2	348.4	349.8
Rent, residential	232.2	238.2	239.5	240.4	241.3	242.0	242.9	231.7	237.6	238.9	239.8	240.7	241.3	242.3
Household services less rent of shelter (12/82 = 100)	100.9	104.8	105.1	104.8	104.2	104.1	105.1	....	....	....	....	....	....	....
Transportation services	300.1	304.0	305.4	307.8	310.1	310.8	314.1	297.1	300.2	301.4	303.9	306.0	306.9	310.3
Medical care services	377.4	389.8	391.0	392.9	395.0	396.3	400.2	374.0	387.0	388.3	390.2	392.3	393.8	397.5
Other services	271.5	276.9	282.5	285.2	286.5	287.2	288.0	269.1	274.8	279.6	282.2	283.6	284.3	285.0
Special indexes:														
All items less food	292.6	300.5	302.3	303.2	303.9	304.0	304.8	291.9	300.0	301.5	302.1	302.3	302.1	302.3
All items less homeowners' costs	100.2	102.7	103.2	103.5	103.6	103.7	104.3	....	....	....	....	....	....	....
All items less mortgage interest costs	....	....	....	....	....	....	....	278.9	286.3	287.5	288.1	288.3	288.5	290.0
Commodities less food	254.4	261.4	262.9	263.6	264.1	263.8	263.0	255.7	263.9	264.9	265.1	264.9	264.9	264.2
Nondurables less food	262.4	269.6	270.6	270.2	269.5	268.5	267.4	264.2	271.7	272.8	272.3	271.5	270.4	269.4
Nondurables less food and apparel	303.1	310.9	311.0	310.2	309.3	308.6	308.6	304.4	312.7	312.8	311.9	310.9	310.1	310.0
Nondurables	275.2	281.0	281.8	281.7	281.1	281.2	283.2	276.2	282.1	282.8	282.7	282.1	282.2	284.1
Services less rent of shelter (12/82 = 100)	100.7	103.5	104.2	104.5	104.7	104.8	105.7	....	....	....	....	....	....	....
Services less medical care	331.4	339.9	342.2	343.3	344.1	344.5	346.6	330.7	338.1	340.2	341.3	341.3	341.3	342.6
Domestically produced farm foods	265.7	269.2	269.2	268.5	267.7	269.7	277.2	265.0	268.0	268.1	267.4	266.7	268.7	274.0
Selected beef cuts	271.2	270.5	267.5	265.6	265.3	265.5	274.6	272.5	271.6	268.9	266.7	266.4	266.6	275.8
Energy ¹	414.5	429.8	429.3	425.1	419.9	418.0	416.7	415.1	430.7	430.2	425.8	420.8	418.7	417.0
Energy commodities ¹	414.9	423.7	422.1	418.2	414.4	411.8	409.9	415.2	424.9	423.4	419.6	415.8	412.9	410.7
All items less energy	283.8	290.3	292.1	293.4	294.4	295.0	297.0	282.2	288.8	290.3	291.3	291.8	292.1	293.5
All items less food and energy	281.1	288.2	290.2	291.8	293.2	293.6	294.6	279.3	286.6	288.3	289.5	290.3	290.3	290.7
Commodities less food and energy	237.1	244.2	246.2	247.6	248.9	249.0	248.3	237.1	245.1	246.4	247.1	247.8	247.7	247.2
Services less energy	331.8	339.3	341.6	343.3	344.9	345.5	348.1	330.5	336.8	339.0	340.8	341.6	341.8	343.4
Purchasing power of the consumer dollar, 1967 = \$1	\$0.341	\$0.333	\$0.331	\$0.330	\$0.330	\$0.329	\$0.328	\$0.342	\$0.334	\$0.332	\$0.332	\$0.332	\$0.332	\$0.330

See footnotes at end of table.

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		
	Jan.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Jan.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.
FOOD AND BEVERAGES	280.7	284.9	285.3	285.7	285.3	286.5	291.6	281.1	285.1	285.6	285.9	285.6	286.8	291.9
Food	288.1	292.2	292.6	292.9	292.5	293.9	299.4	288.4	292.2	292.6	292.9	292.6	294.0	299.4
Food at home	279.3	282.5	282.5	282.3	281.4	283.0	290.2	278.6	281.5	281.5	281.3	280.5	282.1	289.1
Cereals and bakery products	287.8	294.0	293.7	294.0	295.7	297.1	299.8	284.9	292.5	292.3	292.6	294.3	295.7	298.3
Cereals and cereal products (12/77 = 100)	154.0	158.6	158.5	158.1	157.9	158.2	159.3	154.8	159.5	159.3	158.8	158.6	158.9	160.0
Flour and prepared flour mixes (12/77 = 100)	140.3	143.9	142.9	141.4	140.8	140.1	143.0	140.6	144.6	143.4	141.9	141.3	140.4	143.3
Cereal (12/77 = 100)	168.1	177.2	177.5	177.6	177.3	178.0	178.6	170.3	179.5	179.7	179.8	179.4	180.1	180.8
Rice, pasta, and cornmeal (12/77 = 100)	146.5	145.6	146.0	145.5	146.1	146.8	146.7	147.6	146.8	147.1	146.6	147.2	148.0	147.9
Bakery products (12/77 = 100)	151.7	154.5	154.4	154.8	156.0	156.9	158.4	150.5	153.3	153.1	153.5	154.8	155.7	157.1
White bread	248.9	253.1	252.9	254.4	257.0	257.4	259.1	244.6	248.7	248.5	250.0	252.7	253.2	254.8
Other breads (12/77 = 100)	147.7	150.1	149.8	149.8	151.9	152.0	153.7	149.7	152.2	151.9	151.8	154.1	154.1	155.8
Fresh biscuits, rolls, and muffins (12/77 = 100)	152.6	153.4	152.6	154.4	155.7	157.8	157.9	148.6	149.6	148.7	150.6	151.7	153.7	153.9
Fresh cakes and cupcakes (12/77 = 100)	153.1	154.9	155.2	156.2	157.9	159.7	161.5	151.3	153.3	153.5	154.5	156.2	157.9	159.5
Cookies (12/77 = 100)	153.6	157.6	157.6	156.0	157.6	159.2	161.1	154.6	158.5	158.6	156.8	158.4	159.9	161.9
Crackers, bread, and cracker products (12/77 = 100)	144.9	151.4	148.3	147.7	147.8	148.1	151.2	146.4	152.8	149.5	149.1	149.2	149.6	152.6
Fresh sweetrolls, coffeecake, and donuts (12/77 = 100)	152.3	155.3	155.9	155.8	156.8	157.7	159.7	154.9	158.0	158.6	158.5	159.6	160.4	162.4
Frozen and refrigerated bakery products and fresh pies, tarts, and turnovers (12/77 = 100)	156.8	159.4	161.3	161.9	160.6	161.5	163.3	149.8	152.5	154.3	154.9	154.0	154.9	156.5
Meats, poultry, fish, and eggs	263.0	258.8	258.7	257.1	256.6	259.3	268.9	262.8	258.4	258.4	256.6	256.1	258.6	268.3
Meats, poultry, and fish	270.3	265.0	264.2	261.9	260.8	261.8	269.8	270.0	264.4	263.8	261.4	260.2	261.0	269.1
Meats	272.2	264.2	262.6	260.4	258.6	258.3	266.4	271.8	263.7	262.2	260.0	258.1	257.7	265.8
Beef and veal	271.3	270.7	268.0	266.2	265.7	266.0	274.9	271.8	271.1	268.7	266.7	266.1	266.4	275.4
Ground beef other than canned	262.7	256.5	254.3	250.9	251.6	251.3	256.9	263.7	258.0	255.9	252.1	252.5	251.7	257.7
Chuck roast	281.7	272.4	269.5	265.8	266.2	266.9	282.8	290.4	280.6	277.4	273.1	274.0	275.2	291.6
Round roast	243.3	232.4	230.3	234.4	235.3	231.3	246.2	246.6	235.0	232.8	237.2	238.1	233.9	250.0
Round steak	255.1	250.3	247.4	251.5	250.0	249.9	256.2	253.0	248.5	245.7	250.9	248.6	248.0	253.0
Sirloin steak	253.1	280.9	277.3	268.4	265.3	262.7	265.7	254.5	281.8	280.1	270.1	266.9	264.1	266.0
Other beef and veal (12/77 = 100)	163.7	166.6	164.8	164.0	162.3	164.7	169.7	162.1	165.1	163.7	162.6	161.8	163.5	168.5
Pork	272.0	249.6	250.2	246.4	241.1	240.3	250.8	271.4	249.3	249.7	246.0	240.7	239.8	250.1
Bacon	290.8	264.7	269.5	262.5	253.7	253.0	259.0	295.5	268.8	273.6	266.4	256.8	256.4	262.4
Chops	245.6	232.4	229.6	227.2	222.3	219.0	236.5	243.9	230.5	227.9	225.6	220.3	217.5	234.5
Ham other than canned (12/77 = 100)	129.2	109.6	111.0	111.6	109.1	111.8	113.0	126.0	106.8	108.1	108.8	106.4	108.8	110.0
Sausage	333.6	313.9	311.3	307.4	305.0	303.4	311.0	335.0	315.3	312.2	308.4	305.9	304.2	312.2
Canned ham	275.2	254.0	252.8	251.9	248.0	246.5	252.4	279.7	259.8	258.8	257.7	254.3	252.0	257.5
Other pork (12/77 = 100)	147.9	138.4	139.0	134.4	131.5	129.9	139.7	147.1	137.8	138.2	133.9	131.1	129.3	138.9
Other meats	269.3	264.6	262.6	262.2	262.6	261.3	262.5	268.7	264.4	262.4	262.0	262.4	260.7	262.0
Frankfurters	269.7	266.7	259.8	260.8	259.7	259.0	260.0	268.5	265.9	258.6	257.8	258.8	257.5	258.9
Bologna, liverwurst, and salami (12/77 = 100)	154.0	153.2	153.0	152.8	152.8	150.4	150.6	153.9	153.3	152.9	152.8	152.8	150.2	150.4
Other luncheon meats (12/77 = 100)	139.9	136.4	136.1	135.2	135.8	134.7	135.2	137.7	134.5	134.2	133.3	133.9	132.8	133.2
Lamb and organ meats (12/77 = 100)	137.4	133.8	133.9	133.7	134.6	136.1	137.6	140.3	136.6	136.9	136.8	137.8	139.3	140.9
Poultry	191.3	200.5	204.4	199.6	201.7	209.8	217.5	189.4	198.5	202.6	197.6	199.7	207.8	215.4
Fresh whole chicken	186.8	202.1	209.6	199.1	207.6	219.4	228.7	185.0	200.0	207.2	196.7	205.1	216.7	226.1
Fresh and frozen chicken parts (12/77 = 100)	125.0	131.7	135.9	132.2	134.1	139.4	144.7	123.5	129.9	134.2	130.5	132.1	137.2	142.5
Other poultry (12/77 = 100)	126.3	125.7	122.9	126.0	120.6	122.3	125.4	125.7	125.1	127.2	125.5	120.3	122.1	124.9
Fish and seafood	376.7	372.7	372.6	374.1	374.9	376.4	383.4	375.1	370.8	370.7	372.0	373.4	374.9	382.4
Canned fish and seafood	140.2	135.9	133.9	133.5	132.6	132.5	133.1	139.5	135.4	133.4	132.1	132.1	132.0	132.6
Fresh and frozen fish and seafood (12/77 = 100)	145.4	143.5	146.7	147.8	148.8	149.9	153.7	145.0	144.8	146.0	147.1	148.5	149.5	153.7
Eggs	172.9	183.7	193.3	200.1	208.2	234.0	266.5	173.7	184.6	194.3	201.0	209.3	235.3	268.1
Dairy products	249.5	250.2	250.2	250.1	250.2	249.9	250.8	248.9	249.4	249.4	249.2	249.3	249.0	249.8
Fresh milk and cream (12/77 = 100)	136.7	136.5	136.1	135.9	135.9	135.9	136.4	136.2	135.9	135.5	135.2	135.3	135.3	135.8
Fresh whole milk	223.7	223.2	222.6	221.9	222.1	222.3	222.7	222.9	222.3	221.7	220.9	221.2	221.4	221.7
Other fresh milk and cream (12/77 = 100)	136.9	136.8	136.4	136.6	136.4	136.2	137.3	136.3	136.2	135.8	136.0	135.8	135.6	136.7
Processed dairy products	147.1	148.4	149.0	149.2	149.3	148.8	149.3	147.4	148.6	149.3	149.4	149.5	149.0	149.6
Butter	253.4	254.2	253.9	256.2	254.8	254.1	254.7	255.9	256.8	256.4	258.7	257.4	256.6	257.1
Cheese (12/77 = 100)	145.2	146.4	146.8	146.7	146.8	146.4	147.0	145.5	146.7	147.1	147.0	147.1	146.7	147.3
Ice cream and related products (12/77 = 100)	152.5	152.5	154.4	154.9	155.3	154.0	154.8	151.6	151.5	153.5	154.0	154.2	153.0	153.8
Other dairy products (12/77 = 100)	141.6	145.9	146.0	145.2	145.7	146.0	146.1	142.3	146.5	146.5	145.8	146.1	146.5	146.7
Fruits and vegetables	276.2	299.4	297.6	296.7	288.9	292.6	311.0	272.6	295.1	293.3	292.7	285.1	289.3	307.3
Fresh fruits and vegetables	269.2	310.7	306.6	304.9	288.7	294.2	327.8	264.3	304.3	300.3	298.9	283.4	289.8	322.5
Fresh fruits	268.3	328.9	316.7	304.4	279.5	270.4	289.6	258.9	317.5	305.9	293.4	269.3	261.1	279.5
Apples	244.2	310.0	320.2	271.8	265.9	270.0	277.0	244.8	311.9	321.3	273.8	267.3	270.8	277.6
Bananas	241.3	291.0	278.6	272.8	233.1	230.0	244.3	239.9	290.7	276.5	270.3	230.7	227.8	242.4
Oranges	292.2	359.8	337.0	299.0	307.8	283.4	301.3	267.5	329.9	307.1	271.3	279.3	257.5	275.1
Other fresh fruits (12/77 = 100)	143.1	173.2	164.1	171.1	148.5	143.0	156.9	138.0	166.3	157.7	164.7	142.9	137.8	151.1
Fresh vegetables	270.0	293.8	297.2	305.5	297.4	316.6	363.6	269.2	292.5	295.4	303.9	296.2	315.7	361.4
Potatoes	236.2	342.2	336.1	316.9	305.0	317.6	342.3	231.5	338.2	330.9	311.7	300.1	314.3	337.5
Lettuce	301.3	293.9	337.0	360.4	329.8	371.8	328.3	303.4	294.2	338.2	360.9	330.0	375.0	329.8
Tomatoes	236.8	200.5	212.2	241.9	243.0	222.2	285.6	241.5	204.0	216.2	246.8	246.9	224.7	290.4
Other fresh vegetables (12/77 = 100)	156.0	163.6	158.0	163.0	163.0	177.2	226.1	155.3	162.5	156.3	161.7	162.3	176.1	224.0
Processed fruits and vegetables	286.6	289.5	290.2	290.3										

