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Bureau of Labor Statistics
May 1981

In this issue:
Productivity for intercity buses
Employment in coal, oil, and gas extraction



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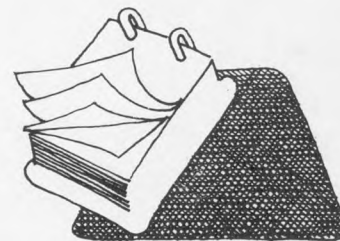
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Labor Month In Review



KLEIN AWARDS. Two Bureau of Labor Statistics economists and a husband-wife research team share the 12th annual Lawrence R. Klein Award for the best original articles published in the *Monthly Labor Review* in 1980. The winners, selected by the Klein Fund trustees, are:

Norman Bowers of the Office of Current Employment Analysis for "Probing the issues of unemployment duration," in the July issue;

Philip L. Ronces, also of the Office of Current Employment Analysis, for "Moving to the sun: regional job growth, 1968 to 1978," in the March issue; and

Robert L. Bach, assistant professor of sociology at the State University of New York, Binghamton, and Jennifer B. Bach, a research analyst, for "Employment patterns of Southeast Asian refugees," in the October *Review*.

The winners received their awards at the annual BLS honor awards ceremony, April 7, from Ben Burdetsky, secretary-treasurer of the Klein Fund. In addition to selecting the award winners, the Klein Fund trustees commended Gregory J. Mounts for "the consistent quality of writing and analysis" in the *Review's* "Significant Decisions in Labor Cases." Mounts is now on the staff of the U.S. General Accounting Office.

The Bowers article, building on the work of an earlier Klein Award winner (Hyman Kaitz, 1971), examines some of the data and measurement problems that have created controversy in interpreting unemployment duration. Bowers advises analysts to take into account when studying unemployment patterns that (1) a sharp conceptual distinction exists

when measuring the duration of completed spells of unemployment and in-progress spells; (2) duration statistics may be an unreliable guide on the relative ease of finding work; (3) it is essential to gauge the importance of multiple spells of unemployment to adequately interpret duration data; (4) the concentration of unemployment may be accounted for by those with many spells or long periods of joblessness; and (5) an understanding of the business cycle and its impact on the labor market is vital.

A year ago, another Bowers article, "Young and marginal: An overview of youth employment," received honorable mention in the Klein Award judging.

The Ronces article reviews a decade of employment growth in the South and West. Ronces also discusses the factors which have led to the industrial expansion of the sunbelt States and the relative decline in the North, including those factors which affect the location of business firms, individuals, and families. He concludes that favorable business climates (such as lower taxes) along with environmental factors were among the factors contributing to the economic development of the South and West. For individuals and families, the decision to migrate is influenced by (1) age and education, (2) employment status—job conditions at the place of origin and the destination may "push" or "pull" persons, especially the unemployed, into migration, (3) the current and potential income of both husbands and wives, and (4) noneconomic factors, such as the search for a better living environment.

The Bach article examines the limited data available about Southeast Asian

refugees—their participation in the labor force, their occupations, their incomes, and where they settled. The Bachs found that the transition was easier for the earlier refugees (those arriving before 1978); they found jobs and have had gradual income gains, although they work long hours. Recent arrivals have not fared so well. They are comparatively less educated than the earlier arrivals and have fewer marketable skills and more difficulty with the language. They also show an increasing reliance on cash and medical assistance. The authors explain that some of the latter refugees' employment problems are attributable to the overall condition of the U.S. economy.

Purpose of the award. The Klein Award Fund was established by Lawrence R. Klein, editor-in-chief of the *Review* for 22 years until his retirement in 1968. Instead of accepting a retirement gift, Klein donated it and matched the amount collected to initiate the fund. Since then, he has contributed regularly, as have others. Purpose of the fund is to encourage *Review* articles that (1) exhibit originality of ideas or method of analysis, (2) adhere to the principles of scientific inquiry, and (3) are well written. Since 1969, fund trustees (including Klein) have presented awards to authors of 22 *Review* articles. Awards initially carried cash prizes of \$100; they are now \$200.

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

Employment trends in energy extraction

In the wake of the 1973–74 oil embargo, higher prices for foreign and domestic fuels stimulated rapid expansion of U.S. extraction industries, and encouraged development of previously unprofitable energy sources

RICHARD GREENE

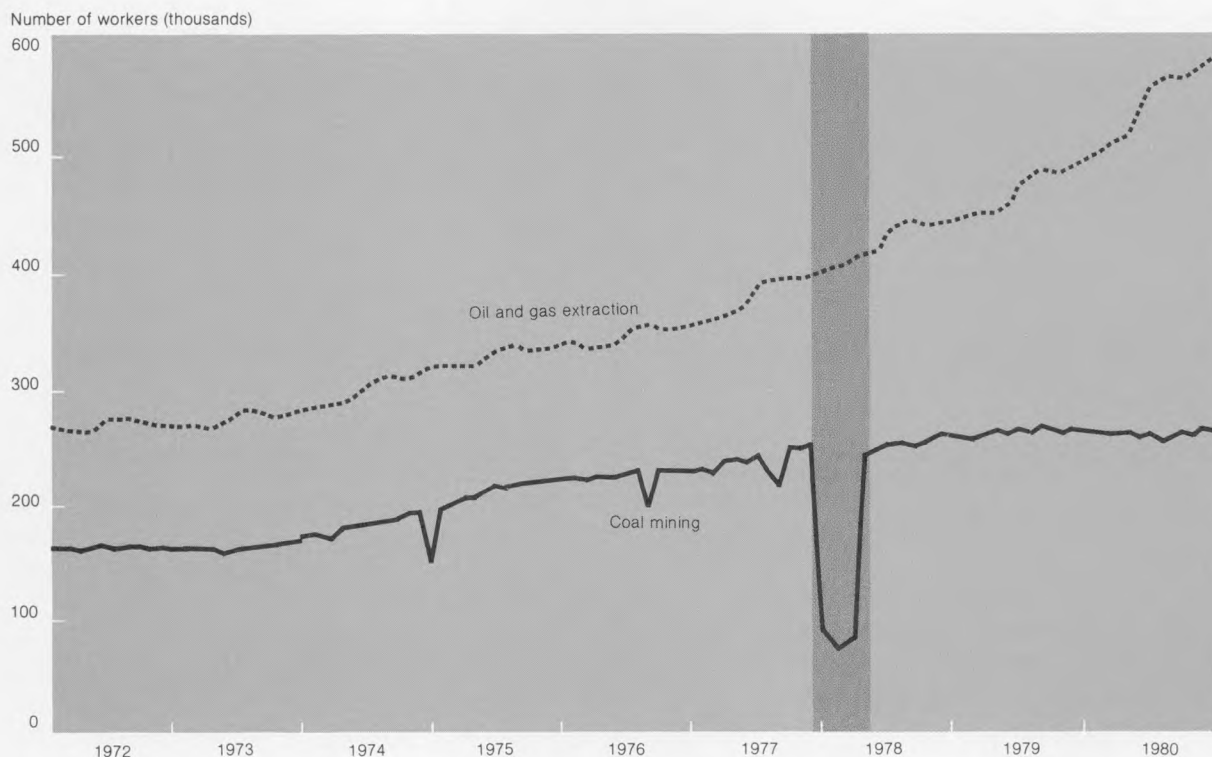
Since the 1973–74 Arab oil embargo, rising energy prices have encouraged domestic suppliers to develop additional sources of energy. For example, in the first 6 months of 1980, domestic oil producers drilled 19 percent more wells in the United States than they did during the comparable period in 1979 and opened 15 percent more oil and gas wells than they did during all of 1973.¹ This increase in exploration and development activity has in turn resulted in significant employment growth in the oil and natural gas extraction industries.

In fact, by the end of 1980, employment in the basic energy extraction industries—coal, oil, and natural gas—had risen by more than 400,000, or 91 percent, since the embargo. (See chart 1.) This growth was almost six times the rate of increase in the total nonagricultural sector of the economy. During 1973–80, employment in the goods-producing sector would have fallen by almost 80,000, or 0.3 percent, without the tremendous growth in the energy extraction industries. These industries, which represent a little more than 3 percent of the total employment in the goods-producing sector, posted a rate of growth which was 123.8 percent of that recorded for the sector as a whole. Other important employ-

ment trends in the energy extraction industries since the embargo:

- The employment growth rate has been accelerating recently, particularly in the oil and natural gas industries, with almost 37 percent of the total increase since the embargo taking place in the last 2 years. Employment in oil and gas field services (primarily contract drilling and maintenance) has almost doubled in the last 4 years.
- During 1973–78, employment in the coal mining and oil and natural gas extraction industries grew at approximately the same rate. Subsequently, however, the oil and natural gas industries have accounted for more than 75 percent of the growth in energy extraction employment and have expanded at almost double the rate of the coal mining industry.
- As would be expected, employment in oil field and mining equipment manufacturing industries has also risen sharply, by 62,300, or 85.3 percent, over the 1973–80 period. This contrasts markedly with the very flat employment growth trend for the total manufacturing sector. The production of oil and gas equipment accounted for 86.2 percent of the increased activity in the energy extraction equipment manufacturing industry. Employment in other indus-

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Chart 1. Monthly employment levels in the coal mining and oil and natural gas extraction industries, 1972-80

NOTE: Shaded area indicates strike in the coal mining industry.

tries manufacturing energy extraction-related equipment, such as offshore drilling platforms and oil and natural gas pipelines, has also significantly increased. However, an accurate estimate of the employment growth in these industries could not be obtained from the data sources used for this study.

This article details national and State employment trends in the energy extraction industries since the 1973-74 oil embargo. Employment data are from two Bureau of Labor Statistics payroll employment programs.² The post-oil embargo period is the focal point for this study because of the profound impact of that event on the subsequent development of both government and private industry energy plans.

Throughout the article, oil and natural gas extraction is defined to include such activities as exploration; drilling; building, completing, and equipping wells; and operation of the wells. The oil and gas field services industry, which is a subgroup of the extraction industry, primarily involves contract drilling and other specific contract field operation activities including building well foundations and chemically treating and clearing

walls. Separate employment data for the oil and natural gas industries are not available under the 1972 Standard Industrial Classification (SIC) coding system. Mining also includes activities such as dredging and mine preparation plants.

The oil field machinery and equipment industry includes establishments primarily engaged in the manufacturing of oil and gas field derricks, drilling tools, and drilling rigs and other machinery used to operate oil and gas fields. The mining machinery and equipment industry includes the manufacturing of coal breakers, mine cars, rock crushing and mineral cleaning machinery.

Background

U.S. dependence on oil imports and vulnerability to interruptions of foreign oil supplies were visibly demonstrated during the 1973-74 Arab oil embargo. Subsequently, the Iranian revolution and oil cutoff, the invasion of Afghanistan by the Soviet Union, and the Iran-Iraq war have only increased the risk of reliance on oil imported from the Middle East. In 1960, imports accounted for only about 20 percent of U.S. oil con-

sumption. However, as oil consumption in the United States began to outpace new domestic discoveries and import quotas were removed (May 1, 1973), this dependence rose to more than 37 percent in 1974 and to 51 percent in early 1977, before dropping back below 37 percent by the end of 1980.³

Despite the recent decline in U.S. oil imports, the economy at the beginning of 1981 remained heavily dependent on imported oil. And, the price of this oil has soared. Since just before the embargo, the price of a barrel of Saudi Arabian benchmark crude oil has risen from \$5.18 to \$32.⁴ The effect of these enormous changes in the availability and price of imported oil have affected every sector of our economy.

In the United States, a major result of the changes in the price and availability of imported oil has been the development and implementation of government policies designed to facilitate the discovery, production, and use of domestic sources of energy—primarily oil, coal, and natural gas.⁵ Examples of these policies include:

<i>Law</i>	<i>Major purpose</i>
Natural Gas Policy Act of 1978	Extension of Federal regulatory control to all natural gas production, and the gradual decontrol of all natural gas prices ⁶
Energy Policy and Conservation Act of 1979	Provide authority for the phased decontrol of domestic crude oil ⁷
Power Plant and Industrial Fuel Use Act of 1978	Encourage the use of coal by major utilities and industrial consumers

Other measures promoting the development of domestic energy sources provide for increased access to Federally owned lands for oil and gas exploration and the resumption of the Federal coal leasing program in 1979.

National trends

Oil and natural gas. Employment in the oil and natural gas extraction industries rose from 278,000, just before the 1973–74 embargo, to 595,000 by the end of 1980. (See chart 1.) More than 43 percent of this increase occurred after the April 4, 1979, announcement of the phased price decontrol of newly discovered domestic crude oil. The average monthly employment increase in these industries has been approximately 6,600 since the phased price decontrol was announced. This increase is more than double the rate of the period between the beginning of the embargo and the announcement of the phased price decontrols. The post-embargo oil and natural gas employment trend contrasts sharply with that observed over the 10-year period prior to the embargo, during which employment in these industries had actually declined by about 10,000.

Clearly, a major reason underlying the recent surge in oil and natural gas exploration and extraction employ-

ment is the increased price firms in these industries are receiving for their products. Higher product prices have not only encouraged the search for new sources of oil and natural gas, but have made the use of enhanced oil recovery techniques and the development of fields previously categorized as sub-marginal more attractive. Other factors affecting recent employment trends are the increased participation of Canadian firms in the discovery and development of U.S. oil and gas fields;⁸ improved search techniques, which decrease the risks associated with exploration activities; and unsettled political conditions in the Middle East which highlighted the vulnerability of the United States to the disruption of imported oil supplies.

A notable component of industry growth has been the increase in drilling activity, which is now at its highest level in more than 20 years.⁹ Employment in the oil and gas field services industry—basically well drilling, building, and maintenance on a contract basis—has grown by almost 100,000 in the last 2 years alone. The following tabulation shows the level and proportion of the employment in the oil and natural gas extraction industries involved in field services over the 1972–80 period:

<i>Year</i>	<i>Total field services employment (in thousands)</i>	<i>Percentage of employment in field services</i>
1972	124.5	46.5
1973	134.6	49.1
1974	155.6	51.8
1975	173.6	52.8
1976	184.3	53.3
1977	211.4	55.4
1978	246.7	57.5
1979	276.2	58.4
1980	329.1	60.1

Coal. Coal mining employment increased by almost 60 percent, from 167,000 in November 1973 to 266,100 in December 1980. (See chart 1.) During the 10 years prior to the embargo, coal mining employment had only increased by 16 percent. It should be noted that the coal mining employment data shown in chart 1 were strongly affected by labor disputes in December 1974 and December 1977–March 1978. In contrast to trends exhibited in the oil and natural gas industries, coal mining employment growth has been modest over the last 2 years, increasing by only 3 percent. It is significant that since the Natural Gas Policy Act was passed in November 1978, total coal mining employment has increased by only about 5,000 workers. In fact, almost 56 percent of the post-embargo coal mining employment growth occurred within 2 years of the beginning of the embargo.

Nevertheless, during this period coal mining employment growth, while not as spectacular as the expansion in its companion oil and natural gas extraction industries, has still been more pronounced than the increase

in almost every other goods-producing industry. The major reason for this growth is that the tremendous increases in imported oil and natural gas prices have caused some industrial users to switch to coal.

Employment growth in the coal mining industry has been moderate compared with that in oil and natural gas extraction in part because of the expanded use of less labor-dependent surface mining techniques. Coal mining productivity is approximately three times greater in surface mines than in underground mines. Surface mining techniques now account for over 60 percent of total production and 33 percent of total employment in the industry.¹⁰ It is also probable that the recent relatively large price increases for oil and natural gas had a correspondingly favorable effect on employment in oil and natural gas fields, while lower growth in coal mining reflects more moderate price increases for industry output. The Bureau of Labor Statistics Producer Price Index, based on the prices received by producers of commodities, provides a measure of relative price changes between various commodities. The following tabulation compares changes in the Producer Price Index for the major domestic energy sources since the beginning of the oil embargo:

Product	Index		Percent increase
	December 1973	December 1980	
Coal	218.1	475.7	118.1
Natural gas	141.4	954.3	574.9
Domestic crude oil	146.2	596.0	307.7
Total finished goods	127.9	244.7	91.3

It is important to note that until the end of 1978, employment grew at about the same rate in the coal mining industry as in the oil and natural gas industries. But, as previously mentioned, strong price incentives were provided to the oil and natural gas extraction industries during 1979. Other factors contributing to the more sluggish coal mining employment growth include the costs associated with compliance to health and safety rules in the mines; environmental regulations associated with the mining of coal; increased transportation costs; and the large capital outlays required to convert an industrial plant from natural gas or oil to coal.¹¹

Coal mining employment did, however, increase sharply during the last quarter of 1980 primarily because of the huge increase in foreign demand for coal. This demand reflected the increased substitution of coal for Middle East oil by foreign industry, as well as prolonged strikes by coal miners in Poland and Australia.

Equipment manufacturing. Employment in the oil and natural gas field equipment manufacturing industry rose from 47,100 in November of 1973 to just over 100,000 by December 1980. (See chart 2.) In the decade preceding the embargo, employment in the industry increased

by about 45 percent. The 114-percent increase roughly parallels the relative magnitude and timing of the employment increases in the oil and natural gas extraction industry. Employment in coal mining machinery equipment manufacturing rose by a third, from 25,900 to 34,500 over the same period, approximately the same rate of growth observed during the 10 years preceding the embargo. Employment in this industry increased at only about one-half the annual rate of that in its companion coal mining industry, and almost all of its post embargo growth occurred within 18 months of the end of the embargo.

State trends

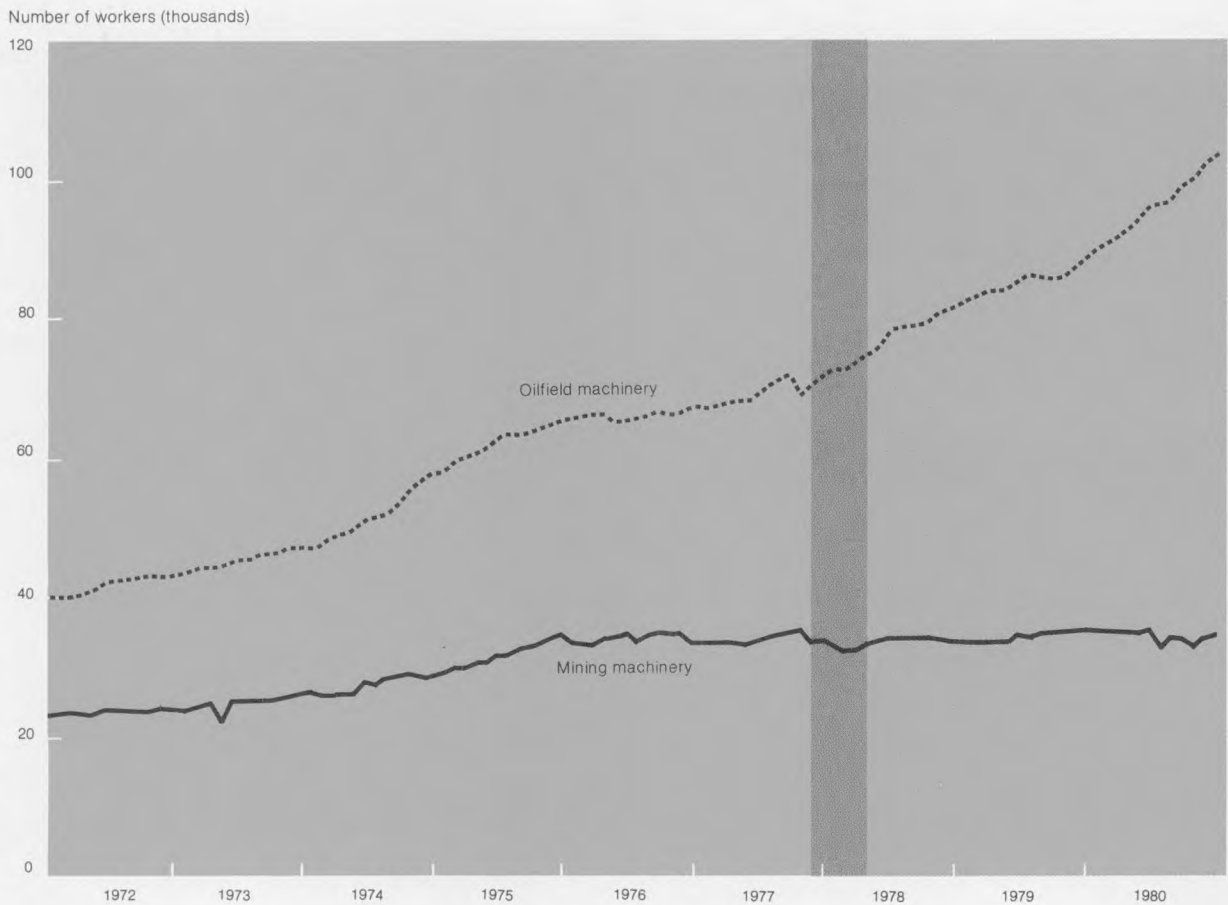
Oil and natural gas. Almost two-thirds of the total employment in the oil and natural gas extraction industries is located in three southwestern States—Texas, Louisiana, and Oklahoma. Texas alone accounts for almost 40 percent of the Nation's employment in these rapidly expanding industries. The following tabulation shows the employment trends for the 10 States with the largest oil and natural gas extraction employment between the beginning of the embargo and June 1980:

State	Oil and natural gas employment (in thousands)		Percent change
	November 1973	June 1980	
Texas	105.5	213.3	102.2
Louisiana	48.4	78.0	61.2
Oklahoma	35.4	65.5	85.0
California	20.4	32.9	61.3
Wyoming	7.5	18.3	144.0
Colorado	7.8	16.4	110.3
Kansas	7.6	12.8	68.4
New Mexico	7.6	12.8	68.4
Ohio	5.4	9.8	81.5
Mississippi	4.2	8.8	109.5

As might be expected, the three largest oil and gas extraction States also accounted for a majority—more than 60 percent—of the post-embargo employment growth. However, the States experiencing the largest relative employment increases following the embargo were North Dakota, Wyoming, Utah, Montana, Colorado, and Alaska. Most of these States have areas located in the Western "Overthrust" Belt¹² and Willeston Basin sections of the Rocky Mountains. These areas are potentially rich in petroleum and natural gas, but extraction is difficult and costly. Thus, the development of these areas did not become economically feasible until the recent oil and natural gas price increases.¹³

Coal. The coal mining industry also has the bulk of its employment concentrated in three States—West Virginia, Kentucky, and Pennsylvania. These States account for almost 55 percent of total industry employment.

Chart 2. Monthly employment levels in oilfield machinery and mining machinery manufacturing, 1972-80



NOTE: Shaded area indicates strike in the coal mining industry.

The following tabulation shows the employment trends for the leading coal mining States between the beginning of the 1973-74 embargo and June 1980:

State	Coal mining employment (in thousands)		Percent change
	November 1973	June 1980	
West Virginia	48.5	55.1	13.6
Kentucky	27.9	47.2	69.2
Pennsylvania	31.1	39.4	26.7
Virginia	13.4	20.8	55.2
Illinois	12.0	16.4	36.7
Ohio	11.3	16.4	45.1
Alabama	6.0	13.0	116.7
Indiana	3.0	6.1	103.3
Wyoming	.8	6.0	650.0
Colorado	1.6	5.5	244.0

In terms of relative employment increases, the leading States have been Wyoming, Montana, and Colorado. As in the case of the oil and gas extraction industries, this growth reflects recent increased interest in developing the Western "Overthrust" Belt and Willeston Basin regions. It is also noteworthy that, as a result of the expected increased activity in this industry, the Power Plant and Industrial Fuel Use Act of 1978 provides financial assistance to areas impacted by coal or uranium development activities.¹⁴

During the last 5 years, employment growth has been much sharper in the States where there is a greater reliance on surface mining techniques. Surface mining now produces about 60 percent of the Nation's coal while employing only one-third of the coal mining work force. In 1973, surface mining accounted for about half of the Nation's coal production, and one-quarter of total coal mining employment.¹⁵

Machinery manufacturing. Not surprisingly, most employment in the energy extraction machinery equipment manufacturing industries is located near areas where the actual mining and extraction activities occur. Most of the machinery is large, highly specialized, and cumbersome, and is consequently expensive to transport over long distances.

Texas establishments employ approximately two-thirds of the Nation's oil and natural gas equipment manufacturing workers and have accounted for more than two-thirds of the post-embargo growth in this industry. Other relatively large equipment manufacturing States are California and Oklahoma, each with approximately 11 percent of the total industry employment.

The largest employers in the coal mining equipment manufacturing industry are Pennsylvania, with almost 19 percent of the Nation's total, and West Virginia and Wisconsin, with approximately 17 percent each. Indus-

try employment in West Virginia and Wisconsin has more than doubled since 1975. The largest mining equipment manufacturing State in the West is Colorado, with about 6 percent of the industry's total employment.

THE 1973-74 ARAB oil embargo and the subsequent 6-fold increase in the price of imported oil have sharply curbed demand for imported crude oil. Coupled with the phased decontrol of domestic energy prices, the change in the price and availability of imported oil has resulted in unprecedented employment increases in the domestic energy extraction industries. Employment growth in these industries, aided in part by changes in Federal energy regulation policies, is an integral component of the Nation's effort to expand the development and use of domestic sources of energy. □

— FOOTNOTES —

ACKNOWLEDGMENT: The author would like to thank Emily Miller and Bernard Bell of the Office of Employment Structure and Trends, Bureau of Labor Statistics, for their assistance in the preparation of this article.

¹ *Economic Report of the President*, January 1981, p. 91.

² Employment estimates for the Nation and the larger States were compiled from the BLS Current Employment Statistics program. These data are produced from employer payroll records reported to the Bureau of Labor Statistics and its cooperating State agencies by more than 160,000 establishments on a voluntary basis each month. Self-employed persons and others not on a regular civilian payroll are outside the scope of this survey.

State employment data were also compiled from the ES-202 program, which collects information on the employment and wages of workers covered by unemployment insurance (UI) programs. Each calendar quarter, all UI-covered employers submit mandatory reports of employment and wages to the appropriate State Employment Security Agency. These reports are edited and summarized by county, State, and detailed industry, and forwarded to BLS. Self-employed persons are also not covered in this statistical program.

³ *Monthly Energy Review* (U.S. Department of Energy, Energy Information Agency), February 1981, pp. 30, 32, and 92.

⁴ *Weekly Petroleum Status Report* (U.S. Department of Energy, Energy Information Agency), Mar. 20, 1981, p. 21.

⁵ *Special Analyses—Budget of the United States Government, Fiscal Year 1981* (U.S. Office of Management and Budget), 1981, p. 383.

⁶ The natural gas decontrol schedule allows the price of "new" natural gas to gradually rise to the equivalent of \$15 for a barrel of oil (in 1978 dollars) by 1985, a level thought at that time to permit a smooth transition to uncontrolled prices. Thus, by 1985, when oil prices will probably be more than double the anticipated level, there will still be a large gap between decontrolled gas and "new" gas. See *Economic Report of the President*, January 1981, p. 101.

⁷ The statute also provided for the termination of domestic crude oil price controls by October 1981 and gave the President discretion on price control levels from June 1979 forward. In January 1981, President Reagan ended all crude oil price controls.

⁸ "Canada's oil policy is starting to hurt," *Business Week*, Dec. 8, 1980, p. 24.

⁹ *Voice* (Federal Reserve Bank of Dallas), December 1980, p. 8.

¹⁰ *Weekly Coal Report* (U.S. Department of Energy, Energy Information Agency), Mar. 6, 1981, p. 5.

¹¹ *Energy Economics*, August 1979, p. 1.

¹² The U.S. Overthrust Belt is an approximately 60-mile wide strip running from Alaska to Mexico.

¹³ Frank Niering, "Drilling Boom Gathers Pace," *The Petroleum Economist*, July 1980, pp. 289-90.

¹⁴ *Federal Register*, Mar. 8, 1979, pp. 12936-37.

¹⁵ *Weekly Coal Report* (U.S. Department of Energy, Energy Information Agency), Mar. 6, 1981, p. 5.

The health services industry: a decade of expansion

During the 1970's, the demand for health care rose, resulting in a dramatically increased work force, accompanied by a need for more highly skilled workers; wages and salaries remained below national averages and absences above; workweeks were shorter

EDWARD S. SEKSCENSKI

Along with a rise in the demand for medical services, and a steady increase in the costs of those services, the number of workers employed in the health services industry has grown at a very rapid pace. As the decade opened, about 4.3 million persons were working in hospitals, convalescent institutions, physicians' and dentists' offices, or other health care facilities.¹ By 1979, their number had grown to more than 6.7 million, an increase of 55 percent. During the same period, the total work force grew by 23 percent.

Median earnings of wage-and-salary workers in health services, however, were below the all-industry average throughout the decade. For full-time hospital employees, median usual weekly earnings were 86 percent of the national average in 1978, up from 82 percent in 1970. In other segments of the health services industry, average wage-and-salary earnings remained at about three-quarters of the all-industry average. However, workweeks tended to be slightly shorter in the health services industry than for all industries, both for part-time and full-time workers.

This article covers health service employees, such as physicians, nurses, and laboratory technicians, plus

those who provide administrative, clerical, food, and other supportive services in health care facilities. The universe for hours and earnings data is wage-and-salary workers. Self-employed health service providers are included in the data on total employed. Much of the material is derived from special tabulations prepared by the author from computer tapes for the Current Population Survey² in May. This survey is the only source of national data on employment, earnings, and hours of workers in the entire health industry.³

An overview

Early approaches to measuring the level of health service requirements stressed the "need" for services according to the size, density, and age and sex distributions of the population, the estimated incidence of illnesses and injuries, and rough estimates of health worker productivity. Roger I. Lee and Lewis W. Jones in their 1933 study of physician requirements used these criteria to calculate the physician to population ratios that were used in planning medical schools and health facilities through the 1950's.⁴ Similarly, the President's Commission on the Health Needs of the Nation (1953)⁵ and the Surgeon General's Consultant Group on Medical Education (1959)⁶ based their recommendations for expansion of medical schools and facilities largely on

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Table 1. Workers in the health services industry by segment, May 1970 to May 1979

[Numbers in thousands]

Year	Total employed	Health services industry					
		Total	Hospitals	Convalescent institutions	Physicians' offices	Dentists' offices	Other ¹
1970	78,358	4,323	2,727	N.A.	N.A.	N.A.	1,596 ²
1971	78,708	4,605	2,878	590	486	234	418
1972	81,224	4,850	2,914	651	557	255	473
1973	83,758	5,235	3,114	760	594	268	499
1974	85,786	5,470	3,190	809	605	292	575
1975	84,146	5,741	3,392	864	570	345	670
1976	87,278	6,140	3,568	933	657	332	650
1977	90,482	6,267	3,507	975	685	323	777
1978	93,904	6,522	3,661	924	815	353	769
1979	96,327	6,699	3,753	1,012	779	351	804
Percent increase, 1970-79	22.9	54.9	37.6	71.5 ³	60.3 ³	50.0 ³	92.3 ³

¹ Includes persons employed in nonhospital clinics, medical and dental laboratories, nonphysician practitioners' offices and other health services not elsewhere classified.

² Represents the sum of persons at work in convalescent institutions, physicians' and dentists' offices, and in other health services not elsewhere classified.

³ Increase for 1971-79.

NOTE: Because of rounding, sums of individual items may not equal totals. N.A. = Not available separately.

existing physician to population ratios and projected changes in the latter.

More recent theory on the demand for health services views each segment of the industry as providing inputs into the production of a final output—"good health" which is an investment good.⁷ Families or individual consumers purchase varying amounts and combinations of these services according to the expected return on their investment (in terms of fewer days of illness and longer and more enjoyable lives) and present costs of the services.

The growing availability of medical insurance has played a large role in the growth of the health services industry. The majority of medical costs (at least two-thirds in 1978) are paid through third party agencies—health insurers.⁸ The prevalence of health insurance, as well as the costs of its premiums, and the extent of coverage differ greatly by segment. In general, demand has been greater where coverage has been more comprehensive. For example, fuller coverage for hospital than for other services resulted in a demand on hospitals for services that might have been provided more economically elsewhere. However, over the decade, broader coverage for physicians' and dentists' services, care in convalescent institutions, and other nonhospital services increased demand for these services.⁹

In addition to the expanding role of health insurance, other factors contributed to the growth in the demand for health services during the 1970's, both in aggregate and on a per capita basis. Among these factors were an increasing and aging population, rising personal and family incomes (at least through mid-decade), and greater public awareness and desire for quality health care. As a result, the Nation's total health expenditures rose from about \$75 billion in 1970 to more than \$212 billion in 1979, while per capita expenditures advanced from \$358 to \$942. Over the same period, the health in-

dustry's share of the gross national product increased from 7.6 to 9.0 percent.¹⁰

Growth by industry segment

Hospitals employed the majority of all workers in the health services industry throughout the decade, 3.7 of 6.7 million in 1979. However, the fastest employment growth was in other segments of the industry. While employment in hospitals increased by 37 percent between 1970 and 1979, it nearly doubled in the rest of the industry (see table 1). As a result, hospitals accounted for a smaller proportion of all health industry workers in 1979 (56 percent) than in 1970 (62 percent).

Employment rose at a less rapid rate in hospitals than in other segments of the industry for several reasons, including decreases in the average length of a patient's stay,¹¹ a lowering of the birth rate (while childbirth remained the major reason for hospitalization in nonfederal short-stay hospitals, total maternal deliveries declined),¹² and a growing substitution of ambulatory or outpatient care for hospital inpatient care. Outpatient visits increased by 53 percent between 1970 and 1977, compared to a 17-percent rise in inpatient admissions over the same period.¹³

The closing of many "long-term" hospitals (where patients stay an average of 30 days or more), especially government-owned psychiatric facilities, also slowed the demand for hospital workers. While the total number of beds in "short-term" hospitals (where patients usually stay less than 30 days) increased by about 8.3 percent during 1972-77, the number in long-term hospitals declined by 40 percent,¹⁴ as more of their patients were treated in outpatient facilities.

Convalescent institutions were the next largest group of health service employers, reaching more than 1 million in 1979. An aging population and increased insur-

ance benefits, especially under medicare and medicaid plans, contributed to the very rapid employment growth in these institutions between 1971 and 1976. However, employment leveled off during mid-decade, as government regulation of these facilities strengthened,¹⁵ and "home-health services" for elderly patients gained support.¹⁶ Employment in convalescent institutions rose again between 1978 and 1979. Over the decade, the proportion of all health industry workers employed in convalescent institutions increased from 10.6 to 15.4 percent.

Employment in physicians' and dentists' offices, and in "other health services," such as nonphysician practitioners' offices, nonhospital clinics, group health associations, and medical and dental laboratories, also grew at rates faster than that in hospitals. Growth in these facilities was consistent with the trend towards substitution of outpatient and other health care for hospital inpatient services and greater insurance coverage for nonhospital services. As a whole, these diverse providers of health services employed 1.8 million persons in 1979, 60 percent greater than in 1971. Among them, physicians' offices were the largest single employers in 1979, with 720,000 workers or about 63 percent more than in 1971. This growth represented an increase of approximately 50 percent in the number of office physicians, to more than 270,000, as well as their increasing use of auxiliaries, such as nurse practitioners, physicians' assistants, and other technical and clerical staff.

The number of persons working in dentists' offices increased to 342,000, about 46 percent over the decade. The number of dentists in these offices rose from about 100,000 to 120,000, while their use of auxiliaries increased. This is partially because of more dental group practices which tend to employ more assistants per dentist than do solo practices.¹⁷

Occupational trends

The health industry work force included a higher proportion of professional and technical workers in 1979 than in 1971.¹⁸ However, clerical workers also increased their share of employment. In contrast, service workers declined in relative importance. (See table 2.)

The growing use of highly sophisticated diagnostic and therapeutic equipment increased the demand for skilled technologists and technicians. Some of this new equipment reduced the demand for workers, by performing equivalent work automatically or faster. However, the delivery of more advanced medical care, made possible by new technology, caused a relative increase in the demand for highly skilled workers. The largest growth in technologists and technician employment was in nonhospital facilities. While there were half again as many hospital employees in these occupations in 1979 as in 1971, the number in nonhospital clinics, laboratories, and physicians' and dentists' offices more than doubled.

A reorganization of the delivery of some health care also added to the demand for more highly skilled workers. For example, according to the American Hospital Association the proportion of hospitals with intensive care units rose from less than one-third in 1965 to about two-thirds in 1978; those with cardiac intensive care units increased from 0.05 to 31.7 percent over the same period.¹⁹ These facilities generally require employees with greater skill levels because of the sophisticated medical care they provide.

The growth in the proportion of registered nurses and the relative decline in importance of licensed practical nurses and nurses' aides also illustrated the trend toward rising skill levels. Total employment of the professional nursing group rose by three-fifths between 1971

Table 2. Workers in the health services industry, by selected occupations, May 1971 and May 1979

[Numbers in thousands]

Occupation	1971			1979		
	Total health services	Hospital	Medical except hospital	Total health services	Hospital	Medical except hospital
Total ¹	4,605	2,878	1,728	6,699	3,753	2,946
Managerial, professional, and technical workers, total	1,586	929	657	2,445	1,433	1,012
Health administrators	128	70	58	148	76	72
Physicians	290	99	191	419	135	284
Dentists	108		108	133	4	129
Registered nurses	662	491	171	1,063	794	269
Therapists	83	49	34	184	100	84
Technologists and technicians	293	199	94	446	293	153
Dieticians	28	21	7	52	31	21
Service and clerical workers, total	2,238	1,506	732	3,051	1,716	1,335
Licensed practical nurses	279	210	69	333	230	103
Nurses' aides	770	533	237	940	483	457
Food, laundry, and housekeeping	597	434	163	680	428	251
Clerical	592	329	263	1,099	575	524

¹ Total includes other occupations not shown in table.

and 1979, aided by increased Federal support to schools of nursing. The Nurse Training Act of 1964, which was renewed through 1975, provided a total of \$2 billion in direct Federal grants to schools of nursing for distribution as student loans and scholarships, and for new school construction and financial support for existing nursing schools.

In contrast, the number of licensed practical nurses and nurses' aides each rose by approximately one-fifth. Aides had declined by about 6 percent in hospitals largely because of the closing of many of these facilities that had provided long-term care. However, the number of aides in convalescent institutions increased by 93 percent.

Therapists were among the professional health occupations that grew more rapidly than total employment in the health services industry. This group roughly doubled in number between 1971 and 1979 as the result of funding for new rehabilitation programs for the disabled as well as growth in established programs. The increased employment was divided about evenly between hospitals and other health facilities.

The growth in demand for lower skilled workers, such as food service and laundry workers, slowed as a result of the trend toward treating many long-term patients through home-health services or outpatient clinics. The proportion of the industry's work force in food service, laundry, and housekeeping occupations decreased from 13 to 10 percent during the 1970's.

Clerical workers nearly doubled in number during the decade, as more of the "office" work of the industry was shifted from those providing medical services to secretaries, medical records clerks, and other clerical employees.

Self-employment in the health industry

Self-employed workers are an important, albeit relatively small, segment of the industry's work force (352,000 or 5.3 percent in 1979). In contrast to an 11-percent increase in the number of all self-employed workers from 1971 to 1979, the number in the health industry was about the same in both years. The proportion of all physicians who were self-employed dropped from approximately one-half to one-third, while that of dentists decreased from nine-tenths to two-thirds. To some extent the rapid growth in wage-and-salary employment in some professional health service occupations represented the incorporation of professional practices for tax benefits. For many such professionals the change was in accounting practices, not in employment status.

Physicians (40 percent) and dentists (20 percent) accounted for about the same proportions of all self-employed persons in the industry throughout the decade. The remainder of the self-employed was made up

of principally registered nurses on private duty, nurse practitioners, private-duty nurses' aides, chiropractors, health technologists in private medical research, and to a lesser degree pharmacists,²⁰ dietitians, psychologists, therapists, medical social workers, and some convalescent institution proprietors.

Women and black workers

In contrast to the overall work force, women make up the majority of workers in the health services industry, reflecting that occupations in this industry—nursing being a primary example—traditionally have been dominated by women. Even though the female proportion of the national work force increased during the 1970's (from about 37 to 42 percent), their proportion of health industry employment remained much higher, nearly 75 percent.

Women's share of all professional health workers, including registered nurses, rose from about 60 to 65 percent during the decade. Their share of all physicians, dentists, and practitioners was 9 percent in 1971, 12 percent in 1979. Among these professionals under age 35 in 1979, women accounted for almost 20 percent.

The ratio of men to women in the health industry in 1979 was nearly the reverse among the self-employed as for the wage-and-salary work force. However, women's share of the self-employed rose from about 20 percent in 1971 to 25 percent in 1979.

Convalescent institutions employ an overwhelming majority of women—nearly 9 of 10 were female employees in 1979. In hospitals, clinics, medical laboratories, and group health associations, about three-quarters of the employees were women.

Black workers, who made up about 10 percent of all workers throughout the decade, also are overrepresented among health service employees. However, the proportion of all health industry employees who were black, decreased slightly over the decade, from about 15 to 13 percent. This was largely because of a proportional decline in their employment in hospitals, where their fraction of the work force went from 18 to 15 percent.

Throughout the period, few blacks worked in physicians' and dentists' offices. No more than 5 percent of employees in these offices were black in any year in the 1970's. Of all physicians and dentists, blacks accounted for less than 3 percent both in 1971 and 1979.

However, blacks, especially men, increased their share of employment in the "other health services" group. For all black workers the proportion of employment in these facilities rose from about 8 percent in May 1971 to 12 percent in May 1979. Black men increased their share of all men in this type of employment from 5 to 14 percent over the same period. For black women, most of the employment increases were in the nonprofessional health occupations. Black men became a little

more numerous among the technical health occupations.

Weekly earnings

Historically, the earnings of wage-and-salary workers in the health services industry have been well below those in the overall work force.²¹ In 1978, usual median weekly earnings of health service employees working full time were \$180,²² or 81 percent that of all full-time workers. The gap had narrowed slightly since 1973. (See table 3.)

Full-time hospital employees were among the highest paid workers in the industry, with usual earnings of about \$195 per week, on average, in 1978. Since 1973, their earnings had increased by 50 percent, compared with 40 percent for all-industry wage-and-salary workers, and 44 percent for wage-and-salary workers in the health industry.

An increase in union coverage of hospital employees, from 12 to 22 percent, especially following extension of the National Labor Relations Act to workers in non-profit hospitals in 1974, as well as an increase in the proportion of professional and technical workers, contributed to the relatively rapid growth in the earnings of hospital employees.²³

Convalescent institution employees had lower earnings than other health workers. Their usual median weekly earnings of \$127 in 1978 represented less than three-fifths that of all workers. The lower proportion of health professionals and higher proportion of service workers contributed to the lower earnings in this segment. In addition, average earnings of workers in several occupations, including registered nurses, health administrators, clerical workers, and nurses' aides, were lower in convalescent institutions than in hospitals.

Persons employed in the "other health services" group were the most highly paid wage-and-salary workers in the industry. Their median weekly earnings throughout most of the 1970's were about equal to those of the overall work force. These higher earnings

are greatly the result of the higher earnings of some of the professional groups employed in this group compared with those of their counterparts in the rest of the health industry.

Usual median weekly earnings of physicians' employed in physicians' offices, approximately \$972 in 1978, were the highest of any occupational group in the industry, although they showed little increase from their 1974 level of about \$966. These data relate only to the wage-and-salary portions of the earnings, of physicians employed in physicians' offices. All other earnings, such as salaries from hospitals and self-employed earnings, are excluded.

The dominance of women in the industry may be one reason for the lower median earnings of health service workers. Throughout industry, women earn less, on average, than men in equivalent occupations.²⁴ In the health industry in 1978, women employed full time as wage-and-salary workers earned approximately \$168 per week, on average, whereas their male counterparts earned \$241 per week. Women employed as health therapists and registered nurses earned about 85 percent of the weekly earnings of men in these occupations. The same earnings ratio applied to licensed practical nurses, nurses' aides, and nonprofessional health service workers.

Work schedules

Average weekly hours of health industry employees were shorter than the average for all wage-and-salary workers. (See table 4.) The relationship showed little variation over the decade. Full-time hospital employees, for example, reported working an average workweek of 40.8 hours in May 1979 compared with 42.6 hours for all full-time wage-and-salary workers. Comparable figures for 1970 were 41.0 hours (hospital workers) and 42.8 hours (all wage-and-salary workers). Health workers in nonhospital facilities who worked full time averaged 41.8 hours in 1979, up slightly from 40.6 hours in

Table 3. Median usual weekly earnings for full-time, wage-and-salary workers in the health services industry, by segment, May 1970 to May 1978

Year	All full-time, wage-and-salary workers	Health services industry					
		Total	Hospitals	Convalescent institutions	Physicians' offices	Dentists' offices	Other ¹
1970	\$131	N.A.	\$108	N.A.	N.A.	N.A.	\$98 ²
1971	139	N.A.	114	N.A.	N.A.	N.A.	104 ²
1972	144	N.A.	123	N.A.	N.A.	N.A.	112 ²
1973	158	\$125	130	\$91	\$122	\$99	162
1974	168	135	142	92	127	116	169
1975	183	148	154	96	140	125	179
1976	194	159	172	109	156	128	191
1977	204	168	179	120	161	151	205
1978	221	180	195	127	174	162	205

¹ Includes earnings in nonhospital clinics, medical and dental laboratories, nonphysician practitioner's offices, and other health services, not elsewhere classified.

² Represents the sum of persons at work in convalescent institutions, physicians' and den-

tists' offices, and in other health services not elsewhere classified.

N.A. = Not available separately.

Table 4. Usual weekly hours of work for wage-and-salary workers in the health services industry, by segment, May 1971 and May 1979

Year and industry segment	Number of workers (in thousands)	Percent distribution									Average weekly hours	
		Total	Part time			Full time					Total workers	Workers on full-time schedules
			1 to 14 hours	15 to 29 hours	30 to 34 hours	35 to 39 hours	40 hours	41 to 48 hours	49 to 59 hours	60 hours or more		
1971												
All industries	64,788	100	5	10	6	8	46	12	8	5	38.9	42.8
Health services, total	4,060	100	5	14	8	6	56	7	2	3	...	...
Hospitals	2,734	100	3	13	7	4	61	8	2	3	37.2	40.6
Medical, except hospital	1,326	100	8	14	10	9	47	6	3	2	38.1	40.9
1979												
All industries	81,075	100	5	11	7	8	45	11	9	6	38.7	42.6
Health services, total	6,040	100	4	15	8	8	50	7	4	4	...	...
Hospitals	3,573	100	3	14	7	6	55	8	3	3	37.4	40.8
Medical, except hospital	2,467	100	6	18	10	10	42	6	4	5	35.9	41.8

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

1970. The latter was probably a function of increased proportion of physicians and dentists among the totals.

The work schedules of employees in the health service industry who held one full-time job varied little by occupation, with the exception of physicians who averaged about 54 hours per week in 1979 (56 hours for men and 44 hours for women). Among registered nurses, health technologists, and nonprofessional health workers, average weekly hours were within less than 1 hour of 41 hours per week, with little difference between men and women.

Usual workweeks of fewer than 5 days were reported by a greater proportion of full-time nonhospital health workers (7.3 percent) in May 1979 than the average for all industries (2.0 percent). A smaller than average proportion (8.5 versus 12.6 percent) reported usual workweeks in excess of 5 days. However, full-time hospital employees were less likely to stray from the 5-day standard. Only 2.2 percent of these employees usually worked fewer than 5 days per week; 7 percent usually worked greater than a 5-day week. These figures compare to 2.2 and 14.3 percent for all workers.²⁵

The health industry had a relatively high proportion of part-time workers throughout the decade. While the ratio of part-time workers to all workers in the total work force rose from 1 in 8 to 1 in 7, that in the health services industry remained 1 in 5. The use of part-time workers in the nonhospital segment of the industry was particularly high—about one-fourth of all workers.

Dual jobholding is common among some health service occupations. Many physicians, for example, combine a private practice with a wage-and-salary job in a hospital or clinic. Other health employees work two wage-and-salary jobs or more in different facilities, such as nurses who provide on-call services to health facilities. The average workweeks of many of these dual jobholding workers are longer than those of single jobholders.

Total weekly hours worked by dual jobholding men whose primary jobs were in the nonhospital sector of

the health industry were 62 hours in 1979. Those whose primary jobs were in hospitals worked an average of 53 hours per week at both jobs combined.

Although the dual jobholding rate among women in professional health occupations (4.5 percent) was higher than for all women (3.5 percent) in 1979, their rate was well below that of men. This reflects in part the smaller proportions of physicians in their ranks.

Because of the need for round-the-clock provision of hospital services, about a quarter of the full-time employees in this segment of the health industry worked schedules in other than daytime hours. This compares with approximately 16 percent of all full-time nonfarm wage-and-salary workers who worked shift schedules, and about the same percent of nonhospital health industry employees. The proportions are nearly identical for every year that data on shifts are available, 1973-78. Among nonprofessional health service workers the proportion of shift workers was 36 percent.²⁶

Absences present problems

Although absence rates have not increased in recent years, the increasing skill levels of the workers providing health services, as well as their life and death responsibilities, has made substitution of absent workers a more difficult task for health managers.

According to Bernhard Hoffman, director of personnel at the Henry Ford Hospital in Detroit:

"At one point limited substitution of skills applied only to the professional medical staff, but as certification and registration have increased, [that is, expanded into semiprofessional and technical occupations], substitution [has] become almost impossible in any of the health professions that involve skill."²⁷

The percent of full-time workers with an absence and the percent of total time lost were higher in the health industry than in the total wage-and-salary work force. About 8.2 percent of full-time health industry workers lost some time from their workweek during May 1979, as a result of illnesses, injuries, and miscellaneous per-

sonal reasons. This compares with 6.7 percent of both nonfarm wage-and-salary workers, as well as all service industry workers, who had lost some worktime during the week. These rates were almost unchanged throughout the decade.

Time lost because of absences in the health industry accounted for about 4.3 percent of their total usual hours worked, while the time lost by all wage-and-salary workers equaled 3.4 percent of their total usual hours.

Relatively higher absence rates in the health industry are largely a reflection of its greater proportion of women employees, who generally have higher such rates than men. The percent of all full-time, wage-and-salary women with one absence or more during May 1979 was 8.6 percent, compared with 5.5 percent for all men.²⁸

In all industries, the incidence of absence and the total time lost also varies greatly by occupational group. Among most full-time professional wage-and-salary workers in the health industry, absence rates are lower than among nonprofessionals. However, among registered nurses absences are higher than the average for the total wage-and-salary work force, and higher than those of elementary and secondary schoolteachers, an occupational group whose educational requirements and sex distributions are about comparable to those of registered nurses.

Fewer physicians reported some time lost during the week in May 1979 than any other group, 3.1 percent, followed by technicians, 4.4 percent, and registered nurses, 7.6 percent. Full-time, non-professional health workers reported the highest incidence of absence, 11.6 percent.

Combined hours lost to the industry by absent workers, as would be expected, followed the same occupa-

tional pattern. Total time lost to the wage-and-salary industry by absent full-time physicians equaled 1.2 percent of the usual hours worked per week by full-time, wage-and-salary physicians in 1979—that of technicians was 4.4 percent. The absences of registered nurses decreased total usual hours worked by all full-time registered nurses by 6.7 percent.

Job tenure, the length of time a person remains at one job, was lower, on average, among men employed in the health services industry (3.6 years) than for all men (4.5 years) in January 1978.²⁹ However, among men in professional health occupations average tenure was 5.5 years; it was 2.7 years for men in nonprofessional health jobs. Among women, average tenure was about the same in the health industry (2.7 years) as in all industries (2.6 years). Again, it was higher among professional (3.5 years) than nonprofessional (1.6 years) occupations.

BECAUSE OF INCREASED DEMAND for health services the industry work force increased greatly during the 1970's. Shifts in the demand for services among the various industry segments yielded a change in the proportional distribution of workers in those segments, as well as the occupational compositions of each segment. Advances in medical technology and a reorganization of the delivery of some health care added to the changes in occupational distribution in the overall industry.

The earnings of wage-and-salary health workers did not generally reflect the dramatic rise in demand for their services. Although, in the hospital segment earnings rose more rapidly than those for all wage-and-salary workers, among workers in clinics, laboratories, and group health associations the increase in weekly earnings kept pace with the national average. □

— FOOTNOTES —

¹ Census Industrial Codes: 828 (physicians' offices), 829 (dentists' offices), 837 (chiropractors' offices), 838 (hospitals), 839 (convalescent institutions), 847 (other health practitioners' offices, not elsewhere classified), and 848 (other health services, not elsewhere classified). "Other health services" include clinics not associated with hospitals, medical and dental laboratories, group health associations, and health maintenance organizations.

² The Current Population Survey is a monthly survey of households conducted for the Bureau of Labor Statistics by the Bureau of the Census. For more information on the survey see *The Current Population Survey: Design and Methodology* (U.S. Bureau of the Census, 1979), Technical Paper 40.

³ The Bureau of Labor Statistics also publishes employment and earnings data on wage-and-salary workers employed in hospitals in about 20 major metropolitan areas of the country, from its Industry Wage Surveys, as well as employment data for all private health industry workers, and earnings and hours data for nonsupervisory production workers in the health industry, from its monthly survey of establishments, the Current Employment Survey. In May 1979 employment in these private health industry establishments totaled 4,726,000. Excluding Government workers from the Current Population Survey total for May 1979 data yields a private health industry work force of about 4,722,000. For more information see *Industry*

Wage Survey: Hospitals, Bulletin 2069 (Bureau of Labor Statistics, 1980).

⁴ Roger I. Lee and Lewis W. Jones, *The Fundamentals of Good Medical Care* (Chicago, University of Chicago Press, 1933).

⁵ See "America's Health Status, Needs, and Resources," *Building America's Health* (President's Committee on Health Needs of the Nation, 1953).

⁶ *Physicians for a Growing America: Report of the Surgeon General's Consultant Group on Medical Education* (U.S. Department of Health, Education, and Welfare, 1959).

⁷ See, for example, Selma J. Mushkin, *Health as an Investment*, Advisory Commission on Intergovernmental Relations, Washington, D.C., 1962, and Michael Grossman, "On the Concept of Health Capital and the Demand for Health," *Journal of Political Economy*, March–April 1972, pp. 223–55.

⁸ See *Health, United States 1979* (U.S. Department of Health, Education, and Welfare, Public Health Service, 1980) p. 237.

⁹ The proportion of total personal health care expenditures paid by third party agencies rose from 56 to 64 percent, for physicians' services between 1970 and 1979; from 10 to 27 percent, for dentists' services; and from 49 to 58 percent, for nursing home services. Third party payments accounted for about 90 percent of personal health care expenditures for hospital care throughout the decade. See Robert

M. Gibson, "National Health Expenditures, 1979," *Health Care Financing Review*, Vol. 2, No. 1, 1980.

¹⁰ Ibid.

¹¹ See *Health, United States 1979*, p. 180.

¹² Ibid.

¹³ See David A. Stockman and W. Philip Graham, "Hospital Cost Containment," *New Directions for Public Health* (San Francisco, Institute for Contemporary Studies, 1980), p. 121.

¹⁴ *Health, United States 1979*, p. 208.

¹⁵ See Charles Hynes, "The Regulation of Nursing Homes: A Case Study," *Regulating Health Care, The Struggle for Control* (New York, Academy of Political Science, 1980), pp. 126-36.

¹⁶ See *Medicare—Use of Home Health Services: 1978* (U.S. Department of Health, Education, and Welfare, Health Care Financing Administration, 1980).

¹⁷ According to the American Dental Association 1975 Survey of Dental Practice, self-employed dentists in solo practice employed 2.4 assistants, on average, while dental group practices with two dentists employed 5.7 assistants per practice; three dentists, 7.9 assistants; and four dentists, 12.3 assistants.

¹⁸ Occupational data for 1970 are not strictly comparable to those for 1971 forward as a result of changes in the occupational classification system for the 1970 Census of Population that were introduced into the Current Population Survey in January.

¹⁹ Stockman and Graham, "Hospital Cost Containment," p. 119.

²⁰ Most pharmacists are classified as employed in the retail trade industry as opposed to the health industry. Of the approximately 214,000 total pharmacists in May 1979, 70,000 were classified as being in the health industry. About 83 percent of these were self-employed.

²¹ *Employment and Earnings* (U.S. Bureau of Labor Statistics), various issues.

²² Comparable weekly earnings data for the health services industry workers shown in this report are not available beyond 1978 because of changes in the Current Population Survey earnings series introduced in 1979. For more information on 1979 earnings see Earl F. Mellor, "Technical Description of the Quarterly Data on Weekly Earnings from the Current Population Survey" (U.S. Bureau of Labor Statistics, July 1980).

²³ Unpublished Current Population Survey data for May 1973-78. For more information on the effect of the 1974 act on union organizing in the health industry see Richard U. Miller, "Hospitals," *Collective Bargaining: Contemporary American Experience* (Madison, Wis. Industrial Relation Research Association, 1980), pp. 373-433, and *Impact of 1974 Health Care Amendments to the NLRA on Collective Bargaining in the Health Care Industry* (U.S. Department of Labor and Federal Mediation and Conciliation Service, 1979).

²⁴ See, for example, Nancy F. Rytina, "Occupational segregation and earnings differences by sex," *Monthly Labor Review*, January 1981, pp. 49-53.

²⁵ See Janice N. Hedges, "The workweek in 1979, fewer but longer workdays," *Monthly Labor Review*, August 1980, p. 31.

²⁶ Janice N. Hedges and Edward S. Sekscenski, "Workers on late shifts in a changing economy," *Monthly Labor Review*, September 1979, pp. 17, 18.

²⁷ Bernhard Hoffman, *Reducing Worker Absenteeism* (Ann Arbor, Mich., The University of Michigan, Institute of Science and Technology, 1979), pp. 59-72.

²⁸ For more information on absences of U.S. workers, see Daniel E. Taylor, "Absent workers and lost hours, May 1978," *Monthly Labor Review*, August 1979, pp. 49-53.

²⁹ For more information on job tenure see Edward S. Sekscenski, "Job tenure declines as work force changes," *Monthly Labor Review*, December 1979, pp. 48-50.

A note on communications

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

Disability payments stabilizing after era of accelerating growth

Programs' share of GNP was constant at 2.2 percent in 1975-77, with claims dropping from peak rates of the mid-1970's; since 1950, payments under both private and Government plans had mushroomed

JONATHAN SUNSHINE

Considerable evidence since 1975 suggests that the previous rapid expansion of disability cash benefits has ceased. Overall, these programs' share of the Gross National Product (GNP) was constant rather than growing between 1975 and 1977, the latest year for which comprehensive data are available. (See table 1.)

The growth rate of real per capita benefits, one of the two factors that determine the growth of total expenditures, seems to have slackened during this period. (See table 2.) One likely cause is the increasing number of Federal programs in which benefit adjustments are provided through systems of automatic indexing tied to wages or prices. Social Security Disability Insurance (DI), for example, is tied to the Consumer Price Index. These adjustment mechanisms have increasingly replaced special, individually legislated adjustments which often provided increases greater than those in wages or prices.

Regarding numbers of beneficiaries, the other factor that determines total expenditures, most evidence also points to a recent slackening of growth. Claims rates are down in many major programs. For example, DI claims rates have declined substantially from their 1974 peak, which had been caused by greater public awareness of the program. The decline was a generally continuing phenomenon over the subsequent five years, and

the annual claims rate is now 13 per 1,000 insured workers, as compared to the 1974 peak of 16 per 1,000. Likewise, Federal Civil Service disability retirement awards, after increasing from 8 per 1,000 insured workers in 1965 to a peak of 12 per 1,000 during 1975-77, declined to 9 per 1,000 by 1979. Here, a tax law change was probably largely responsible. The change reduced the after-tax advantage of receiving disability benefits rather than regular retirement benefits. New Supplemental Security Income (SSI) disability awards have also been declining while the poverty population, one rough index of the underlying pool of possibly eligible persons, has been stable. New SSI disability awards decreased from approximately 370,000 in 1976 and 1977 to approximately 325,000 in 1979. Most dramatically, the number of DI beneficiaries, after very rapid increases since the program's inception, has remained largely constant since 1977 and has actually declined slightly since late 1978.

The growth period

In contrast, after remaining a fairly constant percentage of GNP for many years, cash payments to disabled persons began a period of rapid growth during the mid-1960's, as table 1 shows. During 1965-75, they increased from \$9.7 billion or 1.4 percent of GNP, to \$33.9 billion or 2.2 percent of GNP.

Several related developments added to the concern generated by this decade of intense growth in cash payments. For one, medical payments for the disabled were

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about twice as large as cash payments and grew as rapidly.¹ Second, the Federal share of cash disability payments rose significantly, from 55 percent in 1965 to 61 percent in 1975, as table 1 indicates. Third, the number of beneficiaries of some of the largest programs grew dramatically. (See table 3.) For example, beneficiaries of DI, the largest single disability program in the Nation, increased by 150 percent, from 1 million to 2.5 million, during 1965-75, while the covered workforce grew by only 55 percent. Simultaneously, Federal Civil Service disability retirement rolls grew by nearly 75 percent, while the covered workforce remained essentially constant. And the number of persons on the disability component of the welfare rolls increased by 140 percent during 1963-73 despite a substantial decline in the poverty population.² Fourth, the proportion of the population reporting itself as disabled grew substantially. For example, National Center for Health Statistics (NCHS) data show that between 1969 and 1978 the proportion of men age 45-64 reporting themselves unable to work increased from 72 per 1,000 to 101 per 1,000, an increase of 40 percent.³

Such developments led to a number of public policy responses. The responses ranged from including disability as a major item on the agenda of the President's Commission on Pension Policy (1979-81), to passing 1980 amendments to the Social Security Act, intended to increase incentives for DI beneficiaries to return to work. These amendments in some cases reduced allowable DI cash benefits.

Because of concerns about the recent rapid growth in cash disability payments, the analyses reported in this article were undertaken to identify the underlying causes. Because concern for the future is as serious as concern about what has happened to date, this study also examines the most recent trends in disability programs as a basis for judging both the current situation and the probable future course of disability payments.⁴

Two sources of increase

Purely as a matter of arithmetic, increased disability expenditures must stem from either increased per capita benefits, increased numbers of beneficiaries, or a combination of the two.

Per capita benefits. Increased real per capita benefits have been an important source of the growth in disability cash payments. Table 2 shows the annual growth rate of real per capita benefits in programs for which data are available. It also provides comparison series on workers' real spendable earnings and real per capita GNP.⁵ Per capita benefits have generally grown more rapidly than earnings, with the disparity being particularly great in the first half of the 1970's. As a rough estimate, disability cash payments in 1975 would have been less than three-fourths of their actual level had per capita benefits merely kept pace with, rather than exceeded, the growth in earnings since 1950. However, two points about the growth in per capita benefits should be noted. For one, benefit increases have usually

Table 1. Disability transfer payments in millions of dollars, 1950-77

Program	1950	1955	1960	1965	1970	1975	1977	Program	1950	1955	1960	1965	1970	1975	1977
Grand total	3,094	4,672	6,603	9,729	17,140	33,865	42,230	Workplace-based short-term disability							
Grand total as percentage of GNP	1.1	1.2	1.3	1.4	1.7	2.2	2.2		Subtotal	932	1,629	2,296	3,207	5,695	8,166	9,758
Work-caused disability								Private sector short-term disability insurance (including State-mandated coverage)	293	551	810	1,037	1,887	2,548	2,926
Subtotal	360	521	755	1,074	1,751	3,822	4,946	Private sector sick leave	180	273	400	566	1,066	1,789	2,357
State workers compensation	\$347	\$503	\$730	\$1,038	\$1,590	\$2,855	\$3,805	Federal civilian employees sick leave	172	269	348	488	786	1,019	1,343
Federal Employees Compensation Act (FECA)	13	18	25	36	84	375	570	State and local government employees sick leave	143	276	478	776	1,416	2,220	2,522
Black Lung	0	0	0	0	77	592	571	Military sick leave	144 ²	260 ²	260 ²	340 ²	540 ²	590 ²	610 ²
Workplace-based long-term disability								Non-workplace-based, public assistance type							
Subtotal	1,516	1,994	3,010	4,749	8,231	17,911	22,747	Subtotal	286	528	542	699	1,463	3,966	4,779
Social security disability insurance	0	0	568	1,573	3,067	8,414	11,463	Welfare for disabled and blind, later SSI	61	203	322	494	1,073	3,276	3,856
Federal civilian employees disability retirement	41	71	152	279	518	1,307	1,847	Veterans pensions	225 ³	325 ²	220 ²	205 ²	390 ²	690 ²	923 ²
Military disability retirement	149	209	244	318	538	906	1,023	In percent							
Veterans compensation	1,175	1,440	1,570	1,765	2,555	4,010	4,794	Composition of total							
State and local government employees disability retirement	24	55	95	155	255	490	630	Federal	65	60	56	55	54	61	63
Private sector long-term disability insurance	(¹)	(¹)	(¹)	7 ³	115 ³	500 ²	540 ²	State and local	18	20	22	23	22	19	19
Private sector disability retirement	50 ³	116 ³	234 ³	503 ³	964 ³	1,881 ³	1,995 ³	Private	17	20	22	22	24	20	19
Railroad programs	77	103	147	149	219	403	455								

¹ Less than \$500,000.

