



MONTHLY LABOR REVIEW

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April 1987

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In this issue:
Import and export prices in 1986
Technological change and employment
Health insurance and displaced workers





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

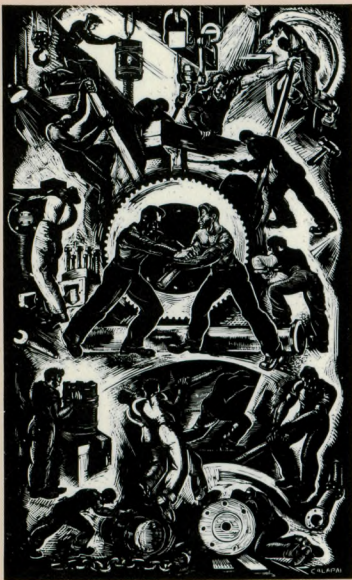
BUREAU OF LABOR STATISTICS
Janet L. Norwood, Commissioner

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Labor Month In Review



QUALITY. Commissioner of Labor Statistics Janet L. Norwood discussed the quality of statistics at the Third Annual Census Bureau Research Conference, March 30, in Baltimore, MD. Excerpts:

Responsibility. We in the Federal statistical system have a special responsibility to provide our users with statistical information that is objective, relevant, accurate, and timely. Because we must operate within fixed resource levels, quality becomes a relative concept that is often affected by a trade-off between cost and benefit. Efficient survey design requires careful analysis of relative error structure to determine, for example, the trade-off between larger samples for housing or food prices in the Consumer Price Index, or for more units in manufacturing or services in the Current Employment Statistics program. Another trade-off—between timeliness and completeness—is made when we decide whether to issue preliminary results that are subject to revision.

Have we successfully handled these elusive aspects of quality in the work that we do? I have to tell you that I am not satisfied that we have done enough. The Federal statistical system has not adequately presented the case for quality improvement and resource investment. It is imperative that we act more effectively in the future.

Population counts. Population counts are a critical element in the accuracy of such surveys as the Current Population Survey. Yet we know that for some groups, despite our best efforts, the population counts are not accurate at all. This translates into some anomalous situations in the official labor force statistics for these groups. Take, for

example, the data for black men of prime working age, those 25–54 years old. Their labor force participation rate, as measured in the Current Population Survey, is close to 90 percent, much higher than that for black women of the same age. Yet, because of the large undercount of black men in the Census, which is carried over into our statistics, in 1986 we actually published a lower labor force level for these men than for black women of the same age.

If the population counts underpinning the data from the Current Population Survey were adjusted for the undercount, the published labor force levels for black men and women of prime working age would be more in line with the participation patterns among the two groups. The differences between the adjusted and unadjusted labor force levels for these groups raise serious questions about the quality of some of our labor force data.

The Census undercount issue has been studied and restudied for many years. Let us hope that in addressing the problem, the Census Bureau can develop the understanding and the consensus needed to settle this issue. It is important, I believe, that the decision must be professionally sound and not merely politically expedient.

Cognitive issues. Statisticians use systematic approaches to sample development, questionnaire design, and interviewer training; all are based on the assumption that the data collected will be an accurate reflection of the phenomenon being measured. We have given too little attention to errors caused by a misunderstanding by the respondent of what we want to collect. We have learned that the words used in drafting a question are important, and that minor

changes in wording and small changes in the placement of questions can affect survey results. Research on memory retrieval from respondents, on questionnaire structure, and on interviewer-respondent interaction has thus far been conducted within the framework of household survey data collection.

Much less has been accomplished in the establishment survey area. Here, the object is to retrieve information that is stored on establishment records rather than in the minds of respondents. Memory and recall problems are not usually so severe in business establishment surveys as in surveys collecting data about individuals. In a business survey, the major issues relate to retention time, availability of access, and comprehension of the questions asked. In this process, questionnaire design and structure, as well as alternative approaches to interviewing respondents, are extremely important.

We have found that in many of our business surveys, effective interaction of the interviewer with the respondent is essential to success, and this interaction cannot always be achieved through a scripted, repetitive process.

I believe that survey quality would be considerably improved if we paid more attention to the vital translation role played by data collectors and planned training programs that build upon the characteristics collectors bring to their jobs.

Commissioner Norwood's address was dedicated to the memory of Shirley Kallek, former associate director of the Census Bureau. Copies of the text are available from the Division of Information Services, Bureau of Labor Statistics, Washington, DC 20122. □

Import price declines in 1986 reflected reduced oil prices

Despite price increases for major product categories resulting from the decline in the dollar, the overall import index decreased for the fourth consecutive year; export prices were relatively stable again last year

ELIZABETH GIBBONS AND GERALD F. HALPIN

Prices of goods imported into the United States in 1986 were influenced primarily by three divergent trends. First, prices of imports originating largely in industrialized countries rose significantly as the currencies of those countries continued to appreciate against the dollar. Second, prices of goods which are produced by the newly industrialized countries and developing countries were more stable as those countries' currencies did not appreciate substantially against the dollar. However, both of these trends were outweighed by the third trend, a large decline in the price of crude oil, which caused an overall decrease of 8.7 percent in prices of all commodities imported. This was the fourth consecutive annual decline of the import index. If fuels are excluded, however, import prices rose 8.4 percent. (See chart 1.)

The dollar's decline against currencies of the United States' major industrialized trading partners began in the first quarter of 1985. The decline accelerated in September 1985 because the United States and four other industrialized countries agreed to intervene in foreign exchange markets to weaken the dollar. Between its peak in the first quarter of 1985 and the fourth quarter of 1986, the dollar declined approximately 60 percent against the Japanese yen and 63 percent against the West German mark. (See chart 2.) By

contrast, the dollar remained comparatively stable against currencies of other major trading partners, such as the Canadian dollar, against which it appreciated 2 percent, as well as the Taiwanese dollar and the South Korean won, which are tied to the dollar.¹

Import price decreases were recorded for fuels and related products, which plunged 51.5 percent, and chemicals, which fell 1.1 percent. Overall, increases were recorded in indexes for most major product areas. The index for machinery and transport equipment rose 12.0 percent, while the miscellaneous manufactured products index moved up 8.7 percent.

U.S. export prices remained relatively stable for the third year in a row, declining 0.5 percent. This followed 1.4-percent decreases each in 1984 and 1985. (See chart 3.) Moderate increases were recorded for machinery and transport equipment (1.6 percent); intermediate manufactured goods (3.6 percent); and crude materials (8.0 percent), among others. However, these increases were offset by decreases in the indexes for food (-13.2 percent) and for chemicals (-4.5 percent).

Trends in U.S. foreign trade

Despite the decline of the dollar against the currencies of the U.S. major industrialized trading partners, the U.S. merchandise trade deficit climbed for the sixth consecutive year to a record high of \$170 billion, 14.3 percent above

Elizabeth Gibbons and Gerald F. Halpin are economists in the Division of International Prices, Bureau of Labor Statistics. Shelley Meister, an economist in the same division, prepared the charts.

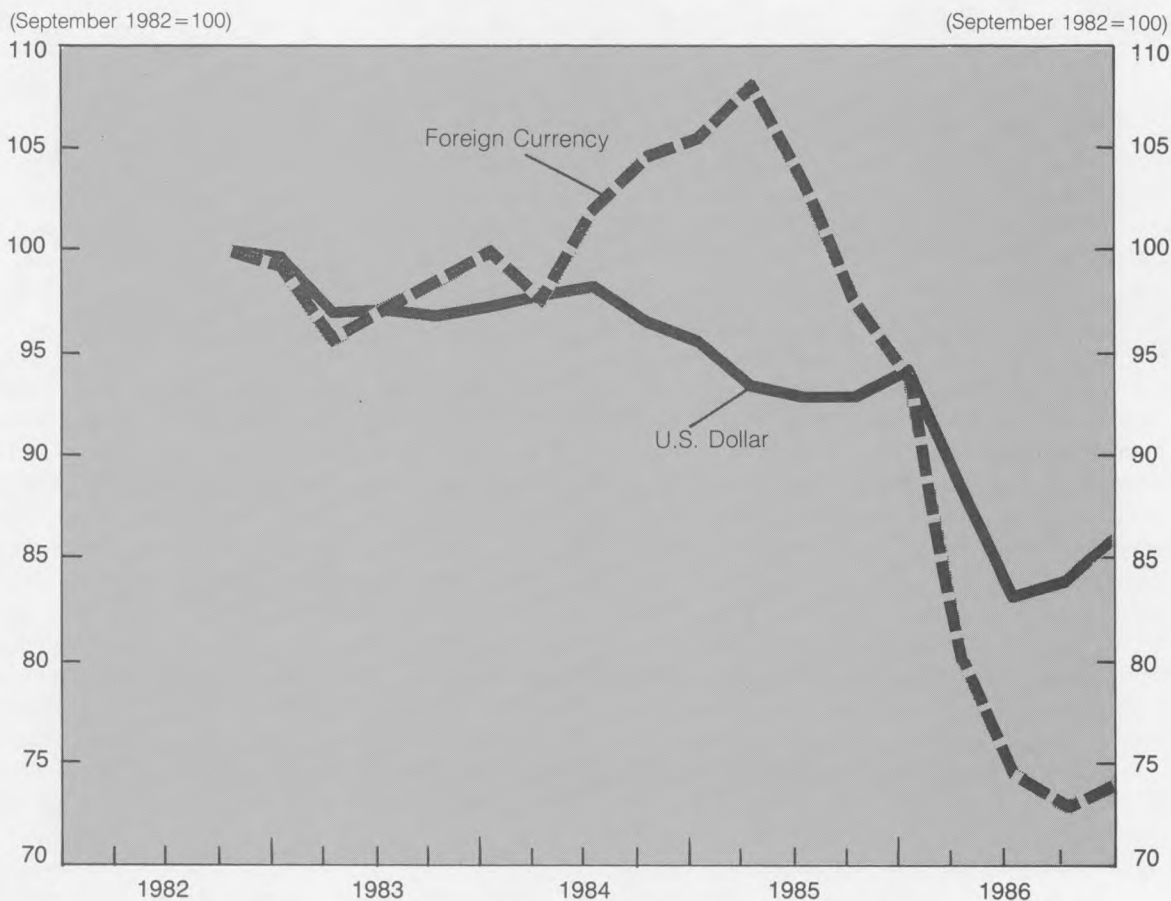
the 1985 deficit of \$149 billion. (See chart 4.) The bulk of the increase can be attributed to a larger value of imports, which rose \$26 billion to \$387 billion, while exports rose only \$4 billion to \$217 billion.²

The U.S. deficit with Japan, the largest deficit with one country, rose \$8.9 billion to \$58.6 billion in 1986. U.S. imports from Japan climbed 24.4 percent to \$85.5 billion, while U.S. exports to Japan rose only 11.1 percent to \$26.9 billion. The United States also had large deficits with Canada (\$23.3 billion) and the European Community (\$26.4 billion). In addition, the U.S. deficit with newly industrialized South Korea, Taiwan, Singapore, and Hong Kong has grown from less than \$500 million in 1975 to \$30.8 billion in 1986.³ Several reasons have been proposed to explain the increasing deficit, including the *j*-curve effect, willingness of foreign exporters to absorb currency shifts, the international debt crisis, and increased trade with countries whose currencies did not appreciate against the dollar.

The *j*-curve effect, in which trade balances tend to worsen before improving following a currency depreciation, is the result of the same volume of imports being bought at higher prices, resulting in a larger import bill. In the short run, import volume levels remain unchanged because of a lag in the response time to the new currency exchange rates by both consumers and producers. These lags arise from delay in realizing the new competitive situation, contracts negotiated before the currency realignment remaining in effect, difficulties in changing production patterns to accommodate the new situation, and slowly changing demand patterns.

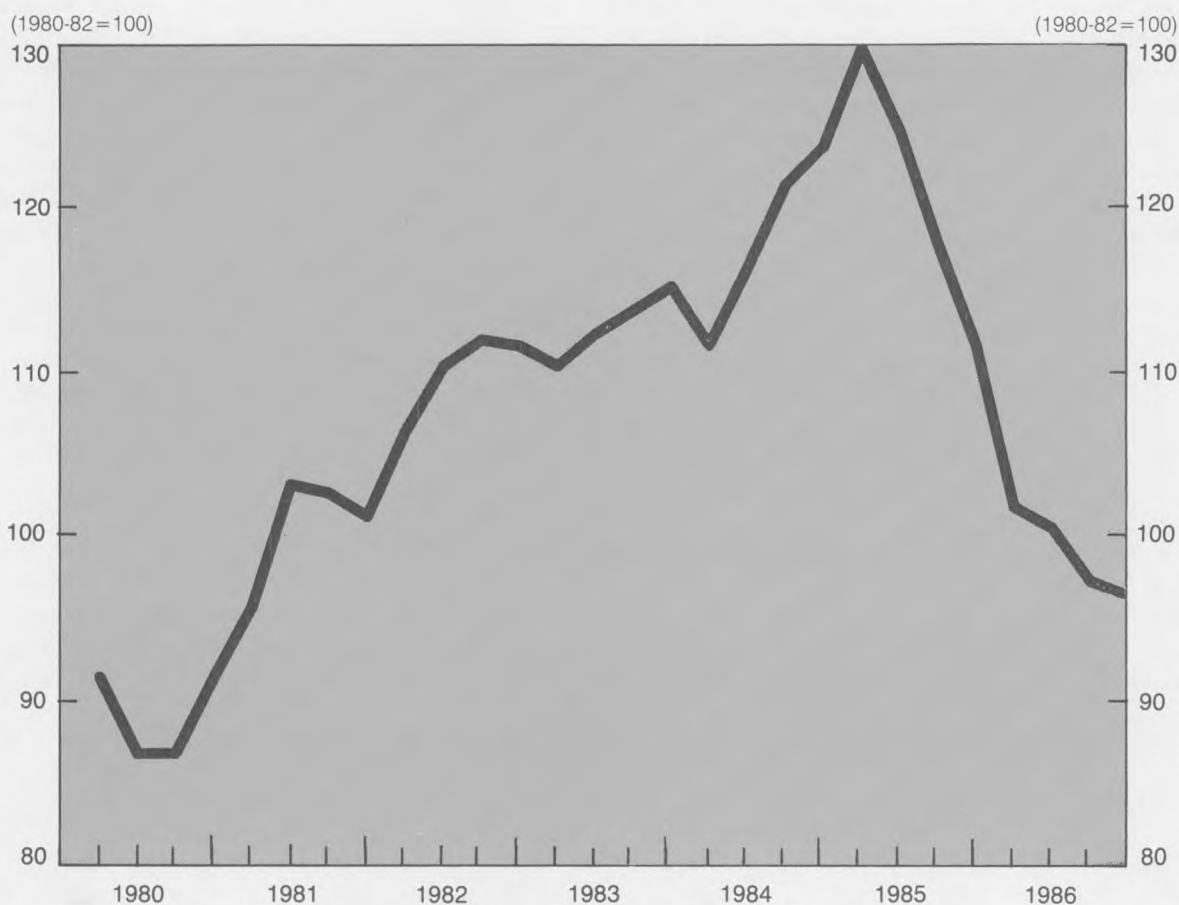
Another explanation for the continuing deficit is the fact that many foreign producers, to maintain U.S. market shares, did not increase prices in direct proportion to exchange rate shifts. When the dollar was strong, many foreign manufacturers accumulated large profits. This cushion allowed them, when faced with a weakening dollar, to

Chart 1. Indexes of U.S. dollar and foreign currency prices for U.S. imports, 1982-86



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

Chart 2. Index of the effective real exchange rate of the U.S. dollar, 1980-86



NOTE: Data are for the last month in the quarter, rather than the 3-month average.

SOURCE: International Economics Department, Morgan Guaranty Trust Co.

moderate price increases by accepting lower profit margins. The machinery and transport index reflects this trend; import prices increased only 12.1 percent while the currencies of Japan and West Germany, the two major trading partners in this category, rose 25.3 percent and 28.2 percent, respectively, during 1986.⁴

Another factor contributing to the deficit is Third World debt, particularly that of Latin American countries, which owe approximately half of total Third World debt, or \$400 billion. About \$300 billion of that figure is accounted for by Argentina, Brazil, and Mexico.⁵ Interest payments on those debts reduce foreign exchange necessary to buy imports, many of which would come from the United States. Brazil, for example, produced a \$12 billion trade surplus, yet \$10 billion of that was used for interest payments.⁶ U.S. exports to Latin American countries declined by 7.0 percent (from \$30.1 billion to \$28.0 billion)⁷ between 1982, when the debt crisis first came to the fore, and 1986.

Furthermore, competition from Pacific Rim countries has

continued to put pressure on the trade balance. These nations' currencies were tied to the dollar during 1986, so that when the value of the dollar fell, the newly industrialized countries did not lose the cost advantage they enjoyed. The falling dollar actually made the industrializing nations' products more competitive in the United States against the more expensive Japanese and German goods. As a result, the volume of imports from newly industrialized countries grew as they struggled to capture the lower priced product market. This is the same position Japan held 10 to 15 years ago. Trade with these newly industrialized countries constitutes 11.2 percent of all U.S. trade.⁸

There have been several efforts to measure how far the dollar has fallen. Exchange rate indexes are published by the Federal Reserve Board of Governors, Morgan Guaranty Trust, the International Monetary Fund, the Department of Commerce, the International Trade Commission, Manufacturers Hanover Trust, and the Atlanta and Dallas Federal Reserve Banks, among others. These indexes, constructed

to measure currency movements, differ in their estimates of the dollar's decline because of the varying methodologies used in their design. For example, the Federal Reserve Board of Governors' index uses weights which are based on percentages of total world trade, or multilateral trade, while others use weights based on bilateral trade. A multilaterally trade-weighted index gives less weight than a bilaterally trade-weighted index to currencies of countries such as Canada, which is the United States' largest trading partner, but is a relatively small world trader. It also gives more weight to currencies of relatively small U.S. trading partners, such as Belgium and the Netherlands, because of their trade with other European nations. Other differences in the construction of indexes include whether weights are based on fixed or moving periods; the number of trading partners included; whether indexes are adjusted for differing inflation rates among countries, that is, whether they are real or nominal; and the algorithm used. Largely as a result of these differing methodologies, the trade-weighted indexes show the dollar falling anywhere from 2.0 percent to 35.0 percent from March 1985 to December 1986.

The Bureau of Labor Statistics is constructing a nominal average exchange rate index for the dollar on a quarterly basis. The BLS index will use 1985 bilateral trade weights and exclude those countries which have experienced high inflation rates. These indexes can be used in conjunction

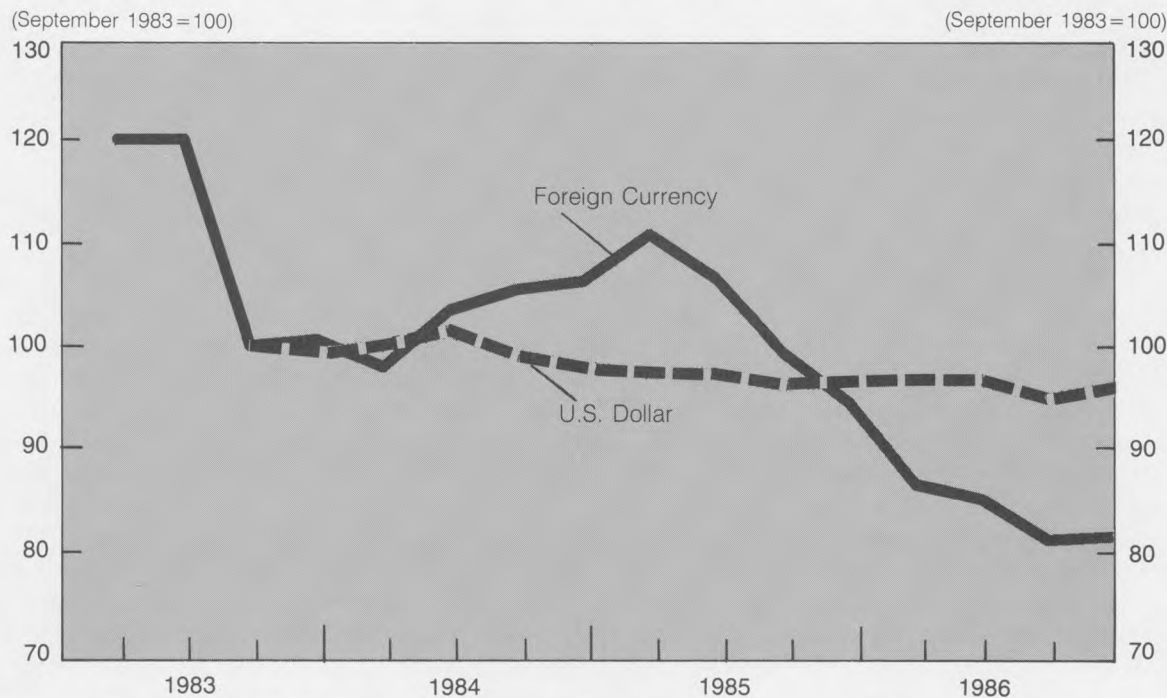
with export and import price indexes in dollar terms to examine U.S. export and import price movements in foreign currency terms. In contrast to the existing exchange rate indexes which are published only at the combined export and import level, the BLS index will be published at the two-digit, one-digit, all-export, and all-import levels according to the SITC Revision II trade classification system.

Price developments discussed in this article are based on data from the BLS International Price Program. That program produces import and export price indexes based on the Standard Industrial Trade Classification scheme. Both indexes use a modified Laspeyres formula. Price data are collected for more than 22,000 products, and are not seasonally adjusted. Import price indexes are weighted by the 1980 Tariff Schedule of the United States Annotated. Export price indexes are weighted using the 1980 Schedule B classification system of the U.S. Bureau of the Census. In addition, the International Price Program, in 1985, also started producing SIC-based indexes and Bureau of Economic Analysis "end-use" price indexes.

Import indexes

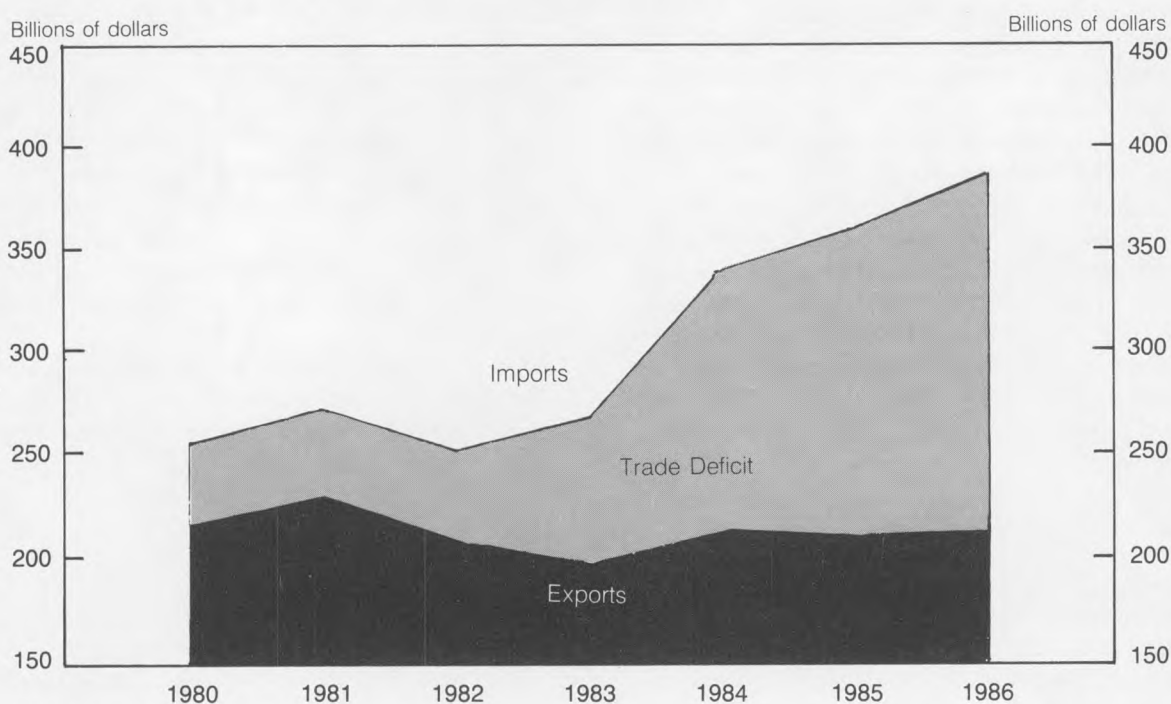
Energy. The fuels and related products category makes up 32.8 percent of the all-import index and was the major factor causing the import index's decline. The fuels index fell 57.9 percent over the year as crude petroleum prices plummeted

Chart 3. Indexes of U.S. dollar and foreign currency prices for U.S. exports, 1983-86



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

Chart 4. Volume of U.S. exports and imports of merchandise, 1980-86



SOURCE: U.S. Department of Commerce.

64.3 percent. The fuel index's decrease was concentrated in the first three quarters with prices rebounding slightly in the fourth quarter. In response to these price decreases, the volume of U.S. petroleum imports rose from an average of 3.2 million barrels per day in 1985 to 4.1 million in 1986.⁹ During the same period, U.S. average daily production fell 3.3 percent from 9.0 million barrels a day to 8.7 million.¹⁰ Despite the increased volume of petroleum imports, the U.S. deficit for petroleum fell \$15.0 billion to \$37.4 billion.¹¹ (See chart 5.)

Behind the precipitous fall in oil prices was a change in marketing strategy by Saudi Arabia in mid-1985 when it abandoned its role as swing producer in the oil market and adopted a system of "net-back" pricing, or linking the price of their crude oil to the value of the final products refined from that oil to ensure purchasers a profit. As swing producer, Saudi Arabia had found itself decreasing oil production and losing market share to maintain the official OPEC (Organization of Petroleum Exporting Countries) price. With its new system of net-back pricing, the Saudis were able to increase production.

At the end of 1985, the change in Saudi pricing started to affect import prices, as increased Saudi production hit the market at the end of the peak winter buying season in what had been a relatively mild winter. The index for petroleum and petroleum products plunged 31.7 percent in the first

quarter of 1986. Saudi production rose from an average 2.4 million barrels a day in June of 1985 to 4.5 million in January of 1986, or 28.6 percent more than they produced in January 1985.¹² World production for January 1986 was 4.9 percent above January 1985,¹³ and U.S. import volume rose 22.7 percent above the year-earlier volume.¹⁴

In the spring, OPEC ministers were unable to agree on individual quotas. Petroleum prices continued to decline—the index fell an additional 34 percent in the second quarter—as production and U.S. imports continued to rise. OPEC production rose to an average of 19.7 million barrels a day in June, with Saudi Arabia raising its production to 5.3 million.¹⁵ U.S. imports of petroleum and petroleum products soared to 7.0 million barrels a day in June, 42.9 percent above imports for June 1985.¹⁶

In August, OPEC ministers, meeting in Geneva, agreed to limit September and October production to 16.8 million barrels a day. This agreement set quotas for individual producers at the same level as agreed upon in December 1984. As a result, prices declined at a more moderate rate in the third quarter, and the petroleum and petroleum products index fell only 11.9 percent. Prices rebounded in the fourth quarter, and the index for petroleum and petroleum products rose 18.1 percent. In October, OPEC ministers extended the August agreement to include November and December with an increase of the total OPEC ceiling to 17 million barrels a day.

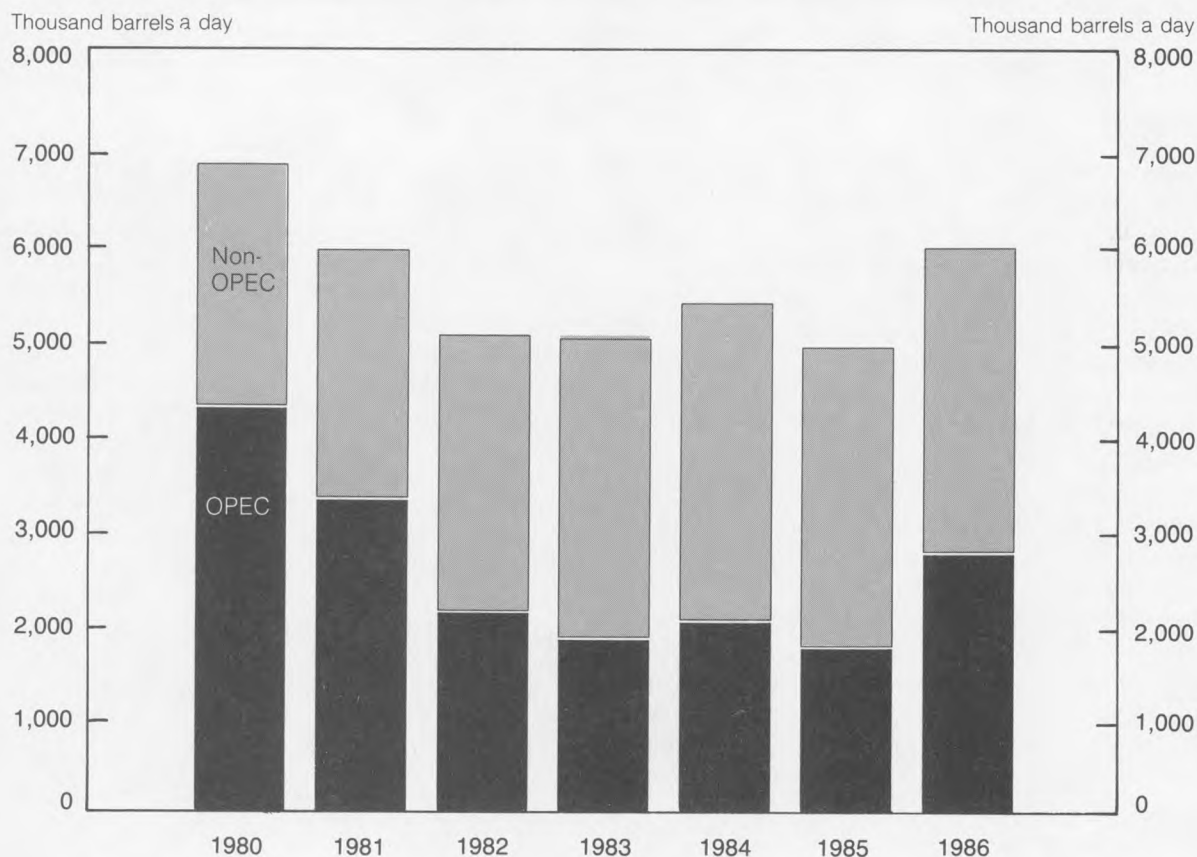
Machinery and transport equipment. Prices in the machinery and transport equipment index, which represents 25 percent of the all-import index, rose 12.0 percent for the year, after rising 4.2 percent in the previous year. (See chart 6.) Substantial price gains were recorded in seven of the eight categories which make up the index. The hikes are largely attributable to the dollar's decline against the yen and European currencies. The majority of products in this category are imported from Japan and Germany and the weakening of the dollar against these nations' currencies is reflected in the rise of the index during 1986, along with the effects of various quotas and pricing agreements. In contrast, prices in the telecommunication index, which includes such items as TV's, radios, and VCR's, remained relatively flat. Many of the products in the telecommunication index are imported from newly industrialized countries whose currencies have not appreciated against the dollar. The intense competition from these nations has forced Japanese and

European suppliers to limit price increases. As a result, the telecommunication index rose only 4.5 percent in 1986.

Despite the weakening of the dollar, imports continued to flow into the United States with \$162 billion being traded in 1986, up from \$141.7 billion in 1985.¹⁷ For instance, the 14.9-percent price hike in the passenger automobile index did not stem the flow of cars and trucks into the United States in 1986. Market penetration of imported cars rose to 30.0 percent in 1986, from 25.7 percent in 1985. The fast-growing U.S. auto market is the largest in the world; car and truck sales reached record levels of 16.3 million in 1986, compared with 15.7 million in 1985. Of the 16.3 million units sold, 5 million were imports.¹⁸ Japan accounted for 47 percent of auto imports, while Canadian autos constituted 25.4 percent.¹⁹

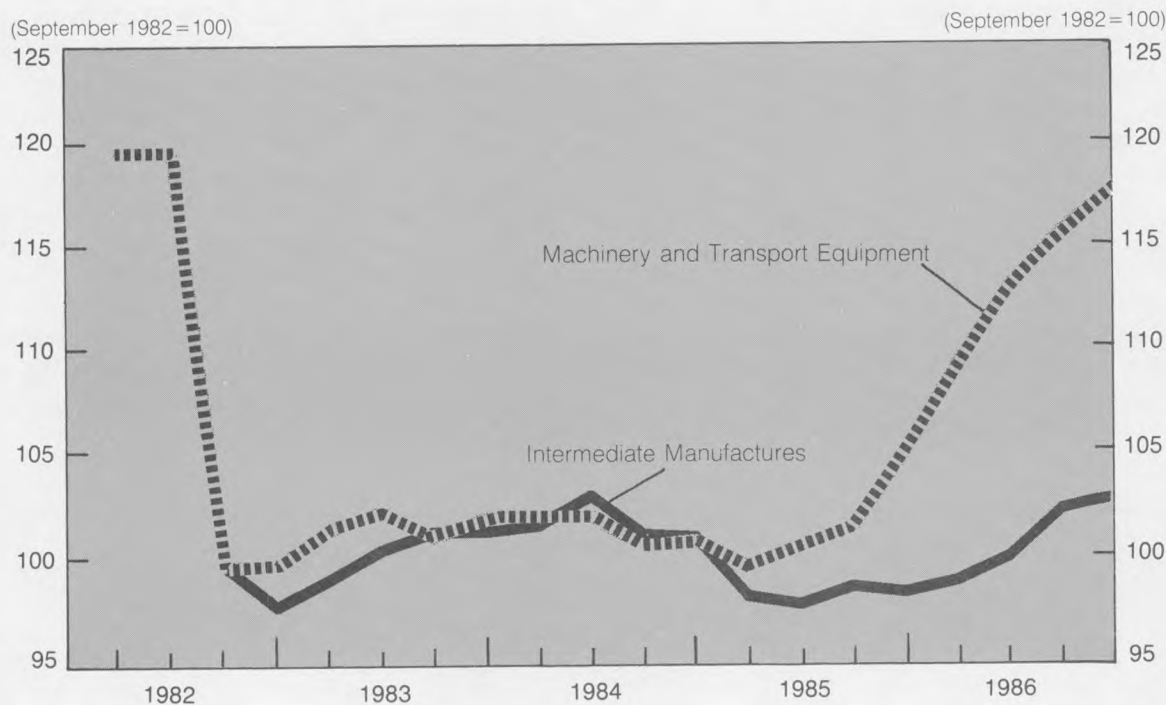
The fear of stronger protectionist action, along with the appreciation of the yen, prompted Japanese manufacturers to begin operating or building plants in North America.

Chart 5. Annual average U.S. imports of crude oil and petroleum products, OPEC and non-OPEC sources, 1980-86



Source: U.S. Department of Energy, Energy Information Administration.

Chart 6. U.S. Import Price Indexes for selected commodity groups, 1982-86



Currently, three of the nine Japanese automakers are operating plants in the United States. In 1986, such transplant facilities built 4 percent, or 365,000, of the 8.2 million cars built in the United States.²⁰ These facilities are expected to add up to 1.8 million more cars by 1989.²¹

Additional pressure is being placed on the U.S. auto producers at the less expensive end of the price scale. Korea and Yugoslavia began exporting cars to the United States in February 1986 and took the subcompact market by surprise. South Korea set a record for an imported auto's first year by selling more than 130,000 cars.²² These sales translate into about a \$1 billion automotive trade deficit between the United States and Korea.²³ Yugoslavia's entrance was not as successful, with fewer than 28,000 vehicles sold in 1986.²⁴

Prices in the electrical machinery and equipment import index increased steadily throughout the year, rising 10.7 percent in 1986. In the semiconductor group, which accounts for 40 percent of the electrical machinery index, prices rebounded 13.6 percent in response to a Japan/U.S. semiconductor agreement, after dropping 14.6 percent in 1985. Electrical machinery and equipment imports jumped to \$19.9 billion in 1986, up from \$18.2 billion in 1985.²⁵

In the early 1980's, makers of semiconductors, or computer chips, in Japan and the United States expanded their capacity in anticipation of a 30- to 100-percent annual sales

growth when increased sales of products ranging from personal computers to video games created intensified demand for chips. However, instead of growing, the computer industry's sales stagnated, and a glut of chips triggered sharp price-cutting practices in the industry. For example, the cost of a 256k dynamic random access memory (dram) chip fell from \$40 to as little as \$3.²⁶ By instigating higher discounting practices, Japan was able to lure customers away from U.S. suppliers. The dram was developed in the United States, but Japan now holds 90 percent of the world market.²⁷

The U.S. electronics industry obtained some relief in July, when Japan signed a 5-year agreement to stop "dumping" chips, specifically drams and erasable programmable read-only memories (eproms), at below fair market value in the United States and other countries. Japan also agreed to double purchases of American-made semiconductors above the \$800 million a year level. With the new trade agreement, the Commerce Department sets fair market values for each Japanese chip exporter to the United States. The department tallies an individual chipmaker's cost of making each product and adds an 8-percent profit to arrive at the price for which the manufacturer is allowed to sell the semiconductor.²⁸ The agreement caused fair market value of chips to soar. For example, 256k dram prices jumped from

\$3 to \$8.75.²⁹ The effect of the agreement on chip prices was reflected in the rise of the index through the last three quarters of the year.

Exchange rate fluctuations were largely responsible for lifting the metalworking machinery index 17.9 percent in 1986, after it rose 9.1 percent in 1985. The major trading partners in this index include Japan, West Germany, and Switzerland, countries whose currencies appreciated against the dollar. Imports of machine tools amounted to \$2.1 billion in the first 11 months of 1986, up 33 percent from the same period in 1985. Imports of metal cutting machinery totaled \$1.5 billion and metal forming tools, \$546.8 million.³⁰ Japan is the major supplier with U.S. sales totaling \$1.1 billion in the first 11 months of 1986. Germany is next with 11-month sales totaling \$341 million, followed by Taiwan selling \$108.9 million and Switzerland with \$102.6 million.³¹

In May 1986, the Reagan Administration requested that

Japan, West Germany, Taiwan, and Switzerland voluntarily limit exports of machine tools to the United States for national security reasons. The agreement was designed to limit the United States' dependency on foreign manufacturers who make military equipment such as tanks and fighter planes. The National Machine Tool Builders Association estimated that imports account for about 43 percent of the \$4.3 billion machine tool industry.³² In December, Japan and Taiwan agreed to cut imports to the United States by 20 percent, which will push import penetration back to 1981 levels. The 5-year trade pact also calls for the Administration to monitor imports from other machine tool exporting countries and to place restrictions on these nations if they fill the void left by Japan and Taiwan.³³ West Germany and Switzerland have not negotiated an agreement, but the Administration informed these two nations that further action would be required if their machine tool exports exceeded 1985 levels.³⁴

Table 1. Changes in Import Price Indexes for selected categories of goods, 1985-86

SITC category	Commodity	Percentage of 1980 trade value	Annual percent change		Quarterly percent change			
			December 1984 to December 1985	December 1985 to December 1986	December 1985 to March 1986	March 1986 to June 1986	June 1986 to September 1986	September 1986 to December 1986
	All commodities	100.000	-1.1	-8.7	-6.1	-6.0	0.8	2.5
	All commodities, excluding fuels and related products	67.223	0.9	8.4	3.4	1.1	2.9	0.6
0	Food	6.554	4.8	2.4	10.3	-7.7	4.2	-3.5
06	Sugar, sugar preparations, and honey .....	.925	-5.6	11.1	11.3	-2.4	1.9	0.3
07	Coffee, tea, cocoa	2.241	10.6	-5.6	33.0	-19.4	3.8	-15.0
1	Beverages and tobacco	1.082	3.3	3.6	0.7	1.4	0.2	1.3
2	Crude materials	4.275	-7.8	8.0	3.3	1.2	2.9	0.4
24	Wood .....	.865	-4.4	7.8	4.9	1.9	2.9	-2.0
25	Pulp and waste paper .....	.708	-18.7	22.4	-1.2	6.7	7.6	7.9
28	Metalliferous ores and metal scrap ..	1.465	-5.8	5.9	4.9	1.2	2.7	-2.9
3	Fuels and related products	32.776	-6.0	-51.5	-30.1	-32.2	-10.4	14.3
33	Crude petroleum and petroleum products	30.653	-4.8	-52.7	-31.7	-34.0	-11.1	18.1
4	Fats and oils .....	.226	-56.0	2.0	-18.2	-5.1	-9.7	45.4
5	Chemicals and related products	3.475	-3.0	-1.1	0.4	-1.4	0.1	-0.2
6	Intermediate manufactured products ..	13.520	-2.5	4.5	0.4	1.2	2.4	0.4
67	Iron and steel	3.127	-4.4	0.2	-0.8	0.7	0.8	-0.4
68	Nonferrous metals	3.123	-7.9	1.5	-1.2	-0.6	5.8	-2.3
7	Machinery and transport equipment ...	25.442	4.2	12.0	4.0	3.4	2.4	1.7
73	Metalworking machinery .....	.755	9.1	17.9	7.0	2.6	2.8	4.5
76	Telecommunications and sound recording and reproducing equipment	2.785	-3.0	4.5	0.9	2.5	2.3	-1.2
77	Electric machinery and equipment ...	3.396	-3.6	10.7	1.7	3.6	2.3	2.8
78	Road vehicles and parts	10.887	5.8	13.1	4.8	3.0	2.1	2.6
8	Miscellaneous manufactured articles ..	9.794	0.8	8.7	2.5	1.5	4.5	0.1
84	Clothing	2.666	-2.9	3.4	-0.8	1.4	1.8	0.9
85	Footwear	1.232	0.1	2.9	3.0	-3.3	2.5	0.8
87	Professional, scientific, and controlling instruments and apparatus .....	.628	10.2	16.3	3.9	5.7	5.2	0.7
88	Photographic apparatus and supplies, optical goods, watches and clocks ..	1.162	3.9	14.0	5.1	3.9	3.6	0.7
89	Miscellaneous manufactured articles, n.e.s.	3.286	1.7	13.4	4.3	1.3	8.6	-1.2

¹ This category includes indexes in addition to those shown here. For all of the indexes available in each category, see "U.S. Import and Export Indexes," *U.S. Department of Labor News Release*

87-40, January 29, 1987.
n.e.s. = not elsewhere specified.

Intermediate manufactures. The intermediate manufactures import index, which represents 13 percent of all imports, climbed 4.5 percent in 1986. Price increases were recorded in all nine categories. The iron and steel index, which encompasses 23 percent of intermediate manufactures, edged up 0.2 percent, compared with a 4.4-percent decline in 1985. This modest increase can be attributed, partially, to exchange rate fluctuations. Much of the steel imported into the United States comes from Japan and the European Community, countries whose currencies have appreciated against the dollar in 1986, raising the dollar price of foreign steel.

Even though the dollar price of steel has increased, international steel prices remain depressed. Declining demand and overcapacity characterized the industry in 1986, with industrialized nations' demand for steel falling 10 percent since the peak year of 1973.³⁵ This decline can be attributed to slower economic growth and decreasing steel usage in steel consuming industries such as construction and automobiles. According to the International Iron and Steel Institute, the industrialized nations currently have about 450 million tons of steel capacity and consume only 321 million tons. In an effort to curb the overcapacity problem, Western Europe, Japan, and the United States have cut production by 35 million tons, 13 million tons, and 33 million tons, respectively, since the start of 1973.³⁶ But developing countries are cutting prices instead of production, and exporting the excess tonnage to the United States.³⁷ These new entrants, which include Taiwan, Korea, and Brazil, have taken an expanding portion of the international steel market and have exerted downward pressure on world steel prices.

Third World excess capacity is often shipped to the United States because, relatively speaking, steel prices in the United States are still among the highest in the world. Steel imports have been significant, totaling 26.7 million tons in 1984 and 24.9 million tons in 1985.³⁸ The Reagan Administration negotiated voluntary restraint agreements in October 1984 with countries whose steel exports to the United States had increased significantly. The agreement included 17 countries and the European Community (excluding Portugal and Spain, which negotiated separate agreements) and was expected to limit the share of imports to 18.5 percent of the American market.³⁹

Despite these controls, imports are still taking about 23 percent of the U.S. steel market. For the first 10 months of 1986, imports captured 22.7 percent of the market, down from the 25.3 percent foreign suppliers seized during the same period in 1985.⁴⁰ Trade data indicate a shift from countries agreeing to voluntary restraints to other countries, partially explaining the continued tide of steel imports. The share of total steel imports accounted for by countries which did not agree to voluntary restraints increased from 18.9 percent to 24.8 percent during the period. Of these countries, Canada is by far the leading supplier, with steel coming into the United States at a rate 10 percent higher in the

first 10 months of 1986 than the same period in 1985.⁴¹

Similar to the steel industry, shrinking demand and abundant supplies have had a dampening effect on world metals prices. Price decreases were recorded for the copper, nickel, and tin subgroups. These decreases, however, were offset by price increases in the silver and platinum and zinc indexes. As a result, the nonferrous metals category rose 1.5 percent for the year. The U.S. demand for nonferrous metals has been decreasing, due primarily to the downsizing of automobiles, substitutions of lighter materials such as plastic, and replacement by such new technology materials as fiber optics in telecommunications.

Nonferrous metal prices registered their first increase in more than a year, rising 5.8 percent in the third quarter before falling 2.3 percent in the fourth quarter. The annual rise in this index can primarily be attributed to a 32.1-percent increase in platinum prices. Gold, silver, and platinum are "price sensitive" because they are traded daily in London, New York, and elsewhere, with their values shifting constantly according to such factors as the strength of the dollar, the level of interest rates, inflation, trade deficits, and political actions.⁴²

Third-quarter platinum prices were boosted as political uncertainty about the future of South Africa, which produces 80 percent of the world's supply, brought speculators into the market. Supplies from South Africa, England, and the Soviet Union had kept pace with demand and platinum prices remained steady, but prices soared in response to fears that South Africa would restrain shipments of platinum in retaliation against the economic sanctions imposed on that nation by the West.

The halt of South African shipment never occurred and that nation's platinum output is now expected to be even higher than 1985 levels. As a result, prices have fallen nearly 30 percent since September's high of \$673 an ounce.⁴³ The platinum and silver import index plunged 9.0 percent in the fourth quarter, after soaring 23.9 percent in the third quarter.

Imported copper prices have fallen 0.5 percent for the year, as demand for copper diminished due to a sluggish economy and continued substitution of aluminum and plastic in the automotive and housing markets and the use of fiber optics in the telephone communications market. Inventories remain low, but a perception of abundant copper supplies among consumers continues to push down prices. In June, total free-world inventories stood at 600,900 short tons, the lowest since 1974.⁴⁴

Nickel prices fell 13.6 percent in 1986, reflecting the slump the industry is facing. The decrease was influenced by weakened demand; consumption has fallen 4 percent since 1974. Manufacturing advances such as automobile downsizing and component miniaturization has reduced the need for nickel, exerting a downward pressure on prices.⁴⁵

Imported tin prices fell 30.7 percent in 1986 as overcapacity and weak demand hampered the market. In the first

two quarters, tin prices plunged after the breakup of the International Tin Cartel, as demand reflected the true market position and not the artificial one which resulted from the Cartel's price support operation.⁴⁶

Food. The index for prices of food imports rose 2.7 percent in 1986, despite a 9.2-percent decrease in the index for coffee which constitutes 25.1 percent of the entire food index. The drop in coffee prices was offset by price increases for imports of fish and sugar. The indexes for these items rose 17.6 and 11.3 percent, respectively. The U.S. agricultural trade surplus continued to decline, falling to \$6.0 billion in fiscal 1986 from \$11.42 billion in fiscal 1985 and \$19.10 billion in fiscal 1984.⁴⁷ U.S. agricultural imports rose 4.1 percent over 1985 levels to \$20.5 billion in 1986, principally because of an increase in the value of coffee imports, which rose 31.3 percent to \$4.2 billion.⁴⁸

Events in Brazil dominated movement in the coffee index. Coffee prices rose 40.9 percent in the first quarter of 1986, largely because of a drought in Brazil. Brazilian production dropped from 33.0 million to 13.9 million bags, as world production fell from 95.8 million to 81.0 million bags between the 1985-86 and the 1986-87 marketing years.⁴⁹ In addition to the effect on price of the immediate decline in production, prices were strengthened by the perception that drought damage to coffee trees would adversely influence future production levels.

Several factors were involved in lowering the coffee index to its yearend level. In response to the price increase, the International Coffee Organization, which consists of coffee producing and consuming countries, suspended coffee export quotas in February.

The Organization, in an attempt to keep coffee prices between \$1.20 and \$1.40 per pound, automatically suspends quotas when the 15-day moving average for the price of coffee rises above \$1.50 per pound. The suspension enabled Colombia and other major coffee producers to increase their coffee exports. Other factors involved in lowering the coffee index included the seasonal downturn in coffee consumption during the Northern Hemisphere's summer months and improved weather conditions in Brazil. As a result, the coffee index declined 22.2 percent in the second quarter.

After rising 3.2 percent in the third quarter, the coffee index fell 19.7 percent in the fourth. The Organization was unable to halt the price decline because it had no automatic mechanism for reinstating quotas, and could not agree on procedures for doing so or on distribution of the total quota among member countries.

The 11.3-percent increase in raw sugar prices was the result of a cut in the import quota announced by the U.S. Department of Agriculture in February. At that time, the 1986 quota year was extended by 3 months, to the end of December. This spread the 1.77 million short ton quota over 15 months instead of 12, decreasing the quota for 1986 by

approximately 425,000 short tons.⁵⁰ Prices for sugar imports remained relatively stable after increasing 11.8 percent in the fourth quarter. The quota for 1987, announced in December 1986, was 1.07 million short tons.

Crude materials. Import prices for crude materials rose 8.0 percent in 1986, in contrast to 1985's 7.8-percent decline. This index represents 4.3 percent of all imports. A major factor contributing to the price increase was tighter supplies of and increased demand for pulp and waste paper, wood, and metalliferous ores.

Consumption of softwood lumber, sparked by new housing construction, jumped about 7 percent above the 43.1 billion board feet used in 1985 to 46.5 billion board feet in 1986. New housing starts during the first 10 months of 1986 totaled 1,578,000 units, almost 5.4 percent more than in the same period in 1985.⁵¹ In response to increased construction activity, imports of softwood lumber in September were roughly 5 percent higher than year-earlier volumes, with 99 percent of the increase coming from Canada.⁵²

The United States is the world's leading importer of softwood lumber, wood pulp and paper, and board products from Canada. Imports of Canadian softwood lumber are taking an increasing share of the U.S. market, rising from 18.75 percent in 1975 to about 36 percent in 1986.⁵³ This year, Canada shipped \$3 billion worth of softwood lumber to the United States.⁵⁴

In October, a preliminary 15-percent countervailing duty was placed on Canadian softwood lumber after the International Trade Administration ruled that the Canadian industry was subsidized by low prices for government-owned stumpage. The Commerce Department stated that the price Canadian lumber firms pay to cut trees on government land is so low that it amounts to an unfair subsidy on exports.

The imposed duty, coupled with a woodcutters' strike which idled part of the Canadian lumber production since August, boosted wood prices 7.8 percent in 1986. At yearend, the United States and Canada came to a decision on the countervailing duty. Canada agreed to impose a 15-percent export tax on softwood lumber shipments to the United States beginning January 8, 1987.⁵⁵ Fourth-quarter prices slipped 3.0 percent as yearend holiday and uncertainty about the negotiations kept overall trading volume low.

The woodcutters' strike also forced three major pulp and paper mills to shut down by secondary picketing or wildcat strikes. Also, the labor disputes dampened woodchip supplies, the vital input of pulp, generating a recovery of pulp prices beginning in the second quarter. The shutdowns occurred at a time when Scandinavian and North American pulp mills, already operating at 90-percent capacity, were unable to handle the extra demand.⁵⁶ As a result, imported pulp and waste paper prices rebounded 22.4 percent in 1986, after plummeting 25 percent in 1985.

The 5.9-percent price hike for metalliferous ores was heavily influenced by tightened supplies of bauxite and alu-

mina. Alumina and bauxite production was cut in 1986, a result of depressed prices in 1984 and 1985. In response to reduced supplies, prices for these materials rebounded 20.4 percent for 1986, fueling the increase in the metalliferous ores category.

Miscellaneous manufactures. The index for miscellaneous manufactures increased 8.7 percent during 1986, as prices increased in all categories. The size of the increases differed among categories, however, largely as a result of varying points of origin of imported goods constituting those categories. The indexes for goods which predominantly come from industrialized countries rose sharply; the indexes for goods which predominantly come from the newly industrialized countries rose more moderately.

The index for photographic equipment, optical goods, and watches and clocks rose 14.0 percent during the year. The major exporters to the United States in this category are industrialized countries. Seventy percent of U.S. imports of photographic equipment, for example, comes from Japan, and the index for those goods rose 20.8 percent in 1986.⁵⁷ Similarly, the index for optical goods, the bulk of which originate in Japan and West Germany,⁵⁸ rose 21.6 percent during the year.

Clothing prices, in contrast, rose only 3.4 percent in 1986. The majority of imports in this category come from Hong Kong, Taiwan, South Korea, and China, countries whose currencies remained comparatively stable in value relative to the dollar.⁵⁹ Goods which are represented in the index for toys, games, and sporting equipment mainly originate in Taiwan and South Korea.⁶⁰ That index rose only 2.6 percent in 1986.

Export indexes

Grains. The export food index represents 12.8 percent of the all-commodities index. Export prices for food declined 17.2 percent during 1986, due to falling prices for grains and grain preparations. Grains and grain preparations constitute approximately 65.3 percent of the weight in the export food index and 8.3 percent in the all-commodities index. The grain surplus has declined \$8.7 billion over the last 3 trade years.⁶¹

Export prices for grain and grain preparations plunged 32.0 percent during 1986, with most of the decrease, 25.4 percent, occurring in the third quarter. The decline was broad-based with all categories registering decreases. Corn and wheat varieties, which have the largest weights among grains, fell 30.3 percent and 19.6 percent, respectively. U.S. exports declined 35.2 percent, from 94.7 million metric tons in 1983–84 to 61.4 million in 1985–86,⁶² as domestic stocks climbed from 77.9 million metric tons to 178.7 million, an increase of 129.4 percent.⁶³ The bulk of U.S. grain exports is made up of wheat varieties and corn, although rice and yellow sorghum are also important.

World grain markets are characterized by excess supplies

due to large foreign debt and increasing self-sufficiency of traditional importers. Total world production for the 1985–86 trade year for wheat and coarse grains climbed to 1,343.3 million metric tons from 1,325.2 million in 1984–85 and 1,177.1 million in 1983–84, an increase of 14.1 percent for the 2-year period.⁶⁴ During the same period, world consumption has ranged between 1,244.5 million metric tons and 1,278.4 million.⁶⁵ As a result, world yearend stocks for the period grew 69.4 percent, from 187.4 million metric tons in 1983–84 to 317.5 million in 1985–86.⁶⁶

A major reason behind the present state of oversupply has been the conversion of the European Community from a net importer to a net exporter. This has been a result of production incentives in the European Community's common agricultural policy and productivity increases. Between the 1976–77 and 1985–86 marketing years for wheat and coarse grains, the European Community went from being a net importer of 26.3 million metric tons to a net exporter of 15.3 million, adding an additional 41.6 million metric tons to world supplies.⁶⁷

Movements in grain export prices over the last year are largely attributable to changes in farm policy brought about by the Food Security Act of 1985, which provides the Department of Agriculture with certain instruments to make grains more competitive on the world market. Provisions for lowering commodity basic loan rates and for automatically adjusting them on an annual basis to keep them in line with world prices have been key to grain price shifts. Loan rates are the effective support prices for commodities which are covered by the Food Security Act. The Department of Agriculture lends money to producers, using their crops as collateral. If the market price falls below the loan rate, producers can repay the loan with product, which the government stores and uses to control market price. In addition to the legislated lower loan rate, the 1985 act enables the Secretary of Agriculture to lower the loan rate by an additional 20 percent from the annual base loan rate. Producer income is supported by deficiency payments, which are the difference between the higher of the loan rate or the market price and the target price, which is calculated to ensure a certain level of farm income. Furthermore, the Department of Agriculture, by issuing stock entitlement certificates to producers rather than cash payments, can release stocks and current production of certain commodities onto the market to lower the market price below the loan rate without adversely affecting farm income. Thus, the Department of Agriculture has several tools for lowering export prices of commodities covered by the 1985 act.

The 30.3-percent drop in corn export prices, for example, was due to a lowering of the basic loan rate for corn from \$2.55 per bushel to \$2.40, and an additional 20-percent lowering of the actual loan rate to \$1.92 by the Secretary of Agriculture. Corn represents 31.0 percent of the food index and 4.0 percent of the all-export index. Because of the previously high prices, U.S. corn exports fell 34.2 percent,

Table 2. Changes in Export Price Indexes for selected categories of goods, 1985-86

SITC category	Commodity	Percentage of 1980 trade value	Annual percent change		Quarterly percent change			
			December 1984 to December 1985	December 1985 to December 1986	December 1985 to March 1986	March 1986 to June 1986	June 1986 to September 1986	September 1986 to December 1986
	All commodities	100.000	-1.3	-0.5	0.3	-0.3	-1.7	1.2
0	Food	12.768	-3.0	-13.2	-3.3	-1.1	-13.7	5.2
04	Grain and grain preparations	8.341	-6.2	-25.6	-5.7	-3.7	-25.4	9.8
1	Beverages and tobacco	1.229	-2.7	3.0	-3.0	0.9	-0.2	5.5
2	Crude materials	10.948	-8.1	2.5	3.6	-0.2	-3.5	2.7
22	Oilseeds	3.024	-14.6	-1.6	4.7	-1.6	-2.0	-2.5
24	Wood	1.417	2.2	5.8	0.5	0.0	0.8	4.5
25	Pulp and waste paper .....	.954	-18.8	30.7	6.6	11.0	9.2r	1.2
26	Textile fibers	1.813	-3.8	-5.6	4.0	-3.0	-24.2	23.4
3	Fuels and related products	3.691	-3.1	-12.3	-4.9	-5.7	-1.2	-1.2
4	Fats and oils .....	.911	-31.4	-14.4	-10.5	-7.0	-9.4	13.5
5	Chemicals and related products	9.578	-1.1	-4.5	-0.1	-1.1	-2.4	-0.9
51	Organic chemicals	2.289	0.7	-6.0	-2.0	-4.5	-1.5	1.9
56	Fertilizers, manufactured	1.036	-5.1	-23.7	-1.6	-5.2	-7.9	-11.2
6	Intermediate manufactured products ..	10.544	-1.2	3.6	1.2	0.9	1.0	0.5
7	Machinery and transport equipment excluding military and commercial aircraft	35.261	1.3	1.6	0.5	0.1	0.3	0.7
72	Machinery specialized for particular industries	5.784	1.5	-0.3	-0.4	-0.5	0.2	0.5
73	Metalworking machinery .....	.829	4.3	2.1	0.4	-0.1	0.9	0.9
75	Office machines and automatic data processing equipment	3.990	-2.0	-1.3	0.5	-0.7	-0.3	-0.8
77	Electric machinery and equipment ..	4.738	-0.7	1.1	1.1	-0.8	0.2	0.5
78	Road vehicles and parts	6.726	2.4	2.1	0.4	0.7	0.1	1.0
8	Miscellaneous manufactured articles ..	7.397	1.0	4.0	2.3	0.8	0.7	0.2

¹ This category includes indexes in addition to those shown here. For all of the indexes available in each category, see "U.S. Import and Export Indexes," U.S. Department of Labor

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from 47.4 million metric tons to 31.5 million between the 1983-84 and the 1985-86 trade years.⁶⁸ During the same period, domestic production climbed 112.5 percent, from 106.0 million metric tons to 225.2 million.⁶⁹ Because U.S. utilization climbed only 9.4 percent, from 121.7 million metric tons to 133.2 million,⁷⁰ national stocks soared from 25.6 million metric tons to 102.6 million, an increase of more than 300 percent.⁷¹ Despite the lower prices for corn exports, the Department of Agriculture is predicting exports will fall to 28.6 million metric tons during the 1986-87 trade year.⁷²

Wheat prices also fell because of the 1985 farm law. Under the law, the basic loan rate dropped from \$3.30 to \$3 and additional reductions resulted in a loan rate of \$2.40. As a result, wheat export prices fell 19.6 percent during the year. Over the last 2 trade years, U.S. exports of wheat and wheat flour fell 35.7 percent, from 38.9 million metric tons to 25.0 million.⁷³ At the same time, U.S. production and utilization figures remained approximately the same, with production rising from 65.9 million metric tons to 66.0 million⁷⁴ and utilization falling from 30.2 million metric tons to 28.4 million.⁷⁵ As a result, U.S. end stocks rose from 38.1 million metric tons to 51.8 million.⁷⁶ Yearend Department of Agriculture predictions for wheat exports during the 1986-87 year suggest a further decline to 26.6 million metric tons, as projections for imports into the So-

viet Union are 12 million metric tons, down 23.6 percent from 1985-86.⁷⁷

Chemicals. The index measuring export prices of chemicals and related products declined 4.5 percent during 1986, reflecting the extreme drop in prices of feedstocks for organic chemicals and the effect of the depressed farm economy on fertilizer prices. The chemicals index, which constitutes 9.6 percent of the all-commodities index, includes organic and inorganic chemicals, fertilizers, medicinal and pharmaceutical products, and artificial resins and plastics materials. The indexes for organic chemicals and for fertilizers fell 5.9 percent and 25.8 percent, respectively, during the year.