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							
	Jan.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	
FOOD AND BEVERAGES—Continued														
Food—Continued														
Food at home—Continued														
Fruits and vegetables—Continued														
Processed vegetables (12/77 = 100)	137.9	140.2	140.6	141.1	141.8	142.8	144.2	136.7	139.1	139.4	140.0	140.7	141.6	143.0
Frozen vegetables (12/77 = 100)	149.7	152.8	152.4	150.6	151.8	151.5	153.3	151.2	154.5	153.9	152.0	153.4	153.2	154.9
Cut corn and canned beans except lima (12/77 = 100)	139.5	142.0	141.8	142.4	143.2	145.8	145.9	137.0	139.5	139.3	140.0	140.8	143.2	143.3
Other canned and dried vegetables (12/77 = 100)	131.0	132.9	134.0	135.7	136.0	136.8	138.7	129.6	131.5	132.6	134.2	134.5	135.3	137.1
Other foods at home	337.1	339.1	340.7	342.7	343.4	343.6	346.6	337.9	339.9	341.5	343.5	344.2	344.4	347.4
Sugar and sweets	371.5	375.8	376.4	375.5	376.0	377.7	380.0	371.4	375.7	376.2	375.3	375.7	377.6	379.7
Candy and chewing gum (12/77 = 100)	149.8	151.6	151.9	151.8	152.0	152.8	154.0	149.8	151.8	151.6	151.6	151.8	152.7	153.9
Sugar and artificial sweeteners (12/77 = 100)	167.0	169.7	170.3	169.3	170.4	171.1	170.9	168.5	171.0	171.6	170.8	171.7	172.4	172.0
Other sweets (12/77 = 100)	152.0	152.8	152.7	152.2	151.7	152.3	153.9	149.8	150.6	150.5	150.1	149.5	150.0	151.8
Fats and oils (12/77 = 100)	259.3	258.1	264.8	271.1	275.4	278.2	279.7	259.3	257.8	264.7	271.2	275.5	278.2	279.5
Margarine	259.4	257.2	259.3	264.6	268.9	273.7	278.2	258.5	255.1	257.3	262.6	267.1	271.7	276.4
Nondairy substitutes and peanut butter (12/77 = 100)	151.6	149.8	148.9	151.6	151.8	151.4	152.2	150.0	148.1	147.2	149.8	150.1	149.6	150.4
Other fats, oils, and salad dressings (12/77 = 100)	130.2	130.3	136.9	140.7	143.8	145.4	145.4	130.7	130.9	137.5	141.5	144.5	146.1	145.9
Nonalcoholic beverages	431.1	430.7	431.2	436.4	435.2	433.7	439.1	432.8	432.5	433.1	438.4	437.3	435.7	441.1
Cola drinks, excluding diet cola	312.9	312.4	312.7	317.2	315.7	314.3	319.9	310.3	309.9	310.2	314.7	313.2	311.6	317.2
Carbonated drinks, including diet cola (12/77 = 100)	145.2	146.3	147.6	150.8	149.4	148.8	149.1	142.8	144.1	145.3	148.7	147.5	146.9	147.0
Roasted coffee	365.0	356.0	353.7	352.8	355.4	354.2	359.2	359.9	350.8	348.4	347.6	350.2	349.0	353.9
Freeze dried and instant coffee	348.2	352.3	348.3	350.2	352.4	351.2	353.7	347.8	351.5	347.5	349.3	351.6	350.5	353.1
Other noncarbonated drinks (12/77 = 100)	141.0	140.5	141.0	141.9	141.8	141.8	143.8	141.3	140.8	141.3	142.2	142.1	142.2	144.2
Other prepared foods	272.6	276.9	277.8	276.8	277.9	278.2	279.9	274.2	278.5	279.4	278.2	279.4	279.7	281.5
Canned and packaged soup (12/77 = 100)	138.1	141.8	141.4	141.3	142.0	142.8	142.6	140.1	143.7	143.3	143.2	143.9	144.6	144.4
Frozen prepared foods (12/77 = 100)	150.6	155.1	155.7	154.7	156.4	155.5	157.2	150.0	154.2	154.9	153.7	155.7	154.5	156.5
Snacks (12/77 = 100)	154.0	159.3	159.9	159.0	158.6	158.9	159.5	156.0	161.4	162.0	160.8	160.7	161.0	161.6
Seasonings, olives, pickles, and relish (12/77 = 100)	159.5	158.3	158.9	159.6	160.7	160.6	161.6	158.5	157.4	158.1	158.7	159.9	159.5	160.5
Other condiments (12/77 = 100)	153.8	156.0	156.3	156.0	155.4	155.5	156.6	155.6	157.9	158.2	157.9	157.2	157.4	158.4
Miscellaneous prepared foods (12/77 = 100)	151.1	151.5	152.2	151.8	152.8	153.3	154.3	151.4	151.8	152.5	152.0	153.0	153.5	154.5
Other canned and packaged prepared foods (12/77 = 100)	146.1	146.5	147.2	146.2	147.0	148.0	149.1	147.3	147.7	148.4	147.4	148.2	149.2	150.4
Food away from home	314.5	321.0	322.2	323.9	324.8	325.5	327.2	317.7	324.3	325.4	327.2	328.0	328.7	330.4
Lunch (12/77 = 100)	153.1	155.4	155.9	156.7	157.1	157.5	158.0	154.8	157.1	157.5	158.3	158.7	159.0	159.5
Dinner (12/77 = 100)	151.3	153.9	154.9	155.5	156.2	156.5	157.6	153.0	155.6	156.6	157.2	157.9	158.3	159.3
Other meals and snacks (12/77 = 100)	154.0	159.5	159.4	160.7	160.8	161.0	162.0	154.6	160.0	159.9	161.2	161.2	161.4	162.5
Alcoholic beverages	211.6	217.1	218.4	218.9	218.6	218.1	219.0	213.7	219.7	221.3	221.8	221.5	221.2	222.0
Alcoholic beverages at home (12/77 = 100)	136.5	140.3	141.2	141.4	140.9	140.4	140.8	137.8	142.1	143.2	143.4	143.0	142.6	142.8
Beer and ale	213.3	224.4	225.4	226.1	225.9	225.5	225.7	212.5	223.2	224.8	225.3	225.2	224.8	224.9
Whiskey	150.5	151.6	153.7	153.5	152.9	152.4	153.5	151.2	152.1	154.2	154.0	153.4	152.9	153.7
Wine	235.6	234.8	235.7	237.1	234.8	232.1	233.2	243.0	242.4	243.7	245.5	242.3	239.9	241.0
Other alcoholic beverages (12/77 = 100)	120.6	122.4	122.5	123.1	121.5	121.4	121.7	120.6	122.4	122.3	122.2	121.5	121.3	121.6
Alcoholic beverages away from home (12/77 = 100)	144.8	147.3	148.4	148.7	149.9	150.4	151.6	146.0	148.5	149.6	149.8	150.9	151.5	153.0
HOUSING	317.9	324.8	326.4	326.8	327.0	327.4	329.2	317.0	324.3	325.3	325.2	324.5	324.2	324.7
Shelter (CPI-U)	338.3	346.6	348.5	349.8	351.1	351.8	353.2							
Renters' costs	100.8	103.7	104.4	104.8	105.0	105.1	105.7							
Rent, residential	232.2	238.2	239.5	240.4	241.3	242.0	242.9							
Other renters' costs	339.2	355.8	361.3	362.0	359.8	356.1	361.7							
Homeowners' costs ²	100.7	103.0	103.5	103.9	104.3	104.5	104.9							
Owners' equivalent rent	100.7	103.0	103.5	103.8	104.2	104.5	104.8							
Household insurance	100.9	103.5	104.0	105.5	106.1	106.1	106.6							
Maintenance and repairs	342.9	347.9	346.6	351.1	353.4	354.7	356.7							
Maintenance and repair services	380.6	388.6	387.6	397.2	398.5	400.8	402.4							
Maintenance and repair commodities	259.4	261.2	259.9	259.5	262.3	262.6	264.6							
Shelter (CPI-W)								337.9	346.4	347.5	347.6	347.1	346.6	346.1
Rent, residential								231.7	237.6	238.9	239.8	240.7	241.3	242.3
Other renters' costs								337.3	354.0	358.6	359.3	357.3	352.9	359.1
Lodging while out of town								350.8	375.7	374.8	374.2	370.9	363.9	374.0
Tenants' insurance (12/77 = 100)								151.5	155.4	156.2	158.6	159.4	160.4	159.4
Homeownership								375.9	385.2	386.1	385.9	384.9	384.1	382.9
Home purchase								291.9	304.1	303.4	301.3	300.0	298.9	298.0
Financing, taxes, and insurance								490.2	496.6	500.0	500.6	499.2	497.6	494.8
Property insurance								414.5	430.8	434.9	437.4	438.0	437.2	438.3
Property taxes								230.6	237.1	238.5	239.1	239.6	240.7	242.7
Contracted mortgage interest costs								624.0	629.8	634.2	634.7	632.2	629.4	624.1
Mortgage interest rates								212.0	205.2	207.2	208.8	208.6	208.7	207.6
Maintenance and repairs								337.8	344.3	343.7	348.1	349.1	351.0	353.0
Maintenance and repair services								377.3	385.1	385.5	392.5	393.3	395.6	397.6

See footnotes at end of table.

MONTHLY LABOR REVIEW April 1984 • Current Labor Statistics: Consumer Prices

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							
	Jan.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Jan.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.
HOUSING—Continued														
Shelter (CPI-W)—Continued														
Homeownership—Continued														
Maintenance and repair commodities								253.6	257.5	255.2	254.7	255.9	257.0	259.0
Paint and wallpaper, supplies, tools, and equipment (12/77 = 100)								148.2	147.6	145.8	145.7	147.3	149.1	150.8
Lumber, awnings, glass, and masonry (12/77 = 100)								120.5	126.8	125.3	124.2	123.8	123.7	125.2
Plumbing, electrical, heating, and cooling supplies (12/77 = 100)								137.3	139.5	140.7	141.3	139.1	138.4	139.9
Miscellaneous supplies and equipment (12/77 = 100)								141.3	143.3	142.2	141.9	144.0	143.7	143.1
Fuel and other utilities	365.4	375.1	376.4	374.4	371.3	370.6	376.0	366.8	376.8	378.1	375.7	372.8	372.0	377.3
Fuels	463.5	476.5	478.3	474.4	468.1	467.4	470.4	463.3	476.6	478.3	474.0	467.8	467.2	469.9
Fuel oil, coal, and bottled gas	671.1	619.0	623.2	624.7	623.9	623.9	642.8	673.4	621.5	625.6	627.2	626.4	626.4	645.1
Fuel oil	689.3	626.5	631.2	632.6	631.5	631.5	652.7	691.2	628.9	633.7	635.1	633.9	633.9	654.9
Other fuels (6/78 = 100)	188.4	190.0	190.2	191.0	191.4	191.4	193.6	189.5	190.8	191.0	191.9	192.4	192.3	194.4
Gas (piped) and electricity	413.5	439.1	440.5	435.6	428.2	427.5	427.3	412.8	438.7	440.0	434.5	427.5	426.7	426.2
Electricity	319.2	340.7	342.3	339.2	331.8	329.8	332.8	318.3	341.2	342.6	338.8	330.8	329.0	331.9
Utility (piped) gas	559.1	589.8	590.5	582.4	576.3	578.2	571.1	556.9	585.8	586.4	578.3	574.0	575.7	568.1
HOUSING														
Fuel and other utilities														
Other utilities and public services	210.1	214.8	215.4	215.8	217.3	216.5	224.6	210.9	215.9	216.4	216.9	218.4	217.4	225.7
Telephone services	171.4	173.9	174.4	174.1	175.4	174.3	183.3	171.7	174.5	175.0	174.7	176.0	174.7	183.9
Local charges (12/77 = 100)	140.6	142.1	142.6	142.2	143.8	142.2	154.3	140.8	142.6	143.1	142.8	144.4	142.6	154.8
Interstate toll calls (12/77 = 100)	121.0	121.9	121.9	121.5	121.5	121.4	121.4	121.5	122.4	122.3	121.9	121.9	121.9	121.9
Intrastate toll calls (12/77 = 100)	114.0	118.3	118.6	119.0	119.8	119.7	122.1	113.9	118.3	118.7	119.1	119.8	119.8	122.2
Water and sewerage maintenance	341.6	355.9	356.8	361.7	363.6	364.3	367.4	344.8	360.2	361.0	366.2	367.8	368.5	371.7
Household furnishings and operations	235.8	238.0	238.9	239.4	239.9	240.5	240.4	232.6	234.8	235.8	236.2	236.7	237.3	237.3
Housefurnishings	194.9	196.7	197.6	198.0	198.4	198.8	197.9	193.0	194.7	195.6	196.0	196.4	196.9	196.3
Textile housefurnishings	221.9	226.1	231.2	228.8	229.6	230.3	224.6	224.5	229.6	234.6	232.0	233.0	233.1	230.9
Household linens (12/77 = 100)	131.5	133.4	138.1	136.0	135.7	135.6	133.0	132.6	134.5	139.0	137.0	136.4	136.2	134.1
Curtains, drapes, slipcovers, and sewing materials (12/77 = 100)	145.6	149.0	150.5	149.6	151.1	152.0	151.3	148.6	153.3	154.8	153.6	155.6	156.1	155.5
Furniture and bedding	213.9	217.2	217.9	219.8	220.1	221.3	219.5	210.4	214.3	215.1	216.6	217.1	218.3	216.7
Bedroom furniture (12/77 = 100)	146.1	151.3	152.5	152.9	152.6	154.9	154.4	142.6	148.2	148.9	149.0	149.5	151.3	151.1
Sofas (12/77 = 100)	117.3	117.3	117.6	118.8	119.8	120.2	119.4	117.9	117.6	118.1	119.2	120.0	120.3	119.2
Living room chairs and tables (12/77 = 100)	121.6	123.5	124.2	125.4	125.6	124.4	124.8	122.0	124.5	125.2	126.5	126.6	125.7	125.9
Other furniture (12/77 = 100)	139.4	139.8	139.4	141.2	141.4	142.3	139.2	134.6	135.6	135.8	137.2	137.1	138.2	135.4
Appliances including TV and sound equipment	151.9	150.6	151.0	151.2	151.0	150.9	151.0	151.8	150.8	151.2	151.7	151.6	151.7	151.9
Television and sound equipment	107.0	105.1	105.1	104.9	105.0	104.8	104.9	106.1	104.3	104.2	103.9	104.1	103.9	104.0
Television	102.3	100.1	99.6	99.1	98.8	99.0	98.8	101.1	99.0	98.3	97.8	97.4	97.6	97.5
Sound equipment (12/77 = 100)	112.2	110.6	111.1	111.0	111.6	111.0	111.3	109.7	110.2	110.0	110.7	110.1	110.5	110.5
Household appliances	187.6	188.0	189.2	190.3	189.2	189.4	189.5	187.9	188.0	189.1	190.5	190.1	190.5	190.7
Refrigerators and home freezers	193.2	191.4	192.4	194.0	193.0	195.8	196.5	199.2	197.2	198.0	200.0	198.9	201.7	202.1
Laundry equipment	141.5	142.0	142.7	142.7	144.1	144.4	145.7	142.1	142.8	143.6	144.1	145.2	145.1	146.6
Other household appliances (12/77 = 100)	124.7	125.4	126.2	127.0	125.9	125.5	125.2	122.8	123.4	124.2	125.2	124.6	124.2	123.6
Stoves, dishwashers, vacuums, and sewing machines (12/77 = 100)	123.7	123.7	125.4	125.9	125.8	124.5	123.3	121.9	122.1	123.6	124.1	124.6	123.5	122.3
Office machines, small electric appliances, and air conditioners (12/77 = 100)	125.8	127.2	127.3	128.3	126.2	126.6	127.2	123.8	124.8	124.9	126.4	124.6	124.9	125.2
Other household equipment (12/77 = 100)	139.1	141.2	141.0	141.3	142.1	142.3	142.1	137.0	138.9	138.8	139.7	140.1	140.0	140.0
Floor and window coverings, infants', laundry, cleaning, and outdoor equipment (12/77 = 100)	141.2	144.4	144.2	146.5	147.3	146.6	145.5	133.2	136.4	136.0	138.2	138.8	138.4	137.5
Clocks, lamps, and decor items (12/77 = 100)	130.8	132.3	132.9	134.0	135.5	134.1	130.9	126.1	128.3	128.4	129.3	131.0	129.6	126.6
Tableware, serving pieces, and nonelectric kitchenware (12/77 = 100)	145.9	148.7	147.7	145.6	146.2	147.4	149.6	141.9	144.4	143.6	141.7	142.4	143.6	145.5
Lawn equipment, power tools, and other hardware (12/77 = 100)	134.1	134.2	134.7	135.9	136.6	137.2	136.9	139.3	139.3	140.2	141.2	141.8	142.4	142.2
Housekeeping supplies	294.0	295.8	295.7	296.6	297.0	298.6	299.4	290.7	292.7	293.1	293.6	293.9	295.3	296.3
Soaps and detergents	288.9	294.4	296.1	295.2	296.7	295.9	296.3	285.0	290.2	292.0	291.1	292.7	291.8	292.2
Other laundry and cleaning products (12/77 = 100)	149.0	151.0	152.0	151.6	151.5	152.7	153.6	147.7	149.8	150.9	150.5	150.2	151.5	152.3
Cleansing and toilet tissue, paper towels and napkins (12/77 = 100)	150.2	148.1	148.0	147.8	148.2	148.6	149.2	150.3	148.1	148.2	148.0	148.3	148.6	149.4
Stationery, stationery supplies, and gift wrap (12/77 = 100)	138.1	139.5	139.5	139.5	140.9	141.7	141.7	141.1	142.5	142.6	144.0	144.7	144.8	144.8
Miscellaneous household products (12/77 = 100)	153.5	154.1	154.9	155.9	155.5	156.6	157.4	148.3	148.8	149.5	150.4	150.0	151.1	152.0
Lawn and garden supplies (12/77 = 100)	144.3	144.6	140.8	144.1	143.0	145.4	145.0	137.0	137.8	134.9	137.2	136.0	138.3	138.0
Housekeeping services	315.4	319.3	320.9	321.6	322.3	322.8	324.1	315.0	319.1	320.8	321.7	322.3	322.9	324.4
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)	159.3	162.8	165.9	167.1	168.1	168.4	171.0	159.5	163.1	166.0	167.3	168.2	168.5	171.1
Appliance and furniture repair (12/77 = 100)	140.4	144.9	145.4	145.8	146.2	147.1	147.5	138.7	143.1	143.6	144.0	144.3	145.2	145.6
APPAREL AND UPKEEP	191.0	197.3	200.4	200.7	200.7	199.3	196.4	190.0	196.3	199.3	199.8	199.7	198.1	195.3
Apparel commodities	179.2	185.3	188.5	188.7	188.6	186.9	183.6	178.7	184.7	188.0	188.4	188.2	186.3	183.1
Apparel commodities less footwear	175.0	181.9	185.3	185.4	185.2	183.4	179.8	174.3	181.2	184.6	185.0	184.5	182.5	178.9
Men's and boys'	184.9	188.3	190.8	192.1	193.0	191.8	189.7	185.2	188.3	191.1	192.5	193.4	192.1	190.2
Men's (12/77 = 100)	116.8	118.5	120.1	120.8	121.6	120.9	119.3	117.4	118.9	120.7	121.4	122.2	121.5	119.8
Suits, sport coats, and jackets (12/77 = 100)	106.5	111.4	112.3	113.7	114.8	112.9	110.8	99.9	104.4	105.5	106.9	107.7	105.8	104.0
Coats and jackets	98.8	99.5	104.4	105.7	105.5	104.4	101.7	100.5	101.7	107.5	108.9	108.8	107.6	104.3
Furnishings and special clothing (12/77 = 100)	142.2	144.8	145.4	145.7	147.3	147.8	145.9	138.7	140.8	141.6	141.9	143.6	144.1	141.9

See footnotes at end of table.