² Figure approximate.

³ Figure highly approximate.

SOURCE: Jonathan Sunshine, "Disability", U.S. Office of Management and Budget Staff Technical Paper, 1979, pp. 29-30, and updates thereto.

Table 2. Rate of growth of real per capita disability benefits, 1950-77 (compound annual growth rate of constant dollar amounts)

[In percent]

Program	1950-60	1960-70	1970-75	1970-77
Social Security Disability Insurance	...	2.3	3.5	3.2
Federal civilian employees disability retirement	2.5	3.7	5.5	3.8
Military disability retirement	-1.9	0.3	1.9	1.8
Veterans compensation	0.6	1.9	1.4	2.6
State and local government employees disability retirement	6.5	2.7	2.6	-2.4
Railroad programs	2.0	1.5	4.3	1.2
Welfare for the disabled and blind, later SSI	4.1	1.7	1.9	1.0
Comparison				
Average nonsupervisory worker's spendable earnings	1.3	0.9	0.1	1.8
U.S. per capita GNP	1.9	2.7	1.5	4.5

SOURCE: Jonathan Sunshine, "Disability", U.S. Office of Management and Budget Staff Technical Paper, 1979, p. 41, and updates thereto.

been the deliberate result of legislation. Examples include the increase in veterans' compensation enacted in each of the last several years and the 20 percent increase in social security benefits enacted in 1972. Thus, most of the increase in per capita benefits should be recognized to be the result of deliberate policy decisions that benefits should increase. The second point is that the latest available data, as the last column of table 2 shows, are suggestive of a recent decrease in the growth rate disparity between wages and per capita benefits.

Thus, while growth in per capita disability benefits is clearly a major source of growth in total payments, analysis does not support any initial impression that the increase is both unintended and accelerating.

Number of beneficiaries. As already noted, the data show that the number of beneficiaries of some major programs has increased much more rapidly than the population the programs cover.

However, for at least two reasons, such findings do not necessarily reflect an underlying change. For one, they could conceivably reflect program start-up phenomena, which would be expected to run for many years. The program start-up possibility means that rates of influx of new beneficiaries are the best figures to examine in order to ascertain whether there has been a genuine, underlying change in the use of programs covering permanent disability. Second, the findings could reflect aging of the covered population, because the incidence of disability rises sharply with age. For example, Social Security Administration data from a 1972 survey show that the fraction of the population reporting itself unable to work either regularly or at all ranges from 2.2 percent among persons age 20-34 to 19 percent among those age 55-64. Because of the possible confounding effects of aging, data for each age and sex group should be examined separately. For DI and Federal Civil Ser-

vice retirement, the two programs for which such analyses have been undertaken, the rate of disability awards for each age and sex group about doubled during 1964-74.⁶ Thus, there clearly has been a genuine increase in the use of disability programs.

The central question—why the increase?

Health. In looking for the sources of this increased program use, the natural first question is whether people's health has deteriorated. If so, increased use of programs would be a simple reflection of poorer health status.

Evidence on this point is indirect, although generally negative. Mortality rates are down and life expectancy at various ages is up, suggesting that illnesses underlying disability probably have decreased also. But no hard data based on medical examinations are currently available.⁷

Moreover, it is possible that the improved mortality statistics reflect, in part, that people who formerly

Table 3. Disability transfer payment beneficiaries in thousands, 1950-77

Program	1950	1955	1960	1965	1970	1975	1977
Grand total ³	(⁵)	(⁵)	(⁵)	(⁵)	(⁵)	10,200 ⁴	10,900 ⁴
Work-caused disability							
Subtotal ³	(⁵)	(⁵)	(⁵)	(⁵)	(⁵)	500 ⁵	475 ⁵
State workers compensation	(⁵)	(⁵)	(⁵)	(⁵)	(⁵)	1,000 ²	(⁵)
Federal Employees Compensation Act (FECA)	15 ⁴	15 ⁴	15 ⁴	20 ⁴	25 ⁴	45	46 ⁴
Black Lung	0	0	0	0	25	333	298
Workplace-based long-term disability							
Subtotal ³	2,269	2,492	3,065	3,779	4,708 ⁴	6,285 ⁴	6,700 ⁴
Social security disability insurance	0	0	445	988	1,493	2,489	2,834
Federal civilian employees disability retirement	43	61	102	149	185	258	301
Military disability retirement	56	86	90	108	148	163	158
Veterans compensation	1,990	2,076	2,027	1,992	2,091	2,220	2,244
State and local government employees disability retirement	32	42	55	69	86	128	152
Private sector long-term disability insurance	(⁵)	(⁵)	(⁵)	(⁵)	40	100	110 ⁵
Private sector disability retirement	72 ⁵	140 ⁵	239 ⁵	371 ⁵	570 ⁵	825 ⁵	800 ⁵
Railroad programs	76	87	97	102	95	102	100
Workplace-based short-term disability¹							
Subtotal ³	(⁵)	(⁵)	(⁵)	(⁵)	(⁵)	1,000 ²	1,050 ⁵
Non-workplace-based, public assistance-type							
Subtotal ³	416 ⁵	685	695	893	1,324	2,454	2,712
SSI—Disability and blindness	166	345	476	642	1,016	2,024	2,207
Veterans pensions	250 ⁵	340 ⁴	219	197	308	430	505

¹ Figures available only for subtotal.

² Total beneficiaries during the year; all other figures refer to beneficiaries on the rolls at a single point in time.

³ Because programs overlap, totals generally include some double counting.

⁴ Figure approximate.

⁵ Figure highly approximate or, if no figure presented, unknown.

SOURCE: Jonathan Sunshine, "Disability", U.S. Office of Management and Budget Staff Technical Paper, 1979, pp. 31, and updates thereto.

would have died, but now survive, are in poor health and seriously impaired condition. These survivors could be a source of increased disability in the U.S. population. Fortunately, a good test of this possibility is available. Heart disease is the one major, chronic, disabling, killer disease which has shown a clear and substantial decline in mortality. The age-adjusted death rate from heart disease, per 100,000, declined from 307 in 1950, to 286 in 1960, to 220 in 1975, and is still falling rapidly. Hence, if there has been a genuine increase in ill health underlying disability, it should be composed in substantial part of persons who 20 or 30 years ago would have died of heart disease, but who now survive and are disabled. Consequently, there should be a large increase in the percentage of the disabled whose condition is due to heart disease. The data, however, do not show such an increase. For example, NCHS data for 1969-76, a period when reported disability was rising rapidly, show that of persons age 45-64 and unable to carry on their usual major activities, the proportion incapacitated by heart disease remained stable at 20 percent among men and 10-15 percent among women. In addition, data from the Federal Civil Service retirement program show that the proportion of new disability awardees having cardiovascular disease declined from more than 40 percent in 1960 to 30 percent in the mid-1970's. During the same period, the rate of new disability retirement awards per 1,000 covered employees increased by more than 50 percent in this program, and the general heart disease death rate decreased by nearly 25 percent.

As the expected increase in disability from cardiovascular disease is not to be found, it thus seems extremely improbable that the increased use of disability programs results from poorer health.

An important distinction. What, then, are the causes? To understand them, it is necessary to draw a distinction, as specialists in the field of disability generally do, between impairment and disability. Impairment, the medical concept, means a physiological or mental loss or other abnormality. Disability, the social concept, means a health-related inability or limitation in performing roles and tasks expected of an individual in a social environment. The critical point is that, contrary to common assumptions, there is no one-to-one correlation between impairment and disability. For example, one person who loses the use of his legs may be unable to work, but another such person served for 13 years as President of the United States.

Among the factors that intervene between impairment and resulting disability for work are education, work experience, economic opportunity, and social and personal attitudes. Thus, someone with little education and literacy is likely to be employed in manual labor, which cannot be performed by a person having major

physical impairments. On the other hand, jobs of persons with more education include and are probably dominated by chairbound posts, which often could be performed from a wheelchair, not only from a conventional chair. Factors intervening between impairment and disability make it possible for disability, the social phenomenon, to increase, while impairments, the underlying medical problem, do not.

Where is the answer found?

There is abundant evidence that two types of factors, economic and social, have played a major role in the increased use of disability programs.

Economic. Economic explanations of the increase hold that use of programs will depend upon how attractive the programs are, in a pecuniary sense, relative to alternatives. A number of analyses have been conducted using this framework and two types of economic variables have been stressed.⁸ The first compares program benefits to earnings, providing an indication of how much income is offered by disability programs relative to the income available from the alternative of working. The replacement ratio (ratio of program benefits to past earnings) is the most commonly used such variable. The second type of variable, the unemployment rate, serves as a measure of the availability of the work option. Generally, economic analyses find both types of variable quite significant in explaining how many persons draw payments from disability programs. They find that the higher the benefits relative to earnings, and the higher the unemployment rate, the more people will make use of the programs. There is some tendency to find that the first type of variable, that which measures program benefits relative to earnings, is the most important. Studies from the private insurance industry, although simpler than the multivariable econometric analyses, show similar results.⁹ Claims rates are almost one and one half times as high when replacement ratios are about 70 percent than when they are about 50 percent. And the increase in the claimed duration of disability episodes is even more dramatic.

Because of the economic effect of replacement ratios, increased per capita benefits raise disability expenditures in two ways, both directly through higher expenditures per beneficiary, and indirectly by inducing greater program utilization.

Social. Social factors have also played a very important role in the increased use of disability programs. Basically, the social explanation of the increase holds that it is becoming more socially acceptable to be disabled and that much of the growth in program use can be explained by subjective changes of attitudes and behavior, not by changes in "objective" circumstances, be they medical or economic. Three lines of evidence sug-

gest that this explanation indeed plays an important part in the changes that have occurred.

Three lines of evidence

More programs. First, American society has created new disability programs. Major examples include DI, created in 1956; Black Lung, created in 1969; the disability component of public assistance, begun late in 1950 and much expanded when federalized as Supplemental Security Income in 1974; and private long-term disability insurance, which was almost negligible as late as 1960. Although these four programs did not exist at the beginning of 1950, when this study began, by 1977 they paid out \$16.4 billion per year, almost 40 percent of total disability cash payments. Thus, if society had not invented and funded new programs for disability since 1950, disability spending in 1977 would have been barely 60 percent as high as it was. Moreover, this figure is conservative because it neglects growth arising from the broadening of programs already in existence in 1950.

Changing attitudes. Second, the data that show more people identifying themselves as disabled, although impairments do not appear to have increased, suggest a private, individual parallel to the public, group change embodied in the creation of new programs. As more and more people label themselves "disabled," claims and awards under disability programs increase. This does not represent malingering unless one regards program definitions and operating procedures as inadequate; adequate program standards would reject unjustified claims. Rather, more persons who in previous years would have worked or attempted to, despite having disabilities which would have met program standards, now file disability claims and become beneficiaries.

The increase in the percentage of persons who identify themselves as disabled is occurring at all educational levels. The following NCHS data show the increasing percentage of men age 45-64 reporting themselves unable to perform their usual major activities:

Year	Less than high school	High school graduate	More than high school
1969	10.6	4.0	2.8
1974	15.1	5.4	3.5
1978	17.1	7.4	3.9

Awareness of programs. Third, information flows also affect benefit claims. Substantial portions of the disabled population have been unaware of disability programs. For example, in 1972, 16 years after the advent of DI, almost half of persons unable to work regularly or at all were unaware of the program. Moreover, a quarter of all persons this seriously disabled were unaware of any government disability program. Knowledge of disability programs among seriously disabled persons was scarcely better than among the nondisabled.¹⁰

The dissemination of information beyond the limited base represented by these figures has probably contributed to increased program use. The clearest example occurred in 1974 when welfare for the disabled and blind was federalized. The new Federal program, SSI, was thereafter administered by the Social Security Administration, which also administers DI. There was a sharp, temporary peak in DI claims and awards as welfare and SSI beneficiaries became more aware of DI, a program operated by the same office they now found themselves dealing with. They applied for DI in very large numbers and qualified in many cases.

In short, disability programs may have repeated the "welfare crisis" of the 1960's. In that crisis there was a dramatic increase in the number of beneficiaries, mainly reflecting a growing percentage of eligible persons filing claims. The total number of eligible persons remained relatively unchanged.

The outlook

Some recent figures on numbers of beneficiaries do not point to a cessation of rapid growth of disability expenditures. For example, Civil Service disability retirement beneficiary rolls have continued to grow. The number of beneficiaries grew by 9 percent between 1977 and 1979. Although the rate of new awards has declined in this program, it has not fallen back to a level low enough to stop the growth of the beneficiary rolls.

Despite such exceptions, the preponderance of evidence as discussed above suggests that the growth of cash payments to the disabled has slowed since 1975, and that these payments may well once again represent a stable percentage of GNP. The best prediction of their future course would also seem to be that they will remain a fairly stable proportion of GNP.

However, this prediction assumes there will be no major changes in the disability system that alter program scope, create or terminate large programs, or change benefit levels greatly from those that would be produced by indexing. In the past, as has been shown, such changes have had major effects on expenditures.

Rather than speculating on the probability of such changes, it is useful to examine a few comparisons between cash benefits on one hand, and earnings lost because of disability on the other. Unfortunately, the latest available data¹¹ relate to 1973-74 and thus probably underestimate current benefits somewhat, given more recent program expansion. However, at that time about one-fourth of those too disabled to work at all reported receiving no benefits, while about one-eighth received multiple benefits, not counting SSI. On average, men unable to work at all had about one-third of their earnings replaced by cash benefits.¹² Among men disabled to this extent, who were initially disabled between 1970 and 1972,¹³ the percentage distribution of benefits was as follows.

<i>Ratio of benefits to gross pre-disability earnings (inflation adjusted)</i>	<i>Percent of disabled persons receiving ratio of benefits</i>
0 to 36	39
More than 36 to 54	25
More than 54 to 72	12
More than 72 to 90	10
More than 90	14

Whatever one regards as the appropriate measure of inadequate or excessive benefits, these figures show that both situations often occur. Thus, from a normative standpoint, there would seem to be justification for major changes in the disability system. Such changes are potentially large enough to upset the assumptions that underlie the prediction that payments will remain a fairly steady proportion of GNP. □

— FOOTNOTES —

¹ See Monroe Berkowitz and Jeffrey Rubin, "The Costs of Disability: Estimates of Program Expenditures for Disability, 1967-1975," Rutgers University, Bureau of Disability and Health Economics Research, 1977.

² In 1974, the program was federalized; data later than 1973 are not comparable.

³ Available data on women are of little use because the question is not asked of those who report housekeeping as their primary activity.

⁴ The extended analyses upon which this paper reports are contained in Jonathan Sunshine, "Disability," U.S. Office of Management and Budget, Staff Technical Paper, 1979, and "Disability: A Comprehensive Overview of Programs, Issues, and Options for Change," President's Commission on Pension Policy Working Paper, 1981.

⁵ The workers' earnings series is a particularly good basis for comparison because most disability programs pay benefits to workers, and base those benefits on previous earnings. Also, as an approximation, if benefits and earnings grow at equal speed, all changes in the fraction of GNP going to disability benefits would be due to changing numbers of beneficiaries.

⁶ See Raymond Eck and Edwin Hustead, "Disability Experience Under the Civil Service Retirement System—1955-1974," *Journal of Occupational Medicine*, January 1976, pp. 45-50.

A better and more direct evaluation of the medical evidence should become possible in a year or two when the National Center for Health Statistics tabulates data based on medical examinations (rather than self-reporting) which will show the incidence of heart dis-

ease and other disabling medical conditions at different dates.

⁸ For example, see Monroe Berkowitz, William Johnson, and Edward Murphy, *Public Policy Toward Disability* (New York, Praeger Publishers, 1976); and Mordechai Lando, Malcolm Coate, and Ruth Kraus, "Disability Benefit Applications and the Economy," *Social Security Bulletin*, October 1979, pp. 3-10. Also see Steve Chaikind, 1979 Congressional Budget Office technical analysis paper, and John Hambor, "An Econometric Model of OASDI," Social Security Administration, Office of Research and Statistics, Studies in Income Distribution, 1979. The Lando, Coate, and Kraus paper reviews other studies.

⁹ See "Compensation Systems Available to Disabled Persons in the United States," Health Insurance Association of America, 1979.

¹⁰ Data are from the Social Security Administration 1972 Survey of Disabled and Nondisabled Adults.

¹¹ From the Social Security Administration 1974 Survey of Disabled and Nondisabled Adults.

¹² Again, peculiarities of the data collection methodology render the information on women of little use.

¹³ These newly disabled men generally are the beneficiaries of higher real replacement ratios than men disabled earlier. Reasons for the more favored status of the recently disabled include growth, over time, in the number and scope of disability programs; receipt by the recently disabled of benefits from non-permanent sources, such as workers compensation; and less time for erosion by inflation of the real value of non-indexed benefits.

Productivity trends for intercity bus carriers

During 1954–79, modest advances in technology, and more package and charter service, were offset by declining passenger demand and reduced bus speeds, resulting in a 0.4-percent rise in productivity

RICHARD B. CARNES

During 1954–1979, output per employee-hour in the class I bus industry rose an average of 0.4 percent a year, a rate significantly below those of other segments of the transportation industry.¹ Class I bus carriers provide intercity service and may also provide local or charter service. Not included are those public and private transit systems that provide urban mass transportation service and do not come under Interstate Commerce Commission (ICC) reporting requirements.²

The 0.4-percent growth in productivity resulted from a small average annual increase in industry output of 0.1 percent combined with an average annual decline in employee hours of 0.3 percent. (See table 1.) By comparison, other transportation industries for which measures are available showed productivity increases over the same period that equaled or exceeded overall productivity growth for the private nonfarm business sector of the economy. For example, productivity in air transportation, an industry which competes for public passenger traffic, rose 6.3 percent, compared with 2.1 percent for the private nonfarm business sector. (See table 2.)

Bus operations have suffered from the recent energy shortages. Longer running times between cities have resulted from the 55-mile-per-hour national speed limit.³

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Lower speeds have increased the labor time needed to drive a given distance, and have reduced productivity. However, lower speeds have also cut fuel costs. Although total transportation travel might be expected to decline because of higher fuel costs, the relative fuel efficiency of buses enhance future demand for this mode of transportation, especially for shorter distance travel.

Productivity movements were uneven over the 1954–79 period, ranging from a 9.4 percent increase in 1962 to a decline of 11.9 percent in 1975. Generally, these changes have been in response to cyclical swings in industry output. There were three distinct trend periods. During 1954–60, output per hour rose at a 1.2-percent average annual rate. Output declined at an average yearly rate of 1.3 percent and hours dropped more sharply, by 2.6 percent. From 1960 to 1966, demand for bus service increased 4.7 percent annually, but employee hours increased at only a 1.3 percent average annual rate. The more efficient utilization of equipment and facilities, which resulted from this higher demand, raised productivity at a 3.6 percent annual rate during those 6 years. Load factors and average length of haul both increased appreciably. Load factor is the percentage of capacity actually utilized.

In the third period, 1966–79, all of the measures turned down. Productivity and output fell at an annual rate of 1.4 and 2.5 percent, respectively, while employee hours dropped 1.1 percent. Output fell in all years ex-

cept 1967, 1974, and 1979. Since 1974, the beginning of the energy crisis and the year of the 55-mile-per-hour speed limit, productivity trends have been mixed, as table 1 indicates. There were sharp rises in 1974 and 1977, and a small gain in 1979. These were offset by a serious drop in 1975, and smaller declines in 1976 and 1978. More travelers rode buses in 1974 when fuel for private passenger cars became scarce. But when gasoline once again became plentiful in 1975, even at higher prices, bus travel declined drastically. Again in 1979, gas shortages in the second quarter helped boost industry output by 6.1 percent for the year and productivity by 0.4 percent.

Industry profile

The class I regulated bus industry comprises 43 intercity and 13 local carriers certified by the ICC. In 1978, these companies operated about 9,700 buses and had 34,000 employees. During that year, they moved 237 million passengers, and generated \$961 million in passenger revenue and \$175 million in freight revenue.

For most of the 15,000 communities served by intercity bus carriers, there is no other form of public transportation. Despite this, the bus passenger market has declined during the period of this study. Automom-

Table 2. Productivity comparison, private nonfarm business and selected transportation industries, 1954-79

Industry	Average annual rate of change		
	Output per employee-hour	Output	Employee-hours
Private nonfarm business	1.9	3.7	1.7
Transportation sector	2.7	2.9	.2
Petroleum pipelines ¹	7.5	5.6	-1.8
Air transportation ¹	6.3	11.0	4.5
Class I railroads	4.9	1.2	-3.5
Intercity trucking ¹	2.4	5.6	3.1
Class I bus carriers ¹ .....	.4	.1	-.3

¹ Output per employee.

obile travel represents the primary source of competition to the industry, followed by air and then train service. Expansion of charter bus and package express service has helped to offset passenger declines. (See table 3.)

Intercity bus operations have the potential to provide service over a wide area because of the national highway network. Nonstop intercity buses can operate at speeds similar to those of an automobile. And, over shorter distances buses generally provide lower cost service than air or rail travel.⁴ Most demand comes from short-haul passengers even though the average length of trip for intercity service has more than doubled from 62 miles in 1954 to 130 miles in 1979.⁵

When intercity bus service began in the early 1900's it was characterized by a large number of local and regional carriers. Startup costs were modest and there was rapid growth. By the 1930's, the industry had evolved into its present form, with fewer bus companies and with national systems operating over longer distances. These national networks were thought to facilitate through-service for passengers and improve bus and terminal utilization. During World War II, industry output increased rapidly due to rationing of auto parts and gasoline. Load factors during this period reached nearly 80 percent. Passenger-miles peaked in 1952 and did not reach that level again until 1967. Since 1954, few new intercity bus carrier operations have been authorized by the ICC. Presently, Greyhound and Trailways dominate the market.⁶

The bus industry is subject to both Federal and State regulation. There are restrictions on the entry of new firms, fares, route requirements, and service levels. Competition along routes is limited. Federal regulation has encouraged merger activity of carriers into larger national companies. Recently there has been an effort on the part of the ICC to liberalize entry controls and to provide greater carrier rate making autonomy. General deregulation of the industry, however, has not been formally introduced.

The sources of revenue for bus carriers have changed substantially since 1954 as table 3 indicates. Intercity and local passenger revenue has declined in relative

Table 1. Productivity and related indexes for class I bus carriers
[1967 = 100]

Year	Output per employee-hour	Output	Employee-hours
1954	77.4	80.5	104.0
1955	80.4	79.0	98.3
1956	81.2	78.0	96.1
1957	81.6	78.3	96.0
1958	81.9	74.0	90.3
1959	84.6	74.0	87.5
1960	83.7	75.4	90.1
1961	85.3	77.1	90.4
1962	93.3	86.2	92.4
1963	94.6	86.6	91.5
1964	95.7	90.2	94.3
1965	101.2	95.0	93.9
1966	103.4	99.2	95.9
1967	100.0	100.0	100.0
1968	98.6	97.5	98.9
1969	95.7	94.2	98.4
1970	93.4	92.5	99.0
1971	91.3	86.9	95.2
1972	93.0	83.3	89.6
1973	92.5	79.8	86.3
1974	95.9	86.5	90.2
1975	84.5	78.0	92.3
1976	81.7	75.2	92.1
1977	87.1	74.7	85.8
1978	86.8	73.7	84.9
1979 ¹	87.2	78.2	89.7
Average annual rates of change			
1954-79	0.4	0.1	-0.3
1974-79	-.9	-1.9	-1.0

¹ Preliminary.

terms while charter and package express services have shown significant growth. Charter service has expanded due to the increase in group travel and tourism, while package express service has benefited from the large distribution network provided by intercity buses.

The private automobile has been a major factor in the slow growth of intercity bus travel. The doubling of new car registrations since 1955 and the use of these cars for both personal and business trips impacted bus travel, and is expected to be the primary source of bus industry competition in the foreseeable future. Autos accounted for 89 percent of all intercity passenger-miles in 1954, and for 83 percent in 1979. Passenger-miles flown during this period increased their relative share of the market from 3 to 15 percent while both bus and rail passenger-miles declined.⁷

Employment and influences on productivity

Employment in the class I regulated bus industry declined from 39,000 in 1954 to an estimated 35,300 in 1979. Employment dropped steadily in the 1950's, then advanced irregularly through 1967, and thereafter generally declined again to the present level. Recent exceptions to the downward trend were in 1974-75 and again in 1979. Energy shortages resulting from the Organization of Petroleum Exporting Countries oil embargo boosted both employment and passenger service in 1974, the year that also marked the introduction of the 55-mile-per-hour national speed limit. Employment needs increased partially as a result of the decline in the number of bus miles per driver. Again in 1979, fuel shortages reversed the downward trends in both employment and passenger service.

Since 1954, there has been a change in the composition of employment. The number of equipment maintenance and garage personnel has declined from 22 to 17 percent of the work force because of reduced service requirements. Station workers, however, have increased from 11 to 19 percent of total employment, reflecting the greater demand for package express traffic. Drivers have accounted for about half of industry employment since 1954. However, more fully utilized and larger capacity buses may, in the future, reduce the percentage

of drivers in the industry, by increasing the proportion of administrative and service workers. Since 1954, workers paid on a daily basis, mostly supervisory personnel, as opposed to hourly wage employees, have increased from 8 percent of total employment to 10 percent. In the intercity portion of the regulated bus industry, women represent 12 percent of the work force, up from 10 percent in 1960. By contrast, women make up 40 percent of the work force in the total private nonfarm sector.

Changes in technology associated with the bus industry have been characterized by a gradual trend toward innovation, fuel efficiency, and greater passenger comfort. Diesel-powered buses, in primary use since the early 1950's, have undergone steady advances in performance and reductions in maintenance requirements. Current-model intercity buses have a seating capacity of 47 passengers and have space for large amounts of baggage and cargo. Typically, buses are 8 feet wide and 40 feet long, and weigh 13 tons. Including resale after use by class I carriers, useful bus life is over 20 years and mileage may exceed 3 million.⁸ The average number of seats for the bus fleet in 1955 was 39.1 and increased 10 percent to 43.1 by 1978. However, the seating capacity utilized during this period has remained at about 47 percent, and load factors have changed little since 1954, which helps explain the low rise in productivity in the industry.

From 1950 to 1973, average bus speeds increased from 50 to 60 miles per hour because of improved highways and urban beltways. But the introduction of the national speed limit in 1974 reduced average speeds to less than 55 miles per hour,⁹ and has also slowed productivity growth.

The growth in package express and charter services, however, has aided productivity. Delivering package express while engaging in regularly scheduled passenger service has resulted in more efficient use of vehicle and driver time. Charter services have also offered significant economies of scale for bus companies. Charters typically have a 50-percent greater load factor and 100-percent longer average trip length than regular route carriers. This form of passenger service also provides economies in baggage handling, ticketing, and scheduling terminal facilities.

Reduced investment has hurt industry productivity. Since 1954, investment in plant and equipment by intercity bus carriers has declined. Buses, which presently cost about \$135,000 each, account for about 80 percent of industry capital expenditures. Annual constant dollar investment dropped from \$78 million in 1954 to \$56 million in 1974, the latest year for which data are available. Similarly, the constant dollar stock of plant and equipment fell 18 percent, while capital investment per worker declined more than 20 percent. In contrast, gross constant dollar investment in the transportation

Table 3. Revenue distribution for class I bus carriers and percent of total service, 1954 and 1978

Service	1954		1978	
	Revenue in millions	Percent	Revenue in millions	Percent
Total	\$467	100	\$1137	100
Passenger:				
Intercity	306	66	678	60
Local	112	24	73	6
Charter	33	7	211	19
Freight	16	3	175	15

sector as a whole increased more than 150 percent, while gross stocks of capital increased 35 percent.¹⁰

Outlook

Factors are emerging which are both favorable and unfavorable to demand and productivity growth in the bus industry. Energy and demographic variables are likely to be positive factors while negative public image and low capital investment may retard growth. Restructuring the industry has been suggested as a way to increase capacity utilization and spur productivity.

With current low rates of bus utilization, increased demand would likely result in higher load factors and enhance productivity. Several projections of growth in the bus industry for the next decade have been made. The Federal Energy Administration (now part of the Department of Energy) estimates a 25 percent growth in passenger-miles over the next decade. This projection is not altered substantially even when based on different fuel availability assumptions. The Department of Transportation (DOT) makes a similar growth projection but notes the negative effect of rising income levels and shift from longer-haul bus travel. DOT sees potential for greater demand through improved service and regulatory reform. A third projection estimates a more optimistic 40-percent growth based on assumptions of fuel shortages and restricted auto use. In contrast to these three optimistic scenarios the ICC concludes that regular route traffic will continue to experience flattened demand and market share loss.¹¹

In a period of energy shortage, bus operations are likely to increase because of the comparative fuel efficiency of this mode of transportation. This was demonstrated both during World War II and in 1974 when fuel shortages existed. Given energy priorities, buses would make inroads into the use of the private automobile. Presently, diesel turbocharged engines are being introduced into service because of their potential for fuel savings and reduced emissions. Gas turbine buses now being used experimentally are able to run on non-petroleum based fuels and may aid future productivity

growth because of their increased reliability.¹²

Fuel shortages would likely create more reliance on the use of buses for lower density routes to and from small towns and rural areas. Higher utilization of existing capacity in the industry would boost labor productivity. However, a recent DOT study projects that over the next two or three decades the passenger automobile will continue in its dominant transportation role because of its flexibility and tailored service.¹³

Demographic changes may also help to increase the demand for bus service, raising both load factors and productivity. The trends toward population dispersion, smaller households, and an older population are all factors which favor increased use of intercity bus service. Population dispersion reduces the availability of other forms of transportation; private cars are more cost efficient for larger families; and many older persons prefer the relative comfort and safety of bus travel.

However, a history of low productivity growth, lack of demand, and reduced profits may impair the ability of the industry to attract needed capital and enhance future performance. The ICC sees a need for changes in policy to insure a balanced transportation network. Such changes would include bus and engine design studies, similar to those conducted for air transportation and other forms of mass transit, to find ways to increase productivity. Improvements in the quality and location of bus terminals and facilities have also been recommended.¹⁴ Because the price differential between long distance air fares and bus fares has narrowed over the years, some analysts argue that bus carriers should drop coast-to-coast service and concentrate in short-haul markets of 100 to 200 miles. Such a system could enlarge the number of daily departures and increase bus utilization from its current average of 7 hours a day to 16 hours.¹⁵ Further advances in productivity are possible through improvements in intermodal linkages. Construction of municipal transportation terminals to serve as connectors for bus, train, and plane service could improve productivity for all of these forms of transportation. □

FOOTNOTES

¹ This study is based on statistics reported to the Interstate Commerce Commission for all class I motor carriers of passengers. Class I carriers are those that have 3-year average annual revenues of more than \$3 million. This portion of the bus industry, as defined in the 1972 Standard Industrial Classification (SIC) manual, makes up a small part of SIC 4111 (local and suburban transit), and a more substantial part of both SIC 4131 (intercity and rural highway passenger transportation) and SIC 414 (passenger transportation charter service). Based on their major source of revenue, class I carriers have been divided by the ICC into local or intercity service. Local service is defined as transportation performed within a city or town, including service for the contiguous suburban area. Intercity service includes all transportation performed beyond the limits set for local service. Either of these carrier types may also engage in intercity, local, or charter operations.

² The output measure underlying the productivity series for the bus industry has been constructed using data on passenger-miles, passengers, and express freight service, combined with appropriate weights relating to labor importance. A technical note describing the methods used in the construction of the index is available upon request.

³ Lawrence Leist, *Intercity Bus Service: Frequency and Running Time*, Report No. WP-220-04-20 (Washington, U.S. Department of Transportation, 1975).

⁴ *Transportation and the Future* (Washington, U.S. Department of Transportation, 1975), p. 35.

⁵ Derived by dividing revenue passenger miles by revenue passengers.

⁶ *The Intercity Bus Industry: A Preliminary Study* (Washington, Interstate Commerce Commission, 1978), pp. 2-3.

⁷ *Transportation facts and Trends* (Washington, Transportation

Association of America, 1980), p. 18.

⁸ *America's Most Fuel Efficient Passenger Transportation Service* (Washington, American Bus Association, 1979), p. 5.

⁹ *The Intercity Bus Industry*, p. 26.

¹⁰ See *Capital Stock Estimates for Input-Output Industries: Methods and Data*, Bulletin 2034 (Bureau of Labor Statistics, 1979).

¹¹ *The Intercity Bus Industry*, pp. 106–08.

¹² *America's Most Fuel Efficient*, p. 5.

¹³ *Transportation and the Future*, p. 111.

¹⁴ *The Intercity Bus Industry*, pp. 121–27.

¹⁵ Rush Loving, Jr., "The Bus Lines are on the Road to Nowhere," *Fortune*, Dec. 31, 1978, pp. 58–64.

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 industry output by an index of employee-hours.

The preferred output index for transportation industries would be obtained from data on the quantities of services provided by the industry. The quantity of each type of service provided would be weighted (multiplied) by the employee-hours required to provide one unit of each type of service in some specified base period. Thus, those services that require more labor time would be given more importance in the output index.

Annual indexes of output for the bus industry were derived from both quantity and revenue data. In passenger service, quantity data is available for intercity

passenger-miles, local passengers, and charter passengers. In freight service, output was estimated by removing the effects of changing price levels from the current dollar value of sales. Total industry output was developed by combining passenger and freight outputs, using appropriate revenue and employee-hour weights. 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 effect of factors such as changes in technology, capital investment, capacity utilization, plant design and layout, skill and effort of the work force, managerial ability, and labor-management relations.

Conference Papers



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Work, stress, and individual well-being

ROBERT L. KAHN

Research and theory about organizational life have been dominated by the criterion of organizational effectiveness. Productivity and profit, absence and turnover, strikes and grievances, and other such measures are the outcomes that such research attempts to predict or explain. In combination they indicate the effectiveness or well-being of the organization as a living system.

But the individual is also a living system, with criteria of well-being quite separate from those of the organization. Agreement on those criteria is far from perfect, but there is some convergence around the ability to work, love, and play; to regard oneself and one's life with positive feelings; to perceive people and events without major distortion; and to be free from distressing physical symptoms. These and other measures of individual health, physical and mental, we regard as complex outcomes determined in part by properties of the organizations within which people work and the roles they perform in those organizations.

The enactment of an organizational role by an individual can thus be thought of as an intersection and

partial overlap of two ongoing systems, the person and the organization. The overlap consists of certain cycles of behavior that are identical for both; these behaviors are part of the ongoing life of both the individual and the organization. We are accustomed to examining the extent to which these overlapping cycles contribute to efficiency, productivity, and other measures of organizational effectiveness. It is equally appropriate, however, to ask the complementary questions: Does the enactment of the organizational role enhance or reduce the well-being of the individual? Does it enlarge or diminish the person's valued skills and abilities? Does it increase or restrict the individual's opportunity and capacity to perform other valued social roles?¹

Stress and health

Research on the full triad of work, stress, and health is still relatively uncommon. More research has been done on the latter elements, stress and health, or more specifically, on the physiological and behavioral effects of certain stressors (stimuli) on laboratory animals and on human beings. As a result, much has been learned about the psychobiology of stress, about the effects of stress on the central nervous system, on neuroregulators in the brain, and on the immune system. Something is known also about the relationship of stress to physical and psychiatric illness. Without pretending even to summarize these large bodies of work, I want to suggest in each of these areas the kinds of findings that are accumulating, especially those in which the experimental stressor is strongly suggestive of conditions imposed by many jobs.

Psychobiology of stress. The earliest research on biological aspects of stress concentrated on the adrenocorticotrophic hormone (ACTH) and the pituitary-adrenal system. In more recent years, other hormones have been identified as stress-responsive. Many stressors evoke these hormonal responses, but the common element appears to be emotional arousal to threatening and unpleasant aspects of life situations.

Moreover, some of these hormonal changes occur not only in response to classical aversive stimuli like pain or noise, but also in response to unfavorable changes in environmental contingencies and expectations. For example, when animals trained to work for food by pressing a lever were presented with a condition in which

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pressing the lever did not produce food, they showed elevations in plasma corticoids as high as those evoked by noxious stimuli. Other research also emphasizes the importance of predictability in facilitating coping and in minimizing hormonal stress responses. For example, animals subjected to unpredictable shocks showed greater somatic change (corticosterone elevation, stomach ulceration, and weight loss) than animals that received shocks of the same magnitude on a predictable basis. Experiments with escapable and inescapable shock show similar results. Animals exposed to inescapable shock showed more fear than those exposed to escapable shock. Moreover, animals so exposed learned the lesson of helplessness and showed a severely reduced ability to escape in subsequent situations in which escape was possible. One researcher summarizes these and other laboratory studies by stating that there are two basic stimulus patterns that elevate hormonal responses for significant lengths of time: instability, which creates an unpredictable and "ununderstandable" environment, and uncontrollability, which makes coping efforts futile.

Stress and immunity. A recent review of research on the immune system found that certain psychosocial processes affect the central nervous system, thereby bringing about changes in the immune function, which in turn alter the risk of onset and subsequent course of many diseases. Frightening and distressing stimuli, overcrowding, exposure to loud noise and bright light have all been found to have effects of this kind in animals. For example, the stress of avoidance learning (performance to avoid punishment) and confinement in mice produced adrenal hypertrophy and susceptibility to viral infection. Stress effects on the immune systems have also been noted in studies with human beings. For example, in 1977, one researcher reported decreased immune responses among bereaved spouses after a period of seven to 10 weeks. Studies of infectious diseases, both with animals and human beings, bear out the effects of psychosocial stress in reducing resistance, increasing susceptibility, and lengthening the process of recovery.

Stress and physical illness. A current review by one researcher summarized research on stress as a causal factor in a wide array of physical illness. Examples with apparent relevance to conditions encountered by men and women at work include gastric ulcer, cancer, and cardiovascular diseases. The treatment now considered most useful for peptic ulcer (cimetidine) acts by blocking the release of hydrochloric acid in response to emotional stimuli and other stressors. There is some evidence for the involvement of stress factors—including recent significant loss, job instability, and lack of plans for the future—in the precipitation of cancer. The effects of stress in illness have perhaps been demonstrat-

ed most clearly with respect to cardiovascular disease. Laboratory studies of stressful stimuli produce changes in stroke volume, heart rate, and blood pressure. Consistent with these is the clinical identification of emotional disturbance as a major cause of anginal pain, and as a cause of heart failure in persons with heart disease otherwise under control.

Stress and psychiatric illness. Recent research implicates stress as a factor in depression, anxiety states, alcoholism, drug abuse, and sleep disorders. For example, depressed men and women experienced many more stressful life events just prior to their depression than did comparable groups in the general population.

Anxiety as a temporary feeling associated with some actual or threatened event is an experience that everyone has had. It seems to arise when we feel that the demands made on us (or soon to be made) exceed our abilities or resources to meet them successfully. When such feelings of anxiety are chronic, disabling, or seemingly unrelated to external realities, they are classified as signs of psychiatric disorder. Since the work role is for the majority of adults one of the most important sources of recurring demands for performance within specified limits of time, quality, and resources, we can expect it also to be a common source of anxiety.

Alcoholism and drug abuse almost certainly have many causes that do not lie in the immediate environment of the person. Environmental stressors seem to be implicated in both disorders, nevertheless. For example, the use of alcohol was found to increase during the first year after the death of a spouse and the use of opiates and marijuana was higher among Americans in Vietnam than would have been predicted from comparison groups in the United States.

The intuitive opinion that acute life stresses cause sleep disturbances has been well documented. Furthermore, chronic insomniacs, as compared to controls, reported more stressful life events during the year in which their insomnia began. There is some evidence that chronic lack of sleep is more than unpleasant. Even short periods of sleep during periods of prolonged physical stress reversed stress-related changes in growth hormone, prolactin, and testosterone. And in a long prospective study, a group of researchers found that otherwise healthy individuals who initially reported abnormal sleep patterns (substantially less or more than the average) were more likely than members of the control group to have died by the time of the 6-year follow-up.

Implications for jobs and organizations

Now let us bring work back into the discussion of stress and health, by proposing a few implications of stress research for the improvement of work life. With

both the field and the laboratory findings in mind, let us go beyond research and propose a few decision rules for the design of less stressful jobs and organizations:

1. *Minimize unpredictability and ambiguity at work.* Make the work situation as predictable as possible, in terms of job stability and certainty about the future. (Change can be predictable, too.)
2. *Minimize uncontrollable events at the individual level.* That is, maximize the decisions that can be made autonomously by the individual, then the decisions that can be made directly by the primary group in which the individual works, and only then those decisions in which control must be by more distant representative arrangements. (Take into account differences in individual preference.)
3. *Eliminate avoidance learning,* that is, performance-or-punishment. Instead, recognize and reward successful performance, both at the group and the individual level.
4. *Minimize physical stressors*—excessive noise, extremes of temperature and light intensity, spatial and postural confinement, crowding and isolation.
5. *Avoid recurring (daily) stresses;* they are more damaging than the occasional peaks of demand.
6. *Watch for negative affect* (emotional response). Feelings of boredom and apathy, anger and hostility, and other kinds of emotional distress often precede more severe somatic and behavioral reactions to stress.

The reader is likely to say, "Well everybody knows that." Perhaps everybody knows it, but almost nobody does much about it. There is some innovation; some drift toward job enlargement and employee involvement in decisions, perhaps; some experimentation in related matters. But the spread is slow and the successful experiments are not copied, even in the companies where they were done. Compared with the adoption rate of flared trousers and color television, not to mention computers, stress-reducing improvements in the quality of work life are adopted slowly.

Why should this be so? Many reasons come to mind, and many have been offered. Let me conclude by proposing a reason that is not so often given for the slow spread of stress-reducing, work-enhancing organizational changes—their special demands on organizational leadership. Buying a new technology is a decision usually made by people at the top of an organization that creates change-demands on others. But redesigning an organization to increase autonomy and control of each person and group creates change-demands that begin with the leaders themselves, in labor unions and government as well as industry. This task, its admitted difficulty, and its apparent implications for the reduction of managerial power and privilege, account for the slow,

resistant, over-skeptical response of management to the findings of stress research—a response that has been slower in the United States than in some other technically advanced countries.

The scientific understanding of stress has greatly enlarged and continues to grow. The use of that understanding to reduce stress has only begun. □

—FOOTNOTE—

¹ The introductory paragraphs of this article are adapted from Chapter 17 of Daniel Katz and Robert L. Kahn, *The Social Psychology of Organizations* (New York, Wiley, 1978). The discussion of stress and health owes much to the work of the Committee on Stress Research, Institute of Medicine, National Academy of Sciences.

The lack of female union leaders: a look at some reasons

KAREN S. KOZIARA AND DAVID A. PIERSON

Even though women are a significant and increasing proportion of union members, men are much more likely to be union officers. There are some general explanations for this, but little research has been done on it.

In 1970, 23.9 percent of all union and employee association members were women. By 1978 this increased to about 27.4 percent.¹ However, this increase has not been reflected in the number of women who are national union officers.² Women are more common in local than national office, but even in locals they are rare—except as shop stewards.³

The issue of why few women are union officers will be discussed by integrating traditional industrial relations (or labor market) reasons for the dearth of women officers, with behavioral research on how our society views men and women.

The basis of choosing union leaders

Many reasons may explain the underrepresentation of women in union office. Many women have two jobs, one paid and the other at home. Also, although the number of women with careers interrupted by child-bearing is declining, women are more likely than men to have interrupted careers. The time when women leave the labor force is also the time when people interested in union office generally take their first positions. Women are also less likely than men to be in the high status, visible positions from which union officers are generally

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selected, and at least some men and women see women as inappropriate for union office.⁴

Perceptions held by both members and candidates, perhaps more than solid information, help determine who runs for office. If members, including incumbent officers, feel a candidate meets requirements for office, the candidate can become an officer. If members do not perceive a candidate as meeting qualifications, the candidate cannot attain office. Similarly, individuals do not run for office unless they see themselves as qualified, the rewards of office as meeting their needs, and members as supporting them.

The literature on stereotypes shows that group, rather than individual, attributes affect selection most when qualifications for office are ambiguous and when candidates are not personally known to selectors. Both conditions can occur when union officers are chosen. Also, in many situations union members do not personally know candidates, particularly at the national level. This increases the reliance on group attributes.

Finally, members and candidates use perceptions of necessary requirements for office based on perceptions of the union leadership role. The economic focus of unions in our society suggests union leaders are expected to deliver economic and work-related benefits.

Three related requirements for union office are perceived negotiation and interpersonal skills, perceived knowledge of industrial relations, and members' view of the access they are likely to have to officers once elected.

Perceived negotiation and interpersonal skills

Perceived negotiation and interpersonal skills include dealing effectively with management and internal union groups by using effective power tactics, and being an assertive, strong spokesperson. Interpersonal skills include being perceived as easily approachable and empathizing with and responding to members.

Stereotype research shows men characterized as aggressive, competitive, uncompromising, assertive, having better judgment, and more intelligent than women.⁵ These characteristics are commonly associated with negotiating skills and may lead members to favor men. The latter also are perceived to use direct, concrete, and competent, or expert tactics.⁶ Because industrial relations involves power tactics normally associated with men, members may favor them.

Another interpersonal skill is approachability. It is difficult from available research to determine whether a potential officer's sex influences member perceptions of approachability. There is, however, evidence that people perceive men as more emotionally stable than women.⁷ However, women are perceived as more helpful and understanding. These qualities could enhance approachability if viewed appropriate for negotiators.

A subtle skills stereotype involves interaction with management staffs which are predominantly male. Union members may feel women will not be considered as equals by management. A study of local union officers showed it was initially hard for men to accept a woman as their spokesperson.⁸ Thus, members who do not themselves have traditional stereotypes of women may discriminate against women because they feel that others will.

An individual's self perception of skills also influences self-confidence. Research suggests that people typically have less confidence performing tasks generally associated with the opposite sex.⁹ This suggests that women might have less self-confidence than men when evaluating their industrial relations skills because these tasks usually are performed by men.

Perceived industrial relations knowledge

Perceived industrial relations knowledge includes understanding the negotiating process, the collective bargaining contract, the grievance procedure, internal union politics, and relationship of the union to its external environment. Industrial relations knowledge and political savvy often are assumed to result from job seniority and age.¹⁰ Officers almost invariably come from the ranks of the workers they represent, suggesting that perceived knowledge depends not only on union experience, but on experience with a specific union.¹¹

If perceived industrial relations knowledge is a function of seniority and experience, women as a group are likely to be perceived as having insufficient knowledge to be officers because women are more likely to have interrupted careers. The resulting lack of experience can be a permanent handicap for some women.¹²

Traditional sex role stereotypes can affect how people are treated. Women seen as unacceptable for union office because of its masculine image had little opportunity to get industrial relations knowledge. These women may see themselves as too inexperienced to hold union office. Again, this self perception may be accurate because of the impact of sex role stereotypes on women's treatment.

Union members concerned about access

Union members concerned about the time leaders have for union duties may feel women will not have sufficient time to be officers. Sayles and Strauss' finding that union members generally feel women belong in the home is consistent with this.¹³

If women feel they have more time-consuming family responsibilities than men do, women will be less likely to seek union office.

Physical location is another component of access. People whose jobs allow them to circulate around the plant or office are easily accessible. Examples are jobs

in maintenance, machine set-up, and inspection. These are generally high status jobs often filled by seniority, and more routinely held by men than women because of men's continuous work histories.¹⁴

Rewards of union office

Another influence on decisions to seek union office are the associated rewards. Members decide to seek office partly because they feel they will get something from the experience. If men and women evaluate the rewards differently, this may help account for the relatively greater number of male union officers.

Sayles and Strauss identified six general rewards of union office: A sense of achievement or self fulfillment, an outlet for aggression, an intellectual outlet, relief from monotonous jobs, opportunity to gain prestige or status, and a social outlet.¹⁵

Men and women probably seek achievement to the same extent but perhaps in different ways. If holding union office is considered more appropriate for men, women would be less likely to see union office as relevant to achievement needs.

If union office is an outlet for aggression, traditional concepts of appropriate male and female roles could influence the likelihood that women view holding union office as appropriate. Our society more readily condones aggression in men than in women, making this reward more attractive to men.

The social outlet rewards of union office may be less important for women than for men because current officers are men. Job-linked social mixing between the sexes, in contrast to romantic mixing, is relatively new. It could be that men are more interested in going out for a "beer with the boys" than are some women. This dimension is difficult to measure and worthy of further study.

A reward encouraging women to run for office is relief from monotonous jobs. Because women are overrepresented in lower occupational levels, relief from monotony could be more enticing to women than men. A somewhat different reward, super seniority, often given to stewards, might also be an inducement for some women to seek office because of limited job tenure.

There are two reasons few women are union officers: Women are less likely to seek union office and incumbent officers and members are less likely to support women for office. The evidence reviewed supports both reasons, and suggests women will have to put aside traditional sex-role stereotypes and aggressively seek office before members will see them as fully qualified. □

FOOTNOTES

¹ Katherine Hoyle, "Labor Union and Employee Association Membership—1978," *News*, Sept. 3, 1979, p. 4.

² L. H. LeGrande, "Women in labor organizations: their ranks are

increasing," *Monthly Labor Review*, August 1978, pp. 8–14.

³ Alice H. Cook, "Women and American Trade Unions," *The Annals of the American Academy of Political and Social Science*, January, 1968, pp. 124–132; and Leonard R. Sayles and George Strauss, *The Local Unions*, (Rev. Ed.) New York, Harcourt, Brace and World, 1967; and Cook, *op. cit.*

⁴ See, for example, Fritz Heider, *The Psychology of Interpersonal Relations*, New York, John Wiley and Sons, 1958 pp. 20–78, for an excellent discussion of the importance of perceptions in explaining people's attitudes and behaviors.

⁵ E. M. Bennett and L. R. Cohen, "Men and Women: Personality Patterns and Contracts," *Genetics Psychology Monographs*, 1950, pp. 101–155; R. L. Dipboye, "Women as Manager: Stereotypes and Realities," in B.A. Stead (ed.), *Women in Management*, Englewood Cliffs, N.J., Prentice-Hall, 1978, pp. 2–10; Douglas Masengill and Nicholas DiMarco, "Sex-Role Stereotypes and Requisite Management Characteristics," *Sex Roles*, October, 1979, pp. 561–570; B. Rosen and T. H. Jerdee, "Sex Stereotyping in the Executive Suite," *Harvard Business Review*, (1974), pp. 45–58; and V. E. Schein, "The Relationship Between Sex Role Stereotypes and Requisite Management Characteristics," *Journal of Applied Psychology*, 1975, pp. 352–376.

⁶ P. Johnson, "Women and Power: Toward a Theory of Effectiveness," *Journal of Social Issues*, 1976, pp. 99–110.

⁷ Schein, *op. cit.*; Dipboye, *op. cit.*

⁸ B. Wertheimer and A. H. Nelson, *Trade Union Women*, New York, Praeger Publishers, 1975.

⁹ E. Lenny, "Women's Self-Confidence in Achievement Setting," *Psychological Bulletin*, 1977, pp. 1–13.

¹⁰ Sayles and Strauss, *op. cit.*

¹¹ M. Estey, *The Unions* (2d ed.), New York, Harcourt Brace Jovanovich, 1976.

¹² Cook, *op. cit.*

¹³ Sayles and Strauss, *op. cit.*

¹⁴ *Ibid.*

¹⁵ *Ibid.*

Microeconomic research ignored by government and industry

RUDY A. OSWALD

Research obligations in our society are shared between the public sector and the private sector. Clearly, government has a lead role to play in conducting economic and industrial relations research, but the responsibility is also a private one for universities, research organizations, and clearly also for business and labor as primary actors in the economic and workplace scene.

But "macro" analysis is not enough. There is need for the "micro" approach as well, and the inadequacy of research in the micro area is especially egregious. It is again time for thorough research on individual industries, as was done by the Temporary National Economic Committee more than a generation ago. Such analysis should set forth essential background for tripartite ac-

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tion by business, labor, and government on new national programs for economic revitalization and reindustrialization. Industry and sector data need to be collected and analyzed, as well as area data including inner city economic problems.

As part of the basic industry and sector analysis, more information is needed on the employment and inflation effects of U.S. trade, both imports and exports. This analysis should include a review of the loss of jobs resulting from the export of capital and production, as well as the export of technology by U.S. corporations to their foreign subsidiaries.

The growing problem of plant closings needs more research work. Workers and communities suffer serious job losses and negative social effects from major plant closings. The reasons for such closings must be analyzed, including import penetration of U.S. markets, effects of tax subsidies on industrial migration, easy tax-loss write-offs, corporate mergers, shifts in consumer tastes, technological developments, corporate mismanagement and financial insolvency, and so forth. Barry Bluestone and Bennett Harrison have produced an impressive report¹ on causes and effects of plant closings, but legislation dealing with plant closings is already before Congress and many State legislatures, and therefore, much more micro-level research is needed on the subject.

Information on safe and healthy working conditions needs to be enhanced. Governmental agencies such as the Occupational Safety and Health Administration and the National Institute for Occupational Safety and Health should increase their capability for research and standards development, and private research in occupational safety and health should be expanded.

An example of decreased research in the micro field of industrial relations is the discontinuation by the Bureau of Labor Statistics (BLS) of four important wage and benefit statistical programs: (1) the "Digest of Selected Health and Insurance Plans" and "Digest of Selected Pension Plans;" (2) wage chronologies; (3) employer compensation expenditures; and (4) the collection of data from smaller collective bargaining agreements covering fewer than 1,000 workers.

Little research today deals with the policies and programs that contribute to full employment. Little work is done on income distribution, and there are practically no accurate data measures on the income of the wealthy, or the extent of wealth. Poverty data fail to measure poverty, and BLS has not updated the methodology of the city workers' family budgets and the budgets for retired workers.²

Proposed research agenda

A specific research agenda was developed in March 1980, when more than 70 union and university research-

ers specializing in industrial and labor relations, and representatives of public and private funding agencies attended a symposium in Boston, jointly sponsored by the AFL-CIO Research Department and the Extension-Public Service Division of the Cornell University School of Industrial and Labor Relations. A major objective of the meeting was to explore the possibility of developing a research agenda on topics of interest to union and university researchers in the field of industrial and labor relations. Following is a brief outline of just three of the many research topics that were discussed at the symposium. These outlines are just a hint of the vast array of new micro research that should be undertaken to improve the industrial relations that now exist in the United States.

Corporate structure, corporate concentration, and bargaining. Four major points were discussed:

- Union responses to corporate mergers and corporate concentration;
- Research on the factors associated with corporate concentration, including competition, the presence or absence of labor unions, and conglomerate interests;
- Research on the impact of corporate concentration on employment, wages, union structure, and union bargaining power;
- Examination of the impact of deregulation on employment and collective bargaining.

Labor law. Six major points were discussed:

- Research on the impact of the increased legalization of labor relations, especially the professionalization of arbitrators, the increasing use of administrative law judges, and the resurgence of the labor injunction on free collective bargaining;
- Studies concerning procedural delays and the effects of National Labor Relations Board representation rules, particularly those concerning unit determination on union growth;
- Studies of the impact of court rulings related to the duty of fair representation;
- Examination of the role and impact of management consultants on the collective bargaining rights of workers;
- Research into the issue of impasse resolution in the public sector;
- Studies of the overall role of law in industrial relations, especially the commitment of labor and management to the basic principles underlying rational labor policies.

Job security and economic dislocation. Three major points were discussed:

- Examination of the forces underlying economic dislocation, especially the impact of changing forms of corporate structure;
- Research into possible methods of preventing economic dislocation, including government subsidization of failing industries, employee ownership, and the role of collective bargaining;
- Studies of the impact of economic dislocation on workers and collective bargaining, and methods of easing that impact. □

— FOOTNOTES —

¹ See Barry Bluestone and Bennett Harrison, *Capital and Communities: The Causes and Consequences of Private Disinvestment* (Washington, The Progressive Alliance, 1980).

² A recent study of the Family Budgets Program has been summarized in Harold W. Watts, "Special panel suggests changes in BLS Family Budget Program," *Monthly Labor Review*, December 1980, pp. 3-10.

Role of arbitration in dispute settlement

HENRY S. FARBER

The search for an acceptable alternative to the strike for settling public sector labor disputes has led to the development of a variety of arbitration schemes for this purpose. The first type is conventional arbitration where a neutral third party simply imposes terms of agreement in the event that the parties fail to reach a negotiated settlement.¹ A number of observers of the early experience with conventional arbitration have suggested that arbitrators have a tendency to "split the difference" between the positions of the parties. It is alleged that this results in a "chilling" of bargaining and excessive reliance on the procedure.² An alternative to conventional arbitration which is becoming increasingly popular and which purports to be free of the chilling problem is final-offer arbitration.³ Under this procedure each party submits a final offer and the arbitrator selects one or the other of the offers which then becomes the settlement. The distinguishing feature of final-offer arbitration is that the arbitrator is *not* allowed to fashion a compromise between the final offers.

The crucial role of any dispute settlement procedure in the collective bargaining process is to provide incentives for the parties to reach agreement without resort to the procedure. In terms of evaluation this means that one criterion for a good dispute settlement procedure is

that it be used infrequently.⁴ The incentive for settlement is derived from the costs which the particular procedure imposes on the parties in the event of disagreement. In order to avoid these costs the parties presumably will concede in negotiations so that agreement can be reached. The strike imposes costs on the parties in a direct and obvious manner having at the first level to do with lost wages and sales or profits. Arbitration, on the other hand, does not impose direct costs of such magnitude.⁵

Uncertainty imposes costs

The major source of arbitration costs is the uncertainty concerning exactly what the arbitrator will decide. To the extent that the parties are risk averse each will be willing to concede a portion of the expected arbitration award in order to avoid the risk of having the arbitrator impose a settlement which is very unfavorable to the particular party.⁶ The larger the costs are which the uncertainty imposes on the parties the more the parties will concede in order to avoid the costs and the less likely it is that the parties will actually resort to arbitration.

In order to understand the relationship between the magnitude of the costs imposed by arbitration and its actual usage rate, we must resolve the apparent paradox that arbitration is ever used when *ex post* both parties would have been better off to avoid the uncertainty and reach a negotiated settlement on the same terms. There are two major explanations for a failure to reach agreement. The first is what can be called information problems. If the parties have divergent expectations concerning the distribution of potential arbitration awards then this may offset the costs of disagreement and result in the absence of a contract zone of potential settlements which are preferred by both parties to arbitration. For instance, if each party expects an arbitrator to be relatively favorable to its side then they may not be willing to concede enough from these incompatible positions to allow agreement. How much the parties are willing to concede from their respective expectations about the disagreement outcome depends on their respective costs of disagreement. The larger these costs are the more the parties will concede and the less likely it will be that a given divergence in expectations will lead to disagreement.⁷

The second major explanation for a failure to reach agreement in an environment where arbitration of some sort is the dispute settlement procedure is that at least one party may want to place the responsibility for an unfavorable outcome on the shoulders of a third party (the arbitrator).⁸ This shifting of responsibility is important for political reasons if the leaders need to convince their constituency that they were not to blame for the bad outcome. This may be particularly important for

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union leaders who have to deal with a sometimes militant rank-and-file. However, in the public sector the employer is concerned with winning elections as well, and the arbitration procedure may be used to that end.

It is important to note that the larger the costs of disagreement are the more expensive it is for the leaders to utilize the arbitration procedure for their own political purposes. Thus, as with divergent expectations as an explanation for disagreement, the larger the costs of disagreement are the less likely it will be that there will be disagreement for institutional or political reasons.

In the context of the above discussion the essence of the criticism of conventional arbitration is that it does not impose sufficient costs on the parties. The result is that it is overutilized both where there are relatively minor differences in expectations and for political reasons. It has been suggested that final-offer arbitration is a more costly procedure and hence more effective in encouraging negotiated settlements.

Under conventional arbitration it has been suggested that the arbitrator splits the difference between the positions of the parties or in a less constrained way finds a compromise. It is clear that the naive split-the-difference model is not realistic because it would provide the parties with the incentive to make their offers as extreme as possible. This sort of behavior is not generally observed because as either party begins to take an extreme position the arbitrator will tend to disregard that party's position as unreasonable. This suggests that the arbitrator has some exogenous notion of what is an equitable split of the pie, and, while he may consider the positions of the parties in fashioning an award, he evaluates these positions in light of the exogenous equitable settlement. It is the uncertainty surrounding what the arbitrator feels is an equitable outcome which makes arbitration a costly alternative.

In formulating their offers the parties are aware that, while they have some influence over the outcomes, if they are too extreme the arbitrator will tend to weight their position less heavily. The process which generates the positions of the parties is one where each party is trading having a favorable influence on the arbitration award with the chance that the arbitrator will consider it unreasonable and be more heavily influenced by the other party's position. It is interesting to note that it is likely to be true that the parties adopt final positions located around their expectation of the arbitrator's idea of the equitable outcome.⁹ Thus, while the outcomes look like the arbitrator has split the difference, the parties have actually located their offers around the expected outcome.

If it is assumed (unrealistically) that the final positions of the parties are invariant to the change in the dispute settlement mechanism from conventional to final-offer arbitration, that under the latter the final offers are equally likely to be selected by the arbitrator, and

that the distribution of arbitration awards under conventional arbitration is symmetrical, then it is straightforward that final-offer imposes larger costs on the parties than conventional arbitration. Intuitively, the average arbitration award is unchanged but the distribution of awards has been made riskier by moving all of the possible outcomes to the extremes. As a result all risk averse parties will prefer the conventional arbitration settlement possibilities to those under final-offer arbitration. This is equivalent to saying that the parties are willing to give up more to avoid the risk inherent in final-offer arbitration than they are willing to give up to avoid the risk inherent in conventional arbitration. Thus, the final-offer arbitration induced contract zone is larger than that induced by conventional arbitration and final-offer will be relatively more successful than conventional arbitration at inducing negotiated settlements.

Assumptions in doubt

This seems to be the conceptual framework which has led researchers to expect that final-offer arbitration will be a more effective dispute settlement procedure than conventional arbitration. However it is based on a number of crucial assumptions which are probably not true. First, it will only be the merest coincidence that the final positions under final-offer arbitration will be identical to those under conventional arbitration. To examine this more carefully, it is reasonable to assume that the arbitrator under final-offer arbitration selects the final offer which is closest to his notion of an equitable settlement. The parties are not certain what the arbitrator feels is the equitable settlement. In this situation the parties face a trade-off in setting their final offers between increasing the value of their offer if it is selected and reducing the probability that the arbitrator selects their offer.

It is entirely possible that the final positions will be less extreme under final-offer arbitration than under conventional arbitration. It can no longer be concluded that final-offer is a riskier, and hence costlier, procedure than conventional arbitration. Intuitively, if the final positions are less extreme under final-offer than under conventional arbitration there is some positive probability that the arbitration award will be more extreme under conventional than under final-offer arbitration, and it is not possible to evaluate *a priori* whether the latter is riskier than the former.¹⁰

A second assumption which fails is that the final offers are equally likely to be chosen by the arbitrator. As an empirical matter it is unlikely that the parties are equally risk averse, and it can be shown that the party more averse to risk submits an offer which has a higher probability of being selected than the offer of the party less averse to risk.¹¹

Lastly, the validity of the assumption that the distri-

bution of arbitration awards under conventional arbitration is symmetrical is largely a function of the symmetry of the parties' prior distribution on the arbi-

trator's notion of the equitable settlement. While this distribution may well be symmetrical, there is no compelling theoretical reason for believing this is the case. □

— FOOTNOTES —

¹ Conventional arbitration is used in a number of States, including Alaska; Maine; Minnesota; New York; Oregon; Pennsylvania; Rhode Island; Washington; and Wyoming, to settle labor disputes among certain categories of public employees.

