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In this issue:

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Elizabeth Dole, *Secretary*

Bureau of Labor Statistics
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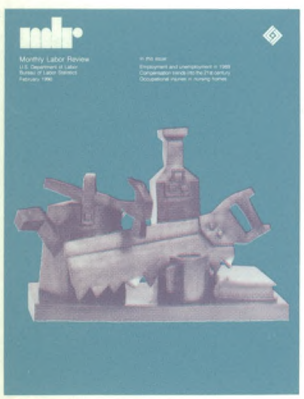

February cover:

"Still Life with Tennon Saw,"
a 1985 varnished steel scupture
by Christopher Plowman,
from "Tools as Art: The Hechinger Collection,"
at the National Building Museum, Washington, DC.
Photo by Edward Owen.

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Monthly Labor Review

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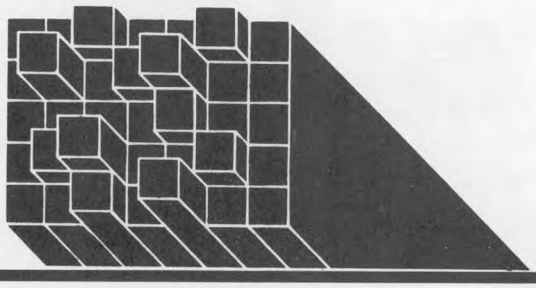
Articles

Departments

Labor month in review



PENSION TRENDS. The U.S. Department of Labor's Pension and Welfare Benefits Administration published a comprehensive guide to Federal Government statistics about private pensions. The 500-page book contains 200 statistical tables and analysis of major trends. Some excerpts:

Major findings. The rate of pension coverage for the full-time private wage and salary labor force—which doubled from 1950 to 1975—has remained virtually unchanged since 1975 at about 53 percent. Although there has been little change in coverage, many other aspects of the pension system have changed considerably. For jobs with pension coverage, the period from 1975 to 1987 was marked by a decline in the defined benefit plan coverage rate, an increase in the defined contribution plan coverage rate, increases in the rate of participation under two or more pension plans, rapid growth in the use of employee stock ownership plans (ESOP's) and tax-exempt 401(k) savings plans, and steady improvements in the vesting rate.

Private pensions are playing an increasingly important role in corporate finance and in financial markets. Assets held by private pension plans increased from 5 percent of all financial assets in 1960 to 13 percent in 1987. The share of outstanding corporate equities held by private pension plans increased from 4 percent in 1960 to 18 percent in 1987. Over the same period, the share of outstanding corporate bonds held by private pension plans increased from 25 percent to 27 percent. An examination of the private pension systems of eight foreign countries indicates that, as in the United States, private pensions also are playing an increasingly important role in financial markets in Europe and Japan.

The expanded role of private pensions in financial markets is due in part to the maturing of the private pension system and in part to improved funding. Pension funding rates have improved since 1975, with most plans holding assets in excess of termination liabilities in 1985. Underfunding is concentrated in a few plans, with nearly half of the underfunding of the entire pension system in 1985 accounted for by the 25 most underfunded plans.

Terminations of overfunded plans peaked in 1985 and declined precipitiously in 1986 and 1987. The higher a firm's debt-to-equity ratio, the more likely is the firm to terminate a pension plan in order to obtain a reversion of the excess assets it has invested in the plan. In some cases, firms have explicitly indicated that the reason for pension termination and reversion was to reduce takeover-related debt.

Private pensions as a whole received lower rates of return than the inflation rate during the 1970's but outpaced inflation during the 1980's. Passively managed plans outperformed plans that were very actively managed.

Coverage and vesting. A total of 40.4 million private wage and salary workers participated in pension plans in 1985, a coverage rate of 46 percent for the total private labor force and 53 percent for the private full-time labor force. Forty percent of all covered workers participated in both primary and supplemental pension plans.

Since 1972, growth in primary pension coverage has generally paralleled growth in the labor force. As a result, the overall coverage rate has remained virtually unchanged during the last 15 years.

While coverage has been relatively stable, the types of plans available to workers underwent significant shifts away from defined benefit plans as the "plan of choice" toward defined contribution plans—plans that specify employer contributions to a fund rather than the level of benefits employees will eventually receive. Most notably, the study found appreciable growth in defined contribution plans as vehicles for both primary and supplemental pension coverage. From 1975 to 1985, the number of participants in defined contribution plans increased by almost 200 percent, compared to only a 7-percent increase in defined benefit plan participants.

Vesting, a vital factor in earning a retirement benefit, increased from 48 percent of primary plan participants in 1977 to 56 percent in 1985.

Defining benefits or contributions. The 1981 to 1985 period exceeded all other periods in its rapid growth of defined contribution plans and participant coverage. Among plans formed from 1981 to 1985, more than 13 million participants were in defined contribution plans as compared to 3 million in defined benefit plans. A major reason for the rapid growth in defined contribution plans is that employee stock ownership plans and 401(k) plans experienced significant increases in participant coverage during the 1981 to 1985 period. Approximately 5.9 million participants were in ESOP's established during the 1981 to 1985 period. Four million participants were covered by 401(k) plans established during this period.

Copies of *Trends in Pensions*, $14 each, are available from the Superintendent of Documents, Government Printing Office, Washington, DC 20402. □

Job growth moderated in 1989 while unemployment held steady

The slowdown in employment growth occurred across most industries, with actual job losses concentrated in manufacturing; unemployment was relatively stable, averaging 5.3 percent

Steven E. Haugen
and
William Parks II

Job growth moderated in 1989, and unemployment held steady for most of the year, as the U.S. economic expansion extended to 7 consecutive years. The overall deceleration in employment growth resulted largely from pronounced weakness in manufacturing, where employment actually declined during the year, reflecting slower growth in domestic consumption and weaker export growth. Although actual job losses were concentrated in manufacturing, nearly all other industries showed smaller job gains in 1989 than in 1988.

Despite this slowdown, the unemployment rate showed very little change during 1989. After slipping to 5.2 percent in the first quarter, it then registered 5.3 percent each quarter thereafter. Similarly, the number of unemployed persons in the fourth quarter, at 6.6 million, was little different from the year-earlier figure. The pattern of little change in unemployment over the year held for the major demographic groups.

This article is the most recent of a continuing annual series on the status of the labor market.

Steven E. Haugen and William Parks II are economists in the Office of Employment and Unemployment Statistics, Bureau of Labor Statistics.

Overview of the economy

The pronounced slowdown in labor markets in 1989 reflected a diminution in overall economic growth. The rate of growth in real gross national product (GNP)—the Nation's total output of goods and services—moderated from the 1988 pace, reflecting marked declines in auto production and new home construction, as well as a slowdown in export growth. In the first quarter, the economy grew at a seasonally adjusted annual rate of 3.7 percent, although much of this relatively strong growth reflected the temporary resurgence in agricultural output following the 1988 drought. Evidence of slackening growth became clearer in the second and third quarters, when real GNP expanded at annual rates of 2.5 and 3.0 percent, respectively. By the fourth quarter, the economy had slowed much further, as advance data showed the economy growing at an annual rate of 0.5 percent.[1] This was the smallest increase since the second quarter of 1986, when GNP actually declined. (It is important to note, however, that some of the weakness in late 1989 may have reflected the temporary effects of labor-management disputes, as well as the impact of several natural disasters which occurred in the fall.)

The moderation in economic growth in 1989 reflected slower expansion in a number of sectors of the economy, but was most apparent in manufacturing. Industrial output, which had been expanding rapidly over the 1987–88 period, slowed markedly during the year. Much of the weakness reflected a slowdown in spending on the part of American consumers. Slower consumption was most obvious in the reduced

demand for, and ultimately, production of, durable goods—particularly autos. Car sales began softening early in 1989, leaving dealers with excessively large inventories. Although automakers responded by periodically offering consumer incentive programs over the rest of the year, unit sales of domestically manufactured autos for all of 1989 were still down from 1988 levels. Slower than expected sales forced manufacturers to curtail production in order to trim inventories. As shown in chart 1, the industrial production index for motor vehicles and parts, which had been trending upward in 1988, dropped sharply in 1989.

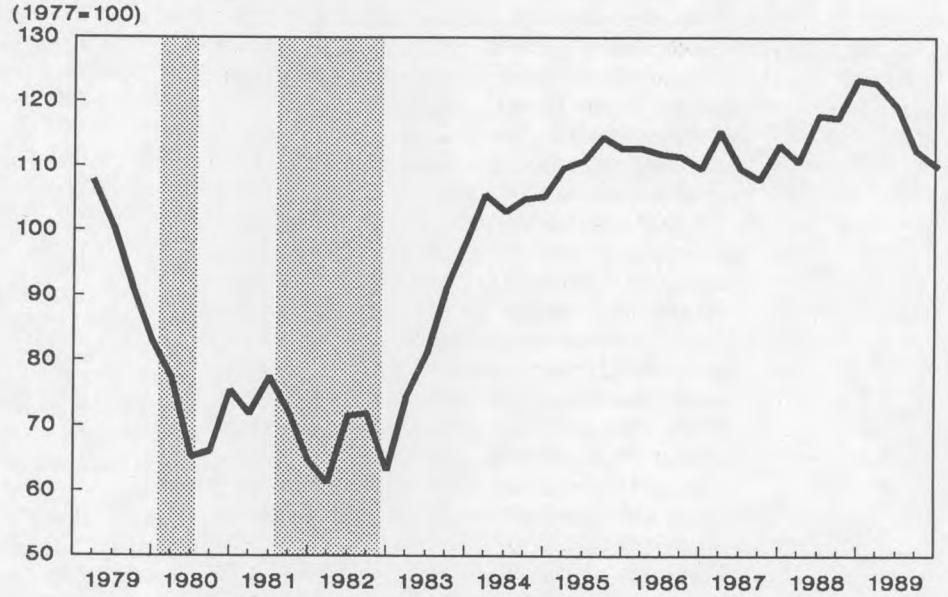
Another factor which figured prominently in the manufacturing slowdown was the slackening in export growth. Over the 1987–88 period, strong export growth had played a major role in the robust expansion in manufacturing. The decline in the value of the dollar since early 1985 had made American-manufactured goods quite attractive to foreign buyers, and many industries, notably machinery, chemicals, and primary metals, benefited substantially from the ensuing export growth. However, the dollar stopped declining in 1988, and then began rising slowly. Although the dollar's value started softening again by the fourth quarter of 1989, as of December, its level was still a bit higher than a year earlier.[2] While the increase in the value of the dollar in 1989 was relatively small, it appeared to dampen export performance. Export growth slowed markedly in the second half of the year.

Construction activity also moderated in 1989. Reflecting steep increases in mortgage interest rates in the first few months of the year, housing starts fell sharply from late-1988 levels. As mortgage rates started to decline around midyear, the number of new housing starts recovered a bit. Despite the general moderation in interest rates in the second half, however, new home construction remained below the 1988 pace. It is important to note that the trend in new homebuilding has generally been down since the beginning of 1986, as shown in chart 2.

Employment

The moderation in output growth in 1989 was evident in both nonagricultural payroll employment, as measured by the Current Employment Statistics program (CES, also known as the establishment survey), and total civilian employment, as measured by the Current Population

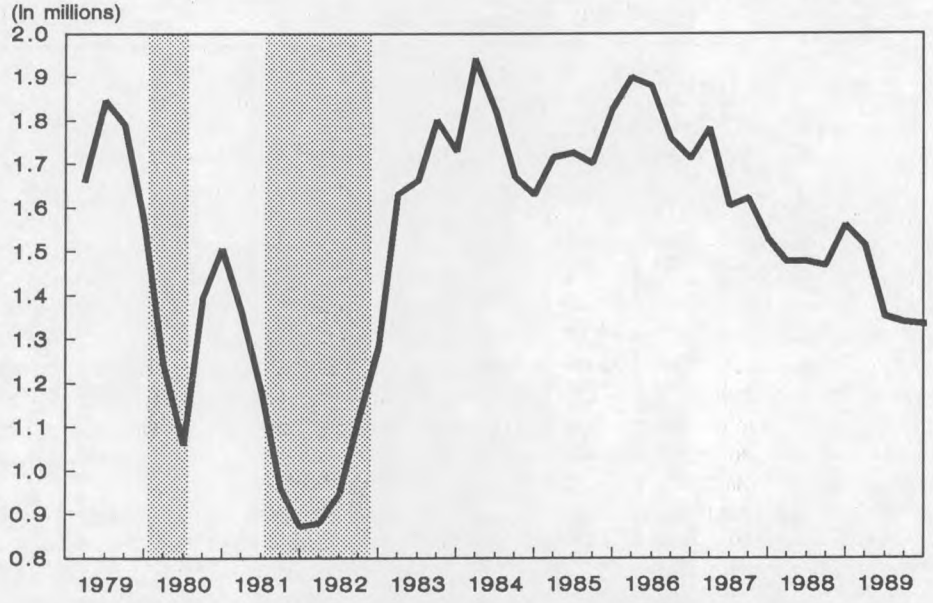
Chart 1. **Industrial production index for the motor vehicles and parts industry, seasonally adjusted quarterly averages, 1979–89**



NOTE: Shaded areas represent recessionary periods as designated by the National Bureau of Economic Research.

SOURCE: Board of Governors of the Federal Reserve System.

Chart 2. **New privately owned housing units started, quarterly averages, seasonally adjusted annual rates, 1979–89**



NOTE: Shaded areas represent recessionary periods as designated by the National Bureau of Economic Research.

SOURCE: Data points are quarterly averages of monthly figures published by the U.S. Bureau of the Census. The data point for the fourth quarter of 1989 is preliminary.

Survey (CPS, also referred to as the household survey).[3] Between the fourth quarters of 1988 and 1989, the establishment survey showed an increase of 2.6 million jobs, compared to 3.3 million in the prior year.[4] (See table 1.) After a large increase early in 1989, job gains slowed markedly. By the fourth quarter, payroll employment growth had slowed to 450,000, the smallest quarterly increase since the second quarter of 1986.

According to the survey of households, total civilian employment (including agricultural workers, the self-employed, and workers in other categories not covered in the establishment survey) posted a gain of 1.8 million in 1989, about 500,000 less than in 1988. (See table 2.) The 1989 increase represents the slowest rate of civilian employment growth thus far in the expansion. As with the establishment survey, the household survey showed that employment growth was at its strongest in the early part of the year. The growth rate dropped precipitously after the first quarter, however, and employment grew only modestly in the second half of the year.

The slowdown in employment growth in 1989, as indicated by both surveys, is illustrated in chart 3. The chart clearly shows that the household survey registered slower employment growth than the establishment survey. While the two surveys show similar employment growth patterns over the longer term, it is not unusual for estimates of job growth from the two surveys to diverge significantly over shorter periods.[5]

Industry developments. Employment trends among the *goods-producing* industries in 1989 generally mirrored the output trends for each industry. Job declines in manufacturing, combined with slackening employment growth in construction, overshadowed a small but noteworthy increase in mining employment. This led to an employment gain in the goods-producing sector of only 130,000 in 1989, about a fourth of the growth in 1988.

The slowdown in job growth in the goods sector was primarily attributable to the weakness in *manufacturing*. After a strong increase early in 1989, employment growth slowed considerably, and in the second half of the year, the Nation's factories lost about 150,000 jobs. As a result, manufacturing employment in the fourth quarter, at about 19.5 million, was down about 40,000 from the year-earlier level. (See chart 4.)