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
	Jan.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Jan.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.
APPAREL AND UPKEEP—Continued														
Apparel commodities—Continued														
Men's and boy's—Continued														
Men's—Continued														
Shirts (12/77 = 100)	124.5	121.6	125.6	125.1	125.2	125.7	125.7	127.5	124.7	128.6	127.8	127.8	128.5	128.9
Dungarees, jeans, and trousers (12/77 = 100)	111.0	112.3	112.4	113.1	113.9	112.9	111.4	116.5	118.1	118.2	119.1	120.1	118.8	117.1
Boys' (12/77 = 100)	118.9	122.6	124.1	125.4	125.2	123.9	124.0	117.2	120.7	122.4	123.9	123.8	122.4	122.7
Coats, jackets, sweaters, and shirts (12/77 = 100)	108.9	115.4	119.0	120.9	119.9	118.8	118.8	110.4	116.2	120.5	122.7	122.1	120.6	121.1
Furnishings (12/77 = 100)	132.0	134.2	135.1	136.2	137.6	137.0	136.2	128.0	129.9	130.7	131.9	133.3	132.9	132.1
Suits, trousers, sport coats, and jackets (12/77 = 100)	121.5	123.5	123.7	124.7	124.4	122.7	123.3	118.6	120.7	120.8	121.8	121.6	120.0	120.6
Women's and girls'	153.9	164.2	168.8	168.6	167.0	164.9	158.8	155.4	165.8	170.2	170.4	168.6	166.0	160.0
Women's (12/77 = 100)	101.8	109.5	112.8	112.3	110.9	109.5	105.4	102.9	111.1	114.3	114.0	112.4	110.8	106.8
Coats and jackets	158.1	171.6	176.6	175.9	173.3	170.3	162.8	161.4	175.3	181.6	182.2	177.4	174.8	166.9
Dresses	152.9	171.4	176.7	173.8	171.9	172.0	164.1	139.8	158.7	162.6	158.9	158.0	157.1	150.5
Separates and sportswear (12/77 = 100)	93.7	99.4	102.5	103.9	102.0	98.9	94.5	94.4	99.7	102.9	104.2	102.4	99.4	94.7
Underwear, nightwear, and hosiery (12/77 = 100)	128.8	133.2	135.1	135.6	136.1	136.5	134.8	128.4	132.9	134.8	135.3	135.7	136.2	134.4
Suits (12/77 = 100)	76.9	87.3	94.3	89.9	85.7	81.7	75.2	91.8	108.1	115.0	112.6	105.8	100.2	93.9
Girls' (12/77 = 100)	105.1	107.7	104.5	111.4	111.8	110.2	106.6	105.0	106.8	108.3	110.4	110.8	108.8	104.8
Coats, jackets, dresses, and suits (12/77 = 100)	95.8	101.9	101.6	105.8	106.2	101.8	98.1	95.2	98.7	98.5	103.1	103.3	98.8	95.1
Separates and sportswear (12/77 = 100)	102.1	102.0	106.3	106.8	107.6	106.7	102.6	102.9	102.9	106.8	107.4	108.3	106.3	101.4
Underwear, nightwear, hosiery, and accessories (12/77 = 100)	125.7	127.8	128.4	129.0	128.7	130.5	128.0	126.8	126.7	127.0	127.6	127.5	129.1	126.5
Infants' and toddlers'	277.1	281.9	287.4	289.0	288.7	282.7	283.6	287.5	292.3	297.9	299.9	298.1	292.1	292.4
Other apparel commodities	211.5	216.2	217.4	215.5	216.6	215.6	215.5	200.1	204.6	205.9	204.0	205.2	204.2	203.7
Sewing materials and notions (12/77 = 100)	120.4	121.6	121.9	120.4	118.6	121.4	119.8	118.5	119.8	120.2	118.5	116.8	119.3	117.7
Jewelry and luggage (12/77 = 100)	143.7	147.5	148.5	147.4	149.2	147.0	147.6	134.4	138.0	139.0	138.0	140.0	137.8	138.1
Footwear	204.8	205.7	208.0	208.6	209.1	207.9	206.7	204.6	205.5	207.6	208.1	209.1	208.3	207.3
Men's (12/77 = 100)	131.4	132.3	134.8	135.0	135.8	134.7	134.4	133.0	134.2	136.7	136.9	137.6	136.6	136.4
Boys' and girls' (12/77 = 100)	130.4	130.3	130.4	131.1	131.8	132.9	132.6	132.9	132.6	132.9	133.2	134.0	135.2	135.0
Women's (12/77 = 100)	124.5	125.3	126.8	127.1	126.7	125.2	123.7	120.4	121.1	122.3	122.6	122.9	121.7	120.3
Apparel services	283.9	292.3	293.4	294.6	296.2	297.0	298.3	282.2	290.4	291.5	292.6	294.3	295.0	296.1
Laundry and drycleaning other than coin operated (12/77 = 100)	169.6	174.5	174.4	176.0	177.0	177.7	179.0	168.1	172.9	173.3	174.3	175.4	176.0	177.3
Other apparel services (12/77 = 100)	148.3	152.7	153.7	153.8	154.5	154.5	154.2	149.4	153.9	154.8	154.9	155.6	155.6	155.4
TRANSPORTATION	293.0	302.4	303.7	305.7	306.3	306.3	306.0	294.3	304.1	305.5	306.9	308.2	308.2	307.9
Private	288.4	298.0	299.2	300.4	301.7	301.8	300.9	290.9	300.8	302.2	303.6	304.9	305.0	304.1
New cars	201.0	202.1	202.7	204.3	206.2	207.0	207.2	200.8	201.7	202.3	203.8	205.7	206.5	206.7
Used cars	311.0	336.8	343.9	350.4	356.1	357.6	357.3	311.1	336.8	343.9	350.4	356.1	357.6	357.3
Gasoline	371.9	389.5	387.1	382.4	378.1	375.2	370.3	373.6	391.0	388.8	384.3	380.1	377.0	372.1
Automobile maintenance and repair	324.4	331.0	332.3	333.5	335.2	335.4	336.1	335.2	331.7	333.0	334.1	335.6	335.9	336.6
Body work (12/77 = 100)	162.2	167.1	167.7	169.0	169.5	169.6	170.2	161.1	166.0	166.5	167.8	168.2	168.3	168.9
Automobile drive train, brake, and miscellaneous mechanical repair (12/77 = 100)	155.4	158.9	160.7	161.9	163.4	163.6	163.8	159.4	162.8	164.5	165.7	167.2	167.4	167.6
Maintenance and servicing (12/77 = 100)	150.5	152.8	152.6	152.5	152.7	152.8	152.9	149.9	152.2	151.9	151.7	151.9	152.0	152.0
Power plant repair (12/77 = 100)	154.4	157.5	158.4	159.1	160.2	160.1	160.9	153.4	156.9	157.8	158.5	159.5	159.5	160.4
Other private transportation	259.9	260.0	260.8	263.3	265.6	266.8	267.6	261.5	261.1	261.8	264.4	266.6	267.9	268.4
Other private transportation commodities	215.6	208.9	208.3	208.1	209.2	208.4	203.3	218.0	211.2	210.9	210.7	211.7	211.4	205.6
Motor oil, coolant, and other products (12/77 = 100)	153.4	153.5	154.2	152.7	152.9	153.3	153.3	153.0	152.6	153.2	152.2	151.7	152.3	152.2
Automobile parts and equipment (12/77 = 100)	137.3	132.4	131.9	131.9	132.7	132.4	128.3	139.1	134.1	133.8	133.8	134.1	134.3	130.0
Tires	191.3	183.4	181.7	181.7	183.1	182.7	175.7	184.9	186.9	185.4	185.4	187.0	186.5	178.5
Other parts and equipment (12/77 = 100)	134.3	131.6	132.9	133.0	133.0	132.9	132.1	134.3	131.3	132.8	132.8	132.9	132.7	131.9
Other private transportation services	274.2	276.0	277.3	280.5	283.1	284.8	287.2	275.6	276.8	277.8	281.1	283.7	285.4	287.6
Automobile insurance	292.0	302.9	303.8	309.4	312.8	315.0	318.8	291.3	302.5	303.4	308.8	312.1	314.3	318.0
Automobile finance charges (12/77 = 100)	169.6	155.4	156.4	157.2	159.1	160.0	160.1	168.7	155.0	155.8	156.8	158.7	159.7	159.6
Automobile rental, registration, and other fees (12/77 = 100)	139.8	146.0	146.9	147.1	147.3	147.5	148.9	140.5	147.2	147.9	148.2	148.3	148.6	149.8
State registration	184.6	194.6	195.3	195.4	195.4	195.6	195.1	184.0	194.5	195.2	195.2	195.2	195.4	195.0
Drivers' licenses (12/77 = 100)	132.8	153.0	153.0	154.0	154.5	154.5	158.0	133.1	153.4	153.4	154.4	154.8	154.8	158.3
Vehicle inspection (12/77 = 100)	129.6	139.0	139.8	139.8	139.8	139.8	139.2	129.9	139.8	140.5	140.5	140.5	140.5	139.9
Other vehicle-related fees (12/77 = 100)	155.8	158.8	160.5	160.2	160.5	160.7	163.5	163.9	166.3	167.8	167.6	167.7	167.9	170.4
Public	357.7	365.0	366.6	368.2	370.3	369.0	378.2	349.8	355.7	357.2	358.5	359.9	359.0	371.1
Airline fare	412.3	420.7	423.3	426.6	431.6	428.5	430.3	409.8	417.1	419.5	422.5	427.2	424.4	426.4
Intracity bus fare	381.8	412.8	415.1	417.7	416.0	405.5	425.3	383.3	412.7	415.3	417.6	416.9	402.6	423.9
Intracity mass transit	318.5	323.7	324.6	324.8	324.3	324.5	342.8	317.4	321.6	322.5	323.0	322.5	322.7	342.8
Taxi fare	300.9	302.4	303.5	303.1	304.7	307.6	308.2	310.5	311.8	312.7	312.2	313.5	316.7	317.2
Intracity train fare	351.8	364.5	364.8	365.4	364.8	370.7	373.7	352.3	365.2	365.4	366.1	365.6	371.3	374.0
MEDICAL CARE	347.8	360.0	361.2	362.9	364.9	366.2	369.5	345.3	357.9	359.2	360.9	362.9	364.3	367.5
Medical care commodities	215.3	225.4	226.3	227.5	228.9	229.9	231.2	215.9	225.8	226.7	227.8	229.1	230.1	231.5
Prescription drugs	204.1	215.7	216.7	218.6	220.8	222.3	223.7	205.3	216.9	218.0	219.9	222.1	223.1	225.0
Anti-infective drugs (12/77 = 100)	151.4	157.9	158.1	158.6	159.1	161.2	161.4	153.5	160.1	160.3	160.8	161.5	163.5	164.2
Tranquilizers and sedatives (12/77 = 100)	166.6	179.1	179.9	182.8	186.9	188.4	190.1	166.4	178.7	179.7	182.6	186.7	188.3	190.0
Circulatories and diuretics (12/77 = 100)	145.9	155.4	155.8	158.1	159.9	160.6	161.5	145.8	155.4	155.7	157.9	159.7	160.3	161.1
Hormones, diabetic drugs, biologicals, and prescription medical supplies (12/77 = 100)	186.5	199.2	200.0	201.9	204.0	205.0	205.8	188.0	201.1	201.9	204.0	206.1	207.1	207.9

See footnotes at end of table.

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
	Jan.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Jan.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.
Pain and symptom control drugs (12/77 = 100)	167.7	175.7	177.5	178.7	180.5	181.1	182.1	169.5	177.5	179.4	180.6	182.4	183.0	184.2
Supplements, cough and cold preparations, and respiratory agents (12/77 = 100)	155.8	162.6	163.8	164.2	164.7	165.7	167.1	156.2	162.9	164.1	164.5	165.1	166.2	167.4
Nonprescription drugs and medical supplies (12/77 = 100)	151.0	156.7	157.3	157.5	157.9	158.3	159.2	151.8	157.5	159.1	158.3	158.8	159.1	160.1
Eyeglasses (12/77 = 100)	133.9	136.2	137.7	137.3	137.8	137.7	137.9	132.6	135.1	136.7	136.2	136.6	136.5	136.8
Internal and respiratory over-the-counter drugs	244.3	255.0	255.6	256.1	256.4	257.5	259.4	245.7	256.3	256.9	257.4	257.7	258.8	260.6
Nonprescription medical equipment and supplies (12/77 = 100)	145.3	151.0	151.2	151.8	152.7	152.6	153.4	146.3	152.4	152.3	153.0	154.1	154.0	155.0
Medical care services	377.4	389.8	391.0	392.9	395.0	396.3	400.0	374.0	387.0	388.3	390.2	392.3	393.8	397.5
Professional services	312.5	326.0	327.6	329.7	331.7	332.9	335.9	312.7	326.5	328.0	330.1	332.0	333.3	336.3
Physicians' services	341.3	354.9	356.5	358.5	360.5	362.0	366.0	344.6	358.8	360.5	362.3	364.3	365.9	369.9
Dental services	291.6	306.5	308.3	310.7	312.9	314.0	316.0	289.3	304.3	306.1	308.5	310.7	311.8	313.9
Other professional services (12/77 = 100)	149.1	154.0	154.3	155.4	155.9	156.2	157.4	145.7	150.5	150.8	151.8	152.5	152.7	153.8
Other medical care services	455.9	466.9	467.8	469.3	471.5	473.0	477.9	451.3	462.9	463.9	465.6	467.9	469.5	474.1
Hospital and other medical services (12/77 = 100)	185.1	196.7	197.8	199.4	201.0	202.2	204.3	183.4	194.6	195.7	197.3	199.0	200.1	202.1
Hospital room	594.6	627.6	633.8	638.0	641.9	643.5	650.2	587.1	619.5	626.1	630.2	633.9	635.9	641.9
Other hospital and medical care services (12/77 = 100)	180.6	193.0	193.3	195.1	197.1	198.8	200.9	179.4	191.2	191.4	193.3	195.4	197.0	199.1
ENTERTAINMENT	241.5	246.6	247.5	249.1	249.5	249.5	249.9	237.7	243.1	244.1	245.4	245.7	245.8	246.2
Entertainment commodities	242.6	248.0	248.0	249.3	249.0	248.7	248.9	236.7	242.5	242.6	243.7	243.4	243.1	243.6
Reading materials (12/77 = 100)	156.1	160.9	161.2	163.4	162.9	162.3	160.7	155.5	160.2	160.5	162.8	162.3	161.8	160.3
Newspapers	295.7	303.5	304.0	306.9	307.7	308.2	309.6	295.6	303.4	303.9	307.0	307.8	308.3	308.6
Magazines, periodicals, and books (12/77 = 100)	162.9	168.4	168.6	171.7	170.2	168.6	165.0	162.6	168.5	168.8	172.0	170.4	168.7	164.9
Sporting goods and equipment (12/77 = 100)	131.5	134.1	134.6	134.5	134.7	135.0	136.1	124.4	128.3	128.9	128.6	128.7	129.1	130.1
Sport vehicles (12/77 = 100)	132.9	136.4	137.4	137.3	137.8	138.5	139.8	122.0	127.8	128.5	128.2	128.5	129.2	130.5
Indoor and warm weather sport equipment (12/77 = 100)	120.3	118.5	118.6	118.6	118.1	117.4	117.8	116.6	116.3	116.4	116.0	115.3	115.8	115.8
Bicycles	197.3	199.9	200.1	199.9	198.6	198.2	200.1	198.4	200.7	200.9	200.7	199.3	199.0	200.9
Other sporting goods and equipment (12/77 = 100)	131.4	133.1	134.6	134.0	134.5	134.8	135.2	130.9	132.9	134.5	133.8	134.4	134.7	134.6
Toys, hobbies, and other entertainment (12/77 = 100)	136.8	139.3	138.8	139.3	139.1	138.8	139.3	135.6	138.0	137.7	138.1	137.8	137.6	138.2
Toys, hobbies, and music equipment (12/77 = 100)	135.5	137.7	136.7	137.3	136.7	136.6	137.0	131.9	133.9	133.0	133.5	132.8	132.9	133.4
Photographic supplies and equipment (12/77 = 100)	129.9	131.6	131.0	131.9	131.7	130.2	130.1	131.0	132.8	132.1	133.0	132.7	131.2	131.2
Pet supplies and expenses (12/77 = 100)	144.2	147.5	148.5	148.5	148.8	148.9	150.1	145.1	148.6	149.6	149.6	149.9	150.1	151.1
Entertainment services	240.5	245.0	247.2	249.2	250.5	251.1	251.8	240.8	245.4	247.8	249.7	251.0	251.7	252.1
Fees for participant sports (12/77 = 100)	150.0	152.2	154.4	155.6	156.4	156.9	157.8	151.2	153.2	155.5	156.9	157.7	158.1	158.8
Admissions (12/77 = 100)	139.9	145.4	145.2	145.8	146.6	147.2	147.3	138.8	144.5	144.2	144.8	145.6	146.3	146.2
Other entertainment services (12/77 = 100)	129.8	129.8	131.0	132.6	133.3	133.0	132.9	130.6	130.7	132.3	133.6	134.4	134.0	133.9
OTHER GOODS AND SERVICES	279.9	289.0	294.4	296.8	298.1	298.6	300.5	277.8	288.0	292.0	294.1	295.5	295.9	298.1
Tobacco products	280.3	297.7	298.0	299.0	299.9	299.9	304.3	279.9	297.5	297.8	298.8	299.7	299.6	304.0
Cigarettes	287.6	306.1	306.4	307.4	308.2	308.0	312.8	286.5	305.2	305.5	306.5	307.3	307.0	311.8
Other tobacco products and smoking accessories (12/77 = 100)	145.8	150.9	151.2	151.4	152.7	153.9	154.9	145.8	150.9	151.2	151.4	152.7	153.9	154.9
Personal care	256.1	262.1	263.0	263.3	265.6	266.3	266.9	253.9	260.1	260.9	261.5	263.7	264.4	265.0
Toilet goods and personal care appliances	253.9	261.9	262.4	263.0	265.7	266.3	266.8	254.8	262.6	263.0	263.9	266.6	267.1	267.5
Products for the hair, hairpieces, and wigs (12/77 = 100)	147.1	152.8	153.0	152.7	154.5	154.0	154.3	146.5	151.9	152.0	151.9	153.6	153.1	153.2
Dental and shaving products (12/77 = 100)	157.6	160.0	160.8	163.1	166.7	167.3	167.8	155.9	158.5	159.1	161.2	165.1	165.6	166.0
Cosmetics, bath and nail preparations, manicure and eye makeup implements (12/77 = 100)	144.0	148.6	148.3	147.7	148.9	149.8	150.0	144.8	149.2	148.9	148.9	150.1	151.1	151.1
Other toilet goods and small personal care appliances (12/77 = 100)	143.6	148.9	149.9	150.5	150.5	150.7	151.0	147.3	152.4	153.4	154.1	154.1	154.4	154.8
Personal care services	259.0	263.3	264.6	264.6	266.6	267.4	268.1	253.4	258.1	259.3	259.6	261.4	262.1	263.0
Beauty parlor services for women	263.3	266.5	268.1	267.5	269.8	270.7	271.2	255.8	259.7	261.1	260.7	262.9	263.7	264.5
Haircuts and other barber shop services for men (12/77 = 100)	142.0	145.6	146.0	146.8	147.5	147.8	148.4	140.8	144.4	144.8	145.6	146.3	146.7	147.2
Personal and educational expenses	322.1	328.1	344.6	350.9	351.3	352.1	353.5	323.6	330.5	345.6	352.4	352.9	353.7	355.4
Schoolbooks and supplies	288.4	294.6	306.6	308.5	308.8	308.9	314.4	292.4	298.8	310.8	312.9	313.0	313.0	318.8
Personal and educational services	330.2	336.2	353.5	360.6	361.0	361.9	362.7	331.5	338.6	354.3	362.0	352.9	363.6	364.5
Tuition and other school fees	167.3	168.2	178.6	182.9	182.9	182.9	183.0	167.7	168.8	178.4	183.3	183.3	183.3	183.4
College tuition (12/77 = 100)	166.9	168.0	180.7	182.7	182.7	182.8	182.9	167.0	168.0	180.5	182.6	182.7	182.7	182.7
Elementary and high school tuition (12/77 = 100)	168.7	169.2	170.9	183.9	183.9	183.9	183.9	169.7	170.3	172.7	184.9	184.9	184.9	184.9
Personal expenses (12/77 = 100)	178.0	189.8	192.6	193.4	194.6	196.8	198.6	177.9	190.4	193.0	193.9	195.2	197.3	199.1
Special indexes:														
Gasoline, motor oil, coolant, and other products	367.9	384.5	382.3	377.8	373.7	370.9	366.3	369.4	385.9	383.9	379.5	375.5	372.5	367.9
Insurance and finance	411.1	415.6	418.2	419.7	419.8	419.4	418.1	415.6	418.2	419.7	419.8	419.4	418.1	418.4
Utilities and public transportation	329.1	343.6	344.7	343.0	340.7	339.8	344.6	328.1	342.9	343.8	341.8	339.4	338.5	343.6
Housekeeping and home maintenance services	355.3	360.1	361.6	363.4	364.2	364.9	366.4	357.9	364.2	365.2	369.7	370.4	372.0	373.9