The last few years have been a period of rationalization, restructuring, and modernization for the chemical industry as it moved from producing commodity chemicals to producing higher value added "specialty chemicals." It is now in a position to reap the benefits of the lower valued dollar. The U.S. chemical industry made a substantial recovery in 1986, as profits reached \$13.3 billion, the highest level ever and 54.5 percent above 1985 profits.⁷⁸ The industry's capacity utilization rose to 81.5 percent in June of 1986, up 23.5 percent from the post-World War II low of 66.0 percent in 1982.⁷⁹

With the decline of the dollar's exchange value making

U.S. exports more attractive to foreigners, the chemicals trade surplus increased last year for the first time since 1980. The 1986 surplus was \$7.7 billion, up 6.9 percent from the 1985 figure of \$7.2 billion, but still below the record 1980 figure of \$12.2 billion. Exports grew 4.6 percent to \$22.8 billion as imports grew 3.3 percent to a record \$15.0 billion.⁸⁰

The 5.9-percent decrease for organic chemicals is primarily the result of falling petroleum prices. Hydrocarbons are commodity organic chemicals which are generally refined directly out of petroleum products or are processed only slightly further. They are the feedstuff for many other organic chemicals. As petroleum prices plummeted during the first three quarters of the year, some of that decrease was reflected in prices of downstream hydrocarbons, the index for which declined 10.9 percent during the first three quarters. The index for all organic chemicals declined 5.9 percent during that period. In August, OPEC announced that its members had reached an agreement on production controls to be effective in September. As a result, prices for petroleum, and therefore prices for organic chemicals, began to climb. During the fourth quarter, the index for hydrocarbons rose 8.7 percent, while the organic chemicals index increased 2.0 percent.

The index for fertilizers fell 25.8 percent in 1986, after falling 5.1 percent in 1984, primarily because of the state of the world farm economy, falling raw material prices, and below-cost pricing of some products by countries with non-market economies. The global farm economy is characterized by oversupply and low commodity prices, thus demand for fertilizers is low.

In the United States, fertilizer consumption was off 5 to 7 percent.⁸¹ The decline was driven by acreage reduction provisions of the 1985 farm bill. Another factor depressing fertilizer export prices was the decline in the price of natural gas, which constitutes 75 percent of the production costs of ammonia. Ammonia is a precursor to urea and ammonium phosphates, fertilizers used for their nitrogen content. Prices have plummeted for both urea and diammonium phosphate as domestic natural gas prices declined 18.2 percent in 1986.⁸² Urea prices, moreover, have faced pressure from countries with nonmarket economies selling the product for prices which the International Trade Commission has ruled are below cost.⁸³ Countries such as the Soviet Union, East Germany, and Romania do so in order to obtain hard currency.

Machinery and transport equipment. The machinery and transport export index, which encompasses 35 percent of the all-export index, registered a 1.6-percent gain in 1986, compared with 1.3 percent in 1985. Gains were posted in most of the categories, except for specialized machinery and office machinery indexes which declined 0.3 percent and 1.3 percent, respectively.

Export prices for electrical machinery, which constitutes

4.7 percent of the machinery and transport equipment index, edged up 1.1 percent in 1986. The largest price movement occurred in the semiconductor index which carries 37 percent of electrical machinery trade weight.

In 1986, the semiconductor industry grew 7 percent to \$11.1 billion.⁸⁴ The export price hike of 2.1 percent in 1986 can be attributed to the U.S.-Japan semiconductor trade agreement that was signed in July 1986. The agreement allowed U.S. producers to raise their prices and still remain competitive. Semiconductor prices began inching up in the third quarter, rising 0.6 percent after falling 2.9 percent in the previous quarter. Fourth-quarter prices climbed 1.1 percent.

One consequence of the agreement, however, is a shift in the supply market from U.S. and Japanese producers to Third World producers. Emerging semiconductor manufacturers in Korea and Taiwan represent a competitive threat to both U.S. and Japanese suppliers and will have a negative impact on future semiconductor growth in the United States.⁸⁵

After climbing 4.3 percent in 1985, metalworking machinery export prices inched up 2.1 percent in 1986. In the first 11 months of 1986, the United States exported \$521.2 million worth of machine tools, up 28 percent from the same period in 1985. Despite the increase in exports, machine tools produced a trade deficit of \$1.56 billion during this period.⁸⁶

The road vehicles and parts index advanced 2.1 percent in 1986, fueled by the 6.1-percent increase in the passenger vehicles index, which carries 28 percent of the aggregate.

Crude materials. The crude materials index registered a 2.5-percent increase for the year. Price gains were recorded in the raw hides and skins (6.0 percent), wood (5.8 percent), pulp and waste paper (30.7 percent), and metal ores (2.5 percent) indexes. Decreases were recorded in the other four components.

The British Columbia mill workers and loggers strike which reduced world wood and pulp supplies contributed to higher wood and pulp prices worldwide. In addition to supply disruptions, the 20-percent increase for pulp and waste paper export prices was partially influenced by exchange rate shifts. The dollar's depreciation against the yen and mark has allowed U.S. suppliers to increase pulp prices by \$30 a ton without any repercussions to their market shares.⁸⁷

The largest decrease occurred in the textile fibers index, which declined 5.6 percent for the year. Cotton, which represents 75 percent of textile fibers, dropped 10.2 percent for the year, generating the downward movement in the index.

Third-quarter cotton export prices plunged 38.8 percent in response to new cotton legislation which became effective in August 1986. The new program was designed to make U.S. prices more competitive on the world market by recapturing lost export shares and reducing stock levels to

4 million bales. Previously, U.S. producers were encouraged to store cotton in return for government loans when prices fell below specified levels. This policy pushed U.S. cotton prices above world levels and resulted in lost export markets. The new plan called for producers to receive a world market price along with either a cash or certificate subsidy from the government.⁸⁸ As a result, U.S. cotton prices fell drastically. The low prices spurred cotton consumption, causing fourth-quarter prices to recover dramatically. Stronger-than-expected demand coupled with weather-related production problems boosted fourth-quarter prices 44 percent.

Oilseed export prices fell 1.6 percent in 1986. The 1986–

87 oilseed world production will most likely reach a record level of 196.4 million metric tons. Prices for soybeans, the leading oilseed export, dropped 3.0 percent in 1986, as exports in the 1986–87 market year are projected to remain fairly stable at 20.68 million metric tons. Even though world production increased, U.S. production dropped to 54.68 million metric tons, compared with 57.11 million in 1985.⁸⁹

The price drop was relatively moderate as the U.S. soybean loan rate was only lowered slightly. Soybean producers are eligible for participation in a Department of Agriculture program similar to the wheat and corn program, but the Department did not lower the soybean loan rate to the 25-percent or more drop for grains.⁹⁰ □

—FOOTNOTES—

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¹ See "Foreign Exchange Rates," *Federal Reserve Statistical Release H.10 (512)*. Figures given are based on monthly average for February 1985 and November 1986.

² *Highlights of U.S. Export and Import Trade*, FT-990 (U.S. Department of Commerce, Bureau of the Census, forthcoming).

³ *Ibid.*

⁴ Figures are based on monthly average for November 1985 through November 1986.

⁵ Hobart Rowen, "The Tax-Reform Payoff Will Come," *The Washington Post*, Sept. 28, 1986, p. H5.

⁶ *Ibid.*

⁷ *Highlights of U.S. Exports*, March 1983 and forthcoming.

⁸ *Highlights of U.S. Exports*, forthcoming.

⁹ *Monthly Energy Review*, DOE/EIA-0035 (U.S. Department of Energy, Energy Information Administration, forthcoming).

¹⁰ *Ibid.*

¹¹ *Highlights of U.S. Exports*, forthcoming.

¹² *Monthly Energy Review*.

¹³ *Ibid.*

¹⁴ *Ibid.*

¹⁵ *Ibid.*

¹⁶ *Ibid.*

¹⁷ *Highlights of U.S. Exports*, forthcoming.

¹⁸ Warren Brown, "Automobile Makers Prepare for Bloody U.S. Price War," *The Washington Post*, Jan. 15, 1987, p. E2.

¹⁹ *Highlights of U.S. Exports*, forthcoming.

²⁰ Donald Baker, "Difficult Year Ahead for Auto Makers," *Standard & Poors Industry Surveys*, Jan. 22, 1987, p. A61.

²¹ "Tough Times Because of Steep Climb of the Yen," *The Wall Street Journal*, Dec. 15, 1986, p. 18.

²² George Russell, "The Big Three Get in Gear," *Time*, Nov. 24, 1986, p. 65.

²³ Andrew Tank, "Korea Launches New Wave of Exports to the US," *Automotive News*, Dec. 15, 1986, p. E1.

²⁴ Russell, "The Big Three," p. 65.

²⁵ *Highlights of U.S. Exports*, forthcoming.

²⁶ Stephen Koepp, "Feeling the Crunch from Foreign Chips," *Time*, Nov. 3, 1986, p. 73.

²⁷ Stuart Auerbach, "Chipmakers Seek Funds for Proving Grounds," *The Washington Post*, Jan. 4, 1987, p. H1.

²⁸ Koepp, "Feeling the Crunch," p. 73.

²⁹ John Wilson, "The Chip Market Goes Haywire," *Business Week*, Sept. 1, 1986, p. 25.

³⁰ *U.S. Foreign Trade in Machine Tools*, Report No. 20-87 (McLean, VA, National Machine Tool Builders' Association, Feb. 6, 1987), p. 1.

³¹ *Ibid.*

³² Erich Schmitt, "30.1 Percent Rise in Machine Tool Orders," *The New York Times*, Nov. 24, 1986, p. D8.

³³ Mark Sfiligoj, "Japan-U.S. Tool Agreement Reported," *American Metal Market*, Nov. 10, 1986, p. 16.

³⁴ Mark Sfiligoj, "Big Import Cuts Seen for Taiwan, Japan Tools, American Metal Markets," *American Metal Market*, Dec. 22, 1986, p. 12.

³⁵ Peter Marcus and Karlis Kirsis, "Forces Creating Change More Powerful Than Business Cycle," *Paine Webber World Steel Dynamics*, June 1986.

³⁶ George McManus, "Are Banks the Villians in World Steel Glut?" *Iron Age*, Dec. 5, 1986, p. 34.

³⁷ Stuart Auerbach, "Steel Importers Say Quotas Have Had Little Effect on Prices," *The Washington Post*, Dec. 9, 1986, p. D3.

³⁸ *Monthly Report on the Status of the Steel Industry*, Publication 1913 (U.S. International Trade Commission, November 1986), p. 3.

³⁹ *Ibid.*, p. vi.

⁴⁰ Richard Lawrence, "Imports Retain 23 Percent of Steel Market," *Journal of Commerce*, Dec. 10, 1986, p. 3A.

⁴¹ *Monthly Report on the Status of the Steel Industry*, Publication 1933 (U.S. International Trade Commission, December 1986), p. 7.

⁴² "Precious Metals: Prices Still on a Roller Coaster," *Purchasing*, Oct. 5, 1986, p. 51.

⁴³ *Economist*, Nov. 22, 1986, p. 1.

⁴⁴ Anthony M. Sorrentino, "Metals-Nonferrous," *Standard & Poors Industry Survey*, Sept. 4, 1986, p. M65.

⁴⁵ "Metals Report, Alloying and Coating Metals Are Overabundant," *Purchasing*, Oct. 23, 1986, p. 52.

⁴⁶ "Rising to the Challenge," *Mining Journal*, Dec. 26, 1986, p. 1.

⁴⁷ *Highlights of U.S. Exports*, forthcoming.

- ⁴⁸ *Ibid.*
- ⁴⁹ *World Coffee Situation, Foreign Agricultural Circular FCOF, 1-87* (U.S. Department of Agriculture, January 1986).
- ⁵⁰ "Sugar and Sweetener," *Outlook and Situation Report, SSRV11n1* (U.S. Department of Agriculture, March 1986).
- ⁵¹ Robert Phelps, "General Economic and Major Domestic Market Trends," *Outlook for Timber Products* (U.S. Department of Agriculture, Dec. 3, 1986), p. 2 (Outlook Conference Session 21).
- ⁵² *Ibid.*
- ⁵³ A.G. Norris, "Issues in Forest Products Trade," *Outlook for Timber Products* (U.S. Department of Agriculture, Dec. 3, 1986), p. 1 (Outlook Conference Session 21).
- ⁵⁴ "U.S., Canada Settle Dispute Over Lumber," *The Washington Post*, Jan. 1, 1987, p. D2.
- ⁵⁵ *Ibid.*
- ⁵⁶ *Pulp & Paper Week*, Aug. 25, 1986, p. 4.
- ⁵⁷ *1987 U.S. Industrial Outlook* (U.S. Department of Commerce, International Trade Administration, January 1987), p. 35-1.
- ⁵⁸ *Ibid.*, p. 33-4.
- ⁵⁹ *Ibid.*, p. 42-1.
- ⁶⁰ *Ibid.*, p. 45-8.
- ⁶¹ *Highlights of U.S. Exports*, forthcoming.
- ⁶² *Grains, World Grain Situation and Outlook, FG-14-86* (U.S. Department of Agriculture, December 1986), p. 8.
- ⁶³ *Ibid.*
- ⁶⁴ *Ibid.*
- ⁶⁵ *Ibid.*
- ⁶⁶ *Ibid.*
- ⁶⁷ *Ibid.*
- ⁶⁸ *Ibid.*
- ⁶⁹ *Ibid.*
- ⁷⁰ *Ibid.*
- ⁷¹ *Ibid.*
- ⁷² *Ibid.*
- ⁷³ *Ibid.*
- ⁷⁴ *Ibid.*
- ⁷⁵ *Ibid.*
- ⁷⁶ *Ibid.*
- ⁷⁷ *Ibid.*
- ⁷⁸ "Chemical Recovery Follows Restructuring," *Chemical Marketing Reporter*, Dec. 15, 1986, p. 3.
- ⁷⁹ "Capacity Utilization: Manufacturing, Mining, Utilities, and Industrial Materials," *Federal Reserve Statistical Release*, Jan. 16, 1987.
- ⁸⁰ *Highlights of U.S. Exports*, forthcoming.
- ⁸¹ "Fertilizer Makers Get Ready for More Belt-tightening," *Chemical Week*, Feb. 18, 1987, p. 8.
- ⁸² *Producer Price Indexes: Data for January 1987* (Bureau of Labor Statistics, 1987).
- ⁸³ "U.S. Urea Makers Win a Round in a Dumping Suit," *Chemical Week*, Jan. 7-14, 1987, p. 59.
- ⁸⁴ "1987 U.S. Market Report: The Struggle Continues," *Electronics*, Jan. 8, 1987, p. 52.
- ⁸⁵ *Ibid.*
- ⁸⁶ *U.S. Foreign Trade in Machine Tools*, p. 1.
- ⁸⁷ "Weak Dollar and B.C. Labor Problems Raise Chances for Fourth-Quarter Pulp Price Hike," *Pulp and Paper Week*, Aug. 25-29, 1986, p. 4.
- ⁸⁸ "U.S. Cotton Situation and Outlook," *Cotton and Wool Situation and Outlook Report* (U.S. Department of Agriculture, November 1986), p. 4.
- ⁸⁹ *World Oilseed Situation and Market Highlights, FoP* (U.S. Department of Agriculture, December 1986), p. 8.
- ⁹⁰ "Oilseeds," *Agriculture Outlook* (USDA AO-123), September 1986, p. 12.

Trends in retirement eligibility and pension benefits, 1974–83

Although annuity increases benefited retirees at all ages studied, the rate of increase was greater for those retiring at ages 55 and 62, than at 65

DONALD BELL AND WILLIAM MARCLAY

Reduced age requirements for retirement and improved pension payments emerged as major changes between 1974 and 1983 in a sample of pension plans analyzed by the Bureau of Labor Statistics. A group of 187 pension plans either fully or partially paid for by employers was studied. The plans covered approximately 6.7 million workers in 1982, and were mainly those of large employers.¹ Eighty-seven percent of the pension plans studied covered 5,000 workers or more in 1982, with 33 percent covering at least 25,000 workers.

The plans were all those common to two BLS sample surveys: (1) a 1974 survey of pension plans whose provisions were filed with the U.S. Department of Labor under the terms of the Welfare and Pension Plan Disclosure Act of 1958, as amended; and (2) the 1983 Employee Benefits Survey of medium and large firms.² Although the plans in this analysis are not a representative sample of all pension plans, they do cover a large number of union and nonunion workers and illustrate the changing provisions for retirement during the 1974–83 period.

Age and service requirements

Pension plans typically require employees to have attained a certain age, a certain number of years of service, or both, to qualify for retirement benefits. Or, they may specify that the sum of the employee's age and years of

service equal a certain number, such as 85. Pension plans often specify more than one requirement; that is, they have "alternative requirements." In such cases, this analysis uses the requirement allowing retirement at the earliest age.

Normal retirement. Over the period studied, many of the plans lowered their age requirements to permit normal retirement prior to age 65. In 1974, 103 of the 187 plans provided for such benefits and by 1983, the number rose to 149. (See table 1.) Increased length-of-service requirements, however, typically accompanied the lowered retirement age. In 1974, 59 plans had no service requirement, whereas 30 plans required 30 years of service. By 1983, the pattern was reversed: 40 plans had no service requirement, while 50 required 30 years of service.

Where an age 65 requirement was eliminated from a plan, the new age was usually 62 or less. The following tabulation summarizes the changes in age and service requirements, using age 62 as a point of reference:

Age requirement for normal retirement	Number of plans	
	1974	1983
All plans	187	187
No minimum age, age 62, or earlier	102	148
Over age 62	85	39
Plans with age and/or service requirement	176	162
No minimum age, age 62, or earlier	91	123
Over age 62	85	39
Plans with sum of age and service requirement	11	25
No minimum age, age 62, or earlier	11	25
Over age 62	0	0

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Glossary of pension terms

Analysis of pension plan provisions is complicated by technical terms which permeate the pension literature. Some of the technical terms used in this article are defined below.

Dollar-amount formula: A formula for calculating benefits that yields pensions by crediting specific dollar amounts per year of service, sometimes limited to a specified maximum number of years. For example, a formula which provides \$20 a month per year of service for 30 years would yield \$600 per month.

Early retirement: Retirement before the normal retirement age. Early retirement pensions depend on earnings and service, but are reduced for each year prior to the normal retirement age.

Integrated pension plan: A private pension plan that is explicitly coordinated with Social Security.

Normal retirement: Retirement at the earliest age specified in a pension plan which entitles retirees to all accrued benefits by virtue of earnings and service, without reduction because of age.

Offset plan: An integrated pension plan that reduces private pension payments by a portion of the retiree's Social Security benefit.

Old-Age, Survivors, and Disability Insurance (OASDI): The old-age insurance program established by the Social Security Act, referred to as "Social Security" in text.

"Open-windows" for early retirement: Temporary offers for employees to retire early if they have met certain years-of-service, and age qualifications. These may be the same as or more liberal than early retirement. The incentives include pension benefits more liberal than those provided under a plan's

early retirement provisions, a lump sum bonus, or both a bonus payment and special ad hoc pension increases to the early retirement amount.

Percent of contribution formula: A formula for calculating benefits that yields pensions equal to a specified percent of the employee or employer career contributions or a specified percent of yearly contributions times years of service.

Replacement rate: Retirement annuity or total retirement benefits (pension and Social Security) as a percent of earnings in the final year of work.

Special early retirement: These are usually normal benefits, or reduced benefits plus supplements paid up to age 62, for employees retired by the employer because of layoffs, plant shutdowns, disabilities which did not qualify for disability retirement, or in situations of mutual consent of the employer and employee.

Supplemental benefits: Benefits added to the early retirement amount which expire at age 62 or 65. They range from specified flat amounts to amounts varying by age at the time benefits are paid and by years of service. Supplements may also be available at normal retirement, but these are usually added on only for retirements prior to receipt of Social Security benefits at age 62 or 65.

Taxable wage base: The maximum wage or salary subject to Social Security payroll taxes. The wage base was \$32,400 in 1982, the last year of earnings covered by this study.

Terminal (final) earnings formula: A formula for calculating benefits that yields pensions based on average earnings in the final years of credited service—often the last 3 or 5 years.

In 1983, most of the 148 plans allowing normal retirement at age 62 or earlier fell broadly into two groups; those permitting retirement at 55 with no more than 30 years' service (55 plans) or those requiring age 60 or 62 (83 plans). The largest growth between 1974 and 1983 occurred in the first group—rising from 29 to 55 plans, or from 16 to 29 percent of the plans studied.³

Alternative requirements. In many instances, plans reduced the normal retirement age to what previously had been an early retirement age. But, as noted above, more years of service were required at these younger ages. At the same time, the plans retained the prior requirements—such as age 65 and no stipulated years of service—as alternatives. This protected older employees with short service.

A total of 131 plans had alternative age and service requirements in 1983, a 54-percent increase from 1974. Usually, age 65 was the alternative retirement age in plans with normal benefits at age 62; retirement by age 62 or 65 was often an alternative in plans with normal benefits prior to age 62. Most plans did not specify any length-of-service requirements for retirement at age 65, but retirement at age 62 typically required 10 to 15 years' service.

Early retirement. Nearly all the plans in 1974 and 1983 permitted retirement before the normal retirement age, but with a reduction in benefits. However, as table 2 indicates,

many plans revised the age and service requirements for early retirement during this period.

The overall effect was to lower age and service qualifications. Twelve fewer plans in 1983 required employees to be at least age 60 before being eligible for early retirement, and none required age 62. In 1983, 158 plans allowed retirement at age 55, up from 143 in 1974. Among plans permitting early retirement at age 55, the average years-of-service requirement dropped from about 10 years and 3 months to about 7 years and 2 months in 1983. These developments are shown in the following summary of age and service requirements for early retirement:

Age	Years of service	1974	1983
Total	—	182	185
None	30	8	8
55	0	20	22
55	5	8	10
55	10	52	69
55	15	23	24
60	10	10	10
60	15	15	5
Age + service = 85	—	9	10
Other age and service requirements ...	—	37	27

Retirement benefits

To permit evaluation of changes in pension benefit formulas, we calculated normal and early retirement benefits

for hypothetical employees retiring at age 65 on January 1, 1975, and January 1, 1983, after 20 or 30 years of service.⁴ Benefits were computed using three earnings assumptions for the employees' final year of work. For the 1983 retirees, \$20,000, \$30,000, and \$40,000 were selected to represent workers at lower, middle, and upper earnings levels in 1982, the last year before retirement. For the 1975 retirees, earnings of \$11,000, \$16,500, and \$22,000 were derived by adjusting the 1982 figures downward to reflect the 81-percent average earnings growth from 1974 to 1982 as calculated by the Social Security Administration.⁵

Table 3 summarizes our computations for three employee groups: 1) professional and administrative employees; 2) technical and clerical employees; and 3) production employees. To develop data by employee group, we averaged calculated benefits for individual pension plans across all plans covering employees in that group. (Averages were not weighted by the number of plan participants.⁶) Also included in the table are replacement rates, which express the pension benefit as a percentage of preretirement earnings. Replacement rates yield insights into the adequacy of pensions in maintaining the worker's preretirement standard of living. In this analysis, the calculated pension payments were divided by the corresponding final-year earnings levels chosen for each year.⁷

Normal retirement benefits. Private pension benefits replaced, on average, a higher portion of preretirement income in 1983 than in 1975. For blue-collar (production) workers retiring at age 65, replacement rates typically increased by 5 or 6 percent over the time span reviewed. For

example, the replacement rate for production workers with 30 years of service was 25.5 percent for the middle earnings level in 1975, compared with 27.0 percent in 1983. For white-collar workers (professional-administrative and technical-clerical), replacement rates were relatively unchanged at the lowest earnings level, but increased 2 to 3 percent at the higher levels. Replacement rates for technical and clerical workers with 30 years of service, for example, rose from 29.3 percent for the middle earnings level in 1975 to 30.1 percent in 1983—an increase of 3 percent. (See table 3.)

The growth of income replacement rates was much more pronounced when Social Security benefits were added. Total replacement rates (private pension plus Social Security) typically increased by 12 to 14 percent for blue-collar workers and 10 to 14 percent for white-collar workers. For example, the total replacement rate for production workers with 30 years of service was 48.5 percent for the middle earnings level in 1975, compared with 55.2 percent in 1983. During these years, the Social Security taxable wage base was increased from \$13,200 to \$32,000. In addition, Social Security benefits were periodically improved and the method used to determine average earnings (which affects benefit calculations) was modified.

Table 3 also shows that pension replacement rates tended to decline for blue-collar workers as earnings increased—just opposite the pattern for white-collar workers. This reflects differences in the pension benefit formulas between the two groups. Most blue-collar workers were covered by dollar-amount benefit formulas, which yield pensions independent of earnings levels. These plans base the monthly

Table 1. Minimum age and associated service requirements for normal retirement under 187 private pension plans, 1974 and 1983

Minimum service requirements	All plans				Number without age requirements		Plans with age requirements of —							
	Number ¹		Percent				55		60		62		65	
	1974	1983	1974	1983	1974	1983	1974	1983	1974	1983	1974	1983	1974	1983
Total	187	187	100	100	22	38	10	22	21	31	46	52	84	38
No service requirement	59	40	31.6	21.4	—	—	—	—	5	4	10	7	44	28
With service requirements—														
1-4 years	4	3	2.1	1.6	—	—	—	—	3	2	—	—	1	1
5 years	13	7	7.0	3.7	—	—	—	—	1	6	5	7	7	1
10 years	39	36	20.9	19.3	—	—	—	—	—	6	12	21	26	8
11-14 years	1	3	0.5	1.6	—	—	—	—	—	1	3	—	—	—
15 years	12	8	6.4	4.3	—	—	—	—	1	4	5	4	6	—
20 years	9	8	4.8	4.3	—	—	3	1	3	—	2	4	—	—
25 years	4	3	2.1	1.6	—	—	—	—	2	1	2	2	—	—
30 years	30	50	16.0	26.7	17	27	2	11	3	7	6	5	—	—
More than 30 years	5	4	2.7	2.1	1	1	2	—	2	2	—	—	—	—
Sum of age plus service equals ² —														
75	3	3	1.6	1.6	—	—	1	1	—	1	2	1	—	—
76	—	1	—	0.5	—	—	—	1	—	—	—	—	—	—
80	—	3	—	1.6	—	1	—	2	—	—	—	—	—	—
85	5	13	2.7	7.0	2	5	2	6	1	2	—	—	—	—
90 or more	3	5	1.6	2.7	2	4	—	—	1	1	—	—	—	—

¹ The sum of plans does not equal totals because the groups for certain ages were too small to be included. In 1974, two plans had an age requirement of less than 55, one required age 56-59, and one required age 63-64. In 1983, three plans required age 56-59, two required age 61, and one required age 63-64.

² One plan in both 1974 and 1983 with a sum of age plus service requirement also specified a minimum length of service.

NOTE: Because of rounding, sums of individual percentages may not equal totals. A dash indicates no plans in this category.

Table 2. Minimum age and associated service requirements for early retirement under 187 private pension plans, 1974 and 1983

Minimum service requirements	All plans				Number without age requirements		Number with age requirements									
	Number of plans		Percent				Less than 55		55		56-59		60		62	
	1974	1983	1974	1983	1974	1983	1974	1983	1974	1983	1974	1983	1974	1983	1974	1983
Total	187	187	100	100	14	15	10	10	119	133	11	11	27	16	1	—
Plan with early retirement	182	185	97.3	98.9	—	—	—	—	20	22	—	—	—	—	—	—
No service requirements	20	22	10.7	11.8	—	—	—	—	20	22	—	—	—	—	—	—
With service requirements:																
1-4 years	1	—	0.5	—	—	—	1	—	—	—	—	—	—	—	—	—
5 years	11	12	5.9	6.4	—	—	—	1	8	10	1	—	2	1	—	—
6-9 years	1	—	0.5	—	—	—	—	—	1	—	—	—	—	—	—	—
10 years	66	83	35.3	44.4	—	—	3	3	52	69	1	1	10	10	—	—
11-14 years	1	1	0.5	0.5	—	—	—	—	1	1	—	—	—	—	—	—
15 years	40	31	21.4	16.6	—	—	1	2	23	24	—	—	15	5	1	—
20 years	13	5	7.0	2.7	1	—	3	1	9	4	—	—	—	—	—	—
25 years	—	2	—	1.1	—	1	—	1	—	—	—	—	—	—	—	—
30 years	8	9	4.3	4.8	8	8	—	—	—	—	—	1	—	—	—	—
Sum of age plus service equals ¹ —																
70 or less	4	4	2.1	2.1	2	1	—	1	2	2	—	—	—	—	—	—
75	4	4	2.1	2.1	2	3	2	1	—	—	—	—	—	—	—	—
76-79	—	1	—	0.5	—	1	—	—	—	—	—	—	—	—	—	—
80	3	1	1.6	0.5	1	1	—	—	2	—	—	—	—	—	—	—
85	9	10	4.8	5.3	—	—	—	—	1	1	9	9	—	—	—	—
90 or more	1	—	0.5	—	—	—	—	—	1	—	—	—	—	—	—	—
Plans without early retirement	5	22	2.7	1.1	—	—	—	—	—	—	—	—	—	—	—	—

¹ Three plans in 1974 and eleven plans in 1983 included a minimum years-of-service requirement.

² One plan provided normal retirement benefits at age 60, the other at age 62.

NOTE: Because of rounding, sums of individual percentages may not equal totals. A dash indicates no plans in this category.

pension benefit on a specified dollar amount (for example, \$20) for each year of service. Most white-collar workers, however, were in plans with terminal earnings benefit formulas, which increase pensions as earnings rise. These plans base the pension benefit on the worker's earnings in the last or highest few (usually 3 or 5) years of service.

Benefit reductions for early retirement

Early retirees receive less benefits than their counterparts retiring at the normal retirement age because, on average, they are expected to receive plan payments over a longer time, and their pension funds have accumulated for fewer years. Early retirement benefits are determined by first calculating the normal retirement benefit payable, given the employee's earnings and service, and then applying a "reduction factor" to this annuity. Reductions are either "actuarial" or "arithmetic." Actuarial reductions adjust fully for the longer payment period by considering the employee's age and life expectancy at retirement. Arithmetic reduction factors (which include uniform percentage reductions for each year prior to normal retirement age, reductions varying by age bracket, reductions varying by service, or some combination of these) are not actuarial—although in some instances their effects may approximate the results of using actuarial tables.

Considerable change occurred between 1974 and 1983 in the approach used to calculate reductions for early retirement. As table 4 indicates, most of the 1983 plans specified uniform percentage reduction factors for each year below a

specified age; in 1974, the most common approach called for reductions varying by age.

Nevertheless, the changes that occurred had little effect on the rate of reduction. For employees taking early retirement at age 55 after 30 years of service, the average reduction in 1983 was 4.4 percent for each year between normal retirement age and age 55, about the same as in 1974 (4.3 percent).

The total percentage reduction (as distinguished from the reduction per year below normal retirement age) did decline, however, because of a drop in the normal retirement age from age 63.5 on average in 1974 to 62.6 in 1983. In the plans studied, pensions for early retirement in 1974 at age 55 after 30 years of service were, on average, 36.6 percent less than normal retirement pensions for the same length of service. The comparable reduction in 1983 was 33.5 percent.

One must consider, therefore, the joint effect of reduced age requirements for normal retirement and changes in early retirement reduction factors. The following sections examine changes in benefits to employees retiring at specified ages—62 and 55. The changes, of course, also reflect alterations in formulas for calculating benefits.

Benefits for retirement at specified ages

Age 62. Pensions are usually lower for workers retiring at age 62 rather than age 65 because, for some plans, age 62 is an early retirement age, thereby triggering reduction factors. Total retirement benefits (pensions plus Social Secu-

Table 3. Average retirement benefits for hypothetical employees retiring under 187 private pension plans at age 65 on January 1, 1975, and January 1, 1983, with 20 and 30 years of service by specified final year's earnings

Year of retirement and final year's earnings	Private pension				Combined pension and Social Security			
	Annual benefit		Replacement rate ¹		Annual benefit		Replacement rate ¹	
	20 years' service	30 years' service	20 years' service	30 years' service	20 years' service	30 years' service	20 years' service	30 years' service
Professional and administrative workers								
1975								
\$11,000	\$2,172	\$3,115	19.7	28.3	\$5,899	\$6,842	53.6	62.2
16,500	3,261	4,828	19.8	29.3	7,055	8,622	42.8	52.2
22,000	4,702	6,700	21.4	30.5	8,496	10,494	38.6	47.7
1983								
\$20,000	\$3,950	\$5,748	19.8	28.7	\$11,966	\$13,764	59.8	68.8
30,000	6,118	9,015	20.4	30.7	14,578	17,475	48.6	58.2
40,000	8,740	12,762	21.8	31.9	17,224	21,246	43.1	53.1
Technical and clerical workers								
1975								
\$11,000	\$2,208	\$3,143	20.1	28.6	\$5,935	\$6,870	54.0	62.5
16,500	3,288	4,842	19.9	29.3	7,082	8,636	42.9	52.3
22,000	4,717	6,699	21.4	30.4	8,511	10,493	38.7	47.7
1983								
\$20,000	\$3,994	\$5,777	20.0	28.9	\$12,010	\$13,793	60.7	68.9
30,000	6,144	9,017	20.5	30.1	14,604	17,477	48.7	58.3
40,000	8,745	12,734	21.9	31.8	17,229	21,218	43.1	53.0
Production workers								
1975								
\$11,000	\$2,200	\$3,142	20.0	28.6	\$5,927	\$6,869	53.9	62.4
16,500	2,980	4,211	18.1	25.5	6,774	8,005	41.1	48.5
22,000	3,766	5,397	17.1	24.5	7,560	9,191	34.4	41.8
1983								
\$20,000	\$4,213	\$6,030	21.1	30.2	\$12,229	\$13,760	61.1	68.8
30,000	5,404	8,112	18.0	27.0	13,864	16,572	46.2	55.2
40,000	7,233	10,279	18.1	25.7	15,717	18,763	39.3	46.9

¹Retirement annuity or total retirement benefits (private and Social Security) as a percent of earnings in the final year of work.

Table 4. Early retirement reduction factors in 187 private pension plans, 1974 and 1983

Type of reduction factor	1974		1983	
	Plans	Percent	Plans	Percent
All plans	187	100	187	100
Plans allowing early retirement	182	97.3	185	98.9
Uniform percentage ¹	80	42.8	100	53.4
Less than 3.0	2	1.1	6	3.2
3.0	18	9.6	19	10.2
3.1-3.9	5	2.7	3	1.6
4.0	11	5.9	13	7.0
4.1-4.9	5	2.7	6	3.2
5.0	14	7.5	15	8.0
5.1-5.9	3	1.6	1	0.5
6.0	20	10.7	31	16.6
6.6-6.7	2	1.1	4	2.1
7.2	—	—	2	1.1
Percentage varies by age	99	52.9	83	44.4
Reduction differs for each year of early retirement ²	69	36.9	29	15.5
Reduction differs by age ³	30	16.0	54	28.9
Percentage varies by service	3	1.6	2	1.1
Plans with no early retirement provision	5	2.7	2	1.1

¹ In specific cases, uniform percentage reductions may approximate actuarial reductions, such as early retirement at age 55 with a 5.5- or 6-percent-per-year reduction between age 55 and the plan's normal retirement age of 62.

² Reduction schedule is related to actuarial assumptions of the life expectancy at age that pension payments begin.

³ Rate of reduction is held constant within age brackets, but differs among brackets, some-

times in approximation of an actuarial table. For example, benefits may be reduced by 6.7 percent for each year between age 60 and the plan's normal retirement age, and by 3.3 percent for each year retirement precedes 60. Also includes some plans which reduce benefits arithmetically for each year immediately below normal retirement age and actuarially below a specified age, usually 55.

NOTE: Because of rounding, sums of individual percentages may not equal totals. A dash indicates no plans in this category.

Table 5. Average retirement benefits for hypothetical employees retiring under 187 private pension plans at age 62 on January 1, 1975, and January 1, 1983, with 20 and 30 years of service, by specified final year's earnings

Year of retirement and final year's earnings	Private pension						Combined pension and Social Security			
	Annual benefit		Percent of age 65 benefits		Replacement rate ¹		Annual benefit		Replacement rate ¹	
	20 years' service	30 years' service	20 years' service	30 years' service	20 years' service	30 years' service	20 years' service	30 years' service	20 years' service	30 years' service
Professional and administrative workers										
1975										
\$11,000	\$1,908	\$2,941	87.8	94.4	17.3	25.8	\$4,890	\$5,923	44.4	53.8
16,500	3,117	4,520	95.5	93.6	18.9	27.4	6,154	7,557	37.3	45.8
22,000	4,119	6,274	87.6	93.6	18.7	28.5	7,156	9,311	32.5	42.3
1983										
\$20,000	\$3,794	\$5,676	96.0	98.8	19.0	28.4	\$9,722	\$11,604	48.6	58.0
30,000	5,928	8,800	96.9	97.6	19.8	29.3	12,204	15,076	40.7	50.2
40,000	8,376	12,434	95.8	97.4	20.9	31.1	14,676	18,734	36.7	46.8
Technical and clerical workers										
1975										
\$11,000	\$1,946	\$2,971	88.1	94.5	17.7	27.0	\$4,928	\$5,953	44.8	54.1
16,500	3,146	4,536	95.7	93.7	19.1	27.5	6,128	7,573	37.1	45.9
22,000	4,139	6,276	87.7	93.7	18.8	28.5	7,176	9,313	32.6	42.3
1983										
\$20,000	\$3,840	\$5,705	96.1	98.8	19.2	28.5	\$9,768	\$11,633	48.8	58.2
30,000	5,955	8,804	96.9	97.6	19.8	29.4	12,231	15,080	40.8	50.3
40,000	8,384	12,408	95.9	97.4	21.0	31.0	14,684	18,708	36.7	46.8
Production workers										
1975										
\$11,000	\$1,991	\$2,942	90.5	93.6	18.1	26.7	\$4,973	\$5,924	45.2	53.8
16,500	2,661	3,964	89.3	94.1	16.1	24.0	5,698	7,001	34.5	42.4
22,000	3,432	5,060	91.1	93.8	15.6	23.0	6,469	8,097	29.4	36.8
1983										
\$20,000	\$3,977	\$5,862	94.4	97.2	19.9	29.3	\$9,905	\$11,790	49.5	59.0
30,000	5,332	7,865	98.7	97.0	17.8	26.2	11,608	14,141	38.7	47.1
40,000	6,835	10,209	94.5	99.3	17.1	25.5	13,135	16,509	32.8	41.3

¹ Retirement annuity or total retirement benefits (private and social security) as a percent of earnings in the final year of work.

ity) are also lower because Social Security benefits at age 62 are only 80 percent of those payable at age 65.⁸ For these reasons, the benefit levels and replacement rates shown in table 5 are lower than those shown in table 3.

However, the pace of increase in age 62 private pension replacement rates was double that for workers retiring at age 65. Pension replacement rates grew by 9 to 11 percent for blue-collar workers and by 4 to 12 percent for white-collar workers retiring at age 62. For example, the replacement rate for production workers with 30 years of service was 24.0 percent for the middle earnings level in 1975, compared with 26.2 percent in 1983—an increase of 9 percent. This stems largely from the lowering of age requirements for normal retirement. Because many of the plans in the study lowered the normal retirement age from 65 to 62 or below, more workers could retire at age 62 with unreduced benefits in 1983 than in 1975.

As a result of the changes in provisions, the average reduction for retirement at age 62, compared with benefits

at age 65, was less in 1983 than in 1975. Pensions for age 62 retirees with 20 years of service were typically 88 to 96 percent of the pensions for age 65 in 1975, compared with 94 to 99 percent in 1983. (See table 5.) A similar pattern held for workers with 30 years of service.⁹

Age 55. For most plans, age 55 is an early retirement age. However, Social Security benefits are not payable to workers until they reach age 62. Thus, the benefit levels for age 55 retirees in table 6 are significantly lower than those shown for age 62 retirees in table 5.

Between 1975 and 1983, increases in pension replacement rates for workers retiring at age 55 varied considerably. For workers with 20 years of service, replacement rates increased by 3 to 6 percent for blue-collar workers and 2 to 7 percent for white-collar workers—both substantially below the rate of increase for age 62 retirees. For workers 55 years of age with 30 years of service, replacement rates increased by 11 to 14 percent for blue-collar workers and 11

Table 6. Average retirement benefits for hypothetical employees retiring under 187 private pension plans at age 55 on January 1, 1975, and January 1, 1983, with 20 and 30 years of service, by specified final year's earnings

Year of retirement and final year's earnings	Annual benefit		Percent of age 65 benefits		Replacement rate ¹	
	20 years' service	30 years' service	20 years' service	30 years' service	20 years' service	30 years' service
Professional and administrative workers						
1975						
\$11,000	\$1,324	\$2,158	61.0	69.3	12.0	19.6
16,500	2,099	3,302	64.4	68.4	12.7	20.0
22,000	2,928	4,521	62.3	67.5	13.3	20.6
1983						
\$20,000	\$2,537	\$4,588	64.2	79.8	12.7	22.9
30,000	3,899	6,721	63.7	74.6	13.0	22.4
40,000	5,661	9,556	64.8	74.9	14.2	23.9
Technical and clerical workers						
1975						
\$11,000	\$1,351	\$2,176	61.2	69.2	12.3	19.8
16,500	2,119	3,310	64.4	68.4	12.8	20.1
22,000	2,941	4,520	62.3	67.5	13.4	20.5
1983						
\$20,000	\$2,567	\$4,600	64.3	79.6	12.8	23.0
30,000	3,918	6,716	63.8	74.5	13.1	22.4
40,000	5,664	9,527	64.8	74.8	14.2	23.8
Production workers						
1975						
\$11,000	\$1,329	\$2,150	60.4	68.4	12.1	19.5
16,500	1,872	2,948	62.8	70.0	11.3	17.9
22,000	2,441	3,785	64.8	70.1	11.1	17.2
1983						
\$20,000	\$2,550	\$4,451	60.5	73.8	12.8	22.3
30,000	3,512	6,053	65.0	74.6	11.7	20.2
40,000	4,556	7,590	63.0	73.8	11.4	19.0

¹ Retirement annuity as a percent of earnings in the final year of work.

to 17 percent for white-collar workers. These divergent trends are primarily attributable to plans permitting unreduced pensions for workers with 30 years of service. In 1983, 55 plans permitted normal retirement benefits to employees age 55 or younger with 30 years' service, compared with 29 plans in 1974. Unreduced pensions were provided to employees age 55 or under with less than 30 years' service by only two plans in 1983 and three plans in 1974.

Again, a similar pattern emerges when comparing pension benefits payable at age 55 with those payable at age 65. (See table 6.) Over the period studied, improvements in benefits at age 55 resulted from (1) the increase in plans applying early retirement reduction factors from ages 60 or 62 to age 55 rather than from ages 62 or 65 to age 55 (for example, 25 plans had such changes for professional and administrative employees), and (2) the increase in plans providing normal benefits at age 55 and 30 years' service rather than at age 62 (12 plans for professional and administrative employees).

Supplemental pension benefits

Some retirees receive benefit payments in addition to

those provided by their pension plan's regular benefit formula. These supplemental pension benefits help to compensate early retirees for the lack of Social Security payments.¹⁰

Plans providing supplemental benefits for *early* retirement at employee option covered 11 percent of all plan participants in the BLS 1984 Employee Benefits Survey, and plans providing supplements for *normal* retirement prior to age 62 covered 10 percent of all participants in BLS' 1982 survey.¹¹ Such plans usually offered supplemental payments for employees retiring at age 55 or prior to receipt of reduced Social Security benefits at age 62. Supplemental benefits were frequently equal to or more than the Social Security amount, and either compensated for early retirement reductions, or for the absence of Social Security benefits. The effect was to provide approximately the same total benefit before and after receipt of Social Security benefits.¹²

Finally, some employers offer "open-windows" for early retirement, typically at age 50 to 55 with 10 years of service, either with supplements to age 62 or more liberal early retirement benefits. Such inducements are offered for temporary periods ("windows") of 2 to 6 months at a time. These opportunities are provided to cut payroll costs during

periods of recession, adverse business conditions, or corporate reorganizations. For example, a recent Conference Board survey reported that 36 percent of surveyed respondents offered such "open-windows" at least once from 1970 to 1983. Two of five companies offering such retirements had made more than one offer, with a concentration of the most recent offers in 1982 and 1983.¹³

While financial inducements to retire prior to age 62 do not always make up for the absence of Social Security benefits, a significant group of plans does offer compensating benefits. These include plans with full benefits at age 55 and 30 years' service, plans with normal or early retirement supplements to age 62, plans with temporary "open-windows," and plans with "special early retirement" clauses.¹⁴

A 1985 update

Of the 187 pension plans in this study, 123 reappeared in the 1985 Employee Benefits Survey sample. Changes in age/service requirements for early or normal retirement and in early retirement reduction factors were infrequent since 1983. However, changes in benefit formulas affected 36 plans. A total of 32 plans improved benefits—26 by increasing dollar amount formulas. Changes in benefit formulas affecting three plans could have a negative effect on pension payments, by lowering formula yields or deleting alternative formulas. Although most of the 26 plans with improved dollar-amount formulas raised the rate of benefit accrual by less than 10 percent, nine improved benefits by an average of 48 percent. □

—FOOTNOTES—

¹ 1982 was the last year in which participation data were available for most plans from the files of the Department of Labor's Pension and Welfare Benefits Administration.

² The latter study is part of a series of annual surveys conducted in private sector establishments employing at least 50, 100, or 250 workers, depending on the industry. Industrial coverage includes: mining; construction; manufacturing; transportation, communications, electric, gas, and sanitary services; wholesale trade; retail trade; finance, insurance, and real estate; and selected services. Findings for 1983 are reported in *Employee Benefits in Medium and Large Firms, 1983*, Bulletin 2213 (Bureau of Labor Statistics, 1984). For information on the background and conduct of the survey, see Robert Frumkin and William Wiatrowski, "Bureau of Labor Statistics takes a new look at employee benefits," *Monthly Labor Review*, August 1982, pp. 41–45.

³ This group includes plans specifying age or service requirements, or both, and those calling for a designated sum of age and service.

⁴ The 1974 survey studied plan provisions in effect as of September 1974. Because January 1, 1975, was closer to this reference date than January 1, 1974, it was chosen as the hypothetical retirement date. Similarly, January 1, 1983, was chosen as the retirement date closest to the plan provisions surveyed in March of 1983.

⁵ *Social Security Bulletin, Annual Statistical Supplement, 1983–1985* (U.S. Department of Health and Human Services, Social Security Administration), table I, p. 30.

⁶ Where a pension plan contained more than one formula, the formula used was that which provided the greatest benefit at a given earnings level and length-of-service combination.

⁷ See the appendix to the article by Donald G. Schmitt, "Today's pension plans: how much do they pay?" *Monthly Labor Review*, December 1985, pp. 19–25, for an explanation of the methodology and assumptions used in calculating pension benefits at age 65. The tabulations in the present article differ from Schmitt's mainly by inclusion of formulas based on contributions as well as other benefit formulas.

⁸ Social Security benefits are reduced by 6.7 percent for each year payments begin prior to age 65.

In an effort to modify the trend towards earlier retirement, the Social Security Act was amended in 1983 to move the normal retirement age to

age 66 and age 67, commencing in the year 2000. See the *Social Security Bulletin, Annual Statistical Supplement, 1983*, p. 12.

⁹ The other patterns noted previously for age 65 retirees were generally found for age 62 retirees: replacement rates declined as earnings increased for blue-collar workers but rose for white-collar workers; replacement rates increased even more sharply for workers with 30 years of service compared with those with 20 years; and replacement rates were higher for blue-collar than white-collar workers at the lowest earnings level, but the opposite was true at the two highest earnings levels.

¹⁰ According to a 1982 survey by Charles D. Spencer & Associates, monthly supplements were the "most frequently offered inducement" for early retirement. See *EBPR Research Reports*, January 1983, pp. 110.11.1–11.

¹¹ See *Employee Benefits in Medium and Large Firms, 1984*, Bulletin 2237 (Bureau of Labor Statistics, 1985), p. 12, for supplements for early retirement. Information on normal retirement supplements is based on unpublished tabulations from the 1982 Employee Benefits Survey.

¹² Such benefits are separate from level income options, which reduce pension benefits at age 62 to compensate for higher benefits during the initial years of retirement. Another 4 percent of plans in the BLS 1981 Employee Benefits Survey had formulas integrated with Social Security, but for early retirees the Social Security offsets were delayed to age 62 or 65. Such provisions had the effect of offering a supplemental benefit for the period of such postponement, and frequently compensated for the reductions required for early receipt of benefits. See Donald Bell and Diane Hill, "How Social Security payments affect private pensions," *Monthly Labor Review*, May 1984, p. 20.

¹³ Shirley H. Rhine, *Managing Older Workers: Company Policies and Attitudes*, Report No. 860 (New York, The Conference Board, 1984), pp. 10–11. See also Elizabeth L. Meier, *Early Retirement Incentive Programs: Trends and Implications*, Public Policy Document, 8604 (Washington, American Association of Retired Persons, December 1986).

¹⁴ For a discussion of trends toward earlier retirement and the implications for public policy, see Employee Benefit Research Institute, *Economic Incentives for Retirement in the Public and Private Sectors*, EBRI Issue Brief No. 57 (August 1986); and General Accounting Office, *Retirement Before Age 65: Trends, Costs, and National Issues*, Report GAO/HRD-86-86 (Washington, 1986).

Technological change and employment: some results from BLS research

Bureau studies indicate that the pace of technological change varies considerably by industry; affected workers are more likely to be transferred to new jobs

JEROME A. MARK

Technological change and its impact on the work force have become a focus of attention in the United States and abroad. The innovations include advanced communication systems, industrial robots, flexible manufacturing systems, computer-assisted design (CAD), and computer-assisted manufacturing (CAM). These modern technologies incorporate powerful and low-cost microelectronic devices that have the potential to increase productivity in office and factory production tasks. They share widespread appeal and are being diffused throughout the world.

There are, however, conflicting views about the implications of changing technology for employment. Some experts say that the pace of technological change is accelerating and that thousands of workers in plants and offices are affected as laborsaving innovations are diffused more widely. These experts contend that recent innovations represent a sharp departure from earlier changes, and that techniques for maintaining job security will be essential. Other analysts assert that technological change is beneficial for all groups in our society, that the changes are more evolutionary than revolutionary in nature, and that technology ultimately creates more jobs than it eliminates.

Concern about changing technology has been continual over our history—usually increasing during periods of higher-than-average unemployment, and abating somewhat

when the economy and employment are expanding. Consequently, the Bureau of Labor Statistics has been studying technological change and its impact on the work force for a long time.

Assessing the impact of technology is very complex. Technological changes interact with, and are affected by, changes in output, consumption patterns, international competition, and other factors, and the relationship between changing technology and employment is by no means clear. Although the Bureau's technology studies do not provide comprehensive answers about any relationship, they do yield some useful insights. This article reports on some of the findings of these studies.

BLS research on technological change

In the mid-1950's, in response to concern about the implications of developments classified under the general term "automation," BLS began an intensive evaluation of the likely effects of the diffusion of electronic computers and other changes. To explore the impact of these emerging technologies on productivity, employment, job skills, and labor-management relations, the Bureau conducted a series of plant-level case studies in industries such as petroleum refining and electronics.

Currently, the program's focus is the preparation of a series of industry technology outlook reports which describe the types of changes gaining importance in key industries, explore the prospects for their further diffusion over the next

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decade, and analyze their impact on productivity, employment, occupational requirements, and labor-management relations.

A total of 35 industry reports, covering a cross-section of the economy, are available in the most recent series. The reports include industries such as motor vehicle manufacturing and telephone communications where the pace of change is rapid, as well as industries such as bakery products where change is slow.¹ These industry reports are based on visits to leading firms, interviews with company and union officials and suppliers of new technologies, and a review of a variety of published sources.

In addition to these reports, the Bureau conducts in-depth studies of major technologies that cut across industry lines. The impact of the introduction of computer-process control in six major industries, including steel and petroleum refining, was one of the innovations examined.²

These studies of major innovations that affect a number of industries are based primarily on intensive interviews with plant managers, technicians, affected employees, union officials, and others.

Major findings

The pace of introduction of new technology appears to be increasing in many industries as these industries modernize to reduce costs and compete more effectively in domestic and overseas markets. Our research confirms the general perception that advanced electronic computers, robots, flexible manufacturing systems, CAD/CAM, and technologies to increase productivity in office tasks are being introduced more extensively in industries, such as steel, motor vehicle manufacturing, metalworking, and banking, to name a few.

However, as would be expected in an economy as large as that of the United States, the pace of change varies by industry. It also varies among plants within an industry—not all have the funds or the volume of business that would support the adoption of the latest technologies, which often are very costly. Moreover, each industry has its own story and it is not always in terms of robots, computers, and other advanced technologies that receive the most widespread attention by the media. Conventional changes, including materials handling mechanization, larger capacity equipment, and machines with faster speeds are often major developments with implications for productivity, employment, and job skills.

In general, relatively few employees have been laid off because of technological change. The introduction of new technology can be consistent with higher levels of employment and minimal displacement when the economy is strong. Moreover, investment in new technology generally takes place during periods of economic expansion when there is also growth in employment.

When computers were introduced for office data applications in the United States in the mid-1950's, predictions that

large numbers of clerical and kindred workers would be displaced were voiced by some experts; and that job opportunities for millions of people, in what is one of the largest occupational employment categories, would be curtailed.

Yet, over the last three decades, employment of clerical workers has continued to increase. Table 1 shows the changes in employment by occupation for the United States, just in the last decade or so when the occupations affected would have been expected to diminish. Over the 14-year period, one-fourth of the employment growth in the United States was found among the professional, technical, and related workers. In addition to managers, administrators, and service workers, clerical workers were one of the broad occupational groups which experienced rapid growth in both absolute and relative terms.

However, significant declines in employment and in their share of total employment were found among operatives and private household workers. The decline among operatives (such as machine operators) was in part related to the depth of the 1981–82 recession when the number of jobs in durable manufacturing, where most operatives work, was lower than that in previous years. Subsequently, the recovery in durable manufacturing employment from 1982–86 has been accompanied by at least partial recovery in operative jobs. The recession probably also accounted, at least in part, for the slower-than-average growth among craftworkers, laborers, and transport operatives. The number of salesworkers increased during the 14-year period, but their share of employment changed very little.

Why did clerical employment increase and not decrease as predicted? First of all, normal growth in the volume of clerical work offset jobs eliminated by the computer. Sec-

Table 1. Employment by major occupational group, 1972–86

[Numbers in thousands]

Occupation	1972	1986	1972–86	
			Absolute change	Percent change
Total	82,153	109,597	27,444	+33.4
Professional, technical, and kindred ¹	11,538	18,532	6,994	+60.6
Managers and administrators ¹	8,081	11,385	3,304	+40.9
Salesworkers ²	5,383	10,935	5,552	+103.1
Clerical and kindred workers ²	14,329	20,055	5,726	+40.0
Craft and kindred workers	10,867	13,405	2,538	+23.4
Operatives, except transport	10,388	8,892	-1,496	-14.4
Transport operatives	3,223	3,583	360	+11.2
Laborers, except farm	4,242	4,685	443	+10.4
Farmers and farm laborers ³	3,077	3,444	367	+11.9
Service workers, except household	9,584	13,699	4,115	+42.9
Private household workers	1,442	981	-461	-32.0

¹ To improve the comparability of these data, we include accountants with professional occupations rather than with managers for 1986.

² For 1986, cashiers are included with clerical workers rather than with salesworkers.

³ The 1986 figures include forestry and fishery occupations.

NOTE: These data are from the Current Population Survey. The data are on a "person" concept and, therefore, count each individual only once, even if he or she is a multiple jobholder. The occupational classification in the household survey was changed in 1983 so that strictly comparable data are not available for 1983 forward.

ond, the introduction of computers made possible work that was previously impractical because it would have been too costly and time consuming. This is true in everyday-management functions where it is now possible to prepare reports and analyses that previously were deemed desirable but too costly. Thus, the computer extended the scope of activities for many industries, creating employment opportunities.

In addition, the computer led to job opportunities in new occupations such as systems analyst, programmer, key-punch operator, console operator, and tape librarian. New industries to manufacture the computer and its related equipment and furniture were formed, resulting in employment for many workers in all types of occupations. Today, thousands of workers also are employed in manufacturing robots, microelectronic devices, advanced communication equipment, and other technologies that are gaining prominence.

The generally favorable experience in the United States also results from the various mechanisms to minimize adverse effects on the employees. At firms contacted by BLS, techniques such as providing advance notice, retraining, and reassigning displaced employees to alternate jobs have been of major importance in easing the introduction of new technology.

The adverse impact of change also is mitigated by the relatively long period required before most new technologies are widely diffused throughout industry. Thus, time usually is available to plan work force changes, undertake training, and carry out related measures to maintain job security.

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

Between 1980 and 1985, output per employee hour increased at an average annual rate exceeding 5 percent in such industries as motor vehicle manufacturing and telephone communications—industries which have modernized facilities to boost efficiency. These rates were well above the 1 percent per year productivity growth recorded by the nonfarm business sector as a whole during the same period.

New technologies are helping to change the structure of occupations. Professional and technical workers, computer systems analysts, and programmers are examples of groups increasing in importance. In contrast, the industry technology studies and BLS projections to 1995 indicate that the growth rate of operatives and laborers is slowing, as ad-

vanced machine tools, robots, computer-process control, and advanced materials-handling systems increase output per employee in key tasks.

Moreover, the content of jobs is being modified by technological change. Although job titles frequently remain the same while innovation is taking place, over time, employers have less demand for manual dexterity, physical strength for materials handling, and for traditional craftsmanship. In the printing industry, for example, electronic composition methods have replaced longstanding craft skills, and employment of compositors and typesetters has declined sharply.

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

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

From BLS research, the following three measures emerge as important:

- *Provide advance notice to workers affected by the new technology.* Advance notice is essential to assist orderly changeover to new methods. It provides time for individuals and unions, if the facility is organized, to formulate plans and to weigh carefully alternative jobs or layoff arrangements. Many companies that install new technology explain to their employees the objectives for introducing an innovation and some potential impacts on the work force. Some companies make extensive efforts to announce early in the changeover that affected employees will continue to have a job with the firm, though not necessarily the one they occupied before the new technology was implemented. Advance notice lessens anxiety and resistance to change and can serve as a positive first step to a cooperative labor-management approach to maintaining job security.
- *Coordinate labor adjustment with technical planning.* This technique increases the likelihood that attrition can be used to reduce the labor force, thereby minimizing the hardship of sudden layoffs and the loss of skilled and productive employees. In a study of planning for changeover in the telephone industry (BLS Bulletin 1574), for

example, the telephone companies followed the practice of projecting their labor requirements a year or two in advance. Displacement was minimized by controlling the hiring of permanent employees, through the use of temporary employees, overtime, and related measures, and by estimating attrition rates. As another technique, some companies time the introduction of new technology to a period of business expansion to cushion the impact.

- *Provide employees with new skills associated with modern technology and retrain those displaced for other work.* Modern technology requires an increasing amount of training. With the computer and similar complex equipment, training is becoming more formal, continuous, and costly, but essential to keep the work force up-to-date and flexible. Making available training opportunities can diminish resistance to change and hasten the diffusion of new technology with minimum hardship.