Table 1. Employees on nonagricultural payrolls by industry, seasonally adjusted quarterly averages, 1982–89

[In thousands]

Industry	1982	1984	1986	1988	1989			
	IV				I	II	III	IV[p]
Total	88,717	95,869	100,357	106,799	107,680	108,339	108,917	109,366
Total private	72,893	79,711	83,505	89,288	90,104	90,661	91,110	91,523
Goods-producing	22,980	24,936	24,446	25,452	25,634	25,664	25,659	25,584
Mining	1,029	956	715	713	712	719	722	735
Oil and gas extraction	651	609	396	397	395	401	406	412
Construction	3,837	4,501	4,849	5,189	5,263	5,282	5,320	5,339
General building contractors	959	1,188	1,303	1,373	1,394	1,383	1,397	1,391
Manufacturing	18,115	19,479	18,881	19,550	19,659	19,663	19,617	19,511
Durable goods	10,484	11,630	11,134	11,540	11,601	11,587	11,527	11,434
Lumber and wood products	596	703	723	775	780	771	763	765
Furniture and fixtures	425	492	501	532	534	535	531	523
Stone, clay, and glass products	558	593	582	605	607	604	600	600
Primary metal industries	824	843	728	784	787	787	783	773
Blast furnaces and basic steel products	344	317	255	277	276	276	275	269
Fabricated metal products	1,349	1,483	1,403	1,445	1,458	1,452	1,442	1,430
Machinery, except electrical	2,051	2,235	2,002	2,119	2,138	2,148	2,151	2,142
Electrical and electronic equipment	1,953	2,247	2,101	2,072	2,062	2,050	2,032	2,010
Transportation equipment	1,662	1,931	2,037	2,059	2,072	2,070	2,051	2,022
Motor vehicles and equipment	659	877	868	866	874	871	853	826
Instruments and related products	699	721	698	762	773	778	781	778
Miscellaneous manufacturing	367	382	360	387	390	392	393	391
Nondurable goods	7,631	7,850	7,747	8,011	8,058	8,076	8,091	8,077
Food and kindred products	1,628	1,608	1,615	1,646	1,652	1,659	1,673	1,671
Tobacco manufactures	68	64	57	56	56	53	52	51
Textile mill products	729	726	708	725	728	728	727	722
Apparel and other textile products	1,139	1,156	1,094	1,087	1,096	1,095	1,092	1,085
Paper and allied products	654	682	676	695	696	697	699	697
Printing and publishing	1,271	1,404	1,475	1,582	1,597	1,604	1,611	1,615
Chemical and allied products	1,055	1,055	1,017	1,076	1,086	1,093	1,094	1,099
Petroleum and coal products	200	187	164	162	161	162	163	163
Rubber and miscellaneous plastics products	679	792	798	838	842	842	840	834
Leather and leather products	209	176	143	143	144	142	140	139
Service-producing	65,737	70,933	75,911	81,346	82,047	82,676	83,258	83,782
Transportation and public utilities	5,023	5,200	5,285	5,615	5,662	5,699	5,688	5,764
Transportation	2,735	2,963	3,093	3,401	3,448	3,484	3,536	3,585
Communications and public utilities	2,288	2,237	2,192	2,214	2,214	2,216	2,151	2,179
Wholesale trade	5,213	5,644	5,764	6,105	6,171	6,219	6,252	6,295
Durable goods	3,034	3,336	3,382	3,612	3,657	3,685	3,708	3,735
Nondurable goods	2,179	2,308	2,382	2,493	2,514	2,535	2,544	2,560
Retail trade	15,189	16,921	18,164	19,280	19,452	19,523	19,613	19,706
General merchandise stores	2,141	2,317	2,383	2,453	2,481	2,492	2,484	2,475
Food stores	2,510	2,685	2,946	3,165	3,212	3,247	3,287	3,334
Automotive dealers and service stations	1,634	1,833	1,966	2,130	2,149	2,158	2,155	2,167
Eating and drinking places	4,872	5,525	6,002	6,321	6,326	6,348	6,384	6,417
Finance, insurance, and real estate	5,356	5,779	6,400	6,727	6,761	6,791	6,834	6,869
Finance	2,664	2,890	3,210	3,300	3,312	3,317	3,334	3,353
Insurance	1,715	1,784	1,977	2,103	2,114	2,124	2,135	2,140
Real estate	977	1,105	1,213	1,324	1,335	1,350	1,365	1,376
Services	19,131	21,231	23,446	26,109	26,424	26,764	27,063	27,305
Business services	3,289	4,196	4,925	5,688	5,724	5,778	5,807	5,842
Health services	5,892	6,177	6,632	7,313	7,442	7,571	7,694	7,832
Government	15,824	16,159	16,852	17,511	17,576	17,679	17,807	17,843
Federal	2,745	2,830	2,896	2,983	2,981	2,992	2,998	2,979
State	3,641	3,772	3,927	4,084	4,094	4,122	4,160	4,163
Local	9,438	9,557	10,029	10,444	10,502	10,565	10,648	10,700

[p] = preliminary.

Table 2. Employment status by sex, age, race, and Hispanic origin, seasonally adjusted quarterly averages, 1982–89

[Numbers in thousands]

Characteristic	1982	1984	1986	1988	1989			
	IV				I	II	III	IV
Total								
Civilian labor force	110,959	114,257	118,583	122,442	123,209	123,759	124,035	124,394
Percent of population	64.1	64.5	65.4	66.1	66.3	66.5	66.5	66.5
Employed	99,120	105,944	110,485	115,933	116,815	117,253	117,468	117,770
Agriculture	3,471	3,324	3,163	3,223	3,216	3,140	3,237	3,185
Nonagriculture	95,649	102,620	107,322	112,710	113,598	114,113	114,231	114,585
Employment-population ratio	57.3	59.8	60.9	62.6	62.9	63.0	63.0	63.0
Unemployed	11,839	8,312	8,097	6,508	6,394	6,506	6,567	6,624
Unemployment rate	10.7	7.3	6.8	5.3	5.2	5.3	5.3	5.3
Men, 20 years and over								
Civilian labor force	58,375	60,020	61,701	63,019	63,382	63,682	63,741	63,985
Percent of population	78.8	78.3	78.2	77.9	78.0	78.1	78.0	78.1
Employed	52,553	56,257	57,933	60,094	60,582	60,854	60,835	61,071
Employment-population ratio	70.9	73.4	73.4	74.3	74.6	74.7	74.4	74.5
Unemployed	5,822	3,764	3,768	2,924	2,800	2,828	2,906	2,914
Unemployment rate	10.0	6.3	6.1	4.6	4.4	4.4	4.6	4.6
Women, 20 years and over								
Civilian labor force	44,112	46,357	49,001	51,471	51,884	52,116	52,365	52,469
Percent of population	52.9	54.0	55.7	57.3	57.6	57.6	57.7	57.7
Employed	40,127	43,256	46,072	49,044	49,480	49,632	49,892	49,962
Employment-population ratio	48.1	50.4	52.4	54.6	54.9	54.9	55.0	54.9
Unemployed	3,985	3,101	2,929	2,427	2,405	2,484	2,473	2,507
Unemployment rate	9.0	6.7	6.0	4.7	4.6	4.8	4.7	4.8
Both sexes, 16 to 19 years								
Civilian labor force	8,472	7,880	7,881	7,952	7,943	7,961	7,929	7,939
Percent of population	54.3	54.1	54.2	55.0	55.3	55.9	55.9	56.3
Employed	6,440	6,432	6,480	6,795	6,753	6,767	6,741	6,736
Employment-population ratio	41.3	44.1	44.5	47.0	47.0	47.5	47.6	47.8
Unemployed	2,032	1,448	1,400	1,157	1,190	1,194	1,188	1,203
Unemployment rate	24.0	18.4	17.8	14.5	15.0	15.0	15.0	15.2
White								
Civilian labor force	96,623	98,811	102,446	105,344	105,895	106,278	106,421	106,783
Percent of population	64.4	64.7	65.7	66.4	66.6	66.8	66.7	66.8
Employed	87,452	92,616	96,398	100,526	101,246	101,505	101,603	101,962
Employment-population ratio	58.3	60.7	61.8	63.4	63.7	63.8	63.7	63.8
Unemployed	9,171	6,195	6,048	4,818	4,649	4,773	4,818	4,821
Unemployment rate	9.5	6.3	5.9	4.6	4.4	4.5	4.5	4.5
Black								
Civilian labor force	11,503	12,252	12,710	13,345	13,440	13,453	13,514	13,535
Percent of population	61.5	62.9	63.2	64.1	64.3	64.1	64.2	64.0
Employed	9,155	10,393	10,896	11,839	11,901	11,934	11,987	11,932
Employment-population ratio	48.9	53.3	54.2	56.9	56.9	56.9	56.9	56.5
Unemployed	2,348	1,859	1,814	1,505	1,539	1,519	1,527	1,603
Unemployment rate	20.4	15.2	14.3	11.3	11.5	11.3	11.3	11.8
Hispanic origin								
Civilian labor force	6,826	7,614	8,258	9,132	9,201	9,312	9,369	9,419
Percent of population	63.5	65.4	66.0	67.7	67.6	67.8	67.6	67.4
Employed	5,783	6,819	7,423	8,417	8,527	8,564	8,561	8,653
Employment-population ratio	53.8	58.6	59.4	62.4	62.7	62.4	61.8	61.9
Unemployed	1,043	795	835	714	674	748	807	767
Unemployment rate	15.3	10.4	10.1	7.8	7.3	8.0	8.6	8.1

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

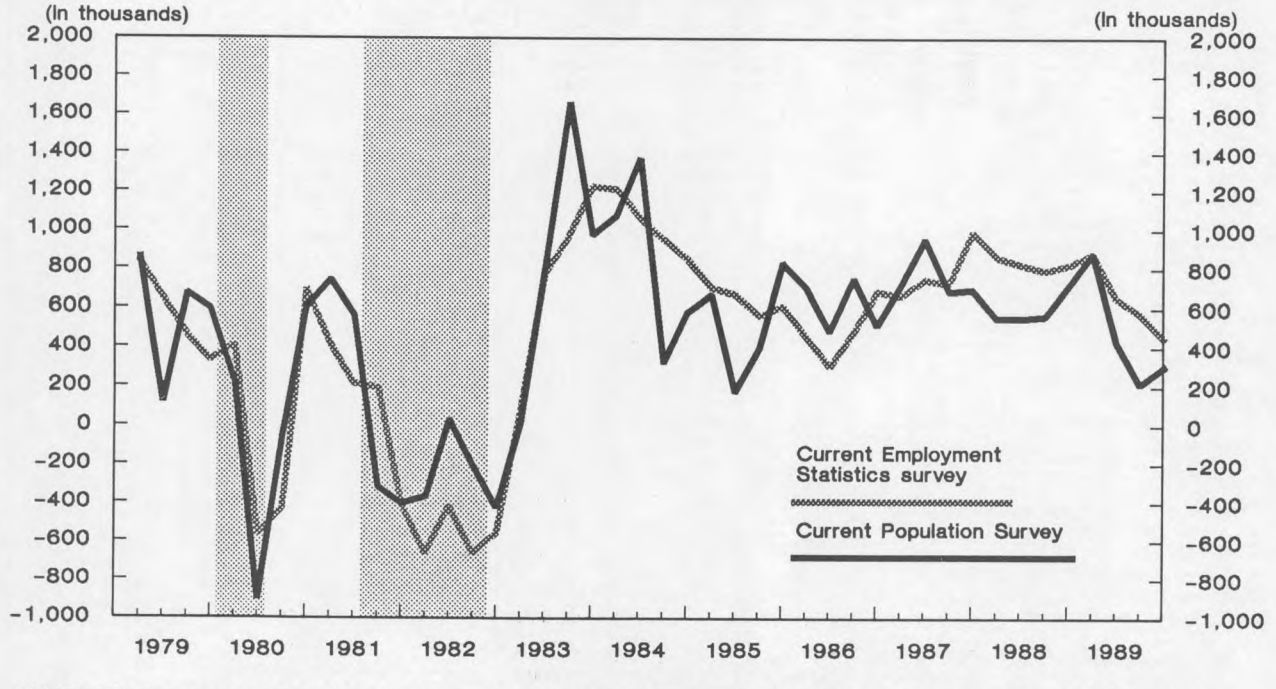
The slowdown in manufacturing job growth and eventual decline in factory employment in 1989 was concentrated in the *durable goods* sector. Between the fourth quarters of 1988 and 1989, the number of jobs in durable goods manufacturing fell by 105,000. The largest absolute job losses occurred in the transportation and electrical equipment industries. In transportation equipment, employment fell by about 35,000 in 1989; after increasing slightly in the first half, employment then fell sharply, as shrinking auto sales forced automakers to cut back production, in some cases closing plants for extended periods. In electrical equipment, employment declined throughout the year, with job losses totaling about 60,000 by the fourth quarter. Except for a brief period of stability in 1988, employment in this industry has generally been on a slow downtrend since early 1985. While the long-term decline reflects the intense foreign competition in the electronic products market, the most recent job losses may also reflect the slowdown in defense orders.

The primary and fabricated metals industries also registered small job losses over the year, partially as a result of cutbacks in auto production, but also because of the slowdown in export growth. While not declining over the year, employment in machinery and in instruments and related products showed slower growth in 1989. These industries also derive a substantial part of their business from exports (they both have relatively high export-to-shipment ratios), and the moderation in export growth in 1989 undoubtedly contributed to the smaller employment gains in these industries.

Employment in the lumber industry and in stone, clay, and glass products started declining early in the year, reflecting the slowdown in new home construction. Employment in each industry continued to drift down throughout much of 1989, and in the fourth quarter, the job totals for both industries were down slightly from a year earlier.

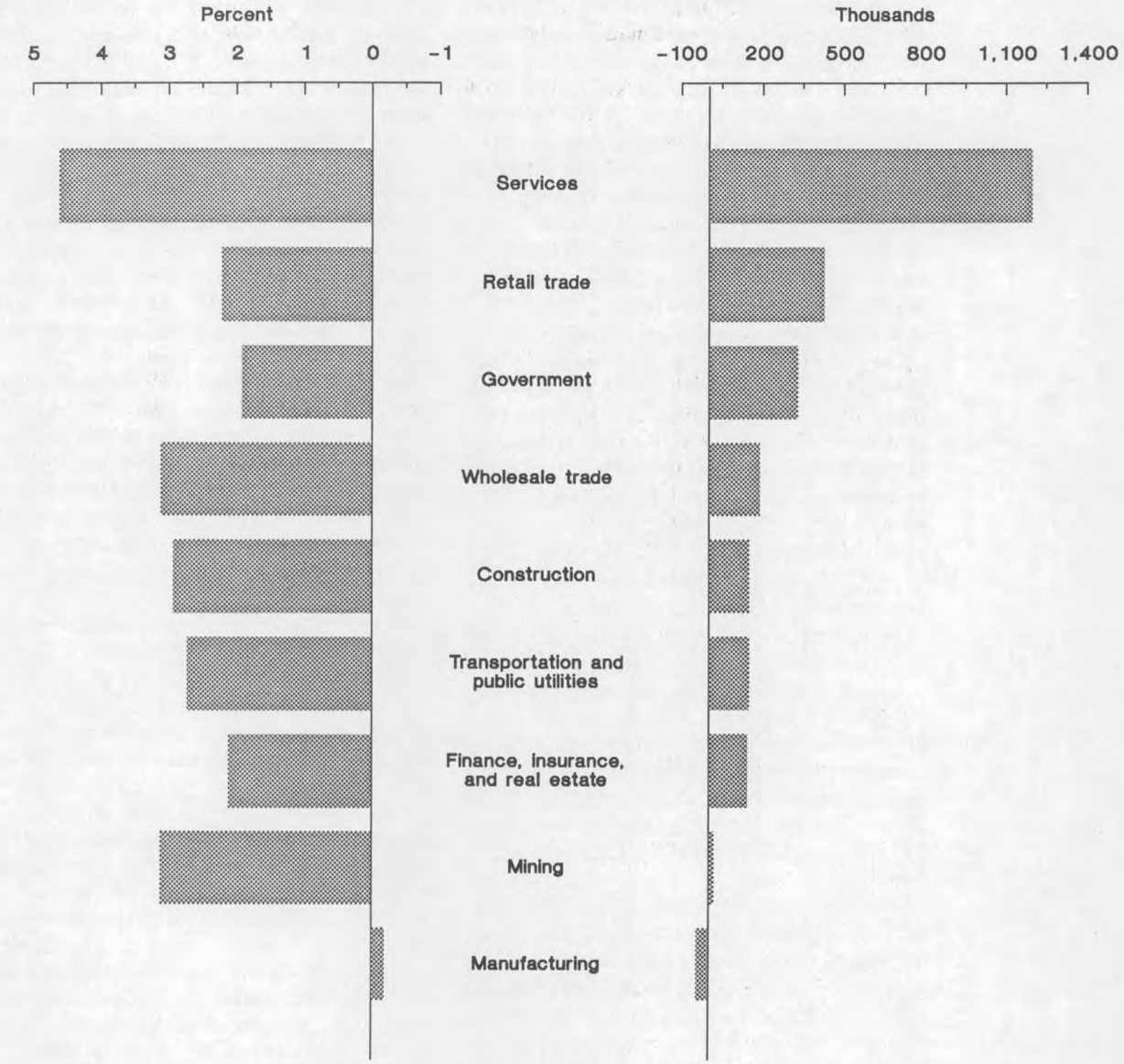
Employment growth among *nondurable goods* manufacturers in 1989 partially offset the job losses in durable goods industries. However, several nondurable goods industries posted slower growth, or, in some cases, job losses, during the year. In particular, the printing and publishing and the chemicals industries registered marked slowdowns in employment growth after the first quarter. Some of the weakness in the chemicals industry may reflect slower export demand, as this industry had benefited from vibrant export growth in 1987–88.