¹Excludes motor oil, coolant, and other products as of January 1983.

c = corrected.

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)		
	1983			1983			1983			1983		
	Aug.	Oct.	Dec.	Aug.	Oct.	Dec.	Aug.	Oct.	Dec.	Aug.	Oct.	Dec.
Northeast												
EXPENDITURE CATEGORY												
All items	155.0	156.5	157.2	161.5	163.1	163.7	165.5	167.1	168.3	160.0	161.6	162.3
Food and beverages	147.5	148.2	148.8	147.4	147.3	146.7	151.6	150.7	151.9	147.7	146.6	147.6
Housing	159.6	160.5	161.7	169.7	171.4	172.6	176.7	178.4	179.5	164.2	166.3	166.4
Apparel and upkeep	123.2	125.5	122.7	125.8	130.0	129.5	128.6	132.3	133.0	128.8	131.9	134.1
Transportation	164.2	165.8	166.5	171.4	173.4	174.2	169.5	172.0	172.9	169.7	171.9	172.5
Medical care	164.4	166.5	168.3	167.1	167.3	170.7	171.2	171.4	174.2	171.9	172.6	177.5
Entertainment	144.3	145.8	145.9	139.6	142.8	140.3	143.8	146.2	149.0	149.3	153.0	152.3
Other goods and services	160.3	166.9	167.9	162.8	167.1	167.7	165.9	170.5	172.3	166.7	171.3	171.8
COMMODITY AND SERVICE GROUP												
Commodities	150.1	151.2	151.4	156.0	157.4	157.1	155.4	156.4	157.0	153.9	154.7	155.5
Commodities less food and beverages	151.6	153.0	152.9	159.8	162.1	162.0	156.8	158.9	159.2	156.3	158.3	159.0
Services	161.3	163.2	164.4	169.8	171.8	173.6	181.7	184.2	186.3	169.2	171.9	172.7
North Central Region												
EXPENDITURE CATEGORY												
All items	166.6	167.3	167.6	162.2	162.6	163.6	159.6	161.1	161.6	160.7	162.1	162.8
Food and beverages	144.5	144.6	145.2	143.6	142.8	143.8	145.0	144.8	144.7	151.9	153.2	152.9
Housing	186.3	185.6	185.8	171.7	170.3	171.5	165.7	167.8	169.0	165.2	165.9	167.0
Apparel and upkeep	119.5	122.3	120.3	128.9	131.8	131.2	129.9	131.6	132.3	125.4	129.2	127.5
Transportation	167.4	168.8	168.9	168.6	170.1	171.6	169.8	171.8	172.1	167.8	169.4	170.8
Medical care	168.4	169.8	172.4	172.4	173.1	173.9	167.5	167.6	168.0	175.4	175.5	177.6
Entertainment	143.3	144.3	144.2	131.8	134.7	133.6	148.4	149.9	148.4	136.6	138.9	139.1
Other goods and services	158.1	162.9	163.8	170.4	175.8	177.4	158.3	161.1	161.7	169.3	172.4	172.3
COMMODITY AND SERVICE GROUP												
Commodities	154.7	155.6	155.6	153.1	153.7	154.2	151.5	152.7	152.6	151.3	153.0	152.9
Commodities less food and beverages	159.7	161.2	160.9	157.1	158.4	158.7	154.5	156.5	156.3	151.0	153.0	153.0
Services	184.3	184.6	185.2	176.8	176.9	178.6	172.8	174.7	176.2	175.6	176.5	178.3
South												
EXPENDITURE CATEGORY												
All items	162.4	163.3	163.5	162.9	164.9	164.9	162.3	163.5	163.7	162.8	165.1	165.7
Food and beverages	150.9	151.4	151.9	149.9	150.5	149.8	147.8	148.3	148.5	150.7	151.4	152.3
Housing	169.7	169.6	169.3	168.4	171.0	170.9	169.5	169.6	169.4	171.9	173.9	174.6
Apparel and upkeep	131.8	130.7	130.5	126.2	129.0	128.7	124.1	126.5	126.7	111.3	116.3	116.0
Transportation	168.7	171.1	171.5	172.2	174.2	174.4	170.3	172.4	172.5	167.3	170.4	170.2
Medical care	170.0	171.7	173.6	169.0	172.4	174.0	180.0	182.3	182.7	184.2	187.8	189.9
Entertainment	140.7	143.4	142.9	154.4	153.7	154.6	146.2	148.1	150.0	146.4	148.6	147.5
Other goods and services	162.1	166.2	166.6	164.9	168.5	169.1	161.6	166.2	167.5	162.9	164.0	167.3
COMMODITY AND SERVICE GROUP												
Commodities	155.0	155.5	155.9	155.6	157.2	156.9	153.7	154.8	154.8	153.2	155.4	155.6
Commodities less food and beverages	156.8	157.3	157.7	157.9	160.1	160.1	156.4	157.9	157.8	154.2	157.1	157.1
Services	172.7	174.1	174.0	173.9	176.6	176.9	175.6	177.1	177.5	177.1	179.6	180.8
West												
EXPENDITURE CATEGORY												
All items	162.7	163.5	164.0	162.5	163.8	164.0	155.2	155.9	156.3	162.2	163.9	164.0
Food and beverages	150.9	151.9	152.7	152.8	153.6	154.4	148.3	149.4	150.2	154.1	154.9	156.0
Housing	168.3	170.0	169.4	165.4	168.1	167.2	152.9	154.2	153.9	163.2	164.9	164.4
Apparel and upkeep	123.3	122.8	122.7	126.9	127.6	127.9	122.8	125.0	123.4	142.4	146.2	144.4
Transportation	173.0	172.0	174.2	174.4	174.3	175.3	170.6	169.9	171.1	167.8	169.8	171.1
Medical care	177.3	177.4	178.0	175.8	175.6	176.5	180.0	180.6	180.9	179.2	179.0	178.9
Entertainment	139.8	141.3	142.6	146.7	146.8	147.5	148.7	147.4	148.8	158.5	160.6	161.2
Other goods and services	165.0	168.0	168.8	165.5	168.4	170.0	161.2	164.6	166.2	173.4	175.3	174.5
COMMODITY AND SERVICE GROUP												
Commodities	152.6	152.4	153.5	155.2	155.7	156.3	153.3	153.4	154.3	152.4	153.8	154.3
Commodities less food and beverages	153.6	152.7	153.9	156.4	156.8	157.2	155.4	155.0	156.0	151.7	153.4	153.6
Services	175.9	177.8	177.8	172.6	174.9	174.7	157.6	159.1	158.8	176.6	178.6	178.3

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

[1967 = 100 unless otherwise specified]

Area ¹	All Urban Consumers						Urban Wage Earners and Clerical Workers							
	1983					1984	1983						1984	
	Jan.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Jan.	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.
U.S. city average ²	293.1	300.3	301.8	302.6	303.1	303.5	305.2	292.1	299.5	300.8	301.3	301.4	301.5	302.7
Anchorage, Alaska (10/67 = 100)	257.6	...	267.9	...	270.4	...	271.5	250.6	...	260.8	...	264.0	...	264.0
Atlanta, Ga.	...	303.9	...	304.4	...	307.3	...	...	304.3	...	306.3	...	309.7	...
Baltimore, Md.	291.4	...	302.9	...	304.7	...	307.6	289.7	...	299.5	...	302.4	...	303.8
Boston, Mass.	286.8	...	290.6	...	294.0	...	296.6	284.5	...	288.6	...	292.5	...	294.4
Buffalo, N.Y.	...	285.9	...	288.5	...	288.2	...	...	285.1	...	286.8	...	285.6	...
Chicago, Ill.—Northwestern Ind.	294.0	301.6	303.0	302.3	303.9	303.9	305.2	292.8	297.4	299.1	294.5	295.7	294.2	298.3
Cincinnati, Ohio-Ky.-Ind.	306.0	...	314.6	...	316.8	...	318.4	305.2	...	311.2	...	316.0	...	313.4
Cleveland, Ohio	...	327.3	...	332.5	...	330.7	...	...	317.6	...	317.6	...	314.9	...
Dallas-Ft. Worth, Tex.	...	315.9	...	318.5	...	317.6	...	...	309.0	...	314.7	...	313.5	...
Denver-Boulder, Colo.	327.5	...	339.4	...	339.8	...	343.0	323.9	...	337.3	...	338.4	...	336.0
Detroit, Mich.	292.6	298.8	299.2	298.2	299.9	300.1	301.3	288.0	303.7	304.6	298.9	301.8	301.3	307.9
Honolulu, Hawaii	...	273.5	...	276.4	...	278.4	...	...	278.2	...	285.9	...	288.2	...
Houston, Tex.	...	324.0	...	324.3	...	320.7	...	...	321.6	...	322.4	...	317.9	...
Kansas City, Mo.-Kansas	...	301.3	...	303.3	...	303.0	...	...	299.3	...	303.9	...	300.0	...
Los Angeles-Long Beach, Anaheim, Calif.	285.6	295.2	296.4	297.0	296.5	297.7	299.1	288.0	293.7	296.7	299.0	297.8	299.9	297.9
Miami, Fla. (11/77 = 100)	157.9	...	162.9	...	164.0	...	165.0	159.2	...	164.3	...	164.9	...	165.9
Milwaukee, Wis.	305.0	...	313.9	...	312.5	...	314.0	303.5	...	329.1	...	328.9	...	327.5
Minneapolis-St. Paul, Minn.-Wis.	...	316.2	...	316.8	...	317.5	...	...	308.5	...	312.7	...	312.5	...
New York, N.Y.—Northeastern N.J.	282.6	289.5	292.1	292.9	293.9	294.3	297.3	280.8	288.4	288.1	288.7	287.3	288.2	290.2
Northeast, Pa. (Scranton)	278.9	...	297.2	...	288.5	...	291.0	282.6	...	290.0	...	290.9	...	293.2
Philadelphia, Pa.-N.J.	282.1	289.9	291.4	291.2	291.7	291.8	294.4	282.5	293.3	294.2	294.2	294.8	294.3	296.7
Pittsburgh, Pa.	...	310.2	...	313.7	...	314.3	...	...	304.2	...	304.7	...	302.6	...
Portland, Oreg.-Wash.	286.6	...	293.3	...	293.9	...	295.1	281.7	...	288.2	...	289.6	...	289.5
St. Louis, Mo.-Ill.	291.1	...	302.0	...	299.6	...	300.9	285.3	...	299.1	...	299.3	...	296.8
San Diego, Calif.	324.9	...	340.4	...	342.3	...	346.6	313.6	...	323.9	...	323.7	...	329.6
San Francisco-Oakland, Calif.	...	306.0	...	305.7	...	307.3	...	...	301.6	...	301.4	...	306.1	...
Seattle-Everett, Wash.	297.5	...	308.8	...	309.5	...	311.1	291.4	...	297.7	...	299.0	...	299.4
Washington, D.C.-Md.-Va.	289.0	...	297.0	...	298.6	...	303.4	292.9	...	300.9	...	302.7	...	308.1

¹The 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.

²Average of 85 cities.

23. Producer Price Indexes, by stage of processing

[1967 = 100]

Commodity grouping	Annual average 1983	1983											1984	
		Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct. ¹	Nov.	Dec.	Jan.	Feb.
FINISHED GOODS														
Finished goods	285.2	284.1	283.4	283.1	284.2	285.0	285.7	286.1	285.1	[†] 287.6	286.8	287.1	289.4	290.6
Finished consumer goods	284.6	283.7	282.7	282.3	283.6	284.6	285.2	285.7	285.1	[†] 287.0	285.8	286.1	288.8	290.1
Finished consumer foods	261.8	261.0	261.1	262.9	262.6	261.2	260.7	260.7	263.0	[†] 263.7	261.8	264.0	272.2	274.7
Crude	259.5	240.8	247.9	265.8	267.2	251.2	247.1	259.9	267.4	[†] 287.3	272.8	269.1	309.2	315.9
Processed	259.9	260.7	260.1	260.5	260.1	260.0	259.8	258.7	260.5	[†] 259.5	258.7	261.5	266.7	268.9
Nondurable goods less foods	335.3	333.7	332.0	328.7	332.0	335.7	337.7	338.6	338.6	[†] 338.1	336.6	335.3	335.0	335.9
Durable goods	233.1	232.9	231.9	232.2	232.9	233.1	233.4	233.8	229.2	[†] 235.3	235.3	235.7	235.9	236.2
Consumer nondurable goods less food and energy	231.4	228.9	229.4	230.1	230.3	230.7	232.0	232.7	233.0	[†] 233.6	233.7	233.7	235.8	236.1
Capital equipment	287.3	285.6	285.6	286.2	286.5	286.7	287.2	287.7	285.1	[†] 289.9	290.3	290.5	291.5	292.5
INTERMEDIATE MATERIALS														
Intermediate materials, supplies, and components	312.4	309.9	309.5	308.7	309.7	311.3	312.8	314.0	315.5	[†] 315.6	315.7	315.8	316.6	317.4
Materials and components for manufacturing	293.3	291.1	290.2	291.0	291.9	292.4	294.1	294.7	296.7	[†] 296.4	296.1	297.0	298.6	299.5
Materials for food manufacturing	258.4	254.1	252.8	255.1	257.0	257.0	257.4	260.5	269.4	[†] 263.5	260.4	262.5	268.3	267.9
Materials for nondurable manufacturing	279.9	277.0	276.6	277.3	277.7	277.7	279.7	281.1	282.7	[†] 283.3	284.1	284.7	287.0	286.9
Materials for durable manufacturing	319.3	319.2	315.7	316.6	318.4	319.0	320.9	320.9	323.1	[†] 322.3	321.1	322.6	322.9	325.2
Components for manufacturing	280.3	277.6	278.3	278.9	279.4	280.3	281.6	281.5	281.8	[†] 282.6	282.5	283.1	284.0	284.9
Materials and components for construction	301.7	298.8	299.6	300.9	301.2	302.4	302.9	303.7	303.1	[†] 303.6	304.0	304.6	305.4	307.5
Processed fuels and lubricants	566.8	565.4	564.2	543.3	547.8	562.0	567.9	572.0	573.4	[†] 574.2	574.0	568.5	562.4	561.7
Manufacturing industries	481.9	475.5	480.6	460.4	462.9	475.9	480.9	485.1	487.2	[†] 490.5	493.4	488.8	482.8	478.3
Nonmanufacturing industries	641.1	644.6	637.2	615.9	622.2	637.5	644.1	648.0	648.8	[†] 647.2	643.9	637.6	631.5	634.5
Containers	286.6	285.3	285.2	284.8	285.8	285.9	286.1	286.3	287.1	[†] 288.1	289.3	289.5	291.5	293.2
Supplies	277.0	273.5	273.9	275.5	275.6	275.6	276.2	277.9	280.2	[†] 280.6	281.0	281.0	282.5	282.2
Manufacturing industries	269.9	267.8	268.1	268.6	268.9	269.8	270.1	270.5	270.8	[†] 271.8	271.9	272.6	274.0	275.9
Nonmanufacturing industries	280.9	276.8	277.1	279.3	279.3	278.8	279.6	282.0	285.3	[†] 285.3	296.0	285.6	287.1	285.7
Feeds	225.5	207.4	207.7	219.8	218.1	213.4	216.2	230.7	249.6	[†] 246.7	249.6	244.0	244.5	227.8
Other supplies	292.7	291.2	291.6	291.9	292.2	292.5	291.9	293.0	293.4	[†] 294.0	294.2	294.8	296.5	298.0
CRUDE MATERIALS														
Crude materials for further processing	323.6	320.2	321.6	325.8	325.8	323.3	320.6	327.1	328.5	[†] 324.8	324.1	327.8	333.7	332.8
Foodstuffs and feedstuffs	252.3	249.3	249.1	256.8	256.5	252.1	248.4	256.4	257.2	[†] 253.7	252.0	256.2	264.2	260.7
Nonfood materials	477.2	473.0	477.7	474.6	475.4	476.8	476.2	479.6	482.5	[†] 478.2	479.5	482.1	483.6	488.2
Nonfood materials except fuel	372.0	366.0	366.8	367.0	369.0	370.5	371.6	375.6	378.1	[†] 377.1	377.7	379.6	380.3	385.5
Manufacturing industries	381.6	375.1	375.9	376.1	378.3	379.9	381.6	385.7	388.3	[†] 387.4	387.8	389.7	390.5	395.5
Construction	271.1	269.1	269.3	270.0	270.3	271.3	270.9	271.0	272.5	[†] 270.5	272.9	274.6	273.9	280.2
Crude fuel	931.5	937.7	961.8	941.6	935.9	936.7	927.8	926.9	931.0	[†] 910.9	915.2	921.4	927.0	927.4
Manufacturing industries	1,094.8	1,103.9	1,134.3	1,107.6	1,100.9	1,102.3	1,090.4	1,088.9	1,093.9	[†] 1,067.1	1,072.4	1,079.9	1,087.7	1,087.5
Nonmanufacturing industries	816.2	820.0	839.2	824.0	819.1	819.4	813.0	812.5	816.1	[†] 801.1	804.6	810.0	813.7	814.6
SPECIAL GROUPINGS														
Finished goods excluding foods	290.9	289.6	288.7	287.7	289.3	290.8	291.8	292.5	290.3	[†] 293.4	293.0	292.6	292.9	293.6
Finished consumer goods excluding foods	291.3	290.3	288.9	287.3	289.4	291.6	292.6	293.5	291.4	[†] 293.9	293.0	292.5	292.5	293.1
Finished consumer goods less energy	249.9	248.7	248.6	249.5	249.7	249.4	249.9	250.2	249.7	[†] 252.1	251.4	252.4	256.0	257.1
Intermediate materials less foods and feeds	317.2	315.2	314.8	313.6	314.6	316.4	318.0	318.7	319.5	[†] 320.0	320.1	320.3	320.9	322.1
Intermediate materials less energy	295.1	292.4	292.1	293.2	293.9	294.4	295.6	296.5	298.1	[†] 298.2	298.2	298.8	300.3	301.2
Intermediate foods and feeds	247.8	238.8	238.0	243.6	244.4	242.8	244.0	250.9	263.2	258.2	257.1	256.6	260.7	254.9
Crude materials less agricultural products	538.4	535.1	539.7	536.1	536.2	537.5	536.8	540.0	542.9	[†] 538.8	540.4	543.8	546.6	552.1
Crude materials less energy	246.5	241.4	242.7	248.6	249.0	246.2	243.9	251.2	252.5	[†] 249.6	248.5	252.3	258.5	257.4