In the United States, substantial training in electronics and computer-related topics is provided in the private sector by business firms, labor unions, and educational institutions, including junior colleges. This training is provided both for those already in the labor force and for new entrants.

Technological change has important implications for personnel management and collective bargaining, and it has been found that the introduction of computers, advanced machine tools, and other innovations requires additional measures to maintain job security. The BLS reports show that measures such as advance notice, retraining, and reassignment of affected employees have been successful in facilitating orderly change, suggesting that others planning to introduce new technology should consider the strategies in planning their changes.

Conclusions

Several conclusions emerge from the Bureau's research on changing technology. Employment in the United States has experienced and is expected to continue to undergo vast changes in its industrial and occupational structure. The

pace of technological change varies considerably by industry and among plants within industries. In most industries studied, technological change displaces few workers when introduced, but is more likely to create dislocations involving transfer of employees to alternate jobs. The analyzed changes in technology show professional and technical occupations increasing, at least in part because of new technology, while operative, laborer, and other lower skilled jobs decline—at least relatively—with the advent of new technology.

The Bureau of Labor Statistics still projects clerical occupations in total to grow at about the same rate as total employment because the shifts in the distribution of demand away from goods production to services—where a larger share of employment is clerical—is expected to enhance the growth of clerical occupations. Some occupations associated with durable-goods industries are declining because of changes expected in technology or shifts in demand.

In many ways, however, the future may be as the past. Professional and technical occupations are projected to grow absolutely and relatively, in part because of changes expected in technology. Demand for lower skilled occupations—laborers, operatives, and farmworkers are projected to decline as both changes in technology and the distribution of demand work toward reducing requirements for jobs in these occupational groups.

Our tentative conclusion from these observations is that changing technology is not incompatible with employment growth. In the short run, dislocations take place, but these are associated as often with changing consumer preferences or governmental priorities or shifts from domestic to foreign producers as with the introduction of new technologies. Although, in many instances, some of the demand shifts may be the result of technology, they are generally slower than expected.

Still, the pace of technology needs to be kept in perspective. For example, even with 25 years of rapid growth in computers, there were, in 1980, still more hand bookkeepers in the United States than all workers of the computer-related occupations combined. □

—FOOTNOTES—

¹ The 35 reports are published in a series of 8 BLS Bulletins. The two recent bulletins, published in 1986, contain reports for the following industries: lumber and wood products, footwear, hydraulic cement, and wholesale trade in *Technology and Labor Developments in Four Industries* (BLS Bulletin 2236), and tires, aluminum, aerospace, and banking in *Technology*

and its Impact on Labor in Four Industries (BLS Bulletin 2242). See BLS Report 722, *BLS Publications on Productivity and Technology*, for a complete listing of the other 27 reports available in this series.

² *Outlook for Computer Process Control* (BLS Bulletin 1658).

Health insurance loss: the case of the displaced worker

Upon termination, most displaced workers lose employer-financed health insurance along with their jobs; data for 1983–84 suggest that such workers ran a high risk of remaining uninsured for extended periods, even after new employment was secured

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Increased import penetration, new automation technologies, and structural changes in industry have focused attention on labor market problems faced by dislocated workers in the United States. These concerns have stimulated research on the extent of the displacement problem, the adjustment cost for workers whose jobs are eliminated, and labor market policies to help these workers secure new work.¹ In this article, we examine one potentially serious problem faced by many displaced workers—the loss of employer-sponsored group health insurance benefits as a result of job displacement.

For most Americans who are covered by private medical insurance, coverage is a fringe benefit of their job, or the job of another family member. A special Labor Department survey in 1979 showed that 73 percent of full-time wage and salary workers in the private sector and 83 percent of workers in the public sector were covered by group health insurance on their job.² In the majority of cases, benefit premiums are paid by the employer. Even when employees make a contribution, their share is usually a small fraction of the total premium. When a worker's job is terminated, however, this employer-paid insurance quickly terminates as well, usually within 30 to 60 days after layoff.³

The perceived existence of a growing pool of persons who are uninsured because their jobs have been eliminated has led to numerous legislative proposals to extend health insurance coverage for displaced workers. Since the 1981–82 recession, the Congress has considered several bills which would extend health insurance benefits for unemployed workers, and recently enacted legislation allowing displaced workers to retain their group health insurance coverage at their own expense for up to 18 months following displacement.⁴ Legislation has also been introduced in the House and Senate which would, among other things, mandate extension of employer-paid insurance for up to 4 months following layoff.⁵ Two States have enacted legislation mandating extension of employer-paid benefits for some workers losing jobs due to plant shutdowns and relocations. A 1984 Massachusetts law requires employers to extend health insurance coverage for 90 days to workers displaced due to certain partial or complete plant shutdowns. Connecticut has passed similar legislation, which extends coverage for 120 days.⁶

While public policy in this area is moving forward, research has tended to lag because of a lack of data on the labor market adjustment difficulties of displaced workers. For example, it has not been possible to directly identify such workers in the monthly Current Population Survey (CPS) or any of its regular supplements, which are the pri-

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mary source of U.S. labor force data. In response to growing concern over the problem of plant shutdowns and job displacement, the Bureau of Labor Statistics added a special "Displaced Worker Survey" to the basic CPS in January 1984. For this analysis, we used the January 1984 CPS and a special January-March 1984 matched data file to examine health insurance loss among displaced workers.

The extent of the problem

In January 1984, all respondents from approximately 60,000 CPS households were asked whether they or any member of their household age 20 or older had ". . . lost or left a job since 1979 because of a plant closing, an employer going out of business, a layoff from which (he or she) was not recalled or other similar reasons." An affirmative response triggered 18 supplemental questions concerning the nature of the job lost and post-displacement labor market experience. These displacement questions, of course, supplement the extensive demographic and labor force data in the basic monthly CPS.

For this study, we drew a sample of workers between the ages of 20 and 64 whose full-time nonagricultural jobs had been eliminated between January 1979 and January 1984 due to plant shutdowns, business relocation or failure, slack work, and selected other reasons.⁷ Workers age 65 or older were excluded from the sample because they generally are eligible for medicare. Weighted national totals for this population are presented in the first row of table 1.

Over the 5-year study period, 9.8 million workers were displaced from full-time nonagricultural jobs. Most of these workers had been covered by group health insurance policies on their former job. Coverage rates, which are reported in the second row of the table, ranged from 60.5 percent for women in white-collar and service positions to 75.6 percent for men in the same occupational groups. In both the blue-collar and the white-collar and service categories, men were somewhat more likely to be covered than women.

Survey respondents were also asked whether the displaced worker was covered by any group health insurance policy in January 1984. Among those who had been covered by an employer group health insurance plan on their former job, 57.9 percent of blue-collar and 70.1 percent of white-collar and service workers reported that they currently were covered by some sort of group policy. Not surprisingly, the coverage rate was strongly associated with labor force status. For example, blue-collar workers who were not reemployed at the time of the January 1984 survey had a coverage rate of just 36.2 percent, while the rate for reemployed blue-collar workers was 71.0 percent.⁸

It is possible, of course, that some of the reemployed workers who lost group health insurance benefits may simply have "cashed out" of this fringe benefit and received higher earnings in return. The data in the lower portion of table 1 suggest that this is the exception rather than the rule, because workers reemployed with relatively large pay losses

Table 1. Group health insurance coverage of displaced workers, January 1984

Item	Blue-collar			White-collar and service		
	Total	Men	Women	Total	Men	Women
Total displaced (thousands) ¹	5,899	4,526	1,372	3,851	1,952	1,899
Percent with group health insurance on former job	70.9	72.1	66.8	68.2	75.6	60.5
Percent covered by any group plan in January 1984:						
Total	57.9	58.2	56.9	70.1	70.2	70.1
Not reemployed	36.2	33.9	42.2	46.1	37.6	53.4
Reemployed	71.0	71.2	70.3	79.6	80.1	78.8
Current/previous earnings ratio for the reemployed: ²						
1.00+ (no loss)	88.2	88.6	86.4	91.5	91.0	92.3
.75 to .999	78.7	79.0	77.3	87.1	90.2	83.1
Less than .75	60.2	61.3	55.7	65.0	67.7	62.1

¹ Workers displaced from full-time nonagricultural jobs between January 1979 and January 1984 who were between the ages of 20 and 65 in January 1984. Totals exclude a small number of workers previously employed as private household workers or for whom a former occupation was not recorded.

² Previous earnings were adjusted to reflect the trend growth of wage and salary earnings by occupation between the year of displacement and January 1984 using Employment Cost Index data from *Current Wage Developments*, May 1986, table 10, pp. 41-48.

also were much more likely to have lost health insurance benefits. For example, reemployed blue-collar workers whose January 1984 earnings matched or exceeded their former earnings had a coverage rate of 88.2 percent, while those earning less than 75 percent of their former pay had a coverage rate of 60.2 percent.

Coverage in 1983

It is possible to glean more detailed information about post-displacement health insurance coverage for a subsample of workers by drawing upon data collected in the Work Experience Survey which was administered with the March 1984 CPS. The Work Experience Survey is retrospective, eliciting information for the entire preceding calendar year—in this case 1983. Because one-quarter of CPS households leave the sample from one month to the next, approximately one-half of the households surveyed in the January 1984 sample were also reinterviewed in March. Using a special January-March matched data file constructed by the Bureau of Labor Statistics, we were thus able to draw upon the additional health insurance information in the March 1984 survey.⁹

In table 2, we report health insurance coverage data for workers displaced between 1979 and 1982. We have excluded workers displaced in 1983 because the questions in the March survey refer to health insurance coverage at any time during 1983 and we are concerned with coverage *after* displacement. Aside from this change, the sample corresponds to that used to calculate the percentages in the lower portion of table 1, that is, workers displaced from full-time nonagricultural jobs who previously had been covered by a

group health insurance policy.

The first row presents the percent of workers who reported that they were covered by an employer group policy at any time during 1983. Only 50.0 percent of blue-collar and 53.4 percent of white-collar and service workers were employed in jobs providing this fringe benefit during the year. The much lower rate for women reflects in part their lower reemployment rate. Among workers who were employed at any time in 1983, the coverage rate for men still exceeds that for women, but the gap is considerably smaller (65.9 percent versus 54.4 percent).

To what extent were workers who had earlier lost employer group health insurance covered by other types of health insurance in 1983? Rows two through five of table 2 present coverage rates for workers who reported that they were *not* covered by their own employer group policy during the year. The most common alternate source of coverage was the employer group plan of a spouse or another family member: 12.7 percent of blue-collar and 15.3 percent of white-collar and service workers reported such coverage. Within each occupational group, women were considerably more likely than men to be picked up by another family member's policy.

Medicaid provided coverage for 5.6 percent of displaced blue-collar and 2.9 percent of displaced white-collar and service workers. A small percentage of the workers reported that they were covered by military-related benefits such as CHAMPUS or VA benefits. Finally, 8.5 percent of the blue-collar and 12.3 percent of the white-collar and service workers reported that they were covered by some other unspecified type of health insurance policy. Unfortunately, the comprehensiveness and quality of insurance policies that fall into this residual category are not known; hence, these coverage rates should be interpreted with caution.

The sixth row of the table shows the percent of displaced workers who reported that they were covered by an employer group health insurance policy of their own or another family member. Finally, row seven shows the percent of workers who reported that they were covered by any of the health insurance policies listed in the first five rows of the table: 76.7 percent of blue-collar and 83.8 percent of white-collar and service workers reported coverage by at least one of these types of insurance at some time during 1983. Although female displaced workers were less likely to become reemployed on a job providing group health insurance, they were more likely to retain coverage through the alternative sources listed in the table. Thus, the comprehensive coverage rates within each occupational grouping are very similar for men and women.¹⁰

There are several possible explanations for the fact that the comprehensive coverage rates in row seven of table 2 are considerably higher than those reported in table 1. First, the employer group health insurance coverage questions in the March 1984 CPS supplement refer to coverage at any time during 1983, whereas the question in the January 1984

monthly survey concerns coverage in the survey reference week. The former coverage rate will tend to be greater than the latter if displaced workers continue to experience spells of unemployment which entail interruptions in insurance coverage. Second, the questions in the two surveys differed. In the January survey, respondents were asked whether they were currently covered by any group health insurance policy, but the statistics in row seven of table 2 refer to *all* types of health insurance coverage, including the unspecified residual category in the fifth row of the table, which may include some types of individual policies. Whether these other types of coverage are comparable to that provided on the former job, however, cannot be assessed.¹¹

In sum, the statistics in table 2 support the conclusion that a very large share of workers lose employer-sponsored group health insurance coverage as a result of displacement. Some of these workers retain coverage through the employer policy of another family member, but some must rely on government programs and many simply lose coverage.

OUR ANALYSIS SHOWS that workers who were displaced from full-time nonagricultural jobs between 1979 and January 1984 did, in fact, face a high risk of losing health insurance coverage for an extended period of time following displacement, even after new employment was secured. Many workers who lost employment-related group health insurance were able to fall back on coverage from another family member's policy, or on other types of insurance coverage, including government programs such as Medicaid

Table 2. Health insurance coverage by type in 1983 for workers having lost group coverage through displacement between 1979 and 1982

Type of coverage	Percent of workers covered at any time during 1983 ¹					
	Blue-collar			White-collar and service		
	Total	Men	Women	Total	Men	Women
Own employer group plan	50.0	53.7	36.5	53.4	62.2	42.5
Other:						
Employer plan of another family member	12.7	10.1	22.1	15.3	9.1	23.1
Medicaid	5.6	4.4	10.0	2.9	1.0	5.3
Military-related ²	2.0	2.0	2.2	2.0	.6	3.6
Other	8.5	7.6	11.6	12.3	11.4	13.3
Total covered by employer group plan (row 1 + row 2)	62.7	63.8	58.6	68.8	71.3	65.6
Total covered by any health insurance ³	76.7	76.0	79.0	83.8	84.6	83.1
Sample size	836	655	181	554	307	247

¹ The estimates, developed from a January-March matched data file, relate to workers displaced from full-time nonagricultural wage and salary jobs who had been covered by group health insurance on their previous job.

² Includes Civilian Health and Medical Program of the Uniformed Services (CHAMPUS), Veterans Administration (VA), and other military health care plans.

³ Percent of workers reporting coverage by any of the health insurance policies or programs in the first five rows of the table. Because some workers reported coverage by more than one program, this total is less than the sum of the first five rows.

or VA benefits. A sizable fraction, however, reported no coverage whatsoever. Information on the extent to which recent legislation allowing workers to continue their group coverage at their own expense reduces health insurance loss

rates awaits future surveys. Our findings do suggest that, for workers displaced between 1979 and 1983, the social safety net had holes. □

— FOOTNOTES —

¹ For example, see Paul O. Flaim and Ellen Sehgal, "Displaced workers of 1979-83; how have they fared?" *Monthly Labor Review*, June 1985, pp. 3-16; Richard M. Devens, Jr., "Displaced workers: one year later," *Monthly Labor Review*, July 1986, pp. 40-43. For a thorough survey of recent research on displaced workers, see U.S. Congress, Office of Technology Assessment, *Technology and Structural Unemployment: Reemployment of Displaced Adults*, OTA-ITE-250 (Washington, U.S. Government Printing Office, February 1986).

² U.S. Department of Labor, Labor-Management Services Administration, *Group Health Insurance Coverage of Private Full-Time Wage and Salary Workers, 1979* (Washington, 1981), pp. 30 and 51.

³ *Health and Life Insurance Benefit Plans*, Personnel Policies Forum Survey, 137 (Washington, Bureau of National Affairs, March 1984), pp. 21-22; and Daniel N. Price, "Health Benefits for Laidoff Workers," *Social Security Bulletin*, February 1976, pp. 40-51.

⁴ Workers covered by an employer group health insurance plan can extend their coverage for up to 18 months following layoff at their own expense (that is, they must pay the total insurance premium plus a 2-percent administrative fee). Widows, spouses, and dependents are eligible for up to 36 months of coverage under similar terms. This Federal law was part of the Budget Reconciliation Act of 1986 and became effective July 1, 1986.

⁵ This is one part of a more comprehensive Access to Health Care Act (S.2402).

⁶ Richard Nelson, "State labor legislation enacted in 1984," *Monthly Labor Review*, January 1985, pp. 27-42; and conversations with officials of the Massachusetts Division of Employment Security. According to the

National Center on Occupational Readjustment (NACOR), Massachusetts and Connecticut are the only two states with mandatory laws.

⁷ The omitted categories are: self-employed business failures; seasonal job ended; and "other." In omitting these categories we are using the same criteria as Flaim and Sehgal, "Displaced workers of 1979-83," and Devens, "Displaced workers: one year later." Unlike these authors, however, we do not limit our sample to workers with 3 or more years of tenure on their old job, but rather include any worker fitting the selection criteria described in the text, regardless of years of tenure.

⁸ If we restrict our sample to workers with 3 or more years of seniority on their former job, the health insurance coverage rates, not surprisingly, tend to be somewhat higher for both blue-collar (85.8 percent) and white-collar and service workers (81.2 percent). The January 1984 coverage rates for these tenured workers are nearly identical to those reported in table 1. The post-displacement coverage rates for the other subgroups shown in the lower portion of the table also are very similar.

⁹ We are indebted to Robert McIntire of the Bureau of Labor Statistics for constructing this matched file for us.

¹⁰ As with table 1, the post-displacement coverage rates for formerly insured workers with 3 or more years of tenure are very similar to those reported in table 2.

¹¹ A related factor may be that respondents in the March survey were prompted concerning the various types of health insurance (such as medicare, medicaid, or veterans benefits) whereas the respondents in the January survey were not. It is also possible that the January survey respondents did not recall coverage by some of these policies, or did not consider them "group" policies.

Two decades of productivity growth in poultry dressing and processing

Since 1963, this industry has witnessed varying degrees of productivity improvements, new processing techniques, and changes in demand; the largest increase in output per employee hour occurred in the early 1980's

ZIAUL Z. AHMED AND MARK SIELING

Output per employee hour in the poultry dressing and processing industry rose at an average annual rate of 2.9 percent between 1963 and 1985—slightly higher than the rate for all manufacturing, 2.3 percent.¹ Output increased 5.2 percent a year and employee hours, 2.3 percent. This long-term trend in productivity masks four distinct periods during which annual rates changed markedly. These rates moved as follows:

	Poultry	Manufacturing
1963-85	2.9	2.3
1963-70 .....	.9	1.6
1970-76	2.7	2.7
1976-80	2.0	1.1
1980-85	3.7	3.9

Prior to 1970, poultry processing was a predominantly manual operation, although some mechanization, such as killing machines, was introduced in the 1960's. Increases in output during this period nearly matched those in employee hours. In the early 1970's, automated eviscerating and cutting machines were widely installed, and helped hold down employee hours even as the output of poultry products increased. Output per employee hour jumped to about three times the annual rate registered in the 1960's. However, by the late 1970's, most of the productivity gains stemming

from this wave of automation had been realized, and output gains were often matched or exceeded by increases in employee hours. (See table 1.)

Between 1980 and 1985, output per employee hour again rose rapidly (3.7 percent). Poultry output increased at an average annual rate of 4.0 percent, spurred by growing consumer demand, higher valued poultry products (such as preformed patties), and new retail outlets in the fast food industry. Concurrently, the introduction of new processing technologies and streamlined Federal inspection procedures contributed to an average 0.3-percent a year advance in employee hours. In comparison, output of all manufacturing industries rose by 3.3 percent per year during this period, and employee hours fell at a rate of -0.5 percent.

Output and demand factors

The poultry dressing and processing industry changes live chickens and turkeys into ready-to-cook or precooked products. The industry's output primarily includes whole fresh or frozen birds, cut-up parts, preformed products (such as patties and nuggets), luncheon meats, frankfurters, and frozen entrees.

Year-to-year movements in output were volatile. Between 1972 and 1973, output declined by almost 10 percent, largely because of increased grain and poultry prices which dampened demand. Between 1980 and 1981, output increased by slightly more than 10 percent. Over the long term, however, the demand for poultry meat and products

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Table 1. Productivity and related indexes for the poultry dressing and processing industry, 1963-85
[1977=100]

Year	Output per employee hour	Output	All employee hours	Employees
1963	73.4	53.3	72.6	71.6
1964	75.1	56.2	74.8	72.8
1965	75.2	58.0	77.1	73.7
1966	74.1	60.0	81.0	76.8
1967	80.6	72.7	90.2	87.0
1968	77.9	71.4	91.7	89.5
1969	76.8	75.0	97.7	93.9
1970	78.3	78.1	99.7	94.9
1971	85.5	80.1	93.7	92.0
1972	88.1	87.3	99.1	94.2
1973	77.5	78.7	101.5	98.2
1974	87.3	88.4	101.3	98.1
1975	87.9	83.3	94.8	94.1
1976	98.6	98.8	100.2	99.1
1977	100.0	100.0	100.0	100.0
1978	101.3	106.5	105.1	104.5
1979	106.1	119.5	112.6	111.0
1980	105.7	127.7	120.8	120.2
1981	116.4	140.9	121.1	122.2
1982	125.6	153.1	121.9	120.3
1983	131.7	159.2	120.9	118.7
1984	130.5	152.7	117.0	114.6
1985	125.7	158.4	126.0	124.0
	Average annual rates of change			
1963-85	2.9	5.2	2.3	2.4
1980-85	3.7	4.0	.3	-.1

has grown steadily. For example, in 1963, the average American consumed 37½ pounds of poultry; in 1985, this figure rose to 70 pounds—an increase of almost 90 percent. This demand was met almost entirely by the domestic poultry industry because imports remained negligible over this period.² In contrast, per capita consumption of beef declined from about 94 pounds in 1976 to about 77 pounds in 1985, with imports making significant inroads.³

The dramatic rise in demand for poultry was abetted by a long-term decline in the real cost of poultry. Poultry consumption is fairly price elastic—that is, reductions in real prices spell a proportional or more than proportional increase in demand. Reductions in real prices, however, do not completely explain the increase in demand because consumer preferences change and increases in income levels have continually been associated with a shift from poultry to red meat.⁴

Another factor contributing to increased demand has been the changes in product over the years. The poultry industry went from supplying mainly whole fresh or frozen birds to the market in the 1950's to supplying cut-up parts in the 1960's. In 1965, less than one-fifth of all young chickens slaughtered were cut into parts for retailing. By 1981, more than two-fifths were cut into parts. Further product diversification occurred in the mid- to late-1970's with the development of items such as prepackaged part trays, preformed patties, luncheon meats, and frankfurters. As an example, poultry hot dogs quadrupled their share of the frankfurter market from about 3 percent in 1977 to 13 percent in 1980.⁵

Product development continued into the 1980's with the introduction of "fancy" frozen entrees, such as stuffed chicken breasts, and specialty items for the fast food and restaurant industries, such as nuggets and breast slivers. Overall, the proportion of poultry used for further processing rose from 9.4 percent of all poultry products in 1963 to 30.3 percent in 1984.⁶

The shift towards two-income families has been among the factors creating increasing demand for convenience foods that are easy and quick to prepare, as well as for more meals away from home. Combining this trend with a growing belief that poultry and fish are healthier than conventional red meats⁷ also increased the demand for poultry.

Employment and hours. Employment in the poultry industry rose from 70,000 workers in 1963 to about 120,000 in 1985. Overall, employment increased at an annual average rate of 2.4 percent between 1963 and 1985, compared with a 0.3-percent annual growth rate for all manufacturing industries combined.

Average annual employment gains in poultry processing were strongest in the 1960's and the later part of the 1970's:

	Average annual percent change
1963-85	2.4
1963-70	4.8
1970-76	.8
1976-80	5.0
1980-85	-.1

The relatively low gains for the 1970-76 period reflect a balancing out of increases and decreases in individual years, while the 1980-85 decline was magnified by a 3.5-percent drop in 1984.

The strong employment performance was tempered by relatively low average weekly hours and high quit rates. Between 1974 and 1985, production workers in the poultry industry averaged about 37 hours per week, compared with 40 hours for their counterparts in total manufacturing. However, average weekly overtime hours were basically the same (about 3 hours per week in both cases). Poultry workers were also five times more likely to leave their jobs voluntarily than were other manufacturing workers. Over the 1974-80 period, there were about 10 voluntary quits a year per 100 production workers, opposed to about 2 quits per 100 production workers in all manufacturing.⁸

Occupational structure

The poultry processing industry's work force mainly consists of manual and semi-skilled occupations predominantly staffed by women. The industry is also primarily located in the South.

In a typical manufacturing establishment, about three-fourths of the employees are production workers, while in a poultry plant the average is about nine-tenths. Moreover, production workers fall mostly into two broad occupational

groups—hand assemblers or fabricators and manual helpers, laborers, or material handlers.⁹ In 1984, these two categories accounted for just over two-fifths of total employment in the entire meatpacking industry, compared with just under one-fifth in the rest of manufacturing. Skilled machine operators made up 11 percent of meatpacking employment, compared with 23 percent of all manufacturing.

Another characteristic of poultry industry employment is the large proportion of women. Traditionally, about one-half of the poultry work force are women. In the rest of manufacturing, the proportion of women is much smaller—increasing from a little more than one-fourth of the work force in 1963 to about one-third in 1984.

Wages in the poultry industry have been relatively low. In 1985, production workers averaged \$217 a week, compared with \$386 for their counterparts in all manufacturing.

Industry structure

Since World War II, the structure of the poultry industry has undergone three major transformations—increasing vertical integration of operations, increasing establishment size and concentration, and changing regional location.

Starting in the 1940's, improved techniques for raising poultry made large-scale operations feasible. However, financing these improvements tended to make most poultry farmers dependent upon poultry processors and feed suppliers, either via outright buyouts or through production contracts. This merger of poultry raising and processing operations—vertical integration—was basically completed by the mid-1950's, when about nine-tenths of all broiler production fell within this system.¹⁰

In the 1960's, processing plants began supplying poultry directly to retailers, thus assuming the role formerly played by wholesalers.¹¹ This trend accelerated in the 1980's, with processors selling directly to the fast food industry and developing and marketing new products on their own.

To fully reap the benefits from technological changes made in processing operations, the poultry industry concentrated its operations in large-scale plants. The number of poultry dressing plants declined from 522 in 1972 to just 375 in 1982, while the number of companies fell from 407 to 231. Employment per establishment rose from 140 to 299 over the same period.

Poultry and egg processing establishments are smaller than dressing establishments, although this segment of the industry is likewise highly concentrated. In 1982, for example, only 21 of 157 establishments, or 13 percent of all establishments, employed between 250 and 999 employees. However, these establishments accounted for 56 percent of all employees and 48 percent of total shipments.

Since the 1950's, broiler production has increasingly located in southern States. The South's share of total broiler output grew from 67 percent in 1950 to 70 percent in 1960 and to 89 percent in 1980.¹² Poultry dressing operations closely followed this migration, although at a slightly less

fevered pace—by 1982, the South accounted for about two-thirds of both employment and total shipments. This linkup between broiler production and dressing operations increased efficiencies by moving processing operations closer to the supply of birds. The South also supplied a relatively large labor pool and low-cost real estate for the expansion of poultry processing facilities.¹³

Capital investment

Partly reflecting their drive towards automation, poultry processors greatly increased their capital expenditures between 1963 and 1984, with investments growing at an average annual rate of 4.6 percent (the rate for all manufacturing industries was 3.2 percent). Total capital expenditures rose in constant-dollar terms¹⁴ from \$47 million in 1963 to more than \$100 million by 1978, before tapering off to around \$80 million in 1983 and 1984. Nevertheless, the constant-dollar capital expenditure per poultry employee was much less than that for the average manufacturing worker. (In 1984, it was \$1,499 and \$4,207, respectively.)

Capital expenditures, of course, vary from year to year. Outlays have also been skewed towards purchasing new machinery and equipment—in 1982, almost three-fourths of all capital investments were for machinery rather than buildings.

Technology in processing operations

The technology of poultry dressing and processing plants has changed drastically since the early 1960's, when the introduction of mechanical killing and defeathering machines led the industry to institute large-scale operations. Much of the work in a processing plant is now automated and the trend towards automation is continuing.¹⁵

Poultry processing plants mainly convert live birds into ready-to-cook whole birds or parts. This involves unloading the cooped birds, hanging them on conveyors, and stunning, slaughtering, defeathering, eviscerating, chilling, grading, packing, and shipping them. It also includes cutting birds into parts, deboning, or further processing them into specialty items.

The first stage of the processing operation, unloading the cooped birds, is partially mechanized.¹⁶ Usually, a conveyor takes the full coops to the hanging area, where the birds are manually shackled to an overhead monorail conveyor. The birds are then stunned electrically within a watertank, which is required for proper slaughtering, satisfactory bleeding, and feather release.

After stunning, the birds are slaughtered and bled. In manual operations, a skilled worker with a sharp knife can kill about 66 birds a minute. Manual killing was replaced in the early 1960's by mechanized killing machines which kill 5 birds per second, or five times faster than manual killing.¹⁷ One worker is usually assigned to monitor the machines to ensure that cuts are properly made.

The birds are then passed through a defeathering ma-

chine. This machine processes 160 birds per minute.¹⁸ Only one worker is needed to adjust the machines and keep the area clean. Pinning and singeing are manually done after defeathering is completed.

Defeathered birds are turned into ready-to-cook form by removing inedible parts. The operation also includes giblet harvesting, that is, trimming and separating the gizzard, heart, liver, and neck from the inedible, and possibly contaminating, parts. Mechanical eviscerating machines were invented in the early 1970's. Today, about nine-tenths of the eviscerating process is automated (each machine replaces about four workers).¹⁹

Also introduced in the 1970's were automatic oil removing machines and open-cut machines, which have further reduced labor time requirements (replacing, on average, two and four workers, respectively).²⁰ Two or three backup workers still are usually necessary to remove the parts missed by the machine. Before the 1970's, evisceration required eight persons to complete the operation and ensure that the viscera would not contaminate the edible parts of the bird.

Mechanized cutting is increasingly done in processing plants, rather than by meatcutters in supermarkets and other retail outlets. Mechanized cutting machines, using motor-driven equipment with shielded circular blades, split the carcasses into up to nine pieces. A halving machine processes about 70 birds a minute (saving the labor of an estimated 40 workers).²¹ In the five-piece cut, a machine removes the legs and backbone, and splits the breast into two pieces. The eight-piece cut consists of the wings, thighs, drumsticks, and two breasts. Generally, four machines with four operators can equal the output of a comparable manual operation requiring 14 or more employees.²² However, some processing work, such as deboning the breast, is still a largely manual operation, performed with a knife.

In the late 1970's, automatic deboning machines were introduced. These machines process up to 800 pieces of chicken a minute, separating edible meat from the bonier parts of the birds. They also harvest meat scraps from partially defleshed carcasses. The separated meat is then used for further processing into a variety of products—for example, preformed patties, soups, luncheon meats, and so forth.²³

Most of the chilling and packaging operations are mechanized. Modern chilling operations use several methods. The most common is the immersion of carcasses in long flow-through tanks containing agitated slush ice, which brings the internal body temperature below 40°F. By reducing the required space, up to 6,000 birds may be chilled in the same space as were 1,200 birds in the past.²⁴ Usually, only one worker monitors and services the operation for a 12,000 bird per hour chill operation.

Several types of both automated and manual packaging are used, including ice, dip chill, snow, dry, and frozen. In the icepack method, birds and ice are placed into boxes

manually. The boxes are then sealed, weighed, dated, and priced by machines. Individual icepack trays are handled similarly, but are wrapped by machines at the rate of 30 trays per minute.²⁵

Whole chill-packed birds are hung on a bar-type trip shackle and conveyed slowly through a room with a 20°F air blast for a little more than an hour, lowering their body temperature to 28–29°F. The parts are packed in trays, wrapped and placed in racks, then passed through a blast freezer for between 1 to 1½ hours. Because they are prepackaged, prepriced, and have a long shelf life, chill-packed birds and parts are very popular with retailers. Another packing method is dry pack where birds and parts are passed through a blast freezer and kept at just above the freezing point until shipping.

Pricing has also been automated in recent years, with computerized pricing machines being much more efficient than manual pricing. Each machine prices 50 packs per minute, compared with a manual rate of about 3 to 4 per minute.²⁶

From the time the birds are shackled to the conveyor to the time they leave the plant, the speed of all manual and mechanical operations is determined by the conveyor line speed, which, to an extent, is limited by the U.S. Department of Agriculture (USDA) inspection system. Average line speeds, however, have increased from 56 to 70–90 birds per minute over the past 10 to 15 years, depending on the inspection system used.²⁷ This increase in speed is partly attributable to changes in the inspection system, which now concentrates more on actual product inspection and less on plant operations. The shift in inspection strategy has resulted in an increase in the number of inspections without a proportional increase in the number of inspectors.²⁸

Overall, inspection productivity has continuously increased. Under the USDA's "traditional" system, introduced in 1959, an inspector would review one bird at a time, directing a trimmer on what needed to be done for the bird to pass inspection. After the instructions were carried out, the bird would be re-inspected for acceptable quality and chilling requirements. On average, not more than 18 birds per minute per inspector could be passed under this system.

In 1978, the USDA began a "modified traditional" inspection system under which three inspectors divide their tasks—one inspects the bird's exterior, another its viscera, and a third does the final inspection. This method raised inspection speed to about 23 birds per minute per inspector.

Line speeds also vary according to the weight and size of the birds being processed and the types of products being produced. When plants were mainly whole-bird operations, adjusting line speed was relatively simple. Today's modern plant, however, produces a panoply of products, with each product having specific processing needs and volume. It is not surprising, therefore, that since the late 1970's, computers have been increasingly used in overall plant operations.²⁹ For example, computers help to control the supply

of live whole birds to the various processing lines to achieve maximum efficiency as well as monitor energy use.

Broiler production

Although outside the scope of poultry processing, the hatching and raising of broilers also play a critical role in processing operations because automated processing depends on a supply of basically standardized birds. In addition, because the cost of live birds is a large material cost in the processing industry, efficiencies in broiler production help maintain the relative cost advantage of poultry over other meats.³⁰

Since the 1960's, the cost of producing broilers has been reduced substantially by improved feed conversion, which results in more meat per pound of feed. Improved feed conversion, in turn, has reduced both feed costs and labor required to handle the feed. With rations specifically developed to ensure proper growth, today's chicken is genetically designed for faster and meatier growth. Because of antibiotic feed additives and vaccines, birds are also less likely to die. Mechanized feeding and cleaning devices have ameliorated arduous manual tasks.³¹

Outlook

There are factors contributing to continued gains in productivity in this industry which are somewhat offset by other

concerns. On the plus side, advances in processing techniques and increasing demand for poultry products are expected to continue. The industry, however, may still experience periods of dampened output related to factors outside its control—such as increases in feed and fuel costs—and declines in output have been associated with slackened productivity growth.³²

In processing operations, the search continues for ways to mechanize currently manual functions, especially the handling of live birds and breast deboning.³³ Research is also focused on methods to reduce waste and rejection of birds because of mishandling or machine processing errors. Increasingly sophisticated use of computers is also likely to improve processing operations, material handling, inventory control, energy management, and waste disposal. Outside of plant operations, changes are also expected in both the poultry product line and marketing techniques—for example, brand-named chicken parts, specialty fowls (such as game hens), and national, rather than local or regional, markets.

Demand for poultry products continues to be strong. Per capita consumption increased 6 percent between 1985 and 1986.³⁴ Much of this growth was in processed products, such as frozen entrees and preformed parts, and will probably continue because of the aging of the population (older people find poultry easier to digest than red meat) and the perceptions of poultry as a healthy and appealing meat. □

—FOOTNOTES—

¹ The poultry dressing and processing industry consists of two segments, poultry dressing plants, designated as sic 2016 by the 1972 *Standard Industrial Classification Manual* of the Office of Management and Budget; and poultry and egg processing, sic 2017. sic 2016 consists of establishments primarily engaged in slaughtering and dressing poultry for sale or for use in the same establishment in further processing, including cooking, deboning, canning, freezing, and so forth. sic 2017 embodies establishments primarily engaged in preparing processed poultry products from purchased carcasses. Establishments primarily engaged in the cutting up and resale of purchased fresh carcasses are classified in the trade industries. sic 2017 also includes establishments which dry, freeze, or break eggs. (This portion of the sic is scheduled to become a separate sic.) The cleaning, oil treatment, packing, and grading of eggs are classified in sic 5144.

Average annual rates of change are based on the linear least squares of the logarithms of the index numbers. Extensions of the indexes will appear in the annual Bureau of Labor Statistics bulletin, *Productivity Measures for Selected Industries*.

² U.S. Department of Agriculture, Statistical Reporting Service, and U.S. Department of Commerce, *U.S. Exports, Schedule B, Commodity by Country* and *U.S. Imports, Schedule B, Commodity by Country*.

³ *Ibid.*

⁴ U.S. Department of Agriculture, *The Chicken Broiler Industry: Structure, Production, and Cost*, Marketing Research Report 930, May 1971, pp. 41–43.

⁵ Paul B. Brown, "Food Processors," *Forbes*, Jan. 4, 1982, pp. 205–206.

⁶ U.S. Department of Agriculture, Statistical Reporting Service.

⁷ U.S. Department of Agriculture, FSIS Planning Office, *Economics of the Red Meat Industry*, Aug. 21, 1985, p. 24; and Donn A. Reimund, J. Rod Martin, and Charles V. Moore, *Structural Change in Agriculture, The Experience for Broilers, Fed Cattle, and Processing Vegetables*, Bulletin 1648 (U.S. Department of Agriculture, Economics and Statistics Service,

April 1981), pp. 4–8.

⁸ Following are voluntary separation rates in poultry processing, compared with the rates in all manufacturing combined (number of voluntary separations per 100 employees):

	Poultry industry	All manufacturing
1972	9.4	2.3
1973	11.2	2.8
1974	10.7	2.4
1975	6.8	1.4
1976	8.1	1.7
1977	9.3	1.8
1978	9.9	2.1
1979	10.3	2.0
1980	7.1	1.5

⁹ Unpublished Bureau of Labor Statistics data. Separate data are not available for poultry dressing and processing industries. However, the general pattern of occupational groupings is basically the same as in the red meatpacking industry which is the other major component of this group. Poultry employees account for about two-fifths of total employment in the combined meatpacking group.

¹⁰ Floyd Lasley, *The U.S. Poultry Industry, Changing Economics and Structure*, Agricultural Economic Report 502 (U.S. Department of Agriculture, Economic Research Service, July 1983), pp. 7–8.

¹¹ *Ibid.*, pp. 14–15.

¹² The South includes the following States: Alabama, Arkansas, Delaware, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia.

¹³ Lasley, *The U.S. Poultry Industry*, pp. 9–10.

¹⁴ Adjustments for price changes were made by using the implicit defla-

tor for nonresidential investment in structures and producers' durable equipment. See *Economic Report of the President*, February 1985, p. 236.

¹⁵ Douglas Wilce, "Further processing growth spurs new equipment," *Poultry and Egg Marketing*, January 1986, pp. 1-7.

¹⁶ Observation of industry operations.

¹⁷ U.S. Department of Agriculture, Agricultural Research Service, *Guidelines for Establishing and Operating Broiler Processing Plants*, p. 24.

¹⁸ *Ibid.*, p. 25.

¹⁹ Industry sources.

²⁰ *Ibid.*

²¹ *Guidelines for Establishing and Operating Broiler Processing Plants*, p. 30.

²² Industry sources.

²³ *Guidelines for Establishing and Operating Broiler Processing Plants*, p. 27.

²⁴ Industry sources.

²⁵ *Ibid.*

²⁶ *Ibid.*

²⁷ Interview with Dr. Robert E. Cook, U.S. Department of Agriculture, Food Safety and Inspection Service, Meat and Poultry Inspection Technical Services, Washington, DC, July 8, 1986.

²⁸ *Ibid.*

²⁹ Wilce, "Further processing."

³⁰ Lasley, *The U.S. Poultry Industry*, pp. 14-18.

³¹ *Economics of The Red Meat Industry*, p. 4.

³² U.S. Department of Commerce, International Trade Association, *1986 U.S. Industrial Outlook*, January 1986, pp. 40-6 to 40-8.

³³ Wilce, "Further processing."

³⁴ U.S. Department of Commerce, International Trade Association, *1987 U.S. Industrial Outlook*, January 1987, p. 39-6.

APPENDIX: Measurement techniques and limitations

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

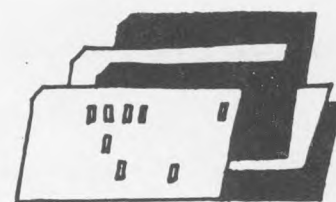
The preferred output index for manufacturing industries would be obtained from data on quantities of the various goods produced by the industry, each weighted (multiplied) by the employee hours required to produce one unit of each good in some specified base period. Thus, those goods which require more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

In the absence of physical quantity data, the output indexes for the poultry dressing and processing industries were constructed using a deflated value technique. The

value of shipments of the various product classes was adjusted for price changes by appropriate Producer Price Indexes to derive real output measures. These, in turn, were combined with employee hour weights to derive the overall output measure. These procedures result in a final output index that is conceptually close to the preferred output measure.

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 effort of factors such as changes in technology, capital investment, capacity utilization, plant design and layout, skill and effort of the work force, managerial ability, and labor-management relations.

Research Summaries



Work experience of the labor force during 1985

SHIRLEY J. SMITH

During 1985, the third calendar year following the recession of 1981-82, the Nation's employment growth was steady but less dramatic than it had been in 1984. The most impressive employment gains in 1985 occurred among blacks, whose employment recovery had lagged behind that of whites in the 2 previous years. Full-time employment was increasingly common while part-time work did not keep pace with population growth. An expanding share of both the white and especially the black work force reported itself to be holding full-time jobs. The share of the population reporting no work experience at all during the year continued to contract.

More than 123 million persons, about 69 percent of all those age 16 and over, held jobs during all or part of 1985. Of these, roughly 3 of 5 held year-round, full-time jobs. About 21 million persons experienced some unemployment during the year, half a million fewer than during the previous year.

These findings are derived from the work experience survey, conducted each March as a supplement to the Current Population Survey (CPS), a monthly survey of about 59,500 households nationwide. The basic CPS data detail the labor force activities of household members during a specific reference week each month. These data provide policymakers with timely information on the changes occurring within the economy. They are also frequently cited in the form of annual averages, which show the situation in a series of "typical" weeks during the year.

The March CPS supplement on work experience provides a different vantage point on labor force activity than do the monthly data,¹ as it demonstrates the extent to which members of various groups have participated in the labor force during all or any part of the previous year. Certain groups, such as youth, minorities, older workers, and women of most ages, exhibit particularly high labor turnover. Members of these groups are far more likely to hold jobs or look for work at some point during the year than to do so during

a "typical" week. Thus, contrasts between estimates based on behavior during an average week and those based on a full year's activity highlight the particular nature of a group's labor force attachment. Consider the following comparisons between the CPS, 12-month average and the work experience data for 1985:

	Average of 12 months (Numbers in thousands)	Work experience data	Percent difference
Total employed	107,150	123,466	15.2
Teenagers	6,433	8,937	38.9
Adult men	56,563	62,643	10.7
Adult women	44,154	51,886	17.5
White	93,736	107,434	14.6
Black	10,501	12,567	19.7
Usual full-time workers	88,534	96,472	9.0
Usual part-time workers	18,615	26,993	45.0
Total unemployed	8,312	20,984	152.5
White	6,191	17,054	175.7
Black	1,864	3,321	78.2

High turnover groups are easily spotted by the fact that so many more people are captured in the work experience data than in the annual average counts. For instance, the number of persons reported to have held part-time jobs during at least part of 1985 was 45 percent larger than the average for the typical week of that year. The corresponding differential for full-time workers was only 9 percent. Nearly three times as many whites experienced unemployment during some part of the year as reported doing so during the average week. The contrast between weekly and yearly counts is much smaller for blacks, because of their longer spells of unemployment, which in turn increase the odds of their being counted as jobless in successive months. This inflates the monthly (and, therefore, annual average) data relative to the March counts, where persons can be so classified only once.

Varying the reference period in this way affects not only overall counts, but also our sense of the proportionate roles of the different groups in the total. For instance, although only 17 percent of all workers held part-time jobs in an average month, the share of those holding jobs during any part of the year who usually did so was about 22 percent. Similarly, blacks made up 22 percent of the monthly unemployment count but only 16 percent of the total seeking employment at any time during the year.²

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Persons with employment

Although more men than women report having worked during any given year, the sex differential in work experience is clearly narrowing. Between 1973 and 1985, the share of adult men reporting some employment during the year dropped 5 percentage points, while that for women rose by about 6 percentage points:

	Percent who worked during reference year		
	Total	Employed full time	Employed year round
Total:			
1973	67.8	79.3	64.1
1985	68.6	78.1	67.0
Men:			
1973	83.7	87.4	72.3
1985	78.8	86.5	71.6
Women:			
1973	53.6	68.1	52.6
1985	59.4	68.1	61.2

In the same vein, there was a slight erosion in the share of all men with employment during the year who worked

year round (50 weeks or more), full time (35 hours or more per week). The full-time component of the female work force has held steady, while there has been a marked increase in their share reporting full-year schedules. The net effect of these developments has been a modest drop in full-time employment but a 3-percentage-point gain in year-round work.

Although a 2.3 million increase in numbers of persons holding jobs during 1985 represented clear growth, the pace of this expansion had obviously slowed from the record 3.6 million increase posted the previous year. The bulk of the 1985 increase was registered in year-round, full-time jobs. (See table 1.) The proportion working part time continued to fall, though there was a slight increase in the absolute number on such schedules.

Nearly 90 percent of the men who worked during 1985 did so full time, and about two-thirds held such jobs year round. Two-thirds of all working women maintained full-time schedules, and about half did so for 50 weeks or more.

The most spectacular employment gains during 1985 were posted by blacks. (See table 2.) The share of all blacks

Table 1. Work experience of the population during the year by sex and extent of employment, 1984-85

Extent of employment	Total		Men		Women	
	1984	1984	1984	1985	1984	1985
Numbers (in thousands)						
Civilian noninstitutional population	177,661	179,944	84,206	85,454	93,455	94,490
Total who worked or looked for work	124,117	125,890	67,234	68,270	56,883	57,620
Percent of the population	69.9	70.0	79.8	79.9	60.9	61.0
Total who worked during the year ¹	121,148	123,466	65,960	67,301	55,188	56,165
Percent of the population	68.2	68.6	78.3	78.8	59.1	59.4
Full time ²	94,312	96,472	56,928	58,206	37,384	38,266
50 to 52 weeks	70,419	72,422	43,833	44,952	26,585	27,470
48 to 49 weeks	2,451	2,485	1,408	1,469	1,043	1,016
40 to 47 weeks	5,502	5,603	3,046	3,169	2,456	2,434
27 to 39 weeks	5,617	5,527	3,095	3,119	2,522	2,408
14 to 26 weeks	5,635	5,759	3,081	3,114	2,554	2,645
1 to 13 weeks	4,689	4,676	2,464	2,383	2,224	2,293
Part time ³	26,836	26,993	9,032	9,094	17,804	17,899
50 to 52 weeks	9,832	10,188	3,099	3,262	6,734	6,926
48 to 49 weeks	861	731	272	204	589	527
40 to 47 weeks	2,380	2,559	793	836	1,587	1,724
27 to 39 weeks	3,129	3,263	1,000	1,112	2,129	2,150
14 to 26 weeks	4,733	4,707	1,704	1,665	3,029	3,042
1 to 13 weeks	5,900	5,545	2,164	2,015	3,736	3,530
Percent distribution						
Total who worked during the year ¹	100.0	100.0	100.0	100.0	100.0	100.0
Full time ²	77.8	78.1	86.3	86.5	67.7	68.1
50 to 52 weeks	58.1	58.7	66.5	66.8	48.2	48.9
48 to 49 weeks	2.0	2.0	2.1	2.2	1.9	1.8
40 to 47 weeks	4.5	4.5	4.6	4.7	4.5	4.3
27 to 39 weeks	4.6	4.5	4.7	4.6	4.6	4.3
14 to 26 weeks	4.7	4.7	4.7	4.6	4.6	4.7
1 to 13 weeks	3.9	3.8	3.7	3.5	4.0	4.1
Part time ³	22.2	21.9	13.7	13.5	32.3	31.9
50 to 52 weeks	8.1	8.3	4.7	4.8	12.2	12.3
48 to 49 weeks .....	.7	.6	.4	.3	1.1	.9
40 to 47 weeks	2.0	2.1	1.2	1.2	2.9	3.1
27 to 39 weeks	2.6	2.6	1.5	1.7	3.9	3.8
14 to 26 weeks	3.9	3.8	2.6	2.5	5.5	5.4
1 to 13 weeks	4.9	4.5	3.3	3.0	6.8	6.3

¹ Time worked includes paid vacation and sick leave.

² Usually worked 35 hours or more per week.

³ Usually worked 1 to 34 hours per week.

NOTE: Figures for 1985 are not strictly comparable with those for 1984, because of the revision of population weights.

holdings jobs during the year rose sharply, as did the share working year round. Most of these gains were achieved by black men. However, black women also registered some substantial gains. In particular, they increased the margin by which they led white women in reporting full-time work and narrowed the margin by which they followed them with respect to overall work experience.

Persons with unemployment

During 1985, 21 million workers—or roughly 1 in 6 of

those in the labor market—experienced some unemployment. This was 2½ times the annual average figure, about the same ratio as in 1984. The median duration of joblessness was little changed from the previous year at 12.6 weeks, and was about 2 weeks longer for men than for women. (See table 3.) Of all those who reported themselves to have been unemployed during 1985, a third experienced two or more spells of joblessness. Nine of 10 held a job for at least some portion of the year, and the unemployment experience for 1 in 20 was sufficiently limited for them to also be classed as

Table 2. Work experience of the population during the year by sex, race, and Hispanic origin, 1984–85
[Numbers in thousands]

Characteristic	Total		Men		Women	
	1984	1985	1984	1985	1984	1985
WHITE						
Civilian noninstitutional population	153,289	155,003	73,180	74,169	80,109	80,834
Total who worked or looked for work	107,749	109,060	59,144	59,924	48,605	49,136
Percent of the population	70.3	70.4	80.8	80.8	60.7	60.8
Total who worked during the year ¹	105,818	107,434	58,324	59,264	47,494	48,170
Percent of the population	69.0	69.3	79.7	79.9	59.3	59.6
Percent distribution						
Total who worked during the year ¹	100.0	100.0	100.0	100.0	100.0	100.0
Full time ²	77.8	78.0	86.8	86.8	66.8	67.0
50 to 52 weeks	58.3	58.8	67.3	67.6	47.3	48.1
27 to 49 weeks	11.2	11.0	11.4	11.5	10.9	10.4
1 to 26 weeks	8.3	8.2	8.1	7.8	8.6	8.6
Part time ³	22.2	22.0	13.2	13.2	33.2	33.0
50 to 52 weeks	8.2	8.4	4.6	4.8	12.6	12.9
27 to 49 weeks	5.4	5.4	3.1	3.1	8.1	8.3
1 to 26 weeks	8.6	8.2	5.5	5.3	12.5	11.8
BLACK						
Civilian noninstitutional population	19,549	19,814	8,727	8,833	10,822	10,980
Total who worked or looked for work	12,994	13,297	6,297	6,504	6,697	6,793
Percent of the population	66.5	67.1	72.2	73.6	61.9	61.9
Total who worked during the year ¹	12,073	12,567	5,893	6,212	6,179	6,356
Percent of the population	61.8	63.4	67.5	70.3	57.1	57.9
Percent distribution						
Total who worked during the year ¹	100.0	100.0	100.0	100.0	100.0	100.0
Full time ²	78.1	79.4	82.4	83.7	73.9	75.2
50 to 52 weeks	56.1	57.3	58.6	60.7	53.7	54.0
27 to 49 weeks	11.8	11.5	12.5	11.9	11.1	11.2
1 to 26 weeks	10.2	10.6	11.4	11.1	9.2	10.1
Part time ³	21.9	20.6	17.6	16.3	26.1	24.8
50 to 52 weeks	7.3	7.1	5.3	5.2	9.2	8.9
27 to 49 weeks	4.3	4.0	2.9	3.5	5.6	4.6
1 to 26 weeks	10.3	9.5	9.4	7.6	11.3	11.3
HISPANIC ORIGIN						
Civilian noninstitutional population	11,429	12,224	5,605	6,047	5,823	6,178
Total who worked or looked for work	7,795	8,252	4,567	4,891	3,228	3,361
Percent of the population	68.2	67.5	81.5	80.9	55.4	54.4
Total who worked during the year ¹	7,543	8,024	4,436	4,794	3,106	3,230
Percent of the population	66.0	65.6	79.1	79.3	53.3	52.3
Percent distribution						
Total who worked during the year ¹	100.0	100.0	100.0	100.0	100.0	100.0
Full time ²	80.8	81.9	87.5	87.4	71.1	73.8
50 to 52 weeks	55.4	55.6	61.1	60.5	47.3	48.3
27 to 49 weeks	13.6	14.1	14.0	15.3	13.2	12.3
1 to 26 weeks	11.7	12.3	12.5	11.6	10.7	13.2
Part time ³	19.2	18.1	12.5	12.6	28.9	26.2
50 to 52 weeks	7.0	6.9	4.5	5.1	10.5	9.5
27 to 49 weeks	4.4	4.2	2.8	2.8	6.6	6.2
1 to 26 weeks	7.9	7.0	5.2	4.7	11.8	10.5

¹ Time worked includes paid vacation and sick leave.

² Usually worked 35 hours or more per week.

³ Usually worked 1 to 34 hours per week.

NOTE: Detail for the above race and Hispanic-origin groups will not sum to totals because data for the "other races" group are not presented and Hispanics are included in both the white and black population groups. Figures for 1985 are not strictly comparable with those for 1984, because of the revision of population weights.

Table 3. Extent of unemployment during the year by sex, 1984-85

Extent of unemployment	Total		Men		Women	
	1984	1985	1984	1985	1984	1985
Numbers (in thousands)						
Total who worked or looked for work	124,117	125,890	67,234	68,270	56,883	57,620
Percent with unemployment	17.4	16.7	18.1	17.2	16.5	16.0
Total with unemployment	21,535	20,984	12,174	11,754	9,361	9,230
Did not work but looked for work	2,969	2,424	1,274	970	1,696	1,455
1 to 14 weeks	1,355	1,202	375	335	979	867
15 weeks or more	1,615	1,222	898	635	716	587
Worked during the year	18,565	18,560	10,900	10,784	7,665	7,775
Year-round workers ¹ with 1 or 2 weeks of unemployment	898	906	539	582	359	325
Part-year workers ² with unemployment	17,668	17,654	10,362	10,203	7,306	7,451
1 to 4 weeks	3,702	3,779	1,750	1,804	1,952	1,975
5 to 10 weeks	3,628	3,594	2,033	2,051	1,594	1,542
11 to 14 weeks	2,351	2,547	1,443	1,573	907	975
15 to 26 weeks	4,377	4,415	2,759	2,751	1,618	1,664
27 weeks or more	3,610	3,319	2,376	2,024	1,234	1,294
Median weeks of unemployment for all workers	12.8	12.6	14.1	13.4	10.7	11.2
With 2 or more spells of unemployment	6,147	5,955	4,027	3,866	2,120	2,090
2 spells	3,000	2,960	1,831	1,880	1,169	1,080
3 or more spells	3,147	2,995	2,196	1,986	952	1,010
Percent distribution						
Did not work but looked for work	100.0	100.0	100.0	100.0	100.0	100.0
1 to 14 weeks	45.6	49.6	29.5	34.5	57.8	59.6
15 weeks or more	54.4	50.4	70.5	65.5	42.2	40.4
Worked during the year	100.0	100.0	100.0	100.0	100.0	100.0
Year-round workers ¹ with 1 or 2 weeks of unemployment	4.8	4.9	4.9	5.4	4.7	4.2
Part-year workers ² with unemployment	95.2	95.1	95.1	94.6	95.3	95.8
1 to 4 weeks	19.9	20.4	16.1	16.7	25.5	25.4
5 to 10 weeks	19.5	19.4	18.7	19.0	20.8	19.8
11 to 14 weeks	12.7	13.7	13.2	14.6	11.8	12.5
15 to 26 weeks	23.6	23.8	25.3	25.5	21.1	21.4
27 weeks or more	19.4	17.9	21.8	18.8	16.1	16.6
With 2 or more spells of unemployment	33.1	32.1	36.9	35.8	27.7	26.9
2 spells	16.2	15.9	16.8	17.4	15.2	13.9
3 or more spells	17.0	16.1	20.1	18.4	12.4	13.0

¹ Worked 50 or 51 weeks.

² Worked fewer than 50 weeks.

NOTE: Data on median weeks of unemployment include the unemployment experience of persons who held jobs for 50 weeks or more. This measure was previously calculated based on the experience of part-year workers only. Figures for 1985 are not strictly comparable with those for 1984, because of the revision of population weights.

year-round (50 to 52 week) workers.

The unemployed as a proportion of all those with labor force experience during the year dropped by nearly a percentage point for men; yet, at 17.2 percent, it was still somewhat higher than the 15.7 percent registered in 1979. At 16.0 percent, the rate for women had returned to its 1979 level.

Less than 16 percent of all white workers were unemployed during 1985; the rate fell by only half a percentage point. By contrast, the proportion of all blacks experiencing unemployment during the year dropped 1.7 percentage points between 1984 and 1985. Despite this sizable improvement, 25 percent of all blacks still faced at least 1 week of unemployment during the year. (See table 4.)

Patterns of redistribution by work schedule

The growth of year-round employment outpaced that of the adult population by nearly 2 percentage points between 1984 and 1985. The expansion of the year-round work force was particularly rapid for black men and, to a lesser extent, white women. Both of these groups, as well as black women, registered their most impressive gains in full-year,

full-time employment; white men registered their greatest relative gains in full-year, part-time work.³

Overall, both the full-year and full-time components of the work force grew relative to the population. As existing labor force attachments became stronger, there was also a net shift of persons previously outside the work force into employment. This shift was particularly strong among black men. The number of black men with work experience during the year grew more than 4 percentage points faster than might have been expected on the basis of population growth alone. The comparable gain in work experience for black women outpaced their own population growth by 1.4 percentage points. Both groups appeared to be shifting from part- to full-time employment, particularly in a full-year, full-time capacity. □

—FOOTNOTES—

¹ Basic cps labor force data are normally referred to as monthly data although technically they pertain to the week that includes the 12th of the month.

² Analysis of labor force changes between 1984 and 1985 has been complicated by a January 1986 revision of the population weights used to

inflate CPS findings. The most important change was the introduction of an allowance for the inflow of undocumented aliens into this country. The net effect of this and other corrections was an estimated upward revision of the total civilian noninstitutional population age 16 and over (between December 1985 and January 1986) of 388,000, or two-tenths of 1 percent. These additions were concentrated among employed white men, particularly those between the ages of 25 and 54, and especially among persons of

Hispanic origin. The reader should keep these revisions in mind in comparing estimated levels for 1984 and 1985. See Jeffrey S. Passel, "Changes in the estimation procedure in the Current Population Survey beginning in January 1986," *Employment and Earnings*, February 1986, pp. 7-10.

³ See Shirley J. Smith, "The growing diversity of work schedules," *Monthly Labor Review*, November 1986, pp. 7-13.