² See Carl M. Stevens, "Is Compulsory Arbitration Compatible with Bargaining?" *Industrial Relations*, February 1966, pp. 38-52; Peter Feuille, "Final Offer Arbitration and the Chilling Effect," *Industrial Relations*, October 1975, pp. 302-10; and Charles Feigenbaum, "Final Offer Arbitration: Better Theory than Practice," *Industrial Relations*, October 1975, pp. 311-17.

³ Some variant of this procedure is used to settle public employee labor disputes in Connecticut, Iowa, Massachusetts, Michigan, New Jersey, and Wisconsin. Final-offer arbitration is also used to resolve salary disputes involving major league baseball players. See James B. Dworkin, "The Impact of Final-Offer Interest Arbitration on Bargaining: The Case of Major League Baseball," *Proceedings of the Twenty-Ninth Annual Winter Meeting of the Industrial Relations Research Association*, 1976, pp. 161-69.

⁴ A second consideration is that the dispute settlement procedure must provide acceptable outcomes, and, because the procedure determines the range of even negotiated settlements, arbitration procedures need to be evaluated in light of their effect on negotiated as well as arbitrated outcomes. For a more detailed discussion see Henry S. Farber and Harry C. Katz, "Interest Arbitration, Outcomes and the Incentive to Bargain," *Industrial and Labor Relations Review*, October 1979, pp. 55-63.

⁵ Positive direct costs of arbitration (such as time and attorney's fees) are assumed to be negligible in this analysis.

⁶ For a detailed discussion of the role of risk and risk preferences in conventional arbitration see Farber and Katz, "Interest Arbitration."

See Henry S. Farber, "An Analysis of Final-Offer Arbitration," *Journal of Conflict Resolution*, December 1980, for the analogous discussion in final-offer arbitration.

⁷ The notion of divergent expectations as a cause of strikes has a long history. J. R. Hicks, *The Theory of Wages* (New York, Macmillan Co., 1963), pp. 146-47 argues that "... the majority of strikes are doubtless the result of faulty negotiation. If there is considerable divergence of opinion between the employer and the union representatives [about the strike outcome] ... then the union may refuse to go below a certain level ... and the employer may refuse to concede it ... [U]nder such circumstances, a deadlock is inevitable, and a strike will ensue; but it arises from the divergence of estimates and from no other cause ... [A]dequate knowledge will always make a settlement possible."

⁸ See Peter Feuille, "Final-Offer Arbitration and the Chilling Effect;" Craig Olson, "Final-Offer Arbitration in Wisconsin After Five Years," *Proceedings of the Thirty-First Annual Meeting of the Industrial Relations Research Association*, 1978, pp. 111-18.

⁹ For a detailed analysis of this model, see Henry S. Farber, "An Analysis of 'Splitting-the-Difference' in Interest Arbitration," *Industrial and Labor Relations Review*, 1981, forthcoming.

¹⁰ For an analysis of the relative merits of final-offer arbitration and conventional arbitration on a number of criteria see Henry S. Farber, "Mechanisms for Settling Public Sector Labor Disputes: A Comparative Evaluation of Conventional Arbitration and Final-Offer Arbitration," August 1979. Mimeographed. It is shown that for some reasonable specifications and parameter values that indeed conventional is costlier than final-offer arbitration.

¹¹ See Farber, "An Analysis of Final-Offer Arbitration."



Estimating the propensity of guestworkers to leave

W. R. BÖHNING

How likely are "guestworkers" to return to their homelands? And can one influence their rate of return through non-coercive policy measures?

A supply versus demand controversy rages as far as the determinants of contemporary international economic migration are concerned. In an earlier study, I examined this question analytically as well as empirically.¹ Results of the study indicate that the supply of labor coming from abroad is necessary but insufficient for international labor movements to occur. The sufficient condition lies in the demand originating from the migrant-receiving country. This demand is caused economically, screened politically, and given effect administratively. Some countries declare publicly that they wish to admit certain numbers or types of foreign workers; in others, the politics and administration produce illegal aliens.

The following discussion examines the propensity of migrant workers to return to their countries of origin and the effectiveness of non-coercive policy tools aimed at controlling foreign labor flows, with special focus on the West German experience.

Guestworker policies explained

As they have evolved in Western Europe, guestworker policies are neither temporary worker programs nor inspired by the immigration-and-settlement philosophy. They fall—rather uncomfortably—between two stools. Foreigners are invited to stay in the hope that they will leave. But the administrative apparatus does not, as a rule, force them to return on economic grounds.²

In the United States, Western European guestworker policies have been perceived as temporary worker programs involving nonimmigrants. This is incorrect. If

temporary means what it says—only for a time—the temporary admission of foreigners stands for limited-time programs and implies voluntary exit or enforced departure when the time is up. Seasonal workers in France and Switzerland fall into this category as do workers under the H-2 program in the United States, but the bulk of Western Europe's migrant workers—those ordinarily considered in this context—do not.

The nature of guestworker policy may be illustrated by an important policy statement from Western Europe's archtypical guestworker country, West Germany: "The Federal Government continues to proceed from the assumption that the overwhelming number of foreign employees will not stay in the Federal Republic . . . The limitation of the duration of stay will not be effected through (police) measures under the law relating to foreigners."³

A guestworker policy controls the *inflow* of foreigners, not their stock or return flow. The numbers present or returning are expected to be regulated by the interplay of market forces, and the short-run targets or return orientation attributed to migrants. Empirical tests confirm this. For example, 96 percent of the changes in admission of workers in West Germany during 1961–76 can be explained by variations in unfilled vacancies in the Federal Republic. On the other hand, the demand for labor and the stock of foreign workers or the numbers returning correlate very badly or not at all.⁴

Temporariness measured and explained

What proportion of the guests admitted for the purpose of employment later return home? Can one identify policy variables that would explain differential rates of return?

Calculations for the Federal Republic of Germany show that about 9 in 10 Italian, 8 in 10 Spanish, 7 in 10 Greek, 5 in 10 Yugoslav, and 3 in 10 of the Turkish workers who were admitted to work during the years 1961–76 left again during this period. Other nationalities averaged a combined return rate of 66 percent and the overall rate for Germany was 68 percent. In the case of Switzerland it amounted to 83 percent for the same years and can apparently be explained as a composite of the German rates for the major nationalities weighted according to their size in the Swiss foreign labor force.⁵

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Table 1. Predicting migrants' propensity to return with their intentions, West Germany

Ranking by nationality	Propensity to return, 1961-76 (1=highest)	Proportion with short-term intentions at beginning, 1976 survey (1=highest)	Proportion in 1976 with future intentions which were:		Proportion of target workers, 1976 survey (1=highest)
			short (1=highest)	long (1=lowest)	
Italians	1	5	3	5	4
Spaniards	2	1	2	4	5
Greeks	3	2	1	1	3
Yugoslavs	4	4	4	3	1
Turks	5	3	5	2	2

SOURCES: "Propensity to return" rankings are from W. R. Böning, "Guest Worker Employment, with Special Reference to the Federal Republic of Germany, France, and Switzerland—Lessons for the United States?" Working paper NB-5 (University of Maryland, Center for Philosophy and Public Policy, 1980). All other data are from Forschungsverbund, "Probleme der Ausländerbeschäftigung," in *Integrierter Endbericht* (Bundesminister für Forschung und Technologie, 1979), [Joint Research Group, "Problems of the employment of foreigners," in *Integrated Final Report* (Federal Minister for Research and Technology, 1979)], pp. 56ff and 231ff.

Migrant intentions. Western European policymakers assumed that migrants intended to return to their homes after a relatively short stay abroad. One might expect, therefore, that variations in intentions would predict each nationality's actual return rate. Table 1 indicates that for West Germany this is not the case.

The reasons for this are severalfold. First, individuals' intentions are complex. This is indicated, for example, by the huge proportion of people who have no clear idea regarding the duration of expatriation or who are evasive on this question. Second, short-term orientations in general and worker targets or motivations in particular are much less prevalent than assumed. "Target workers" are doubtless a minority. Third, migrants, including target workers, change their minds more often than generally thought.⁶

Moreover, intentions of individuals do not constitute a policy variable. As far as the crucial target worker is concerned, it is impossible for an administrator—or even for a sociologist or an economist—to determine reliably which candidate falls into this group. If less than 100 percent of the foreign workers do, one simply cannot anticipate what the net effect of changed intentions will be.

Family reunification. The family has, unfortunately, been considered a policy variable. Making reunification difficult was expected to motivate workers to return. At present, dependents are allowed to accompany the breadwinner in Austria, Belgium, Sweden, and the United Kingdom; the same holds true for Greeks, Portuguese, and Spaniards in France. In the case of other countries or nationalities the rule is that the breadwinner can have his nuclear family join him after a waiting period of 12-months.

Popular beliefs notwithstanding, the proportions of

inactive (dependent family members) in the migrant population tend to be quite similar in Western European countries. Marked differences have disappeared.

As table 2 demonstrates, the degree of completed family reunification in West Germany does not correlate with a nationality's tendency to return. The reasons for this must be sought in the complex web of economic, social, and human factors that make people move. It follows that, short of an inhuman policy totally prohibiting families from coming together, the manipulation of family reunification is not a promising policy variable.

Selection criteria. Host-nation choices made at the moment of recruitment, admission, or engagement are the most frequently mentioned instrument to influence return rates. Personal characteristics (such as age or marital status) and socioeconomic factors (rural versus urban origin, types of skills, previous employment experience), as well as the status and pay levels of jobs offered to candidates from nearby rather than distant countries (benefit versus cost of migration) are generally viewed as suitable predictors of differential rates of return. Data for West Germany presented in table 3 cast serious doubts on the assumptions governing selection measures. There is no coherent correlation with the measured degree of return or among the various criteria themselves. Moreover, what one determinant indicates at one time is quite different from what it indicates at another (or for another sex).⁷

Foreign aid and trade liberalization. Rich countries of employment often consider these factors a means to eliminate, in the medium term, the need for international labor movements⁸ or to stimulate return migration. One cannot directly test the efficacy of this policy variable but one can, indirectly, assess it as follows. As aid

Table 2. Predicting migrants' propensity to return by degree of completed family reunification, West Germany

Ranking by nationality	Propensity to return, 1961-76 (1=highest)	Proportion of inactive in migrant population in:		Complete families in 1976:	
		1968		proportion among married workers	proportion among all migrants
		(1=lowest)				(1=lowest)
Italians	1	4	2	4	4
Spaniards	2	5	4	3	3
Greeks	3	3	3	5	5
Yugoslavs	4	2	1	2	1
Turks	5	1	5	1	2

SOURCES: Data on "proportion of inactive" are from W. R. Böning, "Guest Worker Employment, with Special Reference to the Federal Republic of Germany, France, and Switzerland—Lessons for the United States?" Working paper NB-5 (University of Maryland, Center for Philosophy and Public Policy, 1980), p. 36. Those relating to "complete families" are from Forschungsverbund, "Probleme der Ausländerbeschäftigung," in *Integrierter Endbericht* (Bundesminister für Forschung und Technologie, 1979), [Joint Research Group, "Problems of the employment of foreigners," in *Integrated Final Report* (Federal Minister for Research and Technology, 1979)], pp. 56ff.

Table 3. Predicting migrants' propensity to return by selection criteria, West Germany

Ranking by nationality	Propensity to return, 1961-76 (1= highest)	Personal factors:			proportion of rural origin, 1971 survey (1= highest)	Socioeconomic factors:				Economic factors:	
		youthfulness, 1971 data (1= highest)	proportion of single, divorced, and widowed:			proportion skilled before migration:		proportion skilled in Germany:		average net migrant income, 1976 (benefit) (1= lowest)	distance between host and sending nation capitals (cost) (1= shortest)
			1968	1976		1971 survey	1976 survey	1968	1976		
			(1= highest)			(1= lowest)		(1= lowest)			
Italians	1	1	2	1	3	1	2	2	1	1	1
Spaniards	2	5	3	2	1	4	4	3	3	5	3
Greeks	3	4	4	4	2	2	1	1	4	3	4
Yugoslavs	4	2	1	3	4	5	5	5	5	2	2
Turks	5	3	5	5	5	3	3	4	2	4	5

SOURCES: Information by age, rural origin, and proportion skilled before migration in 1971 is from U. Mehrlander, *Soziale Aspekte der Ausländerbeschäftigung* [Social aspects of the employment of foreigners] (Bonn-Bad Godesberg, Verlag Neue Gesellschaft, 1974), pp. 24-28, and 36. Data on marital status and proportion skilled in Germany for 1968 are from *Ausländische Arbeitnehmer: Ergebnisse der Repräsentativuntersuchung vom Herbst 1968*, Beilage zur ANBA Nr. 8/70 vom 28 August 1970 (Nürnberg, Bundesanstalt für Arbeit, 1970), [Foreign employees: Results of a representative survey of autumn 1968, Supplement to ANBA

No. 8/70 of Aug. 28, 1970 (Nürnberg, Federal Institute of Labor, 1970)), pp. 45, 53-54, 86, and from the author's own computations. And information for 1976 relating to marital status, proportion skilled before migration, and proportion skilled in Germany is from Forschungsverbund, "Probleme der Ausländerbeschäftigung," in *Integrierter Endbericht* (Bundesminister für Forschung und Technologie, 1979), [Joint Research Group, "Problems of the employment of foreigners," in *Integrated Final Report* (Federal Minister for Research and Technology, 1979)], pp. 56-58, 94, 117, and 130.

and trade liberalization are designed to boost incomes and employment in the migrants' countries of origin, these countries' past growth performance in the fields of income and employment should explain why some nationalities return home more than others. Data shown in table 4 do not confirm this reasoning as far as the short to medium term time horizon is concerned. Still, the last column suggests that in the very long term, when aid and trade may have lifted per capita incomes in the poorer countries to a much higher level, it may well be that return flows to the then better-off countries of origin will rise. However, for the time being this remains speculation, and there are flaws in the GNP or income concept that one should not simply overlook.⁹ Of course, this reasoning must not be mistaken as an argument against aid or trade liberalization.

It is conceivable that some or all of the selection criteria and aid or liberalization measures taken together would explain why some nationalities return and others do not. But this, too, is speculation and cannot be corroborated with the data available. Furthermore, cumulative selection criteria are difficult to administer efficiently and the migrants' ingenuity at finding their way around administrative obstacles is well known.

We are left with the empirical observation that *nationality* as such tells one better than any other factor whether migrant workers are likely to stay or return. Although it is sometimes difficult to explain what "nationality" means—other than holding a passport and presumably being of a certain ethnic background—it appears to be crucially important to know which nationality one is dealing with. For, if nationalities are characterized by secular tendencies to stay or return, incentives or constraints will not be able to change these tendencies markedly. Raw political force might, but Western democracies are neither internationally nor ideologically free to employ such force.

Lessons for host nations

If guestworkers' propensity to return voluntarily cannot be accurately predicted on the basis of policy variables other than nationality, what lessons does this hold for nations contemplating labor importation? First, one should accept high or low temporariness rather than try to manipulate it. A further lesson is that one should not create expectations among the resident population regarding the return of guests that are not substantiated by hard facts. If expectations concerning the duration of guestworker employment turn out to have been unrealistic, the policy will be in ruins.

Should potential host nations institute massive temporary worker programs instead of guestworker or enlarged traditional immigration programs? I believe that temporary worker plans for non-temporary jobs are incompatible with the fundamental tenets of Western democracy, the charter of the United Nations, the constitution of the International Labor Organization

Table 4. Predicting migrants' propensity to return by the growth of income and employment in their countries of origin, West Germany

Ranking by nationality	Propensity to return, 1961-76 (1= highest)	Average annual growth rates of:				Level of per capita income in countries of origin, 1976 (1= highest)
		per capita income in countries of origin:		labor force in countries of origin:		
		1960-76	1970-76	1960-69	1976-77	
		(1= highest)		(1= highest)		
Italians	1	5	5	5	4	1
Spaniards	2	3	3	3	3	2
Greeks	3	1	4	4	5	3
Yugoslavs	4	2	1	2	2	4
Turks	5	4	2	1	1	5

SOURCES: Data on growth rates and per capita income levels are from *Atlas* (Washington, World Bank, various years), and from "World Development Report, 1979" (Washington, World Bank, 1979).

and, most of all, the Universal Declaration of Human Rights.¹⁰ It is perfectly legitimate to argue that foreigners do not have a right to enter a country. However, those who are voluntarily admitted—except perhaps foreigners destined to work in truly temporary activities—should be entitled to what the Universal Declaration of Human Rights calls free choice of employment (article 23 [1]); to security in the event of unemployment, sickness, disability, widowhood, old age, or other lack of livelihood (article 25[1]); and to protection for their families (article 16[3]). Western Europe's guestworker policies, by and large, respect the social rights of article 25(1) of the Universal Declaration of Human Rights, and they freely admit and thereby protect families in some, albeit not yet all, cases. But they still subject the free choice of employment to a qualifying period (out-

side the European Economic Community and the Common Nordic Labor Market).¹¹ The trend of policies has been towards closer conformity with the principles of Western democracy; and a recent French attempt to reverse it has met with powerful domestic and international resistance.¹²

This reinforces the lesson drawn earlier. Temporary worker programs and restrictions are ideologically and politically less and less tenable in Western pluralistic societies. One can save oneself a great deal of domestic political and administrative commotion and loss of international standing by adopting from the start a position that is in conformity with the democratic values one espouses rather than having to yield to domestic and international pressures under inauspicious circumstances. □

—FOOTNOTES—

¹ W. R. Böhning, "Guest Worker Employment, with Special Reference to the Federal Republic of Germany, France and Switzerland: Lessons for the United States?" Working paper NB-5 (University of Maryland, Center for Philosophy and Public Policy, 1980).

² Illegals are, in principle, deportable. (Political grounds can also give rise to deportation.) Only Austria has clear legal stipulations according to which foreigners who have become a public charge can, in exceptional circumstances, be expelled. For the sake of correctness, it should also be mentioned that there are some untypical small-scale recruitment agreements which are temporary worker programs, such as the agreement between the Federal Republic of Germany and the Republic of Korea on miners, at present involving about 600 workers.

³ Bundesminister für Arbeit und Sozialordnung, "Politik der Bundesregierung gegenüber den ausländischen Arbeitnehmern in der Bundesrepublik Deutschland." [Federal Minister for Labor and Social Order, "The policy of the Federal Government towards foreign employees in the Federal Republic of Germany."] Bonn, Deutscher Bundestag, 6. Wahlperiode, Drucksache VI/3085, 31. January 1972.

[German Parliament, 6th Session, Print No. VI/3085, Jan. 31, 1972.]

⁴ Böhning, "Guest Worker Employment," p. 17.

⁵ *Ibid.*, pp. 22-27.

⁶ *Ibid.*, pp. 27-33.

⁷ *Ibid.*, table 19.

⁸ See U. Hiemenz and K. W. Schatz, *Trade in Place of Migration* (Geneva, International Labor Office, 1979).

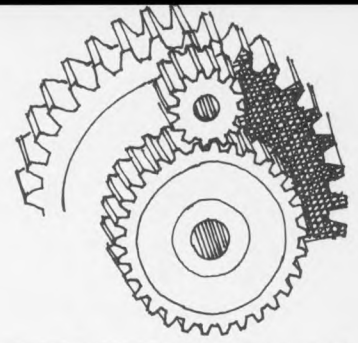
⁹ Böhning, "Guest Worker Employment," pp. 40-44.

¹⁰ See W. R. Böhning, "Regularising indocumentados" (Geneva, International Labor Office, 1979), World Employment Program Research Working Paper. Restricted; mimeographed; and "International Migration in Western Europe: Reflections on the Past Five Years." *International Labour Review*, July-August 1979, pp. 401-14.

¹¹ Restrictions are lifted after 5 to 10 years in Switzerland (depending on nationality), 8 years in Austria, 5 in Germany, 4 in France, 3 in Belgium and the Netherlands, and 1 year in Sweden.

¹² Böhning, "Guest Worker Employment," p. 7.

Productivity Reports



Labor and material requirements for commercial office building projects

BARBARA BINGHAM

The Bureau of Labor Statistics has completed its first study of labor and material requirements for commercial office building construction, similar to studies on school building and Federal office building construction. Based upon this survey of projects completed in 1974, the Bureau estimates that each \$1 billion of construction outlays for commercial office building construction in 1980 generated 21,900 jobs, including 9,800 in the construction industry. The Bureau estimates that during the survey period, each \$1 billion of expenditures generated 49,000 jobs with 23,000 of them in construction.¹ The tabulation compares these data for 1973 and 1980:

Industry	In current dollars	
	Jobs per \$1 billion expenditure in 1973	Jobs per \$1 billion expenditure in 1980 (preliminary)
All industries	49,383	21,900
Construction	23,067	9,800
Onsite construction	20,667	8,800
Offsite construction	2,400	1,000
Other industries	26,316	12,100
Manufacturing	15,752	6,500
Trade, transportation, and services	8,066	4,200
Mining and all other industries	2,498	1,300

Viewed in another perspective, for each \$1,000 expended on commercial office building construction during the survey year, 97.5 employee-hours were required. Of these, 42 were in the construction industry, 37.2 onsite and 4.8 offsite. The remainder of the required hours, 55.5, were in other industries: 33 in manufacturing; 16.6 in trade, transportation, and services; and 5.9 in mining and other industries.²

The Bureau estimates that for each \$1,000 of expenditures on this type of construction in 1980, 41.8 employee-hours were required.³ The industrial breakdown of

these estimated hours are: 17.9 in construction, 15.9 onsite and 2 offsite; 13.7 in manufacturing; 7.6 in trade, transportation, and services; and 2.6 in mining and other industries.

Construction of commercial office buildings accounts for a significant portion of new construction activity in the United States. The Bureau of the Census reported that the value of commercial office building construction totaled \$9.5 billion in 1979.⁴

Survey's scope and uses

The survey, designed to collect information on the number of employee-hours required to construct commercial office buildings, was based upon a sample of these buildings completed in fiscal year 1974.⁵ (Most of the value of construction for these projects was put in place during 1972 and 1973.⁶) A sample of 651 projects with a construction value greater than \$100,000 (built in the 48 contiguous States) was supplied by the Bureau of the Census and was then verified by the Bureau of Labor Statistics. The 83-project subsample was stratified by cost class and by broad geographic region—North, South, North Central, and West.⁶ The subsample was representative of a universe of projects with a total construction value of about \$2.7 billion.

These survey data are used to assess the impact of private and public construction expenditure on jobs and occupations. The occupational information which the studies provide is used by the Department of Labor in an effort to produce estimates of the employment-generating effects of construction expenditures, and to update construction labor requirements, knowledge of which can help determine training needs and prevent labor shortages or surpluses. Market research analysts and companies that manufacture equipment and supplies are interested in the detailed data collected on the amounts and types of materials used in construction. In addition, resurveys provide data on trends in labor requirements through the current year. These trends give an indication of construction productivity.

Onsite labor requirements

Data on onsite construction labor requirements were collected directly by the Bureau from owners, developers, and contractors. Onsite hours, which ranged from a low of 11.7 to a high of 72.4, can be affected by many

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factors. These include strikes, weather conditions, changing building codes, the use of prefabricated or standardized building components, the availability of skilled labor, soil conditions, project size and design, and order and delivery time for materials.

Regional and national data on onsite employee-hours were collected by type of occupation.⁷ The data show that skilled workers accounted for 68 percent of all onsite construction hours. Among the various skilled trades, carpenters accounted for the largest percentage — 15 to 23—of onsite hours in all four regions. The occupation with the next largest proportion was electrician, whose percentages ranged from 5 to 11. All other skilled worker groups accounted for less than 10 percent each of total onsite hours. Semiskilled and unskilled workers accounted for 24 percent of onsite hours, and professional and clerical workers, 7 percent.

Employee-hour data were also collected by type of construction operation. General contractors consistently accounted for the largest percentage of onsite labor in all four regions, although the percentages varied. The general contractors' percentage in the Nation was 34; 28 in the Northeast, 27 in the North Central region, and 33 in the West. The South, however, had a much higher average percentage, 40. Heating, ventilating, and air-conditioning subcontractors claimed the next highest percentage of onsite hours in the Nation and in the North Central, South, and West regions. In the Northeast, however, the electrical subcontractors accounted for a larger percentage of onsite hours than heating,

ventilating, and air-conditioning subcontractors.

Building characteristics. On the average, for the United States and all regions except the Northeast, the construction of buildings containing offices only required fewer employee-hours per \$1,000 than those buildings containing a combination of offices, apartments, or shopping facilities. Labor requirements for such buildings were also lower per 100 square feet in all four regions. In a building containing only offices, some efficiencies may be realized because of the repetitive design and opportunity for increased use of modular materials, thus reducing labor requirements.

Data were also collected by various building characteristics for hours per \$1,000 (table 1) and hours per 100 square feet (table 2).⁸ (Detailed comparisons for each building characteristic in every region have not been made because of the difficulty in isolating and fully explaining differences in labor requirements. Comparisons reflect many other differences besides those in individual characteristics.) On the average, concrete framed buildings had higher labor requirements than buildings with other types of framing by both contract value and area. Buildings with concrete exterior walls required more labor nationally than those with masonry, wood, or other types of exterior walls. Data for both interior walls and ceiling types showed that buildings with plaster walls and ceilings had the highest employee-hour requirements. Concrete again is the material used in buildings requiring the most labor, when buildings with

Table 1. Onsite employee-hours per \$1,000 of cost, by selected building characteristic, for commercial office building construction, by region, 1972-73

Building characteristic	United States	Northeast	North Central	South	West	Building characteristic	United States	Northeast	North Central	South	West
All projects	37.2	37.0	32.4	44.2	31.7	Heating					
Framing						Forced air	39.6	36.8	37.8	45.2	32.9
Steel	35.5	36.3	30.0	44.1	24.0	Hot water	35.3	34.4	29.8	52.2	18.4
Concrete	43.6	(²)	44.2	43.5	44.8	Radiant	32.2	37.4	26.0	36.4	32.6
Masonry	31.6	72.4	27.2	57.7	33.5	Other	35.4	(¹)	(¹)	35.4	(¹)
Wood	35.3	39.5	42.4	(¹)	33.7	Heating fuel					
Exterior walls						Electricity	34.6	36.7	27.0	42.2	28.8
Concrete	42.1	37.2	37.6	47.5	36.2	Gas	39.8	72.4	32.1	46.4	36.2
Masonry (brick)	35.4	38.0	29.2	39.5	39.1	Oil	35.5	35.1	37.0	(¹)	(¹)
Wood	35.2	32.2	47.2	45.5	30.9	Other	49.3	(¹)	49.3	(¹)	(¹)
Other	34.1	(²)	29.0	43.2	27.8	Air-conditioning					
Interior walls						Central air	37.4	36.7	32.4	44.2	32.0
Drywall	37.2	36.5	31.2	43.9	32.8	Other	33.2	45.8	37.6	40.9	30.5
Plaster	47.2	55.6	43.7	46.2	(¹)	Elevators/escalators					
Movable partitions	33.8	(¹)	(²)	(¹)	18.4	Elevators/escalators	37.8	37.5	33.1	43.2	30.8
Other	39.1	(¹)	30.2	(²)	(¹)	None	35.2	35.7	29.8	54.6	32.7
Floor base						Roofing					
Concrete	38.0	36.9	32.3	44.2	34.1	Asphalt/asbestos	29.5	53.6	27.7	(²)	42.1
Wood/plywood	28.1	38.2	37.0	(¹)	26.4	Built-up	38.1 nl	36.7	34.6	43.6	29.9
Floor covering						Wood	39.5	37.4	61.0	(¹)	38.6
Terrazzo	42.4	(¹)	(¹)	42.4	(¹)	Other	38.6	(¹)	(¹)	51.3	31.7
Carpet	36.0	37.1	32.9	47.8	30.0	Roof base					
Vinyl/vinyl-asbestos	37.0	(²)	32.1	40.1	56.4	Steel decking	38.8	37.8	33.2	44.6	42.1
Other	39.7	(¹)	26.3	42.8	28.4	Concrete	40.5	(²)	37.7	43.9	33.1
Ceiling						Wood/plywood	30.2	34.3	29.4	(¹)	30.0
Drywall	30.6	(¹)	28.4	32.9	35.6	Other	(²)	(¹)	(²)	(¹)	(¹)
Plaster	38.7	(¹)	38.7	(¹)	(¹)	Parking facilities					
Acoustical tile	37.8	37.0	33.1	44.9	31.4	Indoor	38.6	(¹)	49.3	46.2	27.8
Other	35.4	(¹)	(¹)	35.4	(¹)	Surface	37.0	37.1	28.4	44.4	30.0
						Indoor and surface	36.8	(¹)	31.4	44.6	44.5
						No parking	39.6	33.4	(²)	40.8	(¹)

¹ No projects in sample.

² Less than 3 projects in universe.

Table 2. Onsite employee-hours per 100 square feet, by selected building characteristic, for commercial office building construction, by region, 1972-73

Building characteristic	United States	Northeast	North Central	South	West	Building characteristic	United States	Northeast	North Central	South	West
All projects	83.3	129.8	68.4	103.2	60.9	Heating					
Framing						Forced air	91.3	97.4	80.9	110.8	71.3
Steel	83.7	123.1	69.9	113.9	46.0	Hot water	79.9	98.3	70.9	116.5	33.0
Concrete	93.9	(²)	73.6	91.4	150.8	Radiant	68.4	194.0	48.6	84.2	40.6
Masonry	66.8	328.7	54.2	107.3	97.1	Other	55.4	(¹)	(¹)	55.4	(¹)
Wood	55.8	128.1	132.9	(¹)	49.3	Heating fuel					
Exterior walls						Electricity	77.2	125.6	57.2	98.2	52.0
Concrete	10.19	220.2	68.0	117.6	118.0	Gas	91.6	328.7	76.0	108.6	76.9
Masonry (brick)	69.5	85.7	60.8	77.7	62.4	Oil	134.9	141.9	115.0	(¹)	(¹)
Wood	57.7	101.2	188.7	80.9	43.4	Other	76.2	(¹)	76.2	(¹)	(¹)
Other	86.3	(²)	82.4	114.4	60.5	Air-conditioning					
Interior walls						Central air	85.6	130.4	68.3	104.0	65.2
Drywall	82.3	128.0	62.7	102.5	63.4	Other	51.8	115.8	92.7	68.8	45.1
Plaster	104.9	197.2	97.7	96.0	(¹)	Elevators/escalators					
Movable partitions	87.3	(¹)	(²)	(¹)	33.0	Elevators/escalators	90.8	161.8	69.6	101.9	78.6
Other	98.2	(¹)	69.0	(²)	(¹)	None	64.2	87.5	63.8	116.4	49.5
Floor base						Roofing					
Concrete	87.7	129.8	67.9	103.2	73.2	Asphalt/asbestos	60.3	119.6	54.3	(²)	138.9
Wood/plywood	47.1	131.8	93.1	(¹)	41.1	Built-up	90.8	130.4	75.7	102.3	66.5
Floor covering						Wood	58.0	110.4	121.2	(¹)	54.0
Terrazzo	93.4	(¹)	(¹)	93.4	(¹)	Other	65.6	(¹)	(¹)	116.4	47.3
Carpet	84.5	125.8	70.4	133.8	59.4	Roof base					
Vinyl/vinyl-asbestos	91.2	(²)	65.1	129.2	199.1	Steel decking	96.6	145.2	78.5	100.0	138.9
Other	76.9	(¹)	60.4	87.5	42.0	Concrete	94.4	(²)	63.9	104.9	93.5
Ceiling						Wood/plywood	51.0	79.7	55.3	(¹)	46.6
Drywall	53.4	(¹)	53.1	85.6	44.7	Other	(²)	(¹)	(²)	(¹)	(¹)
Plaster	99.4	(¹)	99.4	(¹)	(¹)	Parking facilities					
Acoustical tile	87.1	129.8	71.5	107.6	62.8	Indoor	84.9	(¹)	76.2	146.0	75.5
Other	55.4	(¹)	(¹)	55.4	(¹)	Surface	83.4	131.6	66.1	106.5	46.6
						Indoor and surface	81.2	(¹)	66.2	79.1	141.0
						No parking	84.2	94.1	(²)	82.6	(¹)

¹ No projects in sample.

² Less than 3 projects in universe.

different floor base types are compared. Terrazzo floored offices required more hours per \$1,000 and per 100 square feet than buildings with vinyl or vinyl-asbestos flooring, carpet, or "other" floor coverings. Further survey data indicated that forced air heated buildings had higher labor requirements than those heated by hot water, radiant, or "other" types of heat. Data for buildings with different types of heating fuel were conflicting—oil heated buildings required more hours per 100 square feet than those using electricity, gas, or "other" types of fuel. However, per \$1,000, "other" fueled buildings required the most labor. Data for buildings with different roof base types and roofing types were also inconsistent. Projects with wood roofing and those with concrete roof base had higher labor requirements per \$1,000, but built-up roofed buildings, and wood or plywood roof base buildings had higher requirements per 100 square feet. Both buildings with central air-conditioning, as opposed to those with unit air-conditioning, and those buildings with elevators and escalators, as opposed to none, required more labor.

Project characteristics. National data for both hours per \$1,000 (table 3) and hours per 100 square feet (table 4) indicated that more labor was required to build a commercial office building outside metropolitan areas than within metropolitan areas. This relationship did not exist in the Northeast, however, where hours per \$1,000 for metro projects were slightly higher than for buildings in nonmetro areas, and hours per 100 square feet

for metro projects were more than twice as high as those in nonmetropolitan areas.

Employee-hour data stratified by project cost size and by number of floors above ground did not show a consistent relationship between hours and cost, and hours and building height. However, hours per \$1,000 declined in inverse relation to the number of floors below ground.

Indirect and offsite labor requirements. Indirect hours represent the labor required to produce and distribute the materials, equipment, and supplies used in construction activity.⁹ A total of 55.5 indirect employee hours was generated in three industry groups: manufacturing; trade, transportation, and services; and mining and all other industries. The hours by industry were:

Manufacturing	33.0	All other industries	5.9
Trade, transportation, and services	16.6	Mining	1.6
Transportation	3.9	Agriculture	0.8
Wholesale trade	5.3	Construction	0.6
Retail trade	4.9	Communications	0.5
Services	2.5	Public utilities	0.4
		Finance, insurance, and real estate	1.4
		Government enterprises	0.6

For every \$1,000 of commercial office building construction, the estimated indirect hours generated by the manufacturing industry were 33. This is the largest contribution of indirect hours, 59 percent, and is due to the

nature of construction, where most labor is onsite or in the manufacture of materials. In addition, as prefabrication increases, the manufacturing industry's percentage of hours should grow.

Of the 97.5 employee-hours required per \$1,000 of commercial office building construction in the survey period, 5 percent were for offsite construction, compared to 38 percent for onsite hours and 57 percent for indirect hours.¹⁰ The offsite employee-hours, 4.8, represent the builders' administrative office, estimating, and warehousing activities. (Offsite construction hours were estimated from the ratio of nonconstruction workers to total workers for general building contractors in the contract construction industry.)

Costs and project characteristics

Average total cost for surveyed commercial office buildings was \$947,084. Buildings in the West cost the least at \$584,299. Those in the Northeast were somewhat higher, averaging \$776,372. By contrast, buildings constructed in the North Central region averaged \$1,264,162, and South region projects averaged \$1,224,771. Cost per square foot did not correspond in any way to average project cost. It should be noted that over 75 percent of the projects cost less than \$1 million.

Component costs for surveyed projects averaged 42.2 percent for materials, 26.7 percent for labor, 2.7 percent for equipment, 0.6 percent for interest expense, and 27.9 percent for profit and overhead. Projects in the North Central and South had cost components that closely

Table 4. Onsite employee-hours per 100 square feet, by selected project characteristic, for commercial office building construction, by region, 1972-73

Project characteristic	United States	Northeast	North Central	South	West
All projects	83.3	129.8	68.4	103.2	60.9
Location					
Metropolitan area	82.1	144.2	62.8	102.8	60.9
Nonmetropolitan area	96.2	66.9	97.7	109.6	(¹)
Construction value					
\$100,000-249,999 ³	71.4	176.5	98.8	102.8	44.0
\$250,000-499,999	75.2	74.9	95.4	99.7	25.6
\$500,000-999,999	68.5	94.1	48.4	86.2	62.5
\$1,000,000-2,999,999	80.3	160.3	57.2	101.6	51.7
\$3,000,000-4,999,999	96.2	(¹)	(¹)	96.2	(¹)
\$5,000,000 and over	96.8	(²)	78.4	117.0	92.5
Floors above ground					
1 floor	74.4	81.7	71.8	135.3	60.0
2 to 3 floors	70.8	149.5	62.5	83.8	45.4
4 to 10 floors	96.0	(²)	52.4	110.2	138.9
11 to 35 floors	88.6	(¹)	78.8	96.5	92.5
36 to 60 floors	106.9	(¹)	(²)	117.9	(¹)
Floors below ground					
1 floor	82.2	125.8	71.2	102.2	53.1
2 to 3 floors	99.4	(²)	(²)	108.9	92.5
4 to 5 floors	19.3	(¹)	19.3	(¹)	(¹)

¹ No project in sample.

² Less than 3 projects in universe.

³ Does not include one sampled project less than \$100,000.

paralleled the national averages (although the South did have appreciably lower profit and overhead). By contrast, projects in the Northeast had higher average labor costs (29.2 percent) and profit and overhead (33.3 percent), and correspondingly lower relative costs for materials (35.6 percent) and equipment (1.8 percent). The West showed lower relative costs for materials (39.7 percent) and a higher profit and overhead (32.3 percent).

Costs per square foot averaged \$22.36 overall and varied by region: \$35.13 in the Northeast, \$21.10 in the North Central, \$23.36 in the South, and \$19.18 in the West.

Nationally, the average length of time required to complete the construction of commercial office buildings was 47.2 weeks. Projects in the South took considerably longer—60.0 weeks, while those in the West were completed 8.8 weeks faster than the national average.

Average square feet for all surveyed projects was 42,358. For the regions, the average square footage was: Northeast, 22,103; North Central, 59,920; South, 52,421; and West, 30,460. Just over half of the projects had two to three floors above ground, while a third had one floor above ground.

Commercial and Federal office buildings

Because this is the first BLS survey of commercial office buildings, there is no previous study with which to make comparisons. However, a survey of Federal office building construction was published by the Bureau in

Table 3. Onsite employee-hours per \$1,000 of cost by selected project characteristic for commercial office building construction, by region, 1972-73

Project characteristic	United States	Northeast	North Central	South	West
All projects	37.2	37.0	32.4	44.2	31.7
Location					
Metropolitan area	36.9	37.2	31.2	43.5	31.7
Nonmetropolitan area	41.1	34.3	37.2	57.2	(¹)
Construction value					
\$100,000-249,999 ³	44.2	41.4	44.6	53.9	37.1
\$250,000-499,999	35.4	34.7	40.9	47.2	14.9
\$500,000-999,999	32.6	33.4	24.5	43.1	28.6
\$1,000,000-2,999,999	34.5	37.8	28.0	40.1	31.2
\$3,000,000-4,999,999	45.4	(¹)	(¹)	45.4	(¹)
\$5,000,000 and over	39.3	(²)	36.1	46.1	33.0
Floors above ground					
1 floor	37.7	35.6	31.2	57.4	39.2
2 to 3 floors	33.2	37.6	30.0	42.6	26.7
4 to 10 floors	38.4	(²)	28.1	41.8	42.1
11 to 35 floors	40.5	(¹)	40.6	45.2	33.0
36 to 60 floors	38.9	(¹)	(²)	45.9	(¹)
Floors below ground					
1 floor	37.9	37.1	34.6	43.8	31.2
2 to 3 floors	35.8	(²)	(²)	46.5	33.0
4 to 5 floors	11.7	(¹)	11.7	(¹)	(¹)

¹ No project in sample.

² Less than 3 projects in universe.

³ Does not include one sampled project less than \$100,000.

1976.¹¹ Buildings in both studies were constructed at about the same time and therefore provide the opportunity to compare some data, although some structures in the Federal office building study were not similar to those of the surveyed commercial office buildings. (The Federal office buildings survey included Federal office buildings, social security buildings, laboratory-office buildings, and border stations.) In both surveys a majority of the buildings had masonry exterior walls, drywall interior walls, concrete floor bases, acoustical tile ceilings, and built-up roof coverings. A majority in both also had central air-conditioning, forced air heating, and outdoor parking lots. A majority of all Federal buildings surveyed were one to three stories; while over 85 percent of commercial office buildings were one or two stories. In addition, a majority of the construction value for both surveys was put in place during the same period, 1972-73.

Commercial office buildings required 7.4 fewer total hours per \$1,000 than projects in the Federal office building survey (15 percent fewer hours). Commercial office building onsite labor requirements were also lower—37.2 hours compared to 42.8 hours. However, the biggest percent difference was for offsite hours—4.8 hours for commercial office buildings and 6.6 for all types of Federal office buildings. Commercial office buildings also required fewer hours per 100 square feet. The tabulation summarizes these comparisons in hourly requirements:

1972-73 office buildings	<i>Per \$1,000 (current)</i>			<i>Per 100 square feet</i>		
	<i>Total</i>	<i>Onsite</i>	<i>Offsite</i>	<i>Total</i>	<i>Onsite</i>	<i>Offsite</i>
Commercial office buildings	42.0	37.2	4.8	94.0	83.3	10.7
All Federal buildings	49.4	42.8	6.6	204.1	176.8	27.2

Average cost per project was about \$947,000 for commercial office buildings, compared with \$2,780,000 for Federal office buildings. This difference may account for some of the disparity in labor requirements shown in the text tabulation. Cost per square foot also differed considerably. Surveyed commercial office buildings cost about 45 percent less per square foot than the surveyed Federal office buildings: \$22.36 to \$41.28. Commercial office buildings cost less in every region: in the Northeast—41 percent less; in the North Central—36 percent less; in the South—35 percent less; and in the West—51 percent less.

The major components percent of construction costs for the two studies again showed there were large variances in the data. The largest difference was a much lower profit and overhead component for Federal office buildings—12.5 percent less than commercial buildings' profit and overhead.

Industry overview

How much commercial office building construction is done each year is heavily dependent on the economy—and in particular on each area's outlook for growth: the current local office occupancy rates; money market conditions; local, State, and Federal incentives; and available labor. In 1979, the value put in place for private office building construction was \$9.5 billion, a considerable increase over 1975's \$5 billion even if inflation is taken into account.¹² Most of this newly constructed space is being occupied, or will be occupied, by existing companies that are expanding.

The future activity level of this particular segment of construction is even harder to predict than the level of the economy, on which construction activity depends so much. However, some estimates show that there will be a surplus of office space by 1983 when most larger buildings now under construction will be completed.¹³

Technology and construction

Recent trends. Rarely are there any major "break-through" type technological changes in construction. Rather, new ideas, which usually affect one facet of construction, are continually being developed. The ideas are first tested on one or two projects, and then, if successful and accepted, spread gradually throughout the industry. New ideas in design and construction that have led to savings in time and cost have often involved lighter or stronger materials; new materials combinations which were largely prefabricated offsite; increased use of modular systems in design and construction; innovative management techniques like fast-tracking, which is the overlapping of construction phases that are ordinarily sequential; and increased use of computers.

In the early 1970's, the general trends and changes in commercial office building design and construction included some that were basically technological, and others that were related to design, energy consumption, government regulation, tenant requirements, and so forth. Among the trends and changes in this period were: increased environmental considerations; better interior space programming and planning techniques; improved heating, ventilating, and air-conditioning systems; better insulation and increased use of solar heat-reducing glass; improvements in the design and detailing of glass curtain walls; design advancements for rigid-framing, increased use of modules; and new solutions to high-rise wind-load problems.¹⁴

Energy. Owners, architects, engineers, and contractors are all looking for new ways to reduce energy costs. Fuel shortages, the general need to cut costs, and the emergence of energy conservation performance standards have led to a myriad of new ideas as well as in-

creased implementation of older energy conservation techniques. Through building design and the choice of materials and mechanical systems to be used, energy can be conserved in two basic ways: actively and passively. The former (like solar equipment) is usually much more expensive, so the estimated payback period is examined closely before an owner will agree to such a design. The ever rising cost of energy, however, is making many of the payback periods shorter.

Some of the routine features now included in many of the office building designs are: solar oriented siting, double glazed windows or tinted glass, reduction of window area, internal heat recovery systems, energy efficient lighting, computerized heating and cooling systems, openable and recessed windows, and earth berms. Most of these features do not add much to the cost of building and are passive conservation measures.

Some of the more innovative, expensive, and elaborate (and less common) features found in conservation-oriented designs include: extensive atriums, low and broad building configurations (as opposed to office towers), special patented insulated curtain wall and ceiling systems, solar heating, elaborate heat recovery systems (requiring no heating plant), well water cooling, and underground buildings. A relatively low, broad building for instance, can provide increased usable space and yet have less outside surface area than a tower building, which leads to energy savings. Such a design also reduces construction cost because less heavy steel or concrete framing is needed.

High-rise towers present many challenges to engineers and architects. One of the most difficult challenges is designing the structure to resist wind-loads. One industry expert summarizes some of the new structural solutions to high-rise problems by explaining the new possibilities for growth in skyscrapers, brought about by the advent of bundled-tube and stress-tube systems for steel structures, and framed-tube, tube-in-tube, and modular-tube systems for tall concrete structures.¹⁵

One common but fairly new technological development used in design and construction that has had a large impact, is the module. A module, which is based on standardization of sizes of materials, designs, and client requirements, can reduce the time required for both design and construction. Modules are often used extensively in structural framing, lighting, air-conditioning and heating, power supply and communications, partitions, and built-in or movable furniture.

The use of precast concrete, versus cast-in-place concrete, is another example of an idea which produces savings in labor and construction time, and in this case also provides better quality control. For example, an \$8 million hotel addition, which was built using a modular precast concrete building system, was completed 30 per-

cent faster than would have been possible if cast-in-place concrete had been used.¹⁶

Another innovation in the use of precast concrete is precast concrete bents, which eliminates the need for shear walls because the bents themselves are able to bear weight and resist moment forces. They can also serve as the primary architectural elements.¹⁷ Because the bents are cast in one piece, they do not have the heavy joint lines common to precast concrete. These lines are usually very unattractive, so the concrete structures cannot be used as architectural elements. Very few units are required because they cast a beam and two columns simultaneously in each bent. This also helps reduce construction time.

Other changes in construction processes. In general, prefabrication is most fully utilized in construction through the use of systems techniques. This is the process of combining prefabricated assemblies and components into single integrated units using industrialized production, assembly, and methods. Systems or systems building can be employed in erecting or installing exteriors, flooring, ceiling, walls, mechanical and lighting elements, or several combinations of these elements. Generally this will lead to a reduction in onsite labor requirements and an increase in offsite and indirect labor hours.

Another change in the design and management of construction projects, the increased use of computers, has had a more limited impact because of the industry's slow and cautious reaction to innovation, and the state-of-the-art in computers which offered little incentive to change. In the past, the large mainframe computers were often used only for one application and this resulted in relatively small incremental savings. The recent advent of the smaller, less expensive, and easier to use computers, plus the availability of prepackaged software programs, have made it easier for computers to be used in all phases of construction: planning, designing, managing, and building. However, they are still not commonplace. Only a few larger firms have fully integrated systems.¹⁸ Only about one-third of civil engineers and 40 percent of contractors use small computers.¹⁹ In the future, the increasing complexity and cost of construction design and management will increase the potential usefulness of computers even to smaller firms. The design and construction firms will have to contend with an ever increasing number of environmental and energy regulations; local, State, and Federal laws; community group pressures; and labor demands. There is also growing client awareness and increasing inflation to consider. All of these complex constraints simply emphasize the need for coordination of all available information and the need to be able to make rapid responses, all of which a computer can facilitate. In ad-

dition, construction contractors could use a computer while carrying out many of their business functions, such as accounting, drawing graphics, drafting, preparing bids, and compiling payrolls.

Another change in construction, which is more widespread and has been employed for a longer period of time, is in the method of managing. Critical Path Method (CPM), Program Evaluation and Review Technique (PERT), and fast-tracking all try to speed the construction process through tight coordination and cooperation among a project's owners, architects, engineers, and various contractors. This coordination often begins during the design phase; contractors are sometimes brought in for early consultations, some materials are ordered far in

advance of use, and actual construction may even be started. Very often, systems building is used in conjunction with fast-tracking. PERT and CPM are systems of management that allow for tight control of this overlapping by providing a detailed time and cost schedule, and identifying the critical path, the sequence of events which, if delayed, would slow the entire project.

Another variation, that is actually a change in manager and not method of management, is the emergence of construction managers. A construction manager, who can be a general contractor or a specialized company, oversees and manages the entire project for the owner. They are found most frequently on large construction projects. □

FOOTNOTES

¹ Employment-year estimates were computed using 1,800 hours for onsite construction and 2,000 hours for offsite construction. Average hours per job in 1973 for the other industries are: agriculture—2,374; mining—2,173; construction—2,028; manufacturing—2,095; transportation—2,149; communications—2,080; public utilities—2,152; wholesale trade—2,136; retail trade—2,019; finance, insurance and real estate—1,991; services—1,862; and government enterprises—2,134.

² Indirect labor data were developed by aggregating the materials, supplies, and equipment values by general type, and then deflating the dollar total for each type by the appropriate Producer Price Index.

These constant dollar values of materials, equipment, and supplies were then processed through the Bureau's input-output model to generate estimates of final demand. Sector productivity factors were then applied to derive employee-hours for the manufacturing industries; trade, transportation, and services industries; and mining and all other industries. These estimates are the indirect labor hours generated by the construction activity.

Offsite construction labor requirements were estimated from the ratio of nonconstruction workers to total workers for general building contractors in the contract construction industry, as shown in *Employment and Earnings*.

³ The 1972-3 onsite hours required for commercial office building construction were adjusted for price and productivity factors in estimating the 1980 labor requirements. The 1980 estimates are based on 1972-73 commercial office building survey data and the rate of change in onsite hours between 1959 and 1973 for Federal office building construction.

The price deflator is the average of the Census Bureau single family housing deflator, Turner Construction Co. deflator, and the Federal Highways Administration deflator (or the non-residential building deflator): 1959=59.5, 1972=100, 1972-3=104.6, 1980=217.9 (preliminary). The annual rate of change used was -2 percent. From this rate a compound interest factor for the 6 1/2-year span was applied to the hours, which were adjusted by the cost index.

⁴ U.S. Department of Commerce, "Table 1—New Construction Put in Place, *Construction Reports* (C30:-80-5) May 1980, p. 4.

⁵ The length of time between the data year and the year of publication is due to several factors. A considerable amount of time was needed to define and refine the universe, to design and select the sample, and to collect, compile, and verify the data. For each surveyed project, many personal visits to contractors and subcontractors, with followup visits, were required. Additional time was required for preparation and publication of the results. Nevertheless, the data presented indicate trends in labor requirements and are useful in analyzing changes in factors over periods of time. The data also serve as benchmarks for developing current estimates of employment generating effects of construction expenditures.

⁶ Although the overall U.S. and regional data provided by the sur-

vey are believed to be accurate, the detailed data would have a wider margin of sampling error and may be subject to other limitations. Except for the nonresponding sample units and the data estimated by the contractor, there are no known sources of nonsampling error. Sampling variances will be made available at the Bureau of Labor Statistics.

⁷ Data were provided for the continental United States and four broad geographic regions: Northeast—Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont; North Central—Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin; South—Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia; and West—Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

⁸ Employee-hour requirements are affected by a number of factors such as location, size of project, type of structure, labor skills, and local building codes and customs. The effects of these separate factors cannot be isolated.

⁹ The Office of Economic Growth, Bureau of Labor Statistics, uses the input-output tables of the Bureau of Economic Analysis, U.S. Department of Commerce to generate the indirect hours from the materials, equipment, and supply cost data provided by this survey. The data used in this study were prepared by Karen Horowitz.

¹⁰ Offsite employee-hours represent the builder's administrative office, estimating, and warehousing activities. The following procedure was used to calculate offsite construction employee-hours. Employee-hours worked by administrative personnel were subtracted from total onsite hours obtained in the survey. The amount of administrative hours was taken from survey data. The percentage that these "adjusted" onsite hours were of total hours was found in *Employment and Earnings, United States 19-08-78*, Bulletin 1312-11. (Bureau of Labor Statistics, 1979) and a total hour figure was calculated. From this total hour figure, onsite hours, including administrative hours, were subtracted to obtain offsite hours. Administrative hours were subtracted from onsite hours only for calculation of total hours, because the administrative hours are not included in the construction worker employment figures in *Employment and Earnings*. Administrative hours worked onsite are included in all onsite hour data presented.

¹¹ See John G. Olsen, "Decline noted in hours required to erect Federal office buildings," *Monthly Labor Review*, October 1976, pp. 18-22.

¹² The Bureau of the Census, U.S. Department of Commerce, dollar amounts for value put in place are higher than F.W. Dodge's contract value data. The following Census data on value put in place for commercial office building construction are in billions of current dollars:

1972	-	\$ 5,269	1976	-	4,763
1973	-	5,984	1977	-	5,269
1974	-	6,118	1978	-	6,574
1975	-	4,973	1979	-	9,461

Data for 1972-73 are from U.S. Department of Commerce, "Table A-2.—New Construction Put in Place in the United States in Current and Constant (1972) Dollars," *Construction Review*, March 1979, p. 23; 1974-79 data are from U.S. Department of Commerce, "Table 1—Value of New Construction Put in Place," *Construction Reports* (C30-80-5), May 1980, p. 24.

¹³"A towering rise in downtown construction," *Engineering News Record*, March 5, 1979, p. 97.

¹⁴Schmertz, Mildred F., editor, *Office Building Design* (McGraw-Hill Book Company, New York), 1975, p. viii.

¹⁵Schmertz, *Office Building Design*, p. viii.

¹⁶"System cuts 30 percent from 'building time,'" *Engineering News Record*, May 31, 1979, p. 11.

¹⁷"Precast bent disguises strength with good looks," *Engineering News Record*, December 13, 1979, pp. 40-41.

¹⁸"Construction's newest tool is small, low cost, highly productive," *Engineering News Record*, August 4, 1977, p. 20.

¹⁹"Optimizing the construction process" (editorial), *Engineering News Record*, August 4, 1977, p. 80.

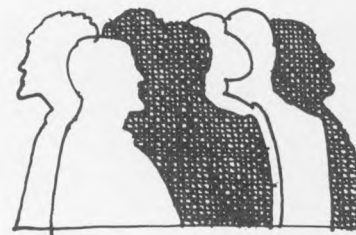
The pension punch

. . . It has been estimated that pension funds overall control more than \$.5 trillion, of which nearly half is to be found in funds set up and controlled at least in part by unions. While such funds are often technically directed by some combination of employer and union representatives, the experience of the Teamsters Central States Fund is instructive as to the extent the employer-named directors seldom constitute an independent force.

Half a trillion dollars is a massive source of investment capital which constitutes a massive threat should an employer be the recipient of fund capital or seeking capital from the fund. Several observers, who implicitly support such uses of pension capital for union organizational purposes, have criticized the current operation of these funds because, for example, large portions of the fund investments surveyed have gone to nonunion firms. Yet this criticism seems misplaced, even granting the validity of the observer's point of view: the problem is not that an unacceptable amount of pension fund money is going to support nonunion firms but that union officials are not using this fact as a lever to accomplish their aim of transforming these firms into unionized enterprises. After all, you can't induce a firm to unionize by threatening to withdraw needed capital (capital the firm has become used to having) if it isn't already invested there. Whatever the criticisms, however, it is evident that some unions and some union activists have been vigorously exploring the limits of the pension fund "card"; they are testing various techniques for using this card in well-orchestrated unionizing stratagems . . .

—JAMES T. BENNETT AND MANUAL H. JOHNSON
Pushbutton Unionism
 (Fairfax, Va., George Mason University,
 Contemporary Economics & Business
 Association, 1980), pp. 13-14.

Special Labor Force Reports—Summaries



Working mothers and their children

ALLYSON SHERMAN GROSSMAN

At the outset of the 1980's, children with working mothers are more the rule rather than the exception. In March, 53 percent of all children under age 18—a total of 30.7 million—had mothers who were either employed or looking for work. (See table 1.) New marital patterns, relatively high inflation, and smaller families have all contributed to increases in women's labor force activity. By early 1980, more than 17 million mothers of children under age 18 were in the work force, 44 percent more than in 1970. (See table 2.) Moreover, in the past 10 years, the number of children whose mothers were in the labor force has grown by more than 5 million despite the falling birth rate and the consequent reduction in the total number of children in the population.¹

Changing family patterns

During the past decade, the marital and family composition of the population has undergone pervasive changes. Among the most prominent were the declining incidence of marriage and childbearing among young women. Between March 1970 and March 1980, the proportion of never-married women among all those 20 to 24 years old increased from 36 to 50 percent, while among those age 25 to 29, the proportion almost doubled from 11 to 21 percent. At the same time, many young women who chose to marry exhibited an increased propensity toward childlessness, delayed childbearing, and smaller families. For instance, in June 1979 about 6 percent of all married women between the ages of 25 and 34 reported that they expected to remain childless throughout their lifetimes, compared with about 3 percent in 1967. Among wives who intended to have children, motherhood was often postponed. Young women who had their first child between 1975 and 1978 did so an average of 2 years after marriage, about 9 months later than did women who married a decade

ago. In addition, only slightly more than 3 of 10 wives expected to have 3 children or more. In 1967, this figure was more than 6 of 10.²

Increased labor market activity among women may be related to these lowered expectations to a large extent, as women who work outside their homes characteristically have smaller families than women not in the labor force. For example, in June 1979, working wives aged 18 to 24 expected on average to have two children while those who were out of the labor force intended to have a little more than two. In addition, wives who are in the labor force usually have their children later in life than do those who are not working outside their homes. In 1979, working wives between 18 and 24 years old had given birth to an average of less than 30 percent of the youngsters they expected to have during their lifetimes, while nonworking wives had given birth to more than 50 percent. Similar patterns existed among older wives.³

Reflecting these trends in childbearing, the birth rate plummeted, and in 1975–76 hit the lowest level ever recorded. Since then, the rate has edged up slightly to 15.9 births per thousand women in the population⁴ as women further into their childbearing years now begin to have the offspring they postponed at the outset of the 1970's. In the year ending with March 1980, the

Table 1. Number of own children under 18 years old, by age, type of family, and labor force status of mother, March 1970 and March 1980

[Numbers in thousands]

Item	Total children under 18		Children 6 to 17		Children under 6	
	March 1970	March 1980 ^r	March 1970	March 1980 ^r	March 1970	March 1980 ^r
Total children ¹	65,755	58,107	46,149	40,688	19,606	17,418
Mother in labor force	25,544	30,663	19,954	23,196	5,590	7,467
Mother not in labor force	39,550	26,493	25,627	16,722	13,923	9,771
Husband-wife families	58,399	46,829	40,479	32,150	17,920	14,679
Mother in labor force	21,982	24,218	17,035	18,032	4,947	6,186
Mother not in labor force	36,417	22,611	23,444	14,118	12,973	8,493
Families maintained by women ²	6,695	10,327	5,102	7,768	1,593	2,559
Mother in labor force	3,562	6,445	2,919	5,164	643	1,281
Mother not in labor force	3,133	3,882	2,183	2,604	950	1,278
Families maintained by men ²	661	951	568	771	93	180

¹ Children are defined as "own" children of the family. Included are never-married sons, daughters, stepchildren, and adopted children. Excluded are other related children such as grandchildren, nieces, nephews, cousins, and unrelated children.

² Includes only divorced, separated, widowed, or never-married persons.

NOTE: Due to rounding, sums of individual items may not equal totals.
^r = revised.

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number of children below age 6 registered its first increase in a decade. However, this growth of nearly 440,000 was more than offset by a greater drop in the school-age population (children 6 to 17 years old). Thus, a net decline occurred in the total population of youngsters below age 18; and over the decade, the number of children in this age group living in families dropped by more than 7.5 million.

Besides a dwindling youth population, the dual influences of marital disruption and of parenthood among never-married women have resulted in some changing family structures. For instance, while the number of children living in two-parent families fell significantly, substantial increases were registered in the number living with only one parent. Whereas in March 1970, about 1 child of 9 lived solely with either a mother or a father; by March 1980, this proportion had grown to almost 1 in 5. Although the vast majority of these children lived with their mothers, the number living with their fathers only had also risen substantially. However, less than 2 percent of all children reside solely with their fathers.

More children with working mothers

Even with a declining youth population, the number and proportion of children with working mothers climbed steadily between 1970 and 1980. During this time, women entered the labor force at an unprecedented pace, averaging over 1 million net additions each year except for 1970–71, a recessionary period. The greatest labor force gains were posted among women 25 to 34 years of age. Many in this age group, who in other times typically stopped working for marriage or childbearing, are no longer doing so. Their labor force participation rate advanced by 21 percentage points in 10 years, reaching 66 percent in March 1980. Because nearly 7 of 10 women this age have children, more youngsters than ever before have working mothers.

As expected, younger children are less likely than older ones to have mothers in the labor force. Of all those living with both parents, the proportions whose mothers were employed or looking for work ranged from 42 percent for those below age 6, to 54 percent for those ages 6 to 13, and to 59 percent for those 14 to 17 years old. (See table 3.) These proportions were significantly greater for children living with their mothers only, but the same order prevailed.

That proportionately fewer younger than older children have working mothers results from the interaction of many factors. First, the belief of some mothers that only a parent can provide the loving, caring environment that a young child needs to be properly nurtured may limit some women's labor force activity. Others find that adequate care for young children, particularly for those below age 2, is difficult to locate. Arrange-

ments for older children—who attend school for most of the day—are somewhat easier to make. Then, too, the cost of quality care for a young child may be prohibitive. Also, because many of the mothers of young children are young themselves, they may lack the education, skills, and experience necessary for some of today's jobs.

Racial differences

Besides age, race and family structure also influence the likelihood of a child having a mother in the work force. Overall, black children are more likely than white children to have a mother in the labor force—57 per-

Table 2. Families with children under 18 years old by age, type of family, and employment status of parents, March 1980

[Numbers in thousands]

Item	Families with children under 18 years			
	Total	Under 6 years	6 to 13 years, none younger	14 to 17 years, none younger
Total families with children	30,811	13,260	11,772	5,778
Mother in labor force	17,107	6,105	7,476	3,526
Employed	15,961	5,544	7,031	3,385
Unemployed	1,147	560	444	142
Mother not in labor force	13,076	7,002	4,058	2,016
Married-couple families	24,580	11,092	9,130	4,358
Mother in labor force	13,352	5,008	5,695	2,650
Employed	12,606	4,623	5,418	2,564
Unemployed	747	384	276	86
Mother not in labor force	11,227	6,084	3,435	1,708
Father in labor force	23,016	10,488	8,559	3,969
Mother in labor force	12,661	4,769	5,403	2,489
Employed	11,968	4,406	5,150	2,412
Unemployed	693	363	253	77
Mother not in labor force	10,355	5,718	3,157	1,480
Father employed	22,026	9,918	8,245	3,863
Mother in labor force	12,149	4,534	5,192	2,423
Employed	11,534	4,220	4,962	2,352
Unemployed	614	314	230	71
Mother not in labor force	9,877	5,384	3,053	1,440
Father unemployed	990	569	314	106
Mother in labor force	513	235	211	66
Employed	434	186	188	60
Unemployed	79	49	23	7
Mother not in labor force	477	334	103	40
Father not in labor force	1,051	295	403	353
Mother in labor force	443	108	198	137
Employed	408	100	179	128
Unemployed	35	8	19	8
Mother not in labor force	608	187	205	216
Father in Armed Forces	513	310	167	36
Mother in labor force	248	131	94	23
Employed	230	117	89	23
Unemployed	19	14	5	...
Mother not in labor force	264	179	73	12
Other families with children ¹				
Maintained by women	5,604	2,015	2,405	1,185
Mother in labor force	3,755	1,097	1,781	876
Employed	3,355	921	1,613	821
Unemployed	400	176	168	56
Mother not in labor force	1,849	918	623	308
Maintained by men	627	153	238	236

¹ Includes only those families maintained by divorced, separated, widowed, or never-married parents.