¹Data for October 1983 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		
			Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct. ¹	Nov.	Dec.	Jan.	Feb.
	All commodities	303.1	300.9	300.6	300.6	301.5	302.4	303.2	304.7	305.3	306.0	305.6	306.0	308.1	308.8
	All commodities (1957-59 = 100)	321.6	319.3	318.9	318.9	319.9	320.8	321.7	323.3	323.9	324.7	324.2	324.7	326.9	327.6
	Farm products and processed foods and feeds	253.9	250.4	250.6	254.7	254.7	252.5	251.5	255.5	259.1	257.5	256.0	257.8	264.4	263.5
	Industrial commodities	315.8	313.9	313.5	312.4	313.6	315.3	316.5	317.3	317.1	318.5	318.3	318.4	319.2	320.4
FARM PRODUCTS AND PROCESSED FOODS AND FEEDS															
01	Farm products	248.2	240.7	241.5	250.5	250.4	247.4	244.3	253.5	256.4	255.2	251.0	254.0	263.3	261.5
01-1	Fresh and dried fruits and vegetables	261.7	227.8	234.9	266.6	260.1	264.4	258.2	270.4	276.0	308.1	274.7	273.0	290.4	311.5
01-2	Grains	240.4	222.4	227.4	243.8	242.2	241.5	236.7	251.8	258.0	253.7	257.5	243.6	245.5	235.3
01-3	Livestock	243.1	251.1	251.4	260.6	258.0	251.7	240.7	242.2	231.5	229.4	220.5	238.2	250.7	251.9
01-4	Live poultry	206.5	200.1	177.8	170.8	186.9	199.3	214.5	221.4	242.2	208.5	238.5	241.2	252.6	251.3
01-5	Plant and animal fibers	227.0	206.4	217.0	213.6	223.8	229.7	230.4	240.7	238.7	234.5	243.6	244.1	229.3	232.7
01-6	Fluid milk	282.0	284.3	282.9	280.8	279.8	278.6	278.7	281.7	284.4	284.1	283.2	281.4	279.1	275.7
01-7	Eggs	(²)	170.0	170.0	170.0	185.1	169.3	177.2	189.5	200.1	(²)	(²)	(²)	282.4	280.7
01-8	Hay, hayseeds, and oilseeds	246.8	217.9	217.8	226.3	227.3	213.3	227.3	262.8	297.8	288.8	287.6	282.2	287.3	265.4
01-9	Other farm products	282.1	281.2	280.3	279.2	281.0	284.4	282.5	285.7	287.3	283.7	283.5	276.9	280.2	278.9
02	Processed foods and feeds	256.0	254.7	254.5	256.0	256.1	254.3	254.4	255.5	259.6	257.8	257.6	258.8	263.9	263.5
02-1	Cereal and bakery products	260.9	256.8	256.9	258.8	259.1	260.3	261.4	262.8	263.6	264.6	264.7	264.9	266.1	267.0
02-2	Meats, poultry, and fish	249.4	261.0	260.7	259.1	257.8	250.2	247.3	243.2	242.9	242.9	235.7	242.1	256.9	255.6
02-3	Dairy products	250.6	250.9	250.7	251.0	250.9	250.4	250.4	250.4	250.6	251.3	251.2	249.2	248.5	248.6
02-4	Processed fruits and vegetables	277.1	274.3	274.9	273.7	275.3	277.1	277.1	278.3	278.6	281.1	279.8	281.5	285.3	291.8
02-5	Sugar and confectionery	292.8	286.4	283.7	287.4	289.9	296.0	296.4	298.9	300.2	298.0	297.6	297.4	299.0	301.6
02-6	Beverages and beverage materials	263.6	261.3	262.0	263.0	263.6	263.0	263.7	263.9	264.3	265.2	266.1	266.5	268.4	270.0
02-7	Fats and oils	239.6	205.3	206.0	214.6	220.0	219.3	222.2	245.6	303.5	281.7	277.6	271.7	278.9	269.1
02-8	Miscellaneous processed foods	254.4	249.3	248.5	249.9	249.9	251.5	255.0	252.7	258.4	262.1	264.0	265.8	266.7	275.3
02-9	Prepared animal feeds	228.5	212.3	212.4	222.8	221.3	217.1	220.0	233.0	249.3	248.6	250.9	245.7	246.0	231.1
INDUSTRIAL COMMODITIES															
03	Textile products and apparel	204.9	202.6	203.4	203.5	204.3	204.7	205.3	206.0	206.2	207.0	207.0	207.2	208.0	209.3
03-1	Synthetic fibers (12/75 = 100)	156.8	153.1	153.9	153.8	155.6	155.9	158.3	157.5	158.0	160.5	159.5	158.2	159.2	161.5
03-2	Processed yarns and threads (12/75 = 100)	138.3	135.0	135.8	136.0	137.4	137.6	138.5	140.2	140.3	141.3	141.3	142.4	142.3	144.0
03-3	Gray fabrics (12/75 = 100)	146.9	144.3	145.1	145.8	146.2	145.8	146.1	146.7	147.3	149.4	150.2	151.7	152.8	152.8
03-4	Finished fabrics (12/75 = 100)	123.1	122.3	122.4	123.1	122.8	122.5	122.4	123.6	123.4	123.8	123.9	124.3	125.0	126.3
03-81	Apparel	197.1	195.0	196.1	195.8	196.5	197.9	198.4	198.7	198.7	198.8	198.7	198.4	198.7	199.8
03-82	Textile housefurnishings	235.6	234.3	234.2	234.2	237.6	235.2	234.8	234.5	235.3	234.9	233.9	234.7	236.6	236.2
04	Hides, skins, leather, and related products	271.4	264.3	264.9	267.4	269.4	271.2	272.3	274.7	274.4	273.7	277.3	278.3	280.1	283.2
04-2	Leather	330.8	312.8	316.2	320.5	326.6	335.9	337.9	343.4	339.4	336.6	340.2	342.6	346.4	361.3
04-3	Footwear	250.1	247.7	248.1	250.0	248.7	249.9	249.9	250.9	251.6	251.3	251.4	251.3	251.7	251.6
04-4	Other leather and related products	253.7	251.0	250.9	251.0	251.7	251.7	253.5	253.7	253.5	253.5	257.6	258.1	258.9	259.1
05	Fuels and related products and power	665.9	668.6	658.0	644.8	651.9	665.5	668.7	671.7	672.3	669.5	667.1	662.1	655.8	656.7
05-1	Coal	536.8	533.4	538.6	538.0	535.2	534.1	534.8	536.6	537.9	538.2	539.8	542.4	541.0	543.4
05-2	Coke	447.8	450.9	447.3	447.3	438.4	438.4	431.6	453.9	453.9	453.1	453.5	453.5	418.3	418.3
05-3	Gas fuels ³	1,147.9	1,154.7	1,180.0	1,156.1	1,156.7	1,155.1	1,148.9	1,145.9	1,147.0	1,128.4	1,124.2	1,125.6	1,126.8	1,123.8
05-4	Electric power	418.0	410.8	411.4	409.2	412.2	419.4	426.4	427.2	427.9	423.6	419.0	417.6	420.9	424.4
05-61	Crude petroleum ⁴	681.5	692.9	678.0	678.0	678.0	677.9	675.7	675.1	675.7	675.7	676.0	674.8	676.0	676.0
05-7	Petroleum products, refined ⁵	686.4	692.8	666.6	645.9	659.3	684.2	688.7	694.9	695.3	696.3	694.7	684.8	669.7	670.1
06	Chemicals and allied products	292.9	290.5	289.8	291.3	291.1	290.8	293.7	294.4	295.9	295.5	296.4	296.6	298.5	296.7
06-1	Industrial chemicals ⁶	342.9	340.1	338.8	338.7	338.8	338.5	347.0	347.6	345.6	344.9	346.3	345.1	347.7	338.0
06-21	Prepared paint	264.7	264.7	264.7	264.7	264.7	264.7	265.2	265.4	264.5	264.2	264.4	264.9	265.7	266.9
06-22	Paint materials	305.6	299.5	298.4	299.8	300.2	299.5	300.5	305.7	316.2	316.9	314.5	315.5	316.3	313.9
06-3	Drugs and pharmaceuticals	226.2	222.2	222.9	225.1	225.2	225.2	227.6	227.3	227.3	229.3	230.6	231.4	233.3	234.4
06-4	Fats and oils, inedible	283.7	253.4	262.2	278.3	287.1	276.9	260.9	278.1	329.0	318.6	320.9	319.0	334.4	348.9
06-5	Agricultural chemicals and chemical products	280.7	283.3	284.2	282.8	282.4	280.6	278.1	277.1	276.0	276.4	281.1	282.5	279.2	287.1
06-6	Plastic resins and materials	290.2	283.1	282.1	285.4	288.0	289.1	291.3	293.7	302.6	299.1	296.6	298.3	304.2	305.0
06-7	Other chemicals and allied products	273.7	274.4	272.0	274.7	272.0	272.4	274.2	274.2	274.3	274.4	274.4	274.5	275.9	273.7
07	Rubber plastic products	243.4	242.3	241.8	243.0	243.2	243.1	243.4	243.7	243.2	244.4	243.8	244.1	244.1	245.4
07-1	Rubber and rubber products	266.6	268.3	267.1	267.0	267.0	265.6	265.2	265.1	263.9	264.8	264.8	265.1	265.6	266.6
07-11	Crude rubber	280.9	274.3	281.2	281.3	280.6	280.2	283.2	284.6	284.4	284.3	282.8	282.4	282.9	282.8
07-12	Tires and tubes	245.4	250.5	246.6	246.5	246.3	243.7	242.4	242.8	242.5	242.6	242.7	243.0	242.9	243.0
07-13	Miscellaneous rubber products	286.0	289.6	285.8	285.7	286.0	285.9	285.7	284.5	281.6	283.8	284.2	284.8	286.2	288.7
07-2	Plastic products (6/78 = 100)	135.3	133.1	133.2	134.6	134.8	135.5	136.0	136.4	136.6	137.4	136.8	136.9	136.7	137.6
08	Lumber and wood products	307.3	303.1	305.8	307.2	308.0	314.8	314.6	313.9	305.6	305.6	306.0	308.8	309.2	315.6
08-1	Lumber	353.1	344.7	349.3	354.2	358.6	372.8	373.1	366.6	346.6	344.7	346.0	351.5	353.2	365.4
08-2	Millwork	302.3	300.5	304.0	302.8	299.0	294.9	296.3	306.6	305.9	307.4	308.2	308.5	308.5	308.5
08-3	Plywood	244.1	239.5	238.9	239.4	241.1	255.5	252.5	246.2	242.2	246.6	244.7	247.1	248.3	249.5
08-4	Other wood products	230.6	233.2	231.6	230.8	231.1	229.6	229.7	229.3	229.4	229.6	229.7	230.4	229.8	230.7