Table 4. Extent of unemployment during the year by race, Hispanic origin, and sex, 1984-85

[Numbers in thousands]

Characteristic	Total		Men		Women	
	1984	1985	1984	1985	1984	1985
WHITE						
Total who worked or looked for work	107,749	109,060	59,144	59,924	48,605	49,136
Percent with unemployment	16.2	15.6	16.9	16.2	15.3	14.9
Percent distribution						
Total with unemployment	17,461	17,054	10,008	9,718	7,454	7,336
Did not work but looked for work	1,930	1,626	819	660	1,111	966
Worked during the year	15,531	15,428	9,188	9,059	6,343	6,369
Total who worked during the year	100.0	100.0	100.0	100.0	100.0	100.0
Year-round workers ¹ with 1 or 2 weeks of unemployment	5.1	5.2	5.3	5.7	4.8	4.4
Part-year workers ² with unemployment	94.9	94.8	94.7	94.3	95.2	95.6
1 to 4 weeks	20.9	21.4	16.6	17.4	27.0	27.2
5 to 14 weeks	33.3	33.7	33.7	34.1	32.6	32.9
15 weeks or more	40.8	39.7	44.4	42.8	35.6	35.3
Percent with 2 or more spells of unemployment	32.7	31.6	36.7	35.6	27.0	25.9
Median weeks of unemployment	12.2	12.0	13.4	13.0	10.2	10.4
BLACK						
Total who worked or looked for work	12,994	13,297	6,297	6,504	6,697	6,793
Percent with unemployment	26.7	25.0	29.3	25.9	24.3	24.1
Total with unemployment	3,473	3,321	1,847	1,685	1,626	1,636
Did not work but looked for work	922	730	404	292	518	438
Worked during the year	2,551	2,591	1,443	1,393	1,108	1,199
Percent distribution						
Total who worked during the year	100.0	100.0	100.0	100.0	100.0	100.0
Year-round workers ¹ with 1 or 2 weeks of unemployment	3.6	3.0	2.8	3.0	4.6	2.9
Part-year workers ² with unemployment	96.4	97.0	97.8	97.0	95.4	97.1
1 to 4 weeks	14.5	13.7	12.5	12.0	17.2	15.6
5 to 14 weeks	26.6	30.0	22.5	30.6	31.8	29.2
15 weeks or more	37.3	53.4	37.3	54.4	37.3	52.2
Percent with 2 or more spells of unemployment	35.2	35.6	39.1	38.1	30.3	32.7
Median weeks of unemployment	17.4	16.5	20.2	17.0	13.9	16.1
HISPANIC ORIGIN						
Total who worked or looked for work	7,795	8,252	4,567	4,891	3,228	3,361
Percent with unemployment	22.8	22.6	25.0	24.4	19.7	19.9
Total with unemployment	1,778	1,865	1,144	1,194	634	670
Did not work but looked for work	252	229	131	97	121	132
Worked during the year	1,526	1,636	1,013	1,097	513	539
Percent distribution						
Total who worked during the year	100.0	100.0	100.0	100.0	100.0	100.0
Year-round workers ¹ with 1 or 2 weeks of unemployment	3.1	3.6	3.0	3.6	3.2	3.8
Part-year workers ² with unemployment	96.9	96.4	97.0	96.4	96.8	96.2
1 to 4 weeks	16.1	16.5	14.6	13.6	19.3	22.3
5 to 14 weeks	32.6	31.9	32.8	32.4	32.0	30.8
15 weeks or more	48.2	48.0	49.5	50.4	45.4	43.2
Percent with 2 or more spells of unemployment	35.4	33.8	38.6	37.9	29.2	25.6
Median weeks of unemployment	14.5	14.5	14.9	15.1	14.7	13.1

¹ Worked 50 weeks or more.

² Worked fewer than 50 weeks.

NOTE: Data on median weeks of unemployment include the unemployment experience of persons who held jobs for 50 weeks or more. This measure was previously calculated

based on the experience of part-year workers only. Detail for the above race and Hispanic-origin groups will not sum to totals because data for the "other races" group are not presented and Hispanics are included in both the white and black population groups. Figures for 1985 are not strictly comparable with those for 1984, because of the revision of population weights.

Deaths in industry, 1985: BLS survey findings

DIANE M. COTTER AND JANET A. MACON

Occupational injuries and illnesses resulted in 3,750 work-related deaths in private sector establishments with 11 employees or more in 1985. These estimates on occupational fatalities were taken from the Bureau of Labor Statistics' Annual Survey of Occupational Injuries and Illnesses. Within the scope of the survey, work-related fatalities are relatively rare events. In 1985, the fatality rate was 6.2 per 100,000 full-time workers. (See table 1.) About 330 of the 3,750 reported deaths were attributable to a job-related illness.¹

Work-related deaths are classified by industry division and by broad causal categories. The fatality rate per 100,000 full-time workers was highest in the mining industry; however, the largest number of deaths occurred in construction. (See table 2.) Both the lowest rate and smallest number of fatalities were reported in finance, insurance, and real estate. Two-thirds of all fatalities occurred in construction, manufacturing, and transportation and public utilities industries. The leading cause of death was attributed to car and truck accidents, accounting for nearly one-third. (See table 3.) Cases involving highway vehicles accounted for at least 1 of every 5 fatalities in 7 of the 8 industry divisions.

Employers participating in the survey provided various data, including the number of fatalities and a brief description of the object or event which caused the fatality. Estimates based on these results present a wide range of analytical problems. Thus, caution should be used in drawing conclusions about year-to-year changes. In order to increase the reliability of data relating to cause of death by industry, the distributions are based on the total number of reported cases for the 1984 and 1985 surveys combined. (See tables 3 and 4.)

Analysis by industry

Agriculture, forestry, and fishing. Highway vehicles accounted for 1 of 4 deaths. (See table 3.) Industrial vehicles or equipment, heart attacks, and aircraft crashes each accounted for more than 1 of 10 fatalities.

Mining—oil and gas extraction only. Industrial vehicles or equipment and highway vehicles each accounted for 1 of every 5 deaths. Objects, other than vehicles or equipment, were another major source.

Construction. Highway accidents and electrocutions were

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Table 1. Number and rate of occupational fatalities for employers with 11 employees or more, private sector, 1974–85

Year	Annual average employment (thousands)	Number of fatalities	Incidence rate per 100,000 full-time workers ²
1974	54,272	4,970	9.8
1975	52,693	4,570	9.4
1976	53,693	3,940	7.9
1977	56,333	4,760	9.1
1978	59,297	4,590	8.2
1979	61,660	4,950	8.6
1980	61,677	4,400	7.7
1981	62,895	4,370	7.6
1982	61,646	4,090	7.4
1983	63,981	3,100	5.6
1984	68,008	3,740	6.4
1985	70,263	3,750	6.2

¹ Employment is expressed as an annual average and is derived primarily from the BLS-State Current Employment Statistics program. Employment estimates have been adjusted based on data provided by the Annual Survey of Occupational Injuries and Illnesses to exclude establishments with fewer than 11 employees.

² The incidence rates represent the number of fatalities per 100,000 full-time workers and were calculated as: $(N/EH) \times 200,000,000$, where

N = number of fatalities
EH = total hours worked by all employees during calendar year
200,000,000 = base for 100,000 full-time equivalent workers (working 40 hours per week, 50 weeks per year).

each responsible for 17 percent of the fatalities. Industrial vehicles or equipment and falls were each a factor in 16 percent of the deaths.

Manufacturing. Twenty percent of the deaths involved highway vehicles. Industrial vehicles or equipment were another leading cause.

Transportation and public utilities. Almost one-half were attributable to highway vehicles. All other causes were each involved in less than 10 percent of the cases.

Wholesale and retail trade. Highway accidents accounted for 36 percent of the deaths. Assaults accounted for 15 percent of the fatalities; accidents involving industrial vehicles or equipment were cited in 12 percent of the deaths; and heart attacks, 10 percent.

Finance, insurance, and real estate. Highway vehicles caused the majority of the fatalities, accounting for 29 percent. Falls and heart attacks accounted for another large portion.

Services. Highway vehicles were the major cause of death, 28 percent, followed by electrocutions, 17 percent, and heart attacks, 16 percent.

Analysis by cause

The largest share of occupational fatalities were attributable to highway accidents, 29 percent. Industrial vehicles or equipment, heart attacks, falls, and electrocutions, combined, accounted for 2 of every 5 fatalities. The remainder were related to entrapments, aircraft crashes, explosions, assaults, gas inhalation, fires, accidents involving plant machinery operations and objects other than vehicles

Table 2. Number and rate of occupational fatalities for employers with 11 employees or more, by industry division, 1984 and 1985

Industry division	1984		1985	
	Fatalities	Incidence rate ¹	Fatalities	Incidence rate ¹
Private sector	3,740	6.4	3,750	6.2
Agriculture, forestry, and fishing	110	16.3	100	14.9
Mining	370	41.4	260	31.1
Construction	660	22.8	980	30.8
Manufacturing	800	4.4	820	4.5
Transportation and public utilities	770	16.9	730	16.0
Wholesale and retail trade	440	3.1	440	3.0
Finance, insurance, and real estate	80	1.9	70	1.6
Services	510	3.9	340	2.5

¹ The incidence rates represent the number of fatalities per 100,000 full-time workers and were calculated as: (N/EH) × 200,000,000, where

N = number of fatalities
 EH = total hours worked by all employees during calendar year
 200,000,000 = base for 100,000 full-time equivalent workers (working 40 hours per week, 50 weeks per year).

NOTE: Because of rounding, components may not add to totals.

or equipment, and other causes.

Highway vehicles were the leading cause of death in all but 1 of the 8 industry divisions. They were responsible for the largest percentage of fatalities in all of the industries except mining. About 36 percent of these accidents occurred in transportation and public utilities. (See table 4.)

Industrial vehicles or equipment, such as tractors and high-lift trucks, were involved in nearly 12 percent of all

fatalities. Workers in the construction and manufacturing industries accounted for 31 and 29 percent of the cases.

Falls were responsible for nearly 9 percent of all fatalities. About 2 of 5 of these fatalities involved construction workers and 1 of 5 involved those in manufacturing.

Electrocutions were the cause of about 9 percent of all fatalities. Electrocutions most frequently occurred in construction, services, and manufacturing industries.

Deaths resulting from heart attack were most common in manufacturing, 22 percent, followed by services, 20 percent, and construction, 18 percent.

With the exception of 3 of the remaining 9 causal categories, the majority of cases occurred in either construction or manufacturing. However, the majority of cases involving aircraft crashes and gas inhalation occurred in transportation and public utilities, while the majority of assaults occurred in wholesale and retail trade.

The "all other" category, accounting for 4 percent of total fatalities, includes deaths involving contact with carcinogenic or toxic substances, drowning, train accidents, and various occupational illnesses.

Reliability of estimates

The 1985 survey was comprised of a random sample of 280,000 units. The relative standard errors, a measure of sampling error in the estimates, are presented in the following tabulation (in percent) and are to be used only in conjunction with the numbers of fatalities or the incidence rate for 1985. (See tables 1 and 2.) The relative standard error of

Table 3. Distribution of occupational fatalities by cause for employers with 11 employees or more, private sector, 1984-1985¹
 [In percent]

Cause ²	Total private sector ³	Agriculture, forestry, and fishing	Mining—oil and gas extraction only	Construction	Manufacturing	Transportation and public utilities ⁴	Wholesale and retail trade	Finance, insurance, and real estate	Services
Total, all causes	100	100	100	100	100	100	100	100	100
Highway vehicles	29	25	20	17	20	49	36	29	28
Industrial vehicles or equipment	12	15	21	16	14	6	12	11	2
Heart attacks	9	13	8	8	9	7	10	18	16
Falls	9	7	9	16	7	3	8	24	5
Electrocutions	9	5	5	17	7	5	2	51	17
Caught in, under, or between objects other than vehicles or equipment	6	3	2	10	6	5	4	0	2
Aircraft crashes	5	11	2	2	5	7	4	11	8
Explosions	4	1	6	2	7	5	5	0	3
Struck by objects other than vehicles or equipment	4	5	14	3	8	51	2	51	51
Assaults	4	2	0	(6)	2	2	15	2	12
Gas inhalation	3	0	6	3	2	6	0	0	51
Fires	2	5	5	2	2	(6)	51	0	51
Plant machinery operations	2	0	0	(6)	6	51	(6)	0	51
All other ⁷	4	8	3	4	5	4	2	3	7

¹ It is difficult to estimate year-to-year changes for the causal categories precisely because sampling errors are large at the industry division level. Therefore, the results are for both years rather than a comparison between them.

² Cause is defined as the object or event associated with the fatality.

³ Excludes coal, metal and nonmetal mining, and railroads, for which data are not available.

⁴ Excludes railroads.

⁵ Data rounded to 1 percent.

⁶ Between .1 and .5 percent.

⁷ The "All other" category includes, for example, contact with carcinogenic or toxic substances, drowning, train accidents, and various occupational illnesses.

NOTE: Because of rounding, percentages may not add to 100.

Table 4. Distribution of occupational fatalities by industry division for employers with 11 employees or more, private sector, 1984-1985¹
[In percent]

Cause ²	Total private sector ³	Agriculture, forestry, and fishing	Mining-oil and gas extraction only	Construction	Manufacturing	Transportation and public utilities ⁴	Wholesale and retail trade	Finance, insurance, and real estate	Services
Total, all causes	100	3	5	22	23	21	12	2	12
Highway vehicles	100	3	4	13	16	36	15	2	12
Industrial vehicles or equipment	100	4	10	31	29	10	13	2	2
Heart attacks	100	5	5	18	22	15	13	4	20
Falls	100	3	6	41	20	8	12	6	7
Electrocutions	100	2	3	40	18	12	3	(5)	22
Caught in, under, or between objects other than vehicles or equipment	100	2	2	41	27	18	8	0	3
Aircraft crashes	100	7	2	9	22	28	8	5	18
Explosions	100	6 ¹	8	10	39	22	13	0	7
Struck by objects other than vehicles or equipment	100	4	21	16	46	5	5	(5)	3
Assaults	100	2	0	2	9	11	42	1	33
Gas inhalation	100	0	12	22	17	47	0	0	3
Fires	100	9	17	25	35	4	4	0	6
Plant machinery operations	100	0	0	3	84	8	2	0	4
All other ⁷	100	6	3	22	24	20	6	2	18

¹ It is difficult to estimate year-to-year changes for the causal categories precisely because sampling errors are large at the industry division level. Therefore, the results are for both years rather than a comparison between them.
² Cause is defined as the object or event associated with the fatality.
³ Excludes coal, metal and nonmetal mining, and railroads, for which data are not available.
⁴ Excludes railroads.
⁵ Between .1 and .5 percent.
⁶ Data rounded to 1 percent.
⁷ The "All other" category includes, for example, contact with carcinogenic or toxic substances, drowning, train accidents, and various occupational illnesses.
 NOTE: Because of rounding, percentages may not add to 100.

7 percent for the private sector means that the chances are 2 out of 3 that a complete census would have produced a number between 3,490 and 4,010.

Industry	Relative standard error
Private sector	7
Agriculture, forestry, and fishing	30
Mining	13
Construction	9
Manufacturing	6
Transportation and public utilities	15
Wholesale and retail trade	26
Finance, insurance, and real estate	57
Services	43

Background of the survey

The 1985 Annual Survey of Occupational Injuries and Illnesses is authorized by the Occupational Safety and

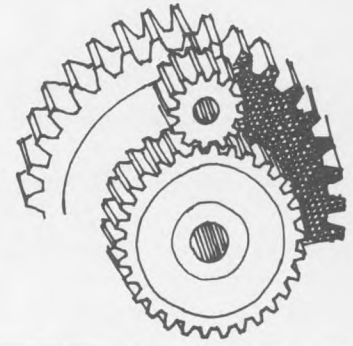
Health Act of 1970. The survey includes all employers except the self-employed, farmers with fewer than 11 employees, private households, Federal, State, and local government agencies, employers with fewer than 11 employees in low-risk industries, and those establishments in which working conditions are covered by other Federal safety and health laws.

Since 1977, the published data on occupational fatalities reflect only those deaths in establishments with 11 employees or more. The 1984 report on the survey of occupational fatalities, entitled "Work-related deaths in 1984: BLS survey findings," was published in the *Monthly Labor Review*, May 1986, pp. 42-44. □

—FOOTNOTE—

¹ Chronic and long-term latent illnesses, which are often difficult to recognize or relate to the workplace, are included in the estimate but may be understated.

Productivity Reports



Productivity gains continued in many industries during 1985

ARTHUR S. HERMAN

Productivity, as measured by output per employee hour, increased in 1985 in about two-thirds of the industries for which data are presently available. These gains continued the productivity growth recorded in 1983 and 1984 in the industries covered by the Bureau of Labor Statistics. However, the increases in 1985 were smaller than the 1984 gains in many industries. Table 1 shows productivity trends in the industries measured by the BLS and includes new measures introduced for additional industries: poultry dressing and processing; mining machinery; furniture, home furnishings, and equipment stores (including separate measures for furniture and home furnishings stores and appliance, radio, TV, and music stores); and liquor stores.¹

Industry changes

Manufacturing. Among important manufacturing industries, the motor vehicles industry registered an above-average gain of 5.7 percent from 1984 to 1985. Demand for motor vehicles continued to be strong, and output was up 7.1 percent, while employee hours grew 1.3 percent. This increase was the fifth consecutive annual productivity gain in this industry.

Productivity also rose in the steel industry, growing 5.5 percent in 1985, following a 12.4-percent gain in the previous year. Steel industry productivity has risen for 3 consecutive years. The 1985 increase, however, reflected a decline in output of 3.0 percent and a larger drop in employee hours of 8.1 percent. Demand for steel was down sharply in 1985, especially from capital goods markets, and the industry continued shutting down less efficient plants and equipment.

Other important manufacturing industries with significant productivity gains in 1985 included construction machinery and equipment (10.4 percent), machine tools (9.5 percent), petroleum refining (8.4 percent), synthetic fibers (7.6 percent), and major household appliances (5.7 percent). The productivity gains in the construction machinery and equip-

ment, machine tools, and synthetic fibers industries reflected output increases and employee hour decreases while in the petroleum refining industry, output recorded no growth and hours dropped sharply. The gain in productivity in the major household appliance industry can be attributed to a decline in output and an even larger falloff in hours.

A number of other large manufacturing industries posted gains in 1985. These included bottled and canned soft drinks (4.8 percent), sawmills and planing mills (2.8 percent), pharmaceutical preparations (2.7 percent), gray iron foundries (2.2 percent), motors and generators (1.7 percent), and paper, paperboard, and pulp mills (0.2 percent).

Despite the large number of manufacturing industries registering productivity increases, several posted productivity declines in 1985. Some of these industries were farm and garden machinery (-6.3 percent), steel foundries (-4.8 percent), primary aluminum (-4.2 percent), malt beverages (-1.6 percent), household furniture (-0.8 percent), and tires and inner tubes (-0.7 percent). Output fell in all of these industries except for malt beverages in 1985.

Mining. All of the mining industries except for crushed and broken stone recorded productivity gains in 1985. Coal mining experienced a gain of 2.0 percent, following a much larger gain of 11.2 percent in 1984. Coal mining output fell 1.1 percent in 1985 because of moderate weather and depletion of stockpiles built up because of an anticipated strike in 1984, and employee hours declined 3.1 percent. Productivity in the iron mining (usable ore) industry increased 7.8 percent in 1985, compared with a 22.9-percent gain in the previous year. Iron mining (usable ore) output was down 5.3 percent, as demand from the steel industry fell, and hours declined 12.2 percent, as a number of mining operations were shut down temporarily. In the copper mining (recoverable metal) industry, productivity spurted 21.9 percent. Copper mining (recoverable metal) output grew only 1.4 percent in 1985, reflecting a continued drop in the price of copper, while hours fell 16.8 percent, reflecting the closing of marginal mining operations. Nonmetallic mineral mining, except fuels, had a productivity gain of 2.3 percent. Output grew 3.7 percent in this industry as demand continued from the construction industry. In the crushed and broken stone industry, hours were up slightly more than output, resulting in a small productivity decline of 0.9 percent.

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Transportation and utilities. Productivity changes were mixed among transportation and utility industries. In railroads (revenue traffic), productivity was up 6.2 percent, continuing the growth registered in the previous year. Railroad output fell 0.5 percent in 1985 as shipments of coal, grain, metallic ores, forest products, and other commodities were down. However, hours fell by 6.3 percent. Productivity in air transportation grew 3.3 percent, compared with a 3.9-percent gain in the previous year. Output in air transportation increased 8.6 percent in 1985 while the number of actual employees grew 5.1 percent. Petroleum pipelines productivity dropped 0.2 percent compared with a 10.8-percent gain in 1984. Output recorded no change in 1985 (as in petroleum refining), while hours increased slightly. In telephone communications, productivity was up 4.8 percent with output growing 2.5 percent and hours falling 2.2 percent. Productivity declined in both gas and electric utilities. In gas utilities, productivity fell 3.5 percent: output decreased 3.7 percent, due mainly to mild weather in 1985, while hours dropped 0.3 percent. In electric utilities, productivity registered a 0.2-percent decline as output grew 2.0 percent while hours were up 2.2 percent, due partly to growth in the number of residential customers.

Trade and services. Productivity changes also varied among the trade and service industries. Apparel and accessory stores had the largest gain in this group, increasing 5.7 percent, as all the component retail apparel industries recorded productivity gains. Output was up 4.0 percent and hours were down 1.6 percent in the apparel and accessory stores industry. The furniture, home furnishings, and equipment stores industry had the second largest gain at 2.9 percent. The components of this industry recorded opposite productivity changes: appliance, radio, TV, and music stores gained 9.9 percent, while furniture and home furnishings stores fell 1.9 percent. Gasoline service stations had a productivity gain of 2.6 percent. Output grew a low 0.2 percent, while hours continued their long-term decline, falling 2.2 percent. The remaining trade and service industries registered productivity declines. New car dealer productivity dropped 0.5 percent, although there was a significant output gain. Liquor store productivity declined 0.6 percent. In retail food stores, productivity fell 1.0 percent, due in part to the continuing trend toward more service-oriented operations such as delicatessens, in-store bakeries, and salad bars. Productivity dropped 2.2 percent in eating and drinking establishments, 4.1 percent in beauty and barber shops, 4.2 percent in drug stores, and 5.0 percent in both hotels, motels, and tourist courts and laundry and cleaning services.

Table 1. Productivity indexes for selected industries, 1980-85
[1977=100]

Sic Code ¹	Industry	1980	1981	1982	1983	1984	1985 ²	Percent change, 1984-85	Average annual percent change, 1980-85
Mining									
1011	Iron mining, crude ore	124.7	132.8	100.9	139.0	172.1	183.7	6.7	9.1
1011	Iron mining, usable ore	123.2	130.6	98.2	138.6	170.4	183.7	7.8	9.4
1021	Copper mining, crude ore	99.5	102.0	106.4	129.9	140.3	159.3	13.5	10.5
1021	Copper mining, recoverable metal	91.6	97.7	116.2	130.9	153.9	187.6	21.9	15.6
111,21	Coal mining	112.5	122.2	119.2	136.1	151.3	154.4	2.0	7.0
121	Bituminous coal and lignite mining	112.6	122.7	120.0	136.9	152.3	155.2	1.9	7.1
14	Nonmetallic minerals, except fuels	96.5	94.7	89.3	98.2	105.3	107.7	2.3	2.8
142	Crushed and broken stone	101.3	96.7	94.1	103.9	105.8	104.9	-0.9	1.6
Manufacturing									
2011,13	Red meat products	107.0	107.9	112.3	115.9	117.0	(3)	(3)	42.5
2011	Meatpacking	108.9	113.9	119.5	123.3	125.6	127.8	1.8	3.3
2013	Sausages and other prepared meats	102.3	95.0	96.5	100.1	99.5	(3)	(3)	(4.5)
2016,17	Poultry dressing and processing	105.7	116.4	125.6	131.7	130.5	(3)	(3)	45.6
2026	Fluid milk	126.5	131.6	140.0	145.5	152.6	(3)	(3)	44.9
203	Preserved fruits and vegetables	100.8	99.2	107.9	110.9	112.4	(3)	(3)	43.3
2033	Canned fruits and vegetables	101.4	100.7	108.6	114.4	114.9	(3)	(3)	43.8
204	Grain mill products	105.3	110.9	121.0	125.5	132.7	(3)	(3)	46.0
2041,2045	Flour (including flour mixes) and other grains	98.1	99.1	112.3	117.9	122.5	(3)	(3)	46.4
2041	Flour and other grain mill products	94.8	96.7	104.1	110.4	114.9	126.5	10.1	5.9
2043	Cereal breakfast foods	105.9	109.3	115.0	118.7	129.0	(3)	(3)	44.9
2044	Rice milling	111.8	117.9	104.5	103.3	93.2	95.2	2.1	-4.3
2046	Corn milling	121.0	137.5	138.8	156.6	191.6	(3)	(3)	411.1
2047,48	Prepared feeds for animals and fowls	105.0	110.7	124.9	127.4	132.5	(3)	(3)	46.2
205	Bakery products	93.7	96.2	103.3	106.9	106.8	(3)	(3)	43.7
2061,62,63	Sugar	100.1	98.8	90.4	98.6	99.7	103.1	3.4	0.8
2061,62	Raw and refined cane sugar	99.3	98.8	87.6	100.0	94.7	102.4	8.1	0.5
2063	Beet sugar	102.1	98.7	94.8	94.6	108.8	105.1	-3.4	1.3
2082	Malt beverages	116.0	118.3	122.6	131.3	137.9	135.7	-1.6	3.8
2086	Bottled and canned soft drinks	109.8	114.3	118.3	127.0	138.3	144.9	4.8	6.0
2111,21,31,61	Total tobacco	102.1	100.5	100.7	105.1	110.3	114.9	4.2	2.6
2111,31	Cigarettes, chewing and smoking tobacco	101.8	99.6	99.5	104.1	107.2	113.1	5.5	2.3
2121	Cigars	106.4	107.3	111.4	112.3	141.4	134.7	-4.7	5.9

See footnotes at end of table.

Table 1. Continued—Productivity indexes for selected industries, 1980–85

[1977=100]

sic Code ¹	Industry	1980	1981	1982	1983	1984	1985 ²	Percent change, 1984–85	Average annual percent change, 1980–85
2251,52	Hosiery	107.4	122.0	114.2	118.0	119.7	115.5	-3.5	1.0
2281	Nonwool yarn mills	99.7	103.1	118.2	126.0	129.7	129.1	-0.5	6.0
2421	Sawmills and planing mills, general	104.2	107.9	115.1	125.0	131.9	135.6	2.8	5.9
2431	Millwork	93.6	96.4	86.1	86.3	88.7	(3)	(3)	4-2.2
2434	Kitchen cabinets	98.2	94.8	96.1	93.5	93.8	(3)	(3)	4-1.0
2435,36	Veneer and plywood	102.8	106.9	114.4	120.6	120.3	(3)	(3)	44.4
2435	Hardwood veneer and plywood	104.1	100.3	101.4	110.1	105.0	(3)	(3)	41.1
2436	Softwood veneer and plywood	102.7	111.8	122.1	126.5	129.5	(3)	(3)	46.0
251	Household furniture	99.9	103.0	104.7	109.6	111.3	110.4	-0.8	2.2
2511,17	Wood household furniture	97.3	97.4	98.3	103.2	104.4	(3)	(3)	42.0
2512	Upholstered household furniture	102.3	110.5	115.9	121.4	122.0	(3)	(3)	44.6
2514	Metal household furniture	93.6	98.7	107.5	109.1	120.3	(3)	(3)	46.2
2515	Mattresses and bedsprings	112.1	114.0	104.3	108.3	109.2	(3)	(3)	4-1.0
252	Office furniture	112.1	108.8	107.4	110.7	116.7	(3)	(3)	41.0
2521	Wood office furniture	109.2	99.5	90.3	92.9	94.5	(3)	(3)	4-3.5
2522	Metal office furniture	113.9	114.0	116.6	120.5	129.6	(3)	(3)	43.2
2611,21,31,61	Paper, paperboard, and pulp mills	105.2	104.4	111.3	119.6	121.9	122.2	0.2	3.7
2643	Paper and plastic bags	94.6	92.3	95.3	102.2	105.0	(3)	(3)	43.2
2651	Folding paperboard boxes	101.3	104.4	104.2	104.1	102.0	103.2	1.2	0.1
2653	Corrugated and solid fiber boxes	111.0	109.8	111.9	114.0	118.9	118.9	0.0	1.7
2823,24	Synthetic fibers	115.7	120.9	103.6	126.2	125.3	134.8	7.6	3.1
2834	Pharmaceutical preparations	106.0	104.2	107.0	114.4	112.6	115.6	2.7	2.1
2841	Soaps and detergents	109.6	107.3	100.9	98.2	101.0	(3)	(3)	4-2.5
2844	Cosmetics and other toiletries	83.6	76.1	84.0	86.0	84.6	(3)	(3)	41.5
2851	Paints and allied products	100.8	99.8	106.5	111.5	114.8	120.6	5.1	4.0
2911	Petroleum refining	94.2	83.7	79.4	81.8	92.5	100.3	8.4	1.9
3011	Tires and inner tubes	102.4	118.1	128.2	136.1	146.8	145.7	-0.7	7.3
3079	Miscellaneous plastics products	95.7	98.5	110.1	107.1	109.9	(3)	(3)	43.7
314	Footwear	99.1	95.6	106.4	103.9	105.7	104.8	0.9	1.6
3221	Glass containers	105.2	110.1	105.8	108.5	128.0	132.1	3.2	4.7
3241	Hydraulic cement	87.0	91.1	94.0	108.4	125.3	132.1	5.4	9.5
325	Structural clay products	97.6	100.7	102.6	104.0	109.9	107.8	-1.9	2.2
3251,53,59	Clay construction products	94.0	97.3	103.3	100.4	108.5	106.6	-1.8	2.7
3251	Brick and structural clay tile	84.9	84.3	88.6	84.9	92.2	93.5	1.4	2.0
3253	Ceramic wall and floor tile	119.8	125.9	128.1	125.5	140.2	(3)	(3)	43.2
3255	Clay refractories	109.6	111.1	100.0	119.9	116.3	113.4	-2.5	1.4
3271,72	Concrete products	90.4	88.5	91.0	96.4	98.3	(3)	(3)	42.6
3273	Ready-mixed concrete	93.1	95.4	90.6	93.7	96.3	(3)	(3)	40.5
331	Steel	102.9	112.0	90.9	116.8	131.3	138.5	5.5	6.5
3321	Gray iron foundries	90.8	92.7	93.7	98.7	106.8	109.2	2.2	4.1
3324,25	Steel foundries	99.8	91.6	89.0	90.6	97.4	92.7	-4.8	-0.5
3331,32,33	Primary copper, lead, and zinc	103.7	118.6	128.0	141.8	148.9	190.9	28.2	11.6
3331	Primary copper	105.3	124.4	128.5	138.3	151.9	208.5	37.3	12.4
3334	Primary aluminum	100.0	103.8	103.0	111.5	125.4	120.1	-4.2	4.6
3351	Copper rolling and drawing	94.1	97.9	106.0	121.2	128.3	128.9	0.5	7.5
3353,54,55	Aluminum rolling and drawing	100.0	96.8	99.2	110.4	116.2	117.1	0.8	4.2
3411	Metal cans	102.6	108.1	118.5	120.5	122.6	125.8	2.6	4.1
3423	Hand and edge tools	98.4	95.2	92.8	90.5	89.4	(3)	(3)	4-2.4
3441	Fabricated structural metal	102.1	98.5	98.4	103.3	106.8	(3)	(3)	41.4
3442	Metal doors, sash, and trim	90.6	90.4	96.0	98.9	102.5	(3)	(3)	43.4
3465,55,69	Metal stampings	99.9	101.4	98.1	104.1	109.3	(3)	(3)	42.1
3465	Automotive stampings	101.6	105.0	106.7	121.5	127.1	(3)	(3)	46.1
3469	Metal stampings, n.e.c.	98.1	98.0	89.3	88.8	93.7	(3)	(3)	4-1.9
3494	Valves and pipe fittings	102.8	105.4	101.3	104.6	104.7	(3)	(3)	40.3
3498	Fabricated pipe and fittings	90.1	93.5	89.5	89.6	100.1	(3)	(3)	41.7
3519	Internal combustion engines, n.e.c.	94.3	93.2	82.0	88.3	98.7	(3)	(3)	40.4
352	Farm and garden machinery	93.3	95.1	94.9	95.1	104.9	98.3	-6.3	1.6
3523	Farm machinery and equipment	91.3	94.1	92.6	92.1	104.7	96.8	-7.5	1.8
3524	Lawn and garden equipment	106.5	101.0	106.9	109.9	109.7	104.8	-4.5	0.6
3531	Construction machinery and equipment	97.4	96.1	88.9	95.3	103.4	114.2	10.4	3.1
3532	Mining machinery and equipment	98.6	97.8	91.0	96.1	98.9	(3)	(3)	4-0.1
3533	Oilfield machinery and equipment	104.0	104.7	98.4	100.9	89.7	(3)	(3)	4-3.3
3542	Machine tools	98.8	96.5	88.1	86.8	93.0	101.8	9.5	0.1
3541	Metal cutting machine tools	100.6	98.9	89.4	85.0	92.9	99.7	7.3	-0.8
3542	Metal forming machine tools	93.5	89.4	85.0	91.6	93.5	106.9	14.3	2.5
3545	Machine tool accessories	99.2	102.0	89.1	85.4	95.2	(3)	(3)	4-2.6
3561,63	Pumps and compressors	100.2	102.4	95.5	101.8	106.0	(3)	(3)	41.1
3561	Pumps and pumping equipment	97.7	101.7	92.7	99.6	104.0	(3)	(3)	41.0
3562	Ball and roller bearings	95.4	94.3	83.3	87.2	92.7	92.6	-0.1	-0.4
3563	Air and gas compressors	105.5	106.8	101.7	106.1	110.0	(3)	(3)	40.8
3585	Refrigeration and heating equipment	93.8	99.4	100.1	101.2	104.1	(3)	(3)	42.3
3612	Transformers	110.6	106.9	99.6	100.7	96.1	97.0	0.3	-2.7
3613	Switchgear and switchboard apparatus	103.2	99.5	101.3	105.7	106.5	105.1	-1.3	1.0
3621	Motors and generators	96.7	100.4	102.4	104.2	106.4	108.2	1.7	2.2
3631,32,33,39	Major household appliances	105.8	107.6	108.6	116.5	121.7	128.6	5.7	4.1
3631	Household cooking equipment	103.9	105.7	112.6	118.2	127.9	137.2	7.3	5.9
3632	Household refrigerators and freezers	114.4	117.4	116.1	128.1	127.5	134.0	5.1	3.3
3633	Household laundry equipment	102.1	103.9	105.4	110.5	117.0	124.9	6.8	4.1

See footnotes at end of table.

Table 1. Continued—Productivity indexes for selected industries, 1980–85

[1977=100]

sic Code ¹	Industry	1980	1981	1982	1983	1984	1985 ²	Percent change, 1984–85	Average annual percent change, 1980–85
3639	Household appliances, n.e.c.	99.1	100.4	94.7	102.8	108.1	110.4	2.1	2.4
3641	Electric lamps	103.2	106.9	108.4	124.7	132.0	126.4	-4.2	5.2
3645,46,47,48	Lighting fixtures	93.3	88.7	91.0	95.3	101.1	105.0	3.9	3.0
3651	Radio and television receiving sets	116.9	133.6	163.9	196.7	228.9	(3)	(3)	418.9
371	Motor vehicles and equipment	90.8	93.1	96.9	109.6	115.9	122.5	5.7	6.7
3825	Instruments to measure electricity	108.4	111.9	119.2	120.7	131.2	(3)	(3)	44.7
	Other								
401	Railroad transportation, revenue traffic	107.3	111.5	115.8	141.9	152.6	162.1	6.2	9.6
401	Railroad transportation, car miles	107.9	107.6	110.1	128.9	137.7	138.9	0.9	6.4
4111,31,14 pts	Class I bus carriers	100.9	90.7	98.8	95.4	90.9	(3)	(3)	4-1.6
4213 pt	Intercity trucking ⁶	94.3	98.7	93.3	101.0	102.5	97.2	-5.2	1.0
4213 pt	Intercity trucking, general freight ⁶	87.9	92.5	86.8	92.5	94.2	90.5	-3.9	0.8
4511,4521, pt	Air transportation ⁶	106.2	104.9	114.9	126.8	131.7	136.1	3.3	5.9
4612,13	Petroleum pipelines	93.0	86.0	89.2	94.3	104.5	104.3	-0.2	3.5
4811	Telephone communications	118.1	124.4	129.1	145.7	144.0	150.9	4.8	5.2
491,92,93	Gas and electric utilities	96.2	94.4	89.3	88.1	91.4	90.4	-1.1	-1.2
491,493 pt	Electric utilities	94.0	93.0	89.5	90.9	94.4	94.2	-0.2	0.2
492,493 pt	Gas utilities	102.1	98.1	89.0	81.1	83.6	80.7	-3.5	-4.9
54	Retail food stores ⁷	98.9	95.2	93.5	93.9	93.6	92.7	-1.0	-1.1
5511	Franchised new car dealers	99.6	98.1	100.4	109.4	110.4	109.8	-0.5	2.7
5541	Gasoline service stations ⁷	104.3	105.8	110.7	118.1	121.0	124.1	2.6	3.9
56	Apparel and accessory stores ⁷	120.1	127.1	130.9	137.8	146.8	155.2	5.7	5.2
5611	Men's and boys' clothing stores ⁷	106.4	115.6	115.7	120.1	127.2	130.5	2.6	3.9
5621	Women's ready-to-wear stores ⁷	125.5	139.0	158.2	169.7	178.4	178.6	0.1	7.7
5651	Family clothing stores ⁷	122.6	131.4	139.6	149.8	150.2	154.8	3.1	4.8
5661	Shoe stores ⁷	109.3	113.0	108.9	110.0	116.5	126.3	8.4	2.4
57	Furniture, home furnishings, and equipment stores ⁷ ..	107.4	112.6	109.2	118.4	122.4	125.9	2.9	3.3
571	Furniture and home furnishings stores ⁷ ..	98.0	101.2	97.6	104.1	110.3	108.2	-1.9	2.4
572,3	Appliance, radio, TV, and music stores ⁷ ..	124.0	132.5	128.7	143.3	143.4	157.6	9.9	4.5
58	Eating and drinking places ⁷	99.5	97.0	96.6	97.1	94.9	92.8	-2.2	-1.2
5912	Drug and proprietary stores ⁷	107.0	107.6	107.9	110.1	105.0	100.6	-4.2	-1.0
592	Liquor stores ⁷	101.6	103.2	107.8	101.2	101.6	101.0	-0.6	-0.4
602	Commercial banking	92.7	90.5	93.2	101.7	104.7	(3)	(3)	43.7
7011	Hotels, motels, and tourist courts ⁷ ..	95.0	91.6	88.8	95.4	102.1	97.0	-5.0	1.4
721	Laundry and cleaning services ⁷	90.6	88.1	90.2	90.1	92.1	87.5	-5.0	-0.1
723,724	Beauty and barber shops ⁷	102.9	109.2	108.3	114.1	103.9	99.6	-4.1	-0.7
723	Beauty shops ⁷	106.2	114.7	113.1	120.0	112.3	107.7	-4.1	0.2

¹As defined in the *Standard Industrial Classification Manual, 1972*, published by the Office of Management and Budget.

²Preliminary.

³Not available.

⁴Percent change, 1980–84.

⁵Rate of change is less than 0.05 percent.

⁶Output per employee.

⁷Output per hour of all persons.

NOTE: Although the output per employee hour measures relate output to the hours of all employees engaged in each industry, they do not measure the specific contribution of labor, capital, or any other single factor of production. Rather, they reflect the joint effects of many influences, including new technology, capital investment, the level of output, capacity utilization, energy use, and managerial skills, as well as the skills and efforts of the work force. Some of these measures use a labor input series that is based on hours paid, and some use a labor input series that is based on plant hours.

n.e.c. = not elsewhere classified.

Trends

Over the recent 5-year period (1980–85), a large majority of the industries registered growth in productivity. Only about 17 percent of the industries had declining rates over this period.

Among the industries with average annual increases during the 1980–85 period, the radio and television receiving sets industry had the highest rate of gain, 18.9 percent per year from 1980 to 1984. (Data for 1985 are not yet available.) Output in this industry grew at a rate of 9.1 percent per year while employee hours declined in every year, averaging -8.3 percent. Productivity growth in this industry was aided by the widespread use of automatic production techniques and equipment and the closing of less efficient plants. The copper mining (recoverable metal) industry recorded the second highest rate of productivity gain, 15.6

percent per year. This gain, however, reflected a drop in output of 4.0 percent and a decline in hours of 17.0 percent. This industry was hit hard by falling copper prices and the closing of many less efficient mines. The third highest rate of gain was registered by the primary copper, lead, and zinc industry, which grew at a rate of 11.6 percent from 1980 to 1985. This industry also was affected by low copper prices. It had a large drop in output and an even larger drop in hours. Other industries with significant gains in productivity during this period include wet corn milling (11.1 percent, 1980–84), railroad transportation (revenue traffic) (9.6 percent), hydraulic cement (9.5 percent), and iron mining (usable ore) (9.4 percent).

Among the industries with average annual declines in productivity, the gas utilities industry posted the largest drop, falling at a rate of 4.9 percent from 1980 to 1985. Output fell 4.1 percent in this industry due in part to a

decrease in average use per customer. At the same time, the number of customers increased, resulting in growth in employee hours. The industry with the next largest decline in output per hour was rice milling, in which the rate fell 4.3 percent. Output declined at the high rate of 6.6 percent from 1980 to 1985, as exports contracted and hours were down at a 2.5-percent rate. Other industries with significant declines were wood office furniture (3.5 percent), oilfield machinery (3.3 percent, 1980–84), transformers (2.7 percent), and machine tool accessories (2.6 percent, 1980–84). □

—FOOTNOTE—

¹ For a detailed report on these industries, see James D. York, "Retail liquor stores experience flat trend in productivity," *Monthly Labor Review*, February 1987, pp. 25–29; and Z.Z. Ahmed and M. Sieling, "Two decades of productivity growth in poultry dressing and processing," *Monthly Labor Review*, April 1987, pp. 34–39. Also, an article by Arthur S. Herman and J. Edwin Henneberger, "Productivity trends in the furniture and home furnishings industry," and an article on mining machinery will appear in forthcoming issues of the *Monthly Labor Review*.

Geographic segmentation

In most occupations, the geographical area in which employers recruit new workers is a commuting area around the workplace. The methods used to find workers—word-of-mouth publicizing of vacancies through their employees, posting of vacancies at the gate, notifying union hiring halls or State or private employment agencies, or placing want ads in newspapers—are focused locally. On the supply side the same is true; workers look for jobs within commuting distance from their homes.

—*Using Labor Market Information in Career Exploration
and Decision Making: A Resource Guide*
(Garrett Park, MD, Garrett Park Press, 1986), p. 56.

Major Agreements Expiring Next Month



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

Industry or activity	Employer and location	Labor organization ¹	Number of workers
Construction	Associated Brick Mason Contractors of Greater New York and one other (New York)	Laborers	5,700
	Associated General Contractors (Detroit, MI)	Carpenters	4,250
	Associated General Contractors (Detroit, MI)	Operating Engineers	1,200
	Associated General Contractors, Wisconsin Chapter (Wisconsin)	Carpenters	4,500
	Allied Construction Employers Association (Milwaukee, WI)	Laborers	1,500
	Allied Construction Employers Association (Milwaukee, WI)	Carpenters	2,200
	Associated Brick Mason Contractors of New York City (New York)	Bricklayers	1,900
	Association of Master Painters and Decorators (New York, NY)	Painters	4,250
	Building Contractors Association (Indianapolis, IN)	Carpenters	1,600
	Calumet Builders Association (Gary, IN)	Carpenters	1,100
	Construction Industries of Massachusetts (Massachusetts)	Operating Engineers	3,000
	Connecticut Construction Industries Association (Hartford, CT)	Laborers	3,000
	Contract Administration Fund of Northeastern Colorado (Denver, CO)	Plumbers	1,400
	Electrical Contractors Association (Chicago, IL)	Electrical Workers (IBEW)	8,100
	Great Lakes Fabricators and Erectors Association, conveyer agreement (Detroit, MI)	Operating Engineers	1,200
	Great Lakes Fabricators and Erectors Association and two others (Detroit, MI)	Iron Workers	1,900
	Independent building construction employers (Buffalo, NY)	Operating Engineers	1,200
	Industrial Contractors and Builders Association (Indiana)	Laborers	1,700
	Illinois Road Builders and others, heavy and highway (Chicago, IL)	Operating Engineers	2,500
	Mason Contractors Association (St. Louis, MO)	Bricklayers	1,000
	Master Builders Association of Western Pennsylvania (Pennsylvania)	Carpenters	5,000
	Master Builders Association of Western Pennsylvania, 11 counties (Pennsylvania)	Operating Engineers	2,000
	Master Builders Association of Western Pennsylvania (Pennsylvania)	Laborers	5,500
	Mechanical Contractors Association of Northeastern Pennsylvania (Pennsylvania)	Plumbers	1,100
	Mechanical Contractors Association (Chicago, IL)	Plumbers	6,000
	Metropolitan Detroit Plumbing and Mechanical Contractors Association (Michigan)	Plumbers	1,800
	National Electrical Contractors Association (Santa Clara, CA)	Electrical Workers (IBEW)	2,000
	National Electrical Contractors Association, Southeastern Michigan Chapter (Michigan)	Electrical Workers (IBEW)	3,000
	National Electrical Contractors Association (Las Vegas, NV)	Electrical Workers (IBEW)	1,100
	Omaha Building Contractors Employers Association (Nebraska)	Laborers	1,700
	Painting and Decorating Contractors Association (Chicago, IL)	Painters	6,250
	Sheet Metal and Air Conditioning Contractors Association (Milwaukee, WI)	Sheet Metal Workers	1,150
Sheet Metal Employers Association (Detroit, MI)	Sheet Metal Workers	1,000	
Tri-State Contractors Association (Kentucky, Ohio, West Virginia)	Carpenters	1,000	
Lumber	Woodworkers Association of Chicago (Illinois)	Carpenters	1,700
	Lumber and Mill Employers Association (California)	Carpenters	1,350
Paper	Scott Paper Co. (Maine)	Paperworkers	1,050
	Longview Fibre Co. (Longview, WA)	Pulp and Paper Workers	1,500
Printing and publishing	Chicago Lithographers Association (Illinois)	Graphic Communications	3,000
	Employing Lithographers of Los Angeles (California)	Graphic Communications	1,300
Chemicals	PPG Industries, Inc., Chemicals (Lake Charles, LA)	Machinists	1,300
Primary metals	Keystone Consolidated Industries, Inc. (Peoria, IL)	Independent Steel Workers' Alliance (Ind.)	1,100
Transportation equipment	Newport News Shipbuilding and Drydock Co. (Virginia)	Steelworkers	18,200
	McDonnell Douglas Corp. (St. Louis, MO)	Machinists	9,600

See footnote at end of table.

Continued—Major Agreements Expiring Next Month

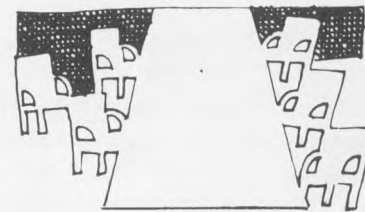
Industry or activity	Employer and location	Labor organization ¹	Number of workers
Communication	General Telephone of the Northwest, Inc. (Interstate)	Electrical Workers (IBEW)	3,400
Utilities	Pennsylvania Electric Co. (Pennsylvania)	Electrical Workers (IBEW)	2,200
	Wisconsin Power and Light Co. (Madison, WI)	Electrical Workers (IBEW)	1,800
Retail trade	Macy's and Emporium Department Stores (San Francisco, CA)	Food and Commercial Workers	3,200
	Nordstrom Inc. (Seattle, WA)	Food and Commercial Workers	1,350
	Kroger Co. (Alabama, Kentucky, Tennessee)	Food and Commercial Workers	4,550
	Anchorage Retail Grocers Association (Anchorage, AK)	Food and Commercial Workers	2,000
	Safeway Stores, meat department (Denver, CO)	Food and Commercial Workers	1,400
	Safeway Stores, grocery department (Denver, CO)	Food and Commercial Workers	4,500
	King Sooper Stores, meat department (Denver, CO)	Food and Commercial Workers	1,600
	King Sooper Stores, grocery department (Denver, CO)	Food and Commercial Workers	6,000
Hotels	Council of Hawaii Hotels (Hawaii)	Longshoremen and Warehousemen	7,000
Hospitals	Health Employers Inc., nurses (Minneapolis-St. Paul, MN)	Minnesota Nurses Association (Ind.)	3,900

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

A note on communications

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

Developments in Industrial Relations



USX contract ends 6-month strike

The longest work stoppage in the history of the U.S. steel industry ended when USX Corp. and the United Steelworkers union settled on a 4-year accord. The vote by 22,000 active and 11,000 laid-off (for less than 2 years) employees was 19,621 to 4,045. The 6-month stoppage was viewed as a lockout by the United Steelworkers and as a strike by USX. (The stoppage was ruled a lockout by courts in some States, enabling involved employees to draw unemployment benefits. Courts in other States ruled it was a strike, precluding payment of such benefits.) It began August 1, 1986, after bargainings were unable to settle peacefully.

In the months prior to the stoppage, it became increasingly clear that a showdown was coming, although earlier in 1986, the Steelworkers reached agreements with some other major steel producers without work stoppages. In 1985, the major companies ended coordinated bargaining with the union, contending that a change to company-by-company and even mill-by-mill bargaining was vital to assure that settlements were tailored to address the problems of each company.

Steelworkers' President Lynn Williams responded that the union would press for similar settlements at the individual companies, subject to variations warranted by valid cost and production problems. The USX accord was patterned after the June 1986 settlement at Bethlehem Steel Co. at the suggestion of Sylvester Garrett, an arbitrator in the industry, who assisted the parties in ending the bargaining stalemate.

The Steelworkers said that the contract changes favorable to USX will save the company about \$300 million over the term, which runs to January 31, 1991. As at Bethlehem, all wage and salary rates and incentive calculation rates were reduced 8.09 percent, amounting to an average cut of \$1.12 an hour. This, plus the following changes in compensation, amounted to about \$2 an hour:

- Suspension of the provision for automatic cost-of-living pay adjustments and termination of the existing 4-cent-an-hour allowance.

- Reduction of the Sunday work premium to time and one-fourth pay, from time and one-half.
- Elimination of 3 of the 10 paid holidays.
- Revision of the vacation pay calculation to exclude the effect of shift differentials and overtime and Sunday work premium.

The parties also agreed on cost reductions that apply only during part of the contract term:

- During the first year, employees eligible for 3 weeks or more of paid vacation will give up 1 week.
- During the first 2 years, shift premiums will be reduced one-third, to 20 cents and 30 cents an hour.
- During the first 2 years, an additional paid holiday will be inoperative.

Part and possibly all of the employees' permanent and temporary sacrifices could be offset from distributions under a new profit-sharing plan. Under the formula of this plan, the annual distributions will equal 10 percent of the first \$200 million of USX pretax income, plus 20 percent of any amount in excess of \$200 million. In any case, employees will be guaranteed minimum distributions based on the payouts to employees covered by the stock ownership plans the union negotiated with Bethlehem and LTV Steel Co. The provision for minimum payments is designed to keep USX's profit-sharing plan at the same cost level as the stock-sharing plans at Bethlehem and LTV. According to the union, the minimum payout to employees will equal 20 percent of their compensation sacrifice if the prices of LTV and Bethlehem stock stay at current levels.

Payouts to USX employees will be proportionate to their annual earnings and will not exceed their sacrifice for the year. Also, unpaid employee sacrifices in one year will not carry over for possible payment in the next year.

A feature of the settlement favorable to the union was new provisions intended to reduce the number of jobs lost as a result of contracting out work. The provisions are comparable to those negotiated earlier at the other companies, generally providing that all work that can be done by members of the bargaining unit shall be done by them. The new rules specify that work contracted out according to a "consistent practice" established before March 1, 1983, may continue to

"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.

be contracted out. Work contracted out according to a consistent practice established after that date now goes to bargaining unit members unless USX can prove that contracting out is warranted according to a "reasonableness test" consisting of 11 factors, such as the desirability of recalling laid-off employees and the impact of contracting out on the number of jobs in the plant. USX is required to notify the union of all proposed contracting out and the parties agreed on special accelerated arbitration procedures to resolve any disputes.

The new contract permits USX to eliminate 1,346 jobs, but two "special pensions" (with \$400-a-month supplements until age 62) will be granted for each of the lost jobs. Also, one laid-off worker will be recalled to work for each special pension granted. Other changes in pensions included a \$1 increase in the normal monthly computation rate, bringing it to \$18.50 monthly for each of the first 15 years of service, plus \$20 for each of the next 15 years, plus \$21.50 for each additional year.

Health insurance changes included a doubling of the lifetime major medical coverage to \$100,000; adoption of a prescription drug mail order plan; and a cost-containment program financially penalizing employees who do not follow requirements for precertification of hospital stays and second medical opinions prior to surgery.

Another aspect of the settlement is a company commitment to modernize its Monongahela Valley, PA, and Fairfield, AL, facilities. The work, to be started during the agreement period, is expected to cost nearly \$1 billion. USX also agreed to keep its Fairless Hills, PA, works in operation at least through the agreement period and to join the Steelworkers in a study of ways to improve prospects for the Geneva, UT, works.

In 1983, when USX and the other major producers settled jointly with the Steelworkers, the parties agreed on a \$1.31 an hour pay cut, including \$1.25 that was restored to the workers in stages during the agreement term; elimination of some possible quarterly cost-of-living adjustments and limits on others (the employees actually received adjustments totaling 4 cents an hour); and temporary and permanent cuts in benefits.

After the 1987 settlement, a controversy erupted when USX placed four plants on "indefinite idled status," meaning that 3,700 union-represented employees would not be recalled in the foreseeable future. Steelworkers' President Williams said that, during the contract negotiations, the company assured them "that all facilities operating before the lockout would resume operations on an orderly basis as work became available." USX Chairman David Roderick said that early in the negotiations, company officials warned union leaders that some plant closings might be necessary if a lengthy work stoppage occurred.

The plant closings affected 250 workers at two plants in the Pittsburgh area, 750 in Baytown, TX, and 2,700 at the Geneva works.

Deere contract protects employees against layoffs

Employees of Deere & Co. ratified a contract negotiated by the United Auto Workers, ending a more than 5-month work stoppage. Deere, the world's largest producer of farm equipment, had generally followed the pattern set by Caterpillar Inc., but was apparently reluctant to do so this time because Caterpillar is primarily engaged in production of construction equipment which has had a healthier market recently than farm equipment.

The accord runs to September 30, 1988, matching the expiration date of the union's contract with Caterpillar. It does not provide for any specified wage changes. However, all employees on the payroll or on temporary layoff on August 23, 1986, received an immediate \$735 lump-sum "recoupment allowance." Employees will be eligible for possible quarterly pay adjustments under the cost-of-living formula, which was continued subject to diversion of a total of 23 cents an hour over the term to help meet the cost of the settlement. Also, all but about 0.5 percentage point of the 38.2-percent cost-of-living float accrued under prior contracts was incorporated into base pay rates, resulting in increases in insurance benefit levels that vary with pay rates.

A major provision of the contract is a new Protected Employee Group program patterned after one adopted at Caterpillar in 1986. It protects 90 percent of employees in current jobs from layoffs resulting from volume reductions, economic conditions or marketplace changes, "sourcing" decisions, new technology, productivity improvements, or consolidations of operations. The job guarantees do not apply to temporary layoffs of up to 6 weeks, job reductions resulting from labor disputes, sale of part of the company's operations as an ongoing operation, a complete plant closing, or job cuts resulting from events beyond the company's control.

A new joint Employee Development and Training Program will cover training, retraining, skill development, and personal development. It will be funded by up to 8 cents of the money subject to diversion from possible cost-of-living pay adjustments.

Pension changes included an increase in the maximum earnings level under the "formula" method for calculating benefits, resulting in a maximum monthly benefit of \$39.33 for each year of service for 30-year employees. Under the alternate "minimum" formula (used if it results in a larger benefit), the calculation rate was increased to \$22.05 a month for each year of service, from \$19. Pension rates also were increased for current retirees and those who retired prior to June 1, 1986, will receive two lump-sum payments, each ranging up to \$200.

Deere's financing of Supplemental Unemployment Benefits was increased, in three stages, to 9 to 19 cents per compensated hour, from 5 to 15 cents.

Improvements in the profit-sharing plan included an increase in the payouts for each step-up in the level of profits and a change in the payout calculation formula to a percent-

age of pay rates (from a cents-per-hour approach) to provide some protection against inflation.

Other terms included a new tax deferred savings plan enabling workers to invest \$10 to \$134 of their weekly earnings in any of three funds; an additional paid holiday; increased shift differentials (to 60 cents an hour, from 54.1 for the second shift, and to 90 cents, from 78.9, for the third shift); transfer, pension, and other types of protections for employees offered jobs by a new joint venture company being formed in Waterloo, IA, by Deere and General Motors Corp.'s Detroit Diesel Allison Division; and improvements in the health care and prescription drug plans.

The accord covers 12,000 active employees and 10,000 on layoff at nine plants in Iowa and Illinois and warehouses and parts depots in Denver, CO, Atlanta, GA, East Moline, IL, Minneapolis, MN, and Memphis, TN. The 159-day stoppage eclipsed the 110-day stoppage in 1950 as the longest in company history.

Constructors Association acts to reduce competition

In a move to help counter increasing competition from nonunion construction companies, the National Constructors Association and the AFL-CIO's Building and Construction Trades Department negotiated a contract containing "model" language to be incorporated into individual labor contracts between their member contractors and member unions. The agreement will bring stability, improve efficiency, and enhance the quality of large construction projects, according to negotiators for both sides. The agreement, which does not deal directly with pay rates, calls for—

- Flexible work hours between 7:00 a.m. and 5:30 p.m.
- Flexible workweeks.
- Seven standard unpaid holidays.
- Elimination of premium pay for night and weekend work.
- Prohibition of all strikes during contract terms, backed by expedited grievance procedures to rule on stoppages that do occur and the possibility of union damage payments to employers of \$10,000 per day per worker for unwaranted stoppages.
- Elimination of travel and subsistence payments to employees in many cases.
- Permission for employers to fire employees for excessive absences from work.
- Permission for companies to hire more nonunion employees, such as trainees and preapprentices.

The New National Construction Stabilization Agreement also established a joint committee to assure uniform interpretation and application of the provisions.

Transportation employees agree to concessions

Bus Lease, Inc., and the Amalgamated Transit Union agreed on a 3-year cost-cutting contract effective in March, when the company completed the purchase of Greyhound

Lines Inc. The announcement of the sale came after the 8,000 union members had rejected a contract offer from Greyhound Lines and were in the process of voting on a 3-month extension of the current agreement, which had expired on October 31, 1986. Union President James LaSala conceded that the contract was "concessionary" on the employees' part, but stressed that it maintained existing pension and health and welfare funds. The employees' efforts to help reverse the decline in profits that had affected the bus line in recent years was not new—in 1983, they agreed to an 11.8-percent pay cut, after a 7-week strike.

The 1987 accord provides for:

- A cut in drivers' mileage pay rates that will be more or less offset by a change in contract language permitting them to drive more hours in a shift. An official of Bus Lease described the change as a "productivity improvement. It doesn't mean longer hours, and it's still within government safety regulations."
- Premium pay for drivers in eight large cities.
- Possible incentive payments to drivers, contingent on increases in ridership.
- Job guarantees for all full-time employees with at least 5 years of service.

AFSCME ends strike against Rutgers University

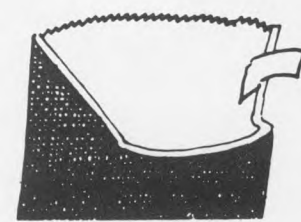
In New Brunswick, NJ, a 9-day strike against Rutgers University ended when members of two locals of the American Federation of State, County and Municipal Employees approved 3-year contracts. Wages were increased by 6 percent retroactive to October 5, 1986, and by 5 percent in October of 1987 and 1988. Under the prior contracts, pay averaged \$16,500 for the 2,800 clerical and maintenance employees.

Shipbuilding workers' pay frozen

In Pascagoula, MS, Ingalls Shipbuilding Co. and 11 unions agreed on 3-year contracts that froze pay rates (which were \$11.28 an hour for most occupations), but provided for lump-sum payments. The first payment, \$1,000, went to workers on the payroll on February 1, 1987, and will be followed by payments ranging from \$250 to \$500 (depending on the number of hours worked) in February 1988.

In 1988, starting rates for new employees will be cut to \$3 an hour below the top rate for the particular occupation. Currently, the starting rate is \$1 below the top rate.

Benefit changes include a \$50,000 increase in major medical insurance coverage, to \$300,000; other improvements in hospital-medical-surgical insurance; a \$15 increase in weekly sickness and accident benefits, to \$145; and an increase in pensions to employees who retire in the future at age 65—under the new formula, they will receive annual payments equal to 60 percent (formerly 50 percent) of their contribution to the pension fund during their career. □



Book Reviews

Employer do's and don'ts

The 1986 Immigration Act: A Handbook on Employer Sanctions and Nondiscrimination Requirements. By G. John Tysse. Washington, National Foundation for the Study of Equal Employment Policy, 1987. 137 pp. \$15, paper.

The purpose of this Handbook is to provide information to employers about employment provisions of the Immigration Reform and Control Act of 1986—landmark legislation that, for the first time, makes it unlawful for employers to hire illegal aliens.