Note: Due to rounding, sums of individual items may not equal totals.

cent compared with 52 percent in March 1980. This relationship prevailed for children living in two-parent families. However, among children living in solo-parent families, white ones were more likely than black ones to have a working parent.

The greater incidence of working mothers among black children living with both parents reflects the historically higher labor force participation of black wives. Financial pressures have forced these women to work outside their homes to a much greater extent than their white counterparts. As early as 1926, the Women's Bureau of the Department of Labor reported, "... it is a well known fact that most Negro women must continue as breadwinners practically all their adult lives, marriage rarely meaning a withdrawal from the wage earning ranks."⁵ Until the mid-1970's, the labor force participation rate for black wives was about 12 to 14 percentage points higher than that for white wives. At that juncture, as white wives began joining the work force at a faster pace than black wives, racial differences between the labor force participation rates of wives narrowed. As a result, the gap between the shares of children in two-parent families whose mothers worked outside their homes also closed somewhat. From March 1970 to March 1980 the proportion of white children living in these circumstances grew from 36 to 51 percent, while for black children, it increased from 52 to 62 percent.

In one-parent families, where half of all black children live, the racial differences in the proportion of children with working mothers have remained fairly stable. Although both white and black mothers in these circumstances show a growing tendency to work, black children in such families are still less apt than white ones to have a mother in the labor force. Black mothers maintaining families are younger and less educated than their white counterparts, and through the years these factors have worked against their labor market success. In addition, black families maintained by women are much more likely than similar white families to contain preschoolers. These young children have a further inhibiting effect on their mothers' labor force participation. Moreover, black families maintained by women were more apt to receive public assistance than were comparable white families.⁶ Thus, in March 1980, 55 percent of the black children living with only their mothers had a working parent, compared with 67 percent of white children. Ten years earlier these figures were 47 percent and 57 percent. In both white and black solo-parent families, older children were much more likely than those who were younger to have a mother in the labor force.

Because Hispanic women characteristically have lower levels of labor force participation than either black or white women, a smaller proportion of their children

have working mothers. In early 1980, about 44 percent of all Hispanic youngsters below age 18 had mothers in the work force with no differences registered by family type.

Family incomes

Regardless of race or family type, children whose mothers were in the labor force were in families with considerably higher incomes, on average, than were children with nonworking mothers. For all two-parent families, median income in 1979 was about \$24,400 for families where the mother was in the labor force and \$20,200 for families where she was not.

Although the earnings of white and black wives are approximately equal, white children more frequently

Table 3. Children under 18 years old by age, type of family, and employment status of parents, March 1980

[Numbers in thousands]

Item	Children under 18 years			
	Total	Under 6 years	6 to 13 years	14 to 17 years
Total children	58,107	17,418	25,966	14,723
Mother in labor force	30,663	7,467	14,457	8,738
Employed	28,419	6,694	13,424	8,300
Unemployed	2,244	774	1,033	438
Mother not in labor force	26,493	9,771	11,128	5,594
Married-couple families	46,829	14,679	20,671	11,479
Mother in labor force	24,218	6,186	11,241	6,791
Employed	22,779	5,667	10,593	6,520
Unemployed	1,438	519	648	271
Mother not in labor force	22,611	8,493	9,430	4,688
Father in labor force	43,874	13,875	19,402	10,597
Mother in labor force	22,990	5,896	10,692	6,402
Employed	21,655	5,407	10,094	6,154
Unemployed	1,335	489	597	248
Mother not in labor force	20,884	7,978	8,711	4,195
Father employed	41,843	13,069	18,531	10,242
Mother in labor force	21,996	5,595	10,212	6,189
Employed	20,818	5,174	9,685	5,959
Unemployed	1,178	421	527	230
Mother not in labor force	19,847	7,474	8,320	4,053
Father unemployed	2,031	805	871	355
Mother in labor force	994	301	480	213
Employed	837	233	409	195
Unemployed	156	68	71	18
Mother not in labor force	1,037	504	391	142
Father not in labor force	2,051	406	881	764
Mother in labor force	804	131	353	320
Employed	730	119	314	298
Unemployed	74	12	40	23
Mother not in labor force	1,247	275	528	444
Father in Armed Forces	904	398	388	118
Mother in labor force	424	159	196	68
Employed	394	141	185	68
Unemployed	30	18	11	1
Mother not in labor force	480	239	192	49
Other families ¹				
Maintained by women	10,327	2,559	4,915	2,853
Mother in labor force	6,445	1,281	3,216	1,948
Employed	5,639	1,027	2,831	1,781
Unemployed	806	254	385	167
Mother not in labor force	3,882	1,278	1,698	906
Maintained by men	951	180	380	391

¹ Includes only those children in families maintained by divorced, separated, widowed, or never-married parents.

NOTE: Due to rounding, sums of individual items may not equal totals.

live in families with higher average incomes than do black children. This results from the fact that the earnings of white husbands far exceed those of black husbands. Among white children in two-parent families, median family income was \$24,800 when the mother worked and \$20,800 when she did not. Comparable median incomes for black families were \$20,800 and \$13,500. (See table 4.)

A substantial number of children are either wholly or partially dependent on their mothers' earnings for a large share of their support. In March 1980, 1 of 4 children—14.4 million—lived in families where the father was absent (10.3 million), unemployed (2.0 million), or out of the labor force (2.1 million). The number of children in these circumstances jumped by more than 1 million over the year. Reflecting the effects of the economic slowdown, about half of this rise occurred in families where the father became unemployed. The remaining increase occurred among families from which the father was absent. More than 5 of 10 black children and 2 of 10 white children were living in one of these situations, proportions slightly higher than in previous years.

The earnings that a working mother provides can make a substantial contribution to family income in each of the above circumstances. When the mother was in the labor force, median income in 1979 for families with children ranged from \$18,500 for those in which the father was unemployed, to \$15,400 for those in which the father was out of the labor force, and \$10,100 for those in which the father was absent. Corresponding medians when the mother was not in the labor force were \$12,000, \$8,300, and \$4,600.

Child rearing costs grow

The increasing labor force participation of wives may be motivated by many factors, including what are perceived as economic realities. In the Nation's early rural history, the value of offspring included a large monetary component. However, children today represent clear financial costs to their parents. These costs include the actual monetary outlays required to supply the child's needs and the opportunity costs of the mother's time devoted to full-time child care. A study, updating a 1969 report by the Commission on Population Growth and the American Future,⁷ estimated that in 1980, the total direct cost of raising a child from birth through college ranged from \$58,200 for those families whose after-tax income was between \$14,000 and \$18,000, to \$85,200 for those whose disposable income was between \$22,500 and \$27,000. These costs represent increases of about 33 percent from 1977.⁸

When the earnings forgone by the mother were included, the estimated costs of raising children skyrocket-

Table 4. Children under 18 years old by age, type of family, labor force status of mother, and race and Hispanic origin, March 1980, and median family income, 1979

Item	Two-parent families			One-parent families maintained by women ¹		
	White	Black	Hispanic	White	Black	Hispanic
Numbers (in thousands)						
Children under age 18	41,915	3,864	3,657	6,376	3,792	947
Mother in labor force	21,235	2,395	1,611	4,275	2,090	453
Mother not in labor force	20,680	1,470	2,046	2,100	1,702	494
Children under age 6	13,148	1,182	1,334	1,482	1,028	313
Mother in labor force	5,344	681	504	786	478	113
Mother not in labor force	7,804	501	830	697	550	200
Children age 6 to 13	18,452	1,741	1,593	3,081	1,768	441
Mother in labor force	9,808	1,150	744	2,128	1,054	239
Mother not in labor force	8,644	591	850	953	714	203
Children age 14 to 17	10,315	942	730	1,813	996	193
Mother in labor force	6,083	564	363	1,362	559	101
Mother not in labor force	4,232	377	366	451	438	92
Median family income, 1979						
Children under age 18	\$22,900	\$17,800	\$16,600	\$ 8,400	\$ 6,200	\$ 5,500
Mother in labor force	24,800	20,800	20,100	11,200	8,200	8,200
Mother not in labor force	20,800	13,500	13,400	4,600	4,700	4,700
Children under age 6	19,800	16,400	14,200	5,200	4,500	4,500
Mother in labor force	21,200	19,800	17,500	8,300	6,300	6,400
Mother not in labor force	18,700	13,100	11,800	3,800	3,500	4,200
Children age 6 to 13	23,300	18,500	17,200	8,300	6,500	6,000
Mother in labor force	24,900	21,200	20,100	10,700	8,300	8,500
Mother not in labor force	21,400	13,600	14,000	4,900	4,800	5,200
Children age 14 to 17	27,300	18,000	20,600	12,100	7,800	6,800
Mother in labor force	29,000	21,100	24,100	13,900	9,500	10,200
Mother not in labor force	24,300	14,000	16,600	6,200	5,900	5,300

¹ Includes only divorced, separated, widowed, or never-married parents.

NOTE: Due to rounding, sums of individual items may not equal totals.

et. It was contended that by staying out of the labor force until her child was age 15, a mother, on average, would forgo an estimated \$130,000 in year-round, full-time earnings, with the amount varying by the mother's educational level. Those lost over a 15-year period were calculated to be about \$93,000, while those lost to mothers with post-graduate college educations would be \$189,000. In any event, the estimates of earnings forgone far outweighed what were considered the direct costs. Moreover, the marginal costs of any additional children represent substantial outlays. Consequently, the combination of forgone career opportunities and extensive costs may be among the prominent reasons young women are planning smaller families and are returning to the labor force sooner than before.

Child care

Day-care centers enroll only a very small proportion of the Nation's children.⁹ Presently, child-care arrangements in the United States range from formally structured programs to informal agreements between neighbors. Day-care facilities may be public, private, or

proprietary, or employer- or union-sponsored. An investigation found:

Child-care activities generally are carried out through units of State or local government or by voluntary bodies, often with public funds which may involve a mix of Federal, State, and local contributions. Although the Federal Government sets general standards and some guidelines, State and local governments are responsible for establishing, administering, and supervising these arrangements.¹⁰

Not surprisingly, these researchers concluded, "The structure of child care in the United States does not lend itself to any classification into clearly delineated systems of care."¹¹

The provision of day-care services for the children of working mothers has mirrored social and economic needs. When women workers have been needed during wartime, institutional arrangements have been made for the care of their children. In other times, day care has been used as a means of facilitating employment for those who otherwise would have remained unemployed. Additionally, (though not primarily), formal child-care situations have been used as part of the socialization process to enrich the lives of the children themselves.

Day-care facilities for children of working mothers first became available in the United States in the early 19th century.¹² In 1828, the Boston Infant School was opened to help both employed parents and their children. This private school, along with a few other nurseries, constituted most of the child-care facilities until the Civil War.

During that war, as was to become customary during most war periods, the Federal Government sponsored its first day-care arrangement. Established in Philadelphia in 1863, it provided a facility for the children of women employed in wartime clothing factories and hospitals. After the war, this particular nursery continued to receive Federal money in order to care for children of working war widows.

Without the urgent need for female workers after the Civil War, national concern for child-care facilities quickly diminished. Then, as immigrants from Europe and Ireland flooded into the country during the latter part of the 19th century, interest was again aroused in day care for the poor. The economic upheavals that occurred in the aftermath of the Civil War were further exacerbated by the waves of new arrivals. Among others, charitable societies were organized to provide daytime care for children. Twofold in purpose, these groups strove both to ease the working mothers' plight and to assimilate immigrant children into the mainstream of society. Overall, the mother received most of the attention from these day nurseries. Working women were generally the object of pity. Unless widowed, they were often regarded as the victim of an irresponsible, lazy, or

criminal husband. The mother's employment was seen as the only means of keeping the family together. Therefore, these charitable organizations attempted to find jobs for the mothers, and often placed them as private household workers in the homes of the families who ran the nurseries.

Use of day-care facilities became less stigmatized at the turn of the century when they came under the scrutiny of America's first generation of college-educated women. Influenced by a new wave of feminism, these women were interested in improving the human condition and women's lot in particular. Associations of private day nurseries were formed to safeguard the quality of child-care services.

Throughout the 20th century the provision of child-care services has seen many peaks and troughs. Depending on the needs and moods of the country, programs were alternately geared up or phased out.

For instance, as labor force participation of women increased with the advent of World War I, demand for child care grew. It was met through the expansion of existing facilities and the opening of new operations sponsored by local governments. However, after the war, the provision of day care diminished. Immigration slowed, militant feminism collapsed in the wake of the passage of the 19th amendment, and many States began providing widows with pensions which allowed mothers to stay at home. In addition, widespread prosperity of the 1920's obscured the needs of those less well off. Then, with the onset of the Depression, provisions for the establishment of day-care facilities were contained in a great deal of the emergency legislation that focused on stimulating the economy. The rationale for these initiatives was to provide jobs in the day-care centers for some of the unemployed. Care of children was of secondary importance. When the economic climate improved, funding of these centers stopped, and they rapidly disappeared.

The years during World War II witnessed another surge in demand for day care, and the Federal provision of these services reached its high point. At the peak, 1.6 million children were enrolled in more than 3,000 centers which were constructed and operated at a cost of \$51 million. When the war ended, most of the centers closed. An era of domesticity settled upon the Nation, and many women left the labor force. The child-care needs of those women who continued to work met through the emergence of a network of day-care homes.

DURING THE 1960's, some child-care programs, such as Head Start, were established under social welfare legislation seeking to improve the lives of poor children.¹³ Other services were instituted to allow welfare recipients to obtain employment. In the 1970's, increased tax relief

was enacted for the growing number of mothers who work.¹⁴ While other avenues—such as employer-sponsored facilities—have become somewhat more common-

place in recent years, most children of working mothers are still cared for by friends, relatives, or neighbors in informal arrangements. □

—FOOTNOTES—

¹ Unless otherwise indicated, the data in this report are from information collected in the March supplement to the Current Population Survey conducted and tabulated for the Bureau of Labor Statistics by the Bureau of the Census. Estimates based on a sample, such as those shown in the tables, may vary considerably from results obtained by a complete count in cases where the numbers are small. Therefore, differences between small numbers or the percents based on them may not be significant. For more detail on the interpretation of such differences, see *Marital and family characteristics of workers, March 1979*, Special Labor Force Report 237 (Bureau of Labor Statistics, 1981).

² See *Fertility of American Women: June 1979*, *Current Population Reports*, Population Characteristics, Series P-20, No. 358 (Bureau of the Census), p. 22; *Fertility of American Women: June 1978*, *Current Population Reports*, Population Characteristics, Series P-20, No. 341 (Bureau of the Census), pp. 25 and 66; and *Previous and Prospective Fertility: 1967*, *Current Population Reports*, Population Characteristics, Series P-20, No. 211 (Bureau of the Census, 1971), p. 17.

³ *Fertility of American Women: June 1979*, p. 15.

⁴ See *Monthly Vital Statistics Report, Provisional Statistics* (U.S. Department of Health and Human Services, Public Health Service, 1980), DHHS Publication No. (PHS) 80-1120, Vol. 29, No. 3.

⁵ *Family Status of Breadwinning Women in Four Selected Cities* (U.S. Department of Labor, Women's Bureau, 1926), p. 14.

⁶ *1977 Recipient Characteristics Study, Part I* (Social Security Administration, Demographic and Program Statistics, 1980), SSA

13-11729, pp. 20-21.

⁷ Ritchie H. Reed and Susan McIntosh, "Costs of Children," *Research Reports*, Vol. 2, Commission on Population Growth and the American Future, 1972.

⁸ Thomas J. Espenshade, "Raising A Child Can Now Cost \$85,000," *Intercom*, Vol. 8, No. 9, 1980, pp. 1, 10-12.

⁹ *Daytime Care of Children: October 1974 and February 1975*, *Current Population Reports*, Population Characteristics, Series P-20, No. 298 (Bureau of the Census, 1976), p. 2, and Mary Jo Bane and others, "Child care arrangements of working parents," *Monthly Labor Review*, October 1979, pp. 50-56.

¹⁰ *Child Care Programs in Nine Countries* (U.S. Department of Health, Education and Welfare 1976), DHEW Publication No. (OHD) 76-30080, p. 16.

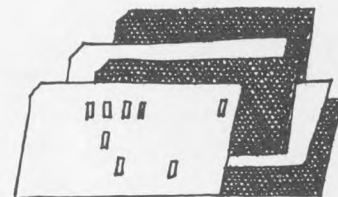
¹¹ *Ibid.*

¹² Historical information in this section is based, in part, on James D. Marver and Meredith A. Larson, "Public Policy Toward Child Care in America: A Historical Perspective," in Philip K. Robins and Samuel Weiner, *Child Care and Public Policy* (Lexington, Mass., D.C. Heath and Co., 1978), pp. 17-42.

¹³ The Economic Opportunity Act of 1964, the Housing and Urban Development Act of 1965, the Model Cities Act of 1966, as well as Head Start provided some direct or indirect support for child care.

¹⁴ Public Law 94-455 (94th Cong., 2d sess.), Oct. 4, 1976.

Research Summaries



Wage increases in 1980 outpaced by inflation

JOAN D. BORUM

Although workers' pay continued to increase at high rates in 1980, consumer prices rose at an even greater rate. All aggregate measures of wage change showed gains below those of prices, resulting in declines in real wages (wages adjusted for price inflation). Prices as measured by the Consumer Price Index for Urban Wage Earners and Clerical Workers rose 12.5 percent during 1980.

The Bureau of Labor Statistics compiles a variety of measures of wage and compensation changes. Some cover rates of pay, others study worker's earnings. Depending on the series, the data may reflect payments for benefits as well as wages and may show the influence of weekly hours and Federal tax rates. Data usually are available in both current and 1967 dollars. Historical data for some key measures are provided in table 1.

Average hourly compensation (wages, salaries, and supplementary benefits), rose 10.0 percent in 1980, the highest since 1974. However, real hourly compensation, or compensation expressed in constant (1967) dollars, fell 2.2 percent. This measure is not adjusted for employment shifts among industries and occupations.

The hourly and weekly earnings series are limited to wages and salaries, that is, they do not cover employer costs for employee benefits. These measures cover production and nonsupervisory workers in the private nonfarm sector. Both series show larger increases in 1980 than for the previous year. Nevertheless, purchasing power continued to decline, but at a decreasing rate.

The Hourly Earnings Index, which covers production and nonsupervisory workers in the private nonfarm economy, rose 9.4 percent in 1980—more than the 8.3-percent gain in 1979. Industry detail indicates that the largest increases in 1980 were in manufacturing (10.8 percent) and the smallest gains were in wholesale and retail trade (8.4 percent) and construction (7.5 percent). This index is developed by adjusting the basic

hourly earnings series so as to exclude the effects of two types of change unrelated to wage-rate developments: changes in the proportion of workers in high-wage and low-wage industries and fluctuations in the volume of overtime work at premium rates in manufacturing (the only sector for which overtime data are available).

A relatively new series—the Employment Cost Index (ECI)—provides a more exact measure of change in labor costs. The ECI covers all private nonfarm workers and is fixed-weighted at the occupation and industry level. It is not affected by employment shifts among occupations and industries with different wage and compensation levels. This series measures changes in wages, salaries, and employer costs for employee benefits for both supervisory and nonsupervisory workers. In 1980, total compensation increased 9.8 percent. Because compensation data were introduced in the first quarter of 1980, comparisons with previous years are not possible.

In 1980, overall wage and salary increases, as measured by the ECI, averaged 9.0 percent, up from 8.7 percent in 1979. Pay in manufacturing was up 9.4 percent and in nonmanufacturing, 8.8 percent. Among industries, increases ranged from 7.4 percent in finance, insurance and real estate to 11.1 percent in transportation and public utilities. Among occupational classifications, blue-collar workers registered the highest pay increases and service workers, the lowest. As in previous years, union workers received larger increases than nonunion workers. In manufacturing, pay advanced 11.0 percent for union workers, compared with 7.9 percent for nonunion workers. Corresponding gains in nonmanufacturing were 10.8 percent and 8.1 percent. The following tabulation shows rates of wage and salary change in the ECI for 1979 and 1980, by selected characteristics:

	1979	1980
All workers	8.7	9.0
Manufacturing industries	8.6	9.4
Nonmanufacturing industries	8.8	8.8
White-collar workers	8.6	8.7
Blue-collar workers	9.0	9.6
Service workers	7.2	8.1
Union workers	9.0	10.9
Nonunion workers	8.5	8.0

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Table 1. Changes in employee wages and compensation, 1970-80

[In percent]

Measure	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Average hourly compensation:¹											
Current dollars	7.0	5.6	7.2	8.1	10.9	7.8	8.3	7.5	9.0	9.5	10.0
1967 dollars	1.3	2.1	3.7	-2	-1.1	.3	3.1	8	0.0	-2.8	-2.2
Gross average hourly earnings:²											
Current dollars	5.8	6.9	7.6	6.6	8.4	6.1	7.9	7.3	9.4	7.9	8.8
1967 dollars	4	3.2	4.2	-2.0	-3.4	-1.1	2.9	.7	.3	-4.8	-3.2
Gross average weekly earnings:²											
Current dollars	3.8	7.2	7.0	6.6	6.3	6.7	7.0	7.0	9.1	7.6	7.9
1967 dollars	-1.7	3.7	3.5	-2.0	-5.3	-4	-2.0	2	.3	-5.1	-4.1
Hourly Earnings Index:²											
Current dollars	6.7	7.0	6.3	6.4	9.2	7.2	7.5	7.4	8.6	8.3	9.4
1967 dollars	1.1	3.6	2.7	-2.2	-2.7	0	2.5	6	.4	-4.5	-2.8

¹ Covers all employees in the nonfarm business sector.

² Covers production and nonsupervisory workers in the private nonfarm economy.

NOTE: Percent changes are based on seasonally adjusted data and reflect fourth quarter to fourth quarter change for average hourly compensation and December to December change for other measures.

Collective bargaining

Although limited in coverage, data on wage developments in major collective bargaining units (1,000 workers or more) are of particular interest. Currently, 9.1 million workers are in such units (9 percent of the civilian labor force). However, these agreements may set wage patterns followed by nonunion and smaller union establishments. Thus, data for the major bargaining units are often important in explaining movements in the broader series of table 1. The following analysis of major labor agreements not only provides additional information on wage changes in 1980, but also yields insights into what will take place in 1981.

In terms of the numbers of workers affected, 1980 was a moderately heavy bargaining year. Settlements covered 3.8 million workers in 826 major bargaining units. The construction industry accounted for 20 percent of these workers; communications industry, 18 percent; primary metals industry, 11 percent; and the

transportation equipment industry, 9 percent. Many of the remaining workers were in the electrical equipment, public utility, and retail food store industries.

As in the past, settlements concluded in 1980 frequently provided increases in wages and benefits for the first year of multi-year agreements that were larger than those agreed upon for subsequent years. (See table 2.) This reflects an attempt by workers to offset the erosion of real wages by inflation during the term of their expiring contracts.

Negotiated wage adjustments in agreements for 1,000 workers or more averaged 9.5 percent in the first contract year and 7.1 percent annually over the life of the agreement. Wage and benefit package settlements in bargaining units of 5,000 workers or more averaged 10.4 percent in the first contract year and 7.1 percent annually over the life of the agreement. Possible future wage increases from cost-of-living adjustment (COLA) provisions are not included in costing settlements.

After several years of relatively moderate settlements,

Table 2. Average change in major collective bargaining agreements, 1970-80

[In percent]

Measure	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980
Settlements											
Wage-rate (contracts covering 1,000 workers or more):											
First-year adjustment	11.9	11.6	7.3	5.8	9.8	10.2	8.4	7.8	7.6	7.4	9.5
Average annual change over life of contract	8.9	8.1	6.4	5.1	7.3	7.8	6.4	5.8	6.4	6.0	7.1
Wage and benefit (contracts covering 5,000 workers or more):											
First-year adjustment	13.1	13.1	8.5	7.1	10.7	11.4	8.5	9.6	8.3	9.0	10.4
Average annual change over life of contract	9.1	8.8	7.4	6.1	7.8	8.1	6.6	6.2	6.3	6.6	7.1
Effective wage-rate changes											
Total effective adjustment ¹	8.8	9.2	6.6	7.0	9.4	8.7	8.1	8.0	8.2	9.1	9.9
Current settlement	5.1	4.3	1.7	3.0	4.8	2.8	3.2	3.0	2.0	3.0	3.6
Prior settlement	3.1	4.2	4.2	2.7	2.6	3.7	3.2	3.2	3.7	3.0	3.5
Cost-of-living adjustment provision .....	.6	.7	.7	1.3	1.9	2.2	1.6	1.7	2.4	3.1	2.8

¹ Detail may not add to totals because of rounding.

NOTE: Major collective bargaining agreements are union-management contracts in the private nonfarm economy covering 1,000 or more workers (5,000 or more workers for wage and

benefit data). Data referring to settlements exclude possible increases under cost-of-living adjustments provisions, except for minimum increases guaranteed in the contract.

construction industry agreements provided for above-average wage adjustments in 1980. Wage-rate increases, averaged 13.6 percent in the first contract year and 11.5 percent annually over the life of the contract in construction, compared with 8.4 and 6.0 percent, respectively, in all other industries. However, cost-of-living adjustment clauses tend to be less common in the construction industry, presumably putting more pressure on negotiated wages, compared with industries where COLA clauses are more pervasive.

The actual amount workers will receive under contracts with COLA clauses depends, of course, on the rate of inflation in the coming years. Formulas for adjusting wage rates and the frequency of potential adjustments vary by contract, but the most common yield is 1 cent for each 0.3-point change in the CPI, reviewed quarterly. Throughout 1980, the average COLA increase was 62 percent of the CPI rise. This rate of return varies, depending on the specific COLA formulas in effect and the rate of price change. As of January 1, 1981, COLA clauses covered 5.3 million workers, or 58 percent of those under major bargaining agreements.

The average wage change put into effect during 1980, prorated among all workers in major bargaining units, was 9.9 percent, higher than the 9.1-percent adjustment for 1979. Settlements reached during the year resulted in about 3.6 percentage points of the 1980 increases, while increases negotiated earlier and deferred to 1980 accounted for 3.5 percent, and increases under COLA clauses accounted for 2.8 percent. □

Trade Secretariats provide U.S. labor with international forum

Despite the AFL-CIO's nonmembership in the major international labor organizations, American unions continue to exert some international influence through their affiliation with the so-called International Trade Secretariats (ITS). In the *Shape of Transnational Unionism: International Trade Secretariats* published by the Labor Department's Bureau of International Labor Affairs, John P. Windmuller, professor of industrial and labor relations at Cornell University, briefly outlines the history, organization and function of these Secretariats.

The ITS, rooted in the international labor movement of the 19th century, are a group of 16 international organizations composed of national unions from different countries whose members work in related industries. They are autonomous bodies and do not hold a charter from any central organization, although they work closely with the International Conference of Free Trade

Unions (ICFTU) and the Industrial Committees of the International Labor Organization. Jurisdiction is demarcated primarily by historical development (most Secretariats began as trade union organizations covering a single craft and gradually evolved to cover entire industries) and merger. Membership has a distinctly European and North American flavor, although increasingly efforts are being made to accommodate and augment Third World affiliation. The Secretariats are financed by affiliate dues.

Windmuller groups ITS activities into seven categories: information and research services, solidarity actions, regional activities, aid to special groups, relations with intergovernmental agencies, establishment of minimum standards and development of transnational labor-management relations. The activity the affiliated unions find most immediately useful is the information and research services that provide comparative data on conditions of employment in different countries. The Secretariats have also had some success in coordinating international action on behalf of its members; for example, the internationalization of the boycott by the Amalgamated Clothing and Textile Workers in the United States against the J. P. Stevens Co. Regional activities (union organization in the Third World) have been less successful due to the resistance of national governments, outdated labor legislation in developing countries and educational and cultural barriers. This relatively low level of unionization in the developing countries has retarded the establishment of worldwide minimum standards of safety and pay. The development of transnational collective bargaining has proven the most elusive of ITS goals, since the heterogeneity of most Secretariats does not lend itself to the easy formation of a united position on any issue, and no legal framework for international bargaining exists.

Windmuller contends that "as a group, the Secretariats continue to be an important element in international labor, perhaps even the most important." Nevertheless, he sees structural changes ahead if the Secretariats are to effectively respond to the increasing diversification of their membership. He goes on to say that while continued American participation in the ITS indicates general satisfaction with the Secretariats' activities, several problems among U.S. affiliates and the ITS could arise over such issues as relations with Communist labor organizations, relations between Secretariats and their regional equivalents, and transnational bargaining. Windmuller concludes by cautioning against overly-optimistic appraisals of the benefits American unions can expect from ITS membership.

The *Shape of Transnational Unionism: International Trade Secretariats* is available for \$2.50 from the Superintendent of Documents, Washington 20402. □

Major Agreements Expiring Next Month



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

Employer and location	Industry	Union ¹	Number of workers
Allied Building Metal Industries, Inc. (New York, N.Y.)	Construction	Iron Workers	1,000
Allied Underwear Association Inc. (New York, N.Y.)	Apparel	Ladies' Garment Workers'	4,000
American Standard, Inc. (Louisville, Ky.)	Fabricated metal products	Standard Allied Trades Council (Ind.)	1,200
Associated General Contractors of America, Inc. Alaska Chapter, 3 agreements	Construction	Bricklayers; Lathers; Carpenters; Plasterers and Cement Masons; and Teamsters (Ind.)	21,100
Georgia Chapter	Construction	Laborers	1,800
Massachusetts Chapter and 3 others	Construction	Carpenters	2,000
New Jersey Chapter	Construction	Operating Engineers	6,900
New York Chapter, Inc.	Construction	Laborers	1,250
Utah Chapter	Construction	Operating Engineers	6,900
Associated Corset and Brassiere Manufacturers, Inc. (New York, N.Y.)	Apparel	Ladies' Garment Workers'	3,200
Association of Motion Picture and Television Producers, Inc. (Interstate)	Motion pictures	Directors Guild (Ind.)	4,600
Building Trades Employers Association of Boston and Eastern Massachusetts, Inc. and 1 other (Massachusetts)	Construction	Iron Workers	1,400
Building Trades Employers Association of the City of New York (New York, N.Y.)	Construction	Lathers	1,000
Carpenters' Agreement, Bridge and Highway (New York, N.Y.) ²	Construction	Carpenters	3,500
Cedars-Sinai Medical Center (Los Angeles, Calif.)	Hospitals	Service Employees	1,800
Cement League and Building Contractors Association of New York, Inc. (New York, N.Y.)	Construction	Carpenters	3,650
Central Hudson Gas and Electric Co. (New York)	Utilities	Electrical Workers (IBEW)	1,300
Construction Employers of the Hudson Valley, Inc. (New York)	Construction	Laborers	1,200
Detroit Edison Co. (Michigan)	Utilities	Utility Workers	3,400
Dresser Industries, Inc., Marion Power Shovel Division (Marion, Ohio)	Machinery	Steelworkers	1,100
Dry Cargo Agreement, Licensed Deck Officers (Interstate) ²	Water transportation	Masters, Mates, and Pilots	5,000
Dry Cargo Vessel Companies and Agents (Interstate) ²	Water transportation	Maritime Union	9,000
Elevator Manufacturers' Association of New York, Inc. (New York, N.Y.)	Construction	Elevator Constructors	1,850
Employing Metallic Furring and Lathing Contractors Association of New York	Construction	Lathers	1,500
Food Employers, Inc. (Oregon)	Retail trades	Food and Commercial Workers	4,150
Ford Aerospace and Communications Corp., Refrigeration Products Division (Connersville, Ind.)	Machinery	Electrical Workers (IUE)	2,000
General Contractors Association of New York, Inc. (New York)	Construction	Laborers	2,050
Georgia Power Co. (Georgia)	Utilities	Electrical Workers (IBEW)	5,450
Great Lakes Association of Marine Operators, Freighter Agreement (Interstate)	Water transportation	Seafarers	1,500
Greater Blouse, Skirt and Undergarment Association, Inc. (New York)	Apparel	Ladies' Garment Workers'	1,650
Group Health Cooperative of Puget Sound (Seattle, Wash.)	Hospitals	Nurses Association (Ind.)	1,000
GTE Lenkurt, Inc. (San Carlos, Calif.)	Electrical products	Electrical Workers	1,200
Huffy Corp., Ohio Bicycle Division (Celina, Ohio)	Transportation equipment	Steelworkers	1,800
Illinois Power Co.	Utilities	Electrical Workers (IBEW)	1,200
John Hancock Mutual Life Insurance Co. (Interstate)	Insurance	Insurance Workers	6,000
Johnson & Johnson Ethicon, Inc. (New Jersey)	Chemicals	Clothing and Textile Workers	1,650
Keystone Building Contractors Association, Inc. (Pennsylvania)	Construction	Carpenters	1,500
Litton Business Systems, Inc., Cole Division (York, Pa.)	Machinery	Steelworkers	1,000
Long Island Builders Institute, Inc. (New York)	Construction	Laborers	2,300

See footnotes at end of table.

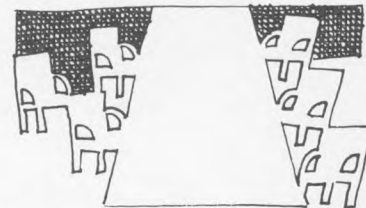
Continued—Major Agreements Expiring Next Month

Employer and location	Industry	Union ¹	Number of workers
Macy's and Emporium Stores (San Francisco, Calif.)	Retail trades	Food and Commercial Workers	3,600
Magnavox Co. of Tennessee (Jefferson City, Tenn.)	Furniture	Electrical Workers (IUE)	2,000
MARBA and Excavators, Inc. (Illinois)	Construction	Teamsters (Ind.)	1,500
MARBA, Illinois Building and Heavy and Highway and Underground agreements (Illinois)	Construction	Operating Engineers	6,800
Mechanical Contractors Association of New York, Inc. (New York)	Construction	Plumbers	4,600
Mechanical Contractors Council of Central California	Construction	Plumbers	1,400
New York State Electrical and Gas Corp. (New York)	Utilities	Electrical Workers (IBEW)	3,000
Philadelphia Container Association (Philadelphia, Pa.)	Paper	Paperworkers	1,200
Plumbing and Air Conditioning Contractors of Arizona (Phoenix, Ariz.)	Construction	Plumbers	3,200
Potlatch Corp., Northwest Paper Division (Cloquet and Brainerd, Minn.)	Paper	Firemen and Oilers; and Paperworkers	1,500
Printing Industry of Illinois Association, Union Employers Association Division (Chicago, Ill.)	Printing and Publishing	Graphic Arts	1,000
Respective Chicago Dealers' Association and Independents (Chicago, Ill.)	Retail trades	Machinists	3,500
Rockwell International Corp. (California)	Transportation equipment	Auto Workers (Ind.)	8,000
Seattle Area Hospital Council (Seattle, Bellevue, and Bremerton, Wash.)	Hospitals	Nurses Associations (Ind.)	2,500
Sheet Metal and Air Conditioning Contractors Association of New York City, Inc. (New York, N.Y.)	Construction	Sheet Metal Workers	3,200
South Central Employers Field Construction (Interstate) ²	Construction	Boilermakers	2,800
Sperry Rand Corp., Univac Division (St. Paul, Minn.)	Machinery	Electrical Workers (IBEW)	2,600
Spokane Food Agreement (Spokane, Wash.) ²	Retail trades	Food and Commercial Workers	1,250
Standard Freightship Agreement (Interstate) ²	Water transportation	Seafarers	10,750
Standard Tanker Agreement (Interstate) ²	Water transportation	Seafarers	10,750
Structural Steel and Ornamental Iron Association of New Jersey, Inc. and others (New Jersey)	Construction	Iron Workers	3,000
Tanker Companies, Licensed Deck Officers (Interstate) ²	Water transportation	Masters, Mates and Pilots	4,700
Tanker Vessels Companies, Unlicensed Personnel (Interstate) ²	Water transportation	Maritime Union	6,000
Textile Rental Services Association (California)	Services	Laundry and Dry Cleaning	2,600
Textron, Inc., Bell Helicopter Textron Divisions, 2 agreements (Dallas and Tarrant, Tex.)	Transportation equipment	Auto Workers (Ind.)	5,250
TRW, Inc., J. H. Williams Division (Buffalo, N.Y.)	Fabricated metal products	Steelworkers	1,050
Twin City Commercial Printers (Minnesota)	Printing and publishing	Graphic Arts	1,200
Union Carbide Corp., Nuclear Division (Oak Ridge, Tenn.)	Chemicals	Atomic Trades and Labor Council	2,400
Union Electric Co., 2 agreements (Missouri and Illinois)	Utilities	Electrical Workers (IBEW)	2,750
Union-Tribune Publishing Co. (San Diego, Calif.)	Printing and publishing	Newspaper Guild	1,000
Zenith Radio Corp. (Chicago, Ill.)	Electrical products	Independent Radionic Workers of America	3,100

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

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

Developments in Industrial Relations



Steelworkers at Ford accept cut in hourly pay

A reduction in output and employment at Ford Motor Co.'s steelmaking division in Dearborn, Mich., was averted when employees agreed to a pay cut the company said was necessary to reduce a labor cost disparity with other steel producers. Earlier, Ford officials had announced that if the workers, represented by the United Auto Workers, did not agree to a cut it would be forced to limit steelmaking to supplying only its internal needs for vehicle production. This would have eliminated 3,200 of the 5,000 hourly paid jobs in the division. In recent years, Ford has been selling as much as 60 percent of its steel to other companies, but has sustained losses it attributed to price discounting required to compete effectively. In 1980, Ford lost \$1.5 billion, including a reported \$68 million on its steel operations.

Under the plan, pay for incentive workers was cut an average of 86 cents an hour. Previously, Ford's "contractual" costs for the employees averaged \$22.93 an hour, which the company asserted was about 30 percent higher than that at competitive steel companies.

Despite the pay cut, Ford's steelworkers will receive all of the cost-of-living and deferred wage increases scheduled to go into effect during the remainder of the master agreement between the company and the Auto Workers. This agreement expires in September 1982.

In addition to negotiating the labor cost cuts for its steel operations, Ford and General Motors Corp. continued to ask for concessions from their auto production workers. Both companies contend the pay cuts will allow them to compete more effectively with foreign producers and with Chrysler Corp., which has already won some pay relief from the Auto Workers and other unions. (See *Monthly Labor Review*, March 1981, p. 73.) General Motors Chairman Roger B. Smith said his company would offer a profit-sharing plan to its employees in exchange for a wage cut. He was hopeful that the Auto Workers would reopen the current agreements with his company and with Ford when the union completed discussions with Chrysler on implementing

the profit-sharing plan featured in their concession settlement.

The initial reaction from Auto Workers President Douglas A. Fraser was not conciliatory. Fraser indicated that he was not willing to reopen the contracts and rejected the idea that Ford and General Motors should receive a labor cost concession simply because Chrysler got one. "They can't seriously consider their situations comparable," said Fraser, referring to the near bankruptcy of Chrysler. He later softened this position somewhat by indicating that the union would be willing to consider reopening the current contracts in a few months, if Ford and General Motors prove that they need help.

Food chain workers forgo cost-of-living increases

Financial problems apparently afflicting some food store chains in the Philadelphia area were reflected in 3-year contracts that the Food and Commercial Workers negotiated with Acme Markets, Inc., and A&P Tea Co. Wendell Young, president of Local 1357, said, "We gave up pretty much, but based on what's happening in the industry, we had to downplay the issue of wages." He noted that Food Fair, Inc., had gone bankrupt, closing 100 Penn Fruit and Pantry Pride stores in the area that employed 3,000 members of the local union. Young attributed the problems of the chains to reduced consumer demand and increased competition from non-union stores.

Workers at both chains will continue to receive the 78 cents an hour in automatic cost-of-living increases they had gained under the 1978 agreements, but will not receive further cost-of-living increases under the new contracts.

The "set" wage increases at A&P and Acme were identical, but were timed to be more beneficial to A&P because its problems were more serious. The 1,500 A&P employees will receive 5 percent increases every 6 months for the first 2 years of their contract. Acme employees received an immediate 8-percent increase and will receive 6-percent increases at the beginning of the second and third years.

Both agreements included a requirement that the company give a 20-day notice of store closings to provide time for bargaining on assistance to affected workers. The A&P contract also barred economic layoffs for

"Developments in Industrial Relations" is prepared by George Ruben and other members of the staff of the Division of Trends in Employee Compensation, Bureau of Labor Statistics, and is largely based on information from secondary sources.

6 months, and provided for the recall of more than 250 laid-off employees and for the restoration of full-time status for those who had been downgraded to part-time.

Braniff employees accept pay cut plan

Employees at Braniff Airways agreed to a pay-cut/profit-sharing plan deemed crucial to Braniff's survival. Earlier, major creditors of Braniff had agreed to defer about \$40 million owed them until July 1, 1981, contingent on employee approval of a pay cut. The 10,000 workers involved are represented by five unions—Machinists, Pilots, Teamsters, Flight Attendants, and Dispatchers.

Under the plan, 10 percent of each employee's pay will be held in a profit-sharing account. If the company earns a 2-percent after-tax profit in a year, the deductions will be returned along with one-third of any additional profit, up to a total return of double the amount deducted from each employee's pay. If there is less than a 2-percent profit, the amount needed to bring the profit to 2 percent will be drawn from the account and any remainder in the account will be distributed to employees. The plan is scheduled to remain in effect through December 31, 1983, and each operating year will be treated separately with no carryover. The disposition of scheduled wage adjustments under existing contracts is yet to be determined.

A 10-percent pay cut was sought by Braniff management in late 1980, but the attempt failed when the Teamsters did not approve the plan. The airline industry has been experiencing financial difficulties for several years, primarily because of rising fuel costs. In 1977, Eastern Air Lines established a similar pay-cut plan.

Employees plan to purchase plant fails

Employee efforts to assure continued operation of the Dayton (Ohio) Press by purchasing the magazine printing facility have been thwarted by an inability to raise the \$135-\$140 million purchase price. The workers were not able to borrow from private lenders primarily because of high interest rates; this precluded government financial assistance, which was contingent on obtaining the private loan.

An official of the Charter Co., owner of the plant, said that the company was considering either closing the facility or selling it to another firm, as continued operation would require \$40 to \$80 million worth of new equipment.

The employees had begun their purchase efforts in 1980, after turning down a wage freeze that management contended was necessary to bring labor costs into line with other printers. (See *Monthly Labor Review*, October 1980, p. 54.)

New unit formed to organize office workers

The Service Employees union and Working Women, a 10,000-member national association of office workers, formed a new unit to organize some 20 million secretarial and clerical workers. The Service Employees will finance the activities of its new District 925 (a play on "9-to-5," the working hours of most office workers). Karen Nussbaum, executive director of Working Women, was named acting president of the unit and Jackie Ruff, head of a Service Employees local in Boston, was named executive director.

Service Employees' President John Sweeney called the formation of District 925 "a new chapter in labor history, a partnership between the women's movement and the trade union movement that will result in a strong national bargaining agent for office workers." He said that he did not foresee any jurisdictional disputes with the Office and Professional Employees, the Steelworkers, the Auto Workers, and other unions that have been accelerating their efforts to organize office workers.

Labor-Management Group formed

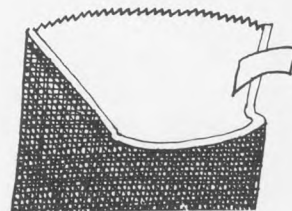
Labor and business leaders have formed a committee to work out proposed solutions to energy and economic problems facing the Nation. The new Labor-Management Group, headed by former Secretary of Labor John T. Dunlop, is similar to panels that advised the last three Administrations, except that it will not include Government representatives. Lane Kirkland, president of the AFL-CIO and chief labor representative, said that the group would not intervene in individual contract negotiations between labor and management. Clifton C. Garvin, chairman of Exxon Corp., described the group as a "meeting of the minds" on key economic issues. In a joint statement, the panel indicated it would emphasize reindustrialization, productivity, and energy.

The last such committee disbanded in 1978, when management members refused to endorse changes in labor laws sought by unions.

Honolulu nurses get pay raise

A settlement between the Hawaii Nurses Association and five hospitals in Honolulu provided a salary increase of nearly 45 percent for 1,200 nurses. The increase, to be implemented in steps over the 3-year agreement term, will raise the hourly rate to \$11.05, from \$7.69, for nurses with at least 2 years of service. There also was a provision for improvement in benefits, financed by an increase in employer financing equal to 8 percent of payroll. The hospitals involved were Kaiser, Juakini, Kapiolani-Children's, St. Francis, and Queen's. □

Book Reviews



Gains by black working women

Black Women in the Labor Force. By Phillis A. Wallace. Cambridge, Mass., The MIT Press, 1980. 163 pp.

The majority of black women are in the labor force. In fact, 1979 annual averages from the Current Population Survey show that about 55 percent of all black adult women were labor force participants. The same proportion was true for black women who maintain families and an even larger participation rate was registered among married black women. *Black Women in the Labor Force*, by Phillis A. Wallace, is a largely statistical study of this growing segment of the United States labor force.

Rather than presenting new, headline-making findings, the author uses a low-keyed, objectively analytical approach in her discussion of labor force participation, worker characteristics, and earnings of black women. The book begins by summarizing recent studies by labor economists on black female labor force participation. As well as pointing out the similarities among these studies, the author notes, with some surprise, the inconsistencies among them. Wallace does not attempt to perfect a labor supply model. Instead, she provides the reader with statistical information which may help explain the trends in labor force participation. Special attention is focused on teenagers, women who maintain families, and private household workers, although all black women are included in the sections dealing with occupations, hours of work, educational attainment, and age and presence of children.

The author concentrates on the post-1960 period because of the major changes which occurred in the employment status of black women as well as the wealth of data available. Wallace herself provides an abundance of data; her major resource is the Current Population Survey, although Decennial Census and other government survey data are presented.

Wallace finds that the greatest improvements in employment status for black women since the 1960's were due to three fundamental changes. First, she cites the shift away from part-time work for black women. In 1968, 27 percent of black and other nonwhite women in the labor force were working part time or were unemployed and seeking part-time jobs. By 1979, the proportion had dropped to 22 percent. The author interprets

this as a positive development, although she speculates that one of the reasons for the shift may be "greater economic pressure to contribute to family income."

The decline in the number of black women employed as private household workers is the second development cited as a fundamental change. A chapter written by Julianne Malveaux describes trends in household employment, pointing out that more than a third of minority working women were private household workers in 1960, compared with 14 percent in 1970. One shortcoming of this chapter is that more recent data, which show that the proportion dropped to about 7 percent by 1979, are not presented.

The third fundamental change noted is "the increased convergence in the job structures of black women as compared with white women." That is, occupations of black women and white women are becoming more similar as young black women enter the labor force and get more skilled jobs than those held by older black cohorts.

The author does point out, however, that black women workers are still more likely than whites to be in blue-collar and service positions. Recent data show that only about half of all working black women are white-collar workers, compared with two-thirds of the white women. Among the white-collar occupations, managers, administrators, and salesworkers account for a particularly small share of employed black women. On the other hand, black women are overrepresented in blue-collar jobs, especially as operatives. And even though the proportion of black women employed as private household workers has been declining, as noted above, blacks still hold a relatively large share of such jobs. Unfortunately, the author used information for only a particular month in 1978 and little is done in terms of detailed occupational breakdowns other than a few tables which use 1970 figures.

Wallace's observation that the improvement made in occupational status for black women relative to white women "merely highlights the inferior occupational status of most women regardless of color" could have been substantiated but the comparison between the occupations of women in general and those of men was not made. The author does, however, present 1976 median earnings data which show both black and white women who are year-round, full-time wage and salary workers

are paid, on average, less than three-fifths that of white males. In fact, in 1979, black women were paid about 55 percent of the earnings of white men and white women received 59 percent of the pay of white men. The figures for 1939 were 23 and 61 percent, respectively. These data themselves cannot, however, prove the existence of either occupational differences or different pay for the same work.

The policy suggestions which are included in the concluding chapter concentrate on increasing the work commitment of low-income black women who maintain families by expanding their job opportunities and work capabilities. One wonders why the author, after pointing out the labor force difficulties encountered by many black women, chooses to focus her policy suggestions on only a subset of the entire group.

While the book does a reasonably good job of summarizing the findings of major economic studies of women as they focus on black women, and organizes these findings and additional data logically according to subject, most chapters could have been supplemented and improved by the presentation of up-to-date, government data which may not have appeared in one of the studies cited. The author does include 15 reference tables but neglects to integrate these into the text. Moreover, many of these tables are difficult to understand as table headings are not clear, or are incorrect, and columns showing percentages are poorly described. In addition, there generally is no notation of age limits or of whether data for blacks includes other minority races, and statistical significance of the numbers in many very small cells is not discussed.

Nevertheless, the book is a welcome addition to the literature on black women as it presents a generally impartial, easy-to-read, somewhat abbreviated discussion of several aspects of black women's labor force participation.

—CAROL BOYD LEON

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Dredging the channels between school and work

Education for employment: Knowledge for Action. Prepared by the Task Force on Education and Employment, Clark Kerr, chairman. Washington, National Academy of Education, 1979. 274 pp. \$14.95.

America spends well over \$100 billion a year on schools. *Education for Employment* looks at what it gets for its money as far as the schools' ability to prepare students for the labor force. This wide-ranging report was prepared by the Task Force on Education and Employment, a distinguished group of experts brought to-

gether by the National Academy of Education. Members of the task force were David W. Breneman, Richard B. Freeman, William Gomberg, Ewald B. Nyquist, Patricia Snider, E. Belvin Williams, and Clark Kerr, the chairman. Theirs was a dual mission: to learn what is known about the relationship between education and employment and to recommend potentially fertile fields for additional research. The report provides ample evidence of their success in achieving the first goal. The task force's recommendations for educators, employers, students, and government officials are geared to improve the school's capacity to produce a labor force adequately trained for the jobs available. With few exceptions, the recommendations have about as much substance as a puff ball.

The task force defined its terms—*education* and *employment*—broadly. Consequently, its report contains information on numerous topics of interest to labor economists and others specializing in the school-work connection. Chapters address the problems of youth in the labor market, work-study programs, the learning needs of adults, and employment and training programs. The value of the research summaries in each chapter is further enhanced by an appendix in which four major studies are compared: *The Manpower Connection: Education and Work*, by Eli Ginzberg; *Education and Working Life in Modern Society*, by the Organization for Economic Cooperation and Development; *The Boundless Resource: A Prospectus for an Education-Work Policy*, by Willard Wirtz; and this volume.

Because the task force conducted no original research, confining itself instead to a review of the pertinent literature, its principal findings, admirably clear and concise statements of the various topics considered, contain few surprises. Among its conclusions are that youths entering the labor market in the 1980's will face less competition than did youths who began working between 1965 and 1974, and that the value of a college education as an investment will increase in the next decade compared to its value in the early 1970's.

As expected, the review of the known throws the unknown into relief, and the findings of the task force serve as a useful reminder of how much of the *terra* remains *incognita*. Definitive conclusions cannot yet be made, the report notes, concerning the implications of the decline in standardized test scores and the effects of participation in work-study and cooperative education programs. The authors state, "While anecdotal evidence is frequently cited, we have found no careful studies demonstrating that work-education programs are especially beneficial to women and minority men. They probably are, but evidence one way or the other is lacking." Not even the effects of career development programs have been fully explored, leaving the task force to observe that "There is probably a need for more career development services and improvement of

those which exist, yet empirical evidence on the comparative utility of alternative guidance services is lacking. The influence of some guidance activities can be assessed: for example, whether career awareness activities lead to greater occupational information. . . . Complex and longer-term outcomes (for example, motivation, acquisition of basic skills, and job satisfaction), however, are more difficult to determine and have been investigated only rarely." Additional research on these subjects will doubtless be useful when it comes time to parcel out funds among career development and other training programs, but incontrovertible results cannot be expected, if the outcomes of studies of other areas covered in the present volume can be taken as a guide. For example, everyone agrees that additional schooling pays off in terms of higher income; but the studies cited do not agree as to how well it pays off. Still, the task force's recommendations for further research should provide a wealth of ideas for doctoral candidates and consulting firms in search of topics to investigate.

The authors assume—no matter what Socrates or Horace Mann might think—that schools should be responsive to the labor market. Responsiveness is not quite enough, however. The authors' ideal school would actually anticipate the labor market confronting its graduates and prepare them accordingly somehow overcoming the individual student's preferences). The schools cannot do so without accurate forecasts of labor conditions, and so the authors rightly devote their second chapter to projections. This chapter brings out the book's real strengths and unfortunate weaknesses.

After surveying projections by the Bureau of Labor Statistics to 1985—which have since been revised for the period through 1990—the authors turn to "Supply and Demand: The Adjustment Process," a recapitulation of points raised by Freeman in *The Overeducated American*. Much of the brief space devoted to forecasting in general is given over to an unspecified model that purports to show "Developments in the Market for College Graduates" by charting a decline in their earnings for the period between 1968 and 1976. An attempt at corroboration is made by citing findings of the Endicott surveys of *planned* hires for 1968 through 1976. Because abundant data justifying the authors' views are available, it is curious that none is presented.

The authors state that "the illustration, of course, greatly oversimplifies reality," noting that anticipated lifetime earnings, job security, and such nonpecuniary concerns as anticipated lifestyle also affect one's decision to attend college. Overlooked completely are the consumption values of a college education, peer pressure, and the attitude of parents. Granting that the model is oversimplified, one might still ask how much can be omitted without reducing the utility of the remainder to zero. The temptation to oversimplify also mars other sections of the book.

The task force next turns to the "State of the Art in Manpower Forecasting." The authors cite two studies by the Bureau of Labor Statistics that find projections accurate for large groups of occupations and inaccurate for particular occupations; they quote Samuel Kelley and his associates to the effect, "Complex predictions are little more than best guesses." They summarize the discoveries of Donald Drewes and Douglas Katz, who found that projections are used to support recommendations for new educational programs only if the programs are already being considered for other reasons and that programs are approved even if the projections do not justify them. They also note, referring to a BLS study, that the absence of occupational mobility data from the Bureau's projection models is one of their shortcomings; and—quoting Freeman and Breneman's *Forecasting the Ph.D. Labor Market*, which they call one of "the strongest criticisms of existing manpower projections"—they list "four major sins of omission in past forecasting efforts: 'first and most importantly, a failure to consider individual responses to market conditions; second, absence of wage-price phenomena from the computations; third, inability to evaluate the consequences of major policy variables; fourth, failure to take account of the interrelations and feedback processes which govern the market.'"

So perspicacious and perspicuous a diagnosis of the drawbacks of the projections warrants an equally clear prescription of a remedy. The following two paragraphs from the final chapter, "Recommendations of the Task Force," constitute the last words of the authors on the subject:

Currently, responsibility for forecasts of supply and demand in markets for highly trained manpower is split among several Federal agencies, including the Bureau of Labor Statistics, the National Science Foundation, and the National Center for Education Statistics. These agencies should be encouraged and given the resources to do a better job. One means of improvement would be to concentrate on occupations where forecasts have validity and margins of error are relatively small (such as public school teaching). Another is to eschew straight-line extrapolation of past trends. A third is to build adjustments into forecasting models.

An absence of timely and reliable forecasts of trends in the labor market—especially in occupations calling for lengthy, expensive training—is costly to society and to individuals. Better forecasting models would reduce such costs. In addition, better forecasts would inform policy decisions by permitting an examination of the human resource implications of government budget options. Therefore, the task force recommends: *that the Federal government develop models to forecast manpower supply and demand, including probable adjustments to imbalances, and that special attention be given to occupations calling for costly and lengthy training.* [Emphasis in original.]

The points in the first paragraph do not provide the explicit blueprint for action that would seem to be

called for by the state of the art of labor force projections. For one thing, occupations requiring lengthy training already receive a disproportionate amount of special attention. For another, straight-line extrapolations of past trends are already eschewed. And for still another thing, building adjustments into the forecasting models requires that the effects of the forecasts themselves be accounted for since the forecasts affect supply. That is not merely counting one's chickens before they are hatched; it's counting their eggs, too.

Throughout *Education for Employment*, the reader experiences similar disappointments as one excellent analysis of a topic after another leads up to a flaccid set of recommendations. The task force recommends that educators work closely with parents. Of course, they should. It recommends that local school officials and teachers "seek better use of student time." of course, they should. It recommends that colleges, "where appropriate, respond to indicators of imbalance" in the labor market. Of course, they should. It recommends "that adults returning to work following an absence from the labor force assess their aptitudes and interests in terms of labor market realities. . . ." Of course, they should. But could not all of these people have thought of these actions for themselves? *Education for Employment* achieves a high standard in its discussions of what is known about key issues; it is a pity that the same standard is not met in the task force's recommendations.

—NEALE BAXTER
Office of Publications
Bureau of Labor Statistics

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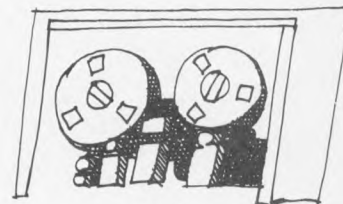
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NOTES ON CURRENT LABOR STATISTICS

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

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

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

Seasonally adjusted labor force data in tables 2-7 were revised in the February 1981 issue of the *Review* to reflect the preceding year's experience. Beginning in January 1980, the BLS introduced two major modifications in the seasonal adjustment methodology for labor force data. First, the data are being seasonally adjusted with a new procedure called X-11/ARIMA, which was developed at Statistics Canada as an extension of the standard X-11 method. A detailed description of the procedure appears in *The X-11 ARIMA Seasonal Adjustment Method* by Estela Bee Dagum (Statistics Canada Catalogue No. 12-564E, February 1980). The second change is that seasonal factors are now being calculated for use during the first 6 months of the year, rather than for the entire year, and then are calculated at mid-year for the July-December period. Revisions of historical data continue to be made only at the end of each calendar year.

Annual revision of the seasonally adjusted payroll data in tables 11, 13, 16, and 18 begins with the August 1980 issue using the X-11 ARIMA seasonal adjustment methodology. New seasonal factors for productivity data in tables 33 and 34 are usually introduced in the September issue. Seasonally adjusted indexes and percent changes from month to month and from quarter to quarter are

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

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

Availability of information. Data that supplement the tables in this section are published by the Bureau of Labor Statistics in a variety of sources. Press releases provide the latest statistical information published by the Bureau; the major recurring releases are published according to the schedule given below. The *BLS Handbook of Labor Statistics*, Bulletin 2070, provides more detailed data and greater historical coverage for most of the statistical series presented in the *Monthly Labor Review*. More information from the household and establishment surveys is provided in *Employment and Earnings*, a monthly publication of the Bureau, and in two comprehensive data books issued annually—*Employment and Earnings, United States* and *Employment and Earnings, States and Areas*. More detailed information on wages and other aspects of collective bargaining appears in the monthly periodical, *Current Wage Developments*. More detailed price information is published each month in the periodicals, the *CPI Detailed Report* and *Producer Prices and Price Indexes*.

Symbols

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

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

n.e.c. = not elsewhere classified.

Schedule of release dates for major BLS statistical series

Title and frequency (monthly except where indicated)	Release date	Period covered	Release date	Period covered	MLR table number
Employment situation	May 8	April	June 5	May	1-11
Producer Price Index	May 8	April	June 5	May	26-30
Consumer Price Index	May 22	April	June 23	May	22-25
Real earnings	May 22	April	June 23	May	14-20
Productivity and costs:					
Nonfinancial corporations	May 27	1st quarter	.....	.....	31-34
Labor turnover in manufacturing	May 27	April	June 30	May	12-13
Work stoppages	May 29	April	June 30	May	37

EMPLOYMENT DATA FROM THE HOUSEHOLD SURVEY

EMPLOYMENT DATA in this section are obtained from the Current Population Survey, a program of personal interviews conducted monthly by the Bureau of the Census for the Bureau of Labor Statistics. The sample consists of about 65,000 households beginning in January 1980, selected to represent the U.S. population 16 years of age and older. Households are interviewed on a rotating basis, so that three-fourths of the sample is the same for any 2 consecutive months.

Definitions

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

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

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

those not classified as employed or unemployed; this group includes persons retired, those engaged in their own housework, those not working while attending school, those unable to work because of long-term illness, those discouraged from seeking work because of personal or job market factors, and those who are voluntarily idle. The **noninstitutional population** comprises all persons 16 years of age and older who are not inmates of penal or mental institutions, sanitariums, or homes for the aged, infirm, or needy.

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

Notes on the data

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

Data in tables 2-7 are seasonally adjusted, based on the seasonal experience through December 1980.