Chart 3. **Quarterly employment changes in the Current Employment Statistics survey and the Current Population Survey, seasonally adjusted, 1979–89**



NOTE: Shaded areas represent recessionary periods as designated by the National Bureau of Economic Research.

Chart 4. **Employment changes by major industry division, fourth-quarter 1988–89**



The rubber industry also posted a sharp reduction in job growth beginning in the second quarter, and employment in the industry declined a bit in the second half. Much of the weakness was attributable to decreased auto production. The textile and apparel industries, which had registered job declines in 1988, showed continued weakness in 1989, with both industries posting small declines over the year. Similarly, employment in the tobacco and leather industries also declined slightly in 1989. Other nondurable industries, such as food and petroleum, continued to show growth about in line with that achieved during 1988.

The average *workweek* for manufacturing workers held at about 41 hours for most of the year, before slipping marginally in the fourth quarter. Overtime hours in manufacturing followed the same pattern. Reflecting both the slight drop in hours and employment weakness, the index of aggregate weekly hours for the manufacturing industry declined slightly over the year, to about 95 (1977=100) in the fourth quarter.

The strongest employment gains in 1989 were in the services industry.

Despite the softening demand for new *construction* in 1989, employment advances in the industry moderated only slightly. Following a strong increase early in the first quarter, construction employment growth slowed sharply, but then recovered a bit in the second half. Some of the growth toward the end of 1989 may have emanated from the rebuilding efforts necessitated by several natural disasters (particularly Hurricane Hugo and the San Francisco earthquake) which occurred in the fall. At 5.3 million in the fourth quarter, construction employment was up to 150,000 from the fourth quarter of 1988, slightly smaller than the gain registered in the previous year.

Within construction, employment growth among general building contractors slowed somewhat during 1989, consistent with the moderation in new home construction. Job growth among special trades contractors—the largest and fastest-growing segment of the construction industry—continued at about the 1988 pace. Similarly, employment in the heavy construction component repeated the 1988 pattern of moderate growth; this industry had shown little growth earlier in the expansion.

In marked contrast to the slowing output and employment trends in the manufacturing and construction industries, the situation in the *mining* industry improved slightly in 1989. Employment in mining registered small increases throughout most of the year, following declines during much of 1988. In the fourth quarter of 1989, mining employment totaled about 735,000, roughly 20,000 above the year-earlier figure.

Virtually all of the mining employment gain in 1989 occurred in oil and gas extraction. Spurred by rising energy prices, exploration and drilling for oil picked up modestly during the year, as indicated by an increase in the number of oil rigs. As a result, employment in oil and gas extraction began showing small advances in the second quarter, and by the fourth quarter, had reached a level of 410,000. While up over the year, employment in this industry still falls way short of the levels that existed prior to the oil price collapse in 1986. Employment trends in oil and gas extraction tend to be positively associated with the price of oil, as increasing prices make domestic production more profitable.

Job growth in the *service-producing* sector slowed slightly in 1989, though the increase of 2.4 million was still fairly healthy, representing nearly all of the net job growth among nonagricultural industries in 1989. Within the sector, employment trends varied somewhat by industry division. (See chart 4.)

The strongest employment gains in 1989, both in terms of the number of jobs added and in the rate of growth, were in the *services* industry. Although job growth slowed slightly after midyear, for the year as a whole, the services industry added about 1.2 million jobs. The moderation in the second half reflected, in part, slower employment expansion in business services. Within this industry, employment in temporary help supply services declined a bit in 1989, reflecting, among other things, the reduced rate of business formations. Earlier in the expansion, this industry had shown marked employment increases. By contrast, job growth in computer programming and software, which had also posted strong job growth in recent years, remained quite strong.

Job gains in health services sustained the vigorous pace that began in mid-1988. Although hospitals continued to add the largest number of employees, the strongest rates of growth were in outpatient care facilities and, to a lesser extent, medical and dental laboratories. One factor contributing to strong job growth in health services in recent years is the continued aging of the population.

Employment growth among most other services industries generally slowed a bit in 1989. Job growth was notably weaker in educational services and membership organizations. In contrast, employment gains in auto repair services and in social services remained fairly robust in 1989.

The softening in retail sales in 1989 contributed to a slowdown in employment growth in the *retail trade* industry. In the fourth quarter, retail employment totaled 19.7 million, up about 425,000 from the fourth quarter of 1988. This is about three-fourths of the growth registered in 1988. Within retail trade, employment in general merchandise stores edged down in the second half. Job growth in the auto dealers and service stations industry slowed sharply in 1989, reflecting the dropoff in auto sales. The other two major retail industries, food stores and eating and drinking places, continued to post moderate-to-strong employment growth in 1989.

In *wholesale trade*, where strong export growth over the 1987–88 period helped boost employment growth, the weakening export picture during 1989, plus the general slowing of consumption expenditures, contributed to a slight slowdown in employment growth in 1989. This weakness was most apparent in durable goods distribution, although job growth in nondurable goods distribution also slowed in the second half of the year. Overall, wholesale trade added about 190,000 jobs during the year.

Despite the slowdown over the year, the rate of employment growth in the industry still exceeded the average for all service-producing industries.

Job growth in the *transportation and public utilities* industry in 1989, at 150,000, was also less than in 1988. In transportation, continued growth in the demand for trucking and airline travel led to strong employment gains. In contrast, employment in the communications industry showed little change in 1989. Strike activity depressed payrolls in the third and fourth quarters, but the return to work of most employees by late in the fourth quarter returned employment levels to where they had been during the first half of the year. Over the longer term, this industry has shown little in the way of employment gains throughout most of the current expansion.

Employment growth in *finance, insurance, and real estate* in 1989, at about 140,000 jobs, slightly exceeded that in 1988. The over-the-year improvement was due entirely to strong expansion in the finance industry. In the insurance industry, employment growth dropped slightly off the 1988 trend, but still continued at a moderate pace. Similarly, employment growth in the real estate industry continued to be fairly strong in 1989.

In *government,* the employment growth in 1989 remained about in line with the 1988 pace. Overall, government employment grew by about 330,000 in 1989. Nearly all of the increase occurred among State and local governments, where strong growth was particularly evident in general administration, as well as in education.

Employment in *agriculture* (as measured by the household survey) showed little change in 1989, hovering around 3.2 million throughout the year. This industry, which is characterized by an older work force and a large degree of self-employment, has accounted for a shrinking share of total civilian employment over the last century. At the beginning of the century, agriculture accounted for about 40 percent of total employment. By the end of World War II, the proportion had dropped to around 15 percent. The industry now employs less than 3 percent of all workers.

Employment changes by sex and race. As has been the case in nearly every year of the expansion, the rate of employment growth for *adult women* (20 years and over) in 1989 exceeded that for *adult men.* Adult female workers, who now make up just over 40 percent of the labor force, comprised half of 1989's job growth. Up until 1989, women's share of overall job gains had been much higher than their overall representation in total employment. This trend is explained, in part, by the fact that adult men, owing to deep job losses suffered in the severe 1981–82 recession, made up a significant percentage of overall job gains in the early years of the expansion. As the employment upswing continued, a more dominant trend—the rapid expansion in work force participation by women—reasserted itself, and women began making up a greater share of employment growth. There were about 61 million employed adult men and 50 million employed adult women in the fourth quarter of 1989.

The proportion of the adult female population with jobs—their employment-population ratio—set a new record of 55.0 percent during 1989, before closing the year at 54.9 percent. The ratio for adult men, at 74.5 percent, reached its highest yearend mark in the decade. Consistent with the ever-increasing presence of women in the labor market, the ratio for women has been rising at a healthy pace every year. By contrast, and again symptomatic of the severity of the last recession for men, the proportion of men employed has still not reattained its prerecession level. Whether the proportion will return to its earlier mark remains to be seen, as the secular trend in this measure since World War II has been downward, owing in large part to the greater availability of early-retirement opportunities.

All of the employment increase in 1989 was among adults. *Teenage* employment, at a level of 6.7 million, was about unchanged over the year, after rising in each of the previous 3 years. The employment gains of those years, coupled with the gradual fall in the size of the teenage population, led to a rising employment-population ratio. That ratio again edged up in 1989, to 47.8 percent in the fourth quarter, but this time attributable entirely to the continued population falloff. The proportion of 16- to 19-year-olds with jobs was well above the 40-percent range of the recession years earlier in the decade.

The rate of employment growth for adult women in 1989 exceeded that for adult men.

Employment gains among *white, black,* and *Hispanic* workers continued in 1989, although growth rates for each group were reduced, consistent with the overall employment slowdown. Hispanics again registered the highest rate of employment growth, owing mainly to the fact that their population has been by far the fastest growing of the three major race/ethnic groups. While they make up only 7 percent of all employed persons, Hispanics accounted for 13 percent of the total employment gain over the year; this pattern of a disproportionately high rate of employment growth for Hispanics has occurred in nearly every year of the expansion.

The rate of employment growth for blacks slowed sharply in 1989. Prior to 1989, blacks had shown generally robust rates of job growth, usually higher than those for whites. Nonetheless, the proportion of the black population who were employed in 1989—56.5 percent in the fourth quarter—remains below that of both white (63.8 percent) and Hispanic (61.9 percent) workers. Indeed, the 7-percentage-point gap between the white and black ratios is virtually the same as 10 years earlier, prior to the recessions of the early 1980's.

Although slower employment growth was felt by all the major demographic worker groups in 1989, the economy was still able to generate enough jobs to raise the proportion of the entire working-age population which is employed to a record 63.0 percent. The 0.4-percentage-point over-the-year rise in the ratio, coming in a year of relatively modest employment gains, points to the extremely slow growth of the civilian working-age population. The latter has been growing at only 1.0 percent per year for the last couple of years. It should be noted, as a further indication of how the pace of employment growth slowed during the course of 1989, that most of the increase in the employment-population ratio took place in the first quarter, with little change occurring over the remainder of the year. This is the first year in the expansion that the quarterly employment-population ratio has not increased throughout the year.

Other employment developments

Consistent with the overall employment slowdown, employment growth for most *occupations* slowed sharply in 1989, as can be seen in the following tabulation.

	Percent change, fourth-quarters—	
	1987–88	*1988–89*
Total employment	2.1	1.6
Executive, administrative, and managerial	5.5	3.4
Professional specialty	4.1	4.1
Technicians and related support	4.8	2.6
Sales occupations	2.5	2.0
Administrative support	−1.5	1.7
Service occupations	2.6	−.9
Precision production, craft, and repair	.4	1.8
Operators, fabricators, and laborers	1.7	0
Farming, forestry, and fishing	1.0	−2.8

The sluggish performance of the goods-producing industries in 1989 kept employment growth in some production-oriented occupations, such as operators, fabricators, and laborers, essentially unchanged over the year. Within this group, the employment level for machine operators, assemblers, and inspectors actually declined.

Some occupations concentrated in the service-producing sector, such as professional specialty and administrative support positions, managed to maintain or improve their growth rates in 1989. Although less than last year's very rapid paces, the growth rate for executives, administrators, and managers was still above the average for all occupations.

All of the net employment growth in 1989 was among *full-time* workers (persons working 35 hours or more per week). By the fourth quarter, slightly less than 17 percent of total employment was made up by *part-time* workers, whose share of employment was down a bit over the year. While the great majority of part-timers were working such schedules voluntarily, some were not: about 4.8 million persons were at work *part time for economic reasons*. This group of workers—persons working part time even though they would have preferred full-time work—accounted for about 4 percent of total civilian employment in the fourth quarter of 1989. While high by historical terms, the number of these underutilized workers was down over the year. The decrease came largely from a drop in the number of persons working part time because that was the only type of work they could find, but there were also fewer working part time because their hours were cut back.

The number of *self-employed* workers showed little change in 1989. This type of employment, which gradually fell as a percentage of total employment in the 1960's and 1970's, has retained a steady share in the 1980's, accounting for about 8 to 9 percent of total employment. Self-employed workers in agricultural pursuits (almost all of whom are men) accounted for 1.4 million of the Nation's 10 million self-employed workers in 1989. Women made up about a third of the self-employed in nonagricultural industries, and their share has been rising steadily over the last two decades.

Unemployment

Even with the slowdown in economic growth in 1989, the number of unemployed persons and the unemployment rate showed little change for most of the year. The level of unemployment in the fourth quarter of 1989 was 6.6 million, about the same as in the fourth quarter of 1988. Likewise, the civilian unemployment rate was little changed from the same period a year earlier. The 5.3-percent fourth-quarter mark in

1989 is in sharp contrast to the Nation's jobless rate at the trough of the last recession (10.7 percent in the fourth quarter of 1982).

The Nation's unemployment rate was remarkably stable for most of the year in 1989. After declining from 5.4 percent in January to 5.0 percent in March, the rate then edged back up to 5.3 percent in April and stayed at or near that mark every month thereafter. Such an extended length of time with no real improvement in the civilian jobless rate occurred once before in the current 7-year-old expansion. After falling sharply in the first year and a half after the 1981-82 recession bottomed out, the jobless rate fluctuated in a fairly narrow band from mid-1984 to mid-1986, attributable principally to marked weakness in the goods-producing sector. (See chart 5.) The pace of reductions in the jobless rate quickened again, as the civilian unemployment rate fell one full percentage point in 1987 and half a percentage point in 1988.

Consistent with the pattern in the overall civilian jobless rate in 1989, unemployment rates for most worker groups remained at their relatively low 1988 levels. Rates for adult men (4.6 percent in the fourth quarter), adult women (4.8 percent), teenagers (15.2 percent), whites (4.5 percent), and blacks (11.8 percent) all exhibited little or no over-the-year change. The rate for Hispanic workers, which experienced broad fluctuations during the course of the year, ended the year at 8.1 percent.

One area of the labor market that has shown little change thus far during the current expansion has been the differential between the unemployment rates of the three major race/ethnic groups, as reflected in the tabulation below. The black jobless rate was about $2\frac{1}{2}$ times that of whites in the fourth quarter of 1989, a ratio similar to that a decade earlier, at the peak of the last major economic expansion, and that at the trough of the 1981–82 recession. The rate for Hispanics was about midway between the rates for white and black workers in each of those periods.

	Fourth-quarter unemployment rates		
	1979	*1982*	*1989*
Whites	5.2	9.5	4.5
Blacks	12.1	20.4	11.8
Hispanics	9.0	15.3	8.1

The unemployment rate differential also applies to teenagers, but at sharply higher rates. The rate for black teenagers remains especially high; at 32.2 percent in the fourth quarter, it reflects the fact that nearly 1 in 3 young black workers is searching for work. By comparison, the rate for white teens was 12.8 percent in the same period.