The Handbook focuses on two provisions of the law: the system of procedures and penalties prohibiting the hiring of illegal workers, and, related to that, the provision prohibiting employers from discriminating against job applicants because of their national origin or citizenship status. (The first provision generally is referred to as “employer sanctions” and the second as “nondiscrimination requirements.”)

The Handbook offers helpful suggestions, in addition to succinctly explaining procedures and requirements. Here are a few examples: In the section on employment verification procedures, it gives the telephone number of the Immigration and Naturalization Service official who is responsible for providing assistance to employers. In another section, pointing out that it is unlawful to knowingly hire illegal aliens, it says, “*The key here is knowledge.* The burden will be on the government to show that an employer knowingly hired an illegal alien. Employers who in good faith comply with the verification procedures . . . are not likely to be found guilty of a knowing violation, even where illegals are hired (for example, because of fraudulent documents)” (p. 20). Also, the section “Steps to Consider Now” (on the nondiscrimination requirements) provides practical advice to employers. For example: “Eliminate ‘citizens only’ hiring policies immediately, unless the policy is specifically required by law” (p. 93).

The Handbook also provides a summary of the employment-related aspects of the “legalization” provision that permits illegal aliens who have lived in the United States since January 1982 to establish legal residence. It includes, too, the full text of the law. The Handbook does not deal with the provisions specific to employment in agriculture. Nor does it go beyond employment matters into other aspects of the law.

The “acknowledgments” section refers to the Handbook as a training program, while the foreword suggests it be used as a reference. For either purpose, it is timely, well organized, and instructive. Although there is a good deal of attention to legal procedures, only an occasional sentence is somewhat difficult to understand.

As noted in the Handbook, however, it does not cover all the information that may be needed by employers. It was published before many of the regulations and interpretations of the law were formulated, and therefore will need updating.

The Handbook, written by G. John Tysse, a partner in a law firm that represents employers on labor and employment law issues, should provide a useful source of information to the employer community.

—Ellen Sehgal
Human Resources Division
U.S. General Accounting Office

Publications received

Economic and social statistics

Beider, Perry C. and others, *Comparable Worth in a General Equilibrium Model of the U.S. Economy*. Cambridge, MA, National Bureau of Economic Research, Inc., 1986, 73 pp. (NBER Working Paper Series, 2090.) \$2, paper.

Flinn, Christopher J., “Econometric Analysis of CPS-Type Unemployment Data,” *The Journal of Human Resources*, Fall 1986, pp. 456–84.

Land, Kenneth C., “Methods for National Population Forecasts: A Review,” *Journal of the American Statistical Association*, December 1986, pp. 888–901.

Leon, Carol Boyd, “Why Americans Are Writing More Checks,” *American Demographics*, February 1987, pp. 34–36.

Schwertman, Neil C. and Lance K. Heilbrun, “A Successive Differences Method for Growth Curves with Missing Data and Random Observation Times,” *Journal of the American Statistical Association*, December 1986, pp. 912–16.

Wolf, Douglas and David Greenberg, “The Dynamics of Welfare Fraud: An Econometric Duration Model in Discrete Time,” *The Journal of Human Resources*, Fall 1986, pp. 437–55.

Health and safety

Competition in a Changing Health Care Environment: “The Future

of Medicare Policy Reform—Priorities for Research and Demonstrations,” by Allen Dobson and others; “Capitation and the Medicare Program: History, Issues, and Evidence,” by Kathryn M. Langwell and James P. Hadley; “Overview of Medicaid Capitation and Case-Management Initiatives,” by Deborah A. Freund and Edward Neuschler; “Overview of Employer Capitation Activities,” by Kevin E. Moley; “Pricing Strategies for Capitated Delivery Systems,” by Leonard Gruenberg, Stanley S. Wallack, and Christopher P. Tompkins; “Rate Adjusters for Medicare Under Capitation,” by Joseph P. Newhouse; “Medicare Capitation and Quality of Care for the Frail and Elderly,” by Albert L. Siu, Robert H. Brook, and Laurence Z. Rubenstein; “Quality of Care Review: Recent Experience in Arizona,” by Donald F. Schaller, Albert W. Bostrom, Jr. and John Rafferty, *Health Care Financing Review*, Annual Supplement, 1986, pp. 1–74.

Industrial relations

- Addison, John T., “Job Security in the United States: Law, Collective Bargaining, Policy, and Practice,” *British Journal of Industrial Relations*, November 1986, pp. 381–418.
- Banderet, M. E., “Discipline at the Workplace: A Comparative Study of Law and Practice,” *International Labour Review*, July–August 1986, pp. 383–99.
- Hince, Kevin, “Wage Fixing in a Period of Change: The New Zealand Case,” *International Labour Review*, July–August 1986, pp. 463–72.
- Kessler, Ian, “Shop Stewards in Local Government Revisited,” *British Journal of Industrial Relations*, November 1986, pp. 419–41.
- Knight, Thomas R., “Tactical Use of the Union’s Duty of Fair Representation: An Empirical Analysis,” *Industrial and Labor Relations Review*, January 1987, pp. 180–94.
- Maranto, Cheryl L. and Jack Fiorito, “The Effect of Union Characteristics on the Outcome of NLRB Certification Elections,” *Industrial and Labor Relations Review*, January 1987, pp. 225–40.
- Schwochau, Susan, “Union Effects on Job Attitudes,” *Industrial and Labor Relations Review*, January 1987, pp. 209–24.
- Steele, Mairi, Kenneth Miller, John Gennard, “The Trade Union Act, 1984: Political Fund Ballots,” *British Journal of Industrial Relations*, November 1986, pp. 443–67.
- “Transfer and Relocation Under Law,” *Japan Labor Bulletin*, November 1986, pp. 5–7.
- Tysse, G. John, *The 1986 Immigration Act: A Handbook on Employer Sanctions and Nondiscrimination Requirements*. Washington, National Foundation for the Study of Equal Employment Policy, 1987, 137 pp. \$15, paper.
- Voos, Paula B., “Managerial Perceptions of the Economic Impact of Labor Relations Programs,” *Industrial and Labor Relations Review*, January 1987, pp. 195–208.

International economics

- Cooper, Richard N., *The International Monetary System: Essays in World Economics*. Cambridge, MA, The MIT Press, 1987, 284 pp. \$27.50, cloth; \$9.95, paper.
- Kornai, Janos, “The Hungarian Reform Process: Visions, Hopes, and Reality,” *Journal of Economic Literature*, December 1986, pp. 1687–1737.

Overseas Development Council, *Third World Worker Rights and U.S. Trade Policy: Should They Be Linked?* Washington, Overseas Development Council, 1986, 8 pp. (ODC Policy Focus, No. 6.) Single copies, \$1.50.

“The 72d Session of the International Labour Conference, June 1986,” *International Labour Review*, September–October 1986, pp. 509–32.

Tokman, Victor E., “Adjustment and Employment in Latin America: The Current Challenges,” *International Labour Review*, September–October 1986, pp. 533–43.

Labor and economic history

- Jefferys, Steve, *Management and Managed: Fifty Years of Crisis at Chrysler*. New York, Cambridge University Press, 1987, 290 pp., bibliography. \$29.95.
- Kazin, Michael, *Barons of Labor: The San Francisco Building Trades and Union Power in the Progressive Era*. Chicago, University of Illinois Press, 1987, 319 pp. \$24.95.
- Malcolmson, Patricia E., *English Laundresses: A Social History, 1850–1930*. Champaign, Ill., University of Illinois Press, 1987, 220 pp. \$26.95.
- O’Sullivan, Judith and Rosemary Gallick, *Workers and Allies: Female Participation in the American Trade Union Movement, 1824–1976*. Washington, Smithsonian Institution, 1986, 96 pp. \$5.95, paper. Available from ILR Press, Ithaca, NY 14851–0952.
- “The People’s Republic of China, 1986,” *Current History*, September 1986, beginning on p. 241.
- Wilson, Joseph with Thomas Weissinger, eds., *Black Labor in America, 1865–1983: A Selected Annotated Bibliography*. Westport, CT, Greenwood Press, 1986, 127 pp. \$29.95.

Labor force

- Altonji and Christina H. Paxson, *Labor Supply Preferences, Hours Constraints, and Hours-Wage Tradeoffs*. Cambridge, MA, National Bureau of Economic Research, Inc., 1987, 31 pp. (NBER Working Paper Series, 2121.) \$2, paper.
- Arun, Roy S., *Impact of Technological Change on Employment Patterns of Women Relative to Men in Canada, 1979–81*. Ottawa, Canada Employment and Immigration, 1986, 52 pp.
- Beach, Charles M. and S. F. Kaliski, “The Distribution of Unemployment Spells: Canada, 1978–82,” *Industrial and Labor Relations Review*, January 1987, pp. 254–67.
- Borjas, George J., “The Self-Employment Experience of Immigrants,” *The Journal of Human Resources*, Fall 1986, pp. 485–506.
- Fuchs, Victor R. and Joyce P. Jacobsen, *Employee Response to Compulsory Short-Time Work*. Cambridge MA, National Bureau of Economic Research, Inc., 1986, 37 pp. (NBER Working Paper Series, 2089.) \$2, paper.
- Greenwood, Michael J. and John M. McDowell, “The Factor Market Consequences of U.S. Immigration,” *Journal of Economic Literature*, December 1986, pp. 1738–72.
- Heckman, James J. and V. Joseph Hotz, “An Investigation of the Labor Market Earnings of Panamanian Males: Evaluating the Sources of Inequality,” *The Journal of Human Resources*, Fall 1986, pp. 507–42.
- Jansen, Mary A., “Emotional Disorders and the Labour Force: Prevalence, Costs, Prevention and Rehabilitation,” *International Labour Review*, September–October 1986, pp. 605–15.

Mallier, A. T. and M. J. Rosser, *Women and the Economy: A Comparative Study of Britain and the USA*. New York, St. Martin's Press, 1987, 221 pp., bibliography. \$29.95.

Sharma, Ursula, *Women's Work, Class, and the Urban Household: A Study of Shimla, North India*. New York, Tavistock Publications in association with Methuen, Inc., 1987, 213 pp. \$39.95, cloth; \$15.95, paper.

Starling, Grover and Otis W. Baskin, "A Systems Approach to Plant Closings," *Akron Business and Economics Review*, Winter 1986, pp. 108-21.

Management and organization theory

Garvin, David A., "Quality Problems, Policies, and Attitudes in the United States and Japan: An Exploratory Study," *Academy of Management Journal*, December 1986, pp. 653-73.

Gustavsen, Björn, "Evolving Patterns of Enterprise Organization: The Move Towards Greater Flexibility," *International Labour Review*, July-August 1986, pp. 367-82.

Isenberg, Daniel J., "Thinking and Managing: A Verbal Protocol Analysis of Managerial Problem Solving," *Academy of Management Journal*, December 1986, pp. 775-88.

Malone, Paul B. III, *Love 'Em and Lead 'Em*. Annandale, VA, Synergy Press, 1986, 173 pp. \$10.95, paper; plus \$1, handling.

Miller, Katherine I. and Peter R. Monge, "Participation, Satisfaction, and Productivity: A Meta-Analytic Review," *Academy of Management Journal*, December 1986, pp. 727-53.

Wages and compensation

Babitsky, Steven and Geoffrey Shapiro, *The Use of the AMA Guides in the Evaluation of Permanent Impairment in Workers' Compensation Cases*. Falmouth, MA, SEAK Inc., 1986, 129 pp. \$50.

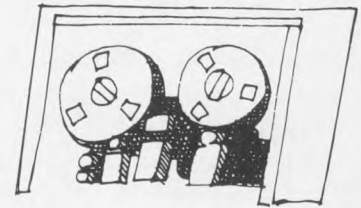
Raff, Daniel M. G. and Lawrence H. Summers, *Did Henry Ford Pay Efficiency Wages?* Cambridge, MA, National Bureau of Economic Research, Inc., 1986, 37 pp. (NBER Working Paper Series, 2101.) \$2, paper.

Worker training and development

Castley, Robert and Torkel Alfthan, "Training for Industrial Development: How Governments Can Help," *International Labour Review*, September-October 1986, pp. 545-60.

Jones, Ian S., "Apprentice Training Costs in British Manufacturing Establishments: Some New Evidence," *British Journal of Industrial Relations*, November 1986, pp. 333-62.

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Consumer Price Index	April 24	March	May 22	April	June 23	May	2; 30-32
Real earnings	April 24	March	May 22	April	June 23	May	14-17
Major collective bargaining settlements	April 27	1st quarter	3; 25-28
Productivity and costs:							
Nonfarm business and manufacturing	May 4	1st quarter	2; 42-44
Nonfinancial corporations	June 1	1st quarter	2; 42-44
Employment Cost Index	April 28	1st quarter	1-3; 22-24
U.S. Import and Export Price Indexes	April 30	1st quarter	36-41

NOTES ON CURRENT LABOR STATISTICS

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

General notes

The following notes apply to several tables in this section:

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

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

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

Adjustments for price changes. Some data—such as the Hourly Earnings Index in table 17—are adjusted to eliminate the effect of changes in price. These adjustments are made by dividing current dollar values by the Consumer Price Index or the appropriate component of the index, then multiplying by 100. For example, given a current hourly wage rate of \$3 and a current price index number of 150, where 1967 = 100, the hourly rate expressed in 1967 dollars is \$2 ($\$3/150 \times 100 = \2). The \$2 (or any other resulting values) are described as "real," "constant," or "1967" dollars.

Additional information

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

Symbols

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

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

n.e.c. = not elsewhere classified.

n.e.s. = not elsewhere specified.

COMPARATIVE INDICATORS

(Tables 1-3)

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

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

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

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

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

Notes on the data

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

sections of these notes describing each set of data. For detailed descriptions of each data series, see *BLS Handbook of Methods*, Volumes I and II, Bulletins 2134-1 and 2134-2 (Bureau of Labor Statistics, 1982 and 1984, respectively), as well as the additional bulletins, articles, and other publications noted in the separate sections of the *Review's* "Current Labor Statistics Notes." Historical data for many series are provided in the *Handbook of Labor Statistics*, Bulletin 2217 (Bureau of Labor Statistics, 1985). Users may also wish to consult *Major Programs, Bureau of Labor Statistics*, Report 718 (Bureau of Labor Statistics, 1985).

EMPLOYMENT DATA

(Tables 1; 4-21)

Household survey data

Description of the series

EMPLOYMENT DATA in this section are obtained from the Current Population Survey, a program of personal interviews conducted monthly by the Bureau of the Census for the Bureau of Labor Statistics. The sample consists of about 59,500 households selected to represent the U.S. population 16 years of age and older. Households are interviewed on a rotating basis, so that three-fourths of the sample is the same for any 2 consecutive months.

Definitions

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

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

The **labor force** consists of all employed or unemployed civilians plus members of the Armed Forces stationed in the United States. Persons **not in the labor force** are those not classified as employed or unemployed; this group includes persons who are retired, those engaged in their own 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. A description of these adjustments and their effect on

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

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

Additional sources of information

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

A comprehensive discussion of the differences between household and establishment data on employment appears in Gloria P. Green, "Comparing employment estimates from household and payroll surveys," *Monthly Labor Review*, December 1969, pp. 9-20.

Establishment survey data

Description of the series

EMPLOYMENT, HOURS, AND EARNINGS DATA in this section are compiled from payroll records reported monthly on a voluntary basis to the Bureau of Labor Statistics and its cooperating State agencies by more than 250,000 establishments representing all industries except agriculture. In most industries, the sampling probabilities are based on the size of the establishment; most large establishments are therefore in the sample. (An establishment is not necessarily a firm; it may be a branch plant, for example, or warehouse.) Self-employed persons and others not on a regular civilian payroll are outside the scope of the survey because they are excluded from establishment records. This largely accounts for the difference in employment figures between the household and establishment surveys.

Definitions

An **establishment** is an economic unit which produces goods or services (such as a factory or store) at a single location and is engaged in one type of economic activity.

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

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

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

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

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

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

Notes on the data

Establishment data collected by the Bureau of Labor Statistics are periodically adjusted to comprehensive counts of employment (called "benchmarks"). The latest complete adjustment was made with the release of May 1986 data, published in the July 1986 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 1984; seasonally adjusted data have been revised back to January 1981. These revisions were published in the *Supplement to Employment and Earnings* (Bureau of Labor Statistics, 1986). Unadjusted data from April 1985 forward, and seasonally adjusted data from January 1982 forward are subject to revision in future benchmarks.

In the establishment survey, estimates for the 2 most recent months are based on incomplete returns and are published as preliminary in the tables (13 to 16 in the *Review*). When all returns have been received, the estimates are revised and published as final in the third month of their appearance. Thus, August data are published as preliminary in October and November and as final in December. For the same reason, quarterly establishment data (table 1) are preliminary for the first 2 months of publication and final in the third month. Thus, second-quarter data are published as preliminary in August and September and as final in October.

COMPENSATION AND WAGE DATA

(Tables 1-3; 22-29)

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

Employment Cost Index

Description of the series

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

Additional sources of information

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

A comprehensive discussion of the differences between household and establishment data on employment appears in Gloria P. Green, "Comparing employment estimates from household and payroll surveys," *Monthly Labor Review*, December 1969, pp. 9-20.

Unemployment data by State

Description of the series

Data presented in this section are obtained from two major sources—the Current Population Survey (CPS) and the Local Area Unemployment Statistics (LAUS) program, which is conducted in cooperation with State employment security agencies.

Monthly estimates of the labor force, employment, and unemployment for States and sub-State areas are a key indicator of local economic conditions and form the basis for determining the eligibility of an area for benefits under Federal economic assistance programs such as the Job Training Partnership Act and the Public Works and Economic Development Act. Insofar as possible, the concepts and definitions underlying these data are those used in the national estimates obtained from the CPS.

Notes on the data

Data refer to State of residence. Monthly data for 11 States—California, Florida, Illinois, Massachusetts, Michigan, New York, New Jersey, North Carolina, Ohio, Pennsylvania, and Texas—are obtained directly from the CPS, because the size of the sample is large enough to meet BLS standards of reliability. Data for the remaining 39 States and the District of Columbia are derived using standardized procedures established by BLS. Once a year, estimates for the 11 States are revised to new population controls. For the remaining States and the District of Columbia, data are benchmarked to annual average CPS levels.

Additional sources of information

Information on the concepts, definitions, and technical procedures used to develop labor force data for States and sub-State areas as well as additional data on sub-States are provided in the monthly Bureau of Labor Statistics periodical, *Employment and Earnings*, and the annual report, *Geographic Profile of Employment and Unemployment* (Bureau of Labor Statistics). See also *BLS Handbook of Methods*, Bulletin 2134-1 (Bureau of Labor Statistics, 1982), chapter 4.

labor—similar in concept to the Consumer Price Index's fixed market basket of goods and services—to measure change over time in employer costs of employing labor. The index is not seasonally adjusted.

Statistical series on total compensation costs and on wages and salaries are available for private nonfarm workers excluding proprietors, the self-employed, and household workers. Both series are also available for State and local government workers and for the civilian nonfarm economy, which consists of private industry and State and local government workers combined. Federal workers are excluded.

The Employment Cost Index probability sample consists of about 2,200 private nonfarm establishments providing about 12,000 occupational observations and 700 State and local government establishments providing

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

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

Definitions

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

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

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

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

Notes on the data

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

Additional sources of information

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

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

Collective bargaining settlements

Description of the series

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

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

Settlement data are measured in terms of future specified adjustments: those that will occur within 12 months after contract ratification—first-year—and all adjustments that will occur over the life of the contract expressed as an average annual rate. Adjustments are worker weighted. Both first-year and over-the-life measures exclude wage changes that may occur under cost-of-living clauses that are triggered by future movements in the Consumer Price Index.

Effective wage adjustments measure all adjustments occurring in the reference period, regardless of the settlement date. Included are changes from settlements reached during the period, changes deferred from contracts negotiated in earlier periods, and changes under cost-of-living adjustment clauses. Each wage change is worker weighted. The changes are prorated over all workers under agreements during the reference period yielding the average adjustment.

Definitions

Wage rate changes are calculated by dividing newly negotiated wages by the average hourly earnings, excluding overtime, at the time the agreement is reached. Compensation changes are calculated by dividing the change in the value of the newly negotiated wage and benefit package by existing average hourly compensation, which includes the cost of previously negotiated benefits, legally required social insurance programs, and average hourly earnings.

Compensation changes are calculated by placing a value on the benefit portion of the settlements at the time they are reached. The cost estimates are based on the assumption that conditions existing at the time of settlement (for example, methods of financing pensions or composition of labor force) will remain constant. The data, therefore, are measures of negotiated changes and not of total changes in employer cost.

Contract duration runs from the effective date of the agreement to the expiration date or first wage reopening date, if applicable. Average annual percent changes over the contract term take account of the compounding of successive changes.

Notes on the data

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

Additional sources of information

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

annually (in February and August) for State and local government. Historical data and additional detailed tabulations for the prior calendar year appear in the April issue of the BLS monthly periodical, *Current Wage Developments*.

Work stoppages

Description of the series

Data on **work stoppages** measure the number and duration of major strikes or lockouts (involving 1,000 workers or more) occurring during the month (or year), the number of workers involved, and the amount of time lost because of stoppage.

Data are largely from newspaper accounts and cover only establishments directly involved in a stoppage. They do not measure the indirect or secondary effect of stoppages on other establishments whose employees are idle owing to material shortages or lack of service.

Definitions

Number of stoppages: The number of strikes and lockouts involving 1,000 workers or more and lasting a full shift or longer.

Workers involved: The number of workers directly involved in the stoppage.

Number of days idle: The aggregate number of workdays lost by workers involved in the stoppages.

Days of idleness as a percent of estimated working time: Aggregate workdays lost as a percent of the aggregate number of standard workdays in the period multiplied by total employment in the period.

Notes on the data

This series is not comparable with the one terminated in 1981 that covered strikes involving six workers or more.

Additional sources of information

Data for each calendar year are reported in a BLS press release issued in the first quarter of the following year. Monthly data appear in the BLS

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

Other compensation data

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

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

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

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

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

PRICE DATA (Tables 2; 30-41)

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

Consumer Price Indexes

Description of the series

The **Consumer Price Index** (CPI) is a measure of the average change in the prices paid by urban consumers for a fixed market basket of goods and services. The CPI is calculated monthly for two population groups, one consisting only of urban households whose primary source of income is derived from the employment of wage earners and clerical workers, and the other consisting of all urban households. The wage earner index (CPI-W) is a continuation of the historic index that was introduced well over a half-century ago for use in wage negotiations. As new uses were developed for the CPI in recent years, the need for a broader and more representative index became apparent. The all urban consumer index (CPI-U), introduced in 1978, is representative of the 1982-84 buying habits of about 80 percent of the noninstitutional population of the United States at that time, compared with 32 percent represented in the CPI-W. In addition to wage earners

and clerical workers, the CPI-U covers professional, managerial, and technical workers, the self-employed, short-term workers, the unemployed, retirees, and others not in the labor force.

The CPI is based on prices of food, clothing, shelter, fuel, drugs, transportation fares, doctors' and dentists' fees, and other goods and services that people buy for day-to-day living. The quantity and quality of these items are kept essentially unchanged between major revisions so that only price changes will be measured. All taxes directly associated with the purchase and use of items are included in the index.

Data collected from more than 21,000 retail establishments and 60,000 housing units in 91 urban areas across the country are used to develop the "U.S. city average." Separate estimates for 27 major urban centers are presented in table 31. The areas listed are as indicated in footnote 1 to the table. The area indexes measure only the average change in prices for each area since the base period, and do not indicate differences in the level of prices among cities.

Notes on the data

In January 1983, the Bureau changed the way in which homeownership costs are measured for the CPI-U. A rental equivalence method replaced the

asset-price approach to homeownership costs for that series. In January 1985, the same change was made in the CPI-W. The central purpose of the change was to separate shelter costs from the investment component of homeownership so that the index would reflect only the cost of shelter services provided by owner-occupied homes. An updated CPI-U and CPI-W were introduced with release of the January 1987 data.

Additional sources of information

For a discussion of the general method for computing the CPI, see *BLS Handbook of Methods, Volume II, The Consumer Price Index*, Bulletin 2134-2 (Bureau of Labor Statistics, 1984). The recent change in the measurement of homeownership costs is discussed in Robert Gillingham and Walter Lane, "Changing the treatment of shelter costs for homeowners in the CPI," *Monthly Labor Review*, June 1982, pp. 9-14. An overview of the recently introduced revised CPI, reflecting 1982-84 expenditure patterns, is contained in *The Consumer Price Index: 1987 Revision*, Report 736 (Bureau of Labor Statistics, 1987).

Additional detailed CPI data and regular analyses of consumer price changes are provided in the *CPI Detailed Report*, a monthly publication of the Bureau. Historical data for the overall CPI and for selected groupings may be found in the *Handbook of Labor Statistics*, Bulletin 2217 (Bureau of Labor Statistics, 1985).

Producer Price Indexes

Description of the series

Producer Price Indexes (PPI) measure average changes in prices received in primary markets of the United States by producers of commodities in all stages of processing. The sample used for calculating these indexes currently contains about 3,200 commodities and about 60,000 quotations per month selected to represent the movement of prices of all commodities produced in the manufacturing, agriculture, forestry, fishing, mining, gas and electricity, and public utilities sectors. The stage of processing structure of Producer Price Indexes organizes products by class of buyer and degree of fabrication (that is, finished goods, intermediate goods, and crude materials). The traditional commodity structure of PPI organizes products by similarity of end use or material composition.

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

Since January 1976, price changes for the various commodities have been averaged together with implicit quantity weights representing their importance in the total net selling value of all commodities as of 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 groups. All Producer Price Index data are subject to revision 4 months after original publication.

Notes on the data

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

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

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

Additional sources of information

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

Additional detailed data and analyses of price changes are provided monthly in *Producer Price Indexes*. Selected historical data may be found in the *Handbook of Labor Statistics*, Bulletin 2217 (Bureau of Labor Statistics, 1985).

International Price Indexes

Description of the series

The BLS **International Price Program** produces quarterly export and import price indexes for nonmilitary goods traded between the United States and the rest of the world. The export price index provides a measure of price change for all products sold by U.S. residents to foreign buyers. ("Residents" is defined as in the national income accounts: it includes corporations, businesses, and individuals but does not require the organizations to be U.S. owned nor the individuals to have U.S. citizenship.) The import price index provides a measure of price change for goods purchased from other countries by U.S. residents. With publication of an all-import index in February 1983 and an all-export index in February 1984, all U.S. merchandise imports and exports now are represented in these indexes. The reference period for the indexes is 1977 = 100, unless otherwise indicated.

The product universe for both the import and export indexes includes raw materials, agricultural products, semifinished manufactures, and finished manufactures, including both capital and consumer goods. Price data for these items are collected quarterly by mail questionnaire. In nearly all cases, the data are collected directly from the exporter or importer, although in a few cases, prices are obtained from other sources.

To the extent possible, the data gathered refer to prices at the U.S. border for exports and at either the foreign border or the U.S. border for imports. For nearly all products, the prices refer to transactions completed during the first 2 weeks of the third month of each calendar quarter—March, June, September, and December. Survey respondents are asked to indicate all discounts, allowances, and rebates applicable to the reported prices, so that the price used in the calculation of the indexes is the actual price for which the product was bought or sold.

In addition to general indexes of prices for U.S. exports and imports, indexes are also published for detailed product categories of exports and imports. These categories are defined by the 4- and 5-digit level of detail of the Standard Industrial Trade Classification System (SITC). The calculation of indexes by SITC category facilitates the comparison of U.S. price trends and sector production with similar data for other countries. Detailed indexes are also computed and published on a Standard Industrial Classification (SIC-based) basis, as well as by end-use class.

Notes on the data

The export and import price indexes are weighted indexes of the Laspeyres type. Price relatives are assigned equal importance within each weight category and are then aggregated to the SITC level. The values assigned to each weight category are based on trade value figures compiled

by the Bureau of the Census. The trade weights currently used to compute both indexes relate to 1980.

Because a price index depends on the same items being priced from period to period, it is necessary to recognize when a product's specifications or terms of transaction have been modified. For this reason, the Bureau's quarterly questionnaire requests detailed descriptions of the physical and functional characteristics of the products being priced, as well as information on the number of units bought or sold, discounts, credit terms, packaging, class of buyer or seller, and so forth. When there are changes in either the specifications or terms of transaction of a product, the dollar value of each change is deleted from the total price change to obtain the "pure" change. Once this value is determined, a linking procedure is employed which allows for the continued repricing of the item.

For the export price indexes, the preferred pricing basis is f.a.s. (free alongside ship) U.S. port of exportation. When firms report export prices f.o.b. (free on board), production point information is collected which enables the Bureau to calculate a shipment cost to the port of exportation.

PRODUCTIVITY DATA

(Tables 2; 42-47)

U. S. productivity and related data

Description of the series

The productivity measures relate real physical output to real input. As such, they encompass a family of measures which include single factor input measures, such as output per unit of labor input (output per hour) or output per unit of capital input, as well as measures of multifactor productivity (output per unit of labor and capital inputs combined). The Bureau indexes show the change in output relative to changes in the various inputs. The measures cover the business, nonfarm business, manufacturing, and nonfinancial corporate sectors.

Corresponding indexes of hourly compensation, unit labor costs, unit nonlabor payments, and prices are also provided.

Definitions

Output per hour of all persons (labor productivity) is the value of goods and services in constant prices produced per hour of labor input. **Output per unit of capital services** (capital productivity) is the value of goods and services in constant dollars produced per unit of capital services input.

Multifactor productivity is the ratio output per unit of labor and capital inputs combined. Changes in this measure reflect changes in a number of factors which affect the production process such as changes in technology, shifts in the composition of the labor force, changes in capacity utilization, research and development, skill and efforts of the work force, management, and so forth. Changes in the output per hour measures reflect the impact of these factors as well as the substitution of capital for labor.

Compensation per hour is the wages and salaries of employees plus employers' contributions for social insurance and private benefit plans, and the wages, salaries, and supplementary payments for the self-employed (except for nonfinancial corporations in which there are no self-employed)—the sum divided by hours paid for. **Real compensation per hour** is compensation per hour deflated by the change in the Consumer Price Index for All Urban Consumers.

Unit labor costs are the labor compensation costs expended in the production of a unit of output and are derived by dividing compensation by output. **Unit nonlabor payments** include profits, depreciation, interest, and indirect taxes per unit of output. They are computed by subtracting compensation of all persons from current dollar value of output and dividing by output. **Unit nonlabor costs** contain all the components of unit nonlabor payments except unit profits.

An attempt is made to collect two prices for imports. The first is the import price f.o.b. at the foreign port of exportation, which is consistent with the basis for valuation of imports in the national accounts. The second is the import price c.i.f. (cost, insurance, and freight) at the U.S. port of importation, which also includes the other costs associated with bringing the product to the U.S. border. It does not, however, include duty charges.

Additional sources of information

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

Additional detailed data and analyses of international price developments are presented in the Bureau's quarterly publication *U.S. Import and Export Price Indexes* and in occasional *Monthly Labor Review* articles prepared by BLS analysts. Selected historical data may be found in the *Handbook of Labor Statistics*, Bulletin 2217 (Bureau of Labor Statistics, 1985).

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

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

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

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

Notes on the data

Output measures for the business sector and the nonfarm business sector exclude the constant dollar value of owner-occupied housing, rest of world, households and institutions, and general government output from the constant dollar value of gross national product. The measures are derived from data supplied by the Bureau of Economic Analysis, U.S. Department of Commerce, and the Federal Reserve Board. Quarterly manufacturing output indexes are adjusted by the Bureau of Labor Statistics to annual estimates of output (gross product originating) from the Bureau of Economic Analysis. Compensation and hours data are developed from data of the Bureau of Labor Statistics and the Bureau of Economic Analysis.

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

Additional sources of information

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

INTERNATIONAL COMPARISONS (Tables 45–47)

Labor force and unemployment

Description of the series

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

Definitions

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

Notes on the data

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

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

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

Additional sources of information

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

Manufacturing productivity and labor costs

Description of the series

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

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

Definitions

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

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

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

Notes on the data

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

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

Additional sources of information

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

OCCUPATIONAL INJURY AND ILLNESS DATA

(Table 48)

Description of the series

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

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

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

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

Definitions

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

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

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

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

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

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

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

ployee worked at a permanent job less than full time; or (3) the employee worked at a permanently assigned job but could not perform all duties normally connected with it.

The number of days away from work or days of restricted work activity does not include the day of injury or onset of illness or any days on which the employee would not have worked even though able to work.

Incidence rates represent the number of injuries and/or illnesses or lost workdays per 100 full-time workers.

Notes on the data

Estimates are made for industries and employment-size classes and for severity classification: fatalities, lost workday cases, and nonfatal cases without lost workdays. Lost workday cases are separated into those where the employee would have worked but could not and those in which work activity was restricted. Estimates of the number of cases and the number of days lost are made for both categories.

Most of the estimates are in the form of incidence rates, defined as the number of injuries and illnesses, or lost workdays, per 100 full-time employees. For this purpose, 200,000 employee hours represent 100 employee years (2,000 hours per employee). Only a few of the available measures are included in the *Handbook of Labor Statistics*. Full detail is presented in the annual bulletin, *Occupational Injuries and Illnesses in the United States, by Industry*.

Comparable data for individual States are available from the BLS Office of Occupational Safety and Health Statistics.

Mining and railroad data are furnished to BLS by the Mine Safety and Health Administration and the Federal Railroad Administration, respectively. Data from these organizations are included in BLS and State publications. Federal employee experience is compiled and published by the Occupational Safety and Health Administration. Data on State and local government employees are collected by about half of the States and territories; these data are not compiled nationally.

Additional sources of information

The Supplementary Data System provides detailed information describing various factors associated with work-related injuries and illnesses. These data are obtained from information reported by employers to State workers' compensation agencies. The Work Injury Report program examines selected types of accidents through an employee survey which focuses on the circumstances surrounding the injury. These data are not included in the *Handbook of Labor Statistics* but are available from the BLS Office of Occupational Safety and Health Statistics.

The definitions of occupational injuries and illnesses and lost workdays are from *Recordkeeping Requirements under the Occupational Safety and Health Act of 1970*. For additional data, see *Occupational Injuries and Illnesses in the United States, by Industry*, annual Bureau of Labor Statistics bulletin; BLS *Handbook of Methods*, Bulletin 2134-1 (Bureau of Labor Statistics, 1982), chapter 17; *Handbook of Labor Statistics*, Bulletin 2217 (Bureau of Labor Statistics, 1985), pp. 411-14; annual reports in the *Monthly Labor Review*; and annual U.S. Department of Labor press releases.

1. Labor market indicators

Selected indicators	1985	1986	1985				1986			
			I	II	III	IV	I	II	III	IV
Employment data										
Employment status of the civilian noninstitutionalized population (household survey) ¹										
Labor force participation rate	64.8	65.3	64.8	64.7	64.7	64.9	65.1	65.2	65.3	65.4
Employment-population ratio	60.1	60.7	60.1	60.0	60.1	60.3	60.5	60.6	60.8	60.9
Unemployment rate	7.2	7.0	7.3	7.2	7.2	7.1	7.1	7.1	6.9	6.9
Men	7.0	6.9	7.1	7.0	7.0	6.9	6.9	7.0	6.9	6.9
16 to 24 years	14.1	13.7	14.2	14.0	14.0	14.2	13.5	14.2	13.7	13.4
25 years and over	5.3	5.4	5.4	5.3	5.3	5.2	5.3	5.3	5.4	5.4
Women	7.4	7.1	7.5	7.5	7.4	7.3	7.3	7.2	6.9	6.8
16 to 24 years	13.0	12.8	13.1	12.9	12.9	13.1	13.1	13.1	12.6	12.5
25 years and over	5.9	5.5	6.0	6.0	5.9	5.6	5.7	5.7	5.4	5.3
Unemployment rate, 15 weeks and over	2.0	1.9	2.1	2.0	2.0	1.9	1.9	1.9	1.9	1.8
Employment, nonagricultural (payroll data), in thousands: ¹										
Total	97,614	100,165	96,581	97,295	97,897	98,668	99,403	99,848	100,316	101,062
Private sector	81,199	83,430	80,341	80,958	81,414	82,069	82,731	83,144	83,650	84,167
Goods-producing	24,930	24,938	24,970	24,947	24,866	24,937	25,028	24,952	24,872	24,892
Manufacturing	19,314	19,186	19,439	19,323	19,241	19,261	19,284	19,194	19,116	19,152
Service-producing	72,684	75,227	71,611	72,347	73,031	73,731	74,375	74,896	75,444	76,170
Average hours:										
Private sector	34.9	34.8	35.0	34.9	34.9	34.9	34.9	34.8	34.7	34.7
Manufacturing	40.5	40.7	40.4	40.4	40.6	40.8	40.7	40.7	40.7	40.8
Overtime	3.3	3.4	3.3	3.2	3.3	3.5	3.4	3.4	3.5	3.5
Employment Cost Index										
Percent change in the ECI, compensation:										
All workers (excluding farm, household, and Federal workers)	4.3	3.6	1.3	.7	1.6	.6	1.1	.7	1.1	.6
Private industry workers	3.9	3.2	1.2	.8	1.3	.6	1.1	.8	.7	.6
Goods-producing ²	3.4	3.1	1.5	.7	.6	.6	1.1	.9	.6	.5
Service-producing ²	4.4	3.2	1.0	1.0	1.8	.5	1.1	.6	.8	.6
State and local government workers	5.7	5.2	1.2	.2	3.4	.7	1.0	.6	2.8	.8
Workers by bargaining status (private industry):										
Union	2.6	2.1	.7	.6	.8	.5	1.0	.2	.5	.3
Nonunion	4.6	3.6	1.6	1.0	1.4	.6	1.2	.9	.8	.7

¹ Quarterly data seasonally adjusted.

producing industries include all other private sector industries.

² Goods-producing industries include mining, construction, and manufacturing. Service-

2. Annual and quarterly percent changes in compensation, prices, and productivity

Selected measures	1985	1986	1985				1986			
			I	II	III	IV	I	II	III	IV
Compensation data^{1, 2}										
Employment Cost Index—compensation (wages, salaries, benefits):										
Civilian nonfarm	4.3	3.6	1.3	0.7	1.6	0.6	1.1	0.7	1.1	0.6
Private nonfarm	3.9	3.2	1.2	.8	1.3	.6	1.1	.8	.7	.6
Employment Cost Index—wages and salaries										
Civilian nonfarm	4.4	3.5	1.2	.9	1.7	.6	1.0	.8	1.1	.6
Private nonfarm	4.1	3.1	1.2	1.1	1.3	.6	1.0	.9	.7	.5
Price data¹										
Consumer Price Index (All urban consumers): All items	3.8	1.1	1.0	1.1	.7	.9	-.4	.6	.7	.3
Producer Price Index:										
Finished goods	1.8	-2.5	.0	.7	-1.4	2.5	-3.1	.5	-.7	.9
Finished consumer goods	1.5	-3.8	-.3	.7	-1.4	2.5	-4.1	.4	-.7	.6
Capital equipment	2.7	2.1	1.3	.4	-1.4	2.5	.2	.6	-.7	2.0
Intermediate materials, supplies, components	-.3	-4.4	-.4	.2	-.5	.4	-2.9	-.9	-.2	-.4
Crude materials	-5.6	-9.7	-3.1	-2.1	-4.5	4.3	-7.6	-1.5	-.5	-.2
Productivity data³										
Output per hour of all persons:										
Business sector	1.0	.7	.9	2.7	3.4	-3.2	3.3	.5	-.4	-2.3
Nonfarm business sector .....	.5	.7	.3	1.8	2.2	-3.5	4.3	.5	-.3	-1.7
Nonfinancial corporations ⁴	1.2	-	.8	2.2	4.9	-2.8	-.5	-.3	.2	-

¹ Annual changes are December-to-December change. Quarterly changes are calculated using the last month of each quarter. Compensation and price data are not seasonally adjusted and the price data are not compounded.

² Excludes Federal and private household workers.

³ Annual rates of change are computed by comparing annual averages.

Quarterly percent changes reflect annual rates of change in quarterly indexes. The data are seasonally adjusted.

⁴ Output per hour of all employees.

- Data not available.

3. Alternative measures of wage and compensation changes

Components	Quarterly average						Four quarters ended--					
	1985		1986				1985		1986			
	III	IV	I	II	III	IV	III	IV	I	II	III	IV
Average hourly compensation:¹												
All persons, business sector	4.4	3.8	2.5	2.8	2.9	2.4	4.4	4.4	3.9	3.4	3.0	2.7
All employees, nonfarm business sector	3.2	3.7	3.1	2.3	2.3	3.1	4.0	3.9	3.6	3.1	2.8	2.7
Employment Cost Index—compensation:												
Civilian nonfarm ²	1.6	.6	1.1	.7	1.1	.6	4.9	4.3	4.1	4.0	3.6	3.6
Private nonfarm	1.3	.6	1.1	.8	.7	.6	4.7	3.9	3.8	3.8	3.2	3.2
Union .....	.8	.5	1.0	.2	.5	.3	3.2	2.6	2.9	2.5	2.3	2.1
Nonunion	1.4	.6	1.2	.9	.8	.7	5.4	4.6	4.2	4.2	3.5	3.6
State and local governments	3.4	.7	1.0	.6	2.8	.8	6.0	5.7	5.5	5.8	5.2	5.2
Employment Cost Index—wages and salaries:												
Civilian nonfarm ²	1.7	.6	1.0	.8	1.1	.6	5.0	4.4	4.2	4.1	3.5	3.5
Private nonfarm	1.3	.6	1.0	.9	.7	.5	4.8	4.1	3.9	3.7	3.1	3.1
Union .....	.9	.5	.7	.4	.6	.2	3.6	3.1	3.2	2.5	2.3	2.0
Nonunion	1.5	.6	1.1	.9	.7	.7	5.4	4.6	4.3	4.1	3.4	3.5
State and local governments	3.5	.8	1.0	.4	3.2	.7	5.6	5.6	5.5	5.7	5.4	5.4
Total effective wage adjustments³												
From current settlements .....	.2	.1	(⁴)	.2	.1	.2	.9	.7	.6	.5	.5	.5
From prior settlements .....	.5	.2	.4	.6	.5	.2	1.8	1.8	1.7	1.8	1.6	1.7
From cost-of-living provision .....	.4	.1	.2	(⁴)	.5	.1	.8	.7	.8	.7	.2	.2
Negotiated wage adjustments from settlements:³												
First-year adjustments	2.0	2.1	.8	1.3	.8	2.0	2.4	2.3	2.0	1.6	1.2	1.2
Annual rate over life of contract	3.1	1.9	1.5	2.0	1.5	2.1	2.5	2.7	2.5	2.2	1.7	1.8
Negotiated wage and benefit adjustments from settlements:⁵												
First-year adjustment	2.0	2.0	.6	.7	.7	2.7	3.1	2.6	2.3	1.4	.9	1.1
Annual rate over life of contract	3.0	1.4	1.2	1.6	1.2	2.4	2.7	2.7	2.5	2.0	1.4	1.6

¹ Seasonally adjusted.

² Excludes Federal and household workers.

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

⁴ Data round to zero.

⁵ Limited to major collective bargaining units of 5,000 workers or more. The most recent data are preliminary.

4. Employment status of the total population, by sex, monthly data seasonally adjusted

(Numbers in thousands)

Employment status	Annual average		1986												1987	
	1985	1986	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	
TOTAL																
Noninstitutional population ^{1, 2}	179,912	182,293	181,512	181,678	181,843	181,998	182,183	182,354	182,525	182,713	182,935	183,114	183,297	183,575	183,738	
Labor force ²	117,167	119,540	118,733	118,880	118,987	119,274	119,685	119,789	119,821	119,988	120,163	120,426	120,336	120,782	121,089	
Participation rate ³	65.1	65.6	65.4	65.4	65.4	65.5	65.7	65.7	65.6	65.7	65.7	65.8	65.7	65.8	65.9	
Total employed ²	108,856	111,303	110,248	110,500	110,664	110,852	111,293	111,559	111,764	111,703	111,941	112,183	112,387	112,759	113,122	
Employment-population ratio ⁴	60.5	61.1	60.7	60.8	60.9	60.9	61.1	61.2	61.2	61.1	61.2	61.3	61.3	61.4	61.6	
Resident Armed Forces ¹	1,706	1,706	1,691	1,693	1,695	1,687	1,680	1,672	1,697	1,716	1,749	1,751	1,750	1,748	1,740	
Civilian employed	107,150	109,597	108,557	108,807	108,969	109,165	109,613	109,887	110,067	109,987	110,192	110,432	110,637	111,011	111,382	
Agriculture	3,179	3,163	3,105	3,252	3,199	3,151	3,164	3,124	3,057	3,142	3,162	3,215	3,161	3,145	3,235	
Nonagricultural industries	103,971	106,434	105,452	105,555	105,770	106,014	106,449	106,763	107,010	106,845	107,030	107,217	107,476	107,866	108,146	
Unemployed	8,312	8,237	8,485	8,380	8,323	8,422	8,392	8,230	8,057	8,285	8,222	8,243	7,949	8,023	7,967	
Unemployment rate ⁵	7.1	6.9	7.1	7.0	7.0	7.1	7.0	6.9	6.7	6.9	6.8	6.8	6.6	6.6	6.6	
Not in labor force	62,744	62,752	62,779	62,798	62,856	62,724	62,498	62,565	62,704	62,725	62,772	62,688	62,961	62,793	62,649	
Men, 16 years and over																
Noninstitutional population ^{1, 2}	86,025	87,349	86,954	87,035	87,120	87,195	87,288	87,373	87,460	87,556	87,682	87,773	87,868	88,020	88,099	
Labor force ²	65,967	66,973	66,737	66,793	66,770	66,854	66,937	66,968	66,911	67,128	67,130	67,407	67,425	67,672	67,764	
Participation rate ³	76.7	76.7	76.7	76.7	76.6	76.7	76.7	76.6	76.5	76.7	76.6	76.8	76.7	76.9	76.9	
Total employed ²	61,447	62,443	62,142	62,221	62,253	62,201	62,318	62,402	62,483	62,528	62,565	62,833	62,986	63,187	63,335	
Employment-population ratio ⁴	71.4	71.5	71.5	71.5	71.5	71.3	71.4	71.4	71.4	71.4	71.4	71.6	71.7	71.8	71.9	
Resident Armed Forces ¹	1,556	1,551	1,539	1,540	1,541	1,533	1,525	1,518	1,541	1,560	1,590	1,592	1,593	1,591	1,584	
Civilian employed	59,891	60,892	60,603	60,681	60,712	60,668	60,793	60,884	60,942	60,968	60,975	61,241	61,393	61,596	62,751	
Unemployed	4,521	4,530	4,595	4,572	4,517	4,653	4,619	4,566	4,428	4,800	4,565	4,574	4,439	4,484	4,429	
Unemployment rate ⁵	6.9	6.8	6.9	6.8	6.8	7.0	6.9	6.8	6.6	6.9	6.8	6.8	6.6	6.6	6.5	
Women, 16 years and over																
Noninstitutional population ^{1, 2}	93,886	94,944	94,558	94,643	94,723	94,803	94,895	94,981	95,065	95,156	95,253	95,341	95,429	95,556	95,639	
Labor force ²	51,200	52,568	51,996	52,087	52,217	52,420	52,748	52,821	52,910	52,860	53,033	53,019	52,911	53,110	53,325	
Participation rate ³	54.5	55.4	55.0	55.0	55.1	55.3	55.6	55.6	55.7	55.6	55.7	55.6	55.4	55.6	55.8	
Total employed ²	47,409	48,861	48,106	48,279	48,411	48,651	48,975	49,157	49,281	49,175	49,376	49,350	49,401	49,572	49,787	
Employment-population ratio ⁴	50.5	51.5	50.9	51.0	51.1	51.3	51.6	51.8	51.8	51.7	51.8	51.8	51.8	51.9	52.1	
Resident Armed Forces ¹	150	155	152	153	154	154	155	154	156	156	159	159	157	157	156	
Civilian employed	47,259	48,706	47,954	48,126	48,257	48,497	48,820	49,003	49,125	49,019	49,217	49,191	49,244	49,415	49,631	
Unemployed	3,791	3,707	3,890	3,808	3,806	3,769	3,773	3,664	3,629	3,685	3,657	3,669	3,510	3,538	3,538	
Unemployment rate ⁵	7.4	7.1	7.5	7.3	7.3	7.2	7.2	6.9	6.9	7.0	6.9	6.9	6.6	6.7	6.6	

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

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

³ Labor force as a percent of the noninstitutional population.

⁴ Total employed as a percent of the noninstitutional population.

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

5. Employment status of the civilian population, by sex, age, race and Hispanic origin, monthly data seasonally adjusted

(Numbers in thousands)

Employment status	Annual average		1986												1987	
	1985	1986	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	
TOTAL																
Civilian noninstitutional population ¹	178,206	180,587	179,821	179,985	180,148	180,311	180,503	180,682	180,828	180,997	181,186	181,363	181,547	181,827	181,998	
Civilian labor force	115,461	117,834	117,042	117,187	117,292	117,587	118,005	118,117	118,124	118,272	118,414	118,675	118,586	119,034	119,349	
Participation rate	64.8	65.3	65.1	65.1	65.1	65.2	65.4	65.4	65.3	65.3	65.4	65.4	65.3	65.5	65.0	
Employed	107,150	109,597	108,557	108,807	108,969	109,165	109,613	109,887	110,067	109,987	110,192	110,432	110,637	111,011	111,382	
Employment-population ratio ²	60.1	60.7	60.4	60.5	60.5	60.5	60.7	60.8	60.9	60.8	60.8	60.9	60.9	61.1	61.2	
Unemployed	8,312	8,237	8,485	8,380	8,323	8,422	8,392	8,230	8,057	8,285	8,222	8,243	7,949	8,023	7,967	
Unemployment rate	7.2	7.0	7.2	7.2	7.1	7.2	7.1	7.0	6.8	7.0	6.9	6.9	6.7	6.7	6.7	
Not in labor force	62,744	62,752	62,779	62,798	62,856	62,724	62,498	62,565	62,704	62,725	62,772	62,688	62,961	62,793	62,649	
Men, 20 years and over																
Civilian noninstitutional population ¹	77,195	78,523	78,171	78,236	78,309	78,387	78,484	78,586	78,634	78,722	78,802	78,874	78,973	79,132	79,216	
Civilian labor force	60,277	61,320	61,092	61,177	61,080	61,158	61,330	61,355	61,219	61,412	61,409	61,703	61,826	61,948	61,973	
Participation rate	78.1	78.1	78.2	78.2	78.0	78.0	78.1	77.9	77.9	78.0	77.9	78.2	78.3	78.3	78.2	
Employed	56,562	57,569	57,296	57,388	57,392	57,338	57,522	57,544	57,585	57,607	57,595	57,883	58,101	58,227	58,325	
Employment-population ratio ²	73.3	73.3	73.3	73.4	73.3	73.1	73.3	73.2	73.2	73.2	73.1	73.4	73.6	73.6	73.6	
Agriculture	2,278	2,292	2,261	2,389	2,319	2,279	2,309	2,275	2,185	2,286	2,297	2,303	2,289	2,254	2,300	
Nonagricultural industries	54,284	55,277	55,035	54,999	55,073	55,059	55,213	55,289	55,400	55,321	55,298	55,580	55,812	55,974	56,024	
Unemployed	3,715	3,751	3,796	3,789	3,688	3,820	3,808	3,811	3,634	3,805	3,814	3,820	3,725	3,720	3,648	
Unemployment rate	6.2	6.1	6.2	6.2	6.0	6.2	6.2	6.2	5.9	6.2	6.2	6.2	6.0	6.0	5.9	
Women, 20 years and over																
Civilian noninstitutional population ¹	86,506	87,567	87,185	87,263	87,355	87,444	87,547	87,629	87,689	87,779	87,856	87,933	88,016	88,150	88,237	
Civilian labor force	47,283	48,589	48,009	48,065	48,181	48,433	48,739	48,879	48,950	48,920	49,014	49,043	48,923	49,161	49,348	
Participation rate	54.7	55.5	55.1	55.1	55.2	55.4	55.7	55.8	55.8	55.7	55.8	55.8	55.6	55.8	55.9	
Employed	44,154	45,556	44,820	44,934	45,094	45,335	45,657	45,869	45,956	45,905	46,020	46,067	46,058	46,261	46,475	
Employment-population ratio ²	51.0	52.0	51.4	51.5	51.6	51.8	52.2	52.3	52.4	52.3	52.4	52.4	52.4	52.5	52.7	
Agriculture	596	614	591	589	585	604	583	607	622	614	612	612	621	628	641	
Nonagricultural industries	43,558	44,943	44,229	44,345	44,509	44,731	45,074	45,262	45,334	45,291	45,408	45,392	45,437	45,633	45,835	
Unemployed	3,129	3,032	3,189	3,131	3,087	3,098	3,082	3,010	2,994	3,015	2,994	2,976	2,865	2,900	2,873	
Unemployment rate	6.6	6.2	6.6	6.5	6.4	6.4	6.3	6.2	6.1	6.2	6.1	6.1	5.9	5.9	5.8	
Both sexes, 16 to 19 years																
Civilian noninstitutional population ¹	14,506	14,496	14,465	14,485	14,484	14,480	14,472	14,467	14,505	14,496	14,527	14,557	14,558	14,545	14,546	
Civilian labor force	7,901	7,926	7,941	7,945	8,031	7,996	7,936	7,883	7,955	7,940	7,991	7,929	7,837	7,926	8,028	
Participation rate	54.5	54.7	54.9	54.9	55.4	55.2	54.8	54.5	54.8	54.8	55.0	54.5	53.8	54.5	55.2	
Employed	6,434	6,472	6,441	6,485	6,483	6,492	6,434	6,474	6,526	6,475	6,577	6,482	6,478	6,524	6,582	
Employment-population ratio ²	44.4	44.6	44.5	44.8	44.8	44.8	44.5	44.8	45.0	44.7	45.3	44.5	44.5	44.9	45.2	
Agriculture	305	258	253	274	295	268	272	242	250	242	253	237	251	264	295	
Nonagricultural industries	6,129	6,215	6,188	6,211	6,188	6,224	6,162	6,232	6,276	6,233	6,324	6,245	6,227	6,260	6,287	
Unemployed	1,468	1,454	1,500	1,460	1,548	1,504	1,502	1,409	1,429	1,465	1,414	1,447	1,359	1,402	1,446	
Unemployment rate	18.6	18.3	18.9	18.4	19.3	18.8	18.9	17.9	18.0	18.5	17.7	18.2	17.3	17.7	18.0	
White																
Civilian noninstitutional population ¹	153,679	155,432	154,889	155,005	155,122	155,236	155,376	155,502	155,604	155,723	155,856	155,979	156,111	156,313	156,431	
Civilian labor force	99,926	101,801	101,178	101,208	101,237	101,531	101,946	102,015	102,122	102,158	102,297	102,455	102,503	102,746	102,893	
Participation rate	65.0	65.5	65.3	65.3	65.3	65.4	65.6	65.6	65.6	65.6	65.6	65.6	65.7	65.7	65.8	
Employed	93,736	95,660	94,780	94,955	95,095	95,283	95,720	95,861	96,177	96,000	96,147	96,281	96,533	96,717	96,995	
Employment-population ratio ²	61.0	61.5	61.2	61.3	61.3	61.4	61.6	61.6	61.8	61.6	61.7	61.7	61.8	61.9	62.0	
Unemployed	6,191	6,140	6,398	6,253	6,142	6,248	6,226	6,154	5,945	6,158	6,150	6,174	5,970	6,029	5,898	
Unemployment rate	6.2	6.0	6.3	6.2	6.1	6.2	6.1	6.0	5.8	6.0	6.0	6.0	5.8	5.9	5.7	
Black																
Civilian noninstitutional population ¹	19,664	19,989	19,863	19,889	19,916	19,943	19,974	20,002	20,028	20,056	20,089	20,120	20,152	20,187	20,218	
Civilian labor force	12,364	12,654	12,572	12,634	12,687	12,721	12,712	12,611	12,553	12,652	12,720	12,719	12,707	12,831	12,957	
Participation rate	62.9	63.3	63.3	63.5	63.7	63.8	63.6	63.0	62.7	63.1	63.3	63.2	63.1	63.6	64.1	
Employed	10,501	10,814	10,704	10,770	10,809	10,839	10,818	10,822	10,716	10,799	10,895	10,910	10,968	10,997	11,101	
Employment-population ratio ²	53.4	54.1	53.9	54.2	54.3	54.3	54.2	54.1	53.5	53.8	54.2	54.2	54.4	54.5	54.9	
Unemployed	1,864	1,840	1,868	1,864	1,878	1,882	1,894	1,789	1,837	1,853	1,825	1,809	1,739	1,833	1,855	
Unemployment rate	15.1	14.5	14.9	14.8	14.8	14.8	14.9	14.2	14.6	14.6	14.3	14.2	13.7	14.3	14.3	

See footnotes at end of table.

5. Continued— Employment status of the civilian population, by sex, age, race and Hispanic origin, monthly data seasonally adjusted

(Numbers in thousands)

Employment status	Annual average		1986												1987	
	1985	1986	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	
Hispanic origin																
Civilian noninstitutional population ¹	11,915	12,344	12,184	12,219	12,255	12,290	12,326	12,362	12,397	12,432	12,469	12,505	12,540	12,653	12,692	
Civilian labor force	7,698	8,076	7,922	7,926	7,969	8,006	8,085	8,121	8,130	8,179	8,200	8,226	8,320	8,431	8,457	
Participation rate	64.6	65.4	65.0	64.9	65.0	65.1	65.6	65.7	65.6	65.8	65.8	65.8	66.3	66.6	66.6	
Employed	6,888	7,219	6,991	7,095	7,129	7,136	7,224	7,269	7,248	7,286	7,345	7,437	7,446	7,538	7,644	
Employment-population ratio ²	57.8	58.5	57.4	58.1	58.2	58.1	58.6	58.8	58.5	58.6	58.9	59.5	59.4	59.6	60.2	
Unemployed	811	857	931	831	840	870	861	852	882	893	855	789	874	893	813	
Unemployment rate	10.5	10.6	11.8	10.5	10.5	10.9	10.6	10.5	10.8	10.9	10.4	9.6	10.5	10.6	9.6	

¹ The population figures are not seasonally adjusted.

² Civilian employment as a percent of the civilian noninstitutional population.