Year	Total non-institutional population	Total labor force		Total	Civilian labor force					Not in labor force
		Number	Percent of population		Employed			Unemployed		
					Total	Agriculture	Nonagricultural industries	Number	Percent of labor force	
1950	106,645	63,858	59.9	62,208	58,918	7,160	51,758	3,288	5.3	42,787
1955	112,732	68,072	60.4	65,023	62,170	6,450	55,722	2,852	4.4	44,660
1960	119,759	72,142	60.2	68,628	65,778	5,458	60,318	3,852	5.5	47,617
1964	127,224	75,830	59.6	73,091	69,305	4,523	64,782	3,786	5.2	51,394
1965	129,236	77,178	59.7	74,455	71,088	4,361	66,726	3,366	4.5	52,058
1966	131,180	78,893	60.1	75,770	72,895	3,979	68,915	2,875	3.8	52,288
1967	133,319	80,793	60.6	77,347	74,372	3,844	70,527	2,975	3.8	52,527
1968	135,562	82,272	60.7	78,737	75,920	3,817	72,103	2,817	3.6	53,291
1969	137,841	84,240	61.1	80,734	77,902	3,606	74,296	2,832	3.5	53,602
1970	140,182	85,903	61.3	82,715	78,627	3,462	75,165	4,088	4.9	54,280
1971	142,596	86,929	61.0	84,113	79,120	3,387	75,732	4,993	5.9	55,666
1972	145,775	88,991	61.0	86,542	81,702	3,472	78,230	4,840	5.6	56,785
1973	148,263	91,040	61.4	88,714	84,409	3,452	80,957	4,304	4.9	57,222
1974	150,827	93,240	61.8	91,011	83,935	3,492	82,443	5,076	5.6	57,587
1975	153,449	94,793	61.8	92,613	84,783	3,380	81,403	7,830	8.5	58,655
1976	156,048	96,917	62.1	94,773	87,485	3,297	84,188	7,288	7.7	59,130
1977	158,559	99,534	62.8	97,401	90,546	3,244	87,302	6,855	7.0	59,025
1978	161,058	102,537	63.7	100,420	94,373	3,342	91,031	6,047	6.0	58,521
1979	163,620	104,996	64.2	102,908	96,945	3,297	93,648	5,963	5.8	58,623
1980	166,246	106,821	64.3	104,719	97,270	3,310	93,960	7,448	7.1	59,425

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

[Numbers in thousands]

Employment status	Annual average		1980										1981		
	1979	1980	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
TOTAL															
Total noninstitutional population ¹	163,620	166,246	165,506	165,693	165,886	166,105	166,391	166,578	166,789	167,005	167,201	167,396	167,585	167,747	167,902
Total labor force	104,996	106,821	106,261	106,519	107,148	106,683	107,119	107,059	107,101	107,288	107,404	107,191	107,668	107,802	108,305
Civilian noninstitutional population ¹	161,532	164,143	163,416	163,601	163,799	164,013	164,293	164,464	164,667	164,884	165,082	165,272	165,460	165,627	165,774
Civilian labor force	102,908	104,719	104,171	104,427	105,060	104,591	105,020	104,945	104,980	105,167	105,285	105,067	105,543	105,681	106,177
Employed	96,945	97,270	97,628	97,225	97,116	96,780	96,999	97,003	97,180	97,206	97,339	97,282	97,696	97,927	98,412
Agriculture	3,297	3,310	3,337	3,262	3,352	3,232	3,267	3,210	3,399	3,319	3,340	3,394	3,403	3,281	3,276
Nonagricultural industries	93,648	93,960	94,291	93,963	93,764	93,548	93,732	93,793	93,781	93,887	93,999	93,888	94,294	94,646	95,136
Unemployed	5,963	7,448	6,543	7,202	7,944	7,811	8,021	7,942	7,800	7,961	7,946	7,785	7,847	7,754	7,764
Unemployment rate	5.8	7.1	6.3	6.9	7.6	7.5	7.6	7.6	7.4	7.6	7.5	7.4	7.4	7.3	7.3
Not in labor force	58,623	59,425	59,245	59,174	58,739	59,422	59,273	59,519	59,687	59,717	59,797	60,205	59,917	59,946	59,598
Men, 20 years and over															
Civilian noninstitutional population ¹	68,293	69,607	69,238	69,329	69,428	69,532	69,664	69,756	69,864	69,987	70,095	70,198	70,320	70,413	70,481
Civilian labor force	54,486	55,234	54,966	55,127	55,440	55,182	55,344	55,403	55,475	55,495	55,539	55,470	55,443	55,445	55,816
Employed	52,264	51,972	52,230	51,935	51,871	51,624	51,714	51,791	51,823	51,963	52,007	52,045	52,091	52,134	52,511
Agriculture	2,350	2,355	2,386	2,334	2,337	2,301	2,306	2,301	2,389	2,351	2,372	2,331	2,378	2,289	2,296
Nonagricultural industries	49,913	49,617	49,844	49,601	49,494	49,323	49,408	49,490	49,434	49,612	49,635	49,714	49,713	49,844	50,215
Unemployed	2,223	3,261	2,736	3,192	3,569	3,558	3,630	3,612	3,652	3,532	3,532	3,425	3,352	3,312	3,305
Unemployment rate	4.1	5.9	5.0	5.8	6.4	6.4	6.6	6.5	6.6	6.4	6.4	6.2	6.0	6.0	5.9
Not in labor force	13,807	14,373	14,272	14,202	13,988	14,350	14,320	14,353	14,389	14,492	14,556	14,728	14,877	14,968	14,665
Women, 20 years and over															
Civilian noninstitutional population ¹	76,860	78,295	77,876	77,981	78,090	78,211	78,360	78,473	78,598	78,723	78,842	78,959	79,071	79,175	79,271
Civilian labor force	38,910	40,243	39,845	40,098	40,193	40,182	40,383	40,523	40,317	40,486	40,629	40,570	40,942	41,090	41,293
Employed	36,698	37,696	37,550	37,597	37,600	37,613	37,728	37,890	37,804	37,754	37,909	37,820	38,191	38,410	38,567
Agriculture	591	575	557	560	598	550	564	555	592	576	574	665	621	615	606
Nonagricultural industries	36,107	37,120	36,973	37,037	37,002	37,063	37,164	37,335	37,212	37,178	37,335	37,155	37,570	37,794	37,961
Unemployed	2,213	2,547	2,295	2,501	2,593	2,569	2,655	2,633	2,513	2,732	2,720	2,750	2,750	2,680	2,725
Unemployment rate	5.7	6.3	5.8	6.2	6.5	6.4	6.6	6.5	6.2	6.7	6.7	6.8	6.7	6.5	6.6
Not in labor force	37,949	38,052	38,031	37,883	37,897	38,029	37,977	37,950	38,281	38,237	38,213	38,389	38,129	38,085	37,978
Both sexes, 16-19 years															
Civilian noninstitutional population ¹	16,379	16,242	16,302	16,291	16,281	16,271	16,268	16,235	16,205	16,174	16,145	16,114	16,069	16,039	16,022
Civilian labor force	9,512	9,242	9,360	9,202	9,427	9,227	9,293	9,019	9,188	9,186	9,117	9,027	9,158	9,146	9,068
Employed	7,984	7,603	7,848	7,693	7,645	7,543	7,557	7,322	7,553	7,489	7,423	7,417	7,414	7,384	7,334
Agriculture	356	380	374	368	377	381	397	354	418	392	394	398	404	376	374
Nonagricultural industries	7,628	7,223	7,474	7,325	7,268	7,162	7,160	6,968	7,135	7,097	7,029	7,019	7,010	7,008	6,960
Unemployed	1,528	1,640	1,512	1,509	1,782	1,684	1,736	1,697	1,635	1,697	1,694	1,610	1,744	1,762	1,734
Unemployment rate	16.1	17.7	16.2	16.4	18.9	18.3	18.7	18.8	17.8	18.5	18.6	17.8	19.0	19.3	19.1
Not in labor force	6,867	7,000	6,942	7,089	6,854	7,044	6,975	7,216	7,017	6,988	7,028	7,087	6,911	6,893	6,954
White															
Civilian noninstitutional population ¹	141,614	143,657	143,115	143,254	143,403	143,565	143,770	143,900	144,051	144,211	144,359	144,500	144,651	144,774	144,882
Civilian labor force	90,602	92,171	91,802	92,044	92,501	92,134	92,335	92,288	92,317	92,516	92,562	92,383	92,832	93,035	93,313
Employed	86,025	86,380	86,723	86,389	86,251	86,007	86,075	86,067	86,307	86,371	86,409	86,377	86,620	86,940	87,291
Unemployed	4,577	5,790	5,079	5,655	6,250	6,127	6,260	6,221	6,010	6,145	6,153	6,006	6,213	6,095	6,022
Unemployment rate	5.1	6.3	5.5	6.1	6.8	6.7	6.8	6.7	6.5	6.6	6.6	6.5	6.7	6.6	6.5
Not in labor force	51,011	51,486	51,313	51,210	50,902	51,431	51,435	51,612	51,734	51,695	51,797	52,117	51,819	51,739	51,569
Black and other															
Civilian noninstitutional population ¹	19,918	20,486	20,301	20,346	20,395	20,448	20,523	20,564	20,617	20,673	20,723	20,771	20,809	20,853	20,892
Civilian labor force	12,306	12,548	12,320	12,401	12,546	12,491	12,661	12,630	12,677	12,686	12,706	12,668	12,684	12,598	12,765
Employed	10,920	10,890	10,856	10,838	10,842	10,809	10,902	10,902	10,894	10,884	10,922	10,895	11,051	10,942	11,020
Unemployed	1,386	1,658	1,464	1,563	1,704	1,682	1,759	1,728	1,783	1,802	1,784	1,773	1,634	1,655	1,745
Unemployment rate	11.3	13.2	11.9	12.6	13.6	13.5	13.9	13.7	14.1	14.2	14.0	14.0	12.9	13.1	13.7
Not in labor force	7,612	7,938	7,981	7,945	7,849	7,957	7,862	7,934	7,940	7,987	8,017	8,103	8,125	8,255	8,127

¹As in table 1, population figures are not seasonally adjusted.

c = corrected.

NOTE: The monthly data in this table have been revised to reflect seasonal experience through 1980.

3. Selected employment indicators, seasonally adjusted

[Numbers in thousands]

Selected categories	Annual average		1980										1981		
	1979	1980	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
CHARACTERISTIC															
Total employed, 16 years and over	96,945	97,270	97,628	97,225	97,116	96,780	96,999	97,003	97,180	97,206	97,339	97,282	97,696	97,927	98,412
Men	56,499	55,988	56,489	56,054	55,914	55,597	55,678	55,589	55,754	55,881	55,897	55,920	56,012	56,045	56,383
Women	40,446	41,283	41,139	41,171	41,202	41,183	41,321	41,414	41,426	41,325	41,442	41,362	41,684	41,882	42,029
Married men, spouse present	39,090	38,302	38,706	38,373	38,197	38,220	38,049	37,987	38,027	38,142	38,167	38,231	38,182	38,113	38,365
Married women, spouse present	22,724	23,097	23,171	23,094	23,145	23,131	23,118	23,126	23,027	22,993	23,065	23,063	23,352	23,356	23,513
OCCUPATION															
White-collar workers	49,342	50,809	50,336	50,465	50,627	50,836	51,023	51,307	51,074	51,101	51,148	51,065	51,594	51,698	51,746
Professional and technical	15,050	15,613	15,408	15,528	15,540	15,682	15,717	15,751	15,540	15,780	15,863	15,810	15,965	15,813	15,827
Managers and administrators, except farm	10,516	10,919	10,765	10,773	10,877	10,901	10,999	11,109	11,007	10,979	11,016	11,009	11,363	11,488	11,565
Salesworkers	6,163	6,172	6,132	6,048	6,072	6,046	6,130	6,140	6,316	6,277	6,155	6,175	6,265	6,271	6,220
Clerical workers	17,613	18,105	18,031	18,116	18,138	18,207	18,177	18,307	18,211	18,065	18,114	18,071	18,001	18,125	18,135
Blue-collar workers	32,066	30,800	31,568	31,120	30,800	30,443	30,276	30,232	30,436	30,521	30,550	30,373	30,338	30,446	30,594
Craft and kindred workers	12,880	12,529	12,740	12,713	12,551	12,357	12,403	12,346	12,490	12,485	12,424	12,337	12,306	12,386	12,605
Operatives, except transport	10,909	10,346	10,556	10,450	10,379	10,233	10,189	10,147	10,202	10,210	10,247	10,194	10,331	10,390	10,189
Transport equipment operatives	3,612	3,468	3,551	3,495	3,458	3,429	3,354	3,478	3,434	3,443	3,429	3,402	3,322	3,361	3,363
Nonfarm laborers	4,665	4,456	4,721	4,462	4,412	4,424	4,330	4,261	4,310	4,383	4,450	4,440	4,380	4,309	4,437
Service workers	12,834	12,958	12,982	13,009	12,947	12,941	13,017	12,928	12,943	12,891	12,888	12,982	12,946	13,070	13,279
Farmworkers	2,703	2,704	2,718	2,682	2,730	2,625	2,694	2,620	2,757	2,735	2,729	2,804	2,737	2,662	2,679
MAJOR INDUSTRY AND CLASS OF WORKER															
Agriculture:															
Wage-and-salary workers	1,413	1,384	1,429	1,377	1,396	1,369	1,360	1,282	1,417	1,363	1,417	1,411	1,465	1,336	1,338
Self-employed workers	1,580	1,628	1,612	1,602	1,642	1,606	1,631	1,640	1,688	1,640	1,612	1,655	1,615	1,610	1,615
Unpaid family workers	304	297	295	287	292	278	295	280	309	325	324	305	284	325	312
Nonagricultural industries:															
Wage-and-salary workers	86,540	86,706	87,110	86,789	86,722	86,370	86,432	86,490	86,395	86,587	86,643	86,513	87,125	87,236	87,870
Government	15,369	15,624	15,605	15,635	15,720	15,817	15,718	15,531	15,575	15,597	15,651	15,653	15,738	15,589	15,685
Private industries	71,171	71,081	71,505	71,154	71,002	70,553	70,714	70,959	70,820	70,990	70,992	70,860	71,387	71,647	72,185
Private households	1,240	1,166	1,140	1,151	1,197	1,204	1,230	1,196	1,125	1,144	1,148	1,110	1,197	1,176	1,235
Other industries	69,931	69,915	70,365	70,003	69,805	69,349	69,484	69,763	69,695	69,846	69,844	69,750	70,190	70,471	70,949
Self-employed workers	6,652	6,850	6,807	6,804	6,698	6,728	6,801	6,881	6,977	7,005	6,943	6,973	6,839	6,923	6,896
Unpaid family workers	455	404	385	363	406	445	426	403	416	417	405	396	422	371	354
PERSONS AT WORK¹															
Nonagricultural industries	88,133	88,325	88,505	88,041	87,974	87,994	87,431	88,195	88,246	88,488	88,694	88,468	89,499	89,441	89,583
Full-time schedules	72,647	72,022	72,618	71,986	71,501	71,454	70,825	71,526	71,929	72,071	72,265	72,131	72,807	72,945	72,875
Part time for economic reasons	3,281	3,965	3,470	3,803	4,276	3,969	4,086	4,143	4,183	4,220	4,176	4,218	4,474	4,145	4,227
Usually work full time	1,325	1,669	1,481	1,680	1,998	1,734	1,794	1,709	1,701	1,685	1,620	1,647	1,698	1,622	1,638
Usually work part time	1,956	2,296	1,989	2,123	2,278	2,235	2,292	2,434	2,482	2,535	2,556	2,571	2,776	2,523	2,589
Part time for noneconomic reasons	12,205	12,338	12,417	12,252	12,197	12,571	12,520	12,526	12,134	12,197	12,253	12,119	12,218	12,351	12,481

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

NOTE: The monthly data in this table have been revised to reflect seasonal experience through 1980.

4. Selected unemployment indicators, seasonally adjusted

[Unemployment rates]

Selected categories	Annual average		1980										1981		
	1979	1980	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
CHARACTERISTIC															
Total, 16 years and over	5.8	7.1	6.3	6.9	7.6	7.5	7.6	7.6	7.4	7.6	7.5	7.4	7.4	7.3	7.3
Men, 20 years and over	4.1	5.9	5.0	5.8	6.4	6.4	6.6	6.5	6.6	6.4	6.4	6.2	6.0	6.0	5.9
Women, 20 years and over	5.7	6.3	5.8	6.2	6.5	6.4	6.6	6.5	6.2	6.7	6.7	6.8	6.7	6.5	6.6
Both sexes, 16-19 years	16.1	17.7	16.2	16.4	18.9	18.3	18.7	18.8	17.8	18.5	18.6	17.8	19.0	19.3	19.1
White, total	5.1	6.3	5.5	6.1	6.8	6.7	6.8	6.7	6.5	6.6	6.6	6.5	6.7	6.6	6.5
Men, 20 years and over	3.6	5.2	4.5	5.2	5.8	5.7	5.8	5.8	5.8	5.7	5.7	5.5	5.5	5.4	5.4
Women, 20 years and over	5.0	5.6	5.0	5.5	5.7	5.7	5.8	5.8	5.5	5.8	5.8	5.9	6.0	5.7	5.6
Both sexes, 16-19 years	13.9	14.8	14.1	14.8	17.1	16.1	16.5	16.6	15.1	16.0	16.4	15.4	16.8	17.4	16.9
Black and other, total	11.3	13.2	11.9	12.6	13.6	13.5	13.9	13.7	14.1	14.2	14.0	14.0	12.9	13.1	13.7
Men, 20 years and over	8.4	11.4	9.5	10.8	11.7	12.2	12.5	12.5	13.2	12.1	12.0	11.6	10.5	10.8	10.8
Women, 20 years and over	10.1	11.1	10.5	11.1	11.6	10.9	11.3	10.9	10.6	12.3	12.2	12.3	11.0	11.9	12.6
Both sexes, 16-19 years	33.5	35.8	33.7	31.8	35.3	34.8	35.9	37.6	37.8	37.4	36.6	37.5	36.5	35.4	37.3
Married men, spouse present	2.7	4.2	3.4	4.0	4.6	4.6	4.9	4.8	4.7	4.6	4.4	4.3	4.2	4.1	4.1
Married women, spouse present	5.1	5.8	5.4	5.7	6.1	6.0	6.1	6.0	5.7	6.0	5.9	5.8	6.2	5.8	6.0
Women who head families	8.3	9.1	8.6	9.0	8.3	8.5	8.8	9.0	9.0	10.2	9.9	10.4	10.5	9.6	9.4
Full-time workers	5.3	6.8	5.9	6.5	7.3	7.2	7.4	7.3	7.3	7.3	7.4	7.3	7.1	7.1	7.1
Part-time workers	8.7	8.7	8.4	8.8	9.0	8.8	8.8	8.7	8.7	9.1	8.6	8.2	9.2	9.1	9.0
Unemployed 15 weeks and over	1.2	1.7	1.3	1.5	1.6	1.7	1.8	2.0	2.2	2.2	2.2	2.3	2.2	2.1	2.1
Labor force time lost ¹	6.3	7.9	6.8	7.6	8.6	8.1	8.4	8.3	8.2	8.4	8.3	8.2	8.2	8.1	8.1
OCCUPATION															
White-collar workers	3.3	3.7	3.4	3.7	3.8	3.7	3.7	3.7	3.8	3.9	3.9	4.0	3.9	3.7	3.9
Professional and technical	2.4	2.5	2.3	2.4	2.6	2.5	2.4	2.4	2.5	2.6	2.5	2.6	2.8	2.6	2.7
Managers and administrators, except farm	1.9	2.4	2.4	2.6	2.6	2.5	2.6	2.5	2.4	2.5	2.4	2.5	2.4	2.4	2.6
Salesworkers	3.9	4.4	4.0	4.5	4.4	4.4	4.2	4.2	4.3	4.6	4.8	4.7	4.4	4.0	3.8
Clerical workers	4.6	5.3	4.8	5.1	5.3	5.2	5.4	5.4	5.4	5.6	5.6	5.8	5.7	5.3	5.9
Blue-collar workers	6.9	10.0	8.2	9.6	10.9	11.1	11.3	11.1	10.8	10.8	10.7	10.5	10.2	10.1	9.8
Craft and kindred workers	4.5	6.6	5.5	6.5	7.5	7.5	7.2	7.6	7.4	7.1	7.1	7.1	6.8	7.2	7.1
Operatives, except transport	8.4	12.2	9.4	11.6	13.7	13.4	14.4	13.3	13.0	13.2	13.0	12.9	12.1	11.9	11.3
Transport equipment operatives	5.4	8.8	6.9	8.4	8.7	10.0	10.0	9.8	10.4	10.6	10.6	8.8	9.1	8.3	9.3
Nonfarm laborers	10.8	14.6	13.3	14.1	14.9	15.7	15.8	16.1	15.2	15.3	15.0	14.8	15.0	14.9	14.1
Service workers	7.1	7.9	7.2	7.8	8.2	8.1	8.3	8.5	8.1	8.3	8.3	7.8	8.0	8.7	8.1
Farmworkers	3.8	4.4	4.2	4.8	4.7	4.5	4.6	5.5	4.3	4.4	4.0	4.0	5.0	4.7	5.1
INDUSTRY															
Nonagricultural private wage-and-salary workers ²	5.7	7.4	6.3	7.0	8.0	8.0	8.0	8.0	7.8	7.8	7.8	7.7	7.5	7.5	7.3
Construction	10.2	14.2	13.1	14.5	16.6	15.6	15.8	17.3	15.9	14.6	14.8	13.8	13.3	13.2	14.7
Manufacturing	5.5	8.5	6.6	7.9	9.7	9.7	9.8	9.3	9.2	9.2	8.9	8.8	8.4	8.4	8.0
Durable goods	5.0	8.9	6.5	8.3	10.4	10.9	10.7	10.1	10.0	9.5	9.0	9.0	8.3	8.5	7.9
Nondurable goods	6.4	7.9	6.8	7.3	8.6	7.9	8.5	8.0	7.9	8.9	8.6	8.5	8.5	8.2	8.3
Transportation and public utilities	3.7	4.9	3.9	4.7	5.0	5.1	5.6	5.6	5.3	5.3	4.9	4.9	5.8	5.5	6.4
Wholesale and retail trade	6.5	7.4	6.4	7.0	7.5	7.7	7.6	7.7	7.7	7.8	8.2	8.3	7.6	7.6	7.3
Finance and service industries	4.9	5.3	4.9	5.1	5.6	5.6	5.5	5.4	5.6	5.5	5.5	5.5	5.8	6.0	5.6
Government workers	3.7	4.1	4.1	4.3	4.2	3.5	4.1	4.0	4.1	4.4	4.2	4.1	4.4	4.3	4.6
Agricultural wage-and-salary workers	9.1	10.8	10.3	11.7	11.4	10.4	10.8	13.2	10.7	11.1	10.1	10.6	11.5	12.1	11.9

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

² Includes mining, not shown separately.

NOTE: The monthly data in this table have been revised to reflect seasonal experience through 1980.

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

Sex and age	Annual average		1980										1981		
	1979	1980	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Total, 16 years and over	5.8	7.1	6.3	6.9	7.6	7.5	7.6	7.6	7.4	7.6	7.5	7.4	7.4	7.3	7.3
16 to 19 years	16.1	17.7	16.2	16.4	18.9	18.3	18.7	18.8	17.8	18.5	18.6	17.8	19.0	19.3	19.1
16 to 17 years	18.1	20.0	17.7	19.0	21.2	20.0	20.5	22.1	20.1	20.9	21.4	19.9	21.0	21.4	21.3
18 to 19 years	14.6	16.1	15.1	14.5	17.4	17.6	17.4	16.5	16.0	16.7	16.5	16.4	17.5	17.9	17.7
20 to 24 years	9.0	11.5	9.9	11.3	12.5	12.1	12.1	12.0	12.0	12.3	12.1	11.7	11.9	11.8	11.7
25 years and over	3.9	5.0	4.4	5.0	5.3	5.4	5.5	5.4	5.4	5.4	5.4	5.3	5.3	5.1	5.2
25 to 54 years	4.1	5.4	4.8	5.3	5.6	5.8	5.9	5.9	5.9	5.9	5.9	5.8	5.7	5.5	5.5
55 years and over	3.0	3.3	2.8	3.3	3.4	3.3	3.4	3.4	3.4	3.4	3.3	3.5	3.5	3.6	3.7
Men, 16 years and over	5.1	6.9	5.8	6.7	7.5	7.5	7.6	7.6	7.6	7.4	7.4	7.2	7.2	7.1	7.0
16 to 19 years	15.8	18.2	15.2	16.3	19.4	19.1	19.5	19.9	18.9	19.8	19.8	19.0	20.3	20.1	19.5
16 to 17 years	17.9	20.4	16.5	18.8	21.5	21.5	20.9	23.7	21.2	21.8	22.3	20.5	23.0	22.1	21.1
18 to 19 years	14.2	16.7	14.5	14.4	17.6	18.8	18.4	17.1	16.9	18.1	17.8	17.8	18.5	18.7	18.6
20 to 24 years	8.6	12.5	10.7	12.3	13.5	13.4	13.2	13.6	13.5	13.8	13.2	12.5	12.8	12.7	13.0
25 years and over	3.3	4.7	4.0	4.7	5.1	5.2	5.4	5.3	5.4	5.1	5.1	4.9	4.9	4.8	4.7
25 to 54 years	3.4	5.1	4.3	4.9	5.4	5.6	5.8	5.7	6.0	5.6	5.6	5.4	5.2	5.2	5.1
55 years and over	2.9	3.3	2.8	3.3	3.4	3.6	3.6	3.6	3.5	3.3	3.3	3.3	3.4	3.4	3.2
Women, 16 years and over	6.8	7.4	6.9	7.2	7.6	7.4	7.7	7.6	7.2	7.7	7.7	7.7	7.7	7.6	7.7
16 to 19 years	16.4	17.2	17.2	16.5	18.3	17.3	17.7	17.6	16.6	17.0	17.2	16.5	17.5	18.4	18.7
16 to 17 years	18.3	19.5	19.2	19.3	20.9	18.3	20.1	20.2	18.8	19.8	20.3	19.3	18.7	20.5	21.6
18 to 19 years	15.0	15.6	15.8	14.8	17.2	16.3	16.2	15.9	15.1	15.1	15.1	14.8	16.4	17.0	16.5
20 to 24 years	9.6	10.3	9.0	10.1	11.3	10.6	10.9	10.2	10.2	10.6	10.8	10.8	10.8	10.8	10.1
25 years and over	4.8	5.5	5.1	5.4	5.5	5.5	5.7	5.7	5.4	5.9	5.8	5.9	5.8	5.6	5.9
25 to 54 years	5.2	5.9	5.5	5.8	6.0	6.0	6.1	6.2	5.9	6.4	6.2	6.3	6.3	5.9	6.2
55 years and over	3.2	3.2	2.9	3.3	3.3	2.9	3.1	3.1	3.3	3.4	3.4	3.9	3.6	3.9	4.5

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

[Numbers in thousands]

Reason for unemployment	1980										1981		
	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
NUMBER OF UNEMPLOYED													
Lost last job	3,102	3,581	4,164	4,468	4,364	4,319	4,387	4,240	4,229	4,226	3,847	3,896	3,846
On layoff	1,135	1,422	1,771	1,954	1,832	1,699	1,744	1,692	1,453	1,470	1,258	1,267	1,299
Other job losers	1,967	2,159	2,393	2,514	2,532	2,620	2,643	2,548	2,776	2,756	2,590	2,629	2,547
Left last job	804	905	930	887	866	890	855	870	897	813	907	884	863
Reentered labor force	1,812	1,909	1,975	1,834	1,868	1,883	1,844	2,013	1,896	1,869	2,039	1,970	2,040
Seeking first job	815	752	871	872	893	870	862	880	890	868	1,000	928	986
PERCENT DISTRIBUTION													
Total unemployed	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Job losers	47.5	50.1	52.4	55.4	54.6	54.2	55.2	53.0	53.5	54.3	49.4	50.7	49.7
On layoff	17.4	19.9	22.3	24.2	22.9	21.3	21.9	21.1	18.4	18.9	16.1	16.5	16.8
Other job losers	30.1	30.2	30.1	31.2	31.7	32.9	33.3	31.8	35.1	35.4	33.2	34.2	32.9
Job leavers	12.3	12.7	11.7	11.0	10.8	11.2	10.8	10.9	11.3	10.5	11.6	11.5	11.2
Reentrants	27.7	26.7	24.9	22.8	23.4	23.6	23.2	25.2	24.0	24.0	26.2	25.7	26.4
New entrants	12.5	10.5	11.0	10.8	11.2	10.9	10.8	11.0	11.2	11.2	12.8	12.1	12.7
UNEMPLOYED AS A PERCENT OF THE CIVILIAN LABOR FORCE													
Job losers	3.0	3.4	4.0	4.3	4.2	4.1	4.2	4.0	4.0	4.0	3.6	3.7	3.6
Job leavers	.8	.9	.9	.8	.8	.8	.8	.8	.9	.8	.9	.8	.8
Reentrants	1.7	1.8	1.9	1.8	1.8	1.8	1.8	1.9	1.8	1.8	1.9	1.9	1.9
New entrants	.8	.7	.8	.8	.9	.8	.8	.8	.8	.8	.9	.9	.9

7. Duration of unemployment, seasonally adjusted

[Numbers in thousands]

Weeks of unemployment	Annual average		1980										1981		
	1979	1980	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.
Less than 5 weeks	2,869	3,208	3,005	3,258	3,714	3,281	3,317	3,255	3,042	3,186	3,108	3,115	3,259	3,203	3,209
5 to 14 weeks	1,892	2,411	2,207	2,373	2,589	2,812	2,649	2,533	2,586	2,500	2,524	2,217	2,264	2,324	2,356
15 weeks and over	1,202	1,829	1,391	1,599	1,686	1,777	1,935	2,150	2,295	2,292	2,329	2,378	2,358	2,250	2,192
15 to 26 weeks	684	1,028	796	931	980	1,024	1,093	1,239	1,366	1,256	1,213	1,231	1,079	992	1,013
27 weeks and over	518	802	595	668	706	753	842	911	929	1,036	1,116	1,147	1,279	1,257	1,179
Average (mean) duration, in weeks	10.9	11.9	11.0	11.2	10.6	11.7	11.8	12.5	13.0	13.3	13.6	13.5	14.4	14.4	14.0

NOTE: The monthly data in these tables have been revised to reflect seasonal experience through 1980.

EMPLOYMENT, HOURS, AND EARNINGS DATA FROM ESTABLISHMENT SURVEYS

EMPLOYMENT, HOURS, AND EARNINGS DATA in this section are compiled from payroll records reported monthly on a voluntary basis to the Bureau of Labor Statistics and its cooperating State agencies by 166,000 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.

LABOR TURNOVER DATA in this section are compiled from personnel records reported monthly on a voluntary basis to the Bureau of Labor Statistics and its cooperating State agencies. A sample of 40,000 establishments represents all industries in the manufacturing and mining sectors of the economy.

Definitions

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

Production workers in manufacturing include blue-collar worker supervisors and all nonsupervisory workers closely associated with production operations. Those workers mentioned in tables 14-20 include production workers in manufacturing and mining; construction workers in construction; and nonsupervisory workers in transportation and public utilities, in wholesale and retail trade, in finance, insurance, and real estate, and in services industries. These groups account for about four-fifths of the total employment on private nonagricultural payrolls.

Earnings are the payments production or nonsupervisory workers receive during the survey period, including premium pay for overtime or late-shift work but excluding irregular bonuses and other special payments. **Real earnings** are earnings adjusted to eliminate the effects of price change. 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. **Spendable earnings** are earnings from which estimated social security and Federal income taxes have been deducted. The

Bureau of Labor Statistics computes spendable earnings from gross weekly earnings for only two illustrative cases: (1) a worker with no dependents and (2) a married worker with three dependents.

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.

Labor turnover is the movement of all wage and salary workers from one employment status to another. **Accession rates** indicate the average number of persons added to a payroll in a given period per 100 employees; **separation rates** indicate the average number dropped from a payroll per 100 employees. Although month-to-month changes in employment can be calculated from the labor turnover data, the results are not comparable with employment data from the employment and payroll survey. The labor turnover survey measures changes during the calendar month while the employment and payroll survey measures changes from midmonth to midmonth.

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 June 1980 data, published in the August 1980 issue of the *Review*. Consequently, data published in the *Review* prior to that issue are not necessarily comparable to current data. Complete comparable historical unadjusted and seasonally adjusted data are published in a Supplement to Employment and Earnings (unadjusted data from April 1977 through March 1980 and seasonally adjusted data from January 1974 through March 1980) and in *Employment and Earnings, United States, 1909-78*, BLS Bulletin 1312-11 (for prior periods).

Data on recalls were shown for the first time in tables 12 and 13 in the January 1978 issue of the *Review*. For a detailed discussion of the recalls series, along with historical data, see "New Series on Recalls from the Labor Turnover Survey," *Employment and Earnings*, December 1977, pp. 10-19.

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

The formulas used to construct the spendable average weekly earnings series reflect the latest provisions of the Federal income tax and social security tax laws. For the spendable average weekly earnings formulas for the years 1978-80, see *Employment and Earnings*, March 1980, pp. 10-11. Real earnings data are adjusted using the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W).

8. Employment by industry, 1950-80

[Nonagricultural payroll data, in thousands]

Year	Total	Mining	Construction	Manufacturing	Transportation and public utilities	Wholesale and retail trade	Wholesale trade	Retail trade	Finance, insurance, and real estate	Services	Government		
											Total	Federal	State and local
1951	47,819	929	2,637	16,393	4,226	9,742	2,727	7,015	1,956	5,547	6,389	2,302	4,087
1952	48,793	898	2,668	16,632	4,248	10,004	2,812	7,192	2,035	5,699	6,609	2,420	4,188
1953	50,202	866	2,659	17,549	4,290	10,247	2,854	7,393	2,111	5,835	6,645	2,305	4,340
1954	48,990	791	2,646	16,314	4,084	10,235	2,867	7,368	2,200	5,969	6,751	2,188	4,563
1955	50,641	792	2,839	16,882	4,141	10,535	2,926	7,610	2,298	6,240	6,914	2,187	4,727
1956	52,369	822	3,039	17,243	4,244	10,858	3,018	7,840	2,389	6,497	7,278	2,209	5,069
1957	52,853	828	2,962	17,174	4,241	10,886	3,028	7,858	2,438	6,708	7,616	2,217	5,399
1958	51,324	751	2,817	15,945	3,976	10,750	2,980	7,770	2,481	6,765	7,839	2,191	5,648
1959 ¹	53,268	732	3,004	16,675	4,011	11,127	3,082	8,045	2,549	7,087	8,083	2,233	5,850
1960	54,189	712	2,926	16,796	4,004	11,391	3,143	8,248	2,629	7,378	8,353	2,270	6,083
1961	53,999	672	2,859	16,326	3,903	11,337	3,133	8,204	2,688	7,620	8,594	2,279	6,315
1962	55,549	650	2,948	16,853	3,906	11,566	3,198	8,368	2,754	7,982	8,890	2,340	6,550
1963	56,653	635	3,010	16,995	3,903	11,778	3,248	8,530	2,830	8,277	9,225	2,358	6,868
1964	58,283	634	3,097	17,274	3,951	12,160	3,337	8,823	2,911	8,660	9,596	2,348	7,248
1965	60,765	632	3,232	18,062	4,036	12,716	3,466	9,250	2,977	9,036	10,074	2,378	7,696
1966	63,901	627	3,317	19,214	4,158	13,245	3,597	9,648	3,058	9,498	10,784	2,564	8,220
1967	65,803	613	3,248	19,447	4,268	13,606	3,689	9,917	3,185	10,045	11,391	2,719	8,672
1968	67,897	606	3,350	19,781	4,318	14,099	3,779	10,320	3,337	10,567	11,839	2,737	9,102
1969	70,384	619	3,575	20,167	4,442	14,705	3,907	10,798	3,512	11,169	12,195	2,758	9,437
1970	70,880	623	3,588	19,367	4,515	15,040	3,993	11,047	3,645	11,548	12,554	2,731	9,823
1971	71,214	609	3,704	18,623	4,476	15,352	4,001	11,351	3,772	11,797	12,881	2,696	10,185
1972	73,675	628	3,889	19,151	4,541	15,949	4,113	11,836	3,908	12,276	13,334	2,684	10,649
1973	76,790	642	4,097	20,154	4,656	16,607	4,277	12,329	4,046	12,857	13,732	2,663	11,068
1974	78,265	697	4,020	20,077	4,725	16,987	4,433	12,554	4,148	13,441	14,170	2,724	11,446
1975	76,945	752	3,525	18,323	4,542	17,060	4,415	12,645	4,165	13,892	14,686	2,748	11,937
1976	79,382	779	3,576	18,997	4,582	17,755	4,546	13,209	4,271	14,551	14,871	2,733	12,138
1977	82,471	813	3,851	19,682	4,713	18,516	4,708	13,808	4,467	15,303	15,127	2,727	12,399
1978	86,697	851	4,229	20,505	4,923	19,542	4,969	14,573	4,724	16,252	15,672	2,753	12,919
1979	89,886	960	4,483	21,062	5,141	20,269	5,204	15,066	4,974	17,078	15,920	2,773	13,147
1980	90,657	1,025	4,469	20,361	5,156	20,573	5,281	15,292	5,162	17,741	16,170	2,866	13,304

¹Data include Alaska and Hawaii beginning in 1959.

9. Employment by State

[Nonagricultural payroll data, in thousands]

State	Feb. 1980	Jan. 1981	Feb. 1981 ^P	State	Feb. 1980	Jan. 1981	Feb. 1981 ^P
Alabama	1,360.0	1,353.6	1,353.2	Montana	273.0	275.6	274.0
Alaska	161.4	160.2	160.2	Nebraska	623.8	619.3	620.2
Arizona	1,011.5	1,009.0	1,018.3	Nevada	389.0	397.1	402.5
Arkansas	738.9	739.8	742.5	New Hampshire ¹	375.8	382.1	380.7
California	9,793.7	9,817.1	9,825.2	New Jersey ¹	2,995.4	3,016.1	3,014.1
Colorado	1,233.1	1,249.3	1,255.6	New Mexico ¹	458.7	456.7	456.8
Connecticut	1,405.9	1,421.5	1,420.6	New York	7,122.5	7,093.9	7,119.0
Delaware	252.9	254.7	250.3	North Carolina	2,369.5	2,377.5	2,375.7
District of Columbia	608.5	608.8	610.2	North Dakota	238.5	240.8	240.8
Florida	3,551.4	3,697.6	3,728.7	Ohio	4,388.1	4,303.8	4,298.9
Georgia	2,131.2	2,150.2	2,148.4	Oklahoma	1,111.7	1,151.7	1,152.3
Hawaii ¹	403.2	402.4	404.4	Oregon	1,048.7	1,026.1	994.3
Idaho	327.8	324.7	325.0	Pennsylvania ¹	4,732.5	4,657.9	4,657.0
Illinois	4,865.3	4,753.7	4,772.7	Rhode Island	390.8	392.7	391.7
Indiana	2,138.8	2,098.1	2,100.4	South Carolina	1,182.6	1,175.8	1,179.4
Iowa	1,109.7	1,070.5	1,070.4	South Dakota	234.6	229.7	229.1
Kansas	944.9	942.1	943.3	Tennessee	1,736.2	1,706.6	1,703.9
Kentucky	1,188.6	1,206.5	1,202.3	Texas	5,719.2	5,989.4	6,006.8
Louisiana	1,540.1	1,603.0	1,607.9	Utah	544.8	552.1	553.2
Maine	405.5	409.6	409.1	Vermont	198.6	203.3	204.5
Maryland	1,666.0	1,663.2	1,664.6	Virginia	2,087.5	2,110.4	2,108.1
Massachusetts	2,616.0	2,636.4	2,636.4	Washington ¹	1,590.2	1,583.8	1,580.8
Michigan ¹	3,496.2	3,437.2	3,420.9	West Virginia	633.7	633.1	634.8
Minnesota	1,747.2	1,726.3	1,723.8	Wisconsin	1,932.5	1,914.3	1,908.5
Mississippi	829.9	826.4	825.6	Wyoming	198.0	203.4	200.0
Missouri	1,947.9	1,927.8	1,920.3	Virgin Islands	37.3	36.3	36.5

¹ Revised series, not strictly comparable with previously published data.

10. Employment by industry division and major manufacturing group

[Nonagricultural payroll data, in thousands]

Industry division and group	Annual average		1980									1981			
	1979	1980	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb. ^P	Mar. ^P
TOTAL	89,886	90,657	90,316	90,761	90,849	91,049	89,820	90,072	90,729	91,332	91,693	91,846	90,082	90,236	90,759
MINING	960	1,025	996	1,006	1,024	1,049	1,030	1,029	1,035	1,039	1,055	1,064	1,069	1,072	1,079
CONSTRUCTION	4,483	4,469	4,150	4,311	4,471	4,611	4,633	4,712	4,690	4,700	4,618	4,431	4,080	3,987	4,137
MANUFACTURING	21,062	20,361	20,793	20,533	20,250	20,201	19,754	20,044	20,269	20,302	20,368	20,316	20,155	20,147	20,222
Production workers	15,085	14,277	14,727	14,466	14,172	14,093	13,657	13,947	14,182	14,204	14,260	14,199	14,049	14,045	14,129
Durable goods	12,772	12,215	12,647	12,414	12,150	12,065	11,774	11,827	12,028	12,100	12,195	12,186	12,110	12,078	12,136
Production workers	9,120	8,468	8,909	8,672	8,409	8,307	8,025	8,075	8,281	8,343	8,430	8,413	8,342	8,314	8,377
Lumber and wood products	766.1	686.9	716.9	678.4	654.8	668.0	666.8	683.0	689.2	686.9	682.8	679.8	668.1	667.7	670.5
Furniture and fixtures	499.3	473.7	494.1	488.7	469.1	460.8	438.1	454.6	466.6	470.3	473.8	475.8	475.0	477.0	478.2
Stone, clay, and glass products	709.7	667.9	679.0	675.5	668.1	666.2	656.0	663.2	667.4	665.5	667.2	654.3	637.4	632.4	641.5
Primary metal industries	1,250.2	1,133.3	1,203.7	1,193.8	1,148.8	1,112.9	1,055.5	1,059.6	1,081.8	1,093.1	1,111.9	1,124.6	1,125.5	1,125.1	1,127.5
Fabricated metal products	1,723.7	1,627.1	1,703.8	1,671.4	1,619.8	1,598.6	1,538.4	1,567.6	1,594.5	1,604.6	1,615.6	1,614.6	1,598.6	1,596.7	1,605.5
Machinery, except electrical	2,481.6	2,488.8	2,539.9	2,523.5	2,509.3	2,486.1	2,440.2	2,417.8	2,449.6	2,456.7	2,475.2	2,492.5	2,491.3	2,500.3	2,504.5
Electric and electronic equipment	2,124.3	2,126.3	2,167.7	2,156.2	2,120.2	2,102.2	2,066.5	2,080.7	2,103.5	2,119.3	2,134.9	2,143.9	2,140.1	2,140.9	2,146.6
Transportation equipment	2,082.8	1,889.8	2,005.6	1,891.1	1,835.1	1,847.0	1,810.2	1,785.4	1,857.9	1,885.7	1,912.2	1,888.4	1,872.0	1,833.4	1,854.7
Instruments and related products	688.9	699.7	703.6	702.2	699.4	702.9	698.3	697.8	695.5	695.9	700.6	702.2	700.6	699.1	698.1
Miscellaneous manufacturing	445.6	422.0	432.9	433.0	424.6	420.1	404.0	417.6	422.2	422.1	421.2	410.1	401.5	405.5	408.9
Non-durable goods	8,290	8,146	8,146	8,119	8,100	8,136	7,980	8,217	8,241	8,202	8,173	8,130	8,045	8,069	8,086
Production workers	5,965	5,809	5,818	5,794	5,763	5,786	5,632	5,872	5,901	5,861	5,830	5,786	5,707	5,731	5,752
Food and kindred products	1,728.1	1,690.4	1,641.1	1,626.2	1,638.5	1,676.8	1,709.5	1,795.3	1,790.5	1,738.8	1,696.6	1,667.2	1,625.0	1,616.9	1,612.2
Tobacco manufactures	69.9	69.0	64.4	62.9	62.7	64.6	63.9	71.3	75.5	76.4	75.6	74.7	72.0	70.2	67.9
Textile mill products	888.5	863.8	886.9	882.1	870.6	853.2	820.6	854.1	854.7	856.8	859.4	858.3	852.5	853.5	855.2
Apparel and other textile products	1,312.5	1,296.5	1,318.4	1,304.2	1,299.0	1,310.5	1,236.9	1,299.9	1,309.2	1,307.5	1,302.3	1,281.7	1,266.2	1,284.7	1,293.6
Paper and allied products	706.7	693.9	701.8	698.8	692.4	695.0	682.3	688.7	688.6	690.7	691.6	691.7	687.9	688.2	688.6
Printing and publishing	1,239.5	1,271.7	1,272.1	1,270.4	1,267.8	1,271.3	1,264.5	1,264.3	1,267.9	1,272.2	1,281.0	1,291.6	1,281.7	1,288.0	1,290.8
Chemicals and allied products	1,110.7	1,112.6	1,118.1	1,120.6	1,119.5	1,122.2	1,112.0	1,108.4	1,106.3	1,104.9	1,106.1	1,107.6	1,106.3	1,109.3	1,112.9
Petroleum and coal products	210.0	197.3	153.1	173.6	203.4	209.1	212.0	212.4	210.9	210.4	210.2	207.8	207.6	206.6	208.7
Rubber and miscellaneous plastics products	775.6	710.7	746.5	737.2	702.4	688.5	659.3	680.4	695.8	703.4	708.3	710.3	708.9	710.9	715.0
Leather and leather products	248.0	240.1	243.4	243.3	243.2	244.7	218.9	242.6	241.1	240.6	241.5	238.8	237.1	240.3	241.3
TRANSPORTATION AND PUBLIC UTILITIES	5,141	5,156	5,143	5,147	5,167	5,185	5,145	5,144	5,170	5,178	5,158	5,163	5,075	5,080	5,096
WHOLESALE AND RETAIL TRADE	20,269	20,573	20,226	20,373	20,497	20,562	20,506	20,579	20,692	20,708	20,937	21,313	20,555	20,397	20,478
WHOLESALE TRADE	5,204	5,281	5,269	5,265	5,263	5,287	5,278	5,284	5,291	5,313	5,313	5,318	5,278	5,277	5,300
RETAIL TRADE	15,066	15,292	14,957	15,108	15,234	15,275	15,228	15,295	15,401	15,395	15,624	15,995	15,277	15,120	15,178
FINANCE, INSURANCE, AND REAL ESTATE	4,974	5,162	5,085	5,104	5,137	5,201	5,229	5,232	5,194	5,204	5,215	5,229	5,226	5,232	5,247
SERVICES	17,078	17,741	17,478	17,636	17,747	17,846	17,973	17,966	17,915	17,949	17,951	17,978	17,788	17,953	18,107
GOVERNMENT	15,920	16,170	16,445	16,651	16,556	16,394	15,550	15,366	15,764	16,252	16,391	16,352	16,134	16,368	16,393
Federal	2,773	2,866	2,869	3,103	2,963	2,995	2,949	2,862	2,754	2,774	2,776	2,782	2,773	2,767	2,769
State and local	13,147	13,304	13,576	13,548	13,593	13,399	12,601	12,504	13,010	13,478	13,615	13,570	13,361	13,601	13,624

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

[Nonagricultural payroll data, in thousands]

Industry division and group	1980										1981		
	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb. P	Mar. P
TOTAL	91,144	90,951	90,468	90,047	89,867	90,142	90,384	90,710	90,961	91,125	91,481	91,644	91,645
MINING	1,009	1,012	1,023	1,029	1,013	1,013	1,028	1,037	1,054	1,072	1,086	1,094	1,093
CONSTRUCTION	4,529	4,467	4,436	4,379	4,322	4,359	4,404	4,442	4,475	4,508	4,610	4,520	4,516
MANUFACTURING	20,938	20,642	20,286	20,014	19,828	19,940	20,044	20,157	20,282	20,312	20,345	20,373	20,369
Production workers	14,850	14,550	14,186	13,931	13,759	13,872	13,972	14,065	14,179	14,195	14,221	14,238	14,255
Durable goods	12,707	12,442	12,140	11,947	11,819	11,860	11,955	12,043	12,146	12,160	12,188	12,193	12,197
Production workers	8,961	8,686	8,386	8,205	8,084	8,123	8,212	8,288	8,381	8,386	8,410	8,408	8,427
Lumber and wood products	737	689	654	648	650	662	674	677	683	688	693	692	690
Furniture and fixtures	494	491	472	461	449	456	464	466	469	472	475	477	478
Stone, clay, and glass products	700	680	663	647	641	648	655	656	661	660	663	661	662
Primary metal industries	1,209	1,193	1,144	1,096	1,049	1,059	1,074	1,096	1,119	1,133	1,133	1,133	1,133
Fabricated metal products	1,711	1,678	1,620	1,584	1,551	1,569	1,587	1,595	1,606	1,608	1,608	1,610	1,612
Machinery, except electrical	2,530	2,518	2,517	2,476	2,448	2,437	2,452	2,469	2,475	2,480	2,484	2,493	2,495
Electric and electronic equipment	2,176	2,167	2,127	2,094	2,079	2,083	2,091	2,107	2,120	2,135	2,147	2,152	2,155
Transportation equipment	2,006	1,885	1,819	1,831	1,839	1,840	1,851	1,873	1,901	1,868	1,866	1,858	1,857
Instruments and related products	705	703	700	696	698	697	697	697	701	701	702	701	700
Miscellaneous manufacturing	439	438	424	414	415	409	410	407	411	415	417	416	415
Nondurable goods	8,231	8,200	8,146	8,067	8,009	8,080	8,089	8,114	8,136	8,152	8,157	8,180	8,172
Production workers	5,889	5,864	5,800	5,726	5,675	5,749	5,760	5,777	5,798	5,809	5,811	5,830	5,828
Food and kindred products	1,704	1,690	1,691	1,677	1,683	1,690	1,672	1,682	1,686	1,684	1,680	1,684	1,674
Tobacco manufactures	68	69	70	71	69	67	68	69	71	70	70	71	71
Textile mill products	888	884	869	843	833	851	851	856	856	857	858	857	857
Apparel and other textile products	1,316	1,302	1,291	1,287	1,276	1,296	1,299	1,292	1,291	1,291	1,289	1,292	1,291
Paper and allied products	708	702	692	685	680	682	686	690	692	693	694	696	695
Printing and publishing	1,274	1,272	1,268	1,269	1,266	1,266	1,269	1,272	1,278	1,284	1,284	1,291	1,293
Chemicals and allied products	1,123	1,123	1,120	1,112	1,103	1,100	1,104	1,105	1,108	1,112	1,115	1,118	1,117
Petroleum and coal products	157	175	203	205	207	208	208	209	209	210	213	213	214
Rubber and miscellaneous plastics products	749	740	703	681	663	680	692	699	705	711	713	716	718
Leather and leather products	244	243	239	237	229	240	240	240	240	240	241	242	242
TRANSPORTATION AND PUBLIC UTILITIES	5,202	5,178	5,167	5,134	5,114	5,129	5,124	5,147	5,132	5,137	5,142	5,147	5,153
WHOLESALE AND RETAIL TRADE	20,610	20,531	20,487	20,459	20,506	20,589	20,620	20,641	20,660	20,638	20,762	20,886	20,915
WHOLESALE TRADE	5,301	5,286	5,268	5,245	5,247	5,263	5,280	5,292	5,297	5,302	5,315	5,330	5,332
RETAIL TRADE	15,309	15,245	15,219	15,214	15,259	15,326	15,340	15,349	15,363	15,336	15,447	15,556	15,583
FINANCE, INSURANCE, AND REAL ESTATE	5,115	5,119	5,137	5,150	5,167	5,180	5,194	5,214	5,225	5,245	5,268	5,274	5,279
SERVICES	17,580	17,618	17,659	17,652	17,760	17,788	17,861	17,913	17,969	18,068	18,133	18,189	18,216
GOVERNMENT	16,161	16,384	16,273	16,230	16,157	16,144	16,109	16,159	16,164	16,145	16,135	16,161	16,104
Federal	2,886	3,115	2,960	2,951	2,893	2,828	2,765	2,788	2,790	2,789	2,801	2,787	2,786
State and local	13,275	13,269	13,313	13,279	13,264	13,316	13,344	13,371	13,374	13,356	13,334	13,374	13,318

12. Labor turnover rates in manufacturing, 1977 to date

[Per 100 employees]

Year	Annual average	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Total accessions													
1977	4.0	3.7	3.7	4.0	3.8	4.6	4.9	4.3	5.3	4.6	3.9	3.1	2.4
1978	4.1	3.8	3.2	3.8	4.0	4.7	4.9	4.4	5.4	4.9	4.3	3.3	2.4
1979	4.0	4.0	3.4	3.8	3.9	4.7	4.8	4.3	5.0	4.5	4.1	3.0	2.2
1980	3.5	3.8	3.3	3.5	3.1	3.4	3.9	3.8	4.5	4.3	3.6	2.7	2.2
1981	...	3.4	P 3.0	...	...	...	...	...	...	...	...	...	...
New hires													
1977	2.8	2.2	2.1	2.6	2.7	3.5	3.7	3.0	4.0	3.5	3.0	2.2	1.6
1978	3.1	2.5	2.2	2.7	2.9	3.6	3.9	3.3	4.2	3.9	3.5	2.6	1.7
1979	2.9	2.8	2.5	2.8	2.9	3.6	3.8	3.1	3.7	3.4	3.1	2.2	1.5
1980	2.1	2.4	2.2	2.3	2.1	2.1	2.4	2.1	2.5	2.6	2.2	1.6	1.2
1981	...	1.8	P 1.8	...	...	...	...	...	...	...	...	...	...
Recalls													
1977	.9	1.2	1.3	1.1	.9	.8	.8	.9	1.0	.8	.6	.6	.6
1978	.7	1.0	.7	.8	.8	.8	.7	.8	.9	.7	.6	.5	.5
1979	.7	.9	.7	.7	.7	.8	.7	.9	.9	.8	.7	.5	.5
1980	1.1	1.1	.9	.9	.8	1.0	1.2	1.4	1.7	1.4	1.1	.9	.8
1981	...	1.3	P 1.0	...	...	...	...	...	...	...	...	...	...
Total separations													
1977	3.8	3.9	3.4	3.4	3.4	3.5	3.5	4.3	5.1	4.9	3.8	3.4	3.4
1978	3.9	3.6	3.1	3.5	3.6	3.7	3.8	4.1	5.3	4.9	4.1	3.5	3.4
1979	4.0	3.8	3.2	3.6	3.7	3.8	3.9	4.3	5.7	4.7	4.2	3.8	3.5
1980	4.0	4.1	3.5	3.7	4.7	4.8	4.4	4.2	4.8	4.1	3.7	3.0	3.1
1981	...	3.6	P 3.1	...	...	...	...	...	...	...	...	...	...
Quits													
1977	1.8	1.4	1.3	1.6	1.7	1.9	1.9	1.9	3.1	2.8	1.9	1.5	1.2
1978	2.1	1.5	1.4	1.8	2.0	2.1	2.2	2.1	3.5	3.1	2.3	1.7	1.3
1979	2.0	1.8	1.6	1.9	2.0	2.1	2.1	2.0	3.3	2.7	2.1	1.6	1.1
1980	1.5	1.6	1.5	1.6	1.5	1.5	1.4	1.4	2.2	1.9	1.4	1.1	.9
1981	...	1.2	P 1.1	...	...	...	...	...	...	...	...	...	...
Layoffs													
1977	1.1	1.7	1.4	1.0	.9	.8	.8	1.5	1.0	1.1	1.1	1.1	1.5
1978	.9	1.2	.9	.9	.8	.7	.7	1.1	.8	.8	.9	1.0	1.4
1979	1.1	1.1	.8	.8	.9	.7	.9	1.4	1.3	1.1	1.2	1.5	1.7
1980	1.7	1.6	1.2	1.3	2.3	2.5	2.2	2.0	1.7	1.4	1.5	1.3	1.6
1981	...	1.6	P 1.2	...	...	...	...	...	...	...	...	...	...

13. Labor turnover rates in manufacturing, by major industry group

[Per 100 employees]

Major industry group	Accession rates									Separation rates								
	Total			New hires			Recalls			Total			Quits			Layoffs		
	Feb. 1980	Jan. 1981	Feb. 1981 P	Feb. 1980	Jan. 1981	Feb. 1981 P	Feb. 1980	Jan. 1981	Feb. 1981 P	Feb. 1980	Jan. 1981	Feb. 1981 P	Feb. 1980	Jan. 1981	Feb. 1981 P			
MANUFACTURING	3.3	3.4	3.0	2.2	1.8	1.8	0.9	1.3	1.0	3.5	3.6	3.1	1.5	1.2	1.1	1.2	1.6	1.2
Seasonally adjusted	3.9	3.5	3.6	2.8	2.2	2.3	...	...	...	4.0	3.6	3.8	1.9	1.5	1.5	1.3	1.3	1.4
Durable goods	3.0	3.2	2.9	1.9	1.6	1.6	.8	1.3	1.0	3.2	3.4	2.9	1.2	1.0	.9	1.2	1.5	1.2
Lumber and wood products	4.6	4.8	4.7	2.9	2.7	2.8	1.6	1.9	1.7	5.6	5.3	4.9	2.2	1.9	1.8	2.5	2.4	2.3
Furniture and fixtures	3.8	4.0	3.3	3.0	2.7	2.5	.7	1.1	.7	4.0	3.8	3.7	2.2	1.8	1.7	.8	1.2	1.3
Stone, clay, and glass products	3.3	3.7	3.3	1.8	1.5	1.6	1.4	2.0	1.5	3.9	5.1	3.7	1.3	1.0	1.0	1.8	3.3	2.1
Primary metal industries	2.3	3.3	2.5	1.0	.9	.8	1.1	2.2	1.4	2.6	2.7	2.4	.6	.5	.5	1.1	1.3	1.2
Fabricated metal products	3.4	3.3	3.3	2.2	1.7	1.7	.9	1.4	1.2	3.7	4.0	3.1	1.5	1.1	1.0	1.4	2.1	1.4
Machinery, except electrical	2.3	2.6	2.3	1.8	1.4	1.5	.3	1.0	.7	2.4	2.6	2.1	1.1	.9	.7	.6	1.0	.7
Electric and electronic equipment	2.8	2.9	2.4	1.9	1.6	1.4	.4	1.0	.6	2.8	3.0	2.6	1.2	1.1	.9	.7	1.1	.9
Transportation equipment	3.0	2.9	...	1.4	1.2	...	1.1	1.3	...	3.6	3.0	...	.8	.7	...	1.8	1.5	...
Instruments and related products	2.8	2.2	2.0	2.3	1.7	1.5	.3	.3	.4	2.3	2.3	2.1	1.3	1.1	1.0	.4	.6	.5
Miscellaneous manufacturing	4.4	5.4	4.2	2.7	2.1	2.4	1.6	3.0	1.6	4.6	5.8	4.0	1.8	1.5	1.3	1.8	3.2	1.9
Nondurable goods	3.7	3.8	3.2	2.5	2.2	2.0	1.0	1.3	1.0	3.8	4.0	3.3	1.8	1.6	1.3	1.2	1.7	1.3
Food and kindred products	4.4	4.6	3.8	2.7	2.4	2.1	1.5	2.0	1.5	5.0	6.0	4.6	2.1	1.9	1.6	2.1	3.3	2.2
Tobacco manufacturers	2.2	3.3	...	.8	1.9	...	.9	.8	...	5.6	3.9	...	1.0	.6	...	3.7	2.2	...
Textile mill products	3.9	3.3	3.0	3.0	2.3	2.1	.6	.8	.6	4.0	3.4	3.0	2.3	1.6	1.5	.7	1.0	.7
Apparel and other products	5.7	5.6	4.8	3.7	3.1	2.8	1.7	2.3	1.7	5.0	5.5	4.2	2.7	2.3	2.0	1.5	2.4	1.5
Paper and allied products	2.1	2.6	2.1	1.4	1.3	1.3	.6	1.0	.7	2.5	2.7	2.5	.9	.8	.7	.9	1.2	1.2
Printing and publishing	3.1	3.2	2.9	2.5	2.4	2.3	.4	.6	.5	3.0	3.2	2.6	1.8	1.7	1.4	.6	.8	.6
Chemicals and allied products	1.5	1.8	1.5	1.2	1.2	1.1	.2	.4	.3	1.5	1.7	1.3	.6	.7	.5	.3	.4	.3
Petroleum and coal products	1.8	2.1	1.9	1.2	1.7	1.6	.4	.3	.2	1.9	1.8	1.7	.7	.6	.5	.3	.7	.6
Rubber and miscellaneous plastics products	4.0	4.2	3.6	2.7	2.4	2.1	1.1	1.5	1.3	4.6	4.0	3.7	1.9	1.4	1.2	1.6	1.7	1.5
Leather and leather products	6.1	6.8	5.0	4.1	3.6	3.3	1.6	3.0	1.5	6.0	5.8	5.1	3.1	2.6	2.4	2.0	2.3	1.9

14. Hours and earnings, by industry division, 1950-80

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

Year	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings
	Total private			Mining			Construction			Manufacturing		
1950	\$53.13	39.8	\$1.335	\$67.16	37.9	\$1.772	\$69.68	37.4	\$1.863	\$58.32	40.5	\$1.440
1951	57.86	39.9	1.45	74.11	38.4	1.93	76.96	38.1	2.02	63.34	40.6	1.56
1952	60.65	39.9	1.52	77.59	38.6	2.01	82.86	38.9	2.13	66.75	40.7	1.64
1953	63.76	39.6	1.61	83.03	38.8	2.14	86.41	37.9	2.28	70.47	40.5	1.74
1954	64.52	39.1	1.65	82.60	38.6	2.14	88.91	37.2	2.39	70.49	39.6	1.78
1955	67.72	39.6	1.71	89.54	40.7	2.20	90.90	37.1	2.45	75.30	40.7	1.85
1956	70.74	39.3	1.80	95.06	40.8	2.33	96.38	37.5	2.57	78.78	40.4	1.95
1957	73.33	38.8	1.89	98.25	40.1	2.45	100.27	37.0	2.71	81.19	39.8	2.04
1958	75.08	38.5	1.95	96.08	38.9	2.47	103.78	36.8	2.82	82.32	39.2	2.10
1959 ¹	78.78	39.0	2.02	103.68	40.5	2.56	108.41	37.0	2.93	88.26	40.3	2.19
1960	80.67	38.6	2.09	105.04	40.4	2.60	112.67	36.7	3.07	89.72	39.7	2.26
1961	82.60	38.6	2.14	106.92	40.5	2.64	118.08	36.9	3.20	92.34	39.8	2.32
1962	85.91	38.7	2.22	110.70	41.0	2.70	122.47	37.0	3.31	96.56	40.4	2.39
1963	88.46	38.8	2.28	114.40	41.6	2.75	127.19	37.3	3.41	99.23	40.5	2.45
1964	91.33	38.7	2.36	117.74	41.9	2.81	132.06	37.2	3.55	102.97	40.7	2.53
1965	95.45	38.8	2.46	123.52	42.3	2.92	138.38	37.4	3.70	107.53	41.2	2.61
1966	98.82	38.6	2.56	130.24	42.7	3.05	146.26	37.6	3.89	112.19	41.4	2.71
1967	101.84	38.0	2.68	135.89	42.6	3.19	154.95	37.7	4.11	114.49	40.6	2.82
1968	107.73	37.8	2.85	142.71	42.6	3.35	164.49	37.3	4.41	122.51	40.7	3.01
1969	114.61	37.7	3.04	154.80	43.0	3.60	181.54	37.9	4.79	129.51	40.6	3.19
1970	119.83	37.1	3.23	164.40	42.7	3.85	195.45	37.3	5.24	133.33	39.8	3.35
1971	127.31	36.9	3.45	172.14	42.4	4.06	211.67	37.2	5.69	142.44	39.9	3.57
1972	136.90	37.0	3.70	189.14	42.6	4.44	221.19	36.5	6.06	154.71	40.5	3.82
1973	145.39	36.9	3.94	201.40	42.4	4.75	235.89	36.8	6.41	166.46	40.7	4.09
1974	154.76	36.5	4.24	219.14	41.9	5.23	249.25	36.6	6.81	176.80	40.0	4.42
1975	163.53	36.1	4.53	249.31	41.9	5.95	266.08	36.4	7.31	190.79	39.5	4.83
1976	175.45	36.1	4.86	273.90	42.4	6.46	283.73	36.8	7.71	209.32	40.1	5.22
1977	189.00	36.0	5.25	301.20	43.4	6.94	295.65	36.5	8.10	228.90	40.3	5.68
1978	203.70	35.8	5.69	332.88	43.4	7.67	318.69	36.8	8.66	249.27	40.4	6.17
1979	219.30	35.6	6.16	365.50	43.0	8.50	342.99	37.0	9.27	268.94	40.2	6.69
1980	235.10	35.3	6.66	396.58	43.2	9.18	367.78	37.0	9.94	288.62	39.7	7.27
	Transportation and public utilities			Wholesale and retail trade			Finance, insurance, and real estate			Services		
1950				\$44.55	40.5	\$1.100	\$50.52	37.7	\$1.340			
1951				47.79	40.5	1.18	54.67	37.7	1.46			
1952				49.20	40.0	1.23	57.08	37.8	1.51			
1953				51.35	39.5	1.30	59.57	37.7	1.58			
1954				53.33	39.5	1.35	62.04	37.6	1.65			
1955				55.16	39.4	1.40	63.92	37.6	1.70			
1956				57.48	39.1	1.47	65.68	36.9	1.78			
1957				59.60	38.7	1.54	67.53	36.7	1.84			
1958				61.76	38.6	1.60	70.12	37.1	1.89			
1959 ¹				64.41	38.8	1.66	72.74	37.3	1.95			
1960				66.01	38.6	1.71	75.14	37.2	2.02			
1961				67.41	38.3	1.76	77.12	36.9	2.09			
1962				69.91	38.2	1.83	80.94	37.3	2.17			
1963				72.01	38.1	1.89	84.38	37.5	2.25			
1964	\$118.78	41.1	\$2.89	74.66	37.9	1.97	85.79	37.3	2.30	\$70.03	36.1	\$1.94
1965	125.14	41.3	3.03	76.91	37.7	2.04	88.91	37.2	2.39	73.60	35.9	2.05
1966	128.13	41.2	3.11	79.39	37.1	2.14	92.13	37.3	2.47	77.04	35.5	2.17
1967	130.82	40.5	3.23	82.35	36.6	2.25	95.72	37.1	2.58	80.38	35.1	2.29
1968	138.85	40.6	3.42	87.00	36.1	2.41	101.75	37.0	2.75	83.97	34.7	2.42
1969	147.74	40.7	3.63	91.39	35.7	2.56	108.70	37.1	2.93	90.57	34.7	2.61
1970	155.93	40.5	3.85	96.02	35.3	2.72	112.67	36.7	3.07	96.66	34.4	2.81
1971	168.82	40.1	4.21	101.09	35.1	2.88	117.85	36.6	3.22	103.06	33.9	3.04
1972	187.86	40.4	4.65	106.45	34.9	3.05	122.98	36.6	3.36	110.85	33.9	3.27
1973	203.31	40.5	5.02	111.76	34.6	3.23	129.20	36.6	3.53	117.29	33.8	3.47
1974	217.48	40.2	5.41	119.02	34.2	3.48	137.61	36.5	3.77	126.00	33.6	3.75
1975	233.44	39.7	5.88	126.45	33.9	3.73	148.19	36.5	4.06	134.67	33.5	4.02
1976	256.71	39.8	6.45	133.79	33.7	3.97	155.43	36.4	4.27	143.52	33.3	4.31
1977	278.90	39.9	6.99	142.52	33.3	4.28	165.26	36.4	4.54	153.45	33.0	4.65
1978	302.80	40.0	7.57	153.64	32.9	4.67	178.00	36.4	4.89	163.67	32.8	4.99
1979	325.98	39.9	8.17	164.96	32.6	5.06	190.77	36.2	5.27	175.27	32.7	5.36
1980	352.04	39.6	8.89	175.91	32.1	5.48	209.24	36.2	5.78	190.71	32.6	5.85

¹ Data include Alaska and Hawaii beginning in 1959.