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		
			Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct. ¹	Nov.	Dec.	Jan.	Feb.
INDUSTRIAL COMMODITIES—Continued															
09	Pulp, paper, and allied products	297.7	294.2	294.8	295.4	296.0	297.0	297.8	298.8	299.9	302.2	302.0	302.7	307.6	310.5
09-1	Pulp, paper, and products, excluding building paper and board	271.0	268.7	268.7	268.5	268.7	269.2	270.2	271.1	273.1	275.2	276.3	276.8	280.0	283.3
09-11	Woodpulp	346.6	345.7	343.0	342.5	343.2	344.9	345.8	346.4	345.4	347.4	352.6	351.3	364.4	371.5
09-12	Wastepaper	(²)	(²)	(²)	(²)	(²)	(²)	183.3	194.4	216.2	210.2	211.5	211.5	229.3	
09-13	Paper	281.9	278.8	278.4	278.5	279.0	279.5	279.2	280.9	286.0	287.2	287.9	288.9	294.3	296.6
09-14	Paperboard	250.5	244.1	246.3	248.1	248.7	249.4	249.7	250.1	254.0	257.3	257.9	259.5	262.2	269.3
09-15	Converted paper and paperboard products	265.4	265.1	265.1	264.2	264.1	264.5	264.1	264.7	265.0	266.5	267.8	268.0	269.4	271.6
09-2	Building paper and board	250.0	241.4	244.2	247.0	249.3	255.7	256.2	252.1	252.8	254.7	254.7	250.5	251.9	253.9
10	Metals and metal products	307.1	304.7	304.4	304.6	306.1	306.3	307.3	308.2	310.7	310.9	310.3	311.4	312.7	314.6
10-1	Iron and steel	343.3	339.9	341.6	341.5	340.9	341.3	342.1	343.2	348.1	348.5	349.2	350.6	354.1	356.3
10-17	Steel mill products	352.6	351.1	349.8	349.7	349.8	350.1	350.8	351.7	358.1	358.7	359.1	359.5	362.8	363.5
10-2	Nonferrous metals	276.0	275.8	270.6	271.8	277.7	275.7	278.4	279.8	282.0	279.3	275.6	278.0	276.1	279.5
10-3	Metal containers	335.2	331.1	331.4	331.9	337.1	337.4	336.5	336.6	338.5	338.3	338.2	338.2	344.5	344.9
10-4	Hardware	290.0	287.9	288.2	288.6	288.5	291.5	292.1	292.2	292.5	292.7	291.5	291.9	292.5	292.9
10-5	Plumbing fixtures and brass fittings	289.1	283.5	285.6	287.7	289.1	290.8	290.4	290.2	292.4	292.7	293.7	293.6	293.9	296.9
10-6	Heating equipment	243.4	240.7	241.1	242.3	242.7	243.0	244.9	245.1	246.6	245.3	245.2	245.6	247.3	248.4
10-7	Fabricated structural metal products	303.3	302.8	303.7	302.5	302.1	302.0	302.2	303.0	304.3	304.2	305.0	304.9	306.5	306.9
10-8	Miscellaneous metal products	283.8	279.0	280.4	280.7	280.8	283.4	283.7	284.0	284.3	289.0	289.1	289.3	289.9	290.7
11	Machinery and equipment	286.4	284.3	284.7	285.4	286.0	286.2	287.4	287.4	287.9	287.6	288.1	288.8	289.6	290.4
11-1	Agricultural machinery and equipment	326.3	323.3	323.5	323.9	326.4	326.4	327.1	327.3	328.5	328.0	329.7	329.8	330.9	331.1
11-2	Construction machinery and equipment	351.9	349.3	349.6	350.9	352.3	352.5	352.8	352.9	353.5	353.6	353.7	353.7	354.3	355.9
11-3	Metalworking machinery and equipment	326.2	325.2	325.5	326.2	326.7	327.0	326.6	326.5	326.6	327.0	326.6	327.7	328.3	330.4
11 4	General purpose machinery and equipment	368.2	307.9	307.5	308.2	308.4	308.4	308.5	307.9	308.1	307.8	308.4	309.3	310.3	310.7
11-6	Special industry machinery and equipment	337.1	332.6	333.6	334.5	335.8	336.7	338.0	339.0	339.8	340.6	340.9	341.7	341.0	343.3
11-7	Electrical machinery and equipment	240.0	237.2	237.5	238.4	238.5	238.8	241.7	241.7	242.6	242.6	242.7	243.7	244.6	245.5
11-9	Miscellaneous machinery	274.5	272.7	273.7	274.2	275.3	275.0	275.2	275.3	274.5	273.3	275.0	275.2	276.3	275.5
12	Furniture and household durables	213.9	212.5	212.3	212.8	213.6	214.0	214.8	214.9	215.4	215.3	215.4	215.3	216.3	216.9
12-1	Household furniture	234.7	232.6	231.1	231.8	234.4	235.0	235.4	236.3	236.6	236.9	237.1	237.3	238.2	239.2
12-2	Commercial furniture	286.5	282.2	285.1	286.2	285.9	286.9	287.5	286.5	287.3	287.4	290.3	290.5	290.8	293.9
12-3	Floor coverings	185.0	182.1	182.0	182.2	182.1	181.4	186.6	188.9	189.5	189.5	187.9	187.8	189.0	187.7
12-4	Household appliances	206.8	204.9	205.0	206.3	207.5	207.8	207.7	208.0	207.7	208.0	207.7	208.1	209.4	210.6
12-5	Home electronic equipment	86.2	87.0	87.0	86.6	86.4	86.5	85.9	85.5	85.8	85.8	85.8	84.6	84.3	84.4
12-6	Other household durable goods	312.5	314.8	312.9	312.0	312.7	314.3	314.8	313.9	314.5	314.0	312.9	313.1	315.9	315.2
13	Nonmetallic mineral products	325.3	322.3	322.0	324.1	324.1	324.5	325.1	326.3	327.2	328.0	328.9	329.2	328.8	332.3
13-11	Flat glass	229.7	229.7	229.7	229.7	229.7	229.7	229.8	229.7	229.5	229.6	230.1	230.0	229.5	230.0
13-2	Concrete ingredients	314.0	310.0	308.5	312.8	313.7	314.2	314.0	316.4	317.2	316.7	316.7	317.0	312.9	321.3
13-3	Concrete products	301.8	300.1	300.4	301.0	301.1	301.6	302.3	302.7	303.5	303.3	303.6	303.7	305.6	306.4
13-4	Structural clay products, excluding refractories	277.6	264.3	270.7	275.7	277.6	281.5	282.4	282.4	282.4	283.5	283.4	283.5	283.7	283.0
13-5	Refractories	341.6	337.7	337.7	338.2	338.2	336.8	338.2	339.4	340.2	344.7	354.3	354.3	355.0	357.0
13-6	Asphalt roofing	383.0	380.4	374.7	384.0	380.0	379.6	385.3	383.4	387.2	387.9	384.2	380.6	381.4	390.4
13-7	Gypsum products	284.9	267.4	265.9	271.9	275.7	273.8	276.0	289.3	297.8	312.8	313.9	321.4	328.5	339.4
13-8	Glass containers	352.6	355.8	354.1	353.5	351.8	351.8	351.6	351.3	351.1	350.2	351.1	351.0	351.0	350.9
13-9	Other nonmetallic minerals	480.1	476.1	476.4	478.7	478.5	479.5	479.7	481.9	482.5	483.2	486.9	487.4	485.4	486.8
14	Transportation equipment (12/68 = 100)	256.7	255.8	255.2	255.6	255.8	256.1	256.2	256.8	250.4	260.6	260.6	260.7	261.7	262.3
14-1	Motor vehicles and equipment	256.8	256.3	255.4	255.9	256.2	256.7	256.6	256.8	249.1	260.6	260.3	260.4	261.0	261.2
14-4	Railroad equipment	352.5	350.5	350.3	350.0	350.4	350.1	351.3	351.0	350.7	348.6	355.4	357.3	359.2	359.2
15	Miscellaneous products	289.5	288.8	287.4	287.4	287.1	288.0	291.5	292.0	291.4	291.7	291.4	292.5	293.3	295.0
15-1	Toys, sporting goods, small arms, ammunition	225.2	225.3	225.7	226.3	226.0	225.9	224.3	224.5	224.8	225.9	225.7	225.8	228.0	228.4
15-2	Tobacco products	365.3	356.4	353.8	354.1	353.8	352.1	373.4	376.7	376.9	376.8	376.7	377.0	389.4	390.3
15-3	Notions	280.1	280.6	280.6	280.3	280.3	280.3	280.3	279.7	279.7	279.7	279.6	280.1	281.4	282.2
15-4	Photographic equipment and supplies	215.8	211.8	216.6	216.6	216.6	216.5	216.5	216.6	216.6	216.8	217.1	217.1	(²)	218.2
15-5	Mobile homes (12/74 = 100)	163.2	161.7	162.9	162.3	162.4	163.1	163.5	163.7	164.3	164.8	164.3	164.7	162.4	162.8
15-9	Other miscellaneous products	351.5	359.8	350.5	350.3	349.2	353.4	353.7	352.9	349.6	349.2	348.4	352.3	350.2	350.2

¹Data for October 1983 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.

²Not available.

³Prices for natural gas are lagged 1 month.

⁴Includes only domestic production.

⁵Most prices for refined petroleum products are lagged 1 month.

⁶Some 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		
		Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct. ¹	Nov.	Dec.	Jan.	Feb.	
All commodities—less farm products	306.7	304.9	304.5	303.8	304.8	306.0	307.1	308.0	308.3	308.3	309.2	309.1	309.4	310.8	311.8
All foods	257.5	255.7	255.8	258.2	258.2	256.6	256.2	257.1	260.7	260.5	258.0	260.0	268.3	270.3	
Processed foods	258.8	259.3	258.9	259.5	259.6	257.9	257.7	257.6	260.9	258.6	258.1	260.1	266.2	267.1	
Industrial commodities less fuels	279.2	277.0	276.9	277.6	278.2	278.7	279.8	280.4	280.0	281.8	281.9	282.5	284.0	285.2	
Selected textile mill products (Dec. 1975 = 100)	138.1	136.8	137.2	137.4	137.7	137.4	143.0	139.0	139.1	139.4	139.2	139.5	140.3	141.1	
Hosiery	144.7	144.5	144.5	144.5	144.5	144.5	144.5	145.6	145.6	145.6	145.6	145.6	145.8	147.2	
Underwear and nightwear	223.7	222.6	223.8	223.4	223.5	222.7	223.3	223.5	224.5	224.7	224.5	224.8	227.0	229.8	
Chemicals and allied products, including synthetic rubber and fibers and yarns	283.5	281.4	280.7	281.8	281.6	281.5	284.6	285.0	285.6	285.6	286.3	286.4	288.0	286.4	
Pharmaceutical preparations	224.8	219.4	220.3	223.3	223.5	223.6	226.3	226.0	227.1	229.4	230.5	231.8	234.1	235.8	
Lumber and wood products, excluding millwork	321.6	314.3	317.2	320.8	324.3	338.8	338.1	331.5	316.5	316.7	316.9	321.5	323.0	331.7	
Steel mill products, including fabricated wire products	351.0	349.9	348.4	348.4	348.5	348.7	349.3	350.1	355.9	356.4	356.9	357.4	360.4	361.0	
Finished steel mill products, excluding fabricated wire products	351.4	349.8	348.3	348.4	348.5	348.8	349.4	350.3	357.1	357.8	358.2	358.7	362.1	363.1	
Finished steel mill products, including fabricated wire products	349.7	348.5	347.0	347.0	347.1	347.4	347.9	348.7	354.8	355.4	355.9	356.4	359.5	360.4	
Special metals and metal products	292.5	290.9	290.3	290.7	291.7	292.0	292.6	293.5	291.5	296.4	296.0	296.6	297.7	298.8	
Fabricated metal products	294.2	291.3	292.3	292.2	292.6	294.0	294.2	294.7	295.5	297.2	297.5	297.6	299.1	299.7	
Copper and copper products	196.6	201.5	198.9	200.9	206.7	201.3	201.6	201.2	198.2	190.7	183.0	184.9	182.1	185.2	
Machinery and motive products	279.8	278.2	278.1	278.7	279.2	279.4	280.1	280.4	277.7	282.2	282.5	283.0	283.9	284.6	
Machinery and equipment, except electrical	313.6	311.9	312.2	312.9	313.8	313.9	314.2	314.2	314.3	314.1	314.8	315.3	316.1	316.8	
Agricultural machinery, including tractors	341.5	337.7	337.8	338.2	341.7	341.8	342.7	342.8	344.0	343.6	346.0	346.0	346.7	347.1	
Metalworking machinery	357.1	355.7	355.6	356.3	358.0	357.8	357.8	357.5	357.1	357.6	357.3	360.0	359.8	362.6	
Total tractors	369.9	365.6	365.7	366.1	370.5	370.6	370.7	370.0	372.5	372.6	375.2	373.8	374.0	374.5	
Agricultural machinery and equipment less parts	330.0	326.6	326.8	327.1	330.1	330.2	331.0	331.2	332.6	331.8	333.9	333.8	334.8	335.2	
Farm and garden tractors less parts	347.5	342.2	342.2	342.2	348.8	348.8	348.8	347.5	350.6	350.7	354.7	351.9	352.2	352.9	
Agricultural machinery, excluding tractors less parts	336.9	334.4	334.5	335.2	336.2	336.4	338.0	339.2	338.9	338.2	339.2	341.4	342.5	342.7	
Construction materials	297.7	294.6	295.0	296.1	296.8	298.6	310.6	299.8	299.9	300.4	300.6	301.4	302.3	304.8	

¹Data for October 1983 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	
		Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct. ¹	Nov.	Dec.	Jan.	Feb.
Total durable goods	286.7	284.8	284.6	285.3	286.0	286.7	287.4	287.8	286.8	289.2	289.2	289.9	290.7	292.2
Total nondurable goods	315.8	313.4	313.0	312.4	313.5	314.5	315.4	317.8	319.7	319.1	318.3	318.5	321.6	321.7
Total manufactures	295.7	293.9	293.2	292.7	293.7	295.0	296.1	296.9	297.2	298.5	298.4	298.7	300.0	301.0
Durable	287.3	285.7	285.3	286.0	286.7	287.3	288.0	288.3	287.2	289.6	289.6	290.3	291.1	292.4
Nondurable	304.4	302.5	301.4	299.7	301.0	303.1	304.5	305.9	307.8	307.7	307.5	307.5	309.4	310.0
Total raw or slightly processed goods	339.9	335.2	337.3	340.4	340.9	339.0	338.3	343.8	345.9	343.6	341.0	342.5	348.9	348.2
Durable	249.6	235.4	243.3	244.1	246.1	249.4	249.9	256.8	260.7	259.8	259.4	264.1	267.7	275.4
Nondurable	345.5	341.5	343.2	346.5	346.8	344.6	343.7	349.1	351.0	348.6	346.0	347.1	353.8	352.4

¹Data for October 1983 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			
			Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct. ¹	Nov.	Dec.	Jan.	Feb.	
MINING																
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	177.1
1092	Mercury ores (12/75 = 100)	269.7	289.5	285.4	272.9	268.7	254.1	237.5	231.2	243.3	283.3	287.5	277.0	275.8	245.4	
1311	Crude petroleum and natural gas	921.7	931.2	934.4	922.1	921.8	924.2	916.6	915.8	920.0	907.2	910.2	910.2	915.1	913.8	
1455	Kaolin and ball clay (6/76 = 100)	164.3	156.3	158.4	164.3	164.3	164.3	164.3	164.3	164.3	171.7	172.9	172.9	172.9	172.9	
MANUFACTURING																
2021	Creamery butter	275.8	275.6	275.6	275.6	275.6	275.6	275.6	276.1	278.4	278.1	278.2	269.5	267.3	267.6	
2044	Rice milling	193.4	183.0	183.0	188.9	191.3	194.5	193.7	198.1	201.1	196.7	199.6	199.6	199.6	198.1	
2067	Chewing gum	326.8	326.0	326.1	326.1	326.1	327.2	327.2	327.3	327.3	327.3	327.4	327.5	327.9	328.1	
2074	Cottonseed oil mills	204.5	173.4	167.1	186.8	186.2	179.7	192.4	220.6	262.9	253.5	233.2	223.3	229.2	201.2	
2083	Malt	234.1	232.6	232.6	232.6	232.6	232.6	232.6	232.6	232.6	232.6	241.6	241.6	241.6	241.6	
2091	Canned and cured seafoods (12/73 = 100)	174.0	179.2	177.9	177.7	175.7	173.4	173.7	169.4	169.8	170.2	169.2	169.2	169.0	168.8	
2098	Macaroni and spaghetti	256.8	255.5	255.5	255.5	255.5	255.5	255.5	255.5	255.5	258.6	261.9	261.9	261.9	261.9	
2251	Women's hosiery, except socks (12/75 = 100)	122.5	118.5	122.6	122.7	122.7	122.7	122.7	122.9	122.9	122.9	123.0	123.0	123.1	123.2	
2261	Finishing plants, cotton (6/76 = 100)	135.3	136.0	136.1	139.8	138.0	132.9	132.8	133.8	133.5	132.8	134.0	137.1	138.5	141.2	
2262	Finishing plants, synthetics, silk (6/76 = 100)	126.6	126.7	126.2	127.2	126.9	125.9	125.1	127.2	125.8	127.2	127.3	127.4	128.8	129.7	
2284	Thread mills (6/76 = 100)	164.9	161.9	165.6	165.7	165.7	165.7	165.7	165.7	166.1	166.1	166.1	166.1	166.1	166.2	
2298	Cordage and twine (12/77 = 100)	139.3	142.7	142.8	137.6	137.6	137.6	137.6	137.6	139.0	139.0	139.0	139.0	139.1	139.3	
2361	Children's dresses and blouses (12/77 = 100)	116.6	117.0	115.5	115.5	115.5	117.0	117.0	117.0	117.0	117.0	117.0	117.0	118.2	117.8	
2381	Fabric dress and work gloves	293.3	288.8	288.8	291.0	291.7	291.7	296.3	296.3	296.3	296.3	296.3	296.3	295.2	299.1	
2394	Canvas and related products (12/77 = 100)	147.2	148.7	146.2	146.2	146.2	146.2	146.2	146.2	146.2	147.8	148.5	148.5	151.3	151.2	
2448	Wood pallets and skids (12/75 = 100)	149.2	145.2	145.7	146.9	148.5	149.5	150.9	151.3	151.0	151.5	151.9	153.6	154.0	155.9	
2521	Wood office furniture	281.6	273.4	279.6	282.5	282.5	282.5	283.5	283.6	283.6	283.6	284.7	284.7	286.3	290.3	
2654	Sanitary food containers	266.6	261.7	265.1	265.2	265.2	265.2	267.1	267.1	267.1	267.0	270.6	270.6	270.6	274.9	
2655	Fiber cans, drums, and similar products (12/75 = 100)	186.5	183.8	183.8	185.6	185.6	185.9	187.7	187.7	187.7	187.8	189.5	189.5	189.6	189.7	
2911	Petroleum refining (6/76 = 100)	254.1	257.4	250.4	240.6	246.0	254.0	255.4	257.2	256.8	257.1	254.5	251.0	245.5	246.9	
2952	Asphalt felts and coating (12/75 = 100)	166.5	165.8	163.2	166.9	165.1	164.9	167.4	166.4	168.0	168.4	167.0	165.5	165.9	169.9	
3251	Brick and structural clay tile	332.6	315.6	328.3	332.2	333.8	334.6	336.4	336.4	336.4	336.4	340.8	341.0	341.3	341.0	
3253	Ceramic wall and floor tile (12/75 = 100)	145.1	140.7	140.7	140.7	142.4	149.6	149.6	149.6	149.6	149.6	146.8	146.8	146.8	146.8	
3255	Clay refractories	356.1	351.1	351.2	352.2	352.2	349.4	352.1	354.4	355.9	364.3	368.6	368.6	369.3	369.7	
3259	Structural clay products, n.e.c.	230.4	215.7	215.7	232.7	234.7	234.8	234.9	234.9	234.9	235.1	235.7	235.7	235.6	232.6	
3261	Vitreous plumbing fixtures	278.1	273.3	275.1	275.3	276.1	276.9	277.0	277.0	281.3	283.7	284.5	285.4	285.6	287.0	
3263	Fine earthenware food utensils	365.8	365.7	365.7	365.7	365.9	366.5	366.5	366.5	366.5	366.5	366.2	366.2	375.9	381.4	
3269	Pottery products, n.e.c. (12/75 = 100)	186.2	186.6	186.6	186.6	186.6	186.6	186.6	186.6	186.6	186.6	187.0	187.0	188.7	189.3	
3274	Lime (12/75 = 100)	185.8	185.5	185.1	187.8	185.2	186.2	187.1	187.6	186.3	185.9	182.6	182.8	183.0	184.6	
3297	Nonclay refractories (12/74 = 100)	205.3	203.6	203.6	203.8	203.6	203.6	203.7	203.8	203.8	203.9	212.9	212.9	213.1	215.4	
3482	Small arms ammunition (12/75 = 100)	182.5	175.1	181.6	181.6	181.6	181.6	181.6	181.6	181.6	181.6	187.6	187.6	196.6	196.6	
3623	Welding apparatus, electric (12/72 = 100)	241.9	244.0	243.4	243.3	243.1	242.3	243.5	243.5	243.6	243.9	239.0	239.7	241.0	241.7	
3648	Lighting equipment, n.e.c. (12/75 = 100)	172.8	171.5	171.6	172.6	172.6	173.1	173.4	173.4	173.5	173.7	173.9	172.6	173.5	173.5	
3671	Electron tubes, receiving type	435.4	432.0	431.9	432.1	432.1	432.2	432.5	432.5	432.8	432.9	432.8	469.8	490.4	490.7	
3942	Dolls (12/75 = 100)	137.4	136.8	136.8	137.7	137.7	137.7	137.7	137.7	137.7	137.7	137.3	137.3	137.2	137.4	
3944	Games, toys, and children's vehicles	237.3	243.4	241.8	242.2	242.2	242.2	236.1	236.2	236.3	236.4	231.9	232.0	235.4	236.5	
3955	Carbon paper and inked ribbons (12/75 = 100)	139.2	139.2	139.2	139.2	139.2	139.2	139.2	139.2	139.2	139.3	139.3	139.3	144.3	149.0	
3995	Burial caskets (6/76 = 100)	153.5	152.1	152.1	152.1	152.1	152.1	155.4	155.4	155.4	156.0	156.0	156.0	156.0	157.2	
3996	Hard surface floor coverings (12/75 = 100)	161.3	159.2	159.2	159.7	159.6	159.6	162.2	163.4	163.5	165.5	163.5	163.5	165.2	165.2	

¹Data for October 1983 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

r = revised.