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

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

6. Selected employment indicators, monthly data seasonally adjusted

(In thousands)

Selected categories	Annual average		1986												1987	
	1985	1986	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	
CHARACTERISTIC																
Civilian employed, 16 years and over	107,150	109,597	108,557	108,807	108,969	109,165	109,613	109,887	110,067	109,987	110,192	110,432	110,637	111,011	111,382	
Men	59,891	60,892	60,603	60,681	60,712	60,668	60,793	60,884	60,942	60,968	60,975	61,241	61,393	61,596	61,751	
Women	47,259	48,706	47,954	48,126	48,257	48,497	48,820	49,003	49,125	49,019	49,217	49,191	49,244	49,415	49,631	
Married men, spouse present ..	39,248	39,658	39,363	39,396	39,504	39,582	39,613	39,634	39,735	39,691	39,780	39,952	40,093	40,102	39,913	
Married women, spouse present	26,336	27,144	26,695	26,761	26,889	27,016	27,354	27,474	27,388	27,249	27,323	27,333	27,400	27,525	27,817	
Women who maintain families ..	5,597	5,837	5,723	5,754	5,799	5,734	5,719	5,812	5,832	5,926	6,016	6,041	6,005	5,985	5,906	
MAJOR INDUSTRY AND CLASS OF WORKER																
Agriculture:																
Wage and salary workers	1,535	1,547	1,512	1,655	1,539	1,489	1,508	1,504	1,509	1,521	1,562	1,582	1,621	1,650	1,647	
Self-employed workers	1,458	1,447	1,444	1,450	1,467	1,472	1,492	1,434	1,387	1,460	1,451	1,425	1,400	1,370	1,454	
Unpaid family workers	185	169	158	169	173	177	163	171	174	159	164	198	152	136	126	
Nonagricultural industries:																
Wage and salary workers	95,871	98,299	97,500	97,661	97,858	98,047	98,314	98,312	98,586	98,692	98,846	98,869	99,164	99,550	99,748	
Government	16,031	16,342	16,155	16,160	16,231	16,333	16,377	16,582	16,446	16,333	16,264	16,457	16,443	16,412	16,532	
Private industries	79,841	81,957	81,345	81,501	81,627	81,714	81,937	81,730	82,140	82,359	82,582	82,412	82,721	83,138	83,216	
Private households	1,249	1,235	1,208	1,227	1,309	1,261	1,267	1,241	1,247	1,229	1,216	1,183	1,189	1,269	1,204	
Other	78,592	80,722	80,137	80,274	80,318	80,453	80,670	80,489	80,893	81,130	81,366	81,229	81,532	81,869	82,012	
Self-employed workers	7,811	7,881	7,711	7,713	7,634	7,793	7,832	8,019	7,956	7,939	7,993	8,179	8,056	8,192	8,187	
Unpaid family workers	289	255	261	243	251	235	236	258	271	275	265	252	239	246	255	
PERSONS AT WORK PART TIME¹																
All industries:																
Part time for economic reasons ..	5,590	5,588	5,446	5,548	5,853	5,825	5,538	5,442	5,471	5,544	5,740	5,563	5,596	5,505	5,780	
Slack work	2,430	2,456	2,385	2,352	2,534	2,605	2,437	2,473	2,417	2,472	2,481	2,510	2,444	2,473	2,535	
Could only find part-time work ..	2,819	2,800	2,724	2,908	2,922	2,843	2,813	2,661	2,741	2,772	2,826	2,714	2,867	2,695	2,828	
Voluntary part time	13,489	13,935	13,800	13,778	13,900	13,853	14,142	13,967	13,981	13,922	14,178	14,021	13,877	14,170	14,061	
Nonagricultural industries:																
Part time for economic reasons ..	5,334	5,345	5,214	5,295	5,567	5,569	5,322	5,222	5,269	5,303	5,450	5,319	5,342	5,201	5,459	
Slack work	2,273	2,305	2,242	2,160	2,382	2,485	2,307	2,317	2,283	2,314	2,314	2,366	2,286	2,281	2,340	
Could only find part-time work ..	2,730	2,719	2,669	2,819	2,906	2,749	2,727	2,609	2,678	2,710	2,739	2,626	2,765	2,599	2,742	
Voluntary part time	13,038	13,502	13,354	13,351	13,528	13,412	13,613	13,578	13,606	13,520	13,736	13,567	13,455	13,750	13,597	

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

7. Selected unemployment indicators, monthly data seasonally adjusted

(Unemployment rates)

Selected categories	Annual average		1986												1987	
	1985	1986	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	
CHARACTERISTIC																
Total, all civilian workers	7.2	7.0	7.2	7.2	7.1	7.2	7.1	7.0	6.8	7.0	6.9	6.9	6.7	6.7	6.7	
Both sexes, 16 to 19 years	18.6	18.3	18.9	18.4	19.3	18.8	18.9	17.9	18.0	18.5	17.7	18.2	17.3	17.7	18.0	
Men, 20 years and over	6.2	6.1	6.2	6.2	6.0	6.2	6.2	6.2	5.9	6.2	6.2	6.2	6.0	6.0	5.9	
Women, 20 years and over	6.6	6.2	6.6	6.5	6.4	6.4	6.3	6.2	6.1	6.2	6.1	6.1	5.9	5.9	5.8	
White, total	6.2	6.0	6.3	6.2	6.1	6.2	6.1	6.0	5.8	6.0	6.0	6.0	5.8	5.9	5.7	
Both sexes, 16 to 19 years	15.7	15.6	16.0	15.0	16.3	15.9	15.9	15.2	15.4	15.9	15.4	16.0	15.1	15.0	15.2	
Men, 16 to 19 years	16.5	16.3	16.6	15.9	17.1	17.0	17.1	15.6	16.6	16.6	15.7	16.3	15.5	16.1	16.0	
Women, 16 to 19 years	14.8	14.9	15.4	14.1	15.4	14.7	14.6	14.7	14.2	15.1	15.2	15.7	14.6	13.8	14.3	
Men, 20 years and over	5.4	5.3	5.4	5.4	5.2	5.4	5.4	5.4	5.1	5.4	5.4	5.4	5.3	5.3	5.2	
Women, 20 years and over	5.7	5.4	5.9	5.7	5.5	5.5	5.4	5.3	5.2	5.3	5.2	5.2	5.0	5.1	4.9	
Black, total	15.1	14.5	14.9	14.8	14.8	14.8	14.9	14.2	14.6	14.6	14.3	14.2	13.7	14.3	14.3	
Both sexes, 16 to 19 years	40.2	39.3	40.0	42.4	41.9	40.5	39.5	38.0	40.3	38.4	35.8	36.0	36.5	39.5	38.9	
Men, 16 to 19 years	41.0	39.3	39.5	42.6	41.2	40.5	39.7	40.5	38.8	38.6	37.8	35.0	36.1	36.5	38.3	
Women, 16 to 19 years	39.2	39.2	40.7	42.2	42.7	40.5	39.4	35.0	41.9	38.3	33.8	37.0	36.9	43.2	39.5	
Men, 20 years and over	13.2	12.9	13.3	12.8	12.8	12.9	13.3	12.9	13.2	13.4	13.1	12.9	11.8	12.2	12.0	
Women, 20 years and over	13.1	12.4	12.5	12.3	12.5	12.7	12.7	12.1	12.5	12.4	12.4	12.5	12.3	12.8	12.9	
Hispanic origin, total	10.5	10.6	11.8	10.5	10.5	10.9	10.6	10.5	10.8	10.9	10.4	9.6	10.5	10.6	9.6	
Married men, spouse present	4.3	4.4	4.5	4.5	4.2	4.4	4.5	4.4	4.2	4.3	4.6	4.5	4.3	4.2	4.2	
Married women, spouse present	5.6	5.2	5.5	5.5	5.3	5.3	5.2	5.2	5.1	5.1	5.0	5.0	4.8	4.8	4.8	
Women who maintain families	10.4	9.8	9.9	10.1	9.5	10.1	10.0	9.5	10.1	9.8	8.9	9.7	9.8	9.8	9.5	
Full-time workers	6.8	6.6	6.9	6.8	6.7	6.9	6.7	6.6	6.4	6.6	6.6	6.6	6.3	6.4	6.3	
Part-time workers	9.3	9.1	9.3	9.1	9.4	9.1	9.1	9.2	9.3	9.3	9.2	9.1	8.8	9.0	8.7	
Unemployed 15 weeks and over	2.0	1.9	2.0	1.9	1.8	1.9	1.9	1.9	1.9	2.0	1.8	1.9	1.8	1.8	1.8	
Labor force time lost ¹	8.1	7.9	8.1	8.1	8.1	8.2	8.1	7.8	7.7	7.9	7.8	7.7	7.6	7.6	7.6	
INDUSTRY																
Nonagricultural private wage and salary workers	7.2	7.0	7.2	7.1	7.1	7.2	7.1	7.1	6.9	7.0	7.0	7.0	6.8	6.7	6.6	
Mining	9.5	13.5	9.5	10.5	12.4	13.6	17.3	16.6	16.6	13.9	14.5	14.5	14.1	14.0	12.4	
Construction	13.1	13.1	13.0	13.0	12.3	13.0	12.4	13.0	12.4	12.9	13.8	15.1	13.7	12.2	11.6	
Manufacturing	7.7	7.1	7.3	7.2	6.9	7.4	7.2	6.9	6.9	7.0	7.3	7.1	6.9	6.8	6.8	
Durable goods	7.6	6.9	7.4	6.9	6.9	7.3	7.0	6.7	6.8	6.5	7.2	6.6	6.4	6.8	6.8	
Nondurable goods	7.8	7.4	7.1	7.6	6.9	7.5	7.5	7.2	6.9	7.7	7.3	7.9	7.7	6.8	6.9	
Transportation and public utilities	5.1	5.1	5.3	5.8	5.5	5.3	5.4	5.5	4.8	4.7	5.2	4.4	4.6	4.8	4.0	
Wholesale and retail trade	7.6	7.6	7.8	7.7	7.9	7.9	7.7	7.8	7.5	7.6	7.4	7.2	7.2	7.5	7.2	
Finance and service industries	5.6	5.5	5.9	5.6	5.8	5.5	5.5	5.7	5.6	5.6	5.4	5.4	5.1	5.2	5.4	
Government workers	3.9	3.6	3.8	3.9	3.6	3.6	3.6	3.3	3.3	3.5	3.7	3.6	3.3	3.6	3.7	
Agricultural wage and salary workers	13.2	12.5	13.8	12.1	13.4	15.3	13.2	11.4	13.3	12.9	11.9	10.1	11.5	11.6	11.2	

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

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

(Civilian workers)

Sex and age	Annual average		1986												1987	
	1985	1986	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	
Total, 16 years and over	7.2	7.0	7.2	7.2	7.1	7.2	7.1	7.0	6.8	7.0	6.9	6.9	6.7	6.7	6.7	
16 to 24 years	13.6	13.3	13.6	13.3	13.7	13.8	13.5	13.2	12.9	13.6	13.0	12.9	12.9	13.1	13.1	
16 to 19 years	18.6	18.3	18.9	18.4	19.3	18.8	18.9	17.9	18.0	18.5	17.7	18.2	17.3	17.7	18.0	
16 to 17 years	21.0	20.2	21.6	19.8	20.8	20.8	20.7	19.8	19.8	20.0	19.3	20.6	18.8	20.1	20.3	
18 to 19 years	17.0	17.0	17.1	17.2	18.4	17.4	17.5	16.2	16.8	17.2	16.5	16.7	16.3	16.2	16.6	
20 to 24 years	11.1	10.7	10.9	10.7	10.8	11.2	10.7	10.8	10.3	11.1	10.5	10.2	10.7	10.7	10.5	
25 years and over	5.6	5.4	5.6	5.6	5.4	5.5	5.5	5.4	5.4	5.4	5.5	5.5	5.2	5.2	5.1	
25 to 54 years	5.8	5.7	5.9	5.9	5.7	5.9	5.9	5.7	5.7	5.6	5.7	5.8	5.5	5.6	5.5	
55 years and over	4.1	3.9	4.3	4.2	3.9	3.7	3.8	3.8	3.7	4.0	4.1	3.8	3.5	3.2	3.0	
Men, 16 years and over	7.0	6.9	7.0	7.0	6.9	7.1	7.1	7.0	6.8	7.0	7.0	6.9	6.7	6.8	6.7	
16 to 24 years	14.1	13.7	13.6	13.7	14.2	14.5	13.9	13.6	13.3	14.3	13.2	13.4	13.4	13.4	13.6	
16 to 19 years	19.5	19.0	19.5	19.2	20.0	20.0	19.9	18.4	19.1	19.1	18.2	18.3	17.8	18.5	18.6	
16 to 17 years	21.9	20.8	22.9	20.5	21.1	21.3	20.0	20.3	20.9	21.0	19.8	21.3	19.1	21.4	21.2	
18 to 19 years	17.9	17.7	17.2	18.3	19.2	19.1	19.4	16.7	18.0	17.5	17.0	16.2	17.0	16.9	17.0	
20 to 24 years	11.4	11.0	10.8	11.0	11.3	11.7	10.9	11.1	10.3	11.9	10.7	10.9	11.3	10.7	11.1	
25 years and over	5.3	5.4	5.5	5.4	5.2	5.4	5.4	5.4	5.3	5.4	5.5	5.5	5.2	5.4	5.1	
25 to 54 years	5.6	5.6	5.7	5.7	5.5	5.7	5.7	5.7	5.6	5.5	5.7	5.7	5.5	5.7	5.4	
55 years and over	4.1	4.1	4.3	4.1	4.0	3.9	4.1	4.0	4.1	4.2	4.4	4.1	4.0	3.5	3.3	
Women, 16 years and over	7.4	7.1	7.5	7.3	7.3	7.2	7.2	7.0	6.9	7.0	6.9	6.9	6.7	6.7	6.7	
16 to 24 years	13.0	12.8	13.5	12.8	13.1	13.1	13.0	12.7	12.4	12.8	12.7	12.4	12.4	12.7	12.4	
16 to 19 years	17.6	17.6	18.3	17.5	18.5	17.5	17.9	17.3	16.7	17.7	17.2	18.2	16.8	16.8	17.4	
16 to 17 years	20.0	19.6	20.1	19.0	20.4	20.3	21.4	19.2	18.7	18.8	18.6	19.8	18.4	18.7	19.2	
18 to 19 years	16.0	16.3	17.1	16.2	17.6	15.5	15.6	15.4	16.9	16.0	17.2	15.7	15.3	16.1		
20 to 24 years	10.7	10.3	11.0	10.3	10.2	10.8	10.4	10.4	10.2	10.2	10.3	9.4	10.0	10.6	9.8	
25 years and over	5.9	5.5	5.8	5.8	5.7	5.6	5.6	5.4	5.4	5.5	5.4	5.5	5.2	5.1	5.1	
25 to 54 years	6.2	5.9	6.1	6.1	6.0	6.0	6.0	6.0	5.8	5.8	5.8	5.7	5.5	5.5	5.6	
55 years and over	4.1	3.6	4.3	4.3	3.8	3.5	3.3	3.6	3.3	3.6	3.6	3.4	2.9	2.7	2.6	

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

(Numbers in thousands)

Reason for unemployment	Annual average		1986												1987	
	1985	1986	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.
Job losers	4,139	4,033	3,802	4,147	4,210	4,035	4,214	4,272	4,063	3,824	4,044	3,984	3,947	3,890	3,971	3,839
On layoff	1,157	1,090	1,143	1,136	1,144	1,057	1,118	1,074	1,078	1,017	1,029	1,072	1,073	1,078	1,118	998
Other job losers	2,982	2,943	2,659	3,011	3,066	2,978	3,096	3,198	2,985	2,807	3,015	2,912	2,874	2,812	2,854	2,842
Job leavers	877	1,015	977	985	989	1,071	979	1,009	1,025	990	1,041	1,027	1,056	1,036	891	1,046
Reentrants	2,256	2,160	2,083	2,263	2,196	2,188	2,200	2,107	2,205	2,199	2,145	2,190	2,119	2,019	2,054	2,042
New entrants	1,039	1,029	1,029	1,073	1,006	1,048	1,046	1,050	989	1,014	1,038	972	1,076	1,015	1,084	1,040
PERCENT OF UNEMPLOYED																
Job losers	49.8	48.9	48.2	49.0	50.1	48.4	49.9	50.6	49.1	47.6	48.9	48.7	48.1	48.9	49.6	48.2
On layoff	13.9	13.2	14.5	13.4	13.6	12.7	13.2	12.7	13.0	12.7	12.4	13.1	13.1	13.5	14.0	12.5
Other job losers	35.9	35.7	33.7	35.6	36.5	35.7	36.7	37.9	36.0	35.0	36.5	35.6	35.1	35.3	35.7	35.7
Job leavers	10.6	12.3	12.4	11.6	11.8	12.8	11.6	12.0	12.4	12.3	12.6	12.6	12.9	13.0	11.1	13.1
Reentrants	27.1	26.2	26.4	26.7	26.1	26.2	26.1	25.0	26.6	27.4	25.9	26.8	25.8	25.4	25.7	25.6
New entrants	12.5	12.5	13.0	12.7	12.0	12.6	12.4	12.4	11.9	12.6	12.6	11.9	13.1	12.8	13.6	13.1
PERCENT OF CIVILIAN LABOR FORCE																
Job losers	3.6	3.4	3.3	3.5	3.6	3.4	3.6	3.6	3.4	3.2	3.4	3.4	3.3	3.3	3.3	3.2
Job leavers .....	.8	.9	.8	.8	.8	.9	.8	.9	.9	.8	.9	.9	.9	.9	.7	.9
Reentrants	2.0	1.8	1.8	1.9	1.9	1.9	1.9	1.8	1.9	1.9	1.8	1.8	1.8	1.7	1.7	1.7
New entrants .....	.9	.9	.9	.9	.9	.9	.9	.9	.8	.9	.9	.8	.9	.9	.9	.9

10. Duration of unemployment, monthly data seasonally adjusted

(Numbers in thousands)

Weeks of unemployment	Annual average		1986												1987	
	1985	1986	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.
Less than 5 weeks	3,498	3,448	3,373	3,534	3,536	3,565	3,610	3,415	3,399	3,436	3,415	3,418	3,382	3,355	3,416	3,361
5 to 14 weeks	2,509	2,557	2,505	2,615	2,625	2,650	2,671	2,650	2,521	2,407	2,524	2,563	2,613	2,389	2,530	2,477
15 weeks and over	2,305	2,232	2,117	2,332	2,243	2,130	2,232	2,299	2,250	2,272	2,373	2,168	2,217	2,171	2,200	2,131
15 to 26 weeks	1,025	1,045	1,003	1,142	1,078	982	1,065	1,038	1,058	1,068	1,110	950	1,045	1,023	1,022	1,008
27 weeks and over	1,280	1,187	1,114	1,190	1,165	1,148	1,167	1,261	1,192	1,204	1,263	1,218	1,172	1,148	1,178	1,123
Mean duration in weeks	15.6	15.0	15.0	15.2	14.6	14.7	14.8	15.2	15.1	15.6	15.5	15.2	14.8	15.0	15.0	14.6
Median duration in weeks	6.8	6.9	6.8	6.9	6.8	6.6	6.8	7.2	7.1	7.1	7.1	7.0	7.0	7.1	7.0	6.6

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

State	Jan. 1986	Jan. 1987	State	Jan. 1986	Jan. 1987
Alabama	9.1	10.0	Montana	9.6	10.1
Alaska	11.4	11.6	Nebraska	7.0	5.7
Arizona	6.6	7.8	Nevada	8.4	6.5
Arkansas	9.9	9.4	New Hampshire	3.8	3.0
California	6.6	6.9			
Colorado	7.1	9.3	New Jersey	6.9	4.6
Connecticut	4.5	3.9	New Mexico	9.3	9.8
Delaware	5.0	3.7	New York	6.7	6.2
District of Columbia	7.7	8.0	North Carolina	5.9	5.2
Florida	5.6	5.8	North Dakota	7.9	6.9
Georgia	5.9	5.7	Ohio	9.3	8.7
Hawaii	5.8	4.4	Oklahoma	7.6	8.4
Idaho	10.5	10.7	Oregon	9.3	8.3
Illinois	8.6	8.2	Pennsylvania	8.1	6.5
Indiana	8.2	7.5	Rhode Island	5.3	4.5
Iowa	9.3	6.9	South Carolina	7.8	6.1
Kansas	6.2	6.4	South Dakota	5.6	5.5
Kentucky	11.7	10.8	Tennessee	8.6	8.1
Louisiana	12.9	14.7	Texas	6.9	9.8
Maine	6.8	6.8	Utah	6.5	7.4
Maryland	4.9	5.2	Vermont	5.3	5.2
Massachusetts	4.1	4.1	Virginia	6.2	5.2
Michigan	9.4	8.1	Washington	8.7	9.3
Minnesota	7.7	6.4	West Virginia	13.4	13.0
Mississippi	11.2	12.7	Wisconsin	8.6	7.9
Missouri	6.7	6.9	Wyoming	10.3	10.6

NOTE: Some data in this table may differ from data published elsewhere because of the continual updating of the database.

12. Employment of workers on nonagricultural payrolls by State, data not seasonally adjusted

(In thousands)

State	Jan. 1986	Dec. 1986	Jan. 1987 ^P	State	Jan. 1986	Dec. 1986	Jan. 1987 ^P
Alabama	1,440.7	1,474.0	1,465.2	Nebraska	635.6	663.2	647.9
Alaska	212.9	211.4	205.1	Nevada	445.0	481.4	476.8
Arizona	1,305.5	1,378.7	1,362.5	New Hampshire	472.0	499.6	492.7
Arkansas	788.9	824.0	809.7				
California	11,021.9	11,526.0	11,381.8	New Jersey	3,382.7	3,549.7	3,476.9
Colorado	1,399.9	1,405.2	1,390.4	New Mexico	521.0	535.3	526.6
Connecticut	1,559.4	1,644.6	1,610.1	New York	7,691.4	8,074.3	7,865.5
Delaware	291.9	313.2	305.7	North Carolina	2,673.8	2,796.8	2,757.6
District of Columbia	628.5	647.0	637.8	North Dakota	243.7	249.7	243.5
Florida	4,508.7	4,739.3	4,722.0	Ohio	4,352.2	4,569.4	4,464.2
Georgia	2,597.3	2,746.5	2,723.4	Oklahoma	1,149.4	1,142.8	1,127.5
Hawaii	429.4	448.1	443.1	Oregon	1,020.8	1,072.8	1,052.1
Idaho	324.0	339.1	329.4	Pennsylvania	4,670.8	4,876.5	4,753.2
Illinois	4,678.8	4,843.9	4,767.5	Rhode Island	427.5	452.2	438.1
Indiana	2,162.6	2,227.5	2,233.3	South Carolina	1,301.1	1,357.9	1,345.6
Iowa	1,046.7	1,092.0	1,075.6	South Dakota	242.5	252.3	246.2
Kansas	964.3	990.5	975.2	Tennessee	1,870.2	1,982.5	1,960.7
Kentucky	1,238.5	1,309.8	1,279.5	Texas	6,648.3	6,538.8	6,471.8
Louisiana	1,556.8	1,509.4	1,488.9	Utah	622.6	644.0	631.1
Maine	451.3	486.7	472.3	Vermont	227.8	241.5	238.2
Maryland	1,877.4	1,998.6	1,959.8	Virginia	2,469.9	2,626.5	2,575.4
Massachusetts	2,904.7	3,045.7	2,963.6	Washington	1,710.9	1,791.6	1,767.1
Michigan	3,579.6	3,699.4	3,626.2	West Virginia	583.8	599.6	587.3
Minnesota	1,829.4	1,919.6	1,877.0	Wisconsin	1,952.7	2,042.8	1,992.8
Mississippi	844.1	859.8	846.3	Wyoming	199.3	191.2	185.9
Missouri	2,079.2	2,145.5	2,106.1	Puerto Rico	695.0	734.4	723.2
Montana	269.8	275.6	270.8	Virgin Islands	37.2	37.9	37.9

^P = preliminary

NOTE: Some data in this table may differ from data published elsewhere

because of the continual updating of the database.

13. Employment of workers on nonagricultural payrolls by industry, monthly data seasonally adjusted

(In thousands)

Industry	Annual average		1986										1987		
	1985	1986	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb. ^P	Mar. ^P
TOTAL	97,614	100,167	99,484	99,783	99,918	99,843	100,105	100,283	100,560	100,826	101,068	101,322	101,626	101,862	102,026
PRIVATE SECTOR	81,199	83,432	82,785	83,072	83,198	83,161	83,508	83,655	83,786	83,956	84,178	84,394	84,708	84,958	85,060
GOODS-PRODUCING	24,930	24,938	24,945	25,038	24,965	24,854	24,869	24,888	24,858	24,865	24,891	24,920	25,008	25,040	24,972
Mining	930	792	852	821	790	772	768	753	743	746	742	738	731	732	735
Oil and gas extraction	585	464	518	488	461	446	442	431	422	423	420	414	412	414	418
Construction	4,687	4,960	4,838	4,972	4,974	4,947	4,980	5,012	5,010	5,001	4,993	4,996	5,109	5,094	5,047
General building contractors	1,251	1,307	1,298	1,315	1,314	1,299	1,299	1,306	1,301	1,302	1,307	1,298	1,333	1,322	1,302
Manufacturing	19,314	19,186	19,255	19,245	19,201	19,135	19,121	19,123	19,105	19,118	19,156	19,186	19,168	19,214	19,190
Production workers	13,130	13,023	13,061	13,060	13,025	12,979	12,961	12,971	12,960	12,974	13,020	13,053	13,031	13,078	13,063
Durable goods	11,516	11,345	11,418	11,415	11,378	11,307	11,294	11,302	11,271	11,266	11,282	11,289	11,265	11,300	11,280
Production workers	7,660	7,495	7,545	7,547	7,519	7,462	7,441	7,458	7,438	7,435	7,452	7,466	7,440	7,480	7,469
Lumber and wood products	700	727	715	719	719	721	724	729	734	737	743	749	754	755	752
Furniture and fixtures	493	497	493	494	496	496	498	499	500	507	500	500	503	504	
Stone, clay, and glass products	591	595	594	600	599	597	593	592	594	590	591	594	595	598	594
Primary metal industries	813	768	787	785	780	761	758	751	749	749	751	752	741	753	755
Blast furnaces and basic steel products	305	283	293	291	288	286	285	272	270	272	271	270	264	274	276
Fabricated metal products	1,468	1,439	1,450	1,451	1,447	1,440	1,428	1,429	1,433	1,429	1,427	1,431	1,430	1,430	1,427
Machinery, except electrical	2,182	2,082	2,118	2,111	2,100	2,089	2,079	2,072	2,044	2,039	2,036	2,030	2,029	2,043	2,042
Electrical and electronic equipment	2,207	2,169	2,177	2,177	2,175	2,143	2,169	2,168	2,162	2,167	2,166	2,164	2,156	2,154	2,147
Transportation equipment	1,971	1,984	1,989	1,986	1,972	1,974	1,969	1,985	1,979	1,979	1,993	1,990	1,979	1,986	1,978
Motor vehicles and equipment	876	843	858	854	839	839	824	839	834	824	837	832	826	836	823
Instruments and related products	723	717	726	723	721	717	713	713	713	713	710	709	709	707	708
Miscellaneous manufacturing industries	369	367	369	369	369	369	363	364	363	363	365	370	369	371	373
Nondurable goods	7,798	7,841	7,837	7,830	7,823	7,828	7,827	7,821	7,834	7,852	7,874	7,897	7,903	7,914	7,910
Production workers	5,470	5,528	5,516	5,513	5,506	5,517	5,520	5,513	5,522	5,539	5,568	5,587	5,591	5,598	5,594
Food and kindred products	1,608	1,641	1,632	1,633	1,640	1,648	1,645	1,642	1,644	1,644	1,654	1,657	1,654	1,657	1,656
Tobacco manufactures	65	61	63	63	62	62	62	59	60	59	61	60	59	60	59
Textile mill products	704	709	707	703	705	707	710	711	709	711	717	719	722	727	727
Apparel and other textile products	1,125	1,115	1,117	1,119	1,113	1,106	1,108	1,108	1,110	1,113	1,112	1,124	1,123	1,116	1,116
Paper and allied products	683	690	688	689	689	690	687	685	691	694	694	697	694	695	694
Printing and publishing	1,435	1,479	1,469	1,472	1,474	1,477	1,483	1,481	1,485	1,491	1,493	1,493	1,500	1,506	1,506
Chemicals and allied products	1,046	1,027	1,031	1,028	1,024	1,026	1,025	1,026	1,025	1,023	1,023	1,020	1,021	1,021	1,019
Petroleum and coal products	178	164	166	166	166	164	163	163	162	161	160	159	159	159	158
Rubber and misc. plastics products	790	801	804	800	796	797	792	794	797	805	809	815	819	820	821
Leather and leather products	166	155	160	157	154	151	152	152	151	151	151	153	152	153	154
SERVICE-PRODUCING	72,684	75,229	74,539	74,745	74,953	74,989	75,236	75,395	75,702	75,961	76,177	76,402	76,618	76,822	77,054
Transportation and public utilities	5,242	5,286	5,280	5,266	5,265	5,167	5,288	5,255	5,316	5,316	5,351	5,359	5,382	5,389	5,411
Transportation	3,006	3,068	3,053	3,040	3,037	3,035	3,057	3,063	3,088	3,094	3,117	3,125	3,140	3,143	3,162
Communication and public utilities	2,236	2,218	2,227	2,226	2,228	2,132	2,231	2,192	2,228	2,222	2,234	2,234	2,242	2,246	2,249
Wholesale trade	5,740	5,853	5,841	5,864	5,872	5,829	5,849	5,863	5,859	5,864	5,859	5,859	5,864	5,876	5,880
Durable goods	3,409	3,482	3,480	3,485	3,488	3,454	3,483	3,485	3,485	3,489	3,489	3,491	3,495	3,497	3,498
Nondurable goods	2,331	2,371	2,361	2,379	2,384	2,375	2,366	2,378	2,374	2,375	2,370	2,368	2,369	2,379	2,382
Retail trade	17,360	17,978	17,828	17,851	17,911	17,944	17,992	18,030	18,065	18,143	18,197	18,206	18,289	18,376	18,411
General merchandise stores	2,320	2,350	2,333	2,342	2,344	2,350	2,354	2,359	2,362	2,379	2,367	2,341	2,333	2,366	2,380
Food stores	2,779	2,932	2,901	2,910	2,917	2,932	2,938	2,951	2,952	2,963	2,968	2,979	2,990	3,008	3,006
Automotive dealers and service stations	1,892	1,954	1,939	1,940	1,944	1,945	1,950	1,962	1,970	1,973	1,977	1,984	1,988	1,993	1,987
Eating and drinking places	5,715	5,921	5,868	5,859	5,889	5,918	5,931	5,923	5,948	5,982	6,006	6,035	6,080	6,092	6,108
Finance, insurance, and real estate	5,953	6,305	6,184	6,228	6,261	6,295	6,334	6,364	6,388	6,409	6,429	6,472	6,495	6,518	6,554
Finance	2,979	3,159	3,095	3,120	3,137	3,159	3,176	3,192	3,202	3,212	3,220	3,236	3,239	3,248	3,255
Insurance	1,830	1,934	1,900	1,910	1,918	1,927	1,945	1,952	1,962	1,971	1,979	1,990	2,002	2,009	2,018
Real estate	1,144	1,211	1,189	1,198	1,206	1,209	1,213	1,220	1,224	1,226	1,230	1,246	1,254	1,261	1,281
Services	21,974	23,072	22,707	22,825	22,924	23,072	23,176	23,255	23,300	23,359	23,451	23,578	23,670	23,759	23,832
Business services	4,452	4,809	4,698	4,750	4,755	4,792	4,835	4,848	4,883	4,908	4,926	4,966	4,990	5,042	5,074
Health services	6,310	6,586	6,497	6,511	6,543	6,571	6,601	6,634	6,649	6,677	6,695	6,726	6,757	6,784	6,802
Government	16,415	16,735	16,699	16,711	16,720	16,682	16,597	16,628	16,774	16,870	16,890	16,928	16,918	16,904	16,966
Federal	2,875	2,899	2,923	2,914	2,899	2,875	2,866	2,875	2,901	2,896	2,899	2,907	2,914	2,915	2,924
State	3,848	3,937	3,927	3,938	3,936	3,927	3,921	3,919	3,932	3,959	3,965	3,983	3,983	3,984	4,003
Local	9,692	9,899	9,849	9,859	9,885	9,880	9,810	9,834	9,941	10,015	10,026	10,038	10,021	10,005	10,039

^P = preliminary

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

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

Industry	Annual average		1986										1987		
	1985	1986	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb. ^P	Mar. ^P
PRIVATE SECTOR	34.9	34.8	34.9	34.8	34.8	34.7	34.7	34.8	34.7	34.7	34.8	34.6	34.8	35.0	34.8
CONSTRUCTION	37.7	37.5	-	-	-	-	-	-	-	-	-	-	-	-	-
MANUFACTURING	40.5	40.7	40.7	40.7	40.7	40.6	40.6	40.8	40.8	40.7	40.8	40.8	41.0	41.2	40.9
Overtime hours	3.3	3.4	3.4	3.4	3.4	3.3	3.4	3.5	3.5	3.5	3.5	3.5	3.6	3.6	3.7
Durable goods	41.2	41.3	41.4	41.3	41.2	41.2	41.1	41.4	41.4	41.3	41.4	41.3	41.6	41.9	41.6
Overtime hours	3.5	3.5	3.6	3.6	3.4	3.5	3.5	3.5	3.6	3.6	3.6	3.6	3.7	3.7	3.8
Lumber and wood products	39.9	40.3	40.2	40.3	40.3	39.9	40.1	40.2	40.1	40.3	40.7	40.4	40.7	41.1	40.8
Furniture and fixtures	39.4	39.6	39.4	39.1	39.4	39.4	39.4	39.9	40.0	39.8	39.6	39.6	40.2	40.1	39.8
Stone, clay, and glass products	41.9	42.3	41.9	42.4	42.3	42.2	42.2	42.5	42.5	42.3	41.9	42.1	42.9	43.1	42.5
Primary metal industries	41.5	41.9	41.9	41.3	41.7	41.6	41.3	41.9	42.0	42.3	42.4	42.5	42.7	42.8	42.7
Blast furnaces and basic steel products	41.1	41.6	41.7	40.5	41.5	41.1	41.2	41.5	41.6	42.3	42.5	42.7	42.8	42.4	42.3
Fabricated metal products	41.3	41.3	41.4	41.2	41.1	41.1	41.1	41.2	41.5	41.2	41.4	41.1	41.5	41.8	41.5
Machinery except electrical	41.5	41.6	41.6	41.8	41.8	41.7	41.4	41.7	41.7	41.6	41.7	41.5	42.0	42.1	41.9
Electrical and electronic equipment	40.6	41.0	41.0	41.1	41.0	41.0	41.1	41.2	41.2	40.9	41.0	41.0	41.0	41.4	40.8
Transportation equipment	42.6	42.4	42.7	42.1	41.9	42.2	42.1	42.6	42.6	42.1	42.3	42.1	42.3	42.8	42.7
Motor vehicles and equipment	43.5	42.7	43.3	41.9	41.8	42.4	42.4	42.8	42.7	42.1	42.6	42.6	43.2	43.5	43.2
Instruments and related products	41.0	41.1	41.3	41.3	40.9	41.0	40.8	41.0	40.7	41.1	41.2	41.3	41.2	41.4	41.3
Miscellaneous manufacturing	39.4	39.6	-	-	-	-	-	-	-	-	-	-	-	-	-
Nondurable goods	39.6	39.9	39.8	39.9	39.9	39.8	39.8	40.0	39.9	39.9	40.1	40.1	40.1	40.4	40.1
Overtime hours	3.1	3.3	3.2	3.3	3.4	3.2	3.4	3.4	3.3	3.4	3.5	3.5	3.5	3.5	3.5
Food and kindred products	40.0	40.0	39.9	40.2	40.2	40.0	40.0	40.3	39.7	39.8	40.0	39.8	40.0	40.1	40.0
Tobacco manufactures	37.2	37.6	-	-	-	-	-	-	-	-	-	-	-	-	-
Textile mill products	39.7	41.2	40.7	41.3	41.1	40.8	40.9	41.4	41.6	41.5	41.5	41.9	41.7	42.3	42.0
Apparel and other textile products	36.4	36.7	36.5	36.9	36.5	36.5	36.6	36.5	36.7	36.7	36.9	37.0	36.9	37.6	37.0
Paper and allied products	43.1	43.3	43.5	43.0	43.2	43.1	43.2	43.5	43.0	43.0	43.2	43.4	43.6	43.6	43.3
Printing and publishing	37.8	38.0	38.0	38.0	38.0	37.8	37.9	38.0	38.0	38.0	38.1	38.1	38.0	38.3	37.9
Chemicals and allied products	41.9	42.0	41.9	41.9	42.0	41.9	41.9	42.1	42.0	42.2	42.5	42.2	42.3	42.1	41.9
Petroleum and coal products	43.0	43.7	43.8	43.6	43.4	44.0	43.5	44.3	43.4	43.7	43.8	43.6	45.0	44.2	44.0
Leather and leather products	37.2	36.9	-	-	-	-	-	-	-	-	-	-	-	-	-
TRANSPORTATION AND PUBLIC UTILITIES	39.5	39.2	39.6	39.2	39.2	39.1	39.2	39.1	38.9	39.1	39.3	39.0	39.1	39.3	39.3
WHOLESALE TRADE	38.4	38.4	38.5	38.5	38.4	38.3	38.3	38.4	38.2	38.4	38.3	38.2	38.3	38.4	38.3
RETAIL TRADE	29.4	29.2	29.3	29.2	29.2	29.1	29.2	29.2	29.2	29.1	29.3	28.9	29.0	29.4	29.2
SERVICES	32.5	32.5	32.5	32.5	32.5	32.4	32.4	32.4	32.3	32.4	32.5	32.4	32.4	32.5	32.3

- Data not available.
^P = preliminary

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

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

Industry	Annual average		1986										1987		
	1985	1986	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb. ^P	Mar. ^P
PRIVATE SECTOR	\$8.57	\$8.75	\$8.73	\$8.72	\$8.72	\$8.71	\$8.69	\$8.70	\$8.81	\$8.81	\$8.85	\$8.83	\$8.88	\$8.89	\$8.90
Seasonally adjusted	-	-	8.73	8.72	8.73	8.74	8.73	8.77	8.76	8.80	8.84	8.82	8.84	8.86	8.89
MINING	11.98	12.45	12.35	12.43	12.44	12.50	12.46	12.51	12.52	12.51	12.57	12.60	12.67	12.52	12.51
CONSTRUCTION	12.31	12.42	12.22	12.29	12.33	12.31	12.31	12.39	12.54	12.62	12.59	12.70	12.53	12.45	12.57
MANUFACTURING	9.53	9.73	9.72	9.70	9.71	9.70	9.74	9.68	9.73	9.72	9.77	9.84	9.83	9.84	9.85
Durable goods	10.10	10.29	10.30	10.28	10.28	10.26	10.27	10.22	10.30	10.28	10.33	10.40	10.38	10.39	10.39
Lumber and wood products	8.22	8.37	8.33	8.32	8.37	8.43	8.36	8.40	8.42	8.37	8.39	8.36	8.29	8.32	8.28
Furniture and fixtures	7.17	7.44	7.35	7.36	7.39	7.46	7.44	7.46	7.52	7.50	7.52	7.60	7.57	7.56	7.57
Stone, clay, and glass products	9.84	10.05	9.93	10.00	10.04	10.04	10.06	10.07	10.11	10.10	10.13	10.17	10.18	10.16	10.17
Primary metal industries	11.68	11.93	11.99	12.00	12.02	11.94	12.06	11.85	11.92	11.84	11.87	11.91	11.86	11.89	11.91
Blast furnaces and basic steel products	13.34	13.82	13.80	13.82	13.86	13.88	14.08	13.83	13.93	13.78	13.78	13.83	13.67	13.70	13.69
Fabricated metal products	9.70	9.87	9.88	9.84	9.85	9.88	9.84	9.82	9.87	9.86	9.93	10.00	9.98	9.98	9.99
Machinery, except electrical	10.29	10.56	10.58	10.55	10.55	10.55	10.57	10.57	10.58	10.56	10.59	10.65	10.61	10.65	10.69
Electrical and electronic equipment	9.47	9.67	9.62	9.62	9.64	9.61	9.68	9.67	9.73	9.72	9.75	9.85	9.86	9.85	9.86
Transportation equipment	12.72	12.86	12.90	12.83	12.79	12.78	12.78	12.75	12.87	12.87	12.92	13.00	12.98	12.95	12.95
Motor vehicles and equipment	13.42	13.52	13.66	13.54	13.47	13.41	13.40	13.36	13.50	13.49	13.52	13.63	13.67	13.60	13.61
Instruments and related products	9.16	9.46	9.41	9.41	9.40	9.41	9.47	9.45	9.51	9.54	9.61	9.62	9.62	9.65	9.60
Miscellaneous manufacturing	7.30	7.56	7.51	7.50	7.54	7.54	7.59	7.52	7.59	7.60	7.65	7.71	7.70	7.69	7.67
Nondurable goods	8.71	8.93	8.88	8.88	8.90	8.91	8.99	8.93	8.96	8.95	9.00	9.06	9.06	9.06	9.09
Food and kindred products	8.57	8.74	8.74	8.75	8.78	8.74	8.75	8.65	8.65	8.68	8.79	8.88	8.89	8.91	8.94
Tobacco manufactures	11.94	12.77	12.76	12.84	13.38	13.68	13.48	13.44	12.21	12.10	12.62	12.86	12.89	13.35	13.76
Textile mill products	6.71	6.95	6.86	6.87	6.88	6.87	6.90	6.99	7.05	7.04	7.07	7.13	7.13	7.13	7.16
Apparel and other textile products	5.73	5.81	5.80	5.81	5.78	5.79	5.76	5.79	5.87	5.82	5.83	5.86	5.89	5.89	5.90
Paper and allied products	10.82	11.14	11.03	11.05	11.12	11.15	11.31	11.17	11.20	11.20	11.17	11.24	11.17	11.18	11.15
Printing and publishing	9.71	9.97	9.90	9.87	9.91	9.88	9.96	10.00	10.10	10.08	10.11	10.14	10.14	10.16	10.17
Chemicals and allied products	11.56	11.97	11.78	11.82	11.89	11.94	12.04	11.99	12.03	12.08	12.15	12.20	12.17	12.20	12.26
Petroleum and coal products	14.06	14.19	14.22	14.16	14.02	14.14	14.16	14.07	14.20	14.18	14.26	14.36	14.40	14.35	14.56
Rubber and miscellaneous plastics products	8.54	8.76	8.72	8.68	8.75	8.75	8.82	8.81	8.76	8.76	8.81	8.86	8.87	8.84	8.85
Leather and leather products	5.82	5.90	5.86	5.89	5.88	5.88	5.89	5.90	5.93	5.92	5.98	5.98	6.03	5.97	6.04
TRANSPORTATION AND PUBLIC UTILITIES	11.40	11.63	11.62	11.55	11.54	11.57	11.61	11.61	11.70	11.68	11.75	11.71	11.73	11.79	11.78
WHOLESALE TRADE	9.16	9.35	9.33	9.29	9.29	9.32	9.30	9.32	9.37	9.35	9.46	9.47	9.49	9.55	9.51
RETAIL TRADE	5.94	6.02	6.03	6.01	6.00	5.99	5.97	5.97	6.05	6.04	6.07	6.05	6.07	6.06	6.05
FINANCE, INSURANCE, AND REAL ESTATE	7.94	8.34	8.30	8.29	8.31	8.37	8.30	8.33	8.37	8.38	8.54	8.46	8.58	8.71	8.68
SERVICES	7.89	8.16	8.18	8.12	8.10	8.10	8.04	8.05	8.19	8.22	8.31	8.31	8.36	8.40	8.40

- Data not available.
P = preliminary

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

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

Industry	Annual average		1986										1987		
	1985	1986	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb. ^P	Mar. ^P
PRIVATE SECTOR															
Current dollars	\$299.09	\$304.50	\$302.93	\$301.71	\$302.58	\$303.98	\$304.15	\$305.37	\$306.59	\$305.71	\$307.10	\$308.17	\$305.47	\$306.71	\$307.94
Seasonally adjusted	-	-	304.68	303.46	303.80	303.28	302.93	305.20	303.97	305.36	307.63	305.17	307.63	310.10	309.37
Constant (1977) dollars	170.42	170.88	171.05	170.94	170.85	170.78	170.97	171.36	171.28	170.69	171.28	171.78	169.14	169.17	-
MINING	519.93	526.64	522.41	522.06	519.99	525.00	518.34	529.17	529.60	527.92	522.91	536.76	542.28	527.09	522.92
CONSTRUCTION	464.09	465.75	444.81	462.10	467.31	465.32	471.47	475.78	482.79	479.56	459.54	468.63	467.37	459.41	471.38
MANUFACTURING															
Current dollars	385.97	396.01	395.60	392.85	394.23	395.76	391.55	393.98	398.93	396.58	400.57	409.34	401.06	401.47	402.87
Constant (1977) dollars	219.93	222.23	223.38	222.58	222.60	222.34	220.10	221.09	222.87	221.43	223.41	228.17	222.07	221.44	-
Durable goods	416.12	424.98	426.42	423.54	423.54	424.76	417.99	420.04	428.48	424.56	429.73	438.88	430.77	430.15	432.22
Lumber and wood products	327.98	337.31	333.20	334.46	338.99	342.26	334.40	341.04	342.69	338.99	338.12	338.58	331.60	336.13	336.17
Furniture and fixtures	282.50	294.62	288.12	286.30	288.21	294.67	287.93	298.40	303.81	303.00	300.80	310.84	299.77	297.11	299.77
Stone, clay, and glass products	412.30	425.12	412.10	425.00	428.71	429.71	427.55	432.00	435.74	431.27	424.45	427.14	424.51	424.69	428.16
Primary metal industries	484.72	499.87	504.78	499.20	501.23	499.09	495.67	491.78	501.83	496.10	503.29	512.13	505.24	508.89	509.75
Blast furnaces and basic steel products	548.27	574.91	576.84	569.38	576.58	577.41	582.91	569.80	579.49	571.87	580.14	590.54	578.24	582.25	580.46
Fabricated metal products	400.61	407.63	409.03	403.44	404.84	408.04	398.52	402.62	410.59	407.22	412.10	421.00	413.17	412.17	414.59
Machinery, except electrical	427.04	439.30	442.24	437.83	437.83	439.94	431.26	436.54	441.19	438.24	443.72	454.76	445.62	447.30	450.05
Electrical and electronic equipment	384.48	396.47	395.38	392.50	393.31	394.01	391.07	395.50	401.85	397.55	403.65	414.69	405.25	403.85	403.27
Transportation equipment	541.87	545.26	552.12	542.71	537.18	540.59	530.37	531.68	544.40	540.54	549.10	564.20	551.65	550.38	554.26
Motor vehicles and equipment	583.77	577.30	592.84	574.10	567.09	572.61	560.12	555.78	573.75	567.93	575.95	599.72	590.54	584.80	589.31
Instruments and related products	375.56	388.81	389.57	385.81	382.58	385.81	382.59	384.62	388.96	390.19	398.82	406.93	396.34	397.58	397.44
Miscellaneous manufacturing	287.62	299.38	299.65	297.75	297.08	298.58	294.49	294.78	300.56	302.48	307.53	310.71	304.15	301.45	302.97
Nondurable goods	344.92	356.31	352.54	351.65	354.22	355.51	356.00	358.09	360.19	358.00	362.70	368.74	362.40	361.49	363.60
Food and kindred products	342.80	349.60	344.36	346.50	352.08	350.47	350.00	352.06	349.46	347.20	353.36	358.75	353.82	350.16	353.13
Tobacco manufactures	444.17	480.15	478.50	469.94	504.43	523.94	483.93	486.53	470.09	473.11	484.61	484.82	482.09	487.28	539.39
Textile mill products	266.39	286.34	278.52	278.92	282.08	283.04	278.07	290.78	295.40	293.57	296.23	302.31	296.61	298.03	300.00
Apparel and other textile products	208.57	213.23	211.70	211.48	210.97	213.65	209.09	211.91	215.43	214.76	216.88	219.16	216.75	218.52	218.30
Paper and allied products	466.34	482.36	477.60	474.05	479.27	480.57	486.33	483.66	484.96	482.72	484.78	496.81	485.90	481.86	480.57
Printing and publishing	367.04	378.86	377.19	374.07	374.60	370.50	374.50	381.00	386.83	384.05	388.22	393.43	382.28	385.06	386.46
Chemicals and allied products	484.36	502.74	494.76	495.26	499.38	502.67	502.07	501.18	505.26	506.15	517.59	520.94	514.79	512.40	514.92
Petroleum and coal products	604.58	620.10	621.41	615.96	605.66	622.16	618.79	623.30	626.22	621.08	626.01	627.53	643.68	625.66	639.18
Rubber and miscellaneous plastics products	350.99	361.79	360.14	356.75	360.50	361.38	357.21	362.97	364.42	362.66	367.38	374.78	368.99	366.86	368.16
Leather and leather products	216.50	217.71	212.72	213.81	215.80	221.68	217.93	216.53	218.22	217.86	222.46	227.84	224.92	222.08	226.50
TRANSPORTATION AND PUBLIC UTILITIES	450.30	455.90	457.83	450.45	450.06	455.86	457.43	457.43	457.47	456.69	461.78	459.03	453.95	459.81	460.60
WHOLESALE TRADE	351.74	359.04	357.34	355.81	356.74	358.82	358.05	358.82	358.87	359.04	363.26	363.65	361.57	362.90	362.33
RETAIL TRADE	174.64	175.78	174.27	173.69	174.60	176.71	178.50	178.50	176.66	175.16	176.64	178.48	172.39	173.92	174.24
FINANCE, INSURANCE, AND REAL ESTATE	289.02	304.41	304.61	301.76	301.65	306.34	302.95	304.88	304.67	306.71	313.42	309.64	313.17	317.92	315.95
SERVICES	256.43	265.20	265.03	263.09	262.44	264.06	263.71	264.04	264.54	266.33	269.24	269.24	269.19	271.32	270.48

- Data not available.
P = preliminary

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

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

Industry	Not seasonally adjusted				Seasonally adjusted					
	Mar. 1986	Jan. 1987	Feb. 1987 ^P	Mar. 1987 ^P	Mar. 1986	Nov. 1986	Dec. 1986	Jan. 1987	Feb. 1987 ^P	Mar. 1987 ^P
PRIVATE SECTOR (in current dollars)	168.5	171.3	171.8	171.8	168.5	170.8	170.6	170.7	171.4	171.8
Mining ¹	180.1	182.0	180.5	181.0	-	-	-	-	-	-
Construction	148.3	152.0	151.0	152.6	149.2	154.0	153.9	151.7	151.0	153.5
Manufacturing	171.9	174.1	174.2	174.3	171.8	173.2	173.5	173.4	173.9	174.1
Transportation and public utilities	169.8	172.1	173.2	172.8	170.2	171.2	171.2	171.5	172.5	173.0
Wholesale trade ¹	171.9	174.9	175.8	175.3	-	-	-	-	-	-
Retail trade	157.7	158.8	159.1	159.1	157.4	159.3	159.3	158.4	158.6	158.8
Finance, insurance, and real estate ¹	179.2	184.7	187.4	187.0	-	-	-	-	-	-
Services	174.0	178.0	178.8	178.9	174.0	176.6	175.8	176.9	178.1	178.9
PRIVATE SECTOR (in constant dollars)	95.2	94.8	94.7	-	95.0	95.3	95.0	94.4	94.4	-

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

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

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

(In percent)

Time span and year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Over 1-month span:												
1985	52.4	47.8	53.8	49.2	51.6	47.0	56.2	56.8	50.8	61.9	57.6	59.5
1986	59.7	53.5	45.1	54.1	49.2	46.2	54.6	54.3	54.9	55.1	62.7	62.4
1987	51.6	63.0	49.7	-	-	-	-	-	-	-	-	-
Over 3-month span:												
1985	51.1	49.7	46.2	46.2	45.1	51.4	49.7	51.1	55.1	55.9	61.4	60.5
1986	58.1	54.3	51.1	49.7	48.4	44.9	47.3	54.1	54.9	62.4	65.1	63.0
1987	62.7	57.3	-	-	-	-	-	-	-	-	-	-
Over 6-month span:												
1985	49.2	47.8	43.0	45.9	44.3	44.3	48.9	50.8	54.1	57.0	57.0	55.9
1986	53.8	53.8	47.6	45.9	45.9	48.6	49.7	55.4	61.1	60.5	63.5	60.8
1987	-	-	-	-	-	-	-	-	-	-	-	-
Over 12-month span:												
1985	46.2	45.7	46.8	43.8	44.9	47.3	47.6	48.9	47.3	49.5	48.9	48.6
1986	50.3	51.1	52.2	52.4	52.7	54.6	53.5	55.1	55.9	-	-	-
1987	-	-	-	-	-	-	-	-	-	-	-	-

- Data not available.
 NOTE: Figures are the percent of industries with employment rising. (Half of the unchanged components are counted as rising.) Data are centered within the spans. Data for the 2 most recent months shown in each span are preliminary. See the "Definitions" in this section. See "Notes on the data" for a description of the most recent benchmark revision.

19. Annual data: Employment status of the noninstitutional population

(Numbers in thousands)

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

20. Annual data: Employment levels by industry

(Numbers in thousands)

Industry	1978	1979	1980	1981	1982	1983	1984	1985	1986
Total employment	86,697	89,823	90,406	91,156	89,566	90,200	94,496	97,614	100,167
Private sector	71,026	73,876	74,166	75,126	73,729	74,330	78,472	81,199	83,432
Goods-producing	25,585	26,461	25,658	25,497	23,813	23,334	24,727	24,930	24,938
Mining	851	958	1,027	1,139	1,128	952	966	930	792
Construction	4,229	4,463	4,346	4,188	3,905	3,948	4,383	4,687	4,960
Manufacturing	20,505	21,040	20,285	20,170	18,781	18,434	19,378	19,314	19,186
Service-producing	61,113	63,363	64,748	65,659	65,753	66,866	69,769	72,684	75,229
Transportation and public utilities	4,923	5,136	5,146	5,165	5,082	4,954	5,159	5,242	5,286
Wholesale trade	4,969	5,204	5,275	5,358	5,278	5,268	5,555	5,740	5,853
Retail trade	14,573	14,989	15,035	15,189	15,179	15,613	16,545	17,360	17,978
Finance, insurance, and real estate	4,724	4,975	5,160	5,298	5,341	5,468	5,689	5,953	6,305
Services	16,252	17,112	17,890	18,619	19,036	19,694	20,797	21,974	23,072
Government	15,672	15,947	16,241	16,031	15,837	15,869	16,024	16,415	16,735
Federal	2,753	2,773	2,866	2,772	2,739	2,774	2,807	2,875	2,899
State	3,474	3,541	3,610	3,640	3,640	3,662	3,734	3,848	3,937
Local	9,446	9,633	9,765	9,619	9,458	9,434	9,482	9,692	9,899

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

21. Annual data: Average hours and earnings of production or nonsupervisory workers on nonagricultural payrolls, by industry

Industry	1978	1979	1980	1981	1982	1983	1984	1985	1986
Private sector									
Average weekly hours	35.8	35.7	35.3	35.2	34.8	35.0	35.2	34.9	34.8
Average hourly earnings (in dollars)	5.69	6.16	6.66	7.25	7.68	8.02	8.32	8.57	8.75
Average weekly earnings (in dollars)	203.70	219.91	235.10	255.20	267.26	280.70	292.86	299.09	304.50
Mining									
Average weekly hours	43.4	43.0	43.3	43.7	42.7	42.5	43.3	43.4	42.3
Average hourly earnings (in dollars)	7.67	8.49	9.17	10.04	10.77	11.28	11.63	11.98	12.45
Average weekly earnings (in dollars)	332.88	365.07	397.06	438.75	459.88	479.40	503.58	519.93	526.64
Construction									
Average weekly hours	36.8	37.0	37.0	36.9	36.7	37.1	37.8	37.7	37.5
Average hourly earnings (in dollars)	8.66	9.27	9.94	10.82	11.63	11.94	12.13	12.31	12.42
Average weekly earnings (in dollars)	318.69	342.99	367.78	399.26	426.82	442.97	458.51	464.09	465.75
Manufacturing									
Average weekly hours	40.4	40.2	39.7	39.8	38.9	40.1	40.7	40.5	40.7
Average hourly earnings (in dollars)	6.17	6.70	7.27	7.99	8.49	8.83	9.19	9.53	9.73
Average weekly earnings (in dollars)	249.27	269.34	288.62	318.00	330.26	354.08	374.03	385.97	396.01
Transportation and public utilities									
Average weekly hours	40.0	39.9	39.6	39.4	39.0	39.0	39.4	39.5	39.2
Average hourly earnings (in dollars)	7.57	8.16	8.87	9.70	10.32	10.79	11.12	11.40	11.63
Average weekly earnings (in dollars)	302.80	325.58	351.25	382.18	402.48	420.81	438.13	450.30	455.90
Wholesale trade									
Average weekly hours	38.8	38.8	38.5	38.5	38.3	38.5	38.5	38.4	38.4
Average hourly earnings (in dollars)	5.88	6.39	6.96	7.56	8.09	8.55	8.89	9.16	9.35
Average weekly earnings (in dollars)	228.14	247.93	267.96	291.06	309.85	329.18	342.27	351.74	359.04
Retail trade									
Average weekly hours	31.0	30.6	30.2	30.1	29.9	29.8	29.8	29.4	29.2
Average hourly earnings (in dollars)	4.20	4.53	4.88	5.25	5.48	5.74	5.85	5.94	6.02
Average weekly earnings (in dollars)	130.20	138.62	147.38	158.03	163.85	171.05	174.33	174.64	175.78
Finance, insurance, and real estate									
Average weekly hours	36.4	36.2	36.2	36.3	36.2	36.2	36.5	36.4	36.5
Average hourly earnings (in dollars)	4.89	5.27	5.79	6.31	6.78	7.29	7.63	7.94	8.34
Average weekly earnings (in dollars)	178.00	190.77	209.60	229.05	245.44	263.90	278.50	289.02	304.41
Services									
Average weekly hours	32.8	32.7	32.6	32.6	32.6	32.7	32.6	32.5	32.5
Average hourly earnings (in dollars)	4.99	5.36	5.85	6.41	6.92	7.31	7.59	7.89	8.16
Average weekly earnings (in dollars)	163.67	175.27	190.71	208.97	225.59	239.04	247.43	256.43	265.20

22. Employment Cost Index, compensation,¹ by occupation and industry group

(June 1981=100)

Series	1984		1985				1986				Percent change	
	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	3 months ended	12 months ended	
										Dec. 1986		
Civilian workers²	123.9	125.5	126.4	128.4	129.2	130.6	131.5	133.0	133.8	0.6	3.6	
Workers, by occupational group:												
White-collar workers	125.5	127.3	128.3	130.7	131.6	133.1	134.2	136.0	136.9	.7	4.0	
Blue-collar workers	120.9	122.2	123.1	124.4	124.9	126.2	126.8	127.8	128.4	.5	2.8	
Service occupations	126.8	127.8	128.0	130.9	131.8	133.1	133.7	135.4	136.6	.9	3.6	
Workers, by industry division:												
Goods-producing	121.4	123.2	123.9	124.9	125.5	126.9	128.1	128.8	129.5	.5	3.2	
Manufacturing	122.0	123.9	124.6	125.5	126.0	127.7	128.7	129.3	130.1	.6	3.3	
Service-producing	125.5	126.9	127.9	130.7	131.5	132.9	133.7	135.6	136.5	.7	3.8	
Services	130.9	131.9	132.6	136.4	137.1	138.8	139.4	142.4	143.6	.8	4.7	
Health services	-	-	-	-	-	-	-	-	-	1.1	4.7	
Hospitals	-	-	-	-	-	-	-	-	-	1.1	-	
Public administration ³	128.6	130.1	130.3	134.2	134.8	136.8	138.0	140.6	141.6	.7	5.0	
Nonmanufacturing	124.8	126.2	127.2	129.7	130.6	131.9	132.8	134.6	135.4	.6	3.7	
Private industry workers	122.7	124.2	125.2	126.8	127.5	128.9	129.9	130.8	131.6	.6	3.2	
Workers, by occupational group:												
White-collar workers	123.9	125.8	127.1	128.8	129.8	131.3	132.5	133.5	134.3	.6	3.5	
Professional specialty and technical occupations	-	-	-	-	-	-	-	-	-	.7	3.6	
Executive, administrative, and managerial occupations	-	-	-	-	-	-	-	-	-	.8	4.1	
Sales occupations	-	-	-	-	-	-	-	-	-	-	-	
Administrative support occupations, including clerical	-	-	-	-	-	-	-	-	-	.7	3.6	
Blue-collar workers	120.6	121.9	122.8	124.0	124.4	125.7	126.3	127.2	127.8	.5	2.7	
Precision production, craft, and repair occupation	-	-	-	-	-	-	-	-	-	.5	2.9	
Machine operators, assemblers, and inspectors	-	-	-	-	-	-	-	-	-	.6	2.7	
Transportation and material moving occupations	-	-	-	-	-	-	-	-	-	.3	2.7	
Handlers, equipment cleaners, helpers, and laborers	-	-	-	-	-	-	-	-	-	.6	2.1	
Service occupations	125.7	126.3	126.5	128.8	129.5	130.9	131.1	132.3	133.5	.9	3.1	
Workers, by industry division:												
Goods-producing	121.2	123.0	123.8	124.6	125.3	126.7	127.8	128.6	129.2	.5	3.1	
Construction	-	-	-	-	-	-	-	-	-	.2	2.8	
Manufacturing	122.0	123.9	124.6	125.5	126.0	127.7	128.7	129.3	130.1	.6	3.3	
Durables	-	-	-	-	-	-	-	-	-	.5	2.8	
Nondurables	-	-	-	-	-	-	-	-	-	.7	4.0	
Service-producing	123.9	125.2	126.4	128.7	129.4	130.8	131.6	132.7	133.5	.6	3.2	
Transportation and public utilities	-	-	-	-	-	-	-	-	-	.1	2.2	
Transportation	-	-	-	-	-	-	-	-	-	-	-	
Public utilities	-	-	-	-	-	-	-	-	-	.7	2.0	
Wholesale and retail trade	-	-	-	-	-	-	-	-	-	.5	2.6	
Wholesale trade	-	-	-	-	-	-	-	-	-	1.0	-	
Retail trade	-	-	-	-	-	-	-	-	-	.3	2.2	
Finance, insurance, and real estate	-	-	-	-	-	-	-	-	-	.8	3.1	
Service	-	-	-	-	-	-	-	-	-	1.0	4.3	
Health services	-	-	-	-	-	-	-	-	-	1.3	4.9	
Hospitals	-	-	-	-	-	-	-	-	-	1.2	-	
Nonmanufacturing	123.1	124.4	125.6	127.6	128.4	129.7	130.6	131.7	132.4	.5	3.1	
State and local government workers	130.1	131.7	132.0	136.5	137.5	138.9	139.7	143.6	144.7	.8	5.2	
Workers, by occupational group:												
White-collar workers	131.1	132.5	132.9	137.6	138.6	140.0	140.5	145.0	146.0	.7	5.3	
Blue-collar workers	125.9	128.1	128.5	131.9	132.7	134.7	136.3	138.5	139.5	.7	5.1	
Workers, by industry division:												
Services	131.3	132.8	133.2	137.9	139.1	140.4	140.8	145.5	146.6	.8	5.4	
Hospitals and other services ⁴	129.2	131.1	131.5	134.1	135.2	136.8	137.9	139.4	141.1	1.2	4.4	
Health services	-	-	-	-	-	-	-	-	-	.7	4.1	
Schools	132.0	133.4	133.7	139.1	140.3	141.5	141.7	147.6	148.4	.5	5.8	
Elementary and secondary	133.5	134.4	134.6	140.9	142.0	143.0	143.2	149.4	150.3	.6	5.8	
Public administration ²	128.6	130.1	130.3	134.2	134.8	136.8	138.0	140.6	141.6	.7	5.0	

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

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

³ Consist of legislative, judicial, administrative, and regulatory activities.