Other unemployment developments

There was little over-the-year change in the distribution of unemployed persons by their *reason* for unemployment. The situation is very different today, however, than earlier in the decade, as a much smaller proportion of currently unemployed workers attribute their situation to job loss now than in 1982. Most of the recent job searchers had either left their last job voluntarily (job leavers) or were entering or reentering the labor force.

	Fourth-quarter	
	1982	*1989*
Percent unemployed	100.0	100.0
Job losers	61.4	46.0
Job leavers	6.7	15.6
Labor force reentrants	21.1	28.1
New labor force entrants	10.9	10.4

The dramatic increase in the proportion of the unemployed who were job leavers, as well as the increase among labor force reentrants, attests to the healthier labor market in the more recent period, as workers are more apt to change jobs or reenter the labor market in order to better their economic status in more prosperous times.

Reductions in the number of people out of work for 27 weeks or more—sometimes called the *very long-term unemployed*—have been very sharp in recent years. From 1988 to 1989, the number fell by 90,000 to a level of 640,000; nonetheless, this level is still 100,000 above its prerecession mark. As can be seen in the following tabulation, the proportions of unemployed workers experiencing jobless spells of less than 5 weeks or for more than half a year have shifted markedly since the recession. The second quarter of 1983 marked the highest level in the long-term unemployed series, and so that period is used as the basis for comparison.

	Second-quarter 1983	*Fourth-quarter 1989*
Percent unemployed	100.0	100.0
Less than 5 weeks	32.4	48.9
5 to 14 weeks	27.2	30.2
15 weeks and over	40.4	20.9
15 to 26 weeks	15.2	11.3
27 weeks and over	25.2	9.7

The number of *families* with at least one unemployed member held steady in 1989 at a level of 4.7 million. Nearly three-quarters of those families had at least one other member em-

ployed, which partly allayed the effect of the other member's joblessness. There were significant differences in that respect, however, by race and ethnicity. Fewer than three-fifths of black families who experienced unemployment also had another family member working, compared with about three-fourths of white and Hispanic families. Further, the proportion of black families with unemployment, at 14.4 percent in the fourth quarter, was much higher than the 6.2 percent for white families and somewhat higher than the 12.0 percent for Hispanic families.

Married persons in the work force, who tend to be older than the average worker, are much less likely to experience job market difficulties than are others. The unemployment rates for married men (3.0 percent) and women (3.9 percent) in the final quarter of 1989 were substantially lower than the national average (5.3 percent). The rate for women who maintain families (with no spouse present), at 8.0 percent, was markedly higher. This aspect of the national unemployment situation is a particular cause for concern, in that about 6 out of 10 women who maintain families have children under the age of 18, and that such women run the highest risk of being in poverty.[6]

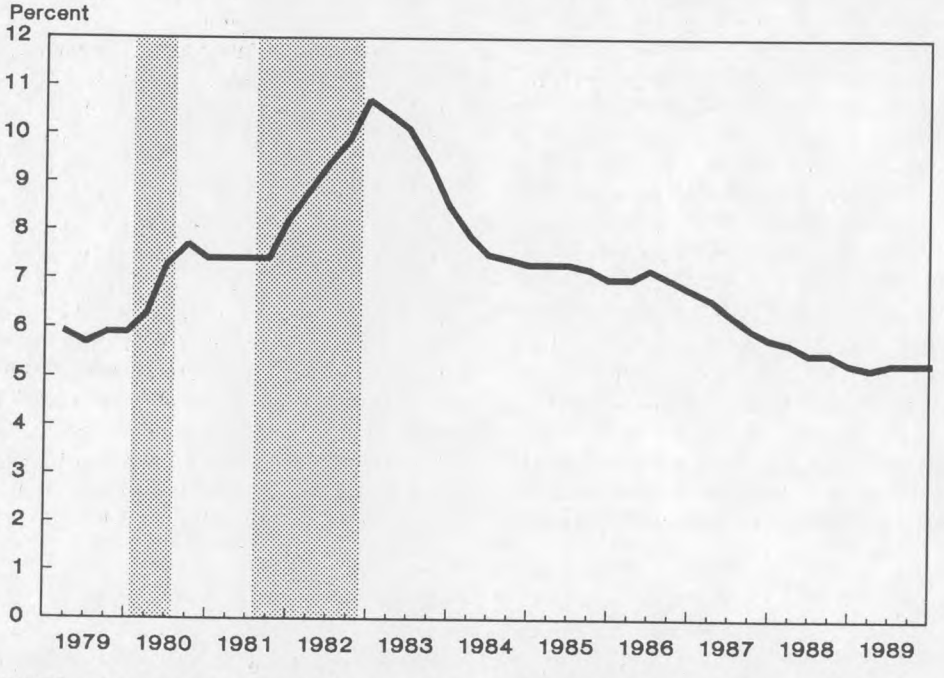
Labor force

The civilian labor force, at a level of 124.4 million in the fourth quarter of 1989, rose by a little under 2 million during the year. Given the relative stability in unemployment, movements in the total labor force and for most worker groups generally matched those of employment, with a relatively fast pace being set early in the year and then little change occurring in the second half.

Adult women were responsible for about half of the over-the-year increase in the work force. Since the beginning of the expansion, they have accounted for 62 percent of total labor force gains. The teenage labor force, at a level of 7.9 million in the fourth quarter of 1989, showed little change over the year, despite the continuing decline in their population. The 16- to 19-year-old population has fallen nearly every year in the 1980's.

The percentage of the population in the labor force—the *labor force participation rate*—reached 66.5 percent during the year, the highest mark on record for that measure. The participation rate for adult men (78.1 percent) showed little change over the year, while that for adult women (57.7 percent) set

Chart 5. **Unemployment rate for all civilian workers, seasonally adjusted quarterly averages, 1979–89**



NOTE: Shaded areas represent recessionary periods as designated by the National Bureau of Economic Research.

another high, as it has virtually every quarter during the expansion.

Hispanic workers accounted for about 15 percent of 1989's work force gains, twice their representation in the total labor force. The rapid increase in the Hispanic population—fueled primarily by immigration—provided the impetus for their increased labor market activity. The Hispanic labor force participation rate—at 67.4 percent in the fourth quarter—continued to be the highest among the three major race/ethnic groups.

Persons not in the labor force

Over the course of a long employment expansion, labor markets tend to tighten as a ready supply of workers becomes more scarce. Some persons outside the labor force may become more inclined to enter it as demand for workers in some areas or industries increases. As such, they may be thought of as potential workers. Table 3 shows the composition of persons outside the work force based on whether or not they want a job and their reason for not looking.

As might be expected, about 9 of 10 persons outside the labor force do not want a job. Most of those persons are women, retired individuals, and students. In the fourth quarter of 1989, about 5.2 million persons outside the labor force wanted a job, but were not looking. About two-thirds of them were women (many of whom cited family responsibilities as their reason for not looking), while students and persons with ill health or disabilities also made up significant shares of this population.

The persons who want jobs but are not looking because they think they cannot find any are called *discouraged workers*. The number of such persons fell over the year, by 125,000, to a level of 825,000 in the fourth quarter. About two-thirds of the discouraged workers claimed job-market factors as their reason for not looking for work, while the remaining third cited personal reasons. The over-the-year improvement came from both sources. Slightly more than half of all discouraged workers were women, while more than 1 in 4 were black.

IN SUMMARY, employment growth continued in 1989, although at a much more moderate pace than in the preceding year, and unemployment showed little change for most of the year. The overall slowdown in job growth resulted from smaller job gains among most industries, although weakness was particularly evident in manufacturing, where employment actually declined during the year. The slower pace of employment growth was felt by all the major demographic groups; similarly, the overall pattern of little change in unemployment in 1989 held for all major worker groups.

The slowdown in labor market improvement in 1989 echoes a similar slowdown which occurred earlier in this expansion, from roughly mid-1984 to mid-1986. Both periods are characterized by reduced overall employment growth, owing mainly to weakness in the goods-producing sector, and an unchanging unemployment picture. The earlier slowdown was followed by a period of renewed labor market strength, as employment growth accelerated and jobless rates began moving downward again. It remains to be seen whether the current moderation of growth in the now 7-year-old labor market expansion portends a worsening economic scenario, or, like the earlier moderating phase, is only a pause which will be followed by more vigorous labor market improvements. □

Table 3. **Persons not in the labor force by reason, seasonally adjusted quarterly averages, 1988 and 1989**

[In thousands]

Reason	1988	1989			
	IV	I	II	III	IV
Total not in labor force	62,811	62,564	62,419	62,567	62,624
Do not want a job now	57,506	57,232	57,007	57,626	57,577
Current activity:					
Going to school	6,289	6,367	6,278	6,995	6,229
Ill, disabled	4,688	4,567	4,774	4,671	4,767
Keeping house	24,573	24,507	24,096	24,031	23,886
Retired	17,256	17,194	17,387	17,673	18,270
Other activity	4,700	4,597	4,472	4,256	4,425
Want a job now	5,439	5,303	5,323	5,463	5,176
Reason not looking:					
School attendance	1,408	1,291	1,286	1,447	1,246
Ill health, disability	782	887	932	888	907
Home responsibilities	1,140	1,176	1,154	1,175	1,251
Think cannot get a job	954	851	865	817	827
Job-market factors	587	563	523	518	563
Personal factors	367	289	343	299	263
Other reasons	1,154	1,097	1,085	1,136	945

Footnotes

[1] Data on gross national product (GNP) are produced quarterly by the Bureau of Economic Analysis of the U.S. Department of Commerce. Advance estimates are released in the first month following the end of the quarter. Preliminary and final estimates, based on more complete information, are released in the second and third months, respectively.

[2] *Federal Reserve Bulletin* (Board of Governors of the Federal Reserve System, selected issues), table 3.28.

[3] The Current Employment Statistics program is a monthly survey of more than 300,000 business establishments nationwide conducted by the Bureau of Labor Statistics (BLS) in cooperation with State employment security agencies. The Current Population Survey is a monthly survey of about 60,000 households nationwide conducted for BLS by the Bureau of the Census. For further information on these surveys, see *BLS Handbook of Methods,* Bulletin 2285 (Bureau of Labor Statistics, 1988).

[4] Unless otherwise noted, estimates of employment change in this article refer to differences in seasonally adjusted quarterly averages. Over-the-year changes are based on fourth-quarter averages.

[5] In a recent *Monthly Labor Review* article which compared job growth estimates from the CES and CPS during the current economic expansion, the author, Paul Flaim, outlined several potential reasons for the divergence between the two surveys. These include differences in the way the two surveys account for multiple jobholders, the accuracy of adjustments to the CES for new firm growth, and the accuracy of population estimates used in the CPS. See Paul O. Flaim, "How many new jobs since 1982? Data from two surveys differ," *Monthly Labor Review,* August 1989, pp. 10–15.

New information on the number of multiple jobholders sheds light on the general pattern of the CES–CPS divergence in employment growth during this recovery. In the establishment survey, multiple jobholders are counted each time they appear on a payroll. In the household survey, a person is counted as employed only once, regardless of the number of jobs held. Data from a special supplement to the CPS on multiple jobholding taken in May 1989 suggest that, since the last estimate of multiple jobholders was made (in May 1985), the number of persons with two jobs or more has grown dramatically; in fact, such growth may account for about two-thirds of the divergence in employment growth estimates between the CPS and CES over the May 1985–May 1989 period. For a summary analysis of the recent data on dual jobholders, see the news release entitled "Multiple Jobholding Reached Record High in May 1989," USDL 89–529 (Bureau of Labor Statistics, Nov. 6, 1989). A forthcoming *Monthly Labor Review* article will provide a thorough analysis of the multiple jobholding data and their impact on the reconciliation of job growth estimates from the two surveys.

[6] See Bruce W. Klein and Philip L. Rones, "A profile of the working poor," *Monthly Labor Review,* October 1989, pp. 3–13.

Geographical trends

. . . The human resources period will be best known for returning work to the home, but other types of migration will occur as well. Having work based in the home will greatly increase individual freedom to live in any area desired without worrying about the commute to work. Individuals might opt for the city, the suburbs, or a rural area simply because that is where they prefer to live.

The human resources period should reduce the trend of people moving to where the jobs are, which has been the trend for hundreds of years. Our highly mobile society will become less mobile, except for those who simply like to relocate every few months. With this more stationary population, there should be a much stronger sense of community, since people will get to know their neighbors better. And that will be needed to offset the loss of contact with coworkers that results from work at home. Stronger ties will exist with the community and within the family.

—Dennis J. Kravetz
The Human Resources Revolution: Implementing Progressive Management Practices for Bottom-Line Success
(San Francisco, CA, Jossey–Bass Publishers, 1988), p. 63.

Hours at work: a new base for BLS productivity statistics

Using data from a recently established survey, BLS defines a new measure of labor input; hours at work replace hours paid in statistics on productivity

Mary Jablonski,
Kent Kunze,
and
Phyllis Flohr Otto

In August 1989, the Bureau of Labor Statistics began publishing productivity statistics for major sectors of the U.S. economy that are based on a new measure of labor input: hours at work. Previous productivity statistics were based primarily on hours paid, which come from employer payroll records. The switch to hours at work was accomplished with data from one of the newer BLS surveys, the Hours at Work Survey.[1]

This article reports on the conversion to hours at work and the resulting effects on productivity statistics. It describes the Hours at Work Survey, which yields ratios of hours at work to hours paid, and presents results from the survey. The historical series of ratios constructed for the period prior to the Hours at Work Survey are discussed. The article concludes with a brief description of how the ratios of hours at work to hours paid are used to produce the new hours measures.

Conversion to hours at work

On August 3, 1989, the Bureau of Labor Statistics began using hours at work in its productivity and cost measures for the major sectors: business, nonfarm business, manufacturing, and nonfinancial corporations. All of the measures for these sectors that involve hours were altered, including output per hour and compensation per hour. The measures are published eight times a year in a Department of Labor news release, "Productivity and Costs," and also appear in Bureau of Labor Statistics publications, such as the *Monthly Labor Review* and *Employment and Earnings*.[2]

In the previous measures, hours of all persons consisted of hours paid of employees in the private nonfarm business sector and hours worked of self-employed persons, unpaid family workers, employees of government enterprises, and, in the business-sector measures, farm employees. Hours paid are based on information from the Current Employment Statistics program (also known as the establishment survey), which collects data from firms' payroll records each month. Hours paid of employees accounted for about 85 percent of total hours in the old business-sector hours measure. Hours worked of self-employed persons, unpaid family workers, employees of government enterprises, and farm employees are from the Current Population Survey, a monthly household survey.[3]

In the new measures, the hours paid of employees in private nonfarm business are replaced by a measure of their hours at work that was developed with the results of the Hours at Work Survey. Because the measure of hours at work excludes paid leave, which is composed of hours that are not devoted to the production process, it is preferred to hours paid as a measure of labor input for productivity statistics.[4]

The use of hours at work instead of hours paid has little effect on the long-term average annual

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growth rates of labor productivity, as measured by output per hour of all persons (table 1). For the period 1948 to 1988, the average annual growth rate of output per hour in nonfarm business is effectively unchanged when hours at work are substituted for hours paid. In manufacturing, the rate is one-tenth of a percentage point higher when the hours measure is hours at work.

Switching to hours at work increases the labor productivity growth rate slightly in nonfarm business from 1948 to 1973 and from 1973 to 1979. The rate is one-tenth of a percentage point higher in both periods, and so the falloff in productivity growth during the two periods (the productivity slowdown) remains the same: 1.9 percentage points. Therefore, the switch to hours at work explains none of the productivity slowdown in nonfarm business in the 1970's. In the most recent period, 1979 to 1988, the annual growth rate of output per hour is one-tenth of a percentage point lower when hours at work of employees are the measure of labor input.