15. Weekly hours, by industry division and major manufacturing group

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

Industry division and group	Annual average		1980										1981		
	1979	1980	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb. ^P	Mar. ^P
TOTAL PRIVATE	35.6	35.3	35.2	35.0	35.0	35.3	35.3	35.5	35.3	35.3	35.3	35.6	35.1	35.0	35.2
MINING	43.0	43.2	43.4	42.8	42.7	43.2	41.9	43.1	43.5	43.5	43.5	44.1	43.5	43.2	42.5
CONSTRUCTION	37.0	37.0	36.2	36.7	36.9	37.9	37.7	37.3	37.9	37.9	36.8	37.1	36.4	35.0	37.2
MANUFACTURING	40.2	39.7	39.8	39.4	39.3	39.4	38.8	39.3	39.7	39.8	40.2	40.8	39.9	39.5	40.0
Overtime hours	3.3	2.8	3.0	2.7	2.5	2.5	2.4	2.7	3.0	2.9	3.1	3.3	2.9	2.8	2.8
Durable goods	40.8	40.2	40.3	39.9	39.7	39.8	39.1	39.7	40.2	40.3	40.7	41.5	40.4	39.9	40.6
Overtime hours	3.5	2.8	3.1	2.7	2.5	2.4	2.3	2.6	2.9	2.9	3.1	3.4	2.9	2.8	2.9
Lumber and wood products	39.4	38.6	38.3	37.1	37.6	38.4	38.2	39.2	39.3	39.2	39.2	39.6	38.8	38.4	39.1
Furniture and fixtures	38.7	38.1	38.5	37.9	37.3	37.3	36.2	37.6	38.3	38.5	38.4	39.6	38.1	38.3	39.0
Stone, clay, and glass products	41.5	40.8	40.7	40.4	40.6	41.0	40.3	40.7	41.1	41.3	41.4	41.6	40.4	39.7	40.8
Primary metal industries	41.4	40.1	40.7	40.6	39.3	39.1	38.6	39.0	39.9	39.9	40.8	41.6	41.1	40.7	41.3
Fabricated metal products	40.7	40.4	40.6	40.2	39.9	40.1	39.2	40.0	40.5	40.5	40.9	41.6	40.4	40.1	40.5
Machinery except electrical	41.8	41.1	41.5	41.1	40.8	40.8	40.0	40.4	41.0	40.7	41.3	42.2	41.2	40.8	41.3
Electric and electronic equipment	40.3	39.8	40.0	39.6	39.3	39.4	38.5	39.2	39.7	39.9	40.4	41.0	40.1	39.6	39.9
Transportation equipment	41.1	40.6	40.4	39.8	39.9	39.9	39.5	40.0	40.7	41.1	41.7	43.1	40.9	40.0	41.2
Instruments and related products	40.8	40.5	40.6	40.4	40.3	40.5	39.6	39.9	40.1	40.3	40.9	41.2	40.6	40.5	40.9
Miscellaneous manufacturing	38.8	38.7	38.8	38.4	38.2	38.3	37.8	38.5	39.1	38.9	39.1	39.5	38.6	38.4	38.9
Nondurable goods	39.3	39.0	38.9	38.7	38.7	38.8	38.5	38.9	39.1	39.1	39.3	39.8	39.1	38.9	39.1
Overtime hours	3.1	2.8	2.9	2.7	2.5	2.5	2.6	2.9	3.0	2.9	3.0	3.1	2.9	2.8	2.8
Food and kindred products	39.9	39.7	39.0	38.9	39.7	39.6	39.9	40.3	40.3	39.7	40.1	40.3	40.0	39.4	39.2
Tobacco manufactures	38.0	38.1	37.7	38.2	38.7	38.3	36.5	36.8	38.2	40.1	40.0	38.1	38.5	38.7	37.6
Textile mill products	40.4	40.0	40.9	39.9	39.8	39.6	38.5	39.2	39.8	39.9	40.3	40.8	39.9	39.9	40.0
Apparel and other textile products	35.3	35.4	35.4	35.3	35.3	35.6	35.3	35.4	35.2	35.4	35.4	35.9	35.2	35.2	35.9
Paper and allied products	42.6	42.3	42.4	42.2	41.6	41.7	41.4	41.8	42.4	42.2	42.8	43.7	42.8	42.4	42.5
Printing and publishing	37.5	37.1	37.2	36.8	36.9	36.7	36.8	37.2	37.3	37.2	37.2	38.1	37.1	37.0	37.2
Chemicals and allied products	41.9	41.5	41.7	41.6	41.3	41.2	40.7	40.9	41.3	41.4	42.0	42.1	41.5	41.5	41.6
Petroleum and coal products	43.8	41.8	39.4	41.1	42.3	42.3	42.7	42.2	43.4	43.7	43.6	43.3	42.6	42.6	43.4
Rubber and miscellaneous plastics products	40.5	40.1	40.0	39.7	39.0	39.3	38.6	40.0	40.3	40.7	41.1	41.6	40.9	40.2	40.6
Leather and leather products	36.5	36.7	36.4	36.7	37.0	37.4	36.4	36.6	36.2	36.5	36.3	36.9	36.6	36.6	36.8
TRANSPORTATION AND PUBLIC UTILITIES	39.9	39.6	39.5	39.5	39.3	39.6	39.9	39.7	39.7	39.8	39.7	40.0	39.4	39.5	39.5
WHOLESALE AND RETAIL TRADE	32.6	32.1	32.0	31.8	31.9	32.3	32.5	32.7	32.1	32.1	32.0	32.4	31.7	31.7	31.9
WHOLESALE TRADE	38.8	38.5	38.4	38.4	38.5	38.2	38.2	38.4	38.5	38.7	38.6	38.9	38.5	38.3	38.5
RETAIL TRADE	30.6	30.1	29.9	29.7	29.9	30.4	30.7	30.9	30.1	30.0	30.0	30.5	29.5	29.6	29.8
FINANCE, INSURANCE, AND REAL ESTATE	36.2	36.2	36.3	36.2	36.1	36.4	36.2	36.3	36.1	36.3	36.3	36.3	36.3	36.4	36.3
SERVICES	32.7	32.6	32.5	32.4	32.3	32.8	33.1	33.1	32.5	32.6	32.6	32.6	32.5	32.6	32.6

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

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

Industry division and group	1980										1981		
	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb. P	Mar. P
TOTAL PRIVATE	35.4	35.3	35.1	35.0	34.9	35.1	35.2	35.3	35.4	35.4	35.5	35.3	35.4
MINING	43.4	42.8	42.7	43.2	41.9	43.1	43.5	43.5	43.5	44.1	43.5	43.2	42.5
CONSTRUCTION	36.6	36.7	36.8	37.1	36.8	36.5	37.4	37.0	37.2	37.1	38.5	36.3	37.6
MANUFACTURING	39.8	39.8	39.3	39.1	39.0	39.4	39.6	39.7	39.9	40.1	40.4	39.9	40.0
Overtime hours	3.1	3.0	2.6	2.4	2.5	2.7	2.7	2.8	2.9	3.1	3.1	2.9	2.9
Durable goods	40.3	40.3	39.7	39.5	39.4	39.9	40.1	40.1	40.5	40.6	40.9	40.2	40.6
Overtime hours	3.2	3.0	2.5	2.4	2.4	2.6	2.7	2.8	3.0	3.2	3.1	2.9	3.0
Lumber and wood products	38.7	37.3	37.5	37.6	38.1	38.9	38.8	38.7	39.3	39.4	40.1	38.9	39.5
Furniture and fixtures	38.5	38.5	37.6	37.0	36.6	37.4	38.0	38.0	38.0	38.6	38.9	38.9	39.0
Stone, clay, and glass products	40.9	40.6	40.3	40.4	40.2	40.3	40.9	40.9	41.1	41.3	41.6	40.7	41.0
Primary metal industries	40.7	40.6	39.2	38.8	38.6	39.2	39.7	40.1	40.9	41.4	41.2	40.8	41.3
Fabricated metal products	40.7	40.8	39.9	39.7	39.6	40.1	40.4	40.4	40.6	40.6	40.7	40.5	40.6
Machinery, except electrical	41.3	41.5	41.0	40.7	40.6	40.8	40.9	40.7	41.0	41.0	41.3	40.8	41.1
Electric and electronic equipment	40.0	39.9	39.5	39.2	39.0	39.4	39.5	39.9	40.0	40.2	40.4	39.7	39.9
Transportation equipment	40.4	40.5	39.7	39.5	39.6	40.9	40.6	40.8	41.4	41.3	41.9	40.4	41.2
Instruments and related products	40.4	40.7	40.3	40.4	40.1	40.1	40.1	40.2	40.5	40.5	41.0	40.6	40.7
Miscellaneous manufacturing	38.6	38.5	38.3	38.2	38.3	38.6	38.9	38.7	38.6	39.0	39.0	38.8	38.7
Nondurable goods	39.0	39.1	38.9	38.6	38.5	38.7	38.8	39.0	39.0	39.3	39.7	39.3	39.2
Overtime hours	3.0	3.0	2.6	2.5	2.6	2.8	2.7	2.8	2.9	3.0	3.1	3.0	2.9
Food and kindred products	39.3	39.6	39.9	39.6	39.7	39.8	39.7	39.6	39.8	39.8	40.3	40.0	39.6
Tobacco manufactures	37.7	38.2	38.2	37.3	38.5	37.3	37.5	39.5	38.9	37.2	39.7	39.7	37.6
Textile mill products	40.8	40.3	39.7	39.1	38.8	39.2	39.7	39.9	40.0	40.3	40.5	40.2	39.9
Apparel and other textile products	35.3	35.8	35.3	35.2	35.1	35.1	35.1	35.3	35.0	35.6	36.0	35.7	35.8
Paper and allied products	42.6	42.5	41.7	41.4	41.4	41.8	42.2	42.2	42.6	43.0	43.1	42.9	42.8
Printing and publishing	37.2	37.2	37.1	36.8	36.9	37.1	36.9	37.1	36.8	37.4	37.7	37.4	37.2
Chemicals and allied products	41.8	41.5	41.3	41.1	40.8	41.0	41.3	41.4	41.7	41.7	41.8	41.8	41.6
Petroleum and coal products	39.7	41.1	42.5	42.3	42.2	42.2	42.7	43.1	43.2	43.2	43.4	43.6	43.7
Rubber and miscellaneous plastics products	39.9	40.1	39.3	39.2	39.0	40.2	40.1	40.4	40.8	40.9	41.3	40.2	40.5
Leather and leather products	36.9	37.3	36.7	36.7	36.1	36.5	36.2	36.5	36.2	36.6	37.1	37.0	37.3
TRANSPORTATION AND PUBLIC UTILITIES	39.5	39.5	39.3	39.6	39.9	39.7	39.7	39.8	39.7	40.0	39.4	39.5	39.5
WHOLESALE AND RETAIL TRADE	32.3	32.0	32.1	31.9	31.8	32.0	32.1	32.2	32.2	32.1	32.3	32.2	32.2
WHOLESALE TRADE	38.5	38.5	38.6	38.0	38.0	38.2	38.5	38.5	38.6	38.7	38.8	38.7	38.6
RETAIL TRADE	30.3	30.0	30.1	30.0	29.8	30.1	30.1	30.2	30.2	30.0	30.2	30.2	30.2
FINANCE, INSURANCE, AND REAL ESTATE	36.3	36.2	36.1	36.4	36.2	36.3	36.1	36.3	36.3	36.3	36.3	36.4	36.3
SERVICES	32.7	32.6	32.5	32.6	32.6	32.6	32.5	32.6	32.7	32.6	32.7	32.8	32.8

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

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

Industry division and group	Annual average		1980										1981		
	1979	1980	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb. ^P	Mar. ^P
TOTAL PRIVATE	\$6.16	\$6.66	\$6.51	\$6.53	\$6.57	\$6.61	\$6.64	\$6.68	\$6.80	\$6.86	\$6.93	\$6.94	\$7.03	\$7.06	\$7.10
MINING	8.50	9.18	8.95	9.10	9.08	9.16	9.08	9.18	9.32	9.37	9.51	9.58	9.78	9.86	9.88
CONSTRUCTION	9.27	9.94	9.68	9.69	9.77	9.81	9.91	10.05	10.19	10.25	10.25	10.35	10.43	10.40	10.40
MANUFACTURING	6.69	7.27	7.06	7.09	7.13	7.20	7.29	7.30	7.42	7.49	7.59	7.69	7.73	7.74	7.79
Durable goods	7.13	7.76	7.54	7.56	7.60	7.69	7.77	7.78	7.93	8.02	8.13	8.24	8.25	8.26	8.32
Lumber and wood products	6.08	6.56	6.35	6.28	6.40	6.56	6.72	6.76	6.80	6.76	6.79	6.77	6.82	6.84	6.83
Furniture and fixtures	5.06	5.48	5.37	5.39	5.42	5.49	5.52	5.54	5.58	5.59	5.62	5.69	5.70	5.73	5.76
Stone, clay, and glass products	6.85	7.51	7.27	7.34	7.45	7.53	7.60	7.64	7.69	7.74	7.82	7.83	7.87	7.90	7.95
Primary metal industries	8.97	9.76	9.45	9.53	9.61	9.65	9.82	9.84	9.95	10.09	10.28	10.35	10.36	10.53	10.60
Fabricated metal products	6.84	7.44	7.24	7.27	7.32	7.42	7.42	7.48	7.62	7.68	7.75	7.86	7.87	7.89	7.97
Machinery, except electrical	7.32	8.04	7.76	7.81	7.91	7.97	8.05	8.07	8.28	8.36	8.44	8.57	8.59	8.62	8.66
Electric and electronic equipment	6.32	6.96	6.78	6.79	6.78	6.87	6.96	7.02	7.14	7.20	7.29	7.39	7.42	7.46	7.48
Transportation equipment	8.54	9.34	9.04	9.04	9.06	9.24	9.34	9.35	9.56	9.77	9.89	10.11	9.98	9.92	10.04
Instruments and related products	6.17	6.81	6.63	6.63	6.72	6.80	6.86	6.86	6.92	6.95	7.02	7.14	7.19	7.21	7.25
Miscellaneous manufacturing	5.03	5.45	5.34	5.37	5.40	5.42	5.46	5.46	5.51	5.55	5.60	5.72	5.81	5.80	5.81
Nondurable goods	6.00	6.54	6.30	6.36	6.42	6.48	6.60	6.62	6.69	6.72	6.80	6.86	6.94	6.95	6.98
Food and kindred products	6.27	6.86	6.68	6.75	6.82	6.84	6.89	6.90	6.93	6.95	7.09	7.13	7.21	7.24	7.27
Tobacco manufactures	6.65	7.66	7.57	7.79	7.64	7.97	8.06	7.74	7.42	7.56	7.74	8.00	8.42	8.48	8.49
Textile mill products	4.66	5.07	4.92	4.91	4.90	4.93	5.06	5.19	5.24	5.26	5.30	5.33	5.34	5.34	5.34
Apparel and other textile products	4.23	4.57	4.49	4.46	4.45	4.51	4.50	4.60	4.70	4.73	4.75	4.81	4.89	4.87	4.94
Paper and allied products	7.13	7.85	7.55	7.63	7.65	7.79	7.97	7.99	8.06	8.09	8.18	8.28	8.27	8.27	8.31
Printing and publishing	6.95	7.54	7.34	7.34	7.44	7.46	7.53	7.63	7.73	7.75	7.79	7.88	7.92	7.97	8.02
Chemicals and allied products	7.60	8.29	8.05	8.12	8.17	8.24	8.35	8.39	8.46	8.52	8.59	8.68	8.73	8.77	8.80
Petroleum and coal products	9.36	10.09	9.29	9.83	10.07	10.22	10.25	10.22	10.33	10.39	10.52	10.37	11.06	11.33	11.33
Rubber and miscellaneous plastics products	5.96	6.49	6.27	6.30	6.34	6.39	6.48	6.57	6.63	6.70	6.79	6.89	6.96	6.95	6.99
Leather and leather products	4.22	4.57	4.51	4.52	4.53	4.54	4.54	4.59	4.61	4.64	4.68	4.73	4.85	4.87	4.89
TRANSPORTATION AND PUBLIC UTILITIES	8.17	8.89	8.62	8.71	8.72	8.75	8.90	8.95	9.04	9.20	9.28	9.31	9.35	9.44	9.41
WHOLESALE AND RETAIL TRADE	5.06	5.48	5.40	5.40	5.42	5.43	5.48	5.48	5.56	5.59	5.64	5.61	5.80	5.83	5.85
WHOLESALE TRADE	6.39	6.97	6.83	6.87	6.89	6.95	6.99	7.01	7.08	7.10	7.20	7.24	7.33	7.38	7.44
RETAIL TRADE	4.53	4.88	4.81	4.80	4.82	4.83	4.88	4.89	4.95	4.98	5.02	4.99	5.18	5.20	5.20
FINANCE, INSURANCE, AND REAL ESTATE	5.27	5.78	5.68	5.68	5.70	5.77	5.77	5.82	5.87	5.91	6.01	6.00	6.10	6.20	6.22
SERVICES	5.36	5.85	5.75	5.75	5.79	5.81	5.79	5.81	5.93	6.00	6.10	6.12	6.22	6.27	6.30

18. Hourly Earnings Index for production or nonsupervisory workers on private nonagricultural payrolls, by industry division

[Seasonally adjusted data: 1967=100]

Industry	1980										1981			Feb. 1981 to Mar. 1981	Mar. 1980 to Mar. 1981
	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb. ^P	Mar. ^P		
TOTAL PRIVATE (in current dollars) ...	245.2	246.2	248.3	250.9	252.1	254.0	255.4	257.9	260.9	261.9	264.4	266.3	268.5	0.8	9.5
Mining	280.9	283.7	284.2	286.3	285.3	288.9	290.4	294.4	298.7	302.3	306.6	308.9	311.0	.7	10.7
Construction	232.2	233.0	234.2	235.3	236.7	239.0	239.3	241.6	243.0	245.3	247.8	247.8	249.2	.6	7.3
Manufacturing	250.2	252.4	255.0	258.3	260.6	262.4	264.5	266.6	268.9	270.4	272.6	274.4	276.5	.8	10.5
Transportation and public utilities	265.9	267.2	268.7	270.6	272.8	273.2	274.0	280.2	283.4	284.1	285.9	288.8	290.7	.6	9.3
Wholesale and retail trade	237.8	238.0	239.8	241.8	243.5	245.3	246.5	247.7	250.9	250.9	254.6	254.6	258.7	.7	8.8
Finance, insurance, and real estate	225.7	224.9	226.3	230.2	229.0	232.7	233.1	234.8	239.3	238.0	240.2	243.8	246.8	1.3	9.3
Services	242.7	243.0	245.7	248.4	247.6	249.8	251.7	254.2	258.5	259.4	261.3	263.6	265.8	.8	9.5
TOTAL PRIVATE (in constant dollars) ...	102.1	101.5	101.5	101.6	102.1	102.0	101.5	101.4	101.5	100.8	101.0	100.8	.....	.....	.....

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

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

Industry division and group	Annual average		1980										1981		
	1979	1980	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb. P	Mar. P
TOTAL PRIVATE	\$219.30	\$235.10	\$229.15	\$228.55	\$229.95	\$233.33	\$234.39	\$237.14	\$240.04	\$242.16	\$244.63	\$247.06	\$246.75	\$247.10	\$249.92
MINING	365.50	396.58	388.43	389.48	387.72	395.71	380.45	395.66	405.42	407.60	413.69	422.48	425.43	425.95	419.90
CONSTRUCTION	342.99	367.78	350.42	355.62	360.51	371.80	373.61	374.87	386.20	388.48	377.20	383.99	379.65	364.00	386.88
MANUFACTURING	268.94	288.62	280.99	279.35	280.21	283.68	282.85	286.89	294.57	298.10	305.12	313.75	308.43	305.73	311.60
Durable goods	290.90	311.95	303.86	301.64	301.72	306.06	303.81	308.87	318.79	323.21	330.89	341.96	333.30	329.57	337.79
Lumber and wood products	239.55	253.22	243.21	232.99	240.64	251.90	256.70	264.99	267.24	264.99	266.17	268.09	264.62	262.66	267.05
Furniture and fixtures	195.82	208.79	206.75	204.28	202.17	204.78	199.82	208.30	213.71	215.22	215.81	225.32	217.17	219.46	224.64
Stone, clay, and glass products	284.28	306.41	295.89	296.54	302.47	308.73	306.28	310.95	316.06	319.66	323.75	325.73	317.95	313.63	324.36
Primary metal industries	371.36	391.38	384.62	386.92	377.67	377.32	379.05	383.76	397.01	402.59	419.42	430.56	425.80	428.57	437.78
Fabricated metal products	278.39	300.58	293.94	292.25	292.07	297.54	290.86	299.20	308.61	311.04	316.98	326.98	317.95	316.39	322.79
Machinery except electrical	305.98	330.44	322.04	320.21	322.73	325.18	322.00	326.03	339.48	340.25	348.57	361.65	353.91	351.70	357.66
Electric and electronic equipment	254.70	277.01	271.20	268.88	266.45	270.68	267.96	275.18	283.46	287.28	294.52	302.99	297.54	295.42	298.45
Transportation equipment	350.99	379.20	365.22	359.79	361.49	368.68	368.93	374.00	389.09	401.55	412.41	435.74	408.18	396.80	413.65
Instruments and related products	251.74	275.81	269.18	267.85	270.82	275.40	271.66	273.71	277.49	280.09	287.12	294.17	291.91	292.01	296.53
Miscellaneous manufacturing	195.16	210.92	207.19	206.21	206.28	207.59	206.39	210.21	215.44	215.90	218.96	225.94	224.27	222.72	226.01
Nondurable goods	235.80	255.06	245.07	246.13	248.45	251.42	254.10	257.52	261.58	262.75	267.24	273.03	271.35	270.36	272.92
Food and kindred products	250.17	272.34	260.52	262.58	270.75	270.86	274.91	278.07	279.28	275.92	284.31	287.34	288.40	285.26	284.98
Tobacco manufactures	252.70	291.85	285.39	297.58	295.67	305.25	294.19	284.83	283.44	303.16	309.60	304.80	324.17	328.18	319.22
Textile mill products	188.26	202.80	201.23	195.91	195.02	195.23	194.81	203.45	208.55	209.87	213.59	217.46	213.07	213.07	213.60
Apparel and other textile products	149.32	161.78	158.95	157.44	157.09	160.56	158.85	162.84	165.44	167.44	168.15	172.68	172.13	171.42	177.35
Paper and allied products	303.74	332.06	320.12	321.99	318.24	324.84	329.96	333.98	341.74	341.40	350.10	361.84	353.96	350.65	353.18
Printing and publishing	260.63	279.73	273.05	270.11	274.54	273.78	277.10	283.84	288.33	288.30	289.79	300.23	293.83	294.89	298.34
Chemicals and allied products	318.44	344.04	335.69	337.79	337.42	339.49	339.85	343.15	349.40	352.73	360.78	365.43	362.30	363.96	366.08
Petroleum and coal products	409.97	421.76	366.03	404.01	425.96	432.31	437.68	431.28	448.32	454.04	458.67	449.02	471.16	482.66	491.72
Rubber and miscellaneous plastics products	241.38	260.25	250.80	250.11	247.26	251.13	250.13	262.80	267.19	272.69	279.07	286.62	284.66	279.39	283.79
Leather and leather products	154.03	167.72	164.16	165.88	167.61	169.80	165.26	167.99	166.88	169.36	169.88	174.54	177.51	178.24	179.95
TRANSPORTATION AND PUBLIC UTILITIES	325.98	352.04	340.49	344.05	342.70	346.50	355.11	355.32	358.89	366.16	368.42	372.40	368.39	372.88	371.70
WHOLESALE AND RETAIL TRADE	164.96	175.91	172.80	171.72	172.90	175.39	178.10	179.20	178.48	179.44	180.48	181.76	183.86	184.81	186.62
WHOLESALE TRADE	247.93	268.35	262.27	263.81	265.27	265.49	267.02	269.18	272.58	274.77	277.92	281.64	282.21	282.65	286.44
RETAIL TRADE	138.62	146.89	143.82	142.56	144.12	146.83	149.82	151.10	149.00	149.40	150.60	152.20	152.81	153.92	154.96
FINANCE, INSURANCE, AND REAL ESTATE	190.77	209.24	206.18	205.62	205.77	210.03	208.87	211.27	211.91	214.53	218.16	217.80	221.43	225.68	225.79
SERVICES	175.27	190.71	186.88	186.30	187.02	190.57	191.65	192.31	192.73	195.60	198.86	199.51	202.15	204.40	205.38

20. Gross and spendable weekly earnings, in current and 1967 dollars, 1960 to date

[Averages for production or nonsupervisory workers on private nonagricultural payrolls]

Year and month	Private nonagricultural workers						Manufacturing workers					
	Gross average weekly earnings		Spendable average weekly earnings				Gross average weekly earnings		Spendable average weekly earnings			
			Worker with no dependents		Married worker with 3 dependents				Worker with no dependents		Married worker with 3 dependents	
	Current dollars	1967 dollars	Current dollars	1967 dollars	Current dollars	1967 dollars	Current dollars	1967 dollars	Current dollars	1967 dollars	Current dollars	1967 dollars
1960	\$80.67	\$90.95	\$65.59	\$73.95	\$72.96	\$82.25	\$89.72	\$101.15	\$72.57	\$81.82	\$80.11	\$90.32
1961	82.60	92.19	67.08	74.87	74.48	83.13	92.34	103.06	74.60	83.26	82.18	91.72
1962	85.91	94.82	69.56	76.78	76.99	84.98	96.56	106.58	77.86	85.94	85.53	94.40
1963	88.46	96.47	71.05	77.48	78.56	85.67	99.23	108.21	79.51	86.71	87.25	95.15
1964	91.33	98.31	75.04	80.78	82.57	88.88	102.97	110.84	84.40	90.85	92.18	99.22
1965	95.45	101.01	79.32	83.94	86.63	91.67	107.53	113.79	89.08	94.26	96.78	102.41
1966	98.82	101.67	81.29	83.63	88.66	91.21	112.19	115.42	91.45	94.08	99.33	102.19
1967	101.84	101.84	83.38	83.38	90.86	90.86	114.49	114.49	92.97	92.97	100.93	100.93
1968	107.73	103.39	86.71	83.21	95.28	91.44	122.51	117.57	97.70	93.76	106.75	102.45
1969	114.61	104.38	90.96	82.84	99.99	91.07	129.51	117.95	101.90	92.81	111.44	101.49
1970	119.83	103.04	96.21	82.73	104.90	90.20	133.33	114.64	106.32	91.42	115.58	99.38
1971	127.31	104.95	103.80	85.57	112.43	92.69	142.44	117.43	114.97	94.78	124.24	102.42
1972	136.90	109.26	112.19	89.54	121.68	97.11	154.71	123.47	125.34	100.03	135.57	108.20
1973	145.39	109.23	117.51	88.29	127.38	95.70	166.46	125.06	132.57	99.60	143.50	107.81
1974	154.76	104.78	124.37	84.20	134.61	91.14	176.80	119.70	140.19	94.92	151.56	102.61
1975	163.53	101.45	132.49	82.19	145.65	90.35	190.79	118.36	151.61	94.05	166.29	103.16
1976	175.45	102.90	143.30	84.05	155.87	91.42	209.32	122.77	167.83	98.43	181.32	106.35
1977	189.00	104.13	155.19	85.50	169.93	93.63	228.90	126.12	183.80	101.27	200.06	110.23
1978	203.70	104.30	165.39	84.69	180.71	92.53	249.27	127.63	197.40	101.08	214.87	110.02
1979	219.30	100.73	177.55	81.56	194.35	89.27	268.94	123.54	212.43	97.58	232.07	106.60
1980	235.10	95.18	188.82	76.45	206.40	83.56	288.62	116.85	225.79	91.41	247.01	100.00
1980: March	229.15	95.52	184.67	76.98	201.89	84.16	280.99	117.13	220.61	91.96	241.22	100.55
April	228.55	94.21	184.25	75.95	201.43	83.03	279.35	115.15	219.49	90.47	239.97	98.92
May	229.95	93.82	185.23	75.57	202.49	82.62	280.21	114.32	220.08	89.79	240.63	98.18
June	233.33	94.16	187.59	75.70	205.06	82.75	283.68	114.48	222.43	89.76	243.26	98.17
July	234.39	94.51	188.33	75.94	205.86	83.01	282.85	114.05	221.87	89.46	242.63	97.83
August	237.14	95.01	190.25	76.22	207.95	83.31	286.89	114.94	224.61	89.99	245.69	98.43
September	240.04	95.29	192.28	76.33	210.15	83.43	294.57	116.94	229.82	91.23	251.52	99.85
October	242.16	95.30	193.76	76.25	211.76	83.34	298.10	117.32	232.22	91.39	254.20	100.04
November	244.63	95.41	195.48	76.24	213.63	83.32	305.12	119.00	236.98	92.43	259.52	101.22
December	247.06	95.50	197.18	76.22	215.47	83.29	313.75	121.28	242.60	93.78	265.84	102.76
1981: January	246.75	94.65	195.68	75.06	213.96	82.07	308.43	118.31	237.60	91.14	260.36	99.87
February ^P	247.10	93.78	195.92	74.35	214.22	81.30	305.73	116.03	235.81	89.49	258.40	98.06
March ^P	249.92	(¹)	197.88	(¹)	216.34	(¹)	311.60	(¹)	239.61	(¹)	262.65	(¹)

¹Not available.

NOTE: The earnings expressed in 1967 dollars have been adjusted for changes in price level as measured by the Bureau's Consumer Price Index for Urban Wage Earners and Clerical Workers. These series are described in "The Spendable Earnings Series: A Technical Note on its Cal-

culational," **Employment and Earnings and Monthly Report on the Labor Force**, February 1969, pp. 6-13. See also "Spendable Earnings Formulas, 1979-81," **Employment and Earnings**, March 1981, pp. 10-11.

UNEMPLOYMENT INSURANCE DATA

UNEMPLOYMENT INSURANCE DATA are compiled monthly by the Employment and Training Administration of the U.S. Department of Labor from records of State and Federal unemployment insurance claims filed and benefits paid. Railroad unemployment insurance data are prepared by the U.S. Railroad Retirement Board.

Definitions

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

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

ployed. Persons not covered by unemployment insurance (about one-third of the labor force) and those who have exhausted or not yet earned benefit rights are excluded from the scope of the survey. **Initial claims** are notices filed by persons in unemployment insurance programs to indicate they are out of work and wish to begin receiving compensation. A claimant who continued to be unemployed a full week is then counted in the insured unemployment figure. The **rate of insured unemployment** expresses the number of insured unemployed as a percent of the average insured employment in a 12-month period.

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

21. Unemployment insurance and employment service operations

[All items except average benefits amounts are in thousands]

Item	1980												1981	
	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	
All programs:														
Insured unemployment	3,730	3,652	3,629	3,680	3,790	4,140	3,911	3,961	3,661	3,726	4,085	4,621	4,264	
State unemployment insurance program: ¹														
Initial claims ²	1,818	1,705	2,190	2,248	2,319	2,737	1,829	1,702	1,808	1,673	2,544	2,653	.....
Insured unemployment (average weekly volume)	3,518	3,356	3,278	3,343	3,455	3,692	3,408	3,087	2,903	2,983	3,321	3,844	3,669	
Rate of insured unemployment	4.1	3.9	3.8	3.9	4.0	4.3	3.9	3.6	3.3	3.4	3.8	4.4	4.2	
Weeks of unemployment compensated	12,801	13,170	12,689	12,302	12,441	14,398	12,786	11,689	11,443	9,524	12,603	14,228	.....
Average weekly benefit amount for total unemployment	\$98.39	\$99.15	\$99.52	\$99.55	\$99.88	\$98.75	\$99.68	\$99.86	\$92.32	\$101.96	\$101.43	\$102.34	.....
Total benefits paid	\$1,229,877	\$1,218,231	\$1,232,173	\$1,196,836	\$1,213,595	\$1,397,508	\$1,249,782	\$1,144,885	\$1,125,416	\$1,055,065	\$1,242,957	\$1,416,513	.....
Unemployment compensation for ex-servicemen: ³														
Initial claims ¹	21	21	21	20	23	27	23	25	23	17	21	19	.....
Insured unemployment (average weekly volume)	58	63	52	50	45	58	55	56	56	54	55	57	54	
Weeks of unemployment compensated	255	249	246	220	122	331	244	245	255	216	261	257	.....
Total benefits paid	\$25,308	\$24,928	\$24,518	\$22,025	\$11,761	\$33,342	\$24,560	\$24,804	\$25,880	\$21,024	\$27,015	\$26,646	.....
Unemployment compensation for Federal civilian employees: ⁴														
Initial claims	11	12	11	12	14	17	15	19	21	14	18	22	.....
Insured unemployment (average weekly volume)	32	30	25	22	20	26	25	29	32	35	37	41	40	
Weeks of unemployment compensated	129	123	108	88	50	124	93	105	130	118	150	160	.....
Total benefits paid	\$12,226	\$11,901	\$10,323	\$8,280	\$4,665	\$11,296	\$8,707	\$9,699	\$11,917	\$11,365	\$14,184	\$15,432	.....
Railroad unemployment insurance:														
Applications	7	5	4	6	24	44	13	10	9	7	11	.....	.....
Insured unemployment (average weekly volume)	39	30	27	23	27	44	39	40	38	38	39	.....	.....
Number of payments	71	68	62	54	55	66	86	89	84	70	83	.....	.....
Average amount of benefit payment	\$208.73	\$210.79	\$201.87	\$193.44	\$199.06	\$207.08	\$211.87	\$211.99	\$208.49	\$209.00	\$212.27	.....	.....
Total benefits paid	\$14,573	\$13,884	\$13,002	\$9,953	\$10,140	\$13,320	\$17,336	\$18,809	\$17,789	\$14,269	\$18,046	.....	.....
Employment service: ⁵														
New applications and renewals	7,285	8,708	10,021	11,446	12,864	14,249	15,431	16,632	.....	.....	.....	.....	.....
Nonfarm placements	1,561	1,853	2,143	2,413	2,730	3,105	3,445	3,827	.....	.....	.....	.....	.....

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

² Includes interstate claims for the Virgin Islands. Excludes transition claims under State programs.

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

⁴ Includes the Virgin Islands. Excludes data on claims and payments made jointly with State programs.

⁵ Cumulative total for fiscal year (October 1-September 30).

r = revised

NOTE: Date for Puerto Rico included. Dashes indicate data not available.

PRICE DATA

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

Definitions

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

The CPI is based on prices of food, clothing, shelter, fuel, drugs, transportation fares, doctor's and dentist's fees, and other goods and services that people buy for day-to-day living. The quantity and quality of these items is kept essentially unchanged between major revisions so that only price changes will be measured. Prices are collected from over 18,000 tenants, 24,000 retail establishments, and 18,000 housing units for property taxes in 85 urban areas across the country. All taxes directly associated with the purchase and use of items are included in the index. Because the CPI's are based on the expenditures of two population groups in 1972-73, they may not accurately reflect the experience of individual families and single persons with different buying habits.

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

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

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

To the extent possible, prices used in calculating Producer Price Indexes apply to the first significant commercial transaction in the United States, from the production or central marketing point. Price data are generally collected monthly, primarily by mail questionnaire.

Most prices are obtained directly from producing companies on a voluntary and confidential basis. Prices generally are reported for the Tuesday of the week containing the 13th day of the month.

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

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

Notes on the data

Beginning with the May 1978 issue of the *Review*, regional CPI's cross classified by population size, were introduced. These indexes will enable users in local areas for which an index is not published to get a better approximation of the CPI for their area by using the appropriate population size class measure for their region. The cross-classified indexes will be published bimonthly. (See table 24.)

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

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

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

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

22. Consumer Price Index for Urban Wage Earners and Clerical Workers, annual averages and changes, 1967-80

[1967 = 100]

Year	All items		Food and beverages		Housing		Apparel and upkeep		Transportation		Medical care		Entertainment		Other goods and services	
	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change
1967	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...
1968	104.2	4.2	103.6	3.6	104.0	4.0	105.4	5.4	103.2	3.2	106.1	6.1	105.7	5.7	105.2	5.2
1969	109.8	5.4	108.8	5.0	110.4	6.2	111.5	5.8	107.2	3.9	113.4	6.9	111.0	5.0	110.4	4.9
1970	116.3	5.9	114.7	5.4	118.2	7.1	116.1	4.1	112.7	5.1	120.6	6.3	116.7	5.1	116.8	5.8
1971	121.3	4.3	118.3	3.1	123.4	4.4	119.8	3.2	118.6	5.2	128.4	6.5	122.9	5.3	122.4	4.8
1972	125.3	3.3	123.2	4.1	128.1	3.8	122.3	2.1	119.9	1.1	132.5	3.2	126.5	2.9	127.5	4.2
1973	133.1	6.2	139.5	13.2	133.7	4.4	126.8	3.7	123.8	3.3	137.7	3.9	130.0	2.8	132.5	3.9
1974	147.7	11.0	158.7	13.8	148.8	11.3	136.2	7.4	137.7	11.2	150.5	9.3	139.8	7.5	142.0	7.2
1975	161.2	9.1	172.1	8.4	164.5	10.6	142.3	4.5	150.6	9.4	168.6	12.0	152.2	8.9	153.9	8.4
1976	170.5	5.8	177.4	3.1	174.6	6.1	147.6	3.7	165.5	9.9	184.7	9.5	159.8	5.0	162.7	5.7
1977	181.5	6.5	188.0	6.0	186.5	6.8	154.2	4.5	177.2	7.1	202.4	9.6	167.7	4.9	172.2	5.8
1978	195.3	7.6	206.2	9.7	202.6	8.6	159.5	3.4	185.8	4.9	219.4	8.4	176.2	5.1	183.2	6.4
1979	217.7	11.5	228.7	10.9	227.5	12.3	166.4	4.3	212.8	14.5	240.1	9.4	187.6	6.5	196.3	7.2
1980	247.0	13.5	248.7	8.7	263.2	15.7	177.4	6.6	250.5	17.7	267.2	11.3	203.7	8.5	213.6	8.8

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

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers						Urban Wage Earners and Clerical Workers (revised)							
	1980					1981	1980					1981		
	Feb.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Feb.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.
All items	236.4	251.7	253.9	256.2	258.4	260.5	263.2	236.5	251.9	254.1	256.4	258.7	260.7	263.5
Food and beverages	238.6	254.2	255.5	257.4	259.3	261.4	263.7	239.0	255.1	256.6	258.7	260.5	262.1	264.3
Housing	250.5	267.7	271.1	273.8	279.9	279.1	280.9	250.5	267.6	271.0	273.7	277.1	279.1	280.7
Apparel and upkeep	171.9	182.2	183.9	184.8	183.9	181.1	182.0	171.5	181.4	182.8	183.3	182.9	180.8	181.8
Transportation	239.6	254.7	256.1	259.0	261.1	264.7	270.9	240.2	255.2	256.6	259.7	261.9	265.7	272.1
Medical care	257.9	270.6	272.8	274.5	275.8	279.5	282.6	258.7	272.2	274.3	276.3	277.6	281.4	284.4
Entertainment	197.8	209.8	210.9	211.2	212.0	214.4	216.7	196.2	208.1	209.2	209.9	210.1	212.2	215.0
Other goods and services	208.1	220.6	221.5	222.8	224.6	226.2	227.4	207.7	219.0	219.9	221.0	223.0	224.4	225.6
Commodities	225.2	239.0	240.7	242.5	243.8	245.4	248.3	235.3	239.2	240.8	242.9	244.3	245.8	248.8
Commodities less food and beverages	215.5	228.4	230.2	232.0	232.9	234.3	237.4	215.7	228.4	230.0	232.0	233.1	234.7	237.9
Nondurables less food and beverages	231.8	244.1	244.4	245.3	246.8	250.2	258.6	234.1	246.0	246.1	247.1	248.8	252.6	261.4
Durables	202.1	215.3	218.1	220.6	221.1	221.0	220.3	200.3	213.5	216.3	218.9	219.7	219.5	218.6
Services	256.8	274.8	277.9	280.9	284.7	287.7	290.1	257.3	275.4	278.6	281.5	285.5	288.4	290.8
Rent, residential	185.6	195.1	197.1	198.3	199.6	200.9	201.9	185.5	194.8	196.8	198.0	199.4	200.6	201.6
Household services less rent	300.2	322.6	327.4	331.9	338.4	342.3	345.4	302.4	325.3	330.3	334.8	341.9	345.5	348.5
Transportation services	229.6	249.4	250.8	253.3	255.8	258.7	260.5	229.3	248.2	249.6	252.2	254.7	257.7	259.7
Medical care services	279.0	292.3	294.8	296.6	297.9	302.1	305.2	279.8	294.3	296.6	298.7	300.0	304.3	307.4
Other services	211.1	225.3	226.7	227.2	228.1	230.4	232.3	211.4	225.4	227.4	227.9	228.4	230.2	232.1
Special indexes:														
All items less food	233.5	248.6	250.9	253.2	255.5	257.6	260.4	233.7	248.7	251.0	253.4	255.7	257.9	260.8
All items less mortgage interest costs	227.1	241.5	243.0	244.5	245.9	247.8	250.6	227.6	242.0	243.5	245.1	246.7	248.5	251.4
Commodities less food	213.8	226.6	228.3	230.0	231.0	232.4	235.4	214.0	226.5	228.2	230.1	231.2	232.7	236.0
Nondurables less food	227.3	239.3	239.6	240.5	242.0	245.3	253.2	229.4	241.1	241.3	242.2	243.9	247.5	255.9
Nondurables less food and apparel	258.2	271.3	271.1	272.1	274.7	281.1	292.4	260.1	273.0	272.8	273.9	276.6	283.0	294.7
Nondurables	236.3	250.2	251.0	252.4	254.1	256.9	262.3	237.4	251.5	252.3	253.8	255.6	258.3	263.8
Services less rent	270.2	289.8	293.2	296.4	300.7	304.2	306.9	270.8	290.7	294.2	297.4	302.0	305.2	307.9
Services less medical care	252.7	271.0	274.2	277.2	281.2	284.2	286.5	253.1	271.4	274.7	277.7	281.9	284.7	287.0
Domestically produced farm foods	229.1	246.2	247.3	249.2	251.1	252.4	254.0	229.2	246.1	247.0	249.1	251.1	252.1	253.9
Selected beef cuts	267.2	278.8	276.8	278.9	276.2	276.2	273.0	270.3	280.8	279.0	280.7	278.4	277.9	275.1
Energy	344.6	370.1	368.0	366.1	370.4	381.7	401.1	348.7	373.1	371.1	369.5	373.7	385.2	405.4
All items less energy	228.0	242.5	245.1	247.7	249.7	251.2	252.5	227.3	242.0	244.5	247.2	249.3	250.6	251.8
All items less food and energy	222.8	236.9	239.7	242.4	244.5	245.7	246.8	221.8	235.9	238.7	241.5	243.6	244.8	245.8
Commodities less food and energy	194.9	207.2	209.4	211.2	211.7	211.5	211.7	193.5	205.7	207.8	209.9	210.6	210.4	210.5
Energy commodities	385.0	401.7	399.1	400.2	404.9	420.4	449.0	386.4	402.7	400.3	401.3	405.9	421.3	450.1
Services less energy	255.2	271.3	274.9	278.6	282.4	285.4	287.6	255.7	271.9	275.6	279.3	283.4	286.2	288.4
Purchasing power of the consumer dollar, 1967 = \$1	\$0.423	\$0.397	\$0.394	\$0.390	\$0.387	\$0.384	\$0.380	\$0.423	\$0.397	\$0.394	\$0.390	\$0.387	\$0.384	\$0.380

c = corrected.

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

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers						Urban Wage Earners and Clerical Workers (revised)							
	1980			1981			1980			1981				
	Feb.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Feb.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.
FOOD AND BEVERAGES	238.6	254.2	255.5	257.4	259.3	261.4	263.7	239.0	255.1	256.6	258.7	260.5	262.1	264.3
Food	244.9	261.1	262.4	264.5	266.4	268.6	270.8	245.2	261.9	263.4	265.7	267.6	269.2	271.4
Food at home	241.3	258.9	260.0	262.1	263.9	265.6	267.3	241.1	258.6	259.7	262.0	263.9	265.1	267.0
Cereals and bakery products	236.8	250.3	253.7	255.8	258.5	262.9	265.3	237.4	251.1	254.3	256.8	259.5	263.0	265.0
Cereals and cereal products (12/77 = 100)	125.8	137.1	137.5	138.7	140.8	143.2	144.5	127.2	137.8	138.5	139.7	142.3	144.5	145.5
Flour and prepared flour mixes (12/77 = 100)	125.7	133.3	133.2	132.9	133.5	135.9	137.5	127.3	134.1	133.8	133.6	134.4	136.8	137.9
Cereal (12/77 = 100)	124.9	138.5	139.3	141.1	143.8	145.8	146.5	125.5	138.6	139.3	141.5	145.0	147.2	148.0
Rice, pasta, and cornmeal (12/77 = 100)	127.4	138.4	138.9	140.5	143.1	146.0	147.9	129.2	140.2	141.6	142.7	145.8	147.8	149.3
Bakery products (12/77 = 100)	125.1	130.9	131.3	134.3	135.4	137.7	139.0	125.1	131.2	133.3	134.7	135.7	137.5	138.5
White bread	210.7	219.6	222.7	224.9	226.3	229.5	231.4	209.7	219.3	222.6	225.2	226.6	229.4	230.9
Other breads (12/77 = 100)	124.6	130.9	132.5	133.1	134.1	137.1	137.3	127.5	134.3	135.8	137.0	137.9	139.4	140.1
Fresh biscuits, rolls, and muffins (12/77 = 100)	126.2	129.2	133.4	134.6	135.4	137.6	138.9	124.3	128.1	132.1	134.1	135.1	136.4	136.9
Fresh cakes and cupcakes (12/77 = 100)	122.8	129.5	132.5	133.4	135.3	138.5	139.5	122.2	129.7	132.6	133.1	134.2	136.8	138.1
Cookies (12/77 = 100)	122.8	129.9	131.0	133.1	134.9	138.0	139.0	124.0	131.7	132.5	134.5	136.1	139.0	139.8
Crackers and bread and cracker products (12/77 = 100)	119.9	124.2	126.4	125.6	126.9	127.0	128.6	121.0	124.5	126.5	125.7	126.5	126.8	128.6
Fresh sweetrolls, coffeecake, and donuts (12/77 = 100)	123.8	131.6	133.4	135.3	135.9	138.0	140.4	125.4	132.0	134.1	136.1	136.4	138.5	140.0
Frozen and refrigerated bakery products and fresh pies, tarts, and turnovers (12/77 = 100)	127.2	132.1	135.3	136.2	137.5	139.7	141.4	123.8	129.9	130.9	132.4	134.0	135.2	136.3
Meats, poultry, fish, and eggs	236.2	251.8	252.6	254.9	255.7	255.1	252.5	236.4	251.2	251.8	254.2	255.0	254.1	251.6
Meats, poultry, and fish	242.6	257.7	259.0	260.7	259.9	260.6	257.9	242.8	251.1	251.8	254.2	255.2	254.9	257.0
Meats	244.1	257.8	258.7	261.1	260.0	259.7	256.4	244.3	257.2	258.1	260.3	259.3	259.2	256.0
Beef and veal	266.2	277.5	275.8	277.9	275.3	275.3	272.3	268.9	279.1	277.4	279.1	276.8	276.4	273.8
Ground beef other than canned	273.3	276.8	275.8	277.1	276.1	276.3	272.8	276.2	279.9	278.9	280.4	281.0	279.3	275.7
Chuck roast	277.7	287.7	284.4	291.7	288.5	285.3	288.1	288.7	295.4	294.0	301.9	296.0	295.2	298.6
Round roast	244.5	248.0	250.6	251.2	245.7	250.0	248.0	245.8	249.0	251.1	249.9	246.6	249.6	247.5
Round steak	252.3	260.7	258.9	263.8	260.2	262.4	259.0	250.5	261.4	257.9	261.8	257.6	255.5	254.7
Sirloin steak	251.1	280.9	270.7	271.8	267.6	264.9	262.0	253.0	282.2	272.8	274.9	269.7	266.3	263.5
Other beef and veal (12/77 = 100)	152.2	161.8	161.0	161.8	160.4	160.3	157.7	152.8	161.2	160.3	160.3	159.2	159.5	156.9
Pork	202.8	222.7	225.8	228.6	229.1	228.2	223.6	204.1	222.8	225.8	228.5	228.8	228.5	223.2
Bacon	190.1	220.1	224.7	229.5	231.9	228.1	221.7	193.8	223.0	226.0	232.3	234.5	232.5	225.7
Pork chops	189.7	206.2	207.8	208.5	208.7	211.6	210.3	191.0	205.0	207.3	204.8	206.8	210.2	207.6
Ham other than canned (12/77 = 100)	95.7	102.2	105.5	107.9	107.8	104.1	100.0	95.2	100.7	103.5	106.0	105.7	102.2	98.2
Sausage	255.1	277.9	282.4	283.5	285.6	287.8	282.3	257.0	280.0	283.2	285.9	287.2	288.5	283.0
Canned ham	219.5	225.1	232.5	237.7	238.4	241.1	238.0	218.9	225.9	235.2	242.2	242.6	243.2	240.6
Other pork (12/77 = 100)	114.3	128.6	127.6	128.4	127.6	127.4	125.4	114.6	128.5	127.9	128.8	127.4	127.9	125.0
Other meats	244.7	254.9	259.4	261.8	262.8	262.9	260.8	240.9	251.5	255.8	259.0	259.4	260.4	259.1
Frankfurters	242.7	256.1	260.9	262.6	264.0	262.5	259.4	242.1	254.3	260.3	262.6	263.4	262.6	261.0
Bologna, liverwurst, and salami (12/77 = 100)	135.6	143.5	146.5	148.4	149.1	151.2	149.4	132.3	141.2	143.6	145.7	145.2	148.0	146.0
Other luncheon meats (12/77 = 100)	120.7	125.7	127.8	129.7	129.9	130.3	129.8	118.6	123.5	125.5	127.5	127.2	128.1	128.6
Lamb and organ meats (12/77 = 100)	142.4	143.8	146.1	146.1	146.6	145.0	144.1	143.4	145.0	146.5	147.7	148.5	147.8	146.5
Poultry	182.6	205.2	209.1	204.1	202.7	203.4	203.7	181.1	203.3	205.4	201.4	201.1	199.2	201.2
Fresh whole chicken	183.6	214.0	216.7	208.7	206.9	202.5	207.0	178.9	209.6	210.5	203.5	202.2	197.2	201.7
Fresh and frozen chicken parts (12/77 = 100)	116.8	134.0	134.7	131.8	131.6	132.7	131.9	117.0	134.1	133.5	131.6	132.3	131.3	131.9
Other poultry (12/77 = 100)	118.8	122.9	128.7	128.0	126.6	128.7	128.5	119.4	122.0	127.1	126.5	126.2	127.9	127.8
Fish and seafood	320.4	335.8	336.6	343.0	346.9	358.0	355.0	317.9	333.4	333.8	340.0	343.1	350.0	349.5
Canned fish and seafood (12/77 = 100)	120.3	133.2	133.9	136.0	136.4	137.4	138.0	119.7	131.0	131.2	133.5	133.7	135.3	135.9
Fresh and frozen fish and seafood (12/77 = 100)	123.0	124.8	124.8	127.5	129.6	135.7	133.5	122.0	124.5	124.6	127.0	128.8	132.0	131.4
Eggs	157.2	179.9	175.3	185.2	206.6	190.2	188.2	156.7	178.4	174.4	185.7	206.6	190.1	187.0
Dairy products	219.5	230.6	232.7	235.4	238.0	240.1	242.1	219.8	230.9	233.1	235.9	238.8	240.7	242.5
Fresh milk and cream (12/77 = 100)	123.7	128.0	129.1	130.4	131.9	133.0	134.0	123.6	128.2	129.1	130.4	132.2	133.4	134.1
Fresh whole milk	203.2	209.7	211.3	213.3	216.2	218.2	219.3	202.7	209.8	211.0	213.0	216.5	218.5	219.3
Other fresh milk and cream (12/77 = 100)	122.7	127.7	129.1	130.5	131.4	132.1	134.2	123.0	128.3	129.5	131.0	131.9	132.9	134.4
Processed dairy products (12/77 = 100)	124.5	133.6	134.9	136.9	138.2	139.6	140.8	125.1	134.1	135.8	137.9	139.2	140.1	141.6
Butter	218.3	236.2	238.9	241.5	241.0	242.7	242.2	220.9	238.8	242.5	244.4	244.1	246.5	246.0
Cheese (12/77 = 100)	124.2	132.3	133.4	135.9	137.0	138.2	139.2	124.4	132.7	133.8	136.2	137.4	138.3	139.6
Ice cream and related products (12/77 = 100)	124.6	135.7	138.0	139.1	141.4	143.6	145.9	125.6	135.4	139.1	140.9	143.2	144.3	146.8
Other dairy products (12/77 = 100)	120.9	128.9	129.0	130.6	132.4	133.3	134.5	121.3	129.3	129.4	131.9	133.1	132.9	135.0
Fruits and vegetables	228.3	257.4	254.2	253.3	255.6	257.6	267.3	225.9	255.8	252.3	251.4	253.9	255.1	266.5
Fresh fruits and vegetables	223.1	269.6	262.3	258.3	262.0	263.9	278.1	220.6	267.8	259.6	255.7	260.2	260.3	277.6
Fresh fruits	235.8	286.3	272.9	258.6	251.8	245.6	256.8	234.7	284.9	270.4	255.5	248.6	241.1	254.4
Apples	239.6	295.2	242.2	213.5	218.8	220.8	217.1	237.6	295.3	243.7	213.0	216.9	216.8	218.2
Bananas	238.5	238.0	233.4	235.7	244.1	237.8	256.9	234.6	234.3	230.2	232.0	229.2	228.9	249.4
Oranges	231.1	296.5	312.9	316.6	299.3	272.9	284.9	228.4	284.2	301.5	300.4	287.0	258.9	269.4
Other fresh fruits (12/77 = 100)	121.4	150.8	145.4	134.9	128.6	127.8	135.9	121.3	151.9	145.6	136.4	129.2	128.4	137.9
Fresh vegetables	211.2	253.9	252.4	258.0	271.5	281.1	298.0	207.9	252.4	249.9	256.0	270.9	277.8	298.7
Potatoes	203.3	313.2	295.6	293.0	297.7	326.1	350.2	199.8	309.2	290.0	289.9	298.0	322.9	347.1
Lettuce	198.7	265.9	249.1	273.5	255.3	234.2	220.4	191.7	262.5	241.3	267.2	253.8	229.9	225.6
Tomatoes	184.9	214.2	237.3	192.2	206.1	247.2	312.8	184.3	210.8	235.6	188.9	204.9	238.8	308.6
Other fresh vegetables (12/77 = 100)	125.1													

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

[1967=100 unless otherwise specified]

General summary	All Urban Consumers						Urban Wage Earners and Clerical Workers (revised)							
	1980					1981	1980					1981		
	Feb.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Feb.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.
FOOD AND BEVERAGES—Continued														
Food—Continued														
Food at home—Continued														
Fruits and vegetables—Continued														
Cut corn and canned beans except lima (12/77=100)	115.2	121.4	122.5	124.1	124.5	126.0	128.2	113.4	119.6	120.9	121.8	122.8	124.5	126.5
Other canned and dried vegetables (12/77=100)	113.9	119.6	120.3	121.5	122.9	123.4	124.7	111.9	117.9	118.5	120.3	121.0	122.1	123.5
Other foods at home	288.0	309.2	311.5	314.8	317.1	320.5	323.0	287.3	309.1	311.7	315.7	317.8	320.8	323.6
Sugar and sweets	297.5	361.1	369.0	381.3	386.3	385.4	385.4	297.1	361.8	369.8	383.9	388.9	387.3	387.7
Candy and chewing gum (12/77=100)	122.4	134.2	134.7	135.7	136.9	138.6	141.1	122.2	134.7	135.4	136.8	137.4	139.4	142.0
Sugar and artificial sweeteners (12/77=100)	131.5	200.2	209.4	225.9	230.3	222.8	217.7	131.6	199.7	209.5	225.9	231.4	223.4	217.9
Other sweets (12/77=100)	119.5	129.2	131.5	132.5	133.7	137.1	137.7	118.5	127.7	129.2	131.9	133.1	135.5	137.3
Fats and oils (12/77=100)	235.9	243.6	246.0	247.4	251.9	260.4	267.3	236.5	244.6	247.0	248.2	252.6	261.8	268.9
Margarine	247.9	249.2	254.2	254.9	253.6	256.9	256.8	247.9	251.8	256.6	256.9	254.6	257.4	258.3
Nondairy substitutes and peanut butter (12/77=100)	116.4	125.8	125.6	127.4	139.6	156.0	171.8	117.2	125.8	125.5	128.0	139.9	156.4	172.7
Other fats, oils, and salad dressings (12/77=100)	123.6	127.4	128.5	129.0	129.1	130.3	131.0	123.8	127.4	128.7	128.8	129.1	131.0	131.4
Nonalcoholic beverages	384.5	403.9	404.9	405.5	405.2	409.7	411.9	383.0	403.6	405.8	407.8	407.4	410.7	413.6
Cola drinks, excluding diet cola	255.9	276.7	280.4	284.0	285.2	290.8	295.3	253.6	274.9	279.6	283.6	284.0	288.2	293.4
Carbonated drinks, including diet cola (12/77=100)	122.3	132.5	133.9	133.8	134.8	137.5	140.1	120.2	130.2	131.8	133.2	133.5	135.0	137.8
Roasted coffee	439.6	426.1	411.8	399.2	389.7	380.7	364.9	436.8	423.1	409.3	395.5	386.2	376.4	360.3
Freeze dried and instant coffee	382.2	376.1	368.1	364.9	356.5	354.6	345.3	380.4	374.8	366.3	364.0	358.1	355.8	347.0
Other noncarbonated drinks (12/77=100)	118.3	124.5	125.8	126.7	127.5	129.1	130.8	117.5	123.8	125.3	126.2	127.7	129.6	130.9
Other prepared foods	221.8	235.2	236.6	239.9	242.4	244.9	246.9	221.7	235.6	236.9	240.4	242.8	245.1	247.1
Canned and packaged soup (12/77=100)	118.1	123.8	124.1	125.1	127.2	128.1	128.7	117.9	124.7	124.9	125.6	128.0	127.9	129.3
Frozen prepared foods (12/77=100)	126.6	133.9	133.9	136.6	137.6	138.6	140.0	125.5	131.6	131.9	133.5	134.8	136.9	137.8
Snacks (12/77=100)	123.4	129.8	130.6	135.2	138.6	141.1	142.3	124.7	130.4	131.0	136.1	140.1	141.7	143.5
Seasonings, olives, pickles, and relish (12/77=100)	123.6	130.7	131.9	133.5	134.2	135.2	137.2	123.1	129.5	132.2	132.8	133.4	134.5	136.3
Other condiments (12/77=100)	123.7	133.0	133.4	133.3	133.5	134.4	135.8	124.6	135.0	135.3	136.5	136.3	137.3	137.3
Miscellaneous prepared foods (12/77=100)	120.7	130.6	132.0	133.5	133.8	135.4	135.8	120.5	131.1	131.7	133.8	133.5	135.2	136.0
Other canned and packaged prepared foods (12/77=100)	121.2	126.9	127.9	128.6	130.3	131.6	132.4	120.3	127.2	128.2	128.9	130.2	132.1	132.4
Food away from home	258.3	271.4	273.1	275.3	277.7	280.9	284.7	260.1	274.9	277.4	279.5	281.8	284.2	287.3
Lunch (12/77=100)	125.9	132.1	132.9	134.3	135.7	137.2	138.6	126.7	132.9	134.4	135.7	137.3	138.5	139.8
Dinner (12/77=100)	125.8	131.9	132.4	133.4	134.4	136.2	138.2	126.8	133.8	135.1	136.1	136.7	138.2	139.4
Other meals and snacks (12/77=100)	123.2	130.4	131.8	132.5	133.7	134.7	137.0	124.4	133.3	133.9	134.5	135.6	136.4	138.5
Alcoholic beverages	180.4	189.6	190.4	190.9	191.6	193.7	195.9	181.1	191.7	192.5	192.8	193.7	195.5	197.6
Alcoholic beverages at home (12/77=100)	117.4	123.6	124.0	124.4	124.9	126.1	127.4	118.3	125.1	125.6	125.9	126.5	127.6	128.8
Beer and ale	179.9	190.8	191.7	192.0	192.9	194.5	197.6	179.9	191.9	192.0	192.2	192.9	194.5	197.2
Whiskey	132.6	137.6	137.7	138.9	138.9	140.0	140.0	133.8	138.5	139.0	139.8	140.2	141.5	142.0
Wine	202.5	214.7	215.4	215.2	217.6	221.7	224.0	206.1	219.8	224.2	224.0	227.2	229.4	231.6
Other alcoholic beverages (12/77=100)	107.3	111.7	112.5	112.9	112.7	113.7	113.9	106.7	111.2	111.6	112.0	112.1	113.2	113.3
Alcoholic beverages away from home (12/77=100)	119.2	124.5	125.1	125.3	125.8	127.6	129.7	117.6	124.8	125.3	125.5	126.2	127.4	129.4
HOUSING	250.5	267.7	271.1	273.8	276.9	279.1	280.9	250.5	267.6	271.0	273.7	277.1	279.1	280.7
Shelter	267.2	285.3	290.4	294.7	298.5	300.1	300.5	268.3	286.8	292.0	296.4	300.4	301.7	301.7
Rent, residential	185.6	195.1	197.1	198.3	199.6	200.9	201.9	185.5	194.8	196.8	198.0	199.4	200.6	201.6
Other rental costs	255.7	268.9	268.8	268.3	267.7	273.9	278.5	255.6	268.6	268.8	268.4	267.3	273.6	278.3
Lodging while out of town	272.8	287.0	286.0	284.2	282.6	291.5	297.4	271.6	285.6	284.9	283.3	281.0	289.9	296.0
Tenants' insurance (12/77=100)	117.8	124.7	125.4	126.5	126.9	127.6	129.3	118.5	125.2	126.0	126.8	127.2	128.0	129.9
Homeownership	296.3	317.6	323.8	329.4	334.2	335.8	335.8	298.4	320.2	326.7	332.3	337.5	338.6	338.2
Home purchase	243.0	261.5	265.5	267.3	267.2	266.2	263.0	243.0	262.1	266.4	268.2	268.0	266.4	262.7
Financing, taxes, and insurance	367.7	393.5	404.7	416.9	429.4	435.2	437.1	371.6	398.9	410.8	423.1	436.0	441.3	442.6
Property insurance	333.7	359.8	362.0	364.5	365.8	369.8	373.1	335.2	362.9	365.3	367.8	369.0	373.2	376.6
Property taxes	188.2	191.2	192.0	192.8	194.5	196.0	198.5	189.9	193.0	193.8	194.7	196.4	197.9	200.6
Contracted mortgage interest cost	464.0	500.9	518.1	536.7	555.5	563.5	565.0	465.0	503.6	521.2	539.7	558.7	565.9	566.5
Mortgage interest rates	187.5	188.9	192.6	198.0	205.1	209.0	211.9	187.8	189.5	193.0	198.4	205.5	209.4	212.3
Maintenance and repairs	273.7	291.6	292.8	294.2	296.8	296.8	302.8	274.4	290.3	290.4	291.1	294.2	294.1	299.9
Maintenance and repair services	297.1	315.9	317.0	318.6	321.5	321.3	328.7	299.3	315.6	315.1	315.9	320.3	319.8	327.7
Maintenance and repair commodities	218.9	234.9	236.3	237.1	239.1	239.7	242.4	219.5	233.9	235.0	235.6	236.2	236.7	238.6
Paint and wallpaper, supplies, tools, and equipment (12/77=100)	123.5	135.6	136.9	137.4	139.2	139.5	141.6	122.3	132.7	133.1	134.7	134.9	135.1	136.9
Lumber, awnings, glass, and masonry (12/77=100)	115.8	122.2	122.4	122.3	123.2	123.4	124.0	119.3	121.8	122.5	122.0	122.9	122.7	122.3
Plumbing, electrical, heating, and cooling supplies (12/77=100)	115.3	123.2	123.8	124.2	124.8	125.2	127.3	117.9	126.1	126.6	124.6	124.9	124.5	127.0
Miscellaneous supplies and equipment (12/77=100)	116.4	122.7	123.3	123.7	124.2	124.7	125.2	114.5	125.2	125.9	126.4	126.3	127.9	127.8
Fuel and other utilities	263.8	288.2	287.6	285.7	289.9	296.7	304.5	264.4	288.7	288.0	286.3	290.7	297.5	305.6
Fuels	327.1	364.5	362.8	358.7	364.7	375.4	387.4	327.0	363.8	362.1	358.2	364.5	375.0	387.3
Fuel oil, coal, and bottled gas	539.1	561.5	558.7	567.0	585.3	625.9	675.6	540.3	562.9	559.9	568.3	587.0	627.9	678.5
Fuel oil	561.9	585.4	581.5	589.8	610.0	656.0	712.0	562.5	585.9	581.8	590.3	610.9	657.1	714.2
Other fuels (6/78=100)	136.6	142.1	143.1	145.7	148.4	152.3	157.5	137.9	143.8	144.8	147.3	150.1	154.1	159.4
Gas (piped) and electricity	278.8	318.4	317.1	310.5	313.9	318.5	322.9	278.5	317.4	316.0	309.8	313.4	317.7	322.1
Electricity	233.8	269.2	265.3	258.7	262.3	266.9	271.3	233.9	269.6	265.3	258.4	262.1	266.5	271.1
Utility (piped) gas	336.8	380.2	384.6	379.0	381.5	385.3	389.0	335.4	376.1	380.9	376.7	379.7	383.3	386.8