⁴ Includes, for example, library, social, and health services.

- Data not available.

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

(June 1981 = 100)

Series	1984		1985				1986				Percent change	
	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	3 months ended	12 months ended	
										Dec. 1986		
Civilian workers ¹	121.7	123.1	124.2	126.3	127.0	128.3	129.3	130.7	131.5	0.6	3.5	
Workers, by occupational group:												
White-collar workers	123.5	125.2	126.4	128.8	129.8	131.2	132.4	134.1	135.0	.7	4.0	
Blue-collar workers	118.2	119.3	120.5	122.0	122.3	123.4	124.1	125.0	125.6	.5	2.7	
Service occupations	124.3	124.8	125.3	128.0	128.6	129.8	130.0	131.7	132.8	.8	3.3	
Workers, by industry division												
Goods-producing	118.8	120.3	121.5	122.5	123.1	124.4	125.6	126.3	127.0	.6	3.2	
Manufacturing	119.5	121.0	122.3	123.2	123.8	125.3	126.5	127.2	127.9	.6	3.3	
Service-producing	123.4	124.7	125.8	128.6	129.4	130.7	131.5	133.4	134.2	.6	3.7	
Services	128.9	129.7	130.5	134.2	134.8	136.4	137.0	139.9	141.1	.9	4.7	
Health services	-	-	-	-	-	-	-	-	-	1.2	4.8	
Hospitals	-	-	-	-	-	-	-	-	-	1.2	-	
Public administration ²	125.7	127.0	127.2	131.4	132.0	133.8	134.6	137.5	138.1	.4	4.6	
Nonmanufacturing	122.6	123.9	125.0	127.6	128.4	129.6	130.4	132.2	133.0	.6	3.6	
Private industry workers	120.6	122.0	123.3	124.9	125.6	126.8	127.9	128.8	129.5	.5	3.1	
Workers, by occupational group:												
White-collar workers	122.3	124.0	125.5	127.3	128.3	129.6	131.1	132.0	132.7	.5	3.4	
Professional specialty and technical occupations	127.3	127.7	128.7	131.2	131.5	132.7	134.0	135.4	136.4	.7	3.7	
Executive, administrative, and managerial occupations	122.2	123.8	126.5	127.7	128.4	130.5	132.1	132.4	133.5	.8	4.0	
Sales occupations	111.6	116.3	117.4	119.3	122.5	122.4	124.3	125.2	124.9	-2.2	2.0	
Administrative support occupations, including clerical	122.9	124.7	125.6	127.1	127.9	129.6	130.8	131.7	132.7	.8	3.8	
Blue-collar workers	118.0	119.1	120.3	121.7	122.0	123.1	123.7	124.5	125.1	.5	2.5	
Precision production, craft, and repair occupations	119.4	120.8	122.0	123.7	123.8	125.3	125.7	126.7	127.4	.6	2.9	
Machine operators, assemblers, and inspectors	117.9	118.9	120.1	121.1	121.6	122.6	123.6	124.1	124.9	.6	2.7	
Transportation and material moving occupations	114.0	114.5	115.7	117.7	117.8	118.0	118.9	119.8	120.1	.3	2.0	
Handlers, equipment cleaners, helpers, and laborers	115.9	116.7	118.5	118.6	119.8	120.0	120.3	120.9	121.4	.4	1.3	
Service occupations	123.7	123.8	124.4	126.3	126.6	128.0	128.0	128.9	130.1	.9	2.8	
Workers, by industry division:												
Goods-producing	118.7	120.2	121.4	122.3	122.9	124.2	125.4	126.1	126.8	.6	3.2	
Construction	114.4	115.5	116.6	117.3	117.9	118.3	119.8	120.5	120.8	.2	2.5	
Manufacturing	119.5	121.0	122.3	123.2	123.8	125.3	126.5	127.2	127.9	.6	3.3	
Durables	119.1	120.6	122.0	122.7	123.4	124.8	125.8	126.4	127.2	.6	3.1	
Nondurables	120.2	121.6	122.6	124.0	124.6	126.1	127.9	128.5	129.3	.6	3.8	
Service-producing	122.1	123.4	124.8	127.0	127.8	129.0	129.9	130.9	131.6	.5	3.0	
Transportation and public utilities	120.7	121.7	122.8	124.8	125.2	126.3	126.6	127.3	127.5	.2	1.8	
Transportation	-	-	-	-	-	-	-	-	-	-3.3	1.3	
Public utilities	-	-	-	-	-	-	-	-	-	.7	2.5	
Wholesale and retail trade	118.1	118.8	121.1	122.7	123.7	124.5	125.8	126.5	126.9	.3	2.6	
Wholesale trade	122.9	123.7	126.8	127.7	128.3	129.7	131.2	131.8	133.1	1.0	3.7	
Retail trade	116.2	116.9	118.9	120.8	121.9	122.5	123.7	124.4	124.5	.1	2.1	
Finance, insurance, and real estate	115.8	122.0	121.7	124.1	126.5	126.6	128.0	129.0	130.0	.8	2.8	
Services	129.5	129.9	131.0	133.9	134.1	136.2	136.9	138.2	139.5	.9	4.0	
Health services	-	-	-	-	-	-	-	-	-	1.5	5.1	
Hospitals	-	-	-	-	-	-	-	-	-	1.5	-	
Nonmanufacturing	121.2	122.6	123.9	125.9	126.6	127.7	128.7	129.7	130.4	.5	3.0	
State and local government workers	127.1	128.4	128.7	133.2	134.2	135.5	136.0	140.4	141.4	.7	5.4	
Workers, by occupational group												
White-collar workers	128.0	129.3	129.6	134.3	135.3	136.6	137.0	141.8	142.8	.7	5.5	
Blue-collar workers	122.5	124.2	124.5	127.9	128.4	130.4	131.9	134.5	135.1	.4	5.2	
Workers, by industry division												
Services	128.1	129.4	129.7	134.5	135.6	136.8	137.1	142.1	143.3	.8	5.7	
Hospitals and other services ³	125.9	127.7	128.0	130.2	130.9	132.4	133.3	135.8	137.3	1.1	4.9	
Health services	-	-	-	-	-	-	-	-	-	.5	4.1	
Schools	128.7	129.9	130.2	135.8	137.0	138.0	138.2	144.1	145.1	.7	5.9	
Elementary and secondary	130.2	130.8	131.1	137.5	138.5	139.4	139.4	145.7	146.4	.5	5.7	
Public administration ²	125.7	127.0	127.2	131.4	132.0	133.8	134.6	137.5	138.1	.4	4.6	

¹ Consists of private industry workers (excluding farm and household workers) and State and local government (excluding Federal Government) workers.

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

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

- Data not available.

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

(June 1981 = 100)

Series	1984		1985				1986				Percent change	
	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	3 months ended	12 months ended	
	Dec. 1986											
COMPENSATION												
Workers, by bargaining status¹												
Union	123.9	124.8	125.5	126.5	127.1	128.4	128.7	129.4	129.8	0.3	2.1	
Goods-producing	122.9	123.6	123.9	124.6	125.2	126.4	126.7	127.3	127.5	.2	1.8	
Service-producing	125.6	126.7	128.0	129.5	130.2	131.6	131.9	132.8	133.4	.5	2.5	
Manufacturing	123.2	124.2	124.2	125.0	125.5	127.0	126.9	127.5	127.9	.3	1.9	
Nonmanufacturing	124.5	125.3	126.6	127.8	128.6	129.7	130.4	131.2	131.5	.2	2.3	
Nonunion	121.9	123.8	125.0	126.8	127.5	129.0	130.2	131.2	132.1	.7	3.6	
Goods-producing	119.6	122.4	123.5	124.4	125.1	126.7	128.2	129.1	130.0	.7	3.9	
Service-producing	123.3	124.7	125.8	128.3	129.0	130.4	131.4	132.5	133.4	.7	3.4	
Manufacturing	120.8	123.6	124.8	125.7	126.3	128.1	129.7	130.4	131.4	.8	4.0	
Nonmanufacturing	122.4	123.9	125.1	127.3	128.1	129.5	130.4	131.6	132.5	.7	3.4	
Workers, by region¹												
Northeast	123.8	125.1	126.4	128.8	129.9	131.6	133.3	134.2	135.2	.7	4.1	
South	122.2	124.2	125.2	126.5	127.2	128.7	129.6	130.7	131.4	.5	3.3	
Midwest (formerly North Central)	120.8	122.0	122.7	124.2	124.6	125.9	126.2	127.3	128.1	.6	2.8	
West	124.9	126.8	127.9	129.1	129.8	130.8	131.6	132.1	132.8	.5	2.3	
Workers, by area size¹												
Metropolitan areas	123.2	124.7	125.7	127.3	128.1	129.5	130.5	131.4	132.2	.6	3.2	
Other areas	119.8	121.4	122.5	123.9	123.9	125.5	126.4	127.2	127.9	.6	3.2	
WAGES AND SALARIES												
Workers, by bargaining status¹												
Union	120.9	121.7	123.0	124.1	124.7	125.6	126.1	126.9	127.2	.2	2.0	
Goods-producing	119.3	120.0	121.3	122.2	122.7	123.4	124.1	124.5	124.8	.2	1.7	
Service-producing	123.5	124.2	125.7	127.1	127.8	129.0	129.3	130.5	130.9	.3	2.4	
Manufacturing	119.5	120.4	121.7	122.8	123.3	124.2	124.6	125.0	125.5	.4	1.8	
Nonmanufacturing	122.1	122.8	124.1	125.3	125.9	126.9	127.4	128.5	128.7	.2	2.2	
Nonunion	120.4	122.1	123.4	125.2	125.9	127.3	128.5	129.4	130.3	.7	3.5	
Goods-producing	118.1	120.2	121.4	122.3	123.0	124.5	126.1	127.0	127.8	.6	3.9	
Service-producing	121.6	123.1	124.4	126.9	127.7	128.9	129.9	130.8	131.7	.7	3.1	
Manufacturing	119.5	121.5	122.8	123.7	124.4	126.1	127.7	128.5	129.5	.8	4.1	
Nonmanufacturing	120.7	122.3	123.6	125.9	126.6	127.8	128.9	129.8	130.6	.6	3.2	
Workers, by region¹												
Northeast	121.9	123.0	124.6	126.8	128.1	129.2	131.3	132.3	133.1	.6	3.9	
South	120.2	122.3	123.4	124.8	125.4	126.8	127.8	128.8	129.4	.5	3.2	
Midwest (formerly North Central)	118.7	119.6	121.1	122.5	122.9	124.2	124.4	125.3	126.2	.7	2.7	
West	122.5	124.0	125.1	126.6	127.1	128.1	128.9	129.3	130.1	.6	2.4	
Workers, by area size¹												
Metropolitan areas	121.0	122.4	123.8	125.5	126.3	127.4	128.5	129.4	130.2	.6	3.1	
Other areas	118.3	119.6	120.6	121.9	122.0	123.6	124.5	125.0	125.6	.5	3.0	

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

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

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

Measure	Annual average		Quarterly average							
	1984	1985	1985				1986			
			I	II	III	IV	I	II	III	IV
Specified adjustments:										
Total compensation ¹ adjustments, ² settlements covering 5,000 workers or more:										
First year of contract	3.6	2.6	3.6	3.5	2.0	2.0	0.6	0.7	0.7	2.7
Annual rate over life of contract	2.8	2.7	2.7	3.4	3.0	1.4	1.2	1.6	1.2	2.4
Wage adjustments, settlements covering 1,000 workers or more:										
First year of contract	2.4	2.3	3.3	2.5	2.0	2.1	.8	1.3	.8	2.0
Annual rate over life of contract	2.4	2.7	3.2	2.8	3.1	1.9	1.5	2.0	1.5	2.1
Effective adjustments:										
Total effective wage adjustment ³	3.7	3.3	.7	.8	1.2	.5	.6	.7	.5	.5
From settlements reached in period .....	.8	.7	.1	.2	.2	.1	4.0	.2	.1	.2
Deferred from settlements reached in earlier periods	2.0	1.8	.6	.5	.5	.2	.4	.6	.5	.2
From cost-of-living-adjustments clauses .....	.9	.7	.1	.1	.4	.1	.2	4.0	4.0	.1

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

² Adjustments are the net result of increases, decreases, and no changes in

compensation or wages.

³ Because of rounding, total may not equal sum of parts.

⁴ Between -0.05 and 0.05 percent.

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

Measure	Average for four quarters ending--							
	1985				1986			
	I	II	III	IV	I	II	III	IV
Specified total compensation adjustments, settlements covering 5,000 workers or more, all industries:								
First year of contract	3.4	3.4	3.1	2.6	2.3	1.4	0.9	1.1
Annual rate over life of contract	2.6	2.7	2.7	2.7	2.5	2.0	1.4	1.6
Specified wage adjustments, settlements covering 1,000 workers or more:								
All industries								
First year of contract	2.4	2.4	2.4	2.3	2.0	1.6	1.2	1.2
Contracts with COLA clauses	2.5	2.3	1.9	1.6	1.6	1.8	2.2	1.9
Contracts without COLA clauses	2.4	2.4	2.7	2.7	2.2	1.5	.8	.9
Annual rate over life of contract	2.3	2.4	2.5	2.7	2.5	2.2	1.7	1.8
Contracts with COLA clauses	1.3	1.5	1.8	2.5	2.5	2.5	2.0	1.7
Contracts without COLA clauses	2.8	2.8	3.0	2.8	2.5	2.1	1.6	1.8
Manufacturing								
First year of contract	2.1	2.0	1.5	.8	.8	.1	-.1	-1.2
Contracts with COLA clauses	2.0	1.9	1.5	.8	.8	.7	1.1	1.3
Contracts without COLA clauses	2.5	2.2	1.5	.9	.9	-.4	-2.0	-2.8
Annual rate over life of contract	1.4	1.5	1.6	1.8	1.8	1.4	.3	.2
Contracts with COLA clauses .....	.9	1.0	1.4	2.1	2.1	2.0	1.1	.9
Contracts without COLA clauses	3.2	3.0	2.4	1.6	1.5	.9	-.1	-.2
Nonmanufacturing								
First year of contract	2.6	2.7	3.2	3.3	2.8	2.6	2.1	2.0
Contracts with COLA clauses	5.1	4.3	4.0	3.6	3.5	3.4	2.7	2.1
Contracts without COLA clauses	2.4	2.5	3.0	3.3	2.7	2.4	1.9	2.0
Annual rate over life of contract	2.8	2.9	3.3	3.3	3.0	2.8	2.3	2.3
Contracts with COLA clauses	4.0	3.8	3.9	3.6	3.6	3.3	2.5	2.1
Contracts without COLA clauses	2.7	2.8	3.2	3.3	2.8	2.6	2.2	2.4
Construction								
First year of contract .....	.9	1.1	1.0	1.5	1.6	2.3	2.3	2.2
Contracts with COLA clauses	4.6	9.2	(¹)	(¹)	(¹)	1.1	1.4	1.4
Contracts without COLA clauses .....	.8	1.0	(¹)	(¹)	(¹)	2.4	2.4	2.3
Annual rate over life of contract	1.4	1.7	1.7	2.1	2.2	2.5	2.6	2.5
Contracts with COLA clauses	1.7	4.6	(¹)	(¹)	(¹)	1.2	1.6	1.6
Contracts without COLA clauses	1.4	1.7	(¹)	(¹)	(¹)	2.6	2.6	2.5

¹ Data do not meet publication standards.

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

Effective wage adjustment	Average for four quarters ending--						
	1985			1986			
	II	III	IV	I	II	III	IV
For all workers:¹							
Total	3.5	3.5	3.3	3.1	2.9	2.3	2.3
From settlements reached in period .....	.9	.9	.7	.6	.5	.5	.5
Deferred from settlements reached in earlier period	1.9	1.8	1.8	1.7	1.8	1.6	1.7
From cost-of-living-adjustments clauses .....	.7	.8	.7	.8	.7	.2	.2
For workers receiving changes:							
Total	4.2	4.3	4.1	4.0	3.8	3.1	2.8
From settlements reached in period	2.9	2.8	3.4	2.9	2.5	1.7	1.6
Deferred from settlements reached in earlier period	3.9	3.7	3.7	3.5	3.4	3.8	3.9
From cost-of-living-adjustments clauses	2.3	2.8	2.2	2.5	2.0	1.0	1.0

¹ Because of rounding, total may not equal sum of parts.

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

Measure	Annual average		
	1984	1985	1986
Specified adjustments:			
Total compensation ¹ adjustments, ² settlements covering 5,000 workers or more:			
First year of contract	5.2	4.2	6.2
Annual rate over life of contract	5.4	5.1	6.0
Wage adjustments, settlements covering 1,000 workers or more:			
First year of contract	4.8	4.6	5.7
Annual rate over life of contract	5.1	5.4	5.7
Effective adjustments:			
Total effective wage adjustment ³	5.0	5.7	5.5
From settlements reached in period	1.9	4.1	2.4
Deferred from settlements reached in earlier periods	3.1	1.6	3.0
From cost-of-living-adjustment clauses	(⁴)	(⁴)	(⁴)

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

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

³ Because of rounding, total may not equal sum of parts.

⁴ Less than 0.05 percent.

29. Work stoppages involving 1,000 workers or more

Measure	Annual totals		1986										1987	
	1985	1986	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan. ^P	Feb. ^P
Number of stoppages:														
Beginning in period	54	69	2	4	6	11	13	10	8	5	2	1	2	2
In effect during period	61	72	8	8	10	15	22	22	18	18	9	6	7	4
Workers involved:														
Beginning in period (in thousands)	323.9	533.1	11.2	7.2	29.7	198.0	46.7	113.3	39.4	44.3	8.7	3.0	7.3	3.7
In effect during period (in thousands)	584.1	899.5	39.7	18.3	41.9	206.8	83.1	153.0	87.4	109.9	67.8	49.4	46.9	7.7
Days idle:														
Number (in thousands)	7,079.0	11,861.0	367.5	287.1	296.9	3,677.0	859.1	1,371.6	1,225.6	1,423.7	940.4	433.2	828.6	97.0
Percent of estimated working time ¹ .....	.03	.05	.02	.01	.01	.18	.04	.07	.06	.06	.05	.04	.04	.02

¹ Agricultural and government employees are included in the total employed and total working time; private household, forestry, and fishery employees are excluded. An explanation of the measurement of idleness as a percentage of the total time worked is found

in "Total economy" measure of strike idleness," *Monthly Labor Review*, October 1968, pp. 54-56.

^P = preliminary

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

(1967=100, unless otherwise indicated)

Series	Annual average		1986										1987	
	1985	1986	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.
CONSUMER PRICE INDEX FOR ALL URBAN CONSUMERS:														
All items	322.2	328.4	326.0	325.3	326.3	327.9	328.0	328.6	330.2	330.5	330.8	331.1	333.1	334.4
All items (1957-59=100)	374.7	381.9	379.1	378.3	379.5	381.4	381.4	382.1	384.1	384.4	384.7	385.1	387.4	388.9
Food and beverages	302.0	311.8	307.8	308.5	309.4	309.5	312.2	314.6	315.1	315.6	316.4	317.0	320.5	321.6
Food	309.8	319.7	315.4	316.1	317.0	317.1	320.1	322.7	323.2	323.7	324.6	325.2	328.9	330.1
Food at home	296.8	305.3	301.2	301.5	302.1	301.6	305.5	308.9	309.0	309.5	309.9	310.2	315.2	316.6
Cereals and bakery products	317.0	325.8	322.7	322.5	323.8	326.1	326.3	328.2	328.5	328.4	328.5	329.5	331.5	332.7
Meats, poultry, fish, and eggs	263.4	275.1	267.7	268.2	263.4	265.1	274.9	283.0	284.7	284.9	286.3	287.3	289.2	286.4
Dairy products	258.0	258.4	256.8	256.8	257.1	257.2	258.4	258.3	258.5	260.0	261.2	262.2	263.3	264.7
Fruits and vegetables	325.7	328.7	319.2	329.5	336.5	327.8	330.3	332.1	329.1	328.6	327.8	328.5	344.3	355.2
Other foods at home	361.1	373.6	375.7	376.1	374.6	374.1	373.7	374.0	373.7	374.4	373.9	372.2	378.7	380.0
Sugar and sweets	398.8	411.1	408.4	411.4	411.2	411.5	412.4	413.1	413.7	413.4	412.4	411.8	415.8	415.8
Fats and oils	294.4	287.8	290.2	288.5	287.2	287.0	287.3	287.8	285.6	284.6	285.4	286.0	293.2	290.3
Nonalcoholic beverages	451.7	478.2	488.0	487.4	481.9	480.0	478.3	476.9	475.7	477.5	476.9	470.2	482.6	481.9
Other prepared foods	294.2	301.9	299.3	300.2	301.4	301.7	301.8	303.2	303.8	304.7	303.9	305.2	308.4	312.1
Food away from home	346.6	360.1	355.5	357.0	358.8	360.2	360.8	361.8	363.3	364.0	365.8	367.1	368.6	369.6
Alcoholic beverages	229.5	239.7	238.8	239.5	239.4	240.1	240.4	240.1	240.4	240.6	240.5	240.8	242.5	243.2
Housing	349.9	360.2	357.0	358.0	358.5	361.2	361.5	362.4	363.7	363.0	361.7	362.1	363.9	365.1
Shelter	382.0	402.9	397.0	400.1	400.9	401.6	403.5	405.2	407.6	409.5	410.2	410.4	412.3	414.0
Renters' costs (12/82=100)	115.4	121.9	119.6	120.9	121.1	121.6	122.5	122.9	123.6	124.0	124.3	124.2	125.3	125.8
Rent, residential	264.6	280.0	275.0	277.9	278.4	279.4	281.2	281.7	283.2	284.6	285.6	286.0	287.1	288.0
Other renters' costs	398.4	416.2	405.5	410.8	411.3	415.2	420.1	425.7	429.1	427.3	425.5	418.2	428.3	430.8
Homeowners' costs (12/82=100)	113.1	119.4	117.9	118.7	118.9	119.0	119.4	119.9	120.7	121.3	121.5	121.6	122.0	122.5
Owners' equivalent rent (12/82=100)	113.2	119.4	117.9	118.7	118.9	119.0	119.4	119.9	120.7	121.3	121.5	121.6	122.0	122.5
Household insurance (12/82=100)	112.4	119.2	118.0	118.3	118.8	118.9	119.9	119.9	120.2	120.6	121.1	121.6	121.8	122.0
Maintenance and repairs	368.9	373.8	367.5	367.6	367.1	366.6	369.2	376.4	376.2	379.0	377.1	380.0	382.1	381.9
Maintenance and repair services	421.1	430.9	422.4	424.6	425.5	427.4	430.1	434.2	437.0	437.5	433.7	433.1	437.7	436.1
Maintenance and repair commodities	269.6	269.7	266.1	264.5	262.9	260.7	262.7	271.3	268.7	273.0	272.9	278.3	277.7	278.8
Fuel and other utilities	393.6	384.7	385.5	381.8	382.5	393.8	389.4	389.5	388.3	379.1	371.1	371.0	373.7	374.8
Fuels	488.1	463.1	467.6	459.6	460.6	477.0	469.2	469.0	467.2	450.3	437.8	438.1	443.7	445.1
Fuel oil, coal, and bottled gas	619.5	501.5	549.9	518.3	496.8	486.6	459.4	447.3	453.5	451.9	452.0	460.6	487.9	503.2
Gas (piped) and electricity	452.7	446.7	442.3	439.2	444.6	466.0	462.3	464.5	461.1	441.4	426.7	425.3	428.8	428.9
Other utilities and public services	240.7	253.1	249.0	251.3	251.5	255.2	255.6	255.9	255.6	257.1	255.4	254.9	254.9	255.6
Household furnishings and operations	247.2	250.4	249.8	249.6	249.9	250.2	250.5	250.5	251.5	251.6	251.2	252.4	253.1	253.5
Housefurnishings	200.1	201.1	201.0	200.4	200.8	200.8	201.2	200.9	202.2	202.2	201.4	202.5	203.0	203.2
Housekeeping supplies	313.6	319.5	317.9	318.5	318.3	319.6	319.5	319.8	320.1	319.8	320.4	322.9	324.6	325.3
Housekeeping services	338.9	346.6	345.1	345.4	345.8	346.1	346.6	347.4	347.8	348.5	348.5	349.3	349.8	350.6
Apparel and upkeep	206.0	207.8	206.3	207.3	206.4	204.5	203.2	207.0	212.1	213.2	213.1	210.9	207.1	208.4
Apparel commodities	191.6	192.0	190.8	191.7	190.7	188.4	187.0	191.2	196.6	197.6	197.4	194.9	190.9	192.1
Men's and boys' apparel	197.9	200.0	198.3	199.7	200.2	198.1	195.8	197.8	203.2	204.3	205.3	202.3	199.2	199.9
Women's and girls' apparel	169.5	168.0	167.6	168.0	164.9	161.3	159.8	167.2	175.7	176.4	175.0	171.7	166.6	167.8
Infants' and toddlers' apparel	299.7	312.7	313.1	316.6	318.5	319.7	307.5	310.6	309.7	312.0	307.0	312.7	301.8	304.5
Footwear	212.1	211.2	210.1	211.4	211.5	210.0	209.1	209.6	212.0	215.1	215.1	214.0	209.9	211.0
Other apparel commodities	215.5	217.9	214.6	215.3	215.4	215.8	218.1	221.6	221.1	219.8	221.1	220.0	223.2	226.0
Apparel services	320.9	334.6	334.5	333.6	334.3	334.6	334.7	336.7	336.3	338.3	339.0	339.5	342.5	343.2
Transportation	319.9	307.5	309.6	303.3	305.7	308.6	304.7	301.3	302.2	302.6	304.3	304.8	308.5	310.0
Private transportation	314.2	299.5	302.1	295.3	297.8	300.8	296.5	292.8	293.7	294.1	295.8	295.9	299.8	301.3
New vehicles	214.9	224.1	220.1	221.0	222.8	224.0	224.5	224.5	224.2	226.7	230.2	231.7	232.3	229.9
New cars	215.2	224.4	220.2	221.2	223.0	224.2	224.7	224.5	224.2	227.1	230.7	232.2	233.0	230.2
Used cars	379.7	363.2	367.2	364.8	363.6	362.5	360.3	358.0	359.5	360.6	361.0	356.6	354.6	356.9
Motor fuel	373.8	292.1	308.5	279.5	289.3	299.4	280.2	265.9	271.1	263.2	260.9	261.9	275.8	288.1
Gasoline	373.3	291.4	307.7	278.6	288.7	299.1	279.8	265.3	270.6	262.6	260.2	261.2	275.1	287.5
Maintenance and repair	351.4	363.1	359.3	360.6	361.3	362.1	363.4	364.3	365.0	365.7	368.4	370.7	371.3	373.0
Other private transportation	287.6	303.9	301.5	301.6	301.3	303.0	304.5	304.5	302.3	307.6	311.6	312.0	314.9	314.0
Other private transportation commodities	202.6	201.6	203.6	202.2	202.4	201.5	201.6	201.8	200.3	198.9	200.0	200.4	202.2	201.8
Other private transportation services	312.8	333.9	330.3	330.9	330.4	332.8	334.6	334.6	332.3	339.3	344.1	344.5	347.7	346.7
Public transportation	402.8	426.4	421.2	422.2	423.7	425.4	428.0	428.0	428.5	428.7	431.7	437.5	438.9	439.8
Medical care	403.1	433.5	425.8	428.0	429.7	432.0	434.8	437.5	439.7	442.3	444.6	446.8	449.6	452.4
Medical care commodities	256.7	273.6	269.4	271.3	272.3	273.3	275.4	276.0	276.7	277.5	278.2	280.8	282.4	283.9
Medical care services	435.1	468.6	460.1	462.3	464.2	466.8	469.8	473.0	475.7	478.8	481.5	483.4	486.5	489.6
Professional services	367.3	390.9	385.0	386.9	388.3	390.3	391.7	393.3	396.1	398.0	399.8	401.0	403.7	406.8
Hospital and related services	224.0	237.4	233.8	234.2	234.4	235.0	237.4	239.5	240.1	242.3	243.8	245.0	246.7	248.1
Entertainment	265.0	274.1	271.9	272.3	272.9	273.9	274.4	274.7	275.3	276.5	277.4	277.4	278.3	278.7
Entertainment commodities	260.6	265.9	265.0	264.8	265.3	266.1	265.8	266.1	265.9	266.7	267.6	267.4	268.1	268.1
Entertainment services	271.8	286.3	282.2	283.5	284.2	285.5	287.0	287.3	289.2	290.8	291.8	292.2	293.3	294.1
Other goods and services	326.6	346.4	341.1	341.8	342.1	342.6	344.9	346.4	353.3	354.6	354.9	355.2	358.1	359.7
Tobacco products	328.5	351.0	345.6	346.5	346.5	347.1	354.3	356.2	356.8	357.2	357.3	357.6	364.9	368.3
Personal care	281.9	291.3	290.3	290.5	290.9	291.0	291.1	292.3	292.0	293.1	293.4	293.6	295.7	296.4
Toilet goods and personal care appliances	278.5	287.9	287.3	287.7	287.9	287.0	287.1	289.1	288.2	289.9	289.6	289.6	291.3	292.1
Personal care services	286.0	295.4	294.0	294.1	294.7	295.7	295.8	296.2	296.5	297.1	297.9	298.2	300.8	301.3
Personal and educational expenses	397.1	428.8	417.9	418.9										

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

(1967 = 100, unless otherwise indicated)

Series	Annual average		1986										1987	
	1985	1986	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.
All items	322.2	328.4	326.0	325.3	326.3	327.9	328.0	328.6	330.2	330.5	330.8	331.1	333.1	334.4
Commodities	286.7	283.9	283.7	281.2	282.1	282.8	281.9	281.9	283.5	283.6	284.0	284.2	286.3	287.7
Food and beverages	302.0	311.8	307.8	308.5	309.4	309.5	312.2	314.6	315.1	315.6	316.4	317.0	320.5	321.6
Commodities less food and beverages	274.6	264.7	266.7	262.5	263.4	264.3	261.4	262.0	262.3	262.1	262.4	262.4	263.7	265.2
Nondurables less food and beverages	282.1	265.2	268.9	262.0	263.3	264.7	259.8	258.1	261.5	260.4	260.0	260.0	261.8	265.4
Apparel commodities	191.6	192.0	190.8	191.7	190.7	188.4	187.0	191.2	196.6	197.6	197.4	194.9	190.9	192.1
Nondurables less food, beverages, and apparel	333.3	307.3	313.6	302.6	305.2	308.4	301.7	296.9	299.5	297.2	296.7	298.0	304.8	310.3
Durables	270.7	270.2	269.7	269.2	269.6	269.9	269.6	269.0	269.3	270.5	271.8	271.7	272.4	271.2
Services	381.5	400.5	394.9	396.8	397.9	401.0	402.3	403.7	405.5	406.1	406.1	406.6	408.6	409.9
Rent of shelter (12/82=100)	113.9	120.2	118.5	119.4	119.7	119.9	120.5	120.9	121.7	122.2	122.4	122.5	123.1	123.6
Household services less rent of shelter (12/82=100)	111.2	112.8	111.6	111.6	112.3	115.2	114.9	115.3	114.9	112.9	111.0	110.8	111.3	111.5
Transportation services	337.0	356.3	352.4	353.2	353.4	355.3	357.1	357.3	356.2	360.5	364.4	366.2	368.5	368.5
Medical care services	435.1	468.6	460.1	462.3	464.2	466.8	469.8	473.0	475.7	478.8	481.5	483.4	486.5	489.6
Other services	314.1	331.8	326.6	327.6	328.2	329.2	330.1	330.8	337.9	339.5	340.3	340.8	342.2	343.1
Special indexes:														
All items less food	323.3	328.6	326.6	325.7	326.7	328.6	328.0	328.1	330.0	330.2	330.4	330.6	332.2	333.6
All items less shelter	303.9	306.7	305.2	303.6	304.7	306.5	306.1	306.4	307.9	307.8	308.0	308.3	310.3	311.5
All items less homeowners' costs (12/82=100)	109.7	111.2	110.5	110.1	110.4	111.1	111.0	111.2	111.7	111.7	111.8	111.9	112.7	113.1
All items less medical care	317.7	322.6	320.5	317.9	320.6	322.2	324.1	322.6	324.2	324.4	324.8	324.8	326.7	328.0
Commodities less food	272.5	263.4	265.2	261.2	262.1	263.0	260.2	259.0	261.1	260.9	261.2	261.2	262.5	264.0
Nondurables less food	277.2	262.2	265.6	259.2	260.5	261.8	257.3	255.6	258.9	257.5	257.4	257.5	259.2	262.6
Nondurables less food and apparel	319.2	297.1	302.7	292.9	295.2	298.1	292.2	287.9	290.2	288.1	287.7	288.9	294.9	299.6
Nondurables	293.2	289.6	289.5	286.3	287.4	288.2	287.1	287.4	289.4	289.0	289.2	289.5	292.1	294.6
Services less rent of shelter (12/82=100)	113.5	118.7	117.1	117.4	117.8	119.2	119.5	119.8	120.2	120.1	120.0	120.2	120.8	121.1
Services less medical care	373.3	390.6	385.4	387.2	388.3	391.3	392.5	393.6	395.4	395.7	395.4	395.8	397.6	398.8
Energy	426.5	370.3	381.3	361.8	367.6	380.6	366.5	358.6	360.6	348.6	341.7	342.4	352.2	359.2
All items less energy	314.8	327.0	323.3	324.4	325.0	325.5	326.9	328.3	330.0	331.4	332.3	332.6	334.0	334.9
All items less food and energy	314.4	327.1	323.6	324.8	325.3	325.9	326.9	327.9	329.9	331.6	332.5	332.8	333.6	334.5
Commodities less food and energy	259.7	263.2	262.0	262.1	262.2	262.0	262.0	262.9	264.5	265.5	266.1	265.8	265.5	265.7
Energy commodities	409.9	322.4	343.0	313.3	319.3	327.1	306.6	292.4	297.7	290.6	288.5	290.5	306.1	319.2
Services less energy	375.9	397.1	391.5	393.8	394.5	395.9	397.7	399.0	401.4	403.7	405.0	407.5	408.9	
Purchasing power of the consumer dollar:														
1967 = \$100	31.0	30.5	30.7	30.7	30.6	30.5	30.5	30.4	30.3	30.3	30.2	30.2	30.0	29.9
1957-59 = \$100	26.7	26.2	26.4	26.4	26.4	26.2	26.2	26.2	26.0	26.0	26.0	26.0	25.8	25.7
CONSUMER PRICE INDEX FOR URBAN WAGE EARNERS AND CLERICAL WORKERS:														
All items	318.5	323.4	321.4	320.4	321.4	323.0	322.9	323.4	324.9	325.0	325.4	325.7	327.7	329.0
All items (1957-59=100)	370.4	376.1	373.7	372.6	373.7	375.6	375.5	376.1	377.8	378.0	378.4	378.8	381.1	382.6
Food and beverages	301.8	311.6	307.6	308.3	309.0	309.3	312.0	314.5	315.0	315.4	316.2	316.8	320.3	321.3
Food	309.3	319.2	315.0	315.6	316.4	316.6	319.5	322.3	322.8	323.3	324.2	324.8	328.4	329.5
Food at home	295.3	303.7	299.7	299.9	300.4	300.9	303.9	307.3	307.5	307.9	308.4	308.7	313.4	314.6
Cereals and bakery products	315.4	324.2	321.1	320.9	322.1	324.5	324.6	326.7	326.8	326.8	327.0	328.0	330.0	331.2
Meats, poultry, fish, and eggs	262.7	274.4	267.2	263.5	262.6	264.2	274.0	282.2	284.0	284.4	285.8	286.6	288.5	285.8
Dairy products	256.9	257.1	255.5	255.5	255.8	255.9	257.0	256.9	257.1	258.6	259.9	260.9	262.0	263.6
Fruits and vegetables	320.3	323.8	314.6	325.0	331.6	323.5	325.6	327.2	324.2	322.9	322.2	323.4	338.2	348.2
Other foods at home	361.5	373.5	375.6	376.0	374.3	373.9	373.4	373.9	373.5	374.4	373.9	372.7	378.9	380.0
Sugar and sweets	398.3	410.5	407.8	410.9	410.6	410.9	411.9	412.6	413.0	412.8	411.9	411.2	414.9	414.8
Fats and oils	293.9	287.2	289.7	287.8	286.6	286.4	287.1	285.1	284.1	284.5	285.5	292.6	289.9	
Nonalcoholic beverages	453.2	478.1	487.4	487.0	481.2	479.5	477.6	476.9	475.5	477.7	477.1	470.3	483.7	482.5
Other prepared foods	295.7	303.2	300.7	301.6	302.7	303.0	303.1	304.5	305.2	305.9	305.3	306.6	309.7	313.3
Food away from home	349.7	363.4	358.6	362.0	362.0	363.5	364.2	365.2	366.6	367.3	369.2	370.5	372.2	373.2
Alcoholic beverages	232.6	242.5	241.4	242.3	242.2	242.9	243.4	243.0	243.4	243.5	243.4	243.9	245.4	246.2
Housing	343.3	353.2	350.1	351.1	351.6	354.3	354.5	355.4	356.6	355.6	354.3	354.8	356.3	357.5
Shelter	370.4	390.7	385.0	388.1	388.8	389.4	391.5	392.9	395.2	397.1	397.8	398.1	399.6	401.2
Renters' costs (12/84=100)	103.6	109.5	107.4	108.6	108.8	109.3	110.0	110.3	110.9	111.4	111.7	111.6	112.3	112.7
Rent, residential	263.7	279.1	274.1	277.0	277.5	278.5	280.3	280.8	282.2	283.6	284.6	285.1	286.1	287.0
Other renters' costs	397.9	416.0	405.4	411.6	411.3	415.5	420.4	426.1	428.9	426.7	424.8	417.3	424.9	427.6
Homeowners' costs (12/84=100)	103.1	108.8	107.4	108.1	108.3	108.4	108.8	109.3	110.0	110.5	110.7	110.8	111.1	111.6
Owners' equivalent rent (12/84=100)	103.0	108.8	107.3	108.1	108.3	108.4	108.8	109.2	110.0	110.5	110.7	110.8	111.1	111.5
Household insurance (12/84=100)	103.2	109.4	108.2	108.5	109.0	109.1	110.1	110.4	110.8	111.3	111.7	111.9	112.1	112.1
Maintenance and repairs	364.1	369.4	364.7	364.6	363.8	363.2	366.7	371.5	370.6	373.1	372.4	374.6	377.3	376.9
Maintenance and repair services	415.0	425.3	416.6	419.2	420.0	422.6	425.2	428.6	430.7	431.1	428.2	428.1	434.5	432.5
Maintenance and repair commodities	261.1	262.5	261.1	259.4	258.0	255.7	259.0	263.5	261.1	264.3	265.0	268.0	267.6	268.4
Fuel and other utilities	394.7	385.4	386.3	382.6	383.0	394.9	390.3	390.6	389.1	379.3	371.3	371.1	373.9	374.9
Fuels	487.5	462.7	467.1	459.1	459.7	477.3	469.1	469.3	467.1	449.2	437.1	437.3	442.7	443.7
Fuel oil, coal, and bottled gas	622.0	504.5	552.8	521.5	499.9	489.9	462.9	450.7	456.6	454.8	455.0	463.5	489.3	503.9
Gas (piped) and electricity	451.6	445.6	441.2	438.0	443.0	465.7	461.4	464.1	460.3	439.6	425.3	423.8	427.4	427.3
Other utilities and public services	241.6	253.8	249.9	252.1	252.2	255.8	256.3	256.6	256.2	257.8	255.8	255.3	255.6	256.5
Household furnishings and operations	243.4	246.5	246.0	246.0	246.1	246.2	246.5	246.6	247.5	247.5	247.2	248.5	248.9	249.4
Housefurnishings	197.6	198.4	198.5	198.1	198.4	198.2	198.4	198.3	199.4	199.3	198.5	199.7	200.0	200.2
Housekeeping supplies	310.7	317.1	315.5	316.3	315.7	316.8	317.1	317.3	317.9	317.8	318.4	320.6	322.0	323.1
Housekeeping services	340.2	348.2	346.6											

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

(1967 = 100, unless otherwise indicated)

Series	Annual average		1986										1987	
	1985	1986	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.
Apparel commodities	191.3	191.5	190.4	191.2	190.1	187.7	186.3	190.8	196.2	197.1	196.6	194.5	190.5	191.5
Men's and boys' apparel	198.2	199.7	198.0	199.3	200.0	198.0	195.4	197.1	202.3	203.6	204.6	202.1	198.6	198.9
Women's and girls' apparel	171.3	169.4	169.0	169.3	165.9	162.0	160.8	169.3	178.1	178.1	176.2	173.1	168.2	169.2
Infants' and toddlers' apparel	311.7	329.4	329.6	331.3	334.3	335.6	323.7	328.6	326.2	329.2	323.8	329.3	319.1	322.2
Footwear	212.5	211.8	210.7	212.1	212.0	210.6	209.6	209.9	212.0	215.3	215.6	214.9	211.1	212.4
Other apparel commodities	203.1	206.1	203.5	204.1	203.8	204.5	206.5	209.5	209.0	207.9	208.9	207.8	210.1	212.1
Apparel services	318.5	332.0	329.0	330.2	330.9	331.9	332.2	332.3	334.2	335.6	336.2	336.6	339.7	340.5
Transportation	321.6	307.6	310.3	303.5	305.9	308.7	304.6	300.9	301.8	302.2	304.0	304.2	308.2	309.9
Private transportation	317.4	301.5	304.5	297.4	299.9	302.8	298.3	294.4	295.3	295.7	297.5	297.5	301.6	303.4
New vehicles	214.2	223.3	219.4	220.2	222.0	223.2	223.7	223.6	223.3	225.7	229.4	230.7	231.2	228.9
New cars	214.5	223.6	219.5	220.4	222.3	223.4	223.9	223.9	223.7	226.3	230.0	231.4	232.0	229.3
Used cars	379.7	363.2	367.2	364.8	363.6	362.5	360.3	358.0	359.5	360.6	361.0	356.6	354.7	357.0
Motor fuel	375.4	293.1	309.6	280.1	290.3	300.6	280.9	266.7	271.9	264.0	262.0	263.2	277.7	289.5
Gasoline	375.0	292.5	308.8	279.1	289.6	300.3	280.5	266.1	271.4	263.4	261.3	262.5	277.1	288.9
Maintenance and repair	352.6	364.7	360.9	362.2	362.8	363.6	365.0	365.7	366.6	367.2	369.7	372.3	373.4	375.1
Other private transportation	287.7	302.2	300.6	300.4	299.8	301.2	302.4	302.2	299.7	305.2	309.5	309.9	312.6	311.5
Other private transportation commodities	204.7	203.9	206.0	204.6	204.9	203.9	203.8	204.0	202.7	201.1	202.3	202.8	204.3	204.0
Other private transportation services	312.3	330.9	328.3	328.5	327.7	329.6	331.2	330.9	328.1	335.4	340.7	341.0	344.0	342.6
Public transportation	391.7	416.3	412.0	413.0	413.8	415.1	418.0	418.4	418.9	421.1	425.8	426.7	427.2	
Medical care	401.2	431.0	423.5	425.7	427.3	429.6	432.4	435.0	437.1	439.7	441.7	443.9	446.7	449.7
Medical care commodities	256.3	272.8	268.8	270.7	271.7	272.5	274.6	275.2	275.8	276.6	277.0	279.8	281.4	282.9
Medical care services	432.7	465.7	457.3	459.5	461.3	464.0	466.9	470.1	472.6	475.6	478.2	480.1	483.2	486.5
Professional services	367.7	391.4	385.6	387.4	388.8	390.8	392.3	394.0	396.6	398.4	400.2	401.5	404.2	407.4
Hospital and related services	221.2	234.2	230.6	231.0	231.2	232.1	234.2	236.3	236.8	239.1	240.4	241.6	243.2	244.6
Entertainment	260.1	268.7	266.5	266.9	267.3	268.4	269.0	269.2	270.0	271.1	272.1	272.3	272.9	273.4
Entertainment commodities	254.2	259.5	258.3	258.4	258.7	259.8	259.6	259.8	259.8	260.6	261.7	261.2	262.2	262.3
Entertainment services	271.6	286.0	282.1	283.0	283.6	284.8	286.5	286.7	288.9	290.7	291.6	292.0	292.7	293.9
Other goods and services	322.7	341.7	337.0	337.6	338.0	338.4	341.2	342.6	347.5	348.8	349.2	349.5	352.8	354.6
Tobacco products	328.1	350.7	345.2	346.0	346.0	346.7	354.0	355.9	356.5	356.8	356.9	357.2	364.7	368.0
Personal care	279.6	289.0	288.0	288.2	288.6	288.6	288.8	289.9	289.5	290.8	291.2	291.3	293.2	294.1
Toilet goods and personal care appliances	279.0	288.6	288.1	288.4	288.6	287.6	287.8	289.7	288.7	290.5	290.5	290.3	292.0	293.2
Personal care services	280.5	289.8	288.4	288.4	289.0	290.0	290.2	290.5	290.8	291.6	292.4	292.7	294.9	295.4
Personal and educational expenses	399.3	430.7	420.1	421.2	422.0	422.9	423.8	425.1	446.1	448.7	449.4	450.0	452.0	453.7
School books and supplies	355.7	384.8	379.0	379.1	379.1	380.2	380.5	381.4	393.9	396.7	396.9	397.1	406.5	409.3
Personal and educational services	410.1	442.0	430.5	431.8	432.8	433.6	434.6	436.0	458.7	461.3	462.1	462.8	464.3	465.9
All items	318.5	323.4	321.4	320.4	321.4	323.0	322.9	323.4	324.9	325.0	325.4	325.7	327.7	329.0
Commodities	286.5	283.1	283.1	280.4	281.3	282.0	281.1	281.1	282.6	282.6	283.1	283.3	285.5	287.0
Food and beverages	301.8	311.6	307.6	308.3	309.0	309.3	312.0	314.5	315.0	315.4	316.2	316.3	320.3	321.3
Commodities less food and beverages	274.9	264.2	266.3	261.9	262.9	263.8	260.7	259.4	261.5	261.1	261.5	261.5	262.9	264.6
Nondurables less food and beverages	283.8	265.6	269.6	262.0	263.6	265.2	260.1	258.1	261.5	260.2	259.7	259.9	262.3	266.0
Apparel commodities	191.3	191.5	190.4	191.2	190.1	187.7	186.3	190.8	196.2	197.1	196.6	194.5	190.5	191.5
Nondurables less food, beverages, and apparel	334.2	306.7	313.2	301.6	304.5	308.0	301.0	295.9	298.4	296.0	295.6	296.9	304.4	310.2
Durables	265.2	264.0	263.7	263.3	263.5	263.6	263.2	262.6	263.0	264.0	265.3	265.0	265.4	264.5
Services	377.3	395.7	390.5	392.2	393.2	396.4	397.7	399.0	400.4	401.0	401.0	401.5	403.3	404.5
Rent of shelter (12/84 = 100)	103.2	109.0	107.4	108.3	108.5	108.7	109.2	109.6	110.3	110.8	111.0	111.1	111.5	111.9
Household services less rent of shelter (12/84 = 100)	102.6	103.9	102.8	102.7	103.4	106.4	106.0	106.4	106.0	103.8	102.0	101.8	102.3	102.5
Transportation services	332.2	350.1	347.0	347.5	347.3	348.9	350.6	350.7	349.2	353.8	357.9	359.5	361.7	361.3
Medical care services	432.7	465.7	457.3	459.5	461.3	464.0	466.9	470.1	472.6	475.6	478.2	480.1	483.2	486.5
Other services	310.1	326.9	322.1	322.9	323.6	324.6	325.6	326.0	332.2	333.8	334.7	335.1	336.4	337.5
Special indexes:														
All items less food	319.4	323.0	321.5	320.2	321.2	323.2	322.2	323.9	324.0	324.2	324.4	324.4	326.0	327.4
All items less shelter	303.4	305.1	303.8	303.0	303.0	304.8	304.3	305.9	305.7	305.9	306.3	306.3	308.4	309.6
All items less homeowners' costs (12/84 = 100)	101.8	102.8	102.3	101.8	102.1	102.7	102.6	102.7	103.2	103.2	103.2	103.4	104.0	104.5
All items less medical care	314.3	318.0	316.2	315.2	316.1	317.7	317.4	317.8	319.3	319.3	319.6	319.8	321.8	323.0
Commodities less food	272.8	262.9	264.9	260.7	261.6	262.6	259.6	258.3	260.3	260.0	260.3	260.4	261.8	263.5
Nondurables less food	279.0	262.7	266.4	259.4	260.9	262.4	257.7	255.8	259.1	257.8	257.4	257.6	259.9	263.3
Nondurables less food and apparel	320.3	296.9	302.6	292.2	294.9	298.0	291.8	287.3	289.6	287.4	287.0	288.2	294.8	299.7
Nondurables	293.9	289.8	289.8	286.3	287.5	288.4	287.2	287.5	289.5	289.0	289.2	289.6	292.5	294.9
Services less rent of shelter (12/84 = 100)	102.6	107.1	105.7	105.9	106.2	107.6	107.8	108.1	108.3	108.2	108.1	108.3	108.8	109.0
Services less medical care	369.0	385.9	381.0	382.7	383.6	386.8	387.9	389.0	390.3	390.6	390.4	390.7	392.5	393.5
Energy	426.3	367.5	379.0	358.4	364.6	378.1	363.1	354.8	356.9	344.8	338.5	339.2	349.8	356.9
All items less energy	309.9	321.2	317.8	318.8	319.2	319.7	321.1	322.4	323.9	325.3	326.3	326.5	327.8	328.7
All items less food and energy	308.7	320.3	317.2	318.3	318.6	319.1	320.1	321.0	322.7	324.4	325.4	325.6	326.3	327.1
Commodities less food and energy	256.8	258.8	258.7	258.8	258.8	258.5	259.3	260.9	261.7	262.4	262.1	261.7	262.0	262.0
Energy commodities	410.9	322.9	343.3	312.9	319.8	328.1	307.2	292.9	298.2	290.9	289.1	291.1	307.2	319.9
Services less energy	371.1	391.9	386.5	388.8	389.4	390.8	392.6	393.7	395.7	398.2	399.6	400.2	401.9	403.2
Purchasing power of the consumer dollar:														
1967 = \$100	31.4	30.9	31.1	31.2	31.1	31.0	31.0	30.9	30.8	30.8	30.7	30.7	30.5	30.4
1957-59 = \$100	27.0	26.6	26.8	26.8	26.8	26.6	26.6	26.6	26.5	26.5	26.4	26.4	26.2	26.1

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

(1967 = 100, unless otherwise indicated)

Area ¹	Pricing schedule ²	Other index base	All Urban Consumers						Urban Wage Earners					
			1986				1987		1986				1987	
			Mar.	Apr.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	Nov.	Dec.	Jan.	Feb.
U.S. city average	M	-	326.0	325.3	330.8	331.1	333.1	334.4	321.4	320.4	325.4	325.7	327.7	329.0
Region and area size³														
Northeast urban	M	12/77	-	173.7	-	177.2	178.4	179.0	-	171.1	-	174.3	175.5	176.0
Size A - More than 1,200,000	M	12/77	-	171.0	-	174.7	176.1	176.8	-	166.9	-	170.3	171.6	172.3
Size B - 500,000 to 1,200,000	M	12/77	-	174.7	-	178.3	179.3	179.1	-	171.7	-	175.1	176.2	176.2
Size C - 50,000 to 500,000	M	12/77	-	183.0	-	186.3	187.1	187.4	-	187.4	-	190.5	191.4	191.7
North Central urban	M	12/77	-	173.9	-	177.1	178.3	178.5	-	170.0	-	173.0	174.3	174.4
Size A - More than 1,200,000	M	12/77	-	177.8	-	181.0	182.1	182.5	-	172.1	-	175.3	176.3	176.6
Size B - 360,000 to 1,200,000	M	12/77	-	172.1	-	176.1	177.2	177.2	-	167.7	-	171.5	172.7	172.6
Size C - 50,000 to 360,000	M	12/77	-	168.5	-	171.9	173.9	173.6	-	165.1	-	168.4	170.3	169.9
Size D - Nonmetropolitan (less than 50,000)	M	12/77	-	170.0	-	171.6	172.5	172.9	-	171.4	-	172.7	173.7	174.1
South urban	M	12/77	-	175.1	-	177.9	178.7	179.5	-	174.1	-	176.5	177.5	178.3
Size A - More than 1,200,000	M	12/77	-	175.5	-	177.9	178.6	179.4	-	174.9	-	177.0	177.8	178.7
Size B - 450,000 to 1,200,000	M	12/77	-	177.0	-	179.9	180.8	181.7	-	173.2	-	175.6	176.5	177.4
Size C - 50,000 to 450,000	M	12/77	-	173.6	-	176.4	177.5	178.5	-	174.3	-	176.7	177.9	179.0
Size D - Nonmetropolitan (less than 50,000)	M	12/77	-	173.2	-	176.6	177.4	177.3	-	174.0	-	177.0	177.9	177.9
West urban	M	12/77	-	176.8	-	179.6	180.6	182.0	-	174.5	-	177.0	177.9	179.3
Size A - More than 1,250,000	M	12/77	-	179.6	-	182.6	183.6	185.3	-	174.9	-	177.5	178.4	180.2
Size B - 330,000 to 1,250,000	M	12/77	-	176.7	-	178.9	179.9	180.6	-	177.1	-	179.0	180.0	180.8
Size C - 50,000 to 330,000	M	12/77	-	170.5	-	172.9	173.8	174.8	-	168.9	-	171.1	171.9	172.7
Size classes:														
A	M	12/77	-	-	-	100.0	100.6	101.1	321.4	320.4	325.4	325.7	327.7	329.0
B	M	12/77	-	175.6	-	178.7	179.6	180.1	-	172.7	-	175.5	176.5	177.0
C	M	12/77	-	173.4	-	176.5	177.7	178.2	-	173.4	-	176.2	177.5	178.0
D	M	12/77	-	172.7	-	175.4	176.1	176.4	-	173.6	-	175.9	176.7	177.1
Selected local areas														
Chicago, IL- Northwestern IN	M	-	323.9	323.7	331.3	331.0	334.3	334.2	309.7	309.1	316.1	315.8	319.1	319.0
Los Angeles-Long Beach, Anaheim, CA	M	-	328.2	326.8	333.8	332.9	335.1	338.8	321.6	320.2	326.3	325.3	327.4	331.2
New York, NY- Northeastern NJ	M	-	322.4	321.4	327.5	329.1	331.6	333.2	314.5	313.2	318.6	320.1	322.3	324.0
Philadelphia, PA-NJ	M	-	319.1	317.8	324.1	325.2	327.7	329.0	321.4	319.7	325.4	326.6	329.1	329.9
San Francisco- Oakland, CA	M	-	-	339.3	-	343.6	345.8	348.8	-	333.2	-	337.0	339.0	342.2
Baltimore, MD	1	-	331.1	-	333.4	-	334.1	-	329.5	-	330.4	-	331.1	-
Boston, MA	1	-	324.9	-	329.3	-	333.2	-	322.3	-	325.9	-	330.9	-
Cleveland, OH	1	-	-	346.9	352.7	351.8	352.9	-	-	324.4	329.6	328.9	330.1	-
Miami, FL	1	11/77	174.5	-	175.8	-	177.2	-	175.1	-	176.1	-	177.6	-
St. Louis, MO-IL	1	-	319.2	-	323.8	-	326.7	-	315.0	-	319.0	-	321.9	-
Washington, DC-MD-VA	1	-	329.1	-	334.0	-	335.7	-	330.5	-	335.9	-	337.7	-
Dallas-Ft. Worth, TX	2	-	-	341.4	-	342.8	-	347.8	-	334.1	-	335.0	-	341.1
Detroit, MI	2	-	320.0	318.8	325.3	324.7	-	327.6	309.3	308.1	314.7	314.0	-	316.5
Houston, TX	2	-	-	330.0	-	331.0	-	334.9	-	327.7	-	328.5	-	333.0
Pittsburgh, PA	2	-	-	328.1	-	333.0	-	335.2	-	307.8	-	311.8	-	314.2

¹ Area is the Consolidated Metropolitan Statistical Area (CMSA), exclusive of farms and military. Area definitions are those established by the Office of Management and Budget in 1983, except for Boston-Lawrence-Salem, MA-NH Area (excludes Monroe County); and Milwaukee, WI Area (includes only the Milwaukee MSA). Definitions do not include revisions made since 1983.

² Foods, fuels, and several other items priced every month in all areas; most other goods and services priced as indicated.

M - Every month.
1 - January, March, May, July, September, and November.
2 - February, April, June, August, October, and December.

³ Regions are defined as the four Census regions.
- Data not available.