In manufacturing, the new measure of output per hour grew at an average annual rate that was one-tenth of a percentage point greater than that of the old measure from 1948 to 1973 and two-tenths of a percentage point greater from 1973 to 1979. Hence, a small fraction of the productivity slowdown in manufacturing in the 1970's (0.1 of 1.4 percentage points) can be explained by excluding paid leave from labor input. As in nonfarm business, the productivity growth rate in manufacturing is one-tenth of a percentage point lower from 1979 to 1988 when hours at work are used.

Annual differences in labor productivity growth rates based on the new and old hours series can be much larger than the long-term differences in the growth rates (table 2). For example, from 1982 to 1983, the percent change in output per hour using hours at work was lower than the percent change in output per hour using hours paid by three-tenths of a percentage point in nonfarm business and six-tenths of a percentage point in manufacturing. Similarly, substituting hours at work for hours paid increases the percent change in output per hour from 1985 to 1986 by half a percentage point in both nonfarm business and manufacturing.

Multifactor productivity measures for business, nonfarm business, and manufacturing are also now computed using hours at work.[5] The effect of the switch to hours at work is smaller on the multifactor productivity measures than on the labor productivity measures, because there are two inputs (capital and labor) in the multifactor productivity measures. The effect on the percent change in multifactor productivity is approximately two-thirds of the effect on labor productivity, because labor's share of the value of output is about two-thirds. For example, the downward adjustment in the annual percent change in labor productivity in nonfarm business in 1983 was three-tenths of a percentage point, while the downward adjustment in multifactor productivity was two-tenths of a percentage point. The smaller adjustment in multifactor productivity can be seen also in some of the long-term growth rates (table 3). For instance, from 1948 to 1973, the average annual growth rate of the new measure of output per hour in nonfarm business was one-tenth of a percentage point higher than that of the old measure, while the growth rates of the old and new measures of multifactor productivity were the same. Note that comparisons between tables 1 and 3 are not straightforward: in some cases the smaller adjustment in multifactor productivity is not evident, because the periods ending in the 1980's are not comparable across the tables and the growth rates are rounded to one decimal place.

Hours at Work Survey

"Hours at work" refers to the time that an employee spends on the job. In addition to time spent actually working, hours at work include short rest periods, coffee breaks, standby or ready time, downtime, portal-to-portal time (if paid), washup time (if paid), travel time from job site to job site within the working day, travel time away from home if it cuts across the working day, and paid training periods. For the purpose of the Hours at Work Survey, hours at

Table 1. **Growth rates of labor productivity, based on hours at work and hours paid, 1948–88**

[Compound average annual rates]

Sector and period	Output per hour based on—		Difference
	Hours at work	Hours paid	
Nonfarm business:			
1948–88	1.9	1.9	0.0
1948–73	2.5	2.4	.1
1973–79	.6	.5	.1
1979–88	1.2	1.3	−.1
Manufacturing:			
1948–88	2.8	2.7	.1
1948–73	2.9	2.8	.1
1973–79	1.6	1.4	.2
1979–88	3.3	3.4	−.1

NOTE: Labor productivity is output per hour of all persons.

Table 2. Labor productivity based on hours at work and hours paid, 1948–88

[Percent change from previous year]

Year	Nonfarm business			Manufacturing		
	Output per hour based on—		Difference	Output per hour based on—		Difference
	Hours at work	Hours paid		Hours at work	Hours paid	
1948	3.8	3.8	0.0	6.1	6.1	0.0
1949	1.6	1.7	−.1	4.1	4.1	.0
1950	6.5	6.4	.1	5.5	5.4	.1
1951	3.1	3.0	.1	4.0	3.9	.1
1952	2.2	2.2	.0	2.0	1.9	.1
1953	2.2	2.2	.0	2.1	2.1	.0
1954	1.4	1.5	−.1	1.4	1.4	.0
1955	3.0	2.9	.1	4.7	4.7	.0
1956	.6	.6	.0	−.5	−.6	.1
1957	1.9	1.9	.0	2.2	2.1	.1
1958	2.3	2.4	−.1	−.6	−.6	.0
1959	3.2	3.2	.0	4.5	4.5	.0
1960	1.1	1.1	.0	.6	.5	.1
1961	3.1	3.1	.0	2.8	2.8	.0
1962	3.3	3.3	.0	4.3	4.2	.1
1963	3.6	3.6	.0	6.9	6.8	.1
1964	3.9	3.9	.0	4.8	4.8	.0
1965	2.6	2.5	.1	2.7	2.7	.0
1966	2.2	2.1	.1	1.1	1.1	.0
1967	2.6	2.3	.3	.3	−.1	.4
1968	2.9	2.6	.3	3.6	3.2	.4
1969	−.3	−.5	.2	1.6	1.2	.4
1970	.5	.3	.2	.4	.0	.4
1971	2.9	3.0	−.1	5.5	5.6	−.1
1972	3.0	3.1	−.1	3.9	4.4	−.5
1973	2.1	1.8	.3	5.4	4.9	.5
1974	−1.9	−2.2	.3	−2.6	−3.0	.4
1975	1.9	1.8	.1	2.6	2.5	.1
1976	2.8	2.6	.2	4.7	4.6	.1
1977	1.7	1.6	.1	3.1	3.0	.1
1978	.9	.8	.1	1.6	1.5	.1
1979	−1.5	−1.6	.1	.0	−.1	.1
1980	−.4	−.4	.0	.0	.0	.0
1981	1.1	1.0	.1	2.3	2.2	.1
1982	−.9	−.6	−.3	2.5	2.2	.3
1983	3.0	3.3	−.3	5.2	5.8	−.6
1984	2.1	2.1	.0	5.4	5.5	−.1
1985	1.3	1.4	−.1	4.5	4.6	−.1
1986	2.0	1.5	.5	3.8	3.3	.5
1987	1.1	1.5	−.4	3.7	3.5	.2
1988	2.0	2.1	−.1	2.7	3.6	−.9

NOTE: Labor productivity is output per hour of all persons.

work can be computed by subtracting hours of paid leave from total hours paid. Paid leave includes paid vacation time, paid sick leave, paid holidays, and other paid personal or administrative leave.

The Hours at Work Survey was developed in order to obtain ratios of hours at work to hours paid. The survey was created following a review by a BLS task force of existing surveys to determine the most appropriate method for the measurement of hours worked.[6] The task force selected the term "hours at work" and provided the definition given above. In its report, the task force recommended that data on hours at work and hours paid be collected from a sample of establishments annually. With these data, ratios of hours at work to hours paid could be computed and applied to data on hours paid from the establishment survey.[7] The Hours at Work Survey, which began in 1982, resulted from the task force recommendations.

The Hours at Work Survey is conducted annually. Annual and quarterly data on hours at work and hours paid for the previous year are

collected from a sample of nonagricultural business establishments. The sample is a stratified random sample of establishments in the Unemployment Insurance reporting system (the ES–202 program). Stratification of the sample is done both by industry and by number of employees at the establishment. During the first 6 years of the survey, approximately 4,500 establishments were sampled. Beginning with the 1987 Hours at Work Survey (which gathered data for 1987 and which was conducted in 1988), the sample size was increased to about 5,500.

The Hours at Work Survey gathers data on the hours at work and hours paid of nonsupervisory and production workers. This makes the survey consistent with the establishment survey, which collects data on hours paid of nonsupervisory and production workers from a sample of about 300,000 establishments each month.

The data on hours at work and hours paid are obtained by mail and by telephone. After an initial mailing of the questionnaires in January of each year, there are two mail followups and a telephone followup. There are two questionnaires: one for manufacturing, mining, and construction, and one for all other industries.

The usable response rate for all industries has averaged about 80 percent. In the 1988 survey, the response rate for all industries was 80.4 percent. The response rate for manufacturing (82.5 percent) was well above the rate for nonmanufacturing (68.4 percent).

The data from the Hours at Work Survey are used to compute annual and quarterly ratios of hours at work to hours paid for 2-digit Standard Industrial Classification (SIC) industries in manufacturing and for industry groups, such as construction and retail trade, outside of manufacturing. The annual ratios of hours at work to hours paid from 1981 to 1988 are shown in table 4.

The ratio of hours at work to hours paid for nonagricultural business rose from .924 in 1981 to .931 in 1988. The ratio has been at or near .930 in most years since it first reached that level in 1983. A ratio of .930 implies 18.2 days of paid leave per year for a full-time, year-round worker. This amounts to slightly more than $3\frac{1}{2}$ weeks of paid leave and is approximately the amount of paid leave received by a worker with a 2-week paid vacation (10 workdays off) and 8 paid holidays.

Movements in the ratio of hours at work to hours paid have inverse effects on productivity measures. When the ratio rises, the adjustment in the productivity measure is downward (as in nonfarm business in 1983). When the ratio falls, the adjustment in the productivity measure is upward (as in nonfarm business and manufacturing in 1986).

The relationship between hours at work and hours paid varies with the business cycle. This was especially evident in the early 1980's. The ratio for all industries jumped from .926 in 1982 to .930 in 1983 as the economy moved from recession to expansion. In the beginning of an economic expansion, there is usually an increase in the proportion of junior employees, who receive less paid leave; there may also be an increase in overtime hours at the start of an expansion. Both of these phenomena raise the average ratio of hours at work to hours paid. Under such conditions, the percent change in hours at work is greater than the percent change in hours paid, and the growth of output per hour based on hours at work will be less than that based on hours paid.

The relationship between hours at work and hours paid is also affected by shifts in employment among sectors of the economy. Between 1981 and 1988, employment shifted from manufacturing to nonmanufacturing: employment in manufacturing fell by 0.8 million and employment in nonmanufacturing rose by 12.4 million. Throughout the life of the Hours at Work Survey, the ratio in nonmanufacturing (.936 in 1988) has always been well above the ratio in manufacturing (.918 in 1988), so that a shift in employment toward nonmanufacturing has a positive effect on the overall ratio.

Table 3. **Growth rates of multifactor productivity, based on hours at work and hours paid, 1948–85**

[Compound average annual rates]

Sector and period	Multifactor productivity based on—		Difference
	Hours at work	Hours paid	
Private nonfarm business:[1]			
1948–85	1.3	1.2	0.1
1948–73	1.8	1.8	.0
1973–79	.1	.0	.1
1979–85	.3	.4	−.1
Manufacturing:			
1948–85	2.0	1.9	.1
1948–73	2.2	2.1	.1
1973–79	.7	.6	.1
1979–85	2.4	2.5	−.1

[1] Private nonfarm business is nonfarm business less government enterprises.

NOTE: Multifactor productivity measures based on hours at work for 1986, 1987, and 1988 were not available at the time this article was prepared.

Table 4. **Ratio of hours at work to hours paid for production and nonsupervisory workers, by industry, 1981–88**

Industry	1981	1982	1983	1984	1985	1986	1987	1988
Nonagricultural business	0.924	0.926	0.930	0.931	0.932	0.925	0.930	0.931
Mining	.937	.925	.916	.921	.926	.924	.928	.924
Construction	.978	.982	.980	.973	.983	.970	.956	.978
Manufacturing	.912	.909	.914	.915	.916	.912	.910	.918
Durable	.907	.905	.911	.911	.915	.908	.904	.916
Lumber	.935	.929	.944	.940	.946	.945	.949	.952
Furniture and fixtures	.941	.931	.936	.937	.938	.940	.936	.928
Stone, clay, glass	.906	.903	.910	.915	.923	.927	.920	.923
Primary metals	.891	.879	.901	.909	.908	.896	.906	.915
Fabricated metals	.919	.912	.919	.917	.921	.918	.904	.924
Machinery (except electrical)	.900	.906	.902	.909	.915	.905	.911	.919
Electrical equipment	.906	.899	.909	.902	.903	.899	.900	.905
Transportation equipment	.893	.898	.908	.898	.905	.882	.862	.900
Instruments	.907	.904	.886	.901	.904	.897	.896	.901
Miscellaneous manufacturing	.927	.921	.919	.931	.920	.942	.930	.935
Nondurable	.920	.916	.918	.921	.917	.916	.919	.919
Food and kindred products	.927	.924	.921	.912	.914	.921	.916	.917
Tobacco	.892	.853	.865	.831	.872	.877	.896	.888
Textile mills	.943	.937	.944	.939	.943	.942	.950	.946
Apparel	.948	.939	.937	.955	.931	.934	.940	.942
Paper	.883	.890	.897	.895	.897	.878	.890	.889
Printing and publishing	.905	.915	.919	.918	.924	.920	.910	.922
Chemicals	.895	.882	.886	.893	.897	.887	.888	.890
Petroleum and coal products	.899	.892	.878	.889	.892	.887	.899	.888
Rubber and plastic products	.918	.906	.916	.931	.919	.924	.927	.929
Leather	.931	.930	.936	.925	.931	.927	.935	.932
Transportation	.875	.871	.879	.890	.917	.918	.927	.918
Communications	.887	.883	.881	.876	.868	.879	.873	.879
Electric, gas, sanitary services	.876	.873	.882	.881	.886	.870	.876	.855
Wholesale trade	.934	.936	.928	.920	.931	.921	.928	.947
Retail trade	.947	.959	.960	.961	.952	.936	.952	.948
Finance, insurance, real estate	.914	.905	.901	.907	.925	.913	.918	.909
Services	.920	.936	.948	.944	.932	.936	.938	.928

Historical series

Because productivity statistics for the major sectors of the economy go back to 1947, while the Hours at Work Survey data begin in 1981, historical series are needed for the ratios of hours at work to hours paid for the period 1947 to 1980. Various sources of data for the historical series were explored, including the Survey of Employer Expenditures for Employee Compensation, the Current Population Survey, the Annual Survey of Manufactures, the Occupational Safety and Health Survey, and BLS area wage surveys (which collect data on leave practices as well as on wages).[8]

In the Survey of Employer Expenditures for Employee Compensation, the Bureau of Labor Statistics collected information on hours paid and hours of paid leave.[9] The survey was conducted biennially from 1966 to 1974 and then for a final time in 1977. The survey covered the private nonfarm economy and gathered separate data on office and nonoffice workers. With the information on hours paid and hours of paid leave, measures of hours at work were calculated. Ratios of hours at work to hours paid were constructed for 2-digit SIC manufacturing industries and for industry groups in nonmanufacturing, using unpublished hours data obtained in the survey by 2-digit SIC industry.[10] Also, for the 2-digit SIC manufacturing industries, ratios of hours at work to hours paid for production workers are available for the years 1959 and 1962. These ratios are from a survey that preceded the Survey of Employer Expenditures for Employee Compensation, called the Survey of Employer Expenditures for Selected Supplementary Compensation Practices for Production and Related Workers in Manufacturing Industries.[11]

Together, the two surveys of employer expenditures provide ratios of hours at work to hours paid for many of the years from 1959 to 1977 for manufacturing and from 1966 to 1977 for nonmanufacturing. However, there are numerous gaps in these data, and there is also a

gap between the 1977 Survey of Employer Expenditures for Employee Compensation and the 1981 Hours at Work Survey. A way to fill the gaps had to be found. After several methods were tried—including regressions with hours data from the Current Population Survey and the Annual Survey of Manufactures, as well as the use of leave practices data, hours worked from the Occupational Safety and Health Survey, or movements in output—simple linear interpolation was selected because its results were at least as good as the results obtained by these other methods.

For the years preceding the employer expenditure surveys, data are not available for the construction of satisfactory estimates of the ratios of hours at work to hours paid. Three data sources—the Current Population Survey, the Annual Survey of Manufactures, and area wage surveys—were examined that provide information with which measures of hours at work can be derived for those years. Several possible series for the ratios were calculated by dividing each measure of hours at work by hours paid from the establishment survey and benchmarking the result to one or the other of the expenditure surveys. In each case, the estimates of the ratios of hours at work to hours paid that were produced were implausible.

Because of the lack of adequate data with which to construct reliable estimates of the ratios, constants are used for the early periods. For the period 1947 to 1958, the ratios for manufacturing industries are held constant at the 1959 levels. For the period 1947 to 1965, the ratios for industry groups in nonmanufacturing are held constant at the 1966 levels. Lacking better data, the best estimates of year-to-year movements in hours at work in those early periods are the movements of the measures of hours paid.