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

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers						Urban Wage Earners and Clerical Workers (revised)							
	1980					1981	1980					1981		
	Feb.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Feb.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.
HOUSING—Continued														
Fuel and other utilities—Continued														
Other utilities and public services	161.3	167.1	167.8	169.0	170.6	171.9	173.6	161.4	167.1	167.8	169.1	170.7	172.0	173.9
Telephone services	132.8	137.0	137.5	138.7	140.3	141.1	142.4	132.8	136.9	137.4	138.7	140.3	141.1	142.5
Local charges (12/77 = 100)	102.7	106.0	106.6	108.3	110.5	111.6	113.5	102.7	105.9	106.5	108.3	110.6	111.7	113.6
Interstate toll calls (12/77 = 100)	97.4	102.1	102.1	101.7	101.8	101.8	101.8	97.5	102.1	102.1	101.8	101.8	101.9	101.9
Intrastate toll calls (12/77 = 100)	98.8	100.1	100.1	100.6	100.9	101.0	101.2	98.7	100.0	99.9	100.5	100.7	100.8	101.0
Water and sewerage maintenance	252.3	264.5	266.2	267.0	267.8	271.4	274.7	253.0	265.5	267.3	268.0	268.7	272.5	276.3
Household furnishings and operations	199.0	209.2	210.1	211.0	211.6	212.6	214.9	196.8	206.0	206.8	208.1	209.0	209.7	211.7
Housefurnishings	169.3	177.3	177.9	178.1	178.3	178.7	180.8	167.9	175.0	175.6	176.4	176.9	176.9	178.5
Textile housefurnishings	182.9	194.1	195.9	192.4	193.2	191.9	195.1	181.2	192.5	195.1	195.7	196.6	193.4	196.9
Household linens (12/77 = 100)	110.1	118.4	119.5	117.3	117.2	114.6	118.6	109.8	117.7	119.5	122.6	122.7	117.0	121.4
Curtains, drapes, slipcovers, and sewing materials (12/77 = 100)	118.2	123.6	124.9	122.7	123.8	124.9	124.8	116.6	122.7	124.1	121.2	122.4	124.6	124.4
Furniture and bedding	185.2	195.7	195.2	196.5	197.0	196.6	199.3	184.3	192.0	192.5	193.9	194.4	193.6	195.6
Bedroom furniture (12/77 = 100)	120.5	127.9	127.4	128.6	129.2	128.3	131.3	117.5	124.5	124.6	125.5	125.7	125.1	127.7
Sofas (12/77 = 100)	108.5	112.7	113.8	114.2	115.3	114.2	114.5	110.3	111.1	113.0	113.6	114.7	113.2	113.2
Living room chairs and tables (12/77 = 100)	110.0	114.1	113.0	113.3	113.1	113.1	115.9	111.2	115.1	114.4	115.6	115.2	114.3	115.2
Other furniture (12/77 = 100)	118.3	127.5	127.0	127.9	127.8	128.7	129.1	117.5	123.6	123.6	124.6	124.7	125.6	126.6
Appliances including TV and sound equipment	138.3	142.0	142.3	142.6	142.4	143.1	143.9	137.8	141.2	141.2	141.4	142.0	142.7	142.9
Television and sound equipment (12/77 = 100)	105.4	107.0	107.1	107.4	107.2	107.4	107.9	104.9	105.7	105.6	106.1	106.1	106.5	106.6
Television	103.7	105.0	104.7	105.1	105.2	105.6	105.7	102.3	103.2	103.2	103.8	103.7	104.2	104.2
Sound equipment (12/77 = 100)	108.1	109.8	110.3	110.6	110.1	110.2	111.0	108.2	108.8	108.7	109.1	109.2	109.4	109.6
Household appliances	159.4	165.5	166.0	166.2	165.9	167.2	168.2	158.8	165.2	165.3	165.2	166.3	167.6	167.8
Refrigerators and home freezers	156.5	164.8	165.8	166.1	166.5	168.0	168.4	159.7	169.1	169.4	169.2	170.9	171.7	172.3
Laundry equipment (12/77 = 100)	115.0	120.9	121.5	122.0	123.4	123.6	123.7	114.7	120.0	120.2	120.2	121.4	121.9	122.8
Other household appliances (12/77 = 100)	111.3	114.2	114.2	114.2	113.1	114.2	115.4	109.5	112.5	112.5	112.4	112.8	114.0	113.7
Stoves, dishwashers, vacuums, and sewing machines (12/77 = 100)	110.8	111.8	112.4	113.0	112.0	114.8	115.1	110.5	111.8	112.1	112.6	113.9	115.7	114.2
Office machines, small electric appliances, and air conditioners (12/77 = 100)	112.0	117.0	116.2	115.5	114.3	113.6	115.7	108.4	113.4	113.0	112.1	111.5	112.0	113.1
Other household equipment (12/77 = 100)	115.9	123.0	124.1	124.6	124.8	125.6	127.9	114.4	121.6	122.2	123.2	123.1	123.8	125.6
Floor and window coverings, infants', laundry, cleaning, and outdoor equipment (12/77 = 100)	114.5	123.0	123.3	124.3	124.6	125.7	128.7	109.4	116.8	118.2	119.0	118.4	118.9	120.8
Clocks, lamps, and decor items (12/77 = 100)	112.7	120.6	121.6	121.4	121.7	122.3	124.1	109.8	118.2	119.4	119.2	118.8	119.2	121.7
Tableware, serving pieces, and nonelectric kitchenware (12/77 = 100)	121.4	128.2	130.0	130.6	130.8	131.9	134.8	118.9	126.3	126.3	127.4	127.6	128.0	131.0
Lawn equipment, power tools, and other hardware (12/77 = 100)	111.7	117.2	117.9	118.4	118.7	118.7	119.9	114.2	120.3	120.9	122.3	122.3	123.8	123.8
Housekeeping supplies	235.0	252.0	253.6	256.0	257.7	259.5	262.8	232.8	249.6	251.2	253.5	256.0	257.5	260.1
Soaps and detergents	228.9	243.7	248.7	252.4	254.0	255.6	256.2	226.5	241.1	245.6	248.2	252.3	253.4	254.3
Other laundry and cleaning products (12/77 = 100)	117.2	125.6	125.7	126.7	127.6	128.8	129.3	117.1	125.0	125.1	126.2	127.6	129.0	129.6
Cleansing and toilet tissue, paper towels and napkins (12/77 = 100)	121.2	133.8	134.2	135.6	136.1	137.3	138.4	123.4	135.8	136.2	136.6	137.6	139.2	139.2
Stationery, stationery supplies, and gift wrap (12/77 = 100)	112.7	118.0	118.6	118.3	119.5	119.9	121.4	112.3	116.9	118.2	118.8	120.0	120.7	122.4
Miscellaneous household products (12/77 = 100)	119.4	129.0	129.5	131.1	132.5	132.6	135.9	116.6	126.6	126.7	128.4	129.5	129.3	132.2
Lawn and garden supplies (12/77 = 100)	119.4	127.1	126.9	128.0	128.4	130.0	134.0	113.3	120.5	121.0	122.5	122.5	122.7	126.1
Housekeeping services	261.6	273.3	274.5	276.1	277.1	279.6	281.6	261.1	270.2	271.0	272.5	273.8	276.4	279.4
Postage	257.3	257.3	257.3	257.3	257.3	257.3	257.3	257.2	257.3	257.3	257.3	257.3	257.3	257.3
Moving, storage, freight, household laundry, and drycleaning services (12/77 = 100)	124.2	132.8	133.3	134.6	134.4	137.0	138.2	124.6	130.3	130.2	131.4	131.8	134.3	137.8
Appliance and furniture repair (12/77 = 100)	114.7	119.8	120.3	120.7	121.4	122.4	123.6	115.5	118.7	119.2	119.7	120.6	121.5	122.4
APPAREL AND UPKEEP	171.9	182.2	183.9	184.8	183.9	181.1	182.0	171.5	181.4	182.8	183.3	182.9	180.8	181.8
Apparel commodities	165.1	174.9	176.4	177.2	176.0	172.6	173.2	165.2	174.4	175.6	176.0	175.3	172.6	173.3
Apparel commodities less footwear	161.8	171.8	173.1	173.9	172.5	168.9	169.6	161.9	171.1	172.2	172.5	171.6	168.7	169.6
Men's and boys'	162.7	171.7	173.9	174.8	174.3	171.1	171.6	162.9	171.6	173.8	174.8	174.4	171.7	172.2
Men's (12/77 = 100)	102.3	108.1	109.5	110.1	109.8	107.5	107.8	102.4	108.3	109.5	110.2	109.9	107.9	108.2
Suits, sport coats, and jackets (12/77 = 100)	98.2	103.2	104.3	104.7	103.5	99.9	100.5	94.4	98.3	99.7	99.4	98.2	95.1	96.1
Coats and jackets (12/77 = 100)	93.6	99.9	100.4	100.5	99.7	95.2	95.6	92.2	100.0	101.3	101.9	101.9	97.4	96.0
Furnishings and special clothing (12/77 = 100)	112.7	120.8	122.9	123.3	123.9	123.9	125.3	111.1	117.5	118.8	119.7	120.0	119.9	120.2
Shirts (12/77 = 100)	109.3	116.9	118.3	119.6	119.7	115.4	114.8	109.4	117.4	118.5	120.4	120.7	116.7	116.8
Dungarees, jeans, and trousers (12/77 = 100)	97.7	101.2	102.6	103.5	103.4	103.4	102.7	102.2	107.1	108.3	108.7	108.1	108.2	108.7
Boys' (12/77 = 100)	106.3	111.4	113.0	113.3	113.1	112.0	112.6	105.9	110.2	112.0	112.7	112.6	111.6	111.9
Coats, jackets, sweaters, and shirts (12/77 = 100)	99.9	108.1	109.2	109.4	108.6	104.8	104.3	101.9	109.6	111.2	112.5	111.8	107.9	107.0
Furnishings (12/77 = 100)	110.9	116.6	118.1	118.4	118.7	119.1	119.1	109.5	113.7	115.1	115.2	116.2	115.8	116.1
Suits, trousers, sport coats, and jackets (12/77 = 100)	109.5	111.9	113.9	114.3	114.3	114.8	116.6	107.7	109.4	111.5	111.9	112.0	112.9	114.2
Women's and girls'	151.1	159.0	159.7	159.9	157.4	152.1	153.4	151.3	159.8	160.3	159.9	158.2	153.9	155.4
Women's (12/77 = 100)	100.8	105.7	106.1	106.3	104.4	100.8	101.9	101.4	107.0	107.0	106.6	105.3	102.3	103.5
Coats and jackets	163.1	168.9	167.0	164.7	161.4	150.4	160.7	162.4	177.0	176.5	175.5	172.2	162.1	159.1
Dresses	160.6	168.5	170.0	168.1	163.8	155.5	156.9	151.2	156.8	157.5	157.7	154.3	147.3	150.5
Separates and sportswear (12/77 = 100)	97.1	102.2	101.6	102.9	101.4	98.2	97.1	99.2	104.6	103.6	102.8	102.4	100.1	99.7
Underwear, nightwear, and hosiery (12/77 = 100)	110.2	114.6	114.9	116.7	116.8	116.0	116.4	110.6	114.8	115.3	116.4	116.6	115.6	116.0
Suits (12/77 = 100)	88.2	95.4	98.2	97.4	91.9	87.8	90.0	96.8	105.7	106.8	102.8	98.2	95.5	103.6
Girls (12/77 = 100)	98.9	105.8	107.0	106.5	106.1	102.9	102.8	97.3	103.3	105.1	105.3	104.9	102.5	102.7
Coats, jackets, dresses, and suits (12/77 = 100)	95.7	102.1	103.2	102.7	101.3	96.0	94.4	92.6	97.3	99.0	99.1	98.6	94.4	93.5
Separates and sportswear (12/77 = 100)	98.2	105.3	106.7	105.9	106.1	103.6	104.2	98.1	104.2	106.3	106.8	106.6	104.4	105.8
Underwear, nightwear, hosiery, and accessories (12/77 = 100)	105.6	113.0	113.8	114.0	113.8	113.1	113.9	103.5	111.3	112.8	112.6	112.2	112.2	112.5

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

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers						Urban Wage Earners and Clerical Workers (revised)							
	1980					1981		1980					1981	
	Feb.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Feb.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.
APPAREL AND UPKEEP — Continued														
Apparel commodities — Continued														
Apparel commodities less footwear — Continued														
Infants and toddlers'	226.6	242.4	244.1	248.9	250.1	249.7	254.3	232.7	248.3	249.2	254.0	255.4	256.9	264.0
Other apparel commodities	191.4	210.5	211.8	213.7	213.3	214.2	212.3	191.8	204.4	204.1	204.0	205.3	204.4	204.4
Sewing materials and notions (12/77 = 100)	106.3	110.9	111.9	110.3	110.6	111.9	112.2	105.7	110.7	112.0	110.2	110.0	110.8	112.2
Jewelry and luggage (12/77 = 100)	131.2	146.8	147.5	149.9	149.5	149.7	147.9	132.3	142.0	141.1	141.8	142.3	142.8	141.3
Footwear	184.6	193.2	196.1	196.5	196.6	194.9	194.9	183.9	193.3	195.6	196.4	196.7	195.5	194.9
Men's (12/77 = 100)	118.3	123.6	124.7	125.4	124.6	124.4	125.0	119.4	124.9	125.8	126.7	126.0	126.1	125.7
Boys' and girls' (12/77 = 100)	117.9	123.3	125.8	126.2	126.6	125.7	125.3	118.0	124.6	126.9	127.4	127.8	127.0	126.2
Womens' (12/77 = 100)	112.1	117.7	119.6	119.4	120.0	118.1	117.9	109.5	115.1	116.3	116.5	117.5	115.9	115.9
Apparel services	222.9	237.3	240.0	241.9	243.4	246.3	249.9	219.8	234.5	238.1	239.9	242.2	245.5	248.7
Laundry and drycleaning other than coin operated (12/77 = 100)	130.6	140.0	141.1	142.4	143.5	145.3	147.6	130.6	139.1	140.9	141.6	143.2	145.5	147.3
Other apparel services (12/77 = 100)	120.7	126.9	129.2	130.0	130.5	131.7	133.3	116.9	125.1	127.4	129.1	129.9	131.1	132.9
TRANSPORTATION														
Private	239.6	254.7	256.1	259.0	261.1	264.7	270.9	240.2	255.2	256.6	259.7	261.9	265.7	272.1
New cars	175.3	181.7	181.9	184.3	184.5	185.3	184.8	175.4	182.3	182.0	184.5	184.6	185.7	185.0
Used cars	195.3	214.6	222.7	230.8	234.4	234.0	234.3	195.3	214.6	222.7	230.8	234.4	234.0	234.4
Gasoline	357.6	373.0	370.5	370.5	373.3	385.2	410.8	359.0	373.9	371.7	371.7	374.4	386.6	412.5
Automobile maintenance and repair	258.2	273.8	276.0	278.4	280.1	282.7	285.4	259.2	273.9	276.6	278.9	280.6	283.2	285.4
Body work (12/77 = 100)	126.5	133.8	135.0	136.1	136.8	137.3	139.2	126.1	133.0	134.6	135.9	136.7	137.3	139.2
Automobile drive train, brake, and miscellaneous mechanical repair (12/77 = 100)	123.2	130.9	132.7	133.6	134.0	135.8	136.8	124.8	131.8	133.9	135.0	135.6	137.5	138.3
Maintenance and servicing (12/77 = 100)	121.3	129.4	130.0	131.0	131.6	132.5	133.7	121.3	129.5	130.2	131.1	131.7	132.7	133.5
Power plant repair (12/77 = 100)	122.5	128.7	129.8	131.3	132.7	134.4	135.5	123.1	128.5	129.6	130.8	132.2	133.5	134.7
Other private transportation	212.6	226.0	226.5	228.8	231.0	232.4	234.2	213.6	227.6	228.0	230.6	233.2	235.0	236.9
Other private transportation commodities	191.2	200.9	200.9	203.1	203.6	203.7	205.8	191.7	201.9	201.4	203.4	205.7	206.2	207.5
Motor oil, coolant, and other products (12/77 = 100)	123.9	137.5	136.5	137.8	138.8	139.1	141.6	124.0	135.6	135.4	137.3	139.0	139.2	139.0
Automobile parts and equipment (12/77 = 100)	123.5	128.8	128.9	130.3	130.6	130.6	131.8	123.9	129.8	129.4	130.6	132.0	132.4	133.4
Tires	168.5	178.8	179.2	181.7	182.1	181.5	183.5	170.6	181.5	180.8	182.5	184.7	184.8	186.6
Other parts and equipment (12/77 = 100)	127.3	127.3	126.9	127.3	127.6	128.6	129.3	125.0	125.8	125.7	126.9	127.8	128.9	129.3
Other private transportation services	220.4	234.9	235.6	237.9	240.6	242.4	244.0	221.5	236.7	237.3	240.1	242.9	244.9	247.0
Automobile insurance	240.2	251.3	251.5	251.9	252.5	252.3	253.7	239.7	250.9	251.2	251.5	252.0	251.8	253.2
Automobile finance charges (12/77 = 100)	132.1	148.6	149.9	154.4	159.4	163.4	165.1	131.3	147.5	148.3	153.2	157.9	161.7	163.9
Automobile rental, registration, and other fees (12/77 = 100)	109.8	114.5	114.6	115.0	115.8	116.2	116.7	110.9	115.8	116.3	116.7	117.5	118.2	119.3
State registration	145.2	146.5	146.5	146.6	146.9	146.9	146.9	145.3	146.5	146.5	146.6	147.0	146.9	147.0
Drivers' licenses (12/77 = 100)	104.8	104.9	104.9	105.0	105.3	105.3	105.4	104.5	104.6	104.7	104.7	105.1	105.1	105.1
Vehicle inspection (12/77 = 100)	119.0	122.8	122.9	123.2	124.3	124.8	125.8	119.7	123.5	123.6	123.9	125.1	125.6	126.6
Other vehicle related fees (12/77 = 100)	119.6	129.8	130.0	130.7	132.7	133.7	134.7	125.4	137.8	139.1	140.0	142.0	144.1	147.2
Public	229.5	271.0	273.6	277.0	280.1	286.4	288.1	223.9	264.4	266.5	269.2	271.8	279.0	280.6
Airline fare	255.4	310.3	315.0	321.8	327.4	331.9	334.1	255.2	308.6	313.0	319.8	325.7	330.2	332.7
Inter-city bus fare	288.5	304.7	307.1	308.0	310.1	310.7	312.8	288.2	304.5	306.9	308.0	309.8	310.6	312.2
Intra-city mass transit	199.7	234.8	235.6	236.1	237.1	247.1	248.4	197.6	234.4	235.2	235.6	236.5	246.5	247.8
Taxi fare	244.0	266.8	267.9	269.2	269.7	271.0	271.4	249.3	273.6	274.7	275.6	275.9	277.5	277.7
Inter-city train fare	237.2	255.5	255.6	255.6	270.1	276.4	276.5	237.0	255.6	255.7	255.7	270.3	276.8	276.9
MEDICAL CARE														
Medical care commodities	257.9	270.6	272.8	274.5	275.8	279.5	282.6	258.7	272.2	274.3	276.3	277.6	281.4	284.4
Prescription drugs	162.1	171.3	172.5	173.8	175.1	176.7	179.2	162.7	171.8	173.0	174.1	175.6	177.5	179.6
Anti-infective drugs (12/77 = 100)	149.8	157.5	158.5	159.6	160.7	162.7	165.0	150.7	158.5	159.5	160.2	161.5	163.4	165.3
Tranquilizers and sedatives (12/77 = 100)	117.2	122.4	124.1	124.6	124.7	127.7	129.2	119.8	123.4	125.1	125.6	126.4	128.6	129.5
Circulatories and diuretics (12/77 = 100)	121.3	126.3	127.1	128.9	130.2	130.7	131.9	121.0	125.4	126.2	127.7	128.6	129.4	130.7
Hormones, diabetic drugs, biologicals, and prescription and supplies (12/77 = 100)	113.4	116.9	117.3	118.3	119.1	120.6	121.9	114.2	118.9	119.3	119.9	120.2	121.3	122.9
Pain and symptom control drugs (12/77 = 100)	128.7	138.9	139.6	140.4	142.3	143.9	147.4	127.8	138.1	138.8	139.6	141.7	143.8	146.5
Supplements, cough and cold preparations, and respiratory agents (12/77 = 100)	119.7	125.6	126.3	126.7	126.9	128.7	130.9	120.1	128.1	128.7	128.3	129.6	131.4	133.3
Nonprescription drugs and medical supplies (12/77 = 100)	113.7	120.5	120.4	121.2	122.4	123.2	124.5	115.2	121.8	122.1	122.3	123.1	123.8	125.2
Eyeglasses (12/77 = 100)	116.3	123.3	124.4	125.3	126.2	127.1	128.9	116.6	123.6	124.4	125.5	126.5	127.9	129.4
Internal and respiratory over-the-counter drugs	112.9	120.5	121.0	121.2	120.8	121.5	123.1	112.6	119.0	119.6	120.2	120.4	121.1	122.3
Nonprescription medical equipment and supplies (12/77 = 100)	180.4	191.2	193.5	195.8	198.1	199.3	202.7	180.8	192.4	194.0	195.8	198.0	200.4	203.0
Nonprescription medical equipment and supplies (12/77 = 100)	114.6	120.8	121.3	121.5	122.5	123.6	124.5	115.6	121.2	121.8	123.0	123.7	125.1	126.5
Medical care services	279.0	292.3	294.8	296.6	297.9	302.1	305.2	279.8	294.3	296.6	298.7	300.0	304.3	307.4
Professional services	242.9	257.3	259.0	260.4	261.7	264.7	267.2	245.5	260.4	261.9	263.8	265.0	268.7	271.6
Physicians' services	260.2	274.2	276.0	278.0	280.3	283.9	287.7	264.1	280.5	281.8	283.8	285.7	290.0	293.9
Dental services	231.5	245.8	247.5	248.0	248.6	251.4	252.8	233.4	247.3	249.0	250.4	251.3	254.9	257.0
Other professional services (12/77 = 100)	118.1	126.7	127.6	128.5	128.5	129.3	130.0	117.4	124.5	125.1	126.7	126.6	127.6	128.5
Other medical care services	322.7	334.7	338.0	340.5	341.6	347.3	351.1	322.1	335.6	339.2	341.6	342.9	347.8	351.3
Hospital and other medical services (12/77 = 100)	127.8	137.1	139.3	141.1	141.7	144.5	146.1	126.8	136.4	138.9	140.5	141.3	143.7	145.2
Hospital room	403.4	428.4	435.8	441.0	443.7	453.8	458.2	398.8	427.2	435.3	439.8	443.1	451.9	455.9
Other hospital and medical care services	126.5	137.0	139.0	140.9	141.4	143.7	145.5	125.9	136.0	138.4	140.2	140.6	142.7	144.4

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

[1967=100 unless otherwise specified]

General summary	All Urban Consumers						Urban Wage Earners and Clerical Workers (revised)							
	1980					1981	1980					1981		
	Feb.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Feb.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.
ENTERTAINMENT	197.8	209.8	210.9	211.2	212.0	214.4	216.7	196.2	208.1	209.2	209.9	210.1	212.2	215.0
Entertainment commodities	200.4	212.8	213.7	214.5	215.3	217.1	219.7	196.9	208.6	209.0	210.2	210.9	213.0	216.2
Reading materials (12/77 = 100)	117.4	126.1	127.0	127.6	128.2	130.0	130.9	117.0	125.5	126.6	127.1	127.6	129.6	130.7
Newspapers	227.7	242.3	245.3	245.6	246.2	249.7	253.8	227.3	241.5	244.6	244.9	245.5	249.4	254.0
Magazines, periodicals, and books (12/77 = 100)	119.2	129.3	129.6	130.7	131.5	133.4	132.9	118.9	129.3	129.6	130.8	131.5	133.5	132.9
Sporting goods and equipment (12/77 = 100)	115.9	121.1	121.8	122.8	122.9	123.5	124.7	110.8	115.8	116.3	117.0	117.8	118.5	119.3
Sport vehicles (12/77 = 100)	117.4	(¹)	(¹)	(¹)	(¹)	(¹)	(¹)	126.5	109.1	(¹)	(¹)	(¹)	(¹)	118.1
Indoor and warm weather sport equipment (12/77 = 100)	108.3	113.8	114.5	114.7	116.2	115.7	115.9	107.8	112.1	112.5	112.2	113.4	114.5	115.3
Bicycles	174.5	184.7	185.3	185.7	184.7	185.9	187.2	174.9	184.9	185.4	185.8	184.9	186.7	188.3
Other sporting goods and equipment (12/77 = 100)	112.4	117.2	118.2	119.9	120.4	120.9	120.6	112.6	117.4	117.8	119.1	119.3	119.2	119.2
Toys, hobbies, and other entertainment (12/77 = 100)	115.1	122.6	122.8	122.8	123.5	124.4	126.3	114.3	121.3	120.9	121.6	121.8	122.9	125.8
Toys, hobbies, and music equipment (12/77 = 100)	114.1	121.4	120.9	120.7	121.3	122.4	124.7	112.3	119.0	117.4	118.4	118.5	119.4	123.0
Photographic supplies and equipment (12/77 = 100)	114.1	123.1	123.1	121.8	122.0	121.5	122.6	114.2	121.8	122.3	122.7	122.4	122.3	124.4
Pet supplies and expense (12/77 = 100)	117.6	124.4	125.8	127.3	128.4	130.1	132.0	117.9	125.2	126.4	126.8	127.6	129.7	131.9
Entertainment services	194.5	206.1	207.2	206.9	207.8	210.9	213.0	196.0	208.4	210.6	210.5	209.7	212.0	213.9
Fees for participant sports (12/77 = 100)	116.0	124.5	125.5	125.2	125.7	128.1	129.4	116.3	124.7	127.0	126.7	125.9	127.8	129.0
Admissions (12/77 = 100)	118.3	122.6	122.7	122.6	123.1	124.7	125.3	119.7	124.1	124.2	124.3	124.0	125.2	126.2
Other entertainment services (12/77 = 100)	111.4	118.3	119.0	118.7	119.4	120.1	122.0	111.8	120.8	121.6	121.6	121.8	122.0	123.0
OTHER GOODS AND SERVICES	208.1	220.6	221.5	222.8	224.6	226.2	227.4	207.7	219.0	219.9	221.0	223.0	224.4	225.6
Tobacco products	198.1	204.5	204.5	207.3	210.8	211.9	212.3	198.3	204.3	204.3	206.8	210.4	211.7	211.9
Cigarettes	200.9	206.8	206.8	209.6	213.5	214.6	214.8	201.3	206.8	206.7	209.3	213.2	214.5	214.5
Other tobacco products and smoking accessories (12/77 = 100)	115.6	122.8	123.2	124.3	124.9	125.4	126.5	114.8	122.7	123.1	123.9	124.5	125.4	126.4
Personal care	206.5	216.7	217.8	219.0	220.9	222.5	224.6	206.6	216.6	218.0	218.5	220.0	221.1	223.2
Toilet goods and personal care appliances	198.6	210.3	211.8	212.4	215.2	216.9	219.3	198.3	210.4	212.1	212.7	214.3	216.1	218.5
Products for the hair, hairpieces, and wigs (12/77 = 100)	116.1	121.8	124.5	124.5	125.2	126.3	128.3	114.9	123.6	123.2	123.2	125.3	126.2	126.7
Dental and shaving products (12/77 = 100)	118.6	125.3	126.0	127.2	128.4	130.8	132.9	116.8	124.0	125.3	125.9	125.4	128.3	131.2
Cosmetics, bath and nail preparations, manicure and eye makeup implements (12/77 = 100)	114.2	121.3	121.3	120.8	122.6	122.9	123.2	114.0	119.7	121.1	121.0	121.4	^c 122.2	122.8
Other toilet goods and small personal care appliances (12/77 = 100)	112.9	120.8	120.8	122.2	124.8	125.5	127.5	115.6	122.1	123.6	125.3	126.8	126.6	129.0
Personal care services	214.2	223.1	223.8	225.5	226.8	228.3	230.0	215.0	222.9	224.0	224.4	225.8	226.3	228.1
Beauty parlor services for women	216.1	224.5	225.2	227.5	228.7	230.1	231.7	216.6	225.0	225.6	226.1	227.5	227.6	229.4
Haircuts and other barber shop services for men (12/77 = 100)	119.3	124.8	125.3	125.6	126.4	127.3	128.5	120.0	123.9	125.0	125.2	126.0	126.7	127.6
Personal and educational expenses	228.0	249.5	251.1	251.3	251.5	253.6	254.4	227.8	249.8	251.2	251.4	251.7	254.0	255.0
Schoolbooks and supplies	206.5	221.0	221.9	221.9	222.1	228.6	229.8	210.4	224.8	225.6	225.6	225.8	232.4	233.6
Personal and educational services	233.3	256.2	257.8	258.1	258.2	259.7	260.4	232.5	256.1	257.5	257.8	258.1	259.6	260.6
Tuition and other school fees	118.5	131.6	132.2	132.2	132.2	132.6	132.7	118.6	131.8	132.4	132.4	132.4	132.8	132.9
College tuition (12/77 = 100)	117.8	130.7	131.5	131.5	131.5	132.0	132.1	117.8	130.7	131.5	131.5	131.5	132.0	132.1
Elementary and high school tuition (12/77 = 100)	120.9	134.4	134.4	134.4	134.4	134.4	134.4	120.7	134.3	134.3	134.3	134.3	134.3	134.3
Personal expenses (12/77 = 100)	124.4	130.5	132.4	133.0	133.4	135.7	137.1	121.4	129.7	131.0	131.6	132.2	134.4	136.3
Special indexes:														
Gasoline, motor oil, coolant, and other products	352.5	367.9	365.5	365.5	368.3	379.9	404.8	353.8	368.7	366.6	366.7	369.4	381.2	406.3
Insurance and finance	316.7	338.6	346.4	355.3	364.5	368.9	370.7	316.2	339.0	346.7	355.6	364.7	368.8	370.4
Utilities and public transportation	227.9	254.8	254.9	253.1	255.8	259.4	262.3	227.2	253.6	253.5	251.6	254.4	258.0	261.0
Housekeeping and home maintenance services	287.6	303.6	304.7	306.4	308.4	309.5	314.6	288.7	302.3	302.4	303.5	306.6	307.4	313.4

¹ Not available.

c = corrected.

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

[December 1977 = 100]

Category and group	Size class A (1.25 million or more)			Size class B (385,000-1.250 million)			Size class C (75,000-385,000)			Size class D (75,000 or less)		
	1980		1981	1980		1981	1980		1981	1980		1981
	Oct.	Dec.	Feb.	Oct.	Dec.	Feb.	Oct.	Dec.	Feb.	Oct.	Dec.	Feb.
Northeast												
EXPENDITURE CATEGORY												
All items	130.5	132.8	135.7	137.2	139.8	143.2	141.2	143.8	146.6	135.6	137.8	141.6
Food and beverages	131.0	132.8	135.2	133.7	135.8	137.6	134.7	137.7	139.8	131.5	132.8	134.8
Housing	131.8	135.2	138.0	141.9	144.6	149.0	151.0	153.7	156.3	139.9	142.0	147.5
Apparel and upkeep	116.2	114.8	114.9	116.2	116.8	114.0	124.6	124.8	119.5	118.6	120.3	119.1
Transportation	139.4	141.9	147.3	145.3	149.4	155.0	142.8	146.5	153.0	143.1	146.5	151.0
Medical care	126.3	128.0	130.5	127.2	129.3	131.2	129.1	130.1	132.1	126.9	130.7	134.4
Entertainment	120.0	120.7	124.6	122.7	123.2	127.5	120.1	120.4	124.2	125.2	126.7	126.7
Other goods and services	121.2	122.7	123.7	124.0	127.5	128.5	127.8	130.3	131.1	122.0	124.4	126.5
COMMODITY AND SERVICE GROUP												
Commodities	131.8	133.7	137.0	138.3	140.8	144.3	139.9	142.1	144.6	136.6	138.1	141.7
Commodities less food and beverages	132.3	134.3	138.2	140.5	143.2	147.6	142.3	144.1	146.8	139.1	140.7	145.0
Services	128.8	131.6	134.0	135.4	138.3	141.5	143.4	146.7	149.8	134.0	137.3	141.4
North Central												
EXPENDITURE CATEGORY												
All items	140.8	143.3	144.0	137.6	140.0	142.8	135.1	136.6	139.7	134.6	136.2	139.6
Food and beverages	133.1	135.0	137.1	130.8	132.9	136.4	133.7	135.1	137.0	135.8	139.1	139.6
Housing	151.9	155.3	152.7	143.7	146.0	147.7	137.9	139.1	141.5	135.3	135.9	140.5
Apparel and upkeep	112.1	110.8	109.4	118.2	118.8	116.9	115.3	114.8	114.5	115.5	116.2	114.1
Transportation	143.2	146.4	151.8	143.0	146.8	152.3	142.9	146.2	153.1	142.2	145.4	150.3
Medical care	129.1	130.5	134.6	129.6	131.4	136.2	130.6	132.4	136.7	133.3	134.6	140.1
Entertainment	124.5	125.1	127.5	121.1	121.3	124.2	124.3	124.0	126.8	121.1	120.8	124.8
Other goods and services	122.6	124.2	126.3	128.4	130.3	132.7	122.5	123.9	126.4	128.4	129.8	131.1
COMMODITY AND SERVICE GROUP												
Commodities	138.1	139.9	140.3	135.0	136.5	139.5	133.9	135.2	138.2	132.6	133.4	136.0
Commodities less food and beverages	140.4	142.3	141.8	136.8	138.0	140.9	134.0	135.3	138.7	131.2	130.9	134.5
Services	144.9	148.4	149.4	141.8	145.6	148.1	137.1	138.9	142.2	137.7	140.6	145.3
South												
EXPENDITURE CATEGORY												
All items	136.7	139.0	142.1	138.1	140.9	144.9	136.1	138.6	142.1	134.1	136.5	138.8
Food and beverages	134.6	136.8	138.8	133.0	135.4	138.6	134.8	137.2	138.4	134.5	136.9	140.2
Housing	139.8	143.1	146.1	143.5	146.7	151.5	139.7	142.5	146.6	133.7	137.5	138.4
Apparel and upkeep	119.9	120.0	119.3	116.4	117.3	117.1	111.8	114.1	113.0	110.5	108.9	105.6
Transportation	145.0	146.8	152.9	144.5	147.9	153.4	143.0	145.7	152.2	142.2	144.8	151.4
Medical care	126.8	127.9	130.4	130.9	132.1	135.1	132.7	133.7	136.8	140.2	140.7	144.0
Entertainment	120.2	120.4	123.5	125.3	127.9	129.0	125.0	127.5	129.0	132.4	130.7	131.0
Other goods and services	126.4	128.1	129.4	126.8	128.8	131.0	124.7	126.7	128.6	128.2	129.9	130.5
COMMODITY AND SERVICE GROUP												
Commodities	135.4	137.2	140.1	135.2	137.5	140.8	134.1	136.3	139.1	133.4	135.6	138.4
Commodities less food and beverages	135.8	137.3	140.7	136.1	138.3	141.7	133.8	135.9	139.5	133.0	135.0	137.6
Services	138.4	141.5	144.8	142.6	146.1	151.2	139.2	142.3	146.6	135.0	138.0	139.3
West												
EXPENDITURE CATEGORY												
All items	137.7	140.7	142.6	139.5	141.4	144.0	136.3	138.4	141.2	136.9	139.8	141.0
Food and beverages	132.7	134.3	136.8	135.0	136.5	139.4	131.7	132.7	134.8	135.6	137.3	140.8
Housing	141.6	146.0	147.2	144.7	146.7	148.7	139.4	142.1	145.2	136.2	140.6	138.3
Apparel and upkeep	117.9	117.9	116.4	121.5	123.8	122.3	111.2	112.0	112.1	129.1	129.0	129.8
Transportation	144.9	146.7	150.8	144.3	146.6	151.9	145.9	148.5	152.6	145.9	148.0	154.1
Medical care	133.0	134.3	137.5	130.7	133.1	136.0	133.3	134.5	137.5	134.9	136.6	139.6
Entertainment	122.3	123.8	127.0	125.7	125.0	126.6	126.9	126.3	126.6	131.2	133.5	140.5
Other goods and services	126.2	127.7	129.1	128.1	129.0	131.4	122.3	125.2	126.8	128.1	130.4	131.5
COMMODITY AND SERVICE GROUP												
Commodities	134.2	135.3	137.3	136.3	137.5	140.0	134.1	135.2	137.1	135.7	137.2	139.7
Commodities less food and beverage	134.8	135.7	137.6	136.8	138.0	140.3	135.1	136.2	138.0	135.7	137.1	139.3
Services	142.5	147.8	149.6	144.0	146.7	149.4	139.5	142.9	146.9	138.7	143.8	142.9

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

[1967 = 100 unless otherwise specified]

Area ¹	All Urban Consumers						Urban Wage Earners and Clerical Workers (revised)							
	1980					1981		1980					1981	
	Feb.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Feb.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.
U.S. city average ²	236.4	251.7	253.9	256.2	258.4	260.5	263.2	236.5	251.9	254.1	256.4	258.7	260.7	263.5
Anchorage, Alaska (10/67=100)	...	230.9	...	236.5	...	240.1	...	...	226.7	...	232.0	...	235.0	...
Atlanta, Ga.	230.3	...	250.2	...	258.3	...	263.0	233.5	...	252.4	...	260.3	...	266.4
Baltimore, Md.	...	255.0	...	258.4	...	264.3	...	...	253.2	...	257.4	...	262.6	...
Boston, Mass.	...	244.4	...	248.8	...	256.4	...	...	244.5	...	249.2	...	255.7	...
Buffalo, N.Y.	227.9	...	239.6	...	246.5	...	251.4	227.9	...	238.2	...	245.2	...	249.7
Chicago, Ill.-Northwestern Ind.	232.7	250.1	253.7	259.9	260.3	258.9	259.6	232.5	249.5	252.8	258.9	258.9	258.1	258.8
Cincinnati, Ohio-Ky.-Ind.	...	259.9	...	262.1	...	264.5	...	...	261.7	...	236.5	...	266.3	...
Cleveland, Ohio	243.5	...	264.6	...	266.5	...	273.5	244.1	...	264.2	...	266.7	...	273.9
Dallas-Ft. Worth, Tex.	241.7	...	264.9	...	269.5	...	274.4	240.9	...	262.9	...	268.2	...	272.9
Denver-Boulder, Colo.	...	266.6	...	271.9	...	277.3	...	...	270.9	...	276.7	...	282.2	...
Detroit, Mich.	240.4	259.5	264.3	266.4	269.7	268.5	270.2	239.9	257.7	261.4	263.6	265.5	264.4	265.5
Honolulu, Hawaii	220.9	...	234.6	...	236.1	...	243.3	221.3	...	233.5	...	237.0	...	243.5
Houston, Tex.	255.9	...	272.3	...	274.8	...	281.5	251.9	...	269.4	...	272.1	...	277.7
Kansas City, Mo.-Kansas	238.7	...	254.8	...	259.1	...	261.9	236.6	...	253.0	...	257.2	...	260.1
Los Angeles-Long Beach, Anaheim, Calif.	237.6	249.6	252.6	255.5	258.7	259.4	261.6	240.0	252.0	254.9	258.4	262.2	262.7	265.0
Miami, Fla. (11/77=100)	...	133.1	...	133.9	...	137.3	...	...	134.9	...	135.6	...	138.8	...
Milwaukee, Wis.	...	258.4	...	262.1	...	266.2	...	...	263.2	...	267.5	...	271.9	...
Minneapolis-St. Paul, Minn.-Wis.	237.9	...	255.5	...	259.0	...	260.6	239.6	...	256.6	...	260.6	...	262.4
New York, N.Y.-Northeastern N.J.	228.0	241.8	243.1	244.7	247.3	249.4	252.7	227.7	241.5	242.6	244.2	247.2	249.1	252.7
Northeast, Pa. (Scranton)	...	243.1	...	247.0	...	252.4	...	...	246.9	...	249.5	...	255.1	...
Philadelphia, Pa.-N.J.	231.1	247.2	247.9	249.2	250.5	253.2	255.9	255.5	248.3	249.5	251.1	252.3	255.5	258.1
Pittsburgh, Pa.	235.5	...	256.3	...	262.0	...	265.5	235.9	...	257.6	...	262.9	...	266.4
Portland, Oreg.-Wash.	...	256.9	...	261.9	...	266.4	...	...	255.4	...	260.7	...	265.0	...
St. Louis, Mo.-Ill.	...	252.4	...	253.8	...	255.7	...	...	252.7	...	254.2	...	255.9	...
San Diego, Calif.	...	271.8	...	279.1	...	287.7	...	...	267.7	...	275.1	...	282.9	...
San Francisco-Oakland, Calif.	240.7	...	251.9	...	254.9	...	260.5	240.0	...	252.6	...	255.7	...	261.6
Seattle-Everett, Wash.	...	258.1	...	262.6	...	264.9	...	...	254.6	...	259.4	...	262.3	...
Washington, D.C.-Md.-Va.	...	249.2	...	253.6	...	257.2	...	...	251.8	...	255.7	...	259.4	...

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

²Average of 85 cities.

26. Producer Price Indexes, by stage of processing

[1967 = 100]

Commodity grouping	Annual average 1980	1980										1981		
		Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov. ¹	Dec.	Jan.	Feb.	Mar.
FINISHED GOODS														
Finished goods	246.8	240.0	242.1	243.4	244.9	249.3	251.4	251.4	255.4	r 256.2	256.9	259.8	262.4	265.3
Finished consumer goods	248.8	242.2	243.7	245.2	246.8	251.7	254.1	254.1	257.0	r 257.9	258.6	261.4	264.0	267.3
Finished consumer foods	239.4	233.6	230.1	231.9	233.0	241.6	246.5	247.4	248.0	r 248.9	248.8	250.6	250.9	251.8
Crude	237.1	230.6	224.1	229.1	224.5	240.9	247.0	259.8	237.8	r 250.5	254.6	257.3	265.0	279.1
Processed	237.7	232.0	228.8	230.3	231.8	239.7	244.4	244.3	246.9	r 246.7	246.3	247.9	247.6	247.3
Nondurable goods less foods	283.9	275.6	281.5	284.2	285.9	288.4	290.0	290.9	291.7	r 293.9	296.0	301.1	307.1	314.7
Durable goods	205.9	200.8	202.3	201.9	204.1	207.5	208.1	206.2	214.0	r 213.1	213.0	213.8	213.9	213.7
Consumer nondurable goods less food and energy	192.1	c 186.3	c 188.5	c 189.6	c 191.1	c 192.8	c 193.9	c 194.6	c 195.6	c 196.9	c 197.5	c 200.5	c 203.0	204.5
Capital equipment	239.5	232.2	236.2	236.7	237.8	240.6	241.9	241.8	249.2	r 250.2	250.8	253.9	256.3	257.8
INTERMEDIATE MATERIALS														
Intermediate materials, supplies, and components	280.1	274.3	275.7	277.0	278.8	281.6	284.3	285.3	287.7	r 289.1	291.7	295.5	297.8	301.4
Materials and components for manufacturing	265.5	259.6	260.6	262.5	264.3	265.6	268.9	269.5	273.3	r 273.9	275.5	278.7	279.7	281.0
Materials for food manufacturing	263.7	243.8	241.5	255.3	259.7	264.4	277.9	275.8	295.1	r 299.0	277.0	277.9	273.8	267.9
Materials for nondurable manufacturing	259.5	252.4	258.1	260.4	261.0	261.7	263.4	263.2	265.0	r 266.7	268.4	273.4	275.8	278.7
Materials for durable manufacturing	301.0	302.3	296.1	294.1	297.0	297.3	299.2	300.5	304.7	r 303.8	304.2	306.9	305.5	306.5
Components for manufacturing	231.4	224.7	227.6	229.0	230.3	232.4	235.6	237.0	238.4	r 238.3	246.4	249.0	251.7	253.5
Materials and components for construction	268.2	265.9	265.5	265.2	266.9	269.6	271.4	271.7	272.4	r 274.0	276.4	279.2	280.2	282.6
Processed fuels and lubricants	502.7	489.8	496.6	498.2	502.0	514.2	517.4	519.5	516.2	r 521.3	538.7	551.4	568.3	595.8
Manufacturing industries	425.3	411.2	415.2	420.9	425.4	431.0	436.0	440.8	440.6	r 445.2	456.8	468.8	481.5	501.6
Nonmanufacturing industries	570.7	557.9	566.7	565.9	569.6	586.1	588.4	589.9	583.7	r 589.3	610.9	624.2	644.8	678.7
Containers	254.5	247.4	253.2	254.4	256.2	257.0	257.4	257.9	260.1	r 259.5	261.1	264.7	268.0	270.6
Supplies	244.5	239.4	239.7	240.0	241.2	245.3	247.7	250.3	252.3	r 255.2	254.9	257.3	257.5	258.6
Manufacturing industries	231.8	225.5	229.0	230.5	232.8	234.2	235.4	236.1	237.5	r 238.7	239.5	242.2	244.6	246.7
Nonmanufacturing industries	251.1	246.6	245.4	245.0	245.7	251.1	254.1	257.6	259.9	r 263.8	262.8	265.1	264.3	265.0
Feeds	229.2	218.8	205.2	207.5	205.1	225.2	234.7	246.8	250.3	r 259.2	251.8	252.2	238.1	232.2
Other supplies	253.5	250.7	253.0	251.9	253.4	254.7	255.8	256.9	258.8	r 261.3	262.1	264.9	267.6	270.1
CRUDE MATERIALS														
Crude materials for further processing	304.2	293.6	286.2	289.3	288.4	304.3	317.0	319.3	322.8	r 324.6	320.8	321.3	335.5	333.0
Foodstuffs and feedstuffs	259.1	246.5	235.8	243.0	243.0	263.4	276.8	276.6	279.1	r 277.3	271.6	270.6	267.1	262.0
Nonfood materials	399.9	393.8	393.4	387.5	384.6	390.8	401.9	409.8	415.4	r 424.9	425.2	428.7	481.7	484.8
Nonfood materials except fuel	344.5	344.9	342.0	333.3	328.9	333.9	344.8	351.4	355.6	r 363.9	363.1	365.8	428.1	430.6
Manufacturing industries	355.8	356.9	353.5	343.8	338.9	343.9	355.4	362.6	367.1	r 376.1	375.1	377.5	445.7	448.2
Construction	237.2	229.9	232.4	232.8	234.1	239.1	243.7	244.8	245.3	r 246.5	247.8	254.3	257.9	260.2
Crude fuel	614.9	579.8	591.4	600.0	604.0	615.1	626.3	639.1	650.9	r 664.9	670.3	677.6	679.0	685.2
Manufacturing industries	690.2	644.3	659.0	670.3	675.7	690.5	705.4	722.0	738.1	r 755.8	763.0	772.2	773.1	781.4
Nonmanufacturing industries	566.9	540.0	549.3	555.9	558.8	567.1	575.5	585.4	593.8	r 605.2	609.1	614.9	616.8	621.5
SPECIAL GROUPINGS														
Finished goods excluding foods	247.7	240.6	244.5	245.6	247.3	250.2	251.4	251.1	256.2	r 257.0	258.0	261.2	264.4	268.0
Finished consumer goods excluding foods	248.5	c 243.8	c 247.7	c 249.0	c 250.9	c 253.9	c 255.0	c 254.6	c 258.7	c 259.5	c 260.6	c 263.8	c 267.3	271.7
Finished consumer goods less energy	216.9	c 212.4	c 212.5	c 213.4	c 214.9	c 219.7	c 221.9	c 221.9	c 225.0	c 225.5	c 225.7	c 227.7	c 228.9	229.8
Intermediate materials less foods and feeds	281.3	c 277.1	c 279.1	c 279.6	c 281.5	c 283.8	c 285.8	c 286.6	c 288.2	c 289.3	c 293.4	c 297.4	c 300.4	304.7
Intermediate materials less energy	265.8	c 259.9	c 260.7	c 261.9	c 263.5	c 265.5	c 268.3	c 269.2	c 272.2	c 273.3	c 274.7	c 277.7	c 278.6	280.0
Intermediate foods and feeds	252.2	235.3	229.5	239.7	242.0	251.4	263.7	265.9	280.3	r 285.7	268.3	269.0	261.9	256.0
Crude materials less agricultural products	480.3	c 439.2	c 437.7	c 430.2	c 428.6	c 434.6	c 447.1	c 454.1	c 463.2	c 473.8	c 472.3	c 478.0	c 543.7	547.5
Crude materials less energy	256.7	c 248.8	c 238.7	c 241.0	c 239.0	c 256.1	c 268.5	c 269.9	c 272.4	c 271.7	c 267.4	c 265.9	c 262.6	259.4

¹ Data for November 1980 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

² Not available.

r = revised.

c = corrected.

Indexes for most Special Groupings by Stage of Processing have been corrected to remove an error made when these indexes were revised on February 13. Although this error caused each monthly index from January 1976 forward to be at an incorrect level, it did not affect the calculation of percent

changes based on these indexes, except for possible rounding differences. Corrected historical data for the Special Groupings by Stage of Processing are available without charge on request to the Division of Industrial Prices and Price Indexes, Bureau of Labor Statistics, 600 E Street, N.W., Room 5210, Washington, D.C. 20212.

NOTE: Figures in this table may differ from those previously reported because stage-of-processing indexes from January 1976 through December 1980 have been revised to reflect 1972 input-output relationships.

27. Producer Price Indexes, by commodity groupings

[1967 = 100 unless otherwise specified]

Code	Commodity group and subgroup	Annual average 1980	1980										1981		
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov. ¹	Dec.	Jan.	Feb.	Mar.
	All commodities	268.6	261.9	262.8	264.2	265.6	270.4	273.8	274.6	277.8	279.1	280.3	283.5	286.9	289.6
	All commodities (1957-59 = 100)	285.0	277.4	278.8	280.3	281.8	286.9	290.5	291.4	294.7	296.1	297.4	300.8	304.4	307.3
	Farm products and processed foods and feeds	244.6	234.9	229.3	233.8	234.3	246.6	255.1	256.5	259.4	260.5	256.5	257.3	254.9	253.1
	Industrial commodities	274.5	268.6	271.3	271.9	273.5	276.2	278.2	278.8	282.0	283.4	286.1	289.9	294.8	298.9
	FARM PRODUCTS AND PROCESSED FOODS AND FEEDS														
01	Farm products	249.3	239.3	228.9	233.5	233.4	254.3	263.8	267.0	263.6	264.9	265.3	264.4	262.3	260.6
01-1	Fresh and dried fruits and vegetables	238.5	218.5	223.2	244.0	233.5	252.0	254.0	266.2	240.9	246.6	244.7	257.7	270.4	291.6
01-2	Grains	239.0	217.9	210.8	219.0	215.3	244.8	256.5	260.6	269.2	270.9	265.2	277.7	267.5	261.8
01-3	Livestock	252.7	251.8	230.5	233.3	240.0	260.5	275.7	266.8	263.0	254.8	251.4	244.3	244.6	239.3
01-4	Live poultry	202.1	180.1	171.9	171.3	166.6	227.2	224.5	241.0	222.9	221.0	218.9	213.1	220.8	213.5
01-5	Plant and animal fibers	271.1	254.9	266.9	272.7	247.0	267.0	280.8	295.2	278.5	287.2	294.1	284.1	268.4	270.1
01-6	Fluid milk	271.2	263.1	265.4	265.4	265.5	265.8	271.6	275.5	280.9	284.7	290.5	288.4	289.5	289.5
01-7	Eggs	171.0	184.2	153.3	140.5	146.8	159.3	176.9	188.4	175.2	194.0	217.5	185.7	184.8	180.4
01-8	Hay, hayseeds, and oilseeds	247.1	215.9	205.1	206.9	207.4	251.4	261.5	280.7	284.4	298.3	310.2	311.8	295.0	289.5
01-9	Other farm products	298.1	311.5	304.8	311.0	309.4	292.4	282.7	292.0	285.8	296.6	296.0	296.1	295.1	295.9
02	Processed foods and feeds	241.0	231.6	228.6	233.1	233.9	241.5	249.4	249.8	256.1	257.2	250.8	252.4	250.0	248.1
02-1	Cereal and bakery products	235.9	231.8	232.4	234.7	233.2	234.7	235.8	238.3	241.5	245.3	248.5	250.8	251.7	251.9
02-2	Meats, poultry, and fish	243.0	239.2	226.0	224.5	226.6	248.5	259.9	257.8	256.0	250.9	248.0	248.8	243.9	242.0
02-3	Dairy products	230.7	223.0	227.5	228.5	229.5	230.1	232.6	233.7	238.0	240.2	242.7	245.2	245.5	245.5
02-4	Processed fruits and vegetables	228.9	223.7	224.6	225.4	227.2	229.8	230.7	231.3	233.8	234.7	237.1	237.4	244.1	251.8
02-5	Sugar and confectionery	321.2	264.1	275.0	327.8	325.4	313.5	347.1	341.4	404.7	409.0	334.6	338.6	324.7	302.6
02-6	Beverages and beverage materials	232.4	225.9	227.9	231.2	234.3	234.6	237.1	236.1	239.5	240.6	238.1	240.4	242.2	242.8
02-7	Fats and oils	226.8	222.6	214.5	212.0	212.8	226.9	240.2	238.3	231.0	238.0	234.3	230.4	228.3	230.0
02-8	Miscellaneous processed foods	227.2	224.7	225.1	223.7	223.4	223.5	224.0	226.8	230.6	235.0	240.5	244.2	248.0	249.2
02-9	Manufactured animal feeds	226.9	216.6	205.0	207.2	205.0	223.9	232.4	243.4	246.9	254.5	247.3	247.9	235.3	231.5
	INDUSTRIAL COMMODITIES														
03	Textile products and apparel	183.4	179.3	181.2	182.0	183.0	184.7	185.6	186.6	188.1	189.6	190.2	192.4	193.1	194.5
03-1	Synthetic fibers (12/75 = 100)	134.8	129.1	130.4	133.2	134.5	136.0	137.5	139.5	140.2	140.7	141.5	147.3	147.8	149.6
03-2	Processed yarns and threads (12/75 = 100)	122.2	119.3	122.1	124.2	122.8	122.4	123.2	124.3	125.1	125.8	127.6	129.2	129.6	133.9
03-3	Gray fabrics (12/75 = 100)	137.7	136.8	137.0	136.5	134.8	135.7	137.5	141.0	143.5	145.0	143.3	142.8	143.1	144.0
03-4	Finished fabrics (12/75 = 100)	115.7	113.2	114.5	115.3	115.8	116.6	116.8	117.0	118.3	117.0	120.0	121.5	122.2	125.2
03-81	Apparel	172.2	168.0	170.0	170.2	172.7	174.4	175.1	175.0	176.2	176.8	177.0	178.6	179.3	180.1
03-82	Textile housefurnishings	208.3	201.3	201.6	202.6	202.7	210.7	211.0	212.9	213.8	213.8	218.5	223.9	225.4	225.4
04	Hides, skins, leather, and related products	248.6	246.8	243.5	240.7	240.9	245.1	251.3	247.8	251.2	255.4	256.6	258.5	257.4	262.4
04-1	Hides and skins	370.9	348.7	328.6	289.7	315.7	356.6	398.4	356.1	381.5	409.1	392.8	377.8	367.3	NA
04-2	Leather	311.6	311.0	297.6	290.4	284.4	292.2	314.2	298.1	301.9	317.3	332.4	332.6	310.0	322.5
04-3	Footwear	293.2	231.8	231.9	231.9	231.9	232.7	233.7	235.5	236.6	237.5	237.1	238.6	240.8	240.5
04-4	Other leather and related products	218.1	217.8	216.2	217.4	215.9	217.5	218.7	218.8	221.8	222.6	223.5	230.7	235.8	243.4
05	Fuels and related products and power	573.4	553.5	566.6	572.1	576.5	585.5	590.6	593.5	592.9	600.2	611.7	625.9	663.8	692.2
05-1	Coal	467.5	461.7	465.2	466.5	466.6	467.5	468.7	471.3	470.7	475.4	475.7	477.5	480.8	481.3
05-2	Coke	430.6	430.6	430.6	430.6	430.6	430.6	430.6	430.6	430.6	430.6	430.6	430.6	430.6	430.6
05-3	Gas fuels ¹	160.4	716.6	730.1	745.1	749.2	762.1	772.6	786.2	802.2	825.5	841.8	857.9	858.8	867.6
05-4	Electric power	321.6	305.5	310.1	316.5	326.0	331.1	333.6	338.3	337.4	333.8	337.9	341.7	345.4	350.4
05-61	Crude petroleum ²	551.7	522.8	533.9	540.1	549.0	551.4	566.8	571.3	579.6	600.6	596.0	615.2	842.9	843.0
05-7	Petroleum products, refined ³	674.4	659.0	678.0	680.9	681.7	693.9	697.6	696.4	690.4	697.6	716.3	736.0	767.8	822.4
06	Chemicals and allied products	260.2	252.8	259.8	262.5	262.8	263.3	264.4	263.4	264.8	266.7	267.9	273.6	277.2	279.4
06-1	Industrial chemicals ⁴	323.8	313.3	322.1	328.5	329.5	329.7	330.0	327.5	330.0	332.7	334.6	342.8	349.4	352.5
06-21	Prepared paint	235.4	228.7	231.5	238.8	238.8	238.8	238.8	239.3	239.3	241.4	241.7	243.3	246.9	246.9
06-22	Paint materials	273.8	267.5	272.1	273.9	275.0	277.2	278.4	278.9	279.6	279.8	280.9	283.1	286.4	288.3
06-3	Drugs and pharmaceuticals	174.4	168.9	172.6	172.8	174.4	175.7	176.1	176.8	178.4	181.1	181.8	184.7	187.4	189.1
06-4	Fats and oils, inedible	297.9	299.9	298.2	294.7	255.8	260.0	307.6	304.5	302.0	308.2	316.0	310.6	289.7	295.7
06-5	Agricultural chemicals and chemical products	256.9	256.1	258.5	258.5	257.6	258.7	260.0	260.6	260.6	261.1	262.8	265.8	271.3	274.8
06-6	Plastic resins and materials	279.4	274.5	287.6	288.4	287.6	285.7	281.5	276.5	276.1	276.2	274.4	275.2	276.1	278.3
06-7	Other chemicals and allied products	224.6	215.0	223.1	224.8	226.9	228.5	229.0	229.1	230.9	232.4	234.2	244.1	246.7	247.8
07	Rubber and plastic products	217.3	212.7	214.1	215.0	217.3	218.8	220.5	222.0	222.8	223.4	223.5	224.9	226.5	228.8
07-1	Rubber and rubber products	237.7	231.5	233.4	234.7	236.8	239.0	240.2	242.6	244.6	245.0	245.9	246.9	249.2	253.0
07-11	Crude rubber	263.9	255.8	264.7	263.9	264.1	263.4	264.3	267.3	271.7	271.0	267.5	278.0	280.8	280.6
07-12	Tires and tubes	236.6	231.6	231.8	233.2	235.6	238.0	238.0	242.1	245.2	245.2	244.7	240.5	243.1	248.2
07-13	Miscellaneous rubber products	227.6	220.6	222.1	224.0	226.4	229.3	232.0	232.1	232.0	233.3	237.1	241.1	243.0	246.5
07-2	Plastic products (6/78 = 100)	120.9	119.0	119.7	119.9	121.4	122.0	123.2	123.7	123.6	124.0	123.6	124.7	125.3	125.9
08	Lumber and wood products	288.8	294.9	275.6	272.1	279.8	289.2	296.1	292.2	289.0	293.4	299.4	296.6	294.5	293.6
08-1	Lumber	325.6	340.6	310.1	301.4	313.0	327.2	333.7	328.0	320.6	324.9	333.0	331.6	327.8	324.7
08-2	Millwork	260.5	262.2	257.5	251.8	253.0	255.9	260.3	264.5	264.5	270.0	273.3	273.6	273.8	275.7
08-3	Plywood	246.6	240.0	219.8	230.6	241.7	252.8	266.0	252.6	252.9	256.6	263.5	251.1	248.6	246.7
08-4	Other wood products	239.1	243.1	241.7	240.7	238.7	236.9	236.2	236.8	236.7	236.6	236.2	238.5	238.1	239.3

See footnotes at end of table.