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

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

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

33. Producer Price Indexes, by stage of processing

(1967 = 100)

Grouping	Annual average		1986										1987	
	1985	1986	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	
Finished goods	293.7	289.6	287.2	288.9	289.3	287.6	288.1	287.3	290.7	290.7	289.9	291.7	292.3	
Finished consumer goods	291.8	284.9	281.9	284.1	284.5	282.3	283.0	282.5	285.2	285.0	284.2	286.2	287.1	
Finished consumer goods	271.2	278.0	271.9	274.8	275.1	280.4	284.0	282.9	283.6	283.0	282.9	280.0	279.6	
Finished consumer goods excluding foods	297.3	283.4	282.2	284.0	284.4	278.3	277.5	277.4	281.0	281.1	279.9	284.5	286.0	
Nondurable goods less food	339.3	311.1	309.8	313.0	313.5	302.6	301.6	304.5	301.9	302.1	300.5	307.7	311.6	
Durable goods	241.5	246.9	245.7	245.5	245.9	246.2	245.8	241.7	253.5	253.5	252.9	252.9	250.4	
Capital equipment	300.5	306.5	305.6	305.7	306.1	306.4	306.2	303.9	309.9	310.5	310.1	311.2	310.5	
Intermediate materials, supplies, and components	318.7	307.6	307.1	306.7	306.8	304.8	304.5	306.1	304.8	304.9	305.0	307.1	308.9	
Materials and components for manufacturing	299.5	296.1	295.5	295.4	295.1	295.6	296.0	296.2	296.4	296.5	296.2	297.7	298.3	
Materials for food manufacturing	258.8	250.9	244.8	248.7	247.9	251.7	255.5	254.3	253.9	253.2	253.0	251.0	250.6	
Materials for nondurable manufacturing	285.9	279.2	279.3	278.2	277.8	277.7	277.1	277.0	277.5	278.1	277.9	280.9	282.1	
Materials for durable manufacturing	320.2	313.8	313.7	313.2	312.9	313.0	313.6	314.9	315.3	315.0	313.8	316.2	316.5	
Components for manufacturing	291.5	294.4	294.1	294.1	294.1	294.6	294.9	295.0	294.9	295.0	295.2	295.6	296.1	
Materials and components for construction	315.2	317.5	318.3	318.3	317.8	317.9	317.6	317.6	317.3	317.6	317.0	317.2	318.2	
Processed fuels and lubricants	548.9	430.3	428.5	424.2	426.7	401.1	395.0	409.1	394.9	393.2	396.2	408.2	420.2	
Containers	311.2	315.1	312.8	313.6	314.0	314.6	316.2	317.4	318.1	319.6	319.7	321.4	323.3	
Supplies	284.2	287.3	287.2	287.1	287.3	287.2	287.1	288.0	287.5	287.9	288.3	289.0	289.8	
Crude materials for further processing ...	306.1	280.0	273.7	279.4	276.9	277.7	276.3	275.4	277.2	278.4	274.8	284.0	288.8	
Foodstuffs and feedstuffs	235.0	230.6	220.3	229.9	227.1	234.4	238.1	233.5	235.0	235.9	232.8	227.1	229.2	
Nonfood materials ¹	459.2	386.8	389.4	386.9	384.8	370.8	358.3	365.6	367.9	369.7	365.1	392.9	401.7	
Special groupings														
Finished goods, excluding foods	299.0	291.1	289.9	291.2	291.6	287.4	286.8	286.1	290.4	290.7	289.7	293.2	294.0	
Finished energy goods	720.9	518.5	517.2	534.1	536.4	461.6	456.2	471.7	452.1	452.9	446.8	478.4	497.9	
Finished goods less energy	269.2	275.6	273.1	274.0	274.3	276.4	277.2	275.5	280.0	280.0	279.5	279.6	279.0	
Finished consumer goods less energy	261.3	267.8	264.9	266.1	266.3	268.9	270.0	268.5	272.6	272.4	271.9	271.6	271.0	
Finished goods less food and energy	268.7	274.9	273.9	274.0	274.3	275.0	274.8	272.9	278.9	279.1	278.5	279.7	279.0	
Finished consumer goods less food and energy	252.1	258.4	257.3	257.5	257.7	258.7	258.4	256.7	262.6	262.7	262.0	263.2	262.6	
Consumer nondurable goods less food and energy	246.2	252.9	252.0	252.3	252.5	253.9	253.8	254.2	254.8	254.9	254.2	256.2	256.8	
Intermediate materials less foods and feeds	325.0	313.3	313.0	312.4	312.5	310.4	309.9	311.5	310.4	310.4	310.5	312.9	314.8	
Intermediate foods and feeds	232.8	230.2	227.0	229.3	229.0	230.3	232.1	233.2	230.3	230.9	231.7	229.7	229.8	
Intermediate energy goods	528.3	414.5	413.3	409.1	411.1	386.6	380.7	393.8	380.3	378.7	381.3	392.8	404.2	
Intermediate goods less energy	304.0	303.5	303.1	303.0	302.9	303.3	303.5	304.0	303.9	304.2	304.0	305.2	306.0	
Intermediate materials less foods and energy	305.2	304.4	304.3	304.0	303.8	304.1	304.2	304.6	304.8	305.1	304.8	306.2	307.0	
Crude energy materials	748.1	575.8	577.0	570.6	563.9	528.8	520.4	533.9	534.4	535.3	519.5	571.6	586.2	
Crude materials less energy	233.2	228.9	221.9	229.2	227.3	232.8	232.4	229.7	231.6	232.7	230.9	227.9	230.3	
Crude nonfood materials less energy	249.7	245.6	249.1	249.3	250.1	250.0	235.9	239.1	242.3	244.5	246.9	251.0	254.6	

¹ Crude nonfood materials except fuel.

34. Producer Price indexes, by durability of product

(1967 = 100)

Grouping	Annual average		1986									1987	
	1985	1986	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.
Total durable goods	297.3	300.0	299.7	299.6	299.7	300.0	299.9	298.8	302.2	302.5	302.1	303.0	303.5
Total nondurable goods	317.2	298.7	296.0	297.9	297.7	294.5	294.2	295.6	294.4	294.6	294.0	298.2	301.0
Total manufactures	304.3	297.6	296.1	296.7	296.9	295.2	295.5	296.0	297.0	297.2	297.2	299.3	300.7
Durable	298.1	300.9	300.5	300.4	300.5	300.9	300.8	299.6	303.1	303.4	302.9	303.7	304.1
Nondurable	310.5	294.0	291.2	292.6	293.0	289.1	289.7	292.1	290.4	290.5	290.9	294.4	296.9
Total raw or slightly processed goods	327.9	305.3	303.0	306.2	304.2	303.2	300.4	299.0	299.2	299.9	296.3	302.0	305.6
Durable	252.2	252.0	253.1	252.1	251.2	249.6	252.0	252.8	252.0	254.3	254.7	260.3	264.2
Nondurable	332.4	308.3	305.8	309.3	307.2	306.2	303.0	301.6	301.8	302.4	298.4	304.1	307.7

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

(1967 = 100)

Index	1977	1978	1979	1980	1981	1982	1983	1984	1985
Finished goods:									
Total	181.7	195.9	217.7	247.0	269.8	280.7	285.2	291.1	293.7
Consumer goods	180.7	194.9	217.9	248.9	271.3	281.0	284.6	290.3	291.8
Capital equipment	184.6	199.2	216.5	239.8	264.3	279.4	287.2	294.0	300.5
Intermediate materials, supplies, and components:									
Total	201.5	215.6	243.2	280.3	306.0	310.4	312.3	320.0	318.7
Materials and components for manufacturing	195.4	208.7	234.4	265.7	286.1	289.8	293.4	301.8	299.5
Materials and components for construction	203.4	224.7	247.4	268.3	267.6	293.7	301.8	310.3	315.2
Processed fuels and lubricants	282.5	295.3	364.8	503.0	595.4	591.7	564.8	566.2	548.9
Containers	188.3	202.8	226.8	254.5	276.1	285.6	286.6	302.3	311.2
Supplies	188.7	198.5	218.2	244.5	263.8	272.1	277.1	283.4	284.2
Crude materials for further processing:									
Total	209.2	234.4	274.3	304.6	329.0	319.5	323.6	330.8	306.1
Foodstuffs and feedstuffs	192.1	216.2	247.9	259.2	257.4	247.8	252.2	259.5	235.0
Nonfood materials except fuel	245.0	272.3	330.0	401.0	482.3	473.9	477.4	484.5	459.2
Fuel	372.1	426.8	507.6	615.0	751.2	886.1	931.5	931.3	909.6

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

(June 1977=100, unless otherwise indicated)

Category	1974 SITC	1984			1985				1986			
		June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.
ALL COMMODITIES (9/83=100)		101.5	99.3	98.1	97.5	97.5	96.5	96.7	97.0	96.7	95.1	96.2
Food (3/83=100)	0	109.6	103.5	96.5	95.8	94.0	90.2	93.6	90.5	89.5	77.2	81.2
Meat (3/83=100)	01	108.7	105.6	104.4	103.9	104.7	106.1	112.2	111.5	114.7	122.0	122.6
Fish (3/83=100)	03	98.7	98.0	98.7	101.0	103.6	102.6	101.8	102.2	106.2	111.2	116.9
Grain and grain preparations (3/80=100)	04	107.4	101.2	92.9	92.4	90.3	82.6	87.1	82.1	79.1	59.0	64.8
Vegetables and fruit (3/83=100)	05	126.9	125.6	114.7	119.5	120.2	126.9	118.9	115.3	125.8	131.4	131.9
Feedstuffs for animals (3/83=100)	08	98.8	83.5	82.4	72.8	68.6	75.7	83.4	88.5	85.5	90.2	87.3
Misc. food products (3/83=100)	09	110.6	109.5	108.4	110.6	109.2	108.1	107.7	106.0	104.7	106.6	108.2
Beverages and tobacco (6/83=100)	1	101.9	102.8	101.3	99.9	100.1	99.7	98.6	95.6	96.5	96.3	101.6
Beverages (9/83=100)	11	102.9	103.3	103.7	104.0	105.3	101.8	100.9	101.9	103.0	102.2	102.9
Tobacco and tobacco products (6/83=100)	12	101.8	102.7	101.1	99.5	99.6	99.5	98.4	95.1	95.9	95.8	101.4
Crude materials (6/83=100)	2	118.3	105.2	101.4	97.5	96.8	93.3	92.5	95.8	95.6	92.3	94.8
Raw hides and skins (6/80=100)	21	154.7	153.7	133.6	121.0	126.2	129.0	139.9	138.9	148.9	138.0	148.3
Oilseeds and oleaginous fruit (9/77=100)	22	104.3	79.9	74.8	71.0	71.2	64.2	63.9	66.9	65.8	64.5	62.9
Crude rubber (including synthetic and reclaimed) (9/83=100)	23	106.0	104.1	104.0	106.4	106.3	107.1	106.0	106.0	106.1	105.3	104.4
Wood	24	129.4	123.8	125.4	128.7	125.7	124.5	128.1	128.7	128.7	129.7	135.5
Pulp and waste paper (6/83=100)	25	122.1	120.8	114.2	100.5	96.1	93.8	92.7	98.8	109.7	119.8	121.2
Textile fibers	26	125.6	109.4	106.7	102.4	105.8	103.6	97.7	101.6	98.6	74.7	92.2
Crude fertilizers and minerals	27	147.7	163.0	163.2	165.6	167.9	169.4	165.5	168.0	166.1	164.3	162.8
Metalliferous ores and metal scrap	28	98.5	93.2	92.4	89.2	82.0	80.1	78.7	83.4	80.5	84.6	80.7
Mineral fuels	3	99.7	99.7	99.7	100.1	99.2	97.6	96.6	91.9	86.7	85.7	84.7
Animal and vegetable oils, fats, and waxes	4	164.5	145.7	147.9	142.0	144.5	114.5	101.4	90.8	84.4	76.5	86.8
Fixed vegetable oils and fats (6/83=100)	42	176.4	159.0	156.7	152.9	164.8	128.8	108.7	95.4	95.3	80.8	87.0
Chemicals (3/83=100)	5	99.7	98.3	97.7	97.0	96.8	97.1	96.6	96.5	95.4	93.1	92.3
Organic chemicals (12/83=100)	51	101.0	97.4	94.7	93.8	96.5	97.1	95.4	93.5	89.3	88.0	89.7
Fertilizers, manufactured (3/83=100)	56	96.9	97.4	94.8	92.5	87.9	89.8	90.0	88.6	84.0	77.4	68.7
Intermediate manufactured products (9/81=100)	-	101.3	102.0	100.4	99.4	99.2	99.2	99.1	100.3	101.2	102.2	102.7
Leather and furskins (9/79=100)	6	81.2	80.8	79.0	82.5	79.2	75.9	78.5	77.8	82.5	84.2	88.0
Rubber manufactures	61	147.5	148.9	148.5	150.2	149.0	148.3	148.7	151.0	150.0	150.4	151.3
Paper and paperboard products (6/78=100)	62	154.7	160.0	159.5	155.0	151.6	149.6	148.2	152.2	158.7	165.3	167.9
Iron and steel (3/82=100)	64	96.1	96.8	96.5	95.5	95.3	95.9	98.2	98.4	99.4	100.2	100.1
Nonferrous metals (9/81=100)	-	92.9	90.4	82.5	79.7	79.6	79.8	78.2	80.2	79.1	79.4	78.8
Metal manufactures, n.e.s. (3/82=100)	-	104.5	105.1	105.0	105.4	105.2	105.4	104.4	105.3	105.5	105.6	105.7
Machinery and transport equipment, excluding military and commercial aircraft (12/78=100)	67	139.4	140.1	141.5	142.3	142.9	143.1	143.3	144.0	144.2	144.6	145.6
Power generating machinery and equipment (12/78=100)	68	156.9	160.6	167.5	165.3	167.4	167.1	167.5	169.1	169.2	169.5	171.4
Machinery specialized for particular industries (9/78=100)	69	152.8	153.7	153.4	155.0	155.7	156.0	156.2	155.5	154.7	155.0	155.7
Metalworking machinery (6/78=100)	7	151.2	151.7	151.9	153.4	155.1	156.3	158.4	159.0	158.9	160.4	161.8
General industrial machines and parts n.e.s. 9/78=100)	71	149.0	149.3	150.2	152.4	152.0	152.4	152.2	152.3	153.3	154.4	155.3
Office machines and automatic data processing equipment	72	101.5	99.8	101.4	100.9	100.0	99.9	99.4	99.9	99.2	98.9	98.1
Telecommunications, sound recording and reproducing equipment	73	132.3	134.4	134.3	133.3	134.1	134.1	134.5	136.5	137.0	137.8	140.4
Electrical machinery and equipment	74	112.6	113.8	114.6	114.9	116.1	115.3	113.8	115.1	114.2	114.4	115.0
Road vehicles and parts (3/80=100)	75	131.2	131.0	131.8	133.1	133.9	133.8	135.0	135.5	136.4	136.5	137.9
Other transport equipment, excl. military and commercial aviation	76	187.7	189.6	191.7	195.5	196.6	199.3	200.7	203.3	206.8	207.4	209.7
Other manufactured articles	77	100.4	100.7	99.3	99.5	100.4	100.3	100.3	102.6	103.4	104.1	104.3
Apparel (9/83=100)	78	102.1	103.9	103.4	104.7	104.7	105.0	105.3	-	-	-	110.0
Professional, scientific, and controlling instruments and apparatus	79	172.0	175.8	171.7	175.5	178.3	178.7	178.8	182.1	183.8	183.8	184.8
Photographic apparatus and supplies, optical goods, watches and clocks (12/77=100)	8	131.3	132.7	130.3	128.0	129.1	127.5	128.5	131.6	132.9	132.7	132.0
Miscellaneous manufactured articles, n.e.s.	84	97.9	95.2	94.1	92.4	93.1	93.1	92.4	95.6	95.6	97.6	97.7
Gold, non-monetary (6/83=100)	971	93.5	81.7	79.5	69.1	75.4	77.4	77.5	81.8	82.2	97.5	94.5

- Data not available.

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

(June 1977=100, unless otherwise indicated)

Category	1974 SITC	1984		1985				1986			
		Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	
ALL COMMODITIES (9/82=100)		95.7	93.5	93.0	92.9	94.2	88.5	83.2	83.9	86.0	
Food (9/77=100)	0	98.1	98.5	96.8	94.9	102.8	113.4	104.7	109.1	105.3	
Meat	01	132.3	130.4	118.2	120.6	131.2	122.7	118.5	126.9	134.4	
Dairy products and eggs (6/81=100)	02	98.4	98.3	97.9	99.1	100.5	106.7	107.1	109.4	111.5	
Fish	03	133.9	132.9	129.4	129.7	132.7	139.3	144.8	149.6	157.1	
Bakery goods, pasta products, grain and grain preparations (9/77=100)	04	132.8	131.8	132.3	136.3	141.9	146.9	149.2	154.0	155.3	
Fruits and vegetables	05	117.2	127.1	129.4	120.2	131.3	119.4	119.4	127.1	125.5	
Sugar, sugar preparations, and honey (3/82=100)	06	118.5	118.4	122.6	123.1	111.9	124.6	121.6	123.9	124.3	
Coffee, tea, cocoa	07	58.4	57.0	56.0	54.4	64.6	85.9	69.2	71.8	61.0	
Beverages and tobacco	1	156.5	156.2	157.1	158.0	162.1	163.2	165.5	165.8	168.0	
Beverages	11	152.8	154.2	154.3	156.0	159.1	161.8	163.9	165.5	168.2	
Crude materials	2	98.9	94.0	93.6	91.5	91.2	94.2	95.3	98.1	98.5	
Crude rubber (inc. synthetic & reclaimed) (3/84=100)	23	83.8	77.6	76.4	68.9	73.2	78.8	75.5	78.9	78.5	
Wood (9/81=100)	24	104.0	100.7	106.9	101.6	99.4	104.3	106.3	109.4	107.2	
Pulp and waste paper (12/81=100)	25	93.2	84.0	80.4	76.8	75.8	74.9	79.9	86.0	92.8	
Crude fertilizers and crude minerals (12/83=100)	27	98.6	100.3	101.7	102.7	102.1	101.5	100.0	100.4	100.2	
Metalliferous ores and metal scrap (3/84=100)	28	95.6	90.4	87.6	89.5	90.1	94.5	95.6	98.2	95.4	
Crude vegetable and animal materials, n.e.s.	29	106.4	104.3	104.9	102.5	102.5	103.6	104.4	104.8	104.7	
Fuels and related products (6/82=100)	3	85.2	82.9	80.9	79.8	79.1	55.3	37.5	33.6	38.4	
Petroleum and petroleum products (6/82=100)	33	85.2	83.8	81.6	80.3	80.1	54.7	36.1	32.1	37.9	
Fats and oils (9/83=100)	4	114.9	89.9	76.7	57.6	50.6	41.4	39.3	35.5	51.6	
Vegetable oils (9/83=100)	42	115.3	89.5	75.9	56.2	48.9	39.3	37.4	33.5	50.0	
Chemicals (9/82=100)	5	97.1	95.7	94.9	94.5	94.2	94.6	93.3	93.4	93.2	
Medicinal and pharmaceutical products (3/84=100)	54	94.6	91.6	95.1	95.3	96.7	102.9	104.9	110.0	110.1	
Manufactured fertilizers (3/84=100)	56	92.9	94.2	82.0	80.8	78.5	79.2	79.7	77.4	79.7	
Chemical materials and products, n.e.s. (9/84=100)	59	97.5	96.1	95.6	96.9	97.8	99.9	100.3	101.0	102.8	
Intermediate manufactured products (12/77=100)	6	136.8	133.1	132.4	133.6	133.4	134.0	135.6	138.8	139.4	
Leather and furskins	61	140.4	135.3	133.3	137.0	141.3	141.6	143.0	147.4	143.3	
Rubber manufactures, n.e.s.	62	140.5	139.5	138.6	137.3	138.1	136.5	137.7	138.1	138.1	
Cork and wood manufactures	63	126.1	121.3	121.2	123.4	124.0	130.8	134.3	137.4	142.7	
Paper and paperboard products	64	157.5	157.6	157.2	157.8	156.5	157.1	157.1	157.5	164.8	
Textiles	65	132.9	130.4	127.5	126.5	128.1	131.2	132.9	135.1	135.3	
Nonmetallic mineral manufactures, n.e.s.	66	159.4	154.2	151.7	157.6	162.2	164.2	169.6	178.2	180.2	
Iron and steel (9/78=100)	67	123.7	121.0	120.1	119.1	118.3	117.3	118.1	119.0	118.5	
Nonferrous metals (12/81=100)	68	87.3	81.9	82.3	83.7	80.4	79.4	78.9	83.5	81.6	
Metal manufactures, n.e.s.	69	119.3	117.4	117.8	119.5	121.6	124.4	127.8	129.1	129.1	
Machinery and transport equipment (6/81=100)	7	102.9	101.6	102.6	103.5	107.2	111.5	115.3	118.1	120.1	
Machinery specialized for particular industries (9/78=100)	72	98.0	96.2	97.0	101.4	104.9	112.1	115.4	120.1	121.1	
Metalworking machinery (3/80=100)	73	89.9	86.3	90.5	94.2	98.1	105.0	107.7	110.7	115.7	
General industrial machinery and parts, n.e.s. (6/81=100)	74	91.3	89.2	91.1	94.3	98.0	103.8	109.0	112.8	113.9	
Office machines and automatic data processing equipment (3/80=100)	75	92.2	89.6	89.4	90.3	93.7	96.9	101.3	102.5	102.4	
Telecommunications, sound recording and reproducing apparatus (3/80=100)	76	91.3	90.0	88.8	88.3	88.6	89.4	91.6	93.7	92.6	
Electrical machinery and equipment (12/81=100)	77	86.4	82.1	83.9	81.4	83.1	84.5	87.5	89.5	92.0	
Road vehicles and parts (6/81=100)	78	111.3	111.5	112.1	112.7	117.8	123.4	127.1	129.8	133.2	
Misc. manufactured articles (3/80=100)	8	100.0	97.0	98.0	99.6	100.8	103.3	104.8	109.5	109.6	
Plumbing, heating, and lighting fixtures (6/80=100)	81	111.6	113.9	114.1	117.8	115.0	120.1	123.5	125.5	125.5	
Furniture and parts (6/80=100)	82	142.5	137.4	136.7	142.1	142.7	147.0	142.2	145.8	146.9	
Clothing (9/77=100)	84	138.5	136.7	133.9	134.5	134.5	133.4	135.3	137.8	139.1	
Footwear	85	142.5	137.4	136.7	142.1	142.7	147.0	142.2	145.8	146.9	
Professional, scientific, and controlling instruments and apparatus (12/79=100)	87	92.9	89.2	92.3	98.8	102.4	106.4	112.5	118.3	119.1	
Photographic apparatus and supplies, optical goods, watches, and clocks (3/80=100)	88	91.3	88.9	89.5	91.1	94.5	99.3	103.2	106.9	107.7	
Misc. manufactured articles, n.e.s. (6/82=100)	89	96.3	91.2	95.2	96.4	97.9	102.1	103.4	112.3	111.0	
Gold, non-monetary (6/82=100)	971	103.6	90.1	98.3	101.1	101.0	106.7	107.3	126.9	123.3	

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

(September 1983 = 100 unless otherwise indicated)

Category	Per-centage of 1980 trade value	1984		1985			1986			
		Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.
Foods, feeds, and beverages	16.294	83.0	81.5	80.9	76.2	77.5	75.5	74.7	66.0	68.4
Raw materials	30.696	99.1	97.6	97.2	96.5	95.9	96.0	94.9	93.3	94.8
Raw materials, nondurable	21.327	101.4	99.6	99.5	98.7	97.9	97.5	96.1	93.7	95.4
Raw materials, durable	9.368	93.3	92.6	91.6	91.1	91.0	92.5	91.9	92.5	93.2
Capital goods (12/82=100)	30.186	105.6	106.2	106.6	106.6	106.6	107.4	107.5	107.7	108.3
Automotive vehicles, parts and engines (12/82=100)	7.483	105.7	106.7	108.0	108.1	109.2	109.5	110.4	110.8	111.8
Consumer goods	7.467	100.8	100.9	101.1	101.9	101.4	103.7	104.5	104.5	105.7
Durables	3.965	99.3	99.1	99.2	100.4	99.5	101.8	101.8	102.1	102.7
Nondurables	3.501	102.3	102.7	103.0	103.3	103.3	105.5	107.2	106.9	108.5

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

(December 1982=100)

Category	Per-centage of 1980 trade value	1984		1985			1986			
		Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.
Foods, feeds, and beverages	7.477	101.8	102.1	100.4	99.0	106.0	115.8	108.2	112.3	109.2
Petroleum and petroleum products, excl. natural gas	31.108	85.7	84.4	82.1	80.9	80.5	55.4	36.8	32.6	38.3
Raw materials, excluding petroleum	19.205	101.1	96.3	95.8	95.4	93.9	94.5	94.0	95.3	94.9
Raw materials, nondurable	9.391	100.7	95.0	93.9	93.5	91.8	91.1	89.7	89.5	89.7
Raw materials, durable	9.814	101.6	97.7	97.8	97.4	96.2	98.1	98.7	101.4	100.3
Capital goods	13.164	97.8	94.8	96.3	97.6	100.0	102.8	106.7	109.4	110.8
Automotive vehicles, parts and engines	11.750	105.2	105.4	105.9	106.4	111.4	115.6	119.0	121.0	123.5
Consumer goods	14.250	101.1	99.5	99.4	101.0	102.4	104.5	106.5	110.1	110.6
Durable	5.507	98.5	97.0	97.0	98.9	100.7	103.4	106.5	111.2	111.7
Nondurable	8.743	104.6	103.0	102.5	103.9	104.7	106.0	106.6	108.6	109.2

40. U.S. export price indexes by Standard Industrial Classification ¹

Industry group	1984		1985			1986			
	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.
Manufacturing:									
Food and kindred products (6/83=100)	103.3	99.5	99.5	96.7	98.1	97.0	95.0	95.2	97.6
Lumber and wood products, except furniture (6/83=100)	97.9	99.9	99.5	98.3	101.2	101.5	101.2	102.1	105.7
Furniture and fixtures (9/83=100)	104.9	105.2	106.5	107.1	108.4	109.2	109.7	110.1	110.4
Paper and allied products (3/81=100)	103.6	97.1	94.7	93.2	92.1	95.7	101.5	106.1	108.7
Chemicals and allied products (12/84=100)	100.7	100.3	99.6	99.7	99.2	98.9	98.3	96.2	95.9
Petroleum and coal products (12/83=100)	100.4	101.3	102.7	102.0	99.1	93.5	83.1	83.1	82.2
Primary metal products (3/82=100)	90.4	87.9	87.5	88.1	87.9	89.8	89.8	90.7	89.9
Machinery, except electrical (9/78=100)	139.9	140.4	140.5	140.6	140.5	140.6	140.3	140.5	140.7
Electrical machinery (12/80=100)	111.1	111.3	112.4	111.9	111.2	112.6	112.3	112.6	113.7
Transportation equipment (12/78=100)	158.8	160.4	161.8	162.6	164.1	165.1	167.1	167.4	169.4
Scientific instruments; optical goods; clocks (6/77=100)	153.0	154.9	156.6	156.2	156.7	159.7	161.2	161.5	162.3

¹ SIC - based classification.

41. U.S. import price indexes by Standard Industrial Classification ¹

Industry group	1984	1985				1986			
	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.
Manufacturing:									
Food and kindred products (6/77=100)	122.6	118.8	115.0	114.2	115.1	117.7	115.6	118.0	122.4
Textile mill products (9/82=100)	104.7	102.8	101.0	100.4	101.8	104.7	106.4	107.1	108.0
Apparel and related products (6/77=100)	138.2	135.6	133.0	133.9	134.4	133.4	135.1	137.8	139.3
Lumber and wood products, except furniture (6/77=100)	120.0	116.3	120.6	117.5	115.8	122.1	124.8	127.9	127.9
Furniture and fixtures (6/80=100)	95.6	93.9	96.1	97.7	98.2	101.2	103.5	105.4	105.6
Paper and allied products (6/77=100)	145.5	141.5	139.8	138.7	137.4	137.6	139.4	142.2	150.3
Chemicals and allied products (9/82=100)	98.2	95.3	93.9	93.3	95.8	98.6	102.1	103.8	102.4
Rubber and miscellaneous plastic products (12/80=100)	98.0	96.9	96.7	96.6	97.5	100.9	100.6	101.9	102.1
Leather and leather products	144.2	139.1	138.9	142.3	144.0	145.8	144.6	147.7	148.7
Primary metal products (6/81=100)	87.8	84.1	84.1	84.3	82.6	82.0	82.4	84.9	84.0
Fabricated metal products (12/84=100)	100.0	99.0	99.1	101.0	102.6	104.9	108.5	110.3	111.1
Machinery, except electrical (3/80=100)	94.1	91.8	93.4	96.6	100.0	105.5	109.0	112.5	114.2
Electrical machinery (9/84=100)	98.6	95.1	95.8	94.5	95.8	97.0	100.2	102.6	103.6
Transportation equipment (6/81=100)	112.9	113.1	114.2	114.8	119.6	123.9	128.0	130.4	133.2
Scientific instruments; optical goods; clocks (12/79=100)	93.2	90.7	91.7	94.6	98.8	103.9	109.1	113.8	114.0
Miscellaneous manufactured commodities (9/82=100)	96.4	95.1	95.1	96.6	98.7	99.9	101.7	106.9	108.1

¹ SIC - based classification.

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

(1977=100)

Item	Quarterly Indexes											
	1984			1985				1986				
	II	III	IV	I	II	III	IV	I	II	III	IV	
Business:												
Output per hour of all persons	105.6	105.5	105.5	105.7	106.4	107.3	106.4	107.3	107.4	107.3	106.6	
Compensation per hour	167.1	169.0	170.6	172.3	174.5	176.4	178.0	179.1	180.4	181.7	182.6	
Real compensation per hour	97.9	98.1	98.2	98.4	98.6	99.0	99.0	99.2	100.2	100.4	100.2	
Unit labor costs	158.3	160.2	161.7	163.1	164.0	164.4	167.3	167.0	168.0	169.3	171.4	
Unit nonlabor payments	156.7	157.0	157.7	158.3	160.0	161.4	159.6	162.2	161.9	163.4	159.1	
Implicit price deflator	157.7	159.0	160.3	161.4	162.6	163.4	164.6	165.3	165.8	167.2	167.0	
Nonfarm business:												
Output per hour of all persons	104.6	104.4	104.3	104.4	104.9	105.4	104.5	105.6	105.7	105.7	105.1	
Compensation per hour	166.9	168.7	170.4	172.1	174.0	175.4	177.0	178.3	179.3	180.4	181.6	
Real compensation per hour	97.8	97.9	98.1	98.3	98.3	98.5	98.4	98.8	99.7	99.6	99.6	
Unit labor costs	159.5	161.5	163.3	164.8	165.9	166.3	169.3	168.8	169.6	170.7	172.8	
Unit nonlabor payments	156.4	157.2	157.9	158.9	160.8	163.0	160.3	163.9	163.7	165.9	161.4	
Implicit price deflator	158.4	160.0	161.4	162.7	164.1	165.2	166.2	167.1	167.5	169.0	168.8	
Nonfinancial corporations:												
Output per hour of all employees	105.9	105.5	105.8	106.0	106.5	107.8	107.0	106.9	106.8	106.9	-	
Compensation per hour	164.8	166.6	168.3	169.9	171.6	173.1	174.5	175.4	176.1	176.8	-	
Real compensation per hour	96.5	96.7	96.9	97.0	96.9	97.2	97.0	97.1	97.8	97.7	-	
Total unit costs	160.1	162.6	163.8	164.9	165.8	165.0	167.2	168.3	168.6	169.8	-	
Unit labor costs	155.7	157.9	159.1	160.3	161.1	160.5	163.0	164.0	164.8	165.4	-	
Unit nonlabor costs	173.1	176.4	177.5	178.5	179.8	178.3	179.8	181.1	179.9	182.6	-	
Unit profits	138.5	130.3	130.5	129.3	130.2	141.7	131.2	131.7	132.3	135.8	-	
Unit nonlabor payments	161.0	160.3	161.0	161.3	162.5	165.5	162.8	163.8	163.2	166.2	-	
Implicit price deflator	157.5	158.7	159.8	160.6	161.6	162.2	162.9	164.0	164.3	165.7	-	
Manufacturing:												
Output per hour of all persons	115.7	117.8	118.2	119.3	121.7	123.0	122.9	123.7	124.7	125.8	125.8	
Compensation per hour	166.8	169.1	171.5	173.8	175.6	178.1	179.3	180.2	181.4	182.5	183.5	
Real compensation per hour	97.7	98.1	98.7	99.2	99.2	100.0	99.7	99.8	100.8	100.8	100.7	
Unit labor costs	144.2	143.5	145.1	145.7	144.3	144.8	145.8	145.7	145.5	145.1	145.9	

- Data not available.

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

(1977=100)

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

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

(1977=100)

Item	1960	1970	1973	1975	1977	1979	1980	1981	1982	1983	1984	1985	1986
Business:													
Output per hour of all persons	67.6	88.4	95.9	95.7	100.0	99.6	99.3	100.7	100.3	103.0	105.3	106.4	107.1
Compensation per hour	33.6	57.8	70.9	85.2	100.0	119.1	131.5	143.7	154.9	161.5	168.1	175.3	180.9
Real compensation per hour	68.9	90.2	96.7	95.9	100.0	99.4	96.7	95.7	97.3	98.2	98.1	98.8	100.0
Unit labor costs	49.7	65.4	73.9	89.0	100.0	119.5	132.5	142.7	154.5	156.8	159.7	164.8	168.9
Unit nonlabor payments	46.4	59.4	72.5	88.2	100.0	112.5	118.7	134.6	136.6	146.3	156.3	159.7	161.6
Implicit price deflator	48.5	63.2	73.4	88.7	100.0	117.0	127.6	139.8	148.1	153.0	158.5	163.0	166.3
Nonfarm business:													
Output per hour of all persons	71.0	89.3	96.4	96.0	100.0	99.3	98.8	99.8	99.2	102.4	104.3	104.8	105.5
Compensation per hour	35.3	58.2	71.2	85.6	100.0	118.9	131.3	143.6	154.8	161.5	167.9	174.6	179.9
Real compensation per hour	72.3	90.8	97.1	96.4	100.0	99.2	96.6	95.7	97.2	98.2	98.0	98.4	99.4
Unit labor costs	49.7	65.2	73.9	89.2	100.0	119.7	132.9	144.0	156.0	157.7	161.0	166.7	170.5
Unit nonlabor payments	46.3	60.0	69.3	86.7	100.0	110.5	118.5	133.5	136.5	148.1	156.1	160.6	163.7
Implicit price deflator	48.5	63.4	72.3	88.3	100.0	116.5	127.8	140.3	149.2	154.3	159.3	164.6	168.1
Nonfinancial corporations:													
Output per hour of all employees	73.4	91.1	97.5	96.7	100.0	99.8	99.1	99.6	100.4	103.5	105.6	106.8	106.9
Compensation per hour	36.9	59.2	71.6	85.9	100.0	118.7	131.1	143.3	154.3	159.9	165.9	172.3	176.5
Real compensation per hour	75.5	92.4	97.6	96.7	100.0	99.1	96.4	95.5	96.9	97.3	96.8	97.0	97.5
Total unit costs	49.4	64.8	72.7	90.3	100.0	118.2	133.4	147.7	159.5	159.5	161.5	165.8	169.2
Unit labor costs	50.2	65.0	73.4	88.8	100.0	119.0	132.3	143.8	153.8	154.5	157.0	161.2	165.1
Unit nonlabor costs	47.0	64.2	70.7	94.9	100.0	115.8	136.7	159.1	176.4	174.3	174.6	179.1	181.3
Unit profits	59.8	52.3	65.6	77.0	100.0	94.5	85.2	98.1	78.5	110.9	133.4	133.1	133.2
Unit nonlabor payments	51.5	60.1	68.9	88.6	100.0	108.4	118.6	137.8	142.1	152.1	160.1	163.0	164.5
Implicit price deflator	50.7	63.3	71.9	88.7	100.0	115.4	127.6	141.7	149.8	153.7	158.1	161.8	164.9
Manufacturing:													
Output per hour of all persons	62.2	80.8	93.4	92.9	100.0	101.4	101.4	103.6	105.9	112.0	116.6	121.7	125.0
Compensation per hour	36.5	57.4	68.8	85.1	100.0	118.6	132.4	145.2	157.5	162.4	168.2	176.7	181.9
Real compensation per hour	74.8	89.5	93.8	95.9	100.0	99.1	97.4	96.7	98.9	98.8	98.1	99.5	100.5
Unit labor costs	58.7	71.0	73.7	91.7	100.0	117.0	130.6	140.1	148.7	145.0	144.2	145.1	145.5
Unit nonlabor payments	60.0	64.1	70.7	87.5	100.0	98.9	97.8	111.8	114.0	128.5	136.9	134.4	-
Implicit price deflator	59.1	69.0	72.8	90.5	100.0	111.7	121.0	131.8	138.6	140.2	142.1	142.0	-

- Data not available.

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

Country	Annual average		1985			1986			
	1985	1986	II	III	IV	I	II	III	IV
Total labor force basis									
United States	7.1	6.9	7.1	7.1	7.0	7.0	7.0	6.8	6.8
Canada	10.4	-	10.5	10.2	10.1	9.7	9.5	9.6	9.4
Australia	8.2	-	8.4	8.1	7.8	7.8	7.7	8.3	8.3
Japan	2.6	-	2.5	2.6	2.9	2.6	2.8	2.9	2.9
France	10.1	-	10.1	10.2	10.0	10.1	10.2	10.4	10.4
Germany	7.7	-	7.8	7.7	7.7	7.6	7.5	7.3	7.2
Italy ^{1, 2}	5.9	-	5.7	5.8	6.1	6.0	6.0	5.9	6.5
Sweden	2.8	-	2.9	2.7	2.7	2.7	2.6	2.6	2.6
United Kingdom	11.3	-	11.2	11.3	11.2	11.4	11.6	11.6	11.3
Civilian labor force basis									
United States	7.2	7.0	7.2	7.2	7.1	7.1	7.1	6.9	6.9
Canada	10.5	-	10.6	10.2	10.1	9.7	9.6	9.7	9.4
Australia	8.3	-	8.5	8.2	7.9	7.8	7.8	8.3	8.4
Japan	2.6	-	2.6	2.7	2.9	2.7	2.8	2.9	2.9
France	10.4	-	10.4	10.4	10.3	10.3	10.5	10.6	10.6
Germany	7.9	-	7.9	7.9	7.8	7.8	7.6	7.5	7.3
Italy ^{1, 2}	6.0	-	5.8	6.0	6.2	6.1	6.1	6.0	6.6
Sweden	2.8	-	2.9	2.8	2.7	2.8	2.6	2.6	2.6
United Kingdom	11.3	-	11.3	11.3	11.3	11.5	11.7	11.6	11.3

¹ Quarterly rates are for the first month of the quarter.

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

double the Italian unemployment rate shown.

- Data not available.

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

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

(Numbers in thousands)

Employment status and country	1977	1978	1979	1980	1981	1982	1983	1984	1985
Labor force									
United States	99,009	102,251	104,962	106,940	108,670	110,204	111,550	113,544	115,461
Canada	10,500	10,895	11,231	11,573	11,904	11,958	12,183	12,399	12,639
Australia	6,358	6,443	6,519	6,693	6,810	6,910	6,997	7,133	7,272
Japan	53,820	54,610	55,210	55,740	56,320	56,980	58,110	58,480	58,820
France	22,300	22,470	22,670	22,790	22,930	23,150	23,130	23,290	23,330
Germany	25,870	26,000	26,250	26,520	26,650	26,710	26,740	26,880	27,090
Italy	20,510	20,570	20,850	21,120	21,320	21,410	21,590	21,670	21,800
Netherlands	4,950	5,010	5,100	5,310	5,520	5,600	5,730	5,720	5,830
Sweden	4,168	4,203	4,262	4,312	4,326	4,350	4,369	4,385	4,418
United Kingdom	26,050	26,260	26,350	26,520	26,590	26,740	26,780	27,120	27,300
Participation rate¹									
United States	62.3	63.2	63.7	63.8	63.9	64.0	64.0	64.4	64.8
Canada	61.6	62.7	63.4	64.1	64.8	64.1	64.4	64.8	65.2
Australia	62.7	62.0	61.7	62.2	62.0	61.8	61.5	61.5	61.8
Japan	62.5	62.8	62.7	62.6	62.6	62.7	63.1	62.7	62.3
France	57.6	57.5	57.5	57.2	57.1	57.1	56.6	56.6	56.4
Germany	53.4	53.3	53.3	53.2	52.9	52.7	52.5	52.6	53.2
Italy	48.2	47.8	48.0	48.2	48.3	47.7	47.5	47.3	47.2
Netherlands	49.0	48.8	49.0	50.2	51.4	51.5	52.1	51.4	52.1
Sweden	65.9	66.1	66.6	67.0	66.8	66.8	66.7	66.8	67.2
United Kingdom	62.7	62.8	62.6	62.5	62.2	62.3	62.1	62.4	62.6
Employed									
United States	92,017	96,048	98,824	99,303	100,397	99,526	100,834	105,005	107,150
Canada	9,651	9,987	10,395	10,708	11,006	10,644	10,734	11,000	11,311
Australia	6,000	6,038	6,111	6,284	6,416	6,415	6,300	6,490	6,670
Japan	52,720	53,370	54,040	54,600	55,060	55,620	56,550	56,870	57,260
France	21,180	21,260	21,300	21,320	21,200	21,230	21,170	20,980	20,910
Germany	24,970	25,130	25,470	25,750	25,560	25,130	24,750	24,790	24,960
Italy	19,670	19,720	19,930	20,200	20,280	20,250	20,320	20,390	20,490
Netherlands	4,700	4,750	4,830	4,980	5,010	4,970	4,900	4,920	5,080
Sweden	4,093	4,109	4,174	4,226	4,218	4,213	4,218	4,249	4,293
United Kingdom	24,400	24,610	24,940	24,670	23,800	23,710	23,600	23,960	24,210
Employment-population ratio²									
United States	57.9	59.3	59.9	59.2	59.0	57.8	57.9	59.5	60.1
Canada	56.6	57.5	58.7	59.3	59.9	57.0	56.7	57.4	58.4
Australia	59.2	58.1	57.9	58.4	58.4	57.3	55.4	56.0	56.6
Japan	61.2	61.3	61.4	61.3	61.2	61.2	61.4	61.0	60.6
France	54.7	54.4	54.0	53.5	52.8	52.3	51.8	51.0	50.5
Germany	51.6	51.5	51.7	51.7	50.8	49.6	48.6	48.5	49.0
Italy	46.3	45.9	45.9	46.1	45.9	45.2	44.7	44.5	44.4
Netherlands	46.5	46.3	46.4	47.0	46.6	45.7	44.6	44.2	45.4
Sweden	64.8	64.6	65.3	65.6	65.1	64.7	64.4	64.7	65.3
United Kingdom	58.7	58.8	59.2	58.1	55.7	55.3	54.7	55.2	55.5
Unemployed									
United States	6,991	6,202	6,137	7,637	8,273	10,678	10,717	8,539	8,312
Canada	849	908	836	865	898	1,314	1,448	1,399	1,328
Australia	358	405	408	409	394	495	697	642	602
Japan	1,100	1,240	1,170	1,140	1,260	1,360	1,560	1,610	1,560
France	1,120	1,210	1,370	1,470	1,730	1,920	1,960	2,310	2,420
Germany	900	870	780	770	1,090	1,580	1,990	2,090	2,130
Italy	840	850	920	920	1,040	1,160	1,270	1,280	1,310
Netherlands	250	260	270	330	510	630	830	800	750
Sweden	75	94	88	86	108	137	151	136	125
United Kingdom	1,660	1,650	1,420	1,850	2,790	3,040	3,180	3,170	3,090
Unemployment rate									
United States	7.1	6.1	5.8	7.1	7.6	9.7	9.6	7.5	7.2
Canada	8.1	8.3	7.4	7.5	7.5	11.0	11.9	11.3	10.5
Australia	5.6	6.3	6.3	6.1	5.8	7.2	10.0	9.0	8.3
Japan	2.0	2.3	2.1	2.0	2.2	2.4	2.7	2.8	2.6
France	5.0	5.4	6.0	6.4	7.5	8.3	8.5	9.9	10.4
Germany	3.5	3.4	3.0	2.9	4.1	5.9	7.4	7.8	7.9
Italy	4.1	4.1	4.4	4.4	4.9	5.4	5.9	5.9	6.0
Netherlands	5.1	5.2	5.3	6.2	9.2	11.3	14.5	14.0	12.9
Sweden	1.8	2.2	2.1	2.0	2.5	3.1	3.5	3.1	2.8
United Kingdom	6.4	6.3	5.4	7.0	10.5	11.8	11.9	11.7	11.3

¹ Labor force as a percent of the civilian working-age population.

² Employment as a percent of the civilian working-age population.

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

(1977 = 100)

Item and country	1960	1970	1973	1974	1975	1976	1978	1979	1980	1981	1982	1983	1984	1985
Output per hour														
United States	62.2	80.8	93.4	90.6	92.9	97.1	101.5	101.4	101.4	103.6	105.9	112.9	118.5	121.8
Canada	50.3	76.8	91.3	93.4	91.0	96.2	101.4	104.2	101.9	104.0	101.0	107.6	111.5	115.1
Japan	23.2	64.8	83.1	86.5	87.7	94.3	108.0	114.8	122.7	127.2	135.0	142.3	152.2	159.9
Belgium	32.8	60.0	78.7	83.2	86.3	95.3	106.2	111.8	119.3	127.2	132.8	141.0	145.5	-
Denmark	37.2	65.5	83.2	86.0	94.6	98.2	101.5	106.5	112.3	114.2	114.6	117.3	118.3	118.4
France	36.4	69.6	82.2	85.2	88.5	95.0	105.7	110.3	112.0	116.4	123.5	129.3	135.0	140.2
Germany	40.3	71.2	84.0	87.4	90.1	96.5	103.1	108.2	108.6	111.0	112.6	119.0	124.7	131.9
Italy	36.5	72.7	90.9	95.3	91.1	98.9	103.0	110.5	116.9	121.0	123.4	126.6	135.0	139.1
Netherlands	32.4	64.3	81.5	88.1	86.2	95.8	106.4	112.3	113.9	116.9	119.4	126.1	139.3	-
Norway	54.6	81.7	94.6	97.7	96.8	99.7	101.8	107.1	109.3	109.7	112.6	119.2	122.3	125.0
Sweden	42.3	80.7	94.8	98.8	100.2	101.7	102.8	110.9	112.7	113.2	116.5	125.5	132.6	135.2
United Kingdom	53.8	77.6	92.9	95.2	94.3	99.1	101.5	102.2	101.2	107.9	112.7	121.2	126.2	129.7
Output														
United States	52.5	78.6	96.3	91.7	84.9	93.1	106.0	108.1	103.2	104.8	98.4	105.6	117.9	121.0
Canada	41.5	75.1	94.6	98.0	92.3	98.1	104.9	110.9	107.7	108.8	96.4	101.7	110.1	115.2
Japan	19.2	69.9	91.9	91.7	86.2	94.8	106.7	113.9	124.1	129.8	137.3	148.2	165.2	175.8
Belgium	41.7	78.1	95.8	99.6	92.1	99.5	101.6	104.2	107.2	105.9	109.1	110.7	112.8	-
Denmark	49.2	82.0	95.9	97.4	95.0	99.6	99.7	105.4	110.1	106.6	108.3	112.2	118.6	122.3
France	35.4	73.3	88.6	91.8	90.0	96.1	103.4	106.1	106.6	105.9	106.0	107.4	108.4	109.0
Germany	50.0	86.6	96.1	95.4	91.0	98.0	101.8	106.6	106.6	104.9	102.4	103.5	107.4	113.0
Italy	37.4	78.0	90.5	96.3	86.9	97.9	101.8	108.6	115.4	114.3	111.6	109.2	113.2	115.3
Netherlands	44.8	84.4	95.8	100.0	92.7	99.0	102.8	106.1	106.6	106.7	105.0	105.3	110.8	-
Norway	55.1	87.0	99.5	104.0	101.0	101.4	98.2	100.3	101.3	100.1	99.8	98.8	101.3	103.7
Sweden	52.6	92.5	100.3	105.7	106.1	106.1	97.3	103.6	104.0	100.6	100.1	105.2	112.4	114.6
United Kingdom	71.0	94.7	104.7	103.5	96.2	98.2	100.6	100.5	91.7	86.2	86.4	88.9	92.4	95.0
Total hours														
United States	84.4	97.3	103.1	101.2	91.4	95.9	104.4	106.5	101.7	101.1	92.9	93.5	99.5	99.3
Canada	82.6	97.7	103.6	105.0	101.4	102.0	103.4	106.4	105.7	104.6	95.4	94.6	98.7	100.1
Japan	82.7	107.9	110.7	106.1	98.2	100.6	98.8	99.3	101.2	102.0	101.7	104.2	108.5	110.0
Belgium	127.0	130.1	121.8	119.7	106.7	104.4	95.7	93.2	89.9	83.3	82.1	78.5	77.5	-
Denmark	132.4	125.1	115.2	113.2	100.4	101.4	98.3	99.0	98.1	93.4	94.5	95.7	100.2	103.3
France	97.2	105.3	107.8	107.8	101.7	101.2	97.8	96.2	95.2	91.0	85.9	83.0	80.3	77.8
Germany	123.8	121.7	114.4	109.2	101.0	101.6	98.7	98.5	98.1	94.6	91.0	87.0	86.2	85.7
Italy	102.3	107.4	99.6	101.0	95.4	99.0	98.8	98.2	98.7	94.5	90.4	86.2	83.9	82.9
Netherlands	138.4	131.2	117.6	113.5	107.6	103.3	96.6	94.4	93.6	91.2	88.0	83.5	79.5	-
Norway	101.0	106.4	105.1	106.5	104.3	101.7	96.5	93.6	92.6	91.3	88.6	82.9	82.8	83.0
Sweden	124.4	114.6	105.7	107.0	105.9	104.3	94.6	93.4	92.3	88.9	85.9	83.9	84.8	84.8
United Kingdom	131.9	122.1	112.7	108.7	102.1	99.0	99.1	98.3	90.7	79.9	76.7	73.3	73.2	73.3
Compensation per hour														
United States	36.5	57.3	68.8	76.2	85.1	92.1	108.2	118.6	132.4	145.2	157.5	163.2	169.1	176.6
Canada	27.1	46.5	59.2	68.5	78.2	89.9	106.7	118.3	130.6	151.5	167.1	179.3	182.1	191.4
Japan	8.9	33.9	55.1	72.3	84.2	90.7	106.6	113.4	120.7	129.8	136.6	140.7	144.8	148.3
Belgium	13.8	34.9	53.5	65.2	78.9	89.5	107.8	117.6	130.4	144.6	152.0	163.7	176.6	-
Denmark	12.6	36.3	56.1	67.9	81.0	90.4	110.2	123.1	135.9	149.6	162.9	174.3	183.9	195.5
France	15.1	36.6	52.3	62.0	76.7	88.9	113.5	129.3	147.5	170.3	200.8	226.2	246.5	262.7
Germany	18.8	48.0	67.5	76.9	84.5	91.3	107.8	116.1	125.6	134.5	141.0	148.4	155.3	164.7
Italy	8.3	26.1	43.7	54.5	70.2	84.2	114.5	134.7	160.2	197.1	237.3	276.4	303.0	334.0
Netherlands	12.5	39.0	60.5	71.9	82.2	91.9	108.4	117.0	123.6	129.1	137.5	144.7	152.8	-
Norway	15.8	37.9	54.5	63.6	77.2	88.8	110.0	116.0	128.0	142.8	156.0	173.5	188.3	205.2
Sweden	14.7	38.5	54.2	63.8	77.3	91.5	111.4	120.1	133.6	148.1	158.9	173.3	190.7	205.8
United Kingdom	14.8	30.8	44.8	56.9	74.7	88.4	116.7	137.7	165.8	188.9	206.4	222.4	237.2	257.0
Unit labor costs: National currency basis														
United States	58.7	70.9	73.7	84.1	91.7	94.9	106.6	117.0	130.6	140.1	148.7	144.5	142.8	145.0
Canada	53.9	60.6	64.8	73.3	86.0	93.5	105.3	113.5	128.1	145.7	165.4	166.7	163.2	166.3
Japan	38.4	52.3	66.4	83.6	96.0	96.2	98.7	98.8	98.4	102.0	101.2	98.9	95.1	92.7
Belgium	42.0	58.1	68.0	78.3	91.5	93.9	101.5	105.2	109.3	113.6	114.4	116.1	121.4	-
Denmark	33.8	55.4	67.4	79.0	85.6	92.1	108.6	115.7	121.0	131.1	142.2	148.6	155.5	165.1
France	41.6	52.6	63.6	72.8	86.7	93.6	107.4	117.3	131.7	146.3	162.6	175.0	182.5	187.4
Germany	46.6	67.4	80.3	88.0	93.8	94.6	104.5	107.3	115.7	121.2	125.2	124.7	124.6	124.9
Italy	22.8	36.0	48.1	57.2	77.1	85.1	111.2	121.9	137.0	162.9	192.4	218.3	224.5	240.1
Netherlands	38.5	60.7	74.3	81.6	95.4	96.0	101.8	104.1	108.5	110.4	115.2	114.7	109.7	-
Norway	29.0	46.4	57.6	65.2	79.7	89.1	108.1	108.2	117.0	130.2	138.6	145.5	154.0	164.2
Sweden	34.8	47.7	57.2	64.6	77.1	90.0	108.4	108.3	118.6	130.9	136.3	138.1	143.8	152.2
United Kingdom	27.6	39.7	48.2	59.7	79.2	89.2	114.9	134.7	163.8	175.1	183.1	183.5	187.9	198.1
Unit labor costs: U.S. dollar basis														
United States	58.7	70.9	73.7	84.1	91.7	94.9	106.6	117.0	130.6	140.1	148.7	144.5	142.8	145.0
Canada	59.0	61.7	68.8	79.7	89.8	100.7	98.1	103.0	116.4	129.1	142.3	143.7	133.9	129.4
Japan	28.5	39.1	65.6	76.8	86.7	86.9	126.8	121.3	116.8	123.8	108.8	111.5	107.2	104.2
Belgium	30.2	42.0	62.8	72.1	89.3	87.2	115.7	128.5	134.1	109.9	89.5	81.3	75.3	-
Denmark	29.5	44.4	67.2	77.9	89.6	91.5	118.4	132.0	129.0	110.3	102.3	97.5	90.1	93.5
France	41.7	46.8	70.4	74.5	99.5	96.3	117.3	135.5	153.4	132.2	121.5	112.9	102.7	102.6
Germany	25.9	42.9	70.4	79.1	88.7	87.3	121.0	135.9	147.9	124.9	119.7	113.4	101.6	98.6
Italy	32.5	50.6	73.1	77.6	104.3	90.5	115.6	129.5	141.4	126.3	125.4	126.8	112.8	111.1
Netherlands	25.1	41.2	65.6	74.6	92.8	89.1	115.7	127.4	134.2	108.9	105.8	98.6	83.9	-
Norway	21.7	34.5	53.4	62.8	81.4	86.9	109.7	113.8	126.2	120.6	114.2	106.1	100.4	101.7
Sweden	30.1	41.1	58.7	65.1	83.2	92.3	107.2	112.9	125.3	115.4	96.9	80.4	77.7	79.1
United Kingdom	44.4	54.4	67.7	80.1	100.8	92.3	126.3	163.9	218.3	203.1	183.5	159.4	143.9	147.3

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

Industry and type of case ¹	Incidence rates per 100 full-time workers ²								
	1977	1978	1979	1980	1981	1982	1983	1984	1985
PRIVATE SECTOR³									
Total cases	9.3	9.4	9.5	8.7	8.3	7.7	7.6	8.0	7.9
Lost workday cases	3.8	4.1	4.3	4.0	3.8	3.5	3.4	3.7	3.6
Lost workdays	61.6	63.5	67.7	65.2	61.7	58.7	58.5	63.4	64.9
Agriculture, forestry, and fishing³									
Total cases	11.5	11.6	11.7	11.9	12.3	11.8	11.9	12.0	11.4
Lost workday cases	5.1	5.4	5.7	5.8	5.9	5.9	6.1	6.1	5.7
Lost workdays	81.1	80.7	83.7	82.7	82.8	86.0	90.8	90.7	91.3
Mining									
Total cases	10.9	11.5	11.4	11.2	11.6	10.5	8.4	9.7	8.4
Lost workday cases	6.0	6.4	6.8	6.5	6.2	5.4	4.5	5.3	4.8
Lost workdays	128.8	143.2	150.5	163.6	146.4	137.3	125.1	160.2	145.3
Construction									
Total cases	15.5	16.0	16.2	15.7	15.1	14.6	14.8	15.5	15.2
Lost workday cases	5.9	6.4	6.8	6.5	6.3	6.0	6.3	6.9	6.8
Lost workdays	111.5	109.4	120.4	117.0	113.1	115.7	118.2	128.1	128.9
General building contractors:									
Total cases	15.0	15.9	16.3	15.5	15.1	14.1	14.4	15.4	15.2
Lost workday cases	5.7	6.3	6.8	6.5	6.1	5.9	6.2	6.9	6.8
Lost workdays	100.2	105.3	111.2	113.0	107.1	112.0	113.0	121.3	120.4
Heavy construction contractors:									
Total cases	16.0	16.6	16.6	16.3	14.9	15.1	15.4	14.9	14.5
Lost workday cases	5.7	6.2	6.7	6.3	6.0	5.8	6.2	6.4	6.3
Lost workdays	116.7	110.9	123.1	117.6	106.0	113.1	122.4	131.7	127.3
Special trade contractors:									
Total cases	15.6	15.8	16.0	15.5	15.2	14.7	14.8	15.8	15.4
Lost workday cases	6.1	6.6	6.9	6.7	6.6	6.2	6.4	7.1	7.0
Lost workdays	115.5	111.0	124.3	118.9	119.3	118.6	119.0	130.1	133.3
Manufacturing									
Total cases	13.1	13.2	13.3	12.2	11.5	10.2	10.0	10.6	10.4
Lost workday cases	5.1	5.6	5.9	5.4	5.1	4.4	4.3	4.7	4.6
Lost workdays	82.3	84.9	90.2	86.7	82.0	75.0	73.5	77.9	80.2
Durable goods									
Lumber and wood products:									
Total cases	22.3	22.6	20.7	18.6	17.6	16.9	18.3	19.6	18.5
Lost workday cases	10.4	11.1	10.8	9.5	9.0	8.3	9.2	9.9	9.3
Lost workdays	178.0	178.8	175.9	171.8	158.4	153.3	163.5	172.0	171.4
Furniture and fixtures:									
Total cases	17.2	17.5	17.6	16.0	15.1	13.9	14.1	15.3	15.0
Lost workday cases	6.0	6.9	7.1	6.6	6.2	5.5	5.7	6.4	6.3
Lost workdays	92.0	95.9	99.6	97.6	91.9	85.6	83.0	101.5	100.4
Stone, clay, and glass products:									
Total cases	16.9	16.8	16.8	15.0	14.1	13.0	13.1	13.6	13.9
Lost workday cases	6.9	7.8	8.0	7.1	6.9	6.1	6.0	6.6	6.7
Lost workdays	120.4	126.3	133.7	128.1	122.2	112.2	112.0	120.8	127.8
Primary metal industries:									
Total cases	16.2	17.0	17.3	15.2	14.4	12.4	12.4	13.3	12.6
Lost workday cases	6.8	7.5	8.1	7.1	6.7	5.4	5.4	6.1	5.7
Lost workdays	119.4	123.6	134.7	128.3	121.3	101.6	103.4	115.3	113.8
Fabricated metal products:									
Total cases	19.1	19.3	19.9	18.5	17.5	15.3	15.1	16.1	16.3
Lost workday cases	7.2	8.0	8.7	8.0	7.5	6.4	6.1	6.7	6.9
Lost workdays	109.0	112.4	124.2	118.4	109.9	102.5	96.5	104.9	110.1
Machinery, except electrical:									
Total cases	14.0	14.4	14.7	13.7	12.9	10.7	9.8	10.7	10.8
Lost workday cases	4.7	5.4	5.9	5.5	5.1	4.2	3.6	4.1	4.2
Lost workdays	69.9	75.1	83.6	81.3	74.9	66.0	58.1	65.8	69.3
Electric and electronic equipment:									
Total cases	8.6	8.7	8.6	8.0	7.4	6.5	6.3	6.8	6.4
Lost workday cases	3.0	3.3	3.4	3.3	3.1	2.7	2.6	2.8	2.7
Lost workdays	46.7	50.3	51.9	51.8	48.4	42.2	41.4	45.0	45.7
Transportation equipment:									
Total cases	11.8	11.5	11.6	10.6	9.8	9.2	8.4	9.3	9.0
Lost workday cases	5.0	5.1	5.5	4.9	4.6	4.0	3.6	4.2	3.9
Lost workdays	79.3	78.0	85.9	82.4	78.1	72.2	64.5	68.8	71.6
Instruments and related products:									
Total cases	7.0	6.9	7.2	6.8	6.5	5.6	5.2	5.4	5.2
Lost workday cases	2.4	2.6	2.8	2.7	2.7	2.3	2.1	2.2	2.2
Lost workdays	37.4	37.0	40.0	41.8	39.2	37.0	35.6	37.5	37.9
Miscellaneous manufacturing industries:									
Total cases	11.5	11.8	11.7	10.9	10.7	9.9	9.9	10.5	9.7
Lost workday cases	4.0	4.5	4.7	4.4	4.4	4.1	4.0	4.3	4.2
Lost workdays	58.7	66.4	67.7	67.9	68.3	69.9	66.3	70.2	73.2

See footnotes at end of table.

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

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

¹ Total cases include fatalities.

² The incidence rates represent the number of injuries and illnesses or lost workdays per 100 full-time workers and were calculated as: (N/EH) X 200,000, where:

N = number of injuries and illnesses or lost workdays.

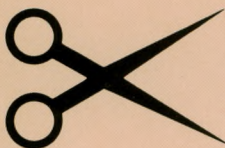
EH = total hours worked by all employees during calendar year.

200,000 = base for 100 full-time equivalent workers (working 40 hours per week, 50 weeks per year.)

³ Excludes farms with fewer than 11 employees since 1976.

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