PRODUCTIVITY DATA

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

Definitions

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

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

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

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

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

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

hour describes labor productivity in nonfinancial corporations where there are no self-employed. The **capital services** input index used in the multifactor productivity computation is developed by BLS from measures of the net stock of physical assets—equipment, structures, land, and inventories—weighted by rental prices for each type of asset. **Combined units of labor and capital input** are computed by combining changes in labor and capital inputs with weights which represent each component's share of total output. The indexes for capital services and combined units of labor and capital are based on changing weights which are averages of the shares in the current and preceding year (the Tornquist index-number formula).

Notes on the data

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

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

The productivity and associated cost measures in the tables describe the relationship between output in real terms and the labor time and capital services involved in its production. They show the changes from period to period in the amount of goods and services produced per unit of input. Although these measures relate output to hours and capital services, they do not measure the contributions of labor, capital, or any other specific factor of production. Rather, they reflect the joint effect of many influences, including changes in technology; capital investment; level of output; utilization of capacity, energy, and materials; the organization of production; managerial skill; and the characteristics and efforts of the work force. For a more complete description of the methodology underlying the multifactor productivity measures, see Bulletin 2178, "Trends in Multifactor Productivity, 1948–81" (September 1983).

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
PRIVATE BUSINESS SECTOR													
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
PRIVATE NONFARM BUSINESS SECTOR													
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
MANUFACTURING													
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
Business sector:													
Output per hour of all persons	50.4	58.3	65.2	78.3	86.2	94.5	97.6	100.6	99.4	98.9	101.3	101.2	103.8
Compensation per hour	20.0	26.4	33.9	41.7	58.2	85.5	92.9	108.6	118.7	131.2	143.9	155.1	163.1
Real compensation per hour	50.5	59.6	69.5	80.1	90.8	96.3	98.9	100.9	99.1	96.5	95.9	97.4	99.2
Unit labor costs	39.8	45.2	52.1	53.3	67.5	90.5	95.1	108.0	119.5	132.7	142.1	153.3	157.1
Unit nonlabor payments	43.4	47.6	50.6	57.6	63.2	90.4	94.0	106.7	112.8	119.0	136.2	136.9	r145.8
Implicit price deflator	41.0	46.0	51.6	54.7	66.0	90.4	94.7	107.5	117.2	128.1	140.1	147.7	r153.3
Nonfarm business sector:													
Output per hour of all persons	56.3	62.7	68.3	80.5	86.8	94.7	97.8	100.6	99.1	98.4	100.3	100.2	103.4
Compensation per hour	21.8	28.3	35.7	42.8	58.7	86.0	93.0	108.6	118.4	130.7	143.5	154.7	r163.4
Real compensation per hour	55.0	64.0	73.0	82.2	91.5	96.8	99.0	100.9	98.9	96.1	95.6	97.1	99.4
Unit labor costs	38.8	45.1	52.3	53.2	67.6	90.8	95.1	108.0	119.5	132.8	143.0	154.4	158.1
Unit nonlabor payments	42.7	47.8	50.4	58.0	63.8	88.5	93.5	105.3	110.4	118.5	135.0	137.0	r146.2
Implicit price deflator	40.1	46.0	51.6	54.8	66.3	90.0	94.6	107.1	116.5	128.1	140.4	148.6	r154.2
Nonfinancial corporations:													
Output per hour of all persons	(1)	(1)	68.0	81.9	87.4	95.5	98.2	100.9	100.7	99.8	102.3	102.8	P106.1
Compensation per hour	(1)	(1)	37.0	43.9	59.4	86.1	92.9	108.5	118.7	130.9	143.6	154.8	P162.3
Real compensation per hour	(1)	(1)	75.8	84.3	92.7	96.9	98.9	100.7	99.1	96.3	95.7	97.2	P98.7
Unit labor costs	(1)	(1)	54.4	53.5	68.0	90.2	94.6	107.5	117.8	131.2	140.3	150.6	P153.0
Unit nonlabor payments	(1)	(1)	54.6	60.8	63.1	90.8	95.0	104.2	106.9	117.4	134.4	137.6	P148.4
Implicit price deflator	(1)	(1)	54.5	56.1	66.3	90.4	94.7	106.4	114.1	126.4	138.3	146.1	P151.4
Manufacturing:													
Output per hour of all persons	49.4	56.4	60.0	74.5	79.1	93.4	97.5	100.8	101.5	101.7	105.3	106.5	P113.4
Compensation per hour	21.5	28.8	36.7	42.8	57.6	85.4	92.3	108.3	118.8	132.7	145.8	158.2	P167.1
Real compensation per hour	54.0	65.1	75.1	82.3	89.8	96.2	98.3	100.6	99.2	97.6	97.2	99.3	P101.6
Unit labor costs	43.4	51.0	61.1	57.5	72.7	91.5	94.6	107.4	117.0	130.5	138.5	148.5	P147.3
Unit nonlabor payments	54.3	58.5	61.1	69.3	65.0	87.3	93.7	102.5	99.9	97.7	110.2	109.2	P(1)
Implicit price deflator	46.6	53.2	61.1	61.0	70.5	90.3	94.4	106.0	112.0	120.9	130.2	137.0	P(1)

¹ Not available.

r = revised.
p = preliminary.

30. Annual changes in productivity, hourly compensation, unit costs, and prices, 1972-83

Item	Year											Annual rate of change	
	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1950-83	1972-83
Business sector:													
Output per hour of all persons	2.6	-2.4	2.2	3.3	2.4	0.6	-1.2	-0.5	2.4	-0.1	2.6	2.2	1.1
Compensation per hour	8.0	9.4	9.6	8.6	7.7	8.6	9.4	10.5	9.7	7.7	5.2	6.6	8.6
Real compensation per hour	1.6	-1.4	0.5	2.6	1.2	0.9	-1.7	-2.6	-0.6	1.5	1.9	2.1	0.3
Unit labor costs	5.3	12.1	7.3	5.1	5.1	8.0	10.7	11.1	7.1	7.9	2.5	4.3	7.4
Unit nonlabor payments	5.9	4.4	15.1	4.0	6.4	6.7	5.8	5.5	14.4	0.5	6.5	3.7	6.6
Implicit price deflator	5.5	9.5	9.8	4.7	5.6	7.5	9.0	9.2	9.4	5.4	3.8	4.1	7.2
Nonfarm business sector:													
Output per hour of all persons	2.4	-2.5	2.0	3.2	2.2	0.6	-1.5	-0.7	1.9	-0.1	3.1	1.9	1.0
Compensation per hour	7.6	9.4	9.6	8.1	7.5	8.6	9.0	10.4	9.8	7.8	5.6	6.3	8.6
Real compensation per hour	1.3	-1.4	0.4	2.2	1.0	0.9	-2.0	-2.8	-0.6	1.6	2.3	1.8	0.2
Unit labor costs	5.0	12.2	7.5	4.8	5.2	8.0	10.7	11.1	7.7	7.9	2.4	4.3	7.5
Unit nonlabor payments	1.3	5.9	16.7	5.7	6.9	5.3	4.8	7.4	13.9	1.4	6.8	3.8	6.8
Implicit price deflator	3.8	10.2	10.3	5.1	5.7	7.1	8.8	10.0	9.6	5.8	3.8	4.2	7.6
Nonfinancial corporations:													
Output per hour of all employees	2.4	-3.7	2.9	2.9	1.8	0.9	-0.2	-0.9	2.5	0.5	P3.2	(¹)	P1.1
Compensation per hour	7.5	9.4	9.6	7.9	7.6	8.5	9.4	10.3	9.7	7.8	P4.9	(¹)	P8.4
Real compensation per hour	1.2	-1.5	0.4	2.0	1.1	0.7	-1.7	-2.8	-0.6	1.6	P1.6	(¹)	P0.2
Unit labor costs	4.9	13.6	6.5	4.9	5.7	7.5	9.6	11.3	7.0	7.3	P1.6	(¹)	P7.2
Unit nonlabor payments	1.5	7.1	20.1	4.6	5.3	4.2	2.6	9.8	14.5	2.4	P7.8	(¹)	P7.1
Implicit price deflator	3.8	11.4	10.9	4.8	5.6	6.4	7.2	10.8	9.4	5.7	P3.8	(¹)	P7.2
Manufacturing:													
Output per hour of all persons	5.4	-2.4	2.9	4.4	2.5	0.8	0.7	0.2	3.5	1.2	6.5	2.5	2.3
Compensation per hour	7.2	10.6	11.9	8.0	8.3	8.3	9.7	11.7	9.9	8.5	5.6	6.4	9.1
Real compensation per hour	0.9	-0.3	2.5	2.1	1.8	0.6	-1.4	-1.6	-0.4	2.2	2.3	1.9	0.8
Unit labor costs	1.7	13.3	8.8	3.4	5.7	7.4	9.0	11.5	6.1	7.2	-0.8	3.8	6.6
Unit nonlabor payments	-3.3	-1.8	25.9	7.4	6.7	2.5	-2.6	-2.2	12.8	-0.9	(¹)	2.2	4.1
Implicit price deflator	0.3	9.0	13.1	4.6	6.0	6.0	5.7	7.9	7.7	5.2	(¹)	3.4	6.5

¹ Not available. r = revised.
p = preliminary.

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

[1977 = 100]

Item	Annual average		Quarterly indexes										
			1981			1982				1983			
	1982	1983	II	III	IV	I	II	III	IV	I	II	III	IV
Business sector:													
Output per hour of all persons	101.2	103.8	101.1	102.3	101.2	101.1	100.7	101.1	101.9	102.5	103.9	104.2	104.8
Compensation per hour	155.1	163.1	142.2	145.5	148.2	151.6	153.9	156.5	158.7	160.7	162.1	163.6	166.3
Real compensation per hour	97.4	99.2	96.0	95.6	95.8	97.1	97.3	97.2	98.1	99.4	99.2	99.0	99.6
Unit labor costs	153.3	157.1	140.7	142.3	146.4	149.9	152.9	154.7	155.6	156.9	156.0	156.9	158.7
Unit nonlabor payments	136.9	145.8	133.4	139.9	140.2	137.0	137.0	136.3	137.4	140.8	145.7	147.6	148.6
Implicit price deflator	147.7	153.3	138.2	141.5	144.3	145.5	147.5	148.5	149.4	151.5	152.5	153.8	155.3
Nonfarm business sector:													
Output per hour of all persons	100.2	103.4	100.1	101.1	99.9	100.0	99.9	100.4	100.8	101.7	103.5	104.0	104.3
Compensation per hour	154.7	163.4	141.8	145.1	147.7	151.3	153.5	156.1	158.3	161.0	162.7	164.2	166.0
Real compensation per hour	97.1	99.4	95.7	95.3	95.5	96.9	97.0	97.0	97.9	99.5	99.5	99.4	99.4
Unit labor costs	154.4	158.1	141.6	143.5	147.8	151.3	153.6	155.4	157.1	158.3	157.2	157.8	159.2
Unit nonlabor payments	137.0	146.2	132.2	138.3	139.5	136.4	137.7	136.5	137.2	140.7	145.7	148.3	149.9
Implicit price deflator	148.6	154.2	138.4	141.8	145.0	146.4	148.3	149.1	150.5	152.4	153.4	154.7	156.1
Nonfinancial corporations:													
Output per hour of all employees	102.8	P106.1	102.1	103.0	102.2	102.4	102.3	103.2	103.4	104.3	105.9	107.0	(¹)
Compensation per hour	154.8	P162.3	142.0	145.0	147.8	151.7	153.7	156.1	158.1	160.4	161.6	162.8	(¹)
Real compensation per hour	97.2	P98.7	95.8	95.2	95.5	97.1	97.1	96.9	97.8	99.2	98.8	98.6	(¹)
Total unit costs	153.5	P155.4	141.1	143.6	147.7	150.9	153.1	153.8	156.3	156.7	155.3	154.5	(¹)
Unit labor costs	150.6	P153.0	139.0	140.7	144.6	148.1	150.2	151.1	152.9	153.9	152.5	152.1	(¹)
Unit nonlabor costs	161.8	P162.3	147.0	151.9	156.6	158.9	161.2	161.3	165.9	164.7	163.1	161.2	(¹)
Unit profits	88.9	P120.3	100.3	108.6	104.2	90.8	90.3	91.2	83.0	96.1	115.0	131.5	(¹)
Implicit price deflator	146.1	P151.4	136.4	139.6	142.7	144.0	145.9	146.6	147.9	149.7	150.7	151.8	(¹)
Manufacturing:													
Output per hour of all persons	106.5	113.4	105.4	106.1	104.4	105.1	105.3	107.8	108.1	110.2	112.6	115.9	117.1
Compensation per hour	158.2	167.1	144.3	147.0	150.5	155.1	157.1	159.6	161.4	165.5	166.4	167.5	169.1
Real compensation per hour	99.3	101.6	97.4	96.6	97.2	99.4	99.3	99.1	99.8	102.3	101.8	101.4	101.3
Unit labor costs	148.5	147.3	136.9	138.5	144.1	147.6	149.1	148.1	149.3	150.2	147.8	144.5	144.5

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					
	II 1982 to III 1982	III 1982 to IV 1982	IV 1982 to I 1983	I 1983 to II 1983	II 1983 to III 1983	III 1982 to IV 1983	III 1981 to III 1982	IV 1981 to IV 1982	I 1982 to I 1983	II 1982 to II 1983	III 1982 to III 1983	IV 1982 to IV 1983
	Business sector:											
Output per hour of all persons	1.7	3.3	2.0	5.9	1.2	2.2	-1.1	0.7	1.3	¹ 3.2	3.1	2.8
Compensation per hour	6.7	5.7	5.4	3.5	3.6	7.0	7.5	7.1	6.1	5.3	4.5	4.8
Real compensation per hour	¹ 0.4	¹ 4.1	¹ 5.0	^r -0.8	¹ 0.6	2.4	1.6	2.5	2.4	1.9	1.9	1.5
Unit labor costs	5.0	2.3	3.3	-2.2	2.3	4.7	8.7	6.3	4.7	2.1	1.4	2.0
Unit nonlabor payments	-2.0	3.2	10.5	14.4	5.4	2.8	-2.6	-2.0	2.8	6.3	8.3	8.0
Implicit price deflator	2.7	2.6	5.5	2.8	3.3	4.1	4.9	3.5	4.1	3.4	3.6	3.8
Nonfarm business sector:												
Output per hour of all persons	2.3	1.3	3.7	7.1	2.3	0.9	-0.6	0.8	1.7	3.6	3.6	3.5
Compensation per hour	7.2	5.8	6.8	4.3	3.8	4.4	7.6	7.2	6.4	6.0	5.2	4.8
Real compensation per hour	^r -0.0	¹ 4.1	¹ 6.5	¹ 0.0	^r -0.3	-0.0	1.7	2.6	2.7	2.6	2.5	1.5
Unit labor costs	4.7	4.4	3.0	-2.6	1.5	3.5	8.3	6.3	4.6	2.3	1.5	1.3
Unit nonlabor payments	-3.4	2.0	10.6	15.2	7.3	4.2	-1.3	-1.6	3.1	5.9	¹ 8.6	9.2
Implicit price deflator	2.2	3.7	5.3	2.7	3.3	3.7	5.2	3.7	4.1	3.4	3.7	3.7
Nonfinancial corporations:												
Output per hour of all employees	3.8	0.6	3.4	6.5	4.2	(¹)	0.2	1.2	1.8	3.6	3.7	(¹)
Compensation per hour	6.4	5.4	6.0	2.9	3.0	(¹)	7.6	7.0	5.8	5.2	4.3	(¹)
Real compensation per hour	^r -0.8	¹ 3.8	¹ 5.6	^r -1.4	^r -1.1	(¹)	1.7	2.4	2.1	¹ 1.8	1.7	(¹)
Total units costs	1.8	6.7	1.0	-3.5	-2.1	(¹)	7.1	5.8	3.8	1.4	0.4	(¹)
Unit labor costs	2.4	4.8	2.5	-3.4	-1.1	(¹)	7.4	5.7	3.9	1.5	0.6	(¹)
Unit nonlabor costs	0.1	11.9	-2.8	-3.8	-4.7	(¹)	6.2	6.0	3.7	1.2	-0.1	(¹)
Unit profits	3.8	-31.4	79.9	104.7	71.0	(¹)	-16.1	-20.3	5.8	27.3	44.2	(¹)
Implicit price deflator	1.9	3.6	5.1	2.5	3.1	(¹)	5.0	3.6	4.0	3.3	3.6	(¹)
Manufacturing:												
Output per hour of all persons	9.6	1.2	8.0	9.0	12.2	4.2	1.6	3.5	4.8	6.9	7.5	8.3
Compensation per hour	6.5	4.5	10.7	2.1	-2.7	4.0	8.6	7.3	6.7	5.9	4.9	4.8
Real compensation per hour	^r -0.6	¹ 2.9	¹ 10.3	^r -2.2	¹ 1.4	-0.4	2.6	2.7	3.0	2.5	2.3	1.5
Unit labor costs	-2.8	3.3	2.5	-6.4	-8.4	-0.2	6.9	-3.6	1.8	-0.9	-2.4	-3.2

¹Not available.