Construction of new hours measures

The new measures of hours at work are constructed with ratios of hours at work to hours paid from the Hours at Work Survey (starting in 1981) and from historical series (1947 to 1980). In the new measures, the hours paid of employees in private nonfarm business are converted to hours at work by means of the ratios, and then these hours at work are combined with the hours at work of other persons from the Current Population Survey.

In manufacturing, the hours at work of production and nonproduction workers are computed separately. The ratios of hours at work to hours paid from the Hours at Work Survey are applied at the 2-digit SIC level to the hours paid of production workers. For nonproduction workers, ratios for the durable and nondurable manufacturing subsectors are used, because average weekly hours paid are calculated for those workers at the subsector level, rather than at a more detailed level.[12] For the years prior to 1981, nonoffice-worker ratios are used in the measures of hours at work for production workers and office-worker ratios for nonproduction workers.

In nonmanufacturing, the hours paid of all types of employees in an industry group are converted together to hours at work. For the period 1947 to 1980, the ratios of hours at work

Table 5. Adjustment ratios for the hours of all persons in nonfarm business and manufacturing, 1947–88

Year	Nonfarm business	Manufacturing
1947	0.955	0.941
1948	.955	.941
1949	.956	.941
1950	.956	.941
1951	.955	.940
1952	.955	.939
1953	.954	.939
1954	.955	.939
1955	.955	.939
1956	.955	.938
1957	.955	.938
1958	.955	.938
1959	.955	.938
1960	.955	.938
1961	.955	.938
1962	.955	.937
1963	.955	.937
1964	.955	.937
1965	.954	.936
1966	.953	.936
1967	.950	.932
1968	.948	.928
1969	.946	.924
1970	.944	.921
1971	.945	.922
1972	.945	.926
1973	.942	.922
1974	.939	.918
1975	.938	.917
1976	.937	.916
1977	.935	.915
1978	.935	.914
1979	.934	.913
1980	.934	.912
1981	.933	.912
1982	.936	.908
1983	.940	.913
1984	.939	.914
1985	.940	.915
1986	.935	.911
1987	.938	.909
1988	.939	.917

NOTE: Adjustment ratio equals new hours measure (hours at work) divided by old hours measure (computed using hours paid of employees).

to hours paid are based on data on all employees taken from the Survey of Employer Expenditures for Employee Compensation; for the years after 1980, the ratios come from the Hours at Work Survey and are calculated from data on production and nonsupervisory workers only.[13]

The ratios of hours at work to hours paid for a given year are not available from the Hours at Work Survey until late in the following year. The annual growth rates of multifactor productivity are published after the ratios become available. However, labor productivity measures for a given year are first released about a month after the year ends. Accordingly, until the ratios for that year become available, the ratios for the previous year are used in the measures that appear in the news release, "Productivity and Costs." For example, the ratios for 1988 were produced in the second half of 1989. Until those ratios were available, the ratios for 1987 were used to compute the 1988 hours measures. Each year, the new ratios will be incorporated into the labor productivity and cost measures in the issue of "Productivity and Costs" that is published in early November.

The Hours at Work Survey gathers quarterly data on hours at work and hours paid. Because the quarterly ratios exhibit a seasonal pattern, seasonal adjustment of the ratios is necessary. However, the seasonal pattern is not yet stable, so the quarterly ratios are not being used in the quarterly labor productivity measures, which are seasonally adjusted measures. An alternative method for obtaining usable quarterly ratios is to use the annual ratio for each of the quarters in a year, but this results in fourth- to first-quarter jumps in the hours and productivity measures. The option that finally was selected to obtain quarterly measures is a method devised by Frank Denton in which a quadratic minimization formula is used together with annual data to generate the measures.[14]

To show the effects on the hours measures of the application of the ratios of hours at work to hours paid, "adjustment ratios" have been calculated. The adjustment ratio for the hours of all persons in nonfarm business equals the new measure of hours, which is hours at work, divided by the old measure of hours, which is primarily hours paid (table 5). The adjustment ratios for 1981 to 1988 are not identical to the ratios of hours at work to hours paid in table 4, because the adjustment ratios refer to all persons and the ratios in table 4 refer to only production and nonsupervisory workers. Notice that the adjustment ratio for nonfarm business falls by 0.016 between 1948 and 1988. However, this fall is spread over 40 years, so the average annual rate of decline in the ratio is less than 0.1 percent. Hence, as seen in table 1, the productivity growth rate for the period is unaltered by the shift to hours at work. Also, note that even though the ratios of hours at work to hours paid are held constant in manufacturing before 1959 and elsewhere before 1966, the adjustment ratios are not constant in the early years. This is due to shifts in employment among sectors and among classes of workers, which produce composition effects. These effects are especially noticeable in manufacturing, where there is clearly a gradual decline in the adjustment ratio between 1947 and 1959. The decline is the result of two factors: (1) faster employment growth in durable manufacturing than in nondurable manufacturing (where the ratio of hours at work to hours paid is higher), and (2) faster growth in the number of employees in manufacturing versus the number of self-employed workers (whose adjustment ratio is 1).[15] □

Footnotes

[1] The Hours at Work Survey was first presented in Kent Kunze, "A new BLS survey measures the ratio of hours worked to hours paid," *Monthly Labor Review*, June 1984, pp. 3–7; in a subsequent research summary, "Hours at work increase relative to hours paid," *Monthly Labor Review*, June 1985, pp. 44–46, Kunze updated the survey results.

[2] Table C–9 in *Employment and Earnings* continues to show hours paid of employees. This table is prepared by the Bureau's Office of Productivity and Technology, as are the productivity and cost measures.

[3] The establishment survey does not cover the farm sector or self-employed and unpaid family workers, so hours worked for those individuals are taken from the Current Population Survey. This survey requests the hours worked in the survey week of each employed person in the household. Because it is a much smaller survey, and because respondents often provide information on household members other than themselves, the Current Population Survey is considered a less reliable source of hours than the establishment survey, and therefore the establishment survey is the main source of hours for productivity statistics.

[4] If hours paid and hours at work grow at the same rate, then for the measurement of productivity growth, it does not matter which measure of hours is used. However, if there is a divergence in the rates of growth over time, using hours paid rather than hours at work will yield an incorrect productivity growth rate.

[5] For descriptions of multifactor productivity measures, see *Trends in Multifactor Productivity, 1948–81*, Bulletin 2178 (Bureau of Labor Statistics, 1983); and Edwin Dean and Kent Kunze, "Recent changes in the growth of U.S. multifactor productivity," *Monthly Labor Review*, May 1988, pp. 14–22. A news release containing multifactor productivity measures for 1948 to 1988 based on hours at work is slated for publication by the Bureau of Labor Statistics in early 1990.

[6] *Report of the BLS Task Force on Hours Worked* (Bureau of Labor Statistics, 1976).

[7] The task force rejected substituting hours at work for hours paid in the establishment survey because the hours paid series are valuable and go back for decades. The task force also rejected collecting hours at work along with hours paid in the establishment survey each month. The reason given was that the survey requests data for the pay period that includes the 12th of the month, and thus it might overstate hours at work because this pay period misses most holidays. See *Report of the BLS Task Force*.

[8] Data on leave practices are for two types of leave: paid holidays and paid vacations. The data on holidays show how many holidays workers are entitled to per year, in percentage terms (for example, 20 percent of workers might be entitled to 10 holidays per year). The data on vacations indicate what percentage of workers are in establishments in which a worker receives a particular amount of vacation after a certain number of years of tenure (for example, 40 percent might be in establishments in which a worker receives 1 week of vacation after 1 year of service). Data on leave practices have been collected since 1952 in BLS area wage surveys.

[9] For details regarding the Survey of Employer Expenditures for Employee Compensation, see *Employee Compensation in the Private Nonfarm Economy, 1974*, Bulletin 1963 (Bureau of Labor Statistics, 1977).

[10] For 1966, unpublished survey data on hours are not available. However, the ratios of hours at work to hours paid for the private nonfarm economy, the manufacturing sector, and the nonmanufacturing sector for that year have been published in *Employee Compensation in the Private Nonfarm Economy, 1966*, Bulletin 1627 (Bureau of Labor Statistics, June 1969).

[11] This survey is described in *Employer Expenditures for Selected Supplementary Compensation Practices for Production and Related Workers; Composition of Payroll Hours, Manufacturing Industries, 1962*, Bulletin 1428 (Bureau of Labor Statistics, April 1965).

[12] The establishment survey does not collect data on the hours of nonproduction workers. The average weekly hours paid of nonproduction workers are calculated for the durable and nondurable subsectors with establishment data on production worker average weekly hours and with data from the Survey of Employer Expenditures for Employee Compensation. Hours paid of nonproduction workers in a specific 2-digit SIC manufacturing industry are obtained by multiplying the number of such workers in the industry (from the establishment survey) by the average weekly hours paid of nonproduction workers in the appropriate subsector. Also, before being applied to the hours paid of nonproduction workers, the Hours at Work Survey ratio for each subsector (which is for production workers) is adjusted to make it more suitable for use with nonproduction worker data. The ratio is multiplied by the ratio of hours at work to hours paid for office workers in the subsector divided by the ratio for nonoffice workers in the subsector in 1977, the last year of the Survey of Employer Expenditures for Employee Compensation.

[13] As with nonproduction workers, the establishment survey does not gather data on the hours of supervisors. To calculate the hours paid of nonproduction workers and supervisors in the sectors in nonmanufacturing, data on their employment (from the establishment survey) are used, along with the average weekly hours paid of production and nonsupervisory workers in those sectors.

[14] See Frank T. Denton, "Adjustment of Monthly or Quarterly Series to Annual Totals: An Approach Based on Quadratic Minimization," *Journal of the American Statistical Association*, March 1971, pp. 99–102. This method was also used to produce quarterly measures for the years before 1981. Note that the method yields ratios of hours at work to hours paid for the quarters in the current year, as well as for quarters in completed years.

[15] The number of employees grew by 12 percent in durable manufacturing from 1947 to 1959 and by only 2 percent in nondurable manufacturing. The number of self-employed workers fell by 13 percent in durable manufacturing and by 32 percent in nondurable manufacturing in that same timespan.

Supplementing retirement until Social Security begins

Nearly all employees covered by a pension plan can begin receiving benefits before they are eligible for Social Security payments; a few pension plans provide supplements until Government payments begin

William J. Wiatrowski

The term "three-legged stool" is commonly used to emphasize that retirement income derives from three primary sources: Social Security, employer-sponsored retirement plans, and workers' savings. If workers retire before age 62, however, the first leg of the stool, Social Security payments, is missing. To compensate, some private pension plans provide extra payments until a retired worker is eligible for this Government benefit.

According to the Bureau of Labor Statistics 1988 Employee Benefits Survey of medium and large firms in private industry, 1 in 8 defined benefit pension plan participants was in a plan that provided such supplemental payments. These special benefits usually continued until the retiree reached age 62, the earliest age at which regular Social Security benefits may commence.[1] Benefit payments ranged widely, but most commonly were a uniform dollar amount for all plan participants regardless of salary or length of service.

The 1988 survey studied full-time employees in a sample of 2,500 establishments, which represented approximately 107,000 establishments employing 31 million full-time workers. Separate data were developed for three broad occupational groups: professional and administrative, technical and clerical, and production and service workers. The first two groups are referred to collectively as white-collar workers, the third as blue-collar workers.[2]

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Retirement ages

The ages at which employees may begin to receive retirement benefits from employer-sponsored pension plans and from Social Security frequently do not correspond. To understand these age differences, it is useful to contrast the benefit approaches of private plans with those of Government programs. In 1988, 63 percent of employees in medium and large firms in private industry participated in defined benefit pension plans.[3] A defined benefit pension plan specifies a formula (for example, a percent of the employee's earnings or a dollar amount for each year of service) and also specifies age and length of service requirements that must be met before an employee is eligible for either normal or early retirement benefits. *Normal retirement* benefits are the full annuities yielded by the pension plan's benefit formula, without reduction due to age at retirement. *Early retirement* benefits are systematically reduced because they begin at an earlier age and, on average, will be received over a long period.

Traditionally, most private pension plans adopted age 65 as the normal retirement age. In 1969, 69 percent of workers in pension plans had to work until age 65 to receive normal retirement benefits, and only 9 percent could receive such benefits prior to age 60.[4] This corresponds with Social Security, which, at its

inception, established 65 as the age for full benefits. The age for receipt of full Social Security benefits is currently 65, although the required age will rise beginning in 2003, as discussed later.

More recently, private pension plans have lowered the age at which retired workers may receive unreduced normal benefits. In 1988, nearly 60 percent of the participants of defined benefit pension plans could retire before age 65 with full benefits.

In addition, early retirement provisions covered nearly all participants of defined benefit pension plans in 1988. Age 55 is the most common minimum age for early retirement, and almost all participants can retire with reduced benefits by age 60. Furthermore, some employers offer incentives to retire early by moderating the reductions in benefits imposed upon early retirees; fewer than a fifth of pension plan participants now face a full actuarial reduction in annuities.[5]

While these data suggest that private pension plans tend to encourage earlier retirement, Government policy appears to be just the opposite. In 1985, the Federal Government outlawed mandatory retirement for most workers.[6] The next year, in response to ongoing court challenges, the Congress required employers to credit years of service worked after age 65 toward future pension benefits.[7] And, currently, the Congress is debating removing the limit on income that can be earned by recipients of Social Security, a restriction which, many believe, discourages older Americans from continuing to work.[8]

In addition, future Social Security policy will encourage people to work longer and retire later.[9] Presently, full Social Security benefits may be received beginning at age 65, and reduced benefits at age 62. However, beginning in 2003, the normal retirement age will climb 1 month per year, reaching age 67 in 2027.[10]

The earliest age that Social Security retirement benefits may be received will remain at 62, although benefit reduction for early receipt will increase. Currently, benefits are reduced $6\frac{2}{3}$ percent per year for receipt prior to the normal retirement age of 65. This yields a 20-percent reduction at age 62. Beginning in 2003, the reduction will be $6\frac{2}{3}$ percent per year for the first 3 years and 5 percent per year beyond 3 years. Once the normal retirement age reaches 67 in 2027, the age 62 benefit will be reduced 30 percent. In addition, the *increase* in benefits provided to those who postpone receipt of Social Security until after normal retirement age will rise gradually from the current 3 percent per year to 8 percent per year.

Table 1. **Full-time participants in defined benefit pension plans with supplemental payments, by method of determining payment, medium and large firms in private industry, 1988**

[In percent]

Method	All participants	Professional and administrative	Technical and clerical	Production and service
Normal retirement				
Total	100	100	100	100
Flat dollar amount	41	35	38	45
Dollar amount per year of service	25	33	28	21
Total benefit equals a flat dollar amount[1]	30	27	21	33
Total benefit equals a dollar amount per year of service[1]	4	5	13	1
Early retirement				
Total	100	100	100	100
Flat dollar amount	14	13	13	14
Dollar amount per year of service	29	31	26	29
Total benefit equals a flat dollar amount[1]	44	33	35	50
Total benefit equals a dollar amount per year of service[1]	12	20	22	7
Formula not determinable	1	3	4	(2)

[1] Plan specifies that the pension payment plus the supplement will equal a specified total.

[2] Less than 0.5 percent.

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

Supplemental private pensions

In 1988, 12 percent of participants were in private defined benefit pension plans that provided supplemental payments, generally designed to augment benefits received prior to receipt of Social Security. Production and service workers were the most frequent beneficiaries of such provisions, in part, because of the prevalence of supplementary benefits in several large collectively bargained plans. The following tabulation shows the percent of full-time participants in defined benefit pension plans by provisions for supplemental payments in medium and large firms in 1988:

	All participants	*Professional and administrative*	*Technical and clerical*	*Production and service*
Total	100	100	100	100
With supplement[1]	12	11	7	16
Normal retirement	8	7	5	10
Early retirement	9	7	5	12
Without supplement	88	89	93	84

[1] The total is less than the sum of the components because some participants could receive supplements to both normal and early retirement benefits.