27. Continued—Producer Price Indexes, by commodity groupings

[1967 = 100 unless otherwise specified]

Code	Commodity group and subgroup	Annual average 1980	1980										1981		
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov. ¹	Dec.	Jan.	Feb.	Mar.
INDUSTRIAL COMMODITIES—Continued															
09	Pulp, paper, and allied products	249.3	242.6	247.8	249.2	251.1	251.7	252.4	252.8	254.3	'255.0	257.4	262.0	266.2	268.4
09-1	Pulp, paper, and products, excluding building paper and board	250.7	244.1	249.4	250.6	252.4	252.9	253.8	254.1	255.6	'256.2	258.6	261.0	264.6	266.9
09-11	Woodpulp	381.1	356.8	385.6	385.6	387.7	388.3	388.3	388.2	389.6	'390.2	392.6	392.6	392.6	392.6
09-12	Wastepaper	208.5	224.9	242.5	226.1	206.6	194.0	193.8	192.5	193.5	'192.3	190.8	191.5	186.1	185.1
09-13	Paper	256.9	250.3	253.5	256.1	257.9	258.2	258.6	258.7	262.1	'264.1	269.8	271.0	273.1	274.0
09-14	Paperboard	235.0	227.4	232.1	235.5	238.9	237.1	238.4	239.5	239.9	'241.7	241.1	251.0	253.2	255.9
09-15	Converted paper and paperboard products	238.6	233.0	236.7	237.6	239.8	241.2	242.3	242.7	243.7	'243.5	245.2	247.0	252.0	255.1
09-2	Building paper and board	206.0	198.7	201.3	206.8	208.9	211.8	210.3	210.2	212.7	'216.5	219.1	219.1	225.2	227.3
10	Metals and metal products	286.2	286.8	284.4	281.8	281.9	282.5	285.1	287.3	291.9	'291.1	290.7	293.6	293.7	296.1
10-1	Iron and steel	305.1	301.8	307.2	304.8	303.4	300.6	302.6	304.5	310.5	'312.7	316.0	322.8	323.0	328.0
10-13	Steel mill products	302.7	295.5	304.1	305.5	305.8	301.0	301.0	301.0	307.5	'309.4	313.4	322.7	322.9	328.7
10-2	Nonferrous metals	304.2	321.4	298.3	289.7	288.8	292.6	298.4	302.2	309.4	'302.1	294.4	290.6	286.2	285.5
10-3	Metal containers	298.6	288.5	304.1	302.7	302.7	303.0	303.2	303.2	304.4	'303.3	303.3	311.4	313.8	314.1
10-4	Hardware	240.1	231.5	237.3	238.4	240.5	242.6	243.3	245.9	246.6	'249.6	249.6	252.5	256.0	256.5
10-5	Plumbing fixtures and brass fittings	246.6	242.4	243.8	247.5	248.6	249.7	250.4	250.6	250.6	'252.3	254.4	255.5	259.0	259.2
10-6	Heating equipment	206.2	202.6	204.2	204.0	205.0	206.2	208.0	208.8	210.6	'212.0	212.6	215.4	216.1	217.6
10-7	Fabricated structural metal products	270.4	265.1	269.1	269.9	270.1	272.2	273.0	274.1	276.9	'278.0	279.2	283.0	285.6	289.4
10-8	Miscellaneous metal products	250.2	244.2	246.1	246.7	250.4	251.1	253.2	255.0	256.3	'256.9	258.4	261.3	264.0	265.7
11	Machinery and equipment	239.6	232.5	236.4	237.6	239.2	241.5	242.6	244.7	246.8	'248.3	249.5	252.7	254.8	256.9
11-1	Agricultural machinery and equipment	258.1	252.0	254.4	256.4	257.1	258.6	259.9	263.9	265.4	'271.6	269.5	273.5	277.2	278.7
11-2	Construction machinery and equipment	289.2	279.5	284.2	285.9	287.6	291.5	293.4	295.7	299.1	'300.1	301.1	304.9	308.4	311.3
11-3	Metalworking machinery and equipment	274.3	264.1	270.2	272.9	275.4	278.0	278.8	280.2	282.5	'283.9	285.6	289.3	291.2	294.7
11-4	General purpose machinery and equipment	264.3	256.7	261.1	262.8	264.8	266.1	267.0	270.0	272.5	'274.3	275.2	278.2	279.9	281.3
11-6	Special industry machinery and equipment	275.9	265.5	271.9	273.0	274.3	276.7	277.1	283.0	286.0	'287.7	291.2	295.3	299.3	300.9
11-7	Electrical machinery and equipment	201.7	196.5	198.9	199.9	201.6	203.7	205.0	206.0	207.0	'207.5	208.9	211.9	213.6	215.9
11-9	Miscellaneous machinery	229.8	223.2	227.2	227.3	228.2	231.1	232.1	233.6	236.5	'238.5	239.2	241.8	243.7	245.4
12	Furniture and household durables	187.3	185.7	184.4	185.4	186.5	188.0	188.9	189.5	190.9	'191.5	192.3	193.2	194.6	195.4
12-1	Household furniture	204.2	198.9	200.3	203.0	204.0	206.5	208.0	208.5	209.8	'210.9	210.4	211.3	212.1	214.4
12-2	Commercial furniture	235.9	232.8	233.6	233.9	235.5	237.2	237.3	237.8	241.4	'242.2	242.4	246.1	251.2	253.2
12-3	Floor coverings	163.0	160.8	162.2	161.9	162.1	163.2	163.8	163.9	164.4	'163.9	170.2	172.3	172.4	174.0
12-4	Household appliances	173.8	169.9	171.1	173.2	175.5	175.8	176.3	177.2	177.5	'178.5	178.2	181.0	182.3	183.0
12-5	Home electronic equipment	91.0	91.3	91.4	92.0	91.8	91.7	91.3	91.6	91.5	'91.2	91.0	91.0	91.7	91.3
12-6	Other household durable goods	277.7	288.3	267.3	265.6	266.5	271.5	275.9	276.2	281.8	'281.2	285.1	278.3	280.2	277.6
13	Nonmetallic mineral products	282.8	276.5	283.7	284.0	283.4	284.8	286.0	286.8	288.6	'288.7	290.7	296.3	297.7	301.2
13-11	Flat glass	196.5	191.4	195.3	195.3	193.6	194.3	199.5	199.7	200.7	'203.1	203.0	203.9	204.3	204.8
13-2	Concrete ingredients	273.4	267.5	271.7	272.4	273.2	275.9	278.6	278.9	279.0	'279.1	278.7	287.5	289.6	291.9
13-3	Concrete products	273.9	269.1	272.9	275.2	275.8	275.9	276.0	277.3	277.5	'277.7	277.8	285.6	286.6	286.9
13-4	Structural clay products excluding refractories	231.5	231.4	235.0	230.0	230.1	230.1	229.7	230.1	233.3	'233.5	234.1	240.0	240.4	245.2
13-5	Refractories	264.9	253.9	261.7	264.4	265.8	268.7	270.6	270.6	273.2	'273.2	274.1	283.5	294.4	297.1
13-6	Asphalt roofing	396.7	388.8	408.9	401.1	400.9	413.8	411.2	407.9	408.5	'397.1	394.5	404.1	389.3	400.7
13-7	Gypsum products	256.3	267.6	264.0	256.5	257.1	253.1	251.8	251.8	249.5	'253.3	252.7	259.6	257.3	257.6
13-8	Glass containers	292.7	274.3	294.3	294.3	294.3	294.3	294.3	294.6	306.2	'306.2	311.5	311.5	311.5	311.5
13-9	Other nonmetallic minerals	394.0	387.0	399.6	400.7	394.8	396.9	397.1	400.7	402.7	'403.3	415.7	417.9	424.7	441.7
14	Transportation equipment (12/68 = 100)	206.6	198.8	203.2	202.5	203.1	206.2	208.8	204.4	217.4	'217.8	224.1	226.4	228.5	228.5
14-1	Motor vehicles and equipment	208.7	200.7	205.4	204.5	205.2	208.6	211.7	205.6	218.2	'218.6	225.9	228.5	230.2	229.9
14-4	Railroad equipment	313.0	302.1	309.9	310.5	312.2	316.4	318.0	320.0	323.3	'323.6	323.6	327.8	334.4	335.8
15	Miscellaneous products	258.7	256.1	252.8	251.7	258.0	261.7	260.1	265.1	266.0	'263.6	265.4	263.0	263.2	262.4
15-1	Toys, sporting goods, small arms, ammunition	198.4	194.5	195.4	196.0	197.5	200.2	201.3	202.3	202.7	'202.8	205.6	207.8	209.5	210.4
15-2	Tobacco products	245.5	237.3	238.1	247.7	248.1	248.2	248.2	248.2	249.4	'254.4	254.2	254.3	255.3	255.4
15-3	Notions	217.2	207.2	216.8	217.0	217.0	221.7	223.8	223.9	224.0	'224.1	225.0	227.0	247.3	247.3
15-4	Photographic equipment and supplies	203.0	219.1	212.3	199.6	201.7	201.6	200.9	200.9	200.8	'206.7	207.0	207.3	209.6	211.1
15-51	Mobile homes (12/74 = 100)	149.9	147.1	149.4	150.4	150.6	151.2	151.4	151.7	153.2	'152.7	152.4	152.3	152.5	154.4
15-9	Other miscellaneous products	363.3	351.3	340.9	340.2	360.2	370.9	364.6	381.9	383.4	'367.0	371.5	359.5	353.2	346.7

¹ Data for November 1980 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

² Prices for natural gas are lagged 1 month.

³ Includes only domestic production.

⁴ Most prices for refined petroleum products are lagged 1 month.

⁵ Some prices for industrial chemicals are lagged 1 month.

r = revised.

28. Producer Price Indexes, for special commodity groupings

[1967 = 100 unless otherwise specified]

Commodity grouping	Annual average 1980	1980										1981		
		Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov. ¹	Dec.	Jan.	Feb.	Mar.
All commodities — less farm products	269.4	262.9	264.8	265.9	267.5	270.9	273.8	274.3	278.1	'279.4	280.7	284.2	288.0	291.1
All foods	244.5	234.8	231.9	237.3	237.7	245.9	254.1	254.3	258.8	'259.7	253.9	255.1	253.9	253.2
Processed foods	246.6	236.9	234.1	239.0	239.9	247.3	255.7	254.9	261.7	'261.9	255.1	256.4	254.2	252.2
Industrial commodities less fuels	243.4	238.9	240.5	240.6	242.0	243.9	245.6	246.0	249.6	'250.3	252.2	255.0	256.6	258.2
Selected textile mill products (Dec. 1975 = 100)	124.4	121.3	122.2	122.9	123.7	125.5	126.0	126.6	127.5	'128.1	129.6	131.8	132.7	133.1
Hosiery	123.3	120.3	121.1	121.5	122.2	123.5	125.9	126.4	126.2	'126.7	126.7	129.2	130.1	130.5
Underwear and nightwear	185.5	182.1	182.4	182.8	187.1	188.3	189.3	189.5	189.7	'190.3	190.9	199.5	201.2	201.6
Chemicals and allied products, including synthetic rubber and manmade fibers and yarns	250.7	243.2	250.0	252.8	253.8	254.2	254.7	254.0	255.4	'257.0	258.2	264.2	268.0	270.2
Pharmaceutical preparations	167.1	161.7	165.6	165.9	167.6	168.1	168.4	168.8	170.8	'173.7	174.6	177.1	179.7	181.8
Lumber and wood products, excluding millwork and other wood products	303.8	312.2	284.7	282.0	293.5	306.9	315.5	307.4	302.3	'306.5	314.2	309.2	305.7	303.0
Special metals and metal products	258.3	255.1	255.8	254.0	254.4	256.2	259.0	257.8	265.7	'265.7	268.4	271.3	272.2	273.5
Fabricated metal products	258.2	252.0	255.9	256.8	258.6	259.9	261.2	262.6	264.3	'265.2	266.3	270.0	272.6	274.7
Copper and copper products	222.1	240.9	222.0	212.2	208.5	214.5	220.4	214.1	216.5	'215.7	210.9	207.8	205.9	205.2
Machinery and motive products	230.1	222.5	226.7	227.1	228.3	231.0	232.9	232.1	239.2	'240.2	243.8	246.7	248.8	250.0
Machinery and equipment, except electrical	261.8	253.5	258.2	259.6	261.2	263.7	264.6	270.2	273.0	'275.1	273.3	276.6	278.9	280.9
Agricultural machinery, including tractors	266.2	260.0	261.9	263.9	264.7	266.3	268.1	272.9	274.8	'280.9	279.1	283.3	285.8	286.7
Metalworking machinery	299.5	287.5	293.6	296.8	299.7	303.3	304.5	306.5	309.6	'311.2	314.4	318.9	320.0	323.3
Numerically controlled machine tools (Dec. 1971 = 100)	225.6	216.7	223.8	226.9	228.5	228.7	229.3	230.0	231.7	'232.1	230.9	235.0	235.4	236.1
Total tractors	286.5	276.6	280.8	282.9	284.0	288.3	291.1	295.8	298.3	'299.9	299.4	304.8	310.2	310.9
Agricultural machinery and equipment less parts	260.2	254.1	256.2	258.0	258.7	260.8	262.2	266.5	268.3	'273.7	272.2	276.3	279.0	280.2
Farm and garden tractors less parts	268.0	261.5	263.7	264.7	264.8	267.2	270.3	277.3	278.0	'284.2	280.8	283.6	286.4	286.8
Agricultural machinery excluding tractors less parts	265.0	258.9	260.7	263.6	265.0	265.9	266.6	269.7	272.5	'279.9	277.9	283.3	285.5	286.9
Industrial valves	287.1	280.0	287.8	288.4	290.1	291.1	291.3	292.4	294.6	'296.0	296.3	297.9	302.7	306.8
Industrial fittings	291.8	282.8	289.9	291.5	295.9	296.1	296.1	296.1	298.6	'298.6	298.6	298.6	296.0	298.8
Abrasive grinding wheels	(²)	244.0	261.4	261.3	261.3	261.5	261.5	261.3	263.4	'273.0	273.8	(²)	(²)	(²)
Construction materials	266.3	265.1	262.3	261.8	264.2	267.0	269.6	269.3	269.9	'271.9	273.9	276.7	277.1	279.0

¹ Data for November 1980 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

² Not available.

29. Producer Price Indexes, by durability of product

[1967 = 100]

Commodity grouping	Annual average 1980	1980										1981		
		Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov. ¹	Dec.	Jan.	Feb.	Mar.
Total durable goods	251.2	247.0	247.7	247.1	248.7	251.2	253.1	253.7	258.4	'258.6	260.8	261.9	263.1	264.5
Total nondurable goods	282.3	273.4	274.4	277.6	278.8	285.6	290.3	291.2	293.0	'295.2	295.8	300.7	306.0	310.0
Total manufactures	261.4	255.2	257.0	258.3	259.8	263.0	265.7	265.8	269.6	'270.5	271.9	276.4	278.7	281.8
Durable	250.5	245.6	246.7	246.7	248.5	251.0	252.7	253.1	257.8	'257.9	260.2	261.5	262.7	264.0
Nondurable	272.9	265.2	267.9	270.7	271.7	275.9	279.5	279.5	282.1	'284.0	284.2	292.5	295.9	301.0
Total raw or slightly processed goods	305.4	295.4	290.4	292.7	293.8	307.7	315.7	319.9	319.6	'322.9	324.3	318.6	328.9	329.7
Durable	278.0	303.4	286.0	282.2	249.9	255.2	265.8	274.9	282.7	'285.6	284.1	275.7	275.7	280.8
Nondurable	306.4	293.8	289.8	294.0	296.1	310.6	318.4	322.2	321.3	'324.6	326.2	320.7	331.7	332.2

¹ Data for November 1980 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

30. Producer Price Indexes for the output of selected SIC industries

[1967 = 100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1980	1980										1981		
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov. ¹	Dec.	Jan.	Feb.	Mar.
MINING															
1011	Iron ores (12/75 = 100)	152.9	152.6	152.6	152.6	152.6	155.8	155.8	155.8	155.8	155.8	155.8	155.8	168.1	168.1
1092	Mercury ores (12/75 = 100)	331.2	330.0	337.5	337.5	322.9	331.2	329.1	335.4	338.7	343.7	325.0	297.9	324.5	335.4
1211	Bituminous coal and lignite	466.8	461.7	464.6	466.0	466.0	469.9	467.9	470.3	469.7	'474.2	474.3	475.8	478.3	
1311	Crude petroleum and natural gas	640.2	600.6	612.5	619.6	631.5	638.0	656.7	667.6	681.8	'704.6	705.5	722.9	885.6	
1442	Construction sand and gravel	252.0	243.9	248.6	249.3	250.0	254.8	255.8	258.5	261.8	'263.2	263.4	269.0	271.9	
1455	Kaolin and ball clay (6/76 = 100)	136.0	136.6	136.6	136.6	136.6	136.6	136.6	136.6	137.2	132.1	133.7	137.1	137.1	
MANUFACTURING															
2011	Meatpacking plants	244.3	238.9	225.6	227.2	230.0	249.1	265.3	257.1	258.0	'251.4	248.9	245.8	237.3	
2013	Sausages and other prepared meats	219.9	209.4	197.9	193.3	190.9	213.7	233.0	240.0	247.0	'249.5	246.8	235.3	232.7	
2016	Poultry dressing plants	191.9	173.5	164.5	164.7	164.2	214.2	212.1	226.0	211.3	205.9	201.8	201.9	208.3	
2021	Creamery butter	258.5	243.4	252.7	253.7	255.7	256.3	268.5	265.8	273.2	273.3	274.8	273.7	273.5	

See footnote at end of table.

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

[1967 = 100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1980	1980										1981		
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov. ¹	Dec.	Jan.	Feb.	Mar.
MANUFACTURING—Continued															
2022	Cheese natural and processed (12/72 = 100)	205.0	195.7	201.9	201.9	202.5	203.4	206.8	208.0	213.7	214.9	217.9	217.8	217.4	217.5
2024	Ice cream and frozen desserts (12/72 = 100)	193.3	185.0	191.3	192.1	195.2	195.2	195.5	196.1	199.5	199.8	207.5	210.1	210.6	210.6
2033	Canned fruits and vegetables	221.7	214.7	216.3	217.3	219.9	222.9	223.4	227.6	231.1	232.8	233.7	238.3	241.7	
2034	Dehydrated food products (12/73 = 100)	160.2	156.4	157.5	156.4	156.3	157.7	159.6	159.9	162.6	168.6	170.5	172.9	170.1	172.9
2041	Flour mills (12/71 = 100)	189.1	181.6	175.0	182.3	180.8	188.6	193.1	196.1	201.5	205.1	199.5	203.4	198.0	195.1
2044	Rice milling	243.4	258.0	260.4	254.5	236.0	225.3	219.9	225.9	237.2	265.8	287.2	289.6	289.6	298.0
2048	Prepared foods, n.e.c. (12/75 = 100)	124.3	121.5	116.5	116.9	116.2	122.2	126.6	129.6	129.2	133.3	134.2	132.9	129.7	127.0
2061	Raw cane sugar	414.1	276.0	320.2	456.1	402.4	381.8	484.0	458.9	588.2	563.8	402.9	418.0	367.1	318.8
2063	Beet sugar	349.6	305.7	296.6	339.9	348.0	342.3	365.5	384.5	460.1	512.2	389.6	375.6	403.1	375.0
2067	Chewing gum	290.7	281.9	282.0	282.0	282.0	282.4	282.4	302.4	322.4	322.9	322.9	323.0	323.0	323.1
2074	Cottonseed oil mills	192.9	170.4	154.7	150.4	155.1	191.3	215.1	232.9	218.7	231.8	228.0	221.2	193.7	204.4
2075	Soybean oil mills	244.2	222.3	211.9	212.9	208.6	37.4	256.9	275.2	279.2	290.5	270.2	272.0	253.0	253.0
2077	Animal and marine fats and oils	290.1	297.4	274.0	262.9	238.9	274.5	297.4	307.0	311.0	317.2	310.8	310.8	287.2	284.2
2083	Malt	249.9	244.1	244.1	244.1	244.1	244.1	244.1	244.1	267.4	267.4	267.4	286.1	286.1	286.1
2085	Distilled liquor, except brandy (12/75 = 100)	123.0	118.7	118.7	118.9	120.5	121.0	127.7	127.7	127.9	127.9	129.2	129.2	133.9	133.9
2091	Canned and cured seafoods (12/73 = 100)	174.0	165.7	170.2	173.1	175.3	175.9	177.5	178.6	180.0	183.1	183.4	187.0	188.8	187.6
2092	Fresh or frozen packaged fish	367.1	391.6	370.5	360.0	361.2	363.7	365.2	355.0	353.8	353.3	354.4	375.4	367.2	385.7
2095	Roasted coffee (12/72 = 100)	269.3	274.0	273.9	273.9	283.1	274.5	274.7	263.9	257.0	252.5	248.5	238.2	238.3	238.3
2098	Macaroni and spaghetti	233.8	227.7	230.5	230.5	230.5	230.5	230.5	239.3	243.6	243.6	243.6	243.6	243.6	243.6
2111	Cigarettes	254.6	246.0	246.3	257.3	257.4	257.4	257.4	257.4	257.8	263.5	263.5	263.5	263.9	263.9
2121	Cigars	157.7	154.4	155.3	155.3	159.8	159.9	159.9	159.9	163.7	164.0	162.4	163.6	162.6	164.2
2131	Chewing and smoking tobacco	278.2	267.3	279.2	278.6	278.6	279.5	279.7	279.7	295.0	295.0	294.0	294.2	310.4	310.4
2211	Weaving mills, cotton (12/72 = 100)	215.6	209.5	211.3	212.9	212.9	217.7	219.0	221.9	223.4	224.2	224.8	227.2	230.2	232.3
2221	Weaving mills, synthetic (12/77 = 100)	124.5	122.7	123.0	122.4	121.2	123.0	124.9	127.7	130.7	133.0	132.0	131.5	131.8	132.9
2251	Women's hosiery, except socks (12/75 = 100)	106.4	104.3	105.0	105.4	105.4	105.4	108.8	108.8	108.7	109.0	109.0	109.1	109.2	109.0
2254	Knit underwear mills	190.0	186.5	186.8	187.1	190.4	192.6	192.9	194.1	194.2	194.7	195.0	205.5	208.6	209.4
2257	Circular knit fabric mills (6/76 = 100)	104.5	103.4	104.0	104.4	105.0	105.4	105.7	105.8	106.7	107.1	107.2	107.9	108.2	107.8
2261	Finishing plants, cotton (6/76 = 100)	135.1	131.9	132.4	134.5	134.6	137.2	137.3	136.9	139.1	139.3	140.1	142.4	144.5	144.6
2262	Finishing plants, synthetics, silk (6/76 = 100)	113.6	110.4	110.7	111.8	112.1	113.8	114.1	115.3	117.3	117.9	120.4	121.6	123.0	124.2
2272	Tufted carpets and rugs	138.1	137.0	137.3	137.1	137.4	137.7	138.3	138.3	138.8	140.0	145.3	148.1	148.2	150.2
2281	Yarn mills, except wool (12/71 = 100)	203.5	199.5	203.7	204.5	202.8	202.9	204.3	206.2	207.9	209.9	215.2	217.0	218.1	220.6
2282	Throwing and winding mills (6/76 = 100)	114.8	112.0	114.8	118.1	115.8	115.0	115.8	117.2	118.2	118.4	118.4	121.5	121.6	129.5
2284	Thread mills (6/76 = 100)	139.1	130.0	134.6	143.0	142.9	143.0	143.1	143.1	143.8	143.9	143.9	144.1	144.3	148.4
2298	Cordage and twine (12/77 = 100)	123.6	118.5	123.6	123.8	125.0	125.0	125.0	125.0	127.1	129.2	129.3	129.3	129.3	130.9
2311	Men's and boys' suits and coats	212.5	208.3	209.7	210.9	211.6	214.9	214.9	214.9	216.2	216.3	216.1	218.1	219.7	220.4
2321	Men's and boys' shirts and nightwear	204.1	199.3	204.0	203.7	205.1	206.5	206.7	207.7	208.0	208.6	208.4	203.1	203.9	205.0
2322	Men's and boys' underwear	208.0	204.0	204.2	204.3	208.5	211.1	211.2	212.8	212.8	212.8	212.8	224.8	229.0	230.9
2323	Men's and boys' neckwear (12/75 = 100)	112.6	112.4	112.4	112.4	112.4	112.4	112.4	112.4	112.4	114.2	115.4	115.4	115.4	115.4
2327	Men's and boys' separate trousers	174.5	174.3	174.9	174.9	175.1	175.3	175.3	180.2	180.2	180.2	180.4	180.4	180.4	180.4
2328	Men's and boys' work clothing	240.4	235.4	241.2	241.8	242.6	244.8	244.1	243.9	244.3	244.3	244.3	241.6	241.7	241.9
2331	Women's and misses' blouses and waists (6/78 = 100)	110.0	106.7	107.6	107.6	107.8	111.4	112.6	112.6	114.0	114.0	114.0	114.8	114.8	115.1
2335	Women's and misses' dresses (12/77 = 100)	114.7	113.8	113.9	113.9	114.0	114.0	115.4	115.4	116.3	116.3	116.3	116.4	116.7	117.9
2341	Women's and children's underwear (12/72 = 100)	154.5	153.1	153.1	153.2	155.0	155.4	156.9	155.4	156.0	157.1	158.7	166.1	168.0	168.0
2342	Brassieres and allied garments (12/75 = 100)	126.6	124.9	125.4	125.4	126.6	127.8	129.0	129.0	129.0	129.1	129.5	132.1	133.2	134.5
2361	Children's dresses and blouses (12/77 = 100)	109.8	105.5	106.3	105.6	108.0	112.7	112.7	112.2	112.7	115.1	117.0	117.1	117.7	118.0
2381	Fabric dress and work gloves	268.6	265.0	267.5	271.1	271.1	271.1	271.1	271.1	271.1	272.1	272.1	284.9	289.1	289.1
2394	Canvas and related products (12/77 = 100)	124.0	123.4	123.4	123.4	123.4	123.4	123.4	123.9	125.1	125.1	126.6	127.4	127.4	128.4
2396	Automotive and apparel trimmings (12/77 = 100)	122.4	122.3	122.3	122.3	122.3	122.3	122.3	122.3	122.3	131.0	131.0	131.0	131.0	131.0
2421	Sawmills and planing mills (12/71 = 100)	227.5	239.1	215.8	209.4	218.1	228.9	234.2	229.0	223.2	226.8	233.5	232.4	230.0	228.1
2436	Softwood veneer and plywood (12/75 = 100)	144.6	139.8	121.9	130.3	140.5	150.4	160.7	149.6	149.1	152.3	158.2	149.8	147.0	145.3
2439	Structural wood members, n.e.c. (12/75 = 100)	155.8	158.3	158.2	152.1	152.1	152.1	152.2	155.5	156.2	157.0	157.1	157.1	157.0	157.1
2448	Wood pallets and skids (12/75 = 100)	160.1	166.3	164.6	162.8	159.7	157.1	156.0	154.9	154.6	154.7	154.1	153.8	152.8	152.7
2451	Mobile homes (12/74 = 100)	150.0	147.2	149.5	150.5	150.7	151.3	151.4	151.8	153.2	152.7	152.4	152.4	152.5	154.5
2492	Particleboard (12/75 = 100)	161.1	158.9	161.9	167.3	171.7	168.7	169.4	163.7	159.8	163.6	164.7	162.7	169.1	171.0
2511	Wood household furniture (12/71 = 100)	183.6	178.9	180.0	182.2	183.5	185.1	186.4	187.7	188.1	189.1	189.8	191.2	191.7	193.4
2512	Upholstered household furniture (12/71 = 100)	162.6	158.7	160.9	161.1	162.5	166.1	166.2	166.2	167.7	168.6	167.6	166.9	167.2	170.0
2515	Mattresses and bedspreads	179.0	170.5	172.8	176.0	176.0	180.8	186.4	186.4	186.5	186.5	186.4	186.2	188.2	192.1
2521	Wood office furniture	235.3	233.8	233.9	233.9	234.0	235.5	235.5	235.5	239.7	239.7	240.8	244.0	250.3	253.5
2611	Pulp mills (12/73 = 100)	240.8	225.5	243.8	243.9	243.9	244.5	244.5	244.4	246.1	246.8	249.1	249.1	249.1	249.1
2621	Paper mills, except building (12/74 = 100)	145.6	142.5	145.0	145.8	146.2	146.4	146.7	146.7	148.2	149.2	151.0	152.0	152.8	153.5
2631	Paperboard mills (12/74 = 100)	139.1	134.6	137.9	139.5	141.2	140.3	141.1	141.7	142.3	143.2	142.8	148.3	149.4	151.0
2647	Sanitary paper products	322.3	311.7	316.7	319.3	321.2	327.4	331.1	331.1	332.6	334.7	339.2	339.2	343.6	344.1
2654	Sanitary food containers	216.4	208.9	212.9	215.5	217.2	218.2	220.3	222.3	222.3	222.3	226.5	233.2	236.5	239.1
2655	Fiber cans, drums, and similar products (12/75 = 100)	151.0	143.3	146.6	148.7	150.6	155.2	155.2	155.5	155.5	155.5	159.4	157.7		

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

[1967=100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1980	1980										1981		
			Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov. ¹	Dec.	Jan.	Feb.	Mar.
3021	Rubber and plastic footwear (12/71 = 100)	178.0	173.6	173.7	173.7	173.8	181.8	181.9	182.0	182.0	182.4	183.0	183.2	183.7	184.4
3031	Reclaimed rubber (12/73 = 100)	184.0	184.9	185.9	186.5	186.5	186.5	185.9	185.9	184.0	184.1	184.7	188.3	192.1	195.1
3079	Miscellaneous plastic products (6/78 = 100)	121.5	119.1	120.3	120.5	122.2	122.7	123.9	124.4	124.2	124.6	124.2	125.1	125.6	126.2
3111	Leather tanning and finishing (12/77 = 100)	147.1	146.7	140.8	137.9	134.6	137.7	147.9	140.0	N.A.	149.3	156.6	157.0	145.5	151.4
3142	House slippers (12/75 = 100)	149.6	145.4	145.4	145.4	145.4	151.1	151.1	151.1	153.5	158.2	154.9	(²)	(²)	(²)
3143	Men's footwear, except athletic (12/75 = 100)	159.9	158.5	158.5	158.5	158.5	158.5	159.5	161.5	161.6	162.4	162.4	164.7	166.4	167.4
3144	Women's footwear, except athletic	213.5	213.5	213.8	213.8	213.8	214.2	214.3	215.2	217.1	217.1	217.2	217.9	220.0	218.8
3171	Women's handbags and purses (12/75 = 100)	137.9	132.1	132.1	140.8	140.9	140.9	140.0	140.9	140.9	140.9	140.9	149.5	149.5	149.7
3211	Flat glass (12/71 = 100)	161.3	157.9	160.8	160.8	158.9	159.5	162.6	162.8	163.8	166.4	166.3	167.1	167.5	168.1
3221	Glass containers	292.6	274.3	294.2	294.2	294.2	294.2	294.2	294.2	306.1	306.1	311.4	311.4	311.4	311.4
3241	Cement, hydraulic	309.8	306.3	312.6	313.8	313.8	313.3	313.1	312.3	311.8	310.5	307.6	319.2	319.1	321.3
3251	Brick and structural clay tile	277.3	271.9	276.4	278.5	278.5	278.5	277.6	278.5	282.6	282.9	283.8	287.5	287.0	296.2
3253	Ceramic wall and floor tile (12/75 = 100)	122.5	130.4	130.4	117.6	117.6	117.6	117.6	117.6	120.1	120.1	120.1	127.1	127.1	127.2
3255	Clay refractories	274.1	263.7	273.9	275.6	275.9	279.2	279.5	279.7	280.2	280.7	282.1	293.1	306.9	309.9
3259	Structural clay products, n.e.c.	202.8	196.4	203.1	204.1	204.4	204.7	205.0	204.8	204.9	205.0	205.6	209.9	213.3	213.5
3261	Vitreous plumbing fixtures	234.8	226.7	227.6	236.1	235.8	237.2	240.4	241.1	241.5	242.6	245.0	244.7	248.9	249.4
3262	Vitreous china food utensils	317.3	308.2	313.4	313.4	318.6	318.3	318.3	318.7	327.4	327.4	327.4	327.4	327.4	328.0
3263	Fine earthenware food utensils	295.4	294.3	295.1	293.9	294.7	294.6	294.6	296.4	297.9	297.9	297.9	298.3	298.3	307.6
3269	Pottery products, n.e.c. (12/75 = 100)	152.6	150.1	151.4	151.5	152.7	152.7	152.7	153.3	155.4	155.5	155.4	155.4	155.4	158.4
3271	Concrete block and brick	257.3	252.3	259.3	259.4	259.4	259.5	259.5	260.5	259.4	259.4	259.4	264.1	264.9	263.2
3273	Ready-mixed concrete	279.9	275.5	278.8	281.5	282.5	282.6	282.6	283.6	282.7	282.8	283.3	294.0	295.4	296.1
3274	Lime (12/75 = 100)	157.8	155.6	157.1	157.3	157.7	159.6	160.2	158.8	160.8	160.8	162.0	165.8	171.9	172.8
3275	Gypsum products	256.7	268.1	264.6	257.0	257.5	253.5	252.3	252.2	250.0	253.6	253.1	259.9	257.6	257.9
3291	Abrasive products (12/71 = 100)	212.6	203.9	212.0	211.8	213.5	215.2	215.7	217.1	218.8	220.2	220.6	222.7	226.9	229.7
3297	Nonclay refractories (12/74 = 100)	161.2	154.2	157.4	159.7	161.2	162.8	164.9	164.8	167.8	167.5	167.6	172.4	177.5	179.0
3312	Blast furnaces and steel mills	310.4	304.1	312.0	313.3	312.5	308.6	308.6	314.8	316.0	316.0	328.7	328.9	334.0	334.0
3313	Electrometallurgical products (12/75 = 100)	117.7	118.0	118.7	118.6	118.7	117.1	117.1	117.2	117.3	117.3	117.3	119.9	119.9	120.0
3316	Cold finishing of steel shapes	283.9	277.2	285.9	288.1	288.2	282.2	282.3	288.1	288.8	293.0	302.8	303.1	306.1	306.1
3317	Steel pipes and tubes	291.0	283.2	286.8	286.9	290.4	292.4	292.6	292.6	294.2	302.4	308.5	315.0	315.7	326.2
3321	Gray iron foundries (12/68 = 100)	282.0	277.2	279.8	280.5	282.5	283.0	283.2	283.3	289.7	290.1	289.2	291.9	293.0	293.0
3333	Primary zinc	269.9	279.6	274.3	268.2	268.6	255.9	255.9	264.0	269.9	282.0	287.5	289.4	296.3	296.0
3334	Primary aluminum	298.3	267.8	276.0	287.0	290.1	312.1	312.2	313.0	325.6	328.5	329.4	333.9	334.9	334.8
3351	Copper rolling and drawing	227.6	238.6	227.4	222.8	220.2	222.8	226.2	220.2	222.9	223.1	221.9	215.4	212.0	212.0
3353	Aluminum sheet plate and foil (12/75 = 100)	158.2	155.5	157.8	157.6	157.8	158.2	157.6	157.6	161.5	163.3	165.1	169.3	170.7	172.1
3354	Aluminum extruded products (12/75 = 100)	167.7	160.9	167.7	167.7	167.7	168.3	168.4	168.2	173.2	176.3	176.4	176.8	177.1	177.3
3355	Aluminum rolling, drawing, n.e.c. (12/75 = 100)	146.2	141.1	143.8	145.7	146.7	147.4	147.6	147.5	150.7	151.2	151.2	155.5	157.5	157.5
3411	Metal cans	291.6	279.9	295.1	295.2	294.9	295.6	295.9	296.1	297.9	297.2	297.4	302.1	303.0	304.7
3425	Hand saws and saw blades (12/72 = 100)	182.0	176.4	178.0	181.5	181.9	183.5	185.4	185.8	186.8	187.2	190.2	195.0	195.1	197.6
3431	Metal sanitary ware	248.3	243.1	245.5	249.7	249.9	250.9	251.4	251.4	251.5	252.2	253.7	255.9	263.3	256.6
3465	Automotive stampings (12/75 = 100)	137.0	132.7	133.5	133.8	137.8	137.8	139.8	140.1	140.2	140.9	141.5	143.3	144.1	144.5
3482	Small arms ammunition (12/75 = 100)	146.8	142.6	141.7	141.4	144.6	145.1	147.3	145.3	145.8	146.3	161.3	158.2	163.2	163.2
3493	Steel springs, except wire	230.2	228.6	229.2	229.2	230.3	230.3	231.9	233.0	233.3	233.9	238.2	239.0	239.0	239.4
3494	Valves and pipe fittings (12/71 = 100)	229.7	223.1	229.4	229.9	231.8	232.5	232.7	233.3	235.8	236.9	237.6	239.0	240.8	243.4
3498	Fabricated pipe and fittings	315.5	303.5	313.0	313.1	313.8	317.2	319.9	325.0	329.9	329.9	335.7	335.7	338.5	338.5
3519	Internal combustion engines, n.e.c.	274.9	266.1	270.6	271.6	271.7	276.8	278.6	283.2	285.2	289.1	288.5	293.0	294.2	298.5
3531	Construction machinery (12/76 = 100)	140.9	136.3	138.6	139.5	140.3	141.8	142.7	143.8	146.0	146.6	146.7	148.9	150.4	151.5
3532	Mining machinery (12/72 = 100)	258.3	247.8	256.0	257.3	258.2	259.4	262.0	264.1	266.0	268.0	269.6	271.9	275.3	275.7
3533	Oilfield machinery and equipment	337.7	319.8	329.8	333.1	337.4	342.6	345.7	347.3	352.9	358.4	360.9	366.5	373.7	375.8
3534	Elevators and moving stairways	239.2	229.1	232.6	234.1	242.8	244.2	243.8	246.4	248.3	248.8	249.5	250.3	250.3	250.3
3542	Machine tools, metal forming types (12/71 = 100)	279.6	269.4	274.3	275.1	279.2	284.3	285.3	285.6	286.8	287.4	292.5	298.1	298.5	301.8
3546	Power driven hand tools (12/76 = 100)	132.0	127.4	129.0	131.2	131.1	133.5	134.5	135.3	136.6	136.7	137.6	141.7	143.9	144.8
3552	Textile machinery (12/69 = 100)	216.6	207.0	213.4	213.6	217.0	221.7	222.1	223.8	224.5	226.0	231.1	233.7	236.6	236.6
3553	Woodworking machinery (12/72 = 100)	212.6	205.1	212.3	212.1	213.7	215.9	216.0	216.0	217.0	217.7	221.9	222.9	223.1	225.0
3576	Scales and balances, excluding laboratory	212.7	206.6	207.5	208.2	208.6	215.4	226.2	226.2	226.3	226.9	218.0	219.8	221.1	224.2
3592	Carburetors, pistons, rings, valves (6/76 = 100)	156.5	148.6	152.6	153.0	153.5	158.6	159.3	160.1	164.9	165.2	167.4	168.7	170.6	170.8
3612	Transformers	185.0	177.5	180.5	181.5	182.9	186.0	190.6	190.7	193.9	193.0	193.4	195.2	197.0	204.4
3623	Welding apparatus, electric (12/72 = 100)	209.7	206.0	207.0	209.2	211.0	212.1	212.1	211.7	214.4	214.9	215.5	218.3	220.0	221.1
3631	Household cooking equipment (12/75 = 100)	133.0	129.4	129.7	133.1	134.7	134.9	134.4	134.7	134.8	135.8	137.1	140.1	140.8	140.9
3632	Household refrigerators, freezers (6/76 = 100)	120.9	118.6	119.3	119.4	122.0	122.2	122.2	123.3	124.1	125.1	123.8	126.2	126.1	126.2
3633	Household laundry equipment (12/73 = 100)	162.0	158.3	160.3	161.7	162.3	161.2	163.6	165.5	166.1	166.6	167.3	169.7	170.1	170.9
3635	Household vacuum cleaners	152.2	151.3	148.6	149.3	155.8	158.4	158.5	158.6	158.8	158.8	152.5	152.6	149.9	151.8
3636	Sewing machines (12/75 = 100)	128.9	129.2	129.2	129.2	129.2	130.0	130.0	130.0	130.3	130.3	129.7	129.7	129.7	131.3
3641	Electric lamps	260.1	251.8	252.3	251.3	258.1	266.3	268.1	269.2	268.7	270.2	266.2	265.9	271.2	272.6
3644	Noncurrent-carrying wiring devices (12/72 = 100)	220.3	215.3	217.4	218.2	220.4	220.3	220.7	220.9	221.8	223.7	231.2	235.3	238.5	242.

PRODUCTIVITY DATA

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

Definitions

Output is the constant dollar gross domestic product produced in a given period. Indexes of **output per hour of labor input**, or labor productivity, measure the value of goods and services produced per hour of labor. **Compensation per hour** includes wages and salaries of employees plus employers' contributions for social insurance and private benefit plans. The data also include an estimate of wages, salaries, and supplementary payments for the self-employed, except for nonfinancial corporations, in which there are no self-employed. **Real compensation per hour** is compensation per hour adjusted by the Consumer Price Index for All Urban Consumers.

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

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

The use of the term "man-hours" to identify the labor component of productivity and costs, in tables 31 through 34, has been discontinued. **Hours of all persons** is now used to describe the labor input of payroll workers, self-employed persons, and unpaid family workers. **Output per all-employee hour** is now used to describe labor productivity in nonfinancial corporations where there are no self-employed.

Notes on the data

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

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

Beginning with the September 1976 issue of the *Review*, tables 31-34 were revised to reflect changeover to the new series—private business sector and nonfarm business sector—which differ from the previously published total private economy and nonfarm sector in that output imputed for owner-occupied dwellings and the household and institutions sectors, as well as the statistical discrepancy, are omitted. For a detailed explanation, see J. R. Norsworthy and L. J. Fulco, "New sector definitions for productivity series," *Monthly Labor Review*, October 1976, pages 40-42.

31. Annual indexes of productivity, hourly compensation, unit costs, and prices, selected years, 1950-80

[1977=100]

Item	1950	1955	1960	1965	1970	1973	1974	1975	1976	1977	1978	1979	1980
Private business sector:													
Output per hour of all persons	50.3	58.2	65.1	78.2	86.1	94.8	92.7	94.8	97.9	100.0	99.8	99.4	99.0
Compensation per hour	20.0	26.3	33.9	41.7	58.2	71.3	78.0	85.5	92.9	100.0	108.4	119.2	131.1
Real compensation per hour	50.4	59.6	69.4	80.0	90.8	97.3	95.9	96.3	98.8	100.0	100.7	99.5	96.4
Unit labor cost	39.8	45.2	52.1	53.3	67.6	75.2	84.2	90.2	94.8	100.0	108.6	119.9	132.4
Unit nonlabor payments	43.5	47.8	50.8	57.8	63.4	75.6	78.9	90.7	94.4	100.0	105.1	110.9	118.1
Implicit price deflator	41.0	46.1	51.7	54.8	66.2	75.3	82.4	90.4	94.7	100.0	107.4	116.9	127.6
Nonfarm business sector:													
Output per hour of all persons	56.2	62.7	68.2	80.4	86.7	95.3	93.1	95.0	98.1	100.0	99.8	99.0	98.4
Compensation per hour	21.8	28.3	35.6	42.8	58.6	71.7	78.4	86.0	93.0	100.0	108.5	118.8	130.4
Real compensation per hour	55.0	63.9	73.0	82.2	91.5	97.7	96.4	96.8	99.0	100.0	100.7	99.2	95.9
Unit labor cost	38.8	45.1	52.3	53.2	67.6	75.2	84.3	90.5	94.8	100.0	108.7	120.0	132.4
Unit nonlabor payments	42.8	47.9	50.5	58.2	64.0	71.9	76.1	88.9	94.0	100.0	103.6	108.5	117.4
Implicit price deflator	40.2	46.0	51.7	54.9	66.4	74.1	81.6	89.9	94.5	100.0	107.0	116.2	127.4
Nonfinancial corporations:													
Output per hour of all employees	(¹)	(¹)	66.3	79.9	85.4	94.5	91.3	94.4	97.4	100.0	100.4	100.3	100.6
Compensation per hour	(¹)	(¹)	36.3	43.0	58.3	70.8	77.6	85.5	92.5	100.0	108.2	118.6	130.4
Real compensation per hour	(¹)	(¹)	74.2	82.6	91.0	96.5	95.4	96.3	98.5	100.0	100.5	99.0	95.9
Unit labor cost	(¹)	(¹)	54.7	53.8	68.3	74.9	85.1	90.6	95.0	100.0	107.8	118.2	129.6
Unit nonlabor payments	(¹)	(¹)	54.6	60.8	63.1	70.7	75.7	90.9	95.0	100.0	103.8	108.3	117.0
Implicit price deflator	(¹)	(¹)	54.7	56.2	66.5	73.4	81.8	90.7	95.0	100.0	106.4	114.8	125.2
Manufacturing:													
Output per hour of all persons	49.5	56.5	60.1	74.6	79.2	93.1	90.9	93.5	97.7	100.0	100.9	101.9	101.4
Compensation per hour	21.5	28.8	36.7	42.9	57.6	69.1	76.4	85.5	92.4	100.0	108.2	118.7	131.2
Real compensation per hour	54.1	65.2	75.1	82.3	89.9	94.2	93.9	96.3	98.3	100.0	100.5	99.1	96.5
Unit labor cost	43.4	51.0	61.1	57.4	72.7	74.2	84.1	91.4	94.6	100.0	107.3	116.5	129.3
Unit nonlabor payments	55.1	59.4	62.0	70.3	66.0	71.6	70.4	88.5	95.1	100.0	104.7	105.7	(¹)
Implicit price deflator	46.8	53.4	61.3	61.2	70.7	73.4	80.1	90.6	94.7	100.0	106.5	113.4	(¹)

¹ Not available.

r = revised.

32. Annual changes in productivity, hourly compensation, unit costs, and prices, 1970-80

Item	Year											Annual rate of change	
	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1950-80	1960-80
Private business sector:													
Output per hour of all persons	0.9	3.6	3.5	2.7	-2.3	2.3	3.3	2.1	-0.2	-0.4	-0.4	2.5	2.2
Compensation per hour	7.4	6.6	6.5	8.0	9.4	9.6	8.6	7.7	8.4	9.9	10.0	6.0	7.1
Real compensation per hour	1.4	2.2	3.1	1.7	-1.4	0.4	2.7	1.2	0.7	-1.2	-3.1	2.4	1.9
Unit labor cost	6.4	2.9	2.9	5.2	11.9	7.2	5.1	5.5	8.6	10.4	10.5	3.5	4.8
Unit nonlabor payments	0.7	7.6	4.5	5.9	4.4	15.0	4.1	5.9	5.1	5.5	6.4	3.2	4.4
Implicit price deflator	4.5	4.4	3.4	5.4	9.4	9.7	4.7	5.6	7.4	8.8	9.2	3.4	4.7
Nonfarm business sector:													
Output per hour of all persons	0.3	3.3	-3.7	2.5	-2.4	2.1	3.2	2.0	-0.2	-0.8	-0.6	2.1	1.9
Compensation per hour	7.0	6.6	6.7	7.6	9.4	9.6	8.1	7.6	8.5	9.6	9.7	5.7	6.8
Real compensation per hour	1.0	2.2	3.3	1.3	-1.4	0.4	2.2	1.0	0.7	-1.5	-3.3	2.1	1.6
Unit labor cost	6.6	3.1	2.8	4.9	12.1	7.4	4.7	5.5	8.7	10.4	10.4	3.5	4.8
Unit nonlabor payments	1.1	7.4	3.2	1.3	5.9	16.7	5.7	6.4	3.6	4.8	8.2	3.1	4.2
Implicit price deflator	4.8	4.5	3.0	3.7	10.1	10.3	5.1	5.8	7.0	8.6	9.7	3.4	4.6
Nonfinancial corporations:													
Output per hour of all employees	0.4	4.8	3.0	2.6	-3.4	3.4	3.2	2.7	0.4	-0.1	0.3	(¹)	2.0
Compensation per hour	6.8	6.5	5.8	7.7	9.7	10.1	8.2	8.1	8.2	9.6	9.9	(¹)	6.7
Real compensation per hour	0.8	2.1	2.5	1.4	-1.1	0.9	2.3	1.5	0.5	-1.5	-3.2	(¹)	1.5
Unit labor cost	6.3	1.6	2.8	4.9	13.6	6.5	4.9	5.3	7.8	9.7	9.6	(¹)	4.6
Unit nonlabor payments	0.5	7.4	2.7	1.5	7.1	20.1	4.6	5.2	3.8	4.4	8.0	(¹)	3.8
Implicit price deflator	4.4	3.5	2.8	3.8	11.4	10.9	4.8	5.2	6.4	7.9	9.1	(¹)	4.3
Manufacturing:													
Output per hour of all persons	-0.2	6.1	5.0	5.4	-2.4	2.9	4.4	2.4	0.9	1.0	0.5	2.5	2.4
Compensation per hour	6.8	6.1	5.4	7.2	10.6	11.9	8.0	8.3	8.2	9.7	10.5	5.6	6.7
Real compensation per hour	0.8	1.8	2.0	0.9	-0.3	2.5	2.1	1.7	0.5	-1.4	-2.7	2.0	1.5
Unit labor cost	7.0	0.0	0.3	1.7	13.3	8.8	3.4	5.7	7.3	8.6	11.0	3.1	4.2
Unit nonlabor payments	-2.5	11.2	0.8	-3.3	-1.8	25.9	7.4	5.2	4.7	0.9	(¹)	4.6	8.3
Implicit price deflator	4.3	3.1	0.5	0.3	9.0	13.1	4.6	5.6	6.5	6.4	(¹)	4.5	7.6

¹ Not available.

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

[1977 = 100]

Item	Annual average		Quarterly indexes										
			1978			1979				1980			
	1979	1980	II	III	IV	I	II	III	IV	I	II	III	IV
Private business sector:													
Output per hour of all persons	99.4	99.0	99.9	100.0	99.9	99.7	99.6	99.2	99.0	99.3	98.8	99.2	98.5
Compensation per hour	119.2	131.1	107.1	109.4	111.9	115.0	118.0	120.5	123.0	126.0	129.7	132.8	135.5
Real compensation per hour	99.5	96.4	100.5	100.5	100.5	100.5	100.1	99.0	97.9	96.5	96.2	96.8	95.9
Unit labor cost	119.9	132.4	107.3	109.4	112.1	115.4	118.5	121.4	124.2	127.0	131.3	133.9	137.6
Unit nonlabor payments	110.9	118.1	104.8	106.7	109.1	109.6	110.4	111.5	112.3	115.3	116.0	119.8	121.7
Implicit price deflator	116.9	127.6	106.4	108.5	111.1	113.4	115.8	118.1	120.2	123.0	126.1	129.1	132.2
Nonfarm business sector:													
Output per hour of all persons	99.0	98.4	99.9	99.9	99.8	99.5	99.1	98.7	98.6	98.6	97.9	98.8	98.3
Compensation per hour	118.8	130.4	107.2	109.4	111.9	114.9	117.6	119.9	122.7	125.6	129.0	131.9	135.0
Real compensation per hour	99.2	95.9	100.6	100.5	100.5	100.4	99.8	98.6	97.7	96.2	95.7	96.1	95.6
Unit labor cost	120.0	132.4	107.3	109.5	112.2	115.4	118.7	121.5	124.4	127.4	131.8	133.5	137.3
Unit nonlabor payments	108.5	117.4	103.2	105.1	107.0	107.1	107.7	109.3	110.2	114.0	115.2	119.2	121.0
Implicit price deflator	116.2	127.4	105.9	108.0	110.5	112.6	115.1	117.4	119.7	122.9	126.3	128.8	131.9
Nonfinancial corporations:													
Output per hour of all employees	100.3	100.6	100.8	100.4	100.5	100.6	100.6	100.3	99.7	100.0	99.8	101.5	(¹)
Compensation per hour	118.6	130.4	107.0	109.2	111.5	114.5	117.5	119.8	122.4	125.3	128.9	132.1	(¹)
Real compensation per hour	99.0	95.9	100.5	100.2	100.1	100.1	99.6	98.5	97.5	95.9	95.6	96.3	(¹)
Total unit costs	116.8	129.8	105.4	107.6	109.6	112.2	115.3	118.2	121.3	124.2	129.2	131.1	(¹)
Unit labor cost	118.2	129.6	106.2	108.7	111.0	113.8	116.8	119.5	122.8	125.4	129.1	130.2	(¹)
Unit nonlabor costs	112.7	130.4	103.0	104.4	106.0	107.8	111.2	114.6	117.2	120.9	129.3	133.8	(¹)
Unit profits	99.0	88.9	105.5	105.9	108.9	105.6	100.7	97.5	92.2	95.5	83.4	89.1	(¹)
Implicit price deflator	114.8	125.2	105.4	107.4	109.6	111.5	113.7	115.9	118.1	121.0	124.1	126.4	(¹)
Manufacturing:													
Output per hour of all persons	101.9	101.4	100.6	101.7	102.0	101.4	102.3	101.9	101.9	101.7	100.5	100.2	103.0
Compensation per hour	118.7	131.2	106.9	109.1	111.5	114.5	118.5	119.7	122.0	125.0	129.6	133.5	136.8
Real compensation per hour	99.1	96.5	100.3	100.2	100.1	100.1	100.5	98.4	97.2	95.7	96.1	97.3	96.9
Unit labor cost	116.5	129.3	106.2	107.3	109.3	112.9	115.9	117.5	119.8	122.9	128.9	133.2	132.8

¹ Not available

r = revised.

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

[1977=100]

Item	Quarterly percent change at annual rate						Percent change from same quarter a year ago					
	II 1979 to III 1979	III 1979 to IV 1979	IV 1979 to I 1980	I 1980 to II 1980	II 1980 to III 1980	III 1980 to IV 1980	III 1978 to III 1979	IV 1978 to IV 1979	I 1979 to I 1980	II 1979 to II 1980	III 1979 to III 1980	IV 1979 to IV 1980
Private business sector:												
Output per hour of all persons	-1.5	-1.1	1.3	-1.9	1.5	-2.8	-0.7	-0.9	-0.4	-0.8	0.0	-0.5
Compensation per hour	8.5	8.6	10.4	12.2	9.7	8.4	10.1	9.9	9.6	9.9	10.2	10.2
Real compensation per hour	-4.4	-4.4	-5.6	-1.3	2.4	-3.4	-1.5	-2.5	-4.0	-3.9	-2.3	-2.0
Unit labor cost	10.1	9.8	9.0	14.4	8.1	11.5	10.9	10.9	10.0	10.8	10.3	10.7
Unit nonlabor payments	4.2	2.6	11.3	2.6	13.6	6.4	4.6	2.9	5.2	5.1	7.4	8.4
Implicit price deflator	8.2	7.4	9.7	10.5	9.8	9.9	8.8	8.2	8.4	9.0	9.4	10.0
Nonfarm business sector:												
Output per hour of all persons	-1.4	-0.3	0.0	-3.0	3.8	-1.9	-1.2	-1.1	-0.9	-1.2	0.1	-0.3
Compensation per hour	8.1	9.6	9.9	11.2	9.3	9.6	9.6	9.6	9.4	9.7	10.0	10.0
Real compensation per hour	-4.7	-3.5	-6.0	-2.2	2.0	-2.3	-1.9	-2.7	-4.2	-4.1	-2.5	-2.2
Unit labor cost	9.7	9.9	9.9	14.6	5.3	11.8	10.9	10.9	10.4	11.0	9.9	10.4
Unit nonlabor payments	5.9	3.3	14.6	4.2	14.9	6.1	4.0	3.0	6.4	6.9	9.1	9.8
Implicit price deflator	8.5	7.8	11.3	11.3	8.2	10.0	8.7	8.3	9.1	9.7	9.6	10.2
Nonfinancial corporations:												
Output per hour of all employees	-1.1	-2.4	1.2	-0.5	6.9	(¹)	-0.1	-0.8	-0.6	-0.7	1.2	(¹)
Compensation per hour	8.2	8.9	9.8	12.0	10.3	(¹)	9.8	9.8	9.5	9.7	10.3	(¹)
Real compensation per hour	-4.6	-4.1	-6.1	-1.5	3.0	(¹)	-1.7	-2.6	-4.1	-4.1	-2.2	(¹)
Total unit costs	10.3	11.0	9.8	17.0	6.2	(¹)	9.9	10.7	10.6	12.0	11.0	(¹)
Unit labor costs	9.5	11.6	8.6	12.6	3.2	(¹)	9.9	10.7	10.1	10.5	8.9	(¹)
Unit nonlabor costs	12.8	9.3	13.5	30.6	14.7	(¹)	9.8	10.6	12.2	16.3	16.8	(¹)
Unit profits	-12.0	-20.2	15.3	-41.9	30.3	(¹)	-7.9	-15.4	-9.5	-17.2	-8.6	(¹)
Implicit price deflator	7.9	7.8	10.3	10.5	7.9	(¹)	7.9	7.8	8.5	9.1	9.1	(¹)
Manufacturing:												
Output per hour of all persons	-1.6	0.1	0.7	-4.6	-1.1	11.7	0.2	-0.1	-0.3	-1.7	-1.6	1.1
Compensation per hour	3.9	8.1	10.1	15.5	12.7	10.3	9.7	9.4	9.1	9.3	11.6	12.1
Real compensation per hour	-8.4	-4.8	-5.9	1.6	5.2	-1.8	-1.8	-2.9	-4.4	-4.4	-1.1	-0.3
Unit labor cost	5.6	8.0	10.8	21.1	14.0	-1.3	9.5	9.6	8.8	11.2	13.4	10.9

¹ Not available.

LABOR-MANAGEMENT DATA

MAJOR COLLECTIVE BARGAINING DATA are obtained from contracts on file at the Bureau of Labor Statistics, direct contact with the parties, and from secondary sources. Additional detail is published in *Current Wage Developments*, a monthly periodical of the Bureau. Data on work stoppages are based on confidential responses to questionnaires mailed by the Bureau of Labor Statistics to parties involved in work stoppages. Stoppages initially come to the attention of the Bureau from reports of Federal and State mediation agencies, newspapers, and union and industry publications.

Definitions

Data on wage changes apply to private nonfarm industry agreements covering 1,000 workers or more. Data on wage and benefit changes *combined* apply only to those agreements covering 5,000 workers or more. **First-year wage settlements** refer to pay changes going into effect within the first 12 months after the effective date of

the agreement. **Changes over the life of the agreement** refer to total agreed upon settlements (exclusive of potential cost-of-living escalator adjustments) expressed at an average annual rate. **Wage-rate changes** are expressed as a percent of straight-time hourly earnings, while **wage and benefit changes** are expressed as a percent of total compensation.

Effective wage-rate adjustments going into effect in major bargaining units measure changes actually placed into effect during the reference period, whether the result of a newly negotiated increase, a deferred increase negotiated in an earlier year, or as a result of a cost-of-living escalator adjustment. Average adjustments are affected by workers receiving no adjustment, as well as by those receiving increases or decreases.

Work stoppages include all known strikes or lockouts involving six workers or more and lasting a full shift or longer. Data cover all workers idle one shift or more in establishments directly involved in a stoppage. They do not measure the indirect or secondary effect on other establishments whose employees are idle owing to material or service shortages.

35. Wage and benefit settlements in major collective bargaining units, 1976 to date

[In percent]

Sector and measure	Annual average					Quarterly average							
	1976	1977	1978	1979	1980 ^P	1979				1980 ^P			
						I	II	III	IV	I	II	III	IV
Wage and benefit settlements, all industries:													
First-year settlements	8.5	9.6	8.3	9.0	10.4	2.8	10.5	9.0	8.5	8.6	10.1	11.6	8.3
Annual rate over life of contract	6.6	6.2	6.3	6.6	7.0	5.3	7.8	6.1	6.0	6.4	6.8	7.3	5.9
Wage rate settlements, all industries:													
First-year settlements	8.4	7.8	7.6	7.4	9.5	5.7	8.9	6.8	6.3	7.8	8.7	10.7	8.4
Annual rate over life of contract	6.4	5.8	6.4	6.0	7.1	6.6	7.2	5.1	5.3	6.3	6.8	7.4	6.5
Manufacturing:													
First-year settlements	8.9	8.4	8.3	6.9	7.3	8.7	9.7	6.3	5.6	7.0	6.6	8.7	7.6
Annual rate over life of contract	6.0	5.5	6.6	5.4	5.4	7.7	8.1	4.7	4.2	5.6	4.9	5.5	5.7
Nonmanufacturing (excluding construction):													
First-year settlements	8.6	8.0	8.0	7.6	9.6	3.2	8.5	9.4	7.8	9.1	10.4	9.4	8.9
Annual rate over life of contract	7.2	5.9	6.5	6.2	6.6	5.6	5.8	6.5	7.4	7.1	8.6	5.8	7.4
Construction:													
First-year settlements	6.1	6.3	6.5	8.8	13.6	9.7	8.7	9.7	7.5	9.6	12.7	15.7	14.3
Annual rate over life of contract	6.2	6.3	6.2	8.3	11.5	8.2	8.3	8.5	7.6	9.3	10.3	13.3	12.0

36. Effective wage adjustments going into effect in major collective bargaining units, 1976 to date

[In percent]

Sector and measure	Average annual changes					Average quarterly changes								
	1976	1977	1978	1979	1980 ^P	1978	1979				1980 ^P			
						IV	I	II	III	IV	I	II	III	IV
Total effective wage rate adjustment, all industries	8.1	8.0	8.2	9.1	9.3	1.4	1.4	2.6	3.3	1.6	1.5	3.2	3.4	1.2
Change resulting from—														
Current settlement	3.2	3.0	2.0	3.0	3.6	4	2	1.1	1.0	.5	.4	1.1	1.6	.5
Prior settlement	3.2	3.2	3.7	3.0	3.1	5	6	1.0	1.0	.4	.5	1.2	1.1	.3
Escalator provision	1.6	1.7	2.4	3.1	2.6	5	6	5	1.2	.7	.6	.8	.7	.5
Manufacturing	8.5	8.4	8.6	9.6	9.7	1.9	1.5	2.3	3.2	2.4	1.9	3.4	2.9	1.6
Nonmanufacturing	7.7	7.6	7.9	8.8	9.0	1.1	1.4	2.8	3.4	1.0	1.3	3.0	3.7	1.0

NOTE: Because of rounding and compounding, the sums of individual items may not equal totals.

37. Work stoppages, 1947 to date

Month and year	Number of stoppages		Workers involved		Days idle	
	Beginning in month or year	In effect during month	Beginning in month or year (thousands)	In effect during month (thousands)	Number (thousands)	Percent of estimated working time
1947	3,693		2,170		34,600	.30
1948	3,419		1,960		34,100	.28
1949	3,606		3,030		50,500	.44
1950	4,843		2,410		38,800	.33
1951	4,737		2,220		22,900	.18
1952	5,117		3,540		59,100	.48
1953	5,091		2,400		28,300	.22
1954	3,468		1,530		22,600	.18
1955	4,320		2,650		28,200	.22
1956	3,825		1,900		33,100	.24
1957	3,673		1,390		16,500	.12
1958	3,694		2,060		23,900	.18
1959	3,708		1,880		69,000	.50
1960	3,333		1,320		19,100	.14
1961	3,367		1,450		16,300	.11
1962	3,614		1,230		18,600	.13
1963	3,362		941		16,100	.11
1964	3,655		1,640		22,900	.15
1965	3,963		1,550		23,300	.15
1966	4,405		1,960		25,400	.15
1967	4,595		2,870		42,100	.25
1968	5,045		2,649		49,018	.28
1969	5,700		2,481		42,869	.24
1970	5,716		3,305		66,414	.37
1971	5,138		3,280		47,589	.26
1972	5,010		1,714		27,066	.15
1973	5,353		2,251		27,948	.14
1974	6,074		2,778		47,991	.24
1975	5,031		1,746		31,237	.16
1976	5,648		2,420		37,859	.19
1977	5,506		2,040		35,822	.17
1978	4,230		1,623		36,922	.17
1979	4,827		1,727		34,754	.15
1980 ^P : February	332	594	77	248	3,131	.19
March	326	605	98	237	3,230	.16
April	357	649	98	218	2,579	.14
May	388	704	116	172	2,099	.10
June	385	699	173	224	2,441	.13
July	414	733	241	336	3,954	.21
August	374	704	80	211	3,079	.15
September	420	724	126	247	3,407	.20
October	347	630	90	200	2,195	.11
November	201	427	52	101	1,110	.06
December	66	247	18	48	617	.03
1981 ^P : January	253	297	50	68	614	.03
February	347	517	90	136	647	.04

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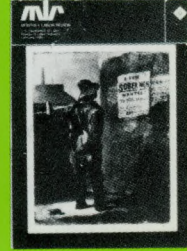
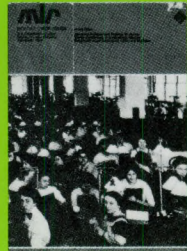
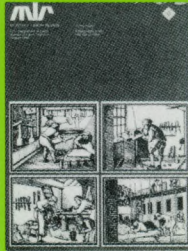
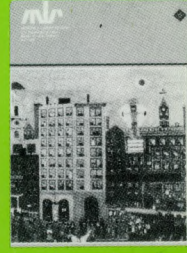
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