^r = revised.

WAGE AND COMPENSATION DATA

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

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

Definitions

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

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

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

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

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

Notes on the data

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

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

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

For a more detailed discussion of the ECI, see chapter 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	1981	1982				1983				Percent change		
		Dec.	March	June	Sept.	Dec.	March	June	Sept.	Dec.	3 months ended	12 months ended
											December 1983	
Civilian workers¹	104.5	106.3	107.5	110.1	111.4	113.2	114.5	116.5	117.8	1.1	5.7	
Workers, by occupational group												
White-collar workers	104.9	106.5	107.7	110.7	111.9	113.7	114.9	117.6	118.9	1.1	6.3	
Blue-collar workers	104.1	105.7	107.1	109.2	110.5	112.3	113.6	114.8	115.8	.9	4.8	
Service workers	104.2	107.2	108.3	110.8	112.4	114.3	115.1	116.7	119.1	2.1	6.0	
Workers, by industry division												
Manufacturing	104.0	106.0	107.2	109.3	110.4	112.5	113.5	115.0	116.0	.9	5.1	
Nonmanufacturing	104.8	106.4	107.7	110.5	111.8	113.5	114.9	117.2	118.6	1.2	6.1	
Services	107.1	108.2	109.2	113.5	115.0	116.6	117.1	121.1	122.6	1.2	6.6	
Public administration ²	106.0	108.1	109.1	112.8	113.6	116.2	117.0	119.8	121.4	1.3	6.9	
Private industry workers	104.0	105.8	107.2	109.3	110.7	112.6	113.9	115.6	117.0	1.2	5.7	
Workers, by occupational group												
White-collar workers	104.0	105.8	107.2	109.5	110.8	112.8	114.2	116.5	117.9	1.2	6.4	
Blue-collar workers	104.0	105.6	107.0	109.0	110.3	112.1	113.5	114.6	115.7	1.0	4.9	
Service workers	103.1	106.7	107.9	109.6	111.8	113.8	114.6	115.1	117.9	2.4	5.5	
Workers, by industry division												
Manufacturing	104.0	106.0	107.2	109.3	110.4	112.5	113.5	115.0	116.0	.9	5.1	
Nonmanufacturing	103.9	105.7	107.1	109.3	110.8	112.6	114.2	116.0	117.5	1.3	6.0	
State and local government workers	107.4	108.8	109.3	114.3	115.1	116.5	117.1	120.8	122.0	1.0	6.0	
Workers, by occupational group												
White-collar workers	107.8	109.1	109.5	114.9	115.8	117.0	117.5	121.5	122.6	.9	5.9	
Blue-collar workers	105.9	108.2	108.9	112.7	113.0	114.9	115.8	118.0	119.2	1.0	5.5	
Workers, by industry division												
Services	107.9	109.0	109.4	114.9	115.9	116.8	117.4	121.7	122.6	.7	5.8	
Schools	107.9	108.9	109.1	114.8	115.8	116.6	116.9	121.9	122.6	.6	5.9	
Elementary and secondary	108.3	109.3	109.5	115.6	116.6	117.2	117.4	123.3	123.9	.5	6.3	
Hospitals and other services ³	107.8	109.5	110.3	115.3	116.0	117.5	118.8	121.1	122.6	1.2	5.7	
Public administration ²	106.0	108.1	109.1	112.8	113.6	116.2	117.0	119.8	121.4	1.3	6.9	

¹ Excludes farm, household, and Federal workers.

² Consists of legislative, judicial, administrative, and regulatory activities.

³ Includes, for example, library, social, and health services.

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

[June 1981 = 100]

Series	1981	1982					1983					Percent change	
		Dec.	March	June	Sept.	Dec.	March	June	Sept.	Dec.	3 months ended	12 months ended	
											December 1983		
Civilian workers¹	104.4	106.3	107.3	109.7	110.9	112.2	113.4	115.3	116.5	1.0	5.0		
Workers, by occupational group													
White-collar workers	104.7	106.7	107.6	110.4	111.4	113.0	114.2	116.7	117.9	1.0	5.8		
Blue-collar workers	104.0	105.5	106.7	108.6	109.8	110.8	112.0	113.1	114.0	.8	3.8		
Service workers	103.6	106.8	107.9	110.1	111.8	113.2	113.9	115.1	117.4	2.0	5.0		
Workers, by industry division													
Manufacturing	104.0	105.9	107.0	108.8	109.8	111.0	112.0	113.3	114.5	1.1	4.3		
Nonmanufacturing	104.5	106.5	107.5	110.1	111.3	112.7	114.0	116.1	117.4	1.1	5.5		
Services	106.6	108.6	109.5	113.2	114.4	115.8	116.3	120.1	121.3	1.0	6.0		
Public administration ²	105.5	107.5	108.4	111.9	112.6	114.6	115.4	118.2	119.4	1.0	6.0		
Private industry workers	103.8	105.9	107.1	109.0	110.3	111.6	112.9	114.5	115.8	1.1	5.0		
Workers, by occupational group													
White-collar workers	103.9	106.2	107.3	109.4	110.6	112.2	113.6	115.9	117.2	1.1	6.0		
Professional and technical workers	105.5	108.0	109.4	111.8	112.9	114.8	115.9	119.9	120.4	.4	6.6		
Managers and administrators	102.8	105.8	107.2	108.5	109.3	112.0	114.0	114.8	115.7	.8	5.9		
Salesworkers	101.9	102.2	101.8	104.5	106.2	105.7	107.1	108.4	111.2	2.6	4.7		
Clerical workers	104.2	107.0	108.3	110.3	111.6	113.4	114.6	116.7	118.3	1.4	6.0		
Blue-collar workers	103.9	105.4	106.6	108.5	109.7	110.7	111.9	112.9	113.9	.9	3.8		
Craft and kindred workers	104.3	106.2	107.6	109.6	111.2	112.2	113.4	114.3	115.4	1.0	3.8		
Operatives, except transport	104.1	105.4	106.6	108.3	109.3	110.0	111.1	112.3	113.6	1.2	3.9		
Transport equipment operatives	102.7	103.2	104.1	106.0	106.9	108.0	110.3	110.7	110.2	-.5	3.1		
Nonfarm laborers	103.3	104.1	105.1	106.5	107.8	109.0	109.8	110.8	112.1	1.2	4.0		
Service workers	102.7	106.7	107.9	109.3	111.4	112.9	113.5	113.7	116.5	2.5	4.6		
Workers, by industry division													
Manufacturing	104.0	105.9	107.0	108.8	109.8	111.0	112.0	113.3	114.5	1.1	4.3		
Durables	104.5	106.3	107.4	109.0	110.3	111.1	111.8	112.9	114.4	1.3	3.7		
Nondurables	103.1	105.3	106.3	108.5	109.1	110.9	112.3	113.9	114.6	.6	5.0		
Nonmanufacturing	103.8	105.9	107.1	109.1	110.5	112.0	113.4	115.2	116.5	1.1	5.4		
Construction	104.3	105.9	107.3	109.1	109.7	110.4	112.1	112.2	112.9	.6	2.9		
Transportation and public utilities	103.6	105.7	106.9	109.5	111.1	112.9	114.7	115.7	116.8	1.0	5.1		
Wholesale and retail trade	102.3	103.9	105.8	106.5	107.2	108.5	110.8	111.5	112.3	.7	4.8		
Wholesale trade	103.4	106.3	108.9	109.0	109.8	111.8	114.1	115.7	116.5	.7	6.1		
Retail trade	101.9	103.0	104.5	105.5	106.1	107.2	109.4	109.9	110.6	.6	4.2		
Finance, insurance, and real estate	102.3	103.7	102.4	106.1	109.0	110.6	111.1	113.5	116.9	3.0	7.2		
Services	105.8	108.8	110.0	112.5	114.3	116.0	116.6	120.4	121.9	1.2	6.6		
State and local government workers	107.0	108.2	108.7	113.5	114.0	115.1	115.7	119.2	120.0	.7	5.3		
Workers, by occupational group													
White-collar workers	107.5	108.5	108.9	114.2	114.6	115.6	116.1	119.8	120.6	.7	5.2		
Blue-collar workers	105.5	107.5	107.9	111.5	112.0	113.3	114.3	116.4	116.9	.4	4.4		
Workers, by industry division													
Services	107.6	108.4	108.8	114.2	114.6	115.5	115.9	119.8	120.6	.7	5.2		
Schools	107.7	108.3	108.5	114.2	114.5	115.2	115.4	119.9	120.6	.6	5.3		
Elementary and secondary	107.9	108.7	108.8	114.9	115.1	115.6	115.8	121.1	121.7	.5	5.7		
Hospitals and other services ³	107.3	108.8	109.5	114.3	114.9	116.5	117.7	119.7	120.6	.8	5.0		
Public administration ²	105.5	107.5	108.4	111.9	112.6	114.6	115.4	118.2	119.4	1.0	6.0		

¹Excludes farm, household, and Federal workers.

²Consists of legislative, judicial, administrative, and regulatory activities.

³Includes, for example, library, social and health services.

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

[June 1981 = 100]

Series	1981	1982				1983					Percent change	
		Dec.	March	June	Sept.	Dec.	March	June	Sept.	Dec.	3 months ended	12 months ended
											December 1983	
COMPENSATION												
Workers, by bargaining status ¹												
Union	104.8	106.5	108.4	110.6	112.3	114.5	116.0	117.8	118.8	0.8	5.8	
Manufacturing	104.6	106.3	108.0	110.3	111.8	114.0	114.8	116.3	117.2	.8	4.8	
Nonmanufacturing	105.0	106.8	108.7	111.0	112.8	114.9	117.1	119.2	120.4	1.0	6.7	
Nonunion	103.5	105.3	106.5	108.5	109.7	111.5	112.8	114.4	115.9	1.3	5.7	
Manufacturing	103.5	105.7	106.6	108.4	109.2	111.2	112.3	113.8	114.9	1.0	5.2	
Nonmanufacturing	103.5	105.2	106.4	108.6	109.9	111.6	113.0	114.7	116.4	1.5	5.9	
Workers, by region ¹												
Northeast					111.7	112.6	114.3	116.0	117.5	1.3	5.2	
South					110.6	112.5	113.5	115.6	117.1	1.3	5.9	
North Central					108.6	110.9	112.5	113.9	114.7	.7	5.6	
West					112.9	115.4	116.6	118.0	120.0	1.7	6.3	
Workers, by area size ¹												
Metropolitan areas	104.1	105.7	107.2	109.4	110.9	112.9	114.2	116.0	117.4	1.2	5.9	
Other areas	103.2	106.2	107.0	108.6	109.1	110.8	112.3	113.4	114.5	1.0	4.9	
WAGES AND SALARIES												
Workers, by bargaining status ¹												
Union	105.0	106.5	108.1	110.3	111.8	112.9	114.2	116.0	116.9	0.8	4.6	
Manufacturing	104.7	105.9	107.3	109.5	110.8	111.4	112.3	113.7	114.8	1.0	3.6	
Nonmanufacturing	105.2	107.0	108.8	111.1	112.7	114.3	116.0	118.3	118.9	.5	5.5	
Nonunion	103.2	105.6	106.5	108.3	109.5	110.9	112.2	113.7	115.2	1.3	5.2	
Manufacturing	103.3	105.9	106.7	108.2	109.1	110.7	111.8	113.0	114.2	1.1	4.7	
Nonmanufacturing	103.2	105.5	106.4	108.3	109.6	111.0	112.4	114.0	115.6	1.4	5.5	
Workers, by region ¹												
Northeast	104.4	106.1	106.7	109.7	111.5	112.0	113.6	115.3	116.6	1.1	4.6	
South	102.8	105.7	107.4	108.8	109.8	111.4	112.5	114.3	115.7	1.2	5.4	
North Central	103.3	104.7	106.1	107.6	108.6	110.1	111.5	112.8	113.6	.7	5.0	
West	105.1	107.9	108.6	110.7	112.0	114.1	114.9	116.5	118.5	1.7	5.8	
Workers by area size ¹												
Metropolitan areas	104.0	105.9	107.1	109.1	110.5	111.9	113.2	114.9	116.2	1.1	5.2	
Other areas	103.1	106.0	106.8	108.3	108.8	110.1	111.4	112.3	113.4	1.0	4.2	

¹The 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	1981	1982				1983			
						IV	I	II	III	IV	I	II	III	IV
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	11.0	1.9	2.6	6.2	3.3	-1.6	4.4	5.0	4.9
Annual rate over life of contract	6.6	7.1	8.3	2.8	3.0	5.8	1.2	2.1	4.7	4.8	1.4	3.6	4.3	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	9.0	3.0	3.4	5.4	3.8	-1.2	2.7	3.7	4.2
Annual rate over life of contract	6.0	7.1	7.9	3.6	2.8	5.7	2.8	3.2	4.5	4.8	2.2	2.8	3.6	2.8
Manufacturing:														
First year of contract	6.9	7.4	7.2	2.8	0.4	6.6	2.5	1.8	5.1	4.1	-3.4	1.3	3.4	2.9
Annual rate over life of contract	5.4	5.4	6.1	2.6	2.1	5.4	2.7	1.7	3.9	4.5	.9	1.7	3.5	3.1
Nonmanufacturing (excluding construction):														
First year of contract	7.6	9.5	9.8	4.3	5.0	9.6	2.7	6.6	5.5	3.6	3.3	5.9	5.8	4.8
Annual rate over life of contract	6.2	6.6	7.3	4.1	3.7	5.6	2.1	6.1	4.8	5.2	5.3	5.2	4.3	2.7
Construction:														
First year of contract	8.8	13.6	13.5	6.5	1.5	11.4	8.6	6.2	6.3	3.4	.7	1.7	1.5	1.1
Annual rate over life of contract	8.3	11.5	11.3	6.3	2.4	11.7	8.2	6.3	5.9	2.9	2.4	2.1	2.9	2.6

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	1981	1982				1983			
						IV	I	II	III	IV	I	II	III	IV
Average percent adjustment (including no change):														
All industries	9.1	9.9	9.5	6.8	4.0	1.5	1.0	2.0	2.4	1.3	0.3	1.3	1.2	1.1
Manufacturing	9.6	10.2	9.4	5.2	2.7	1.9	.9	1.0	1.7	1.5	-.5	1.1	1.2	.9
Nonmanufacturing	8.8	9.7	9.5	7.9	4.8	1.1	1.1	2.7	2.9	1.2	.9	1.5	1.2	1.2
From settlements reached in period	3.0	3.6	2.5	1.7	.8	.4	.2	.4	.5	.6	-.2	.3	.2	.6
Deferred from settlements reached in earlier period	3.0	3.5	3.8	3.6	2.5	.4	.6	1.4	1.3	.4	.4	1.0	.8	.3
From cost-of-living clauses	3.1	2.8	3.2	1.4	.6	.6	.3	.2	.6	.3	.1	.1	.2	.2
Total number of workers receiving wage change (in thousands) ¹	—	—	8,648	7,852	6,530	3,225	2,878	3,423	3,760	3,441	2,875	3,061	3,025	2,887
From settlements reached														
in period	—	—	2,270	1,907	2,327	604	204	511	620	825	448	561	599	996
Deferred from settlements reached in earlier period	—	—	6,267	4,846	3,260	882	1,001	1,594	2,400	860	812	1,405	1,317	669
From cost-of-living clauses	—	—	4,593	3,830	2,327	2,179	1,920	1,568	2,251	1,970	1,938	1,299	1,218	1,290
Number of workers receiving no adjustments (in thousands)	—	—	145	483	1,187	5,568	5,457	4,912	4,575	4,895	4,842	4,656	4,693	4,830

¹The 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.

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	1.6	38.0	794.8	.04
	February	5	14.0	50.4	844.4	.05
1984 ^p	January	4	18.3	32.4	470.1	.02
	February	2	7.8	36.3	347.5	.02

p = preliminary.

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Pine Bluff, Ark., January 1984. 3 pp.

Reno, Nev., November 1983. 3 pp.

Southwest Virginia, December 1983. 3 pp.

Virgin Islands of the U.S., December 1983. 3 pp.

BLS Reports

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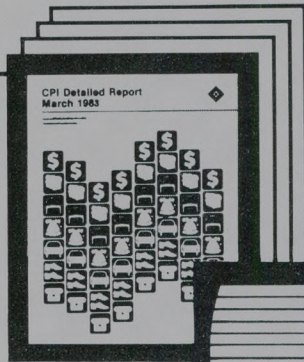
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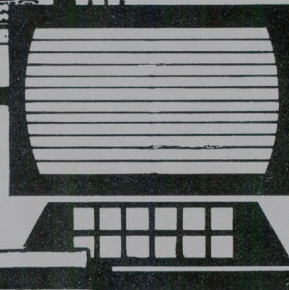
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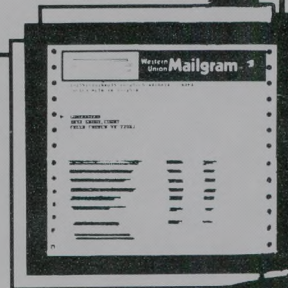
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