Supplemental payment provisions are about evenly divided between those that supplement normal retirement benefits and those that augment early retirement benefits. The approach of a specific plan generally reflects the age at which it makes available normal and early retirement benefits. For example, if a plan offered normal retirement at age 62 and early retirement at age 55, the supplement would apply to the early retirement benefit because Social Security is available at age 62. If, however, normal retirement were available at age 60, the supplement might apply to normal retirement. It is also possible to have payments supplementing both normal and early retirement benefits.

Requirements. Plans may impose special age or length-of-service requirements, or both, on eligibility for supplemental payments. Therefore, a person retiring with full benefits (but still too young to receive Social Security) may receive a supplement while a person retiring with reduced early retirement benefits (and also too young to receive Social Security) may not. Seventy percent of participants in plans supplementing normal benefits did not have to meet special eligibility requirements for the supplement; the remaining 30 percent, however, faced age or service reqirements more stringent than those for normal benefits.

Additional requirements were more common when supplemental payments were tied to early retirement benefits. For example, one large manufacturing plan offers early retirement to workers at any age with 30 years of service, or at age 55 with 10 years of service. The early retirement supplement is available to all employees with 30 years of service, but is available to employees age 55 only if their age plus service totals 85. (This means that, essentially, the supplement is limited to employees with 30 years of service.) The following tabulation examines whether plans impose additional requirements to receive supplemental benefits at early retirement—it shows the percent of participants in plans that impose the same requirements or additional requirements for receipt of supplemental benefits as for early retirement benefits:

	Requirements	
	Same	*Additional*
All participants	52	48
Professional and administrative	38	62
Technical and clerical	32	68
Production and service	62	38

Benefit amounts. While defined benefit pension plans routinely base annuities on either a percent of the retiree's earnings or a flat dollar amount for each year of service, all of the supplemental payments found in the survey were expressed as dollar amounts, either flat amounts or amounts per year of service. (See table 1.) Prior earnings, therefore, do not affect supplemental payments. There are two reasons: first, many of the supplemental payments are part of unionized blue-collar plans, which typically specify benefits as a dollar amount per year of service. Second, the Social Security payments, for which the supplements are a substitute, decline as a percentage of salary for higher-paid workers, and are limited to a maximum dollar benefit. To base a supplement on earnings could provide payments to higher paid employees beyond that which Social Security combined with private pensions would pay.

Supplemental payments were expressed in several ways. Payments could be a flat amount, such as $300 per month, or an amount times years of service, such as $5 per month times years of service. Alternately, benefits were expressed as a guaranteed total benefit, the sum of the basic payment and the supplement. For example, the supplement, when added to the basic benefit, will yield a monthly payment of $1,000, or a monthly payment of $25 times years of service.

While the incidence of supplemental payments among survey respondents was insufficient to allow an extensive survey of benefit amounts, some typical payment amounts can be used to examine the extent to which supplements substitute for Social Security. Flat dollar amount supplements typically ranged from $200

Table 2. **Full-time participants in defined benefit pension plans with supplemental payments, by duration of payments, medium and large firms in private industry, 1988**

[In percent]

Duration	All participants	Professional and administrative	Technical and clerical	Production and service
Normal retirement				
Total	100	100	100	100
To age 62	70	82	69	65
To age 65	15	5	7	21
For specified number of months	8	10	12	6
For life	8	3	12	9
Early retirement				
Total	100	100	100	100
To age 62	81	69	62	90
To age 65	9	10	8	8
For life	10	21	30	1

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

to $400 per month; dollar-per-year formulas typically ranged from $5 to $10 per month times years of service. For the employee with 30 years of service, this amounts to between $150 and $300 per month. From another perspective, in plans providing both a basic and a supplemental benefit expressed as a dollar amount per year of service, the supplemental payment generally was equal to half or more of the basic payment.

How do these typical supplemental payments compare with Social Security payments? One way of comparison is to look at typical Social Security benefits. Data were computed for employees reaching age 65 in 1988, with final year earnings of $25,000 and 40 years of service under Social Security. The Social Security benefit for these workers was estimated to be $772 per month.[11] However, Social Security benefits are reduced $6\frac{2}{3}$ percent per year when benefits are received prior to age 65. So, a 20-percent reduction (to age 62, the earliest age benefits are available) would yield a Social Security payment of $618 per month.

However, this is not a realistic comparison because the supplement could begin as early as age 55 or 60. Using a standard actuarial table to compute equivalent present values of future streams of income beginning at different ages, payments at ages 55 and 60 would be 45 and 65 percent, respectively, of an age 65 benefit.[12] When such reductions are applied to the $772 Social Security benefit, the payments are reduced to $347 at age 55 and $502 at age 60. Using these assumptions, the typical supplemental payments come close to replacing these reduced Social Security benefits.

Duration of benefits. Supplemental payments were most commonly available to retirees without an age requirement or at an early age, such as 55. Benefits most commonly lasted until age 62, when reduced Social Security benefits became available. (See table 2.) Some plans in this group specified "eligibility for reduced Social Security benefits" as the duration of benefits.

Other durations specified for supplemental payments include age 65, a specified number of months, or for life. These provisions suggest the supplemental payments provided by plans are not intended only to replace Social Security. Supplements lasting for life are generally available only to employees meeting added age and service requirements, and are often reduced after age 62. Actually such payments are not supplements, but additions to the basic benefit formula.

Alternative benefits

The move toward later Social Security retirement ages may leave an increasing gap between the time an employee begins receiving employer-sponsored retirement benefits and the time Social Security begins. While supplemental pension payments help bridge that gap, they are available to relatively few retirees.[13] A few other employer practices, however, are currently being used to help retirees augment basic pension payments.

One method is to offer additional employee benefit plans that provide retirement income. In the 1988 survey, 41 percent of defined benefit pension plan participants were in another plan for accumulating funds, most commonly a savings and thrift plan. Such plans provide incentives for employees to save, establishing an account generally payable at retirement. (How such plans affect personal savings is unclear; if individual savings are adversely affected, the net result may simply be a shifting of retirement funds from personal to employer-sponsored sources.[14])

Within a defined benefit pension plan, another method of bridging the gap before Social Security begins is to offer benefits payable under a "level-income option." Such an option alters the basic pension payment to provide greater benefits before Social Security is payable, and reduced benefits thereafter. These options are rare.

Finally, employers wishing to encourage early retirement occasionally provide "open windows," limited periods during which employees are offered special incentives to retire. The incentives granted in these offers may include lump-sum cash payments, moderation or elimination of early retirement reductions, more favorable benefit formulas, or supplemental pensions payments until Social Security begins. Early retirement open windows were available in the last 5 years to at least some of the employees in plans covering 14 percent of defined benefit pension plan participants in 1988. □

Footnotes

[1] Although age 62 is currently the earliest age at which Social Security may be received by workers who retire because of advancing age, other benefits, such as those for disabled employees and survivors, may be received at earlier ages.

[2] The Employee Benefits Survey is an annual study of the incidence and characteristics of employee benefits. In addition to retirement plans, the survey provides data on health care, life and disability insurance, paid and unpaid leave, and a variety of additional benefits. Results of the most

recent survey may be found in *Employee Benefits in Medium and Large Firms, 1988,* Bulletin 2336 (Bureau of Labor Statistics, August 1989).

[3] Participants are employees covered by the plan and those who will be covered upon completion of eligibility requirements. If plans require employee, as well as employer, contributions, participants are those employees currently making the required contributions.

[4] Data are from a 1969 Bureau study of pension plans filed with the U.S. Department of Labor. See Harry E. Davis and Arnold Strasser, "Private pension plans, 1960–1969—an overview," *Monthly Labor Review,* July 1970, pp. 45–56.

[5] A strictly actuarial reduction in benefits takes into account life expectancy data, so that the present value of benefits received over a longer period is exactly equal to the present value of normal retirement benefits. Employers moderate these reductions in many cases by specifying a uniform reduction, such as 3 percent, for each year that an employee retires prior to normal retirement age. The cost of this moderation is borne by the employer. For details on how benefits are reduced for early retirement, see *Employee Benefits in Medium and Large Firms, 1988,* pp. 79, 95.

[6] See 1986 Amendments to the Age Discrimination in Employment Act. The law excludes certain employees, most notably college professors, from protection against mandatory retirement.

[7] The 1979 Department of Labor Interpretive Bulletin on the Age Discrimination in Employment Act (29 CFR 860.120) allowed employers to stop crediting service toward pension benefits for employees working beyond normal retirement age. In 1986, Congress required crediting of all service beginning in 1988 (P. L. 99–509). In 1987, the U.S. District Court for the District of Columbia required immediate crediting of all service in *American Association of Retired Persons* v. *Equal Employment Opportunity Commission.*

[8] The Social Security law now restricts the amount employees under age 70 may earn in wages and salaries. Social Security benefits are reduced for those exceeding this amount. Legislation currently being debated would moderate the earnings restrictions or eliminate them entirely.

[9] The legislative history of the 1983 Social Security amendments presents the reasoning of numerous policymakers for extending the normal retirement age. While financial considerations dominated, the aging population and a desire to allow older workers to remain productive were often cited as reasons for extending the age. See John A. Svahn and Mary Ross, "Social Security Amendments of 1983: Legislative History and Summary of Provisions," *Social Security Bulletin,* July 1983, pp. 3–48.

[10] See 1983 Amendments to Social Security law (P. L. 98–21). When reduced benefits were first instituted in 1956, such benefits were available at age 62 for women only. Beginning in 1965, women could receive reduced benefits at age 60 and men at age 62. This practice ended in 1982, when age 62 became the standard for all workers.

[11] For complete details on computation of Social Security benefits, see Donald G. Schmitt, "Today's pension plans: how much do they pay?" *Monthly Labor Review,* December 1985, pp. 19–25.

[12] Actuarial assumptions are from the Pension Benefit Guaranty Corp.

[13] Defined benefit pension plans may also contain supplemental payments, similar to those discussed here, for employees retiring because of permanent disabilities or under "mutually satisfactory conditions," for example, when a job is abolished. Such benefits were not included in this analysis.

[14] In rare instances, participants in defined benefit pension plans may also participate in a second defined benefit pension plan, provided the employee contributes toward the funding of the second plan. Such "supplemental plans" were excluded from the tabulations in this article.

Nursing home aides experience increase in serious injuries

Physically impaired and socially isolated, many residents of nursing homes greatly depend on nursing aides and other employees; in providing care the workers themselves incur disabling injuries, often to the back

Martin E. Personick

"Old age, though despised,
is coveted by all."
—From H.G. Bohn's
A Handbook of Proverbs (1855)

As the proverb implies, living longer can be a mixed blessing, especially for those so chronically ill or frail that they require round-the-clock assistance with the basic functions of daily living. Absent alternative care, many of these dependent elderly become residents of nursing and personal care facilities, where their physically demanding needs are both a challenge and a hazard to nursing aides and other caregivers.[1] In recent years, such circumstances have led to nursing home employees sustaining, with increasing frequency, serious workplace injuries.

This article—covering private nursing homes[2]—is the first in a Bureau of Labor Statistics series focusing on "high-impact" industries, defined as those with the largest numbers of workplace injuries and illnesses, although not necessarily the highest incidence *rates*.[3] According to a 1988 BLS survey, nursing homes—with 151,000 cases—ranked sixth behind eating and drinking places, grocery stores, hospitals, motor vehicle manufacturing, and trucking in total recordable injuries and illnesses. Only nine industries, the survey shows, reported at least 100,000 cases that year. (See table 1.) These industries, however, accounted for one-fourth of the 6.4 million cases reported nationwide in 1988. Clearly, if industries with high case counts become safer, more healthful workplaces, then the national figures will reflect these gains in addition to those stemming from improved working conditions in "high-rate" industries.

While nursing homes did not rank among "high-rate" industries, the industry's incidence rate of 15.0 workplace injuries and illnesses per 100 full-time workers was well above that for private industry as a whole (8.6), for hospitals (8.7), and for all health services (7.3) in 1988.[4] And, as is evident from chart 1, the year 1988 marked the sixth consecutive annual increase in nursing home rates—one indication of the industry's persistent safety and health problem.

Through the years, the severity of accidents in nursing homes has disrupted day-to-day work schedules. In 1988, for example, a clear majority of the industry's injuries were serious enough to require workers to take time off from work or to be restricted in work activity.[5] Many of these disabling injuries took the form of back sprains and other strains incurred by female employees (primarily nursing aides) who were lifting or otherwise assisting residents in their care. As often as not, the injured employee had relatively short tenure (1 year or less) in the nursing home at the time of the accident.[6] The following sections examine some characteristics of nurs-

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Table 1. **Industry groups with largest number of occupational injuries and illnesses, 1988**

Industry group	SIC code[1]	Employment (thousands)	Injuries and illnesses	
			Total cases (thousands)	Total case rate[2]
Private industry[3]	—	88,698.8	6,438.6	8.6
Eating and drinking places	581	6,281.8	352.1	8.8
Grocery stores	541	2,742.1	237.9	12.2
Hospitals	806	3,300.2	233.0	8.7
Motor vehicle manufacturing	371	856.5	200.4	23.3
Trucking[4]	421	1,454.9	192.9	13.9
Nursing homes	805	1,318.6	151.1	15.0
Department stores	531	2,038.9	146.0	10.5
Hotels and motels	701	1,503.6	120.7	10.5
Meat products manufacturing	201	401.8	110.0	27.9

[1] *Standard Industrial Classification Manual*, 1972 edition, 1977 supplement.

[2] Rates per 100 full-time workers. See footnote 4 to text for method of calculation.

[3] Excludes farms with fewer than 11 employees.

[4] Employment estimate for local and long-distance trucking also includes a few thousand workers in trucking terminal facilities (industry number 423). Safety and health data, however, relate to industry number 421 only.

NOTE: The nine groups shown here are the only "3-digit" industries reporting at least 100,000 injury and illness cases in 1988.

ing homes and, for purposes of comparison, a few features of hospitals; analyze the injury and illness record of nursing homes in more detail; and summarize ongoing efforts to improve working conditions in these homes.

The industry at a glance

Nursing homes primarily provide inpatient nursing and health-related personal care. Such homes differ from residential care facilities, such as homes for the aged, in that they typically provide health care services delivered or supervised by registered or licensed nurses.[7] The National Center for Health Statistics estimated some 19,000 nursing homes provided care for about 1.5 million residents in 1985, about nine-tenths of whom were 65 years or older.[8] Interestingly, the 600,000 oldest residents (at least 85 years of age) constituted one-fifth of the Nation's population in that age group.

Certain characteristics of residents, as reported in the comprehensive Federal study,[9] help explain why their care poses special problems for nursing home employees. Residents typically are: very old (median age, 82), mentally disoriented, and functionally dependent in several activities of daily living (such as getting in and out of bed or chair, bathing, and using the toilet). Moreover, immediately preceding admission to the present nursing home, most residents required medical or other nursing care at hospitals or other health facilities.

Although designated as health care facilities, nursing homes have obvious limits to the kinds of medical services they provide. Often, such facilities are staffed to monitor and treat chronic health conditions of the elderly, as by administering prescribed drugs and catheterization to help with urinary incontinence.[10] For acute episodes of illness (such as infection or anatomic obstruction), however, nursing homes temporarily transfer residents to hospitals which provide diagnostic services and extensive medical treatment (surgery, for example) in addition to continuous nursing services.[11] Some nursing homes and hospitals, in fact, have reciprocal arrangements to cover the appropriate health care needs of their patients.

Reflecting their unique health care roles, nursing homes and hospitals differ markedly in their characteristics. Unlike hospitals, a large majority of private nursing homes are proprietary (operated for profit) institutions;[12] and, they operate with smaller work forces (typically 20 to 250 full-time and part-time workers) than do hospitals (commonly employing a minimum staff of 250).[13] But more to the point of this article, it is differences in patient care needs and work responsibilities, especially for nursing jobs, that account for much of the difference in nursing home injury and illness rates (15.0 per 100 full-time workers in nursing homes and 8.7 in hospitals).

In contrast to hospital services, the nature of patient care in nursing homes calls for substantially more nursing aides than licensed or registered nurses. Traditionally, aides in nursing homes are responsible for almost all of the heavy lifting and other "bed-and-body work"

often required in caring for those incapacitated. Many hospital services, in contrast, are provided on an outpatient basis, thereby reducing the need for inpatient personal care and its attendant hazards to nursing personnel. The following tabulation further reinforces how differences in patient care requirements can lead to contrasting staffing patterns for the two industries:[14]

	Percent of work force	
	Nursing homes	*Hospitals*
All occupations	100	100
Nursing aide and attendant	42	7
Licensed practical nurse	10	7
Registered nurse	7	24
Clerical and administrative support	4	17
All other	37	46

To summarize, nursing aide, by far the most numerous job in nursing homes, is a "high-risk" occupation.[15] Thus, it is not surprising that nursing homes have the highest injury rates of all health services industries.[16]

Safety and health measures

As part of its annual survey of occupational injuries and illnesses, the Bureau of Labor Statistics expanded coverage of the service-producing sector in 1980 by developing separate estimates for nursing homes, hospitals, and many other fast-growing industries.[17] Since then, the Bureau's basic measure of workplace safety and health—its injury and illness incidence rate for all recordable cases—has risen somewhat for health services in general but has climbed sharply for nursing homes in particular. The following tabulation illustrates this point, using total case rates per 100 full-time workers:

	1980	*1984*	*1988*
Health services	6.4	6.3	7.3
Nursing homes	10.7	11.6	15.0

The 1988 incidence rate for nursing homes was 40 percent higher than the 1980 rate; this compares with a 1980–88 increase of 15 percent for all health services. In sum, nursing homes remain a hazardous workplace setting, with an injury and illness rate double that for all health services.

Other Bureau measures that gauge the *severity* of workplace incidents consistently show that lost worktime incidents are a serious problem in nursing homes. (See appendix for definitions.) In 1988, such disabling incidents accounted for nearly three-fifths of the industry's cases (about 88,000 out of 151,000 injuries and illnesses). This translates into 8.7 lost workday cases per 100 full-time workers, double the private industry average. When seriously injured that year, nursing home workers were away from their regular job, on average, 21 days per case; this was 2 days higher than the private sector's figure for average number of lost workdays per case.

Between 1980 and 1988, the lost worktime problem had worsened in nursing homes. The following tabulation tracks the industry's upward trend over that period:

	1980	*1984*	*1988*
Lost workday case rate	5.6	6.5	8.7
Lost workdays rate	85.5	121.3	180.6
Average lost workdays per case	15	19	21

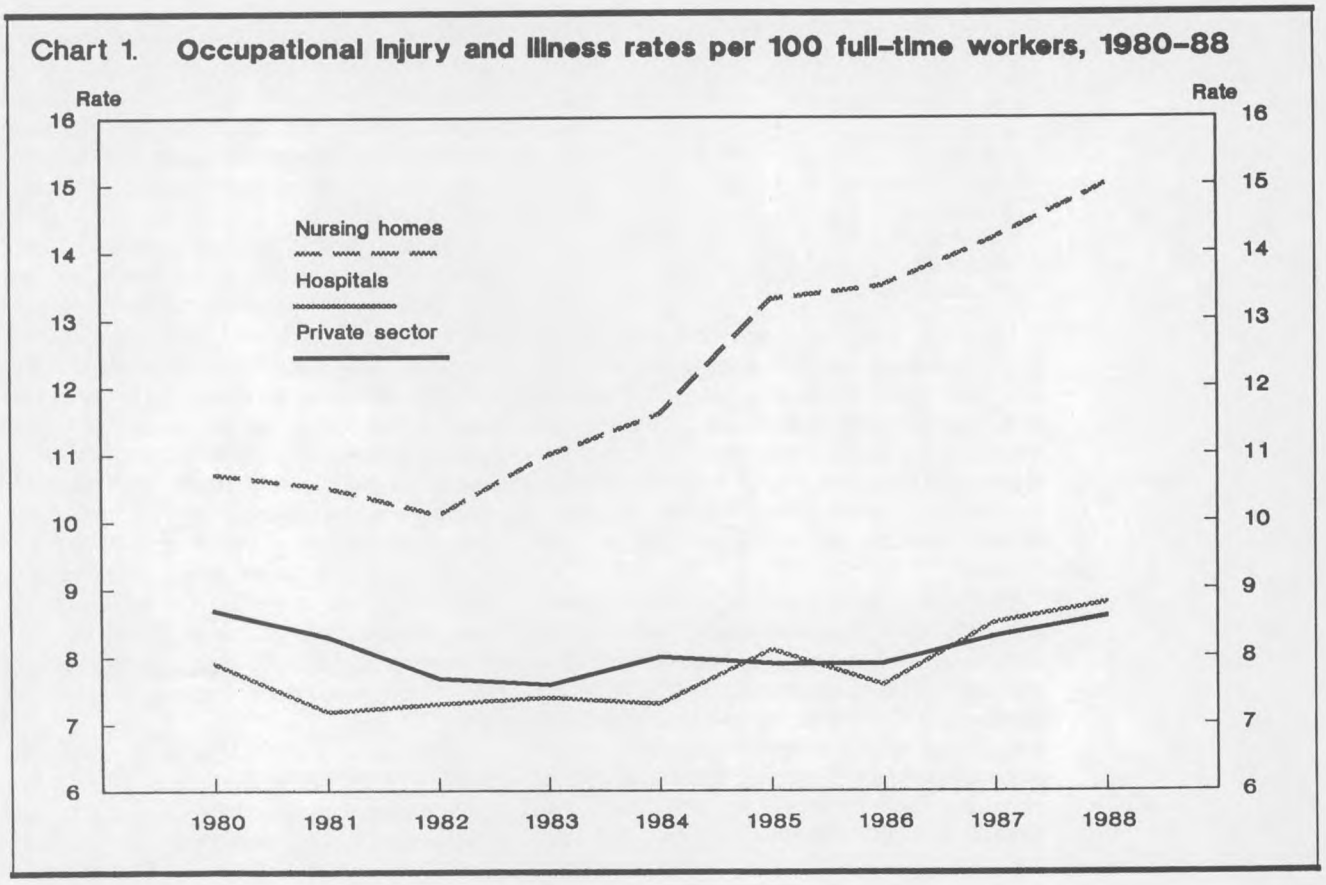
Of special note in nursing homes, the number of lost workdays per 100 full-time workers doubled between 1980 and 1988, as the frequency and duration of such cases increased sharply.

Injury and illness characteristics

The Bureau's annual survey identifies industries with high case counts or high case rates, but it does not provide information about characteristics of the occupational injuries and illnesses. Such information is available, to some extent, from another Bureau program—the Supplementary Data System (SDS)—based on the State workers' compensation systems. Unlike the annual survey, the SDS does not produce nationwide estimates and lacks a uniform treatment among States of what is a compensable workplace injury or illness.[18] However, despite several analytical and statistical limitations, the SDS does help in spotting general patterns (or a lack thereof) in the characteristics of work-related injuries and illnesses involving lost worktime.

In 1987, nearly 31,000 current cases in private nursing homes were reported to 24 State agencies and the Virgin Islands, the participants in the SDS program that year. (Current cases are injuries or illnesses which involved at least 1 lost workday and which either occurred in 1987 or were reported to the State agencies that year.[19]) Separate analysis of nursing home cases and of all SDS cases in the private sector points up several similarities and differences in case characteristics. (Such comparisons, however, are subject to the same types of limitations previously ascribed to the SDS.)

In terms of principal physical characteristics, sprain and strain is, by far, the leading category



under *nature of injury or illness,* constituting seven-tenths of the SDS-recorded cases in nursing homes and two-fifths of those in all private industry. A second injury characteristic is the *part of the body affected,* most often the back and other portions of the trunk (abdomen, shoulder, and so on). Injuries to the trunk were slightly more than one-half of all nursing home cases and about one-third of the private sector total. Taken together, the "nature/part" category of *back sprain* was two-fifths of all SDS cases in nursing homes, double the corresponding proportion for private industry as a whole. No other injury cross-classification of this type, such as ankle sprain or serious finger cut, was as much as one-tenth of either case total.

Ironically, the major *source of injury and illness* in nursing homes is the resident, whom the employee was trying to help. The official SDS classification "person, other than injured" accounted for slightly more than one-half of all nursing home cases; this source was uncommon outside of health services industries. The leading *type of accident or exposure* was overexertion (primarily while lifting), constituting three-fifths of the nursing home cases and one-third of the private sector case total. Cross-tabulating source and type, the category *overexertion while caring for residents* best describes the injury-producing event for one-half of the nursing home case total. An additional one-eighth of the cases were classified as *falls to a floor or other working surface,* in line with the corresponding figure for the private sector.

Predictably, nursing aide was the dominant *occupation* of the injured or ill worker, accounting for about seven-tenths of the SDS-recorded cases in nursing homes. Compared with their two-fifths share of the industry's work force, nursing aides clearly are a disproportionate share of the total nursing home cases. In contrast, licensed and registered nurses, taken together, are about one-sixth of employment but about one-twentieth of SDS-recorded cases in nursing homes. A variety of service occupations, including cooks, janitors, laundry workers, and maids, accounted for most of the industry's other recorded cases.

Not unexpectedly, nurses and aides sustained back injuries with greater frequency than did other nursing home workers. The following tabulation points up the variations in part of the body affected by injury or illness for three nursing jobs (nursing aide, licensed nurse, and registered nurse) compared with all other nursing home jobs.

	Three nursing jobs	*All other jobs*
All body parts (percent) ...	100	100
Trunk	61	38
Back	46	27
Legs and lower extremities	11	17
Arms and upper extremities	12	24
All other parts	16	22

Other SDS data also highlight the somewhat unusual characteristics of nursing home workers. They show that nine-tenths of the injured were women workers and that, at the time of their accident, slightly more than one-half of the injured had worked 1 year or less in the nursing facility.[20] In contrast, a clear majority of injured hospital workers had been employed at least 3 years.

Previous research has shown that short tenure and high labor turnover—characteristics common to nursing aides in nursing homes—are correlated with occupational safety and health problems.[21] Comparatively low pay, especially for nursing aides, contributes, in part, to the turnover problem in nursing homes. Based on two dozen large metropolitan areas studied, the Bureau of Labor Statistics reported that full-time nursing aides in nursing homes commonly averaged between $4 and $5 per hour in the fall of 1985; pay levels for their hospital counterparts, in contrast, usually were at least 40 percent higher.[22]

Accident prevention

During the 1980's, the issue of stress-related injuries in nursing homes and other health care facilities has drawn international attention.[23] In this country, the National Institute for Occupational Safety and Health continues to conduct and sponsor high-priority research and feasibility studies on how to reduce musculoskeletal injuries resulting from load handling and related activities in health care settings. Illustrative of this research, a brief description of the patient-handling problem facing nursing personnel in nursing homes follows.

Heavy lifting and other manual exertions associated with patient handling are difficult to execute safely in nursing homes, in part because the recommended lifting techniques for objects and materials (bent knees and load close to body, for example) often are impractical to apply when singlehandedly lifting unstable residents. One possible solution—getting assistance from a second employee—is encouraged in spirit and, to some extent, in practice; but, to provide two-employee lifting on a large scale would be considered too expensive by many nursing homes.

Another potential approach to reducing back sprains and related injuries in health-care settings is the use of patient-handling devices. A recent study of 120 nursing homes in Wisconsin found that certain mechanical devices, such as gait belts fitted on residents, were used very often for transferring patients and generally had received endorsements from nursing staff.[24] A subsequent study identified the 10 most back-stressing tasks of nursing aides;[25] then, in a laboratory setting, these researchers found that pulling/pushing patients using assistive mechanical devices can effectively eliminate the more stressful activity of patient lifting for all 10 of these tasks.[26] Ergonomic avenues such as these attempt to reshape the job to fit the worker.

Besides accidents related to the physically demanding tasks of resident care, nursing and other personnel incurred other disabling injuries and illnesses that are clearly preventable. Exposure to temperature extremes and contact with caustic agents or biological contaminants, for example, often can be avoided by improved ventilation, proper use of personal protective equipment, and better communication to employees of hazardous conditions and substances. Some government standards specifically address these types of workplace safety and health problems.[27]

On a somewhat optimistic note, a recently enacted Federal law upgrades staff requirements in nursing homes certified by medicare or medicaid. The law mandates that by 1990 such homes provide for *licensed* nursing services during all hours and that nursing aides complete at least 75 hours training in nurses' skills and residents' rights.[28] While primarily directed at the quality of care for nursing home residents, the new law also draws attention to the nursing aide—the pivotal job in delivering enhanced resident care. To supplement this law, though, nursing homes still need a plan for training nursing aides and others in the most promising of the job safety techniques and devices currently under study. □

Footnotes

[1] Many research works have drawn attention to quality-of-life issues for the institutionalized elderly. See, for example, *Technology and Aging in America*, OTA-BA-264 (Washington, U.S. Congress, Office of Technology Assessment, 1985); and National Research Council, *The Aging Population in the Twenty-First Century: Statistics for*

Health Policy, Dorothy M. Gilford, ed. (Washington, National Academy Press, 1988). Both of these contain extensive reference listings. For an account of what nursing home residents value most in nursing aides and other staff, see Institute of Medicine, *Improving the Quality of Care in Nursing Homes* (Washington, National Academy Press, 1986).

[2] Throughout this article, the terms "nursing and personal care facilities" and "nursing homes" are used interchangeably, as are the terms "resident" and "patient."

[3] For an account of industries with high rates of workplace injuries and illnesses, see Martin E. Personick and Katherine Taylor-Shirley, "Profiles in safety and health: occupational hazards of meatpacking," *Monthly Labor Review,* January 1989, pp. 3–9.

[4] *Incidence rates* represent the number of injuries or illnesses, or both, per 100 full-time workers, and were calculated as:

$$N/EH \times 200{,}000$$

where:

N = number of injuries and/or illnesses;
EH = total hours worked by all employees of the industry during the calendar year; and
200,000 = base for 100 full-time equivalent workers (working 40 hours per week, 50 weeks per year).

A variety of useful incidence rates may be computed by making N equal to the number of injuries only, or the number of lost workday cases, or the number of lost workdays, and so forth. In each instance, the result is an estimate of the number of cases or days per 100 full-time workers.

[5] According to the Bureau's 1988 annual survey, 58 percent of all nursing homes cases involved days away from work or restricted work activity. By comparison, the corresponding figure was 46 percent in all private industry and also in hospitals.

[6] This composite of the typical characteristics of injured nursing home employees is drawn from the Bureau's Supplementary Data System (SDS). The SDS is described in footnote 18.

[7] The nursing and personal care facilities industry has been designated number 805 in the *Standard Industrial Classification Manual,* 1972 edition, 1977 supplement of the U.S. Office of Management and Budget. It covers two situations: (1) skilled nursing care facilities (number 8051) that provide care and treatment for patients who require *continuous* health care (including a licensed or registered nurse on duty round-the-clock) but not hospital services, and (2) intermediate or other nursing care facilities (number 8059) that employ a licensed or registered nurse on at least one work shift.

The same manual classifies the residential care industry (number 836) as part of social services rather than in health services.

[8] *The National Nursing Home Survey: 1985 Summary for the United States,* DHHS Publication No. (PHS) 89–1758 (National Center for Health Statistics, 1989), tables 1 and 17. Strictly speaking, the estimates include a relatively small number of government-owned facilities—about 1,000 homes with 126,000 residents—that are outside the scope of the Bureau's study of private nursing homes. As a practical matter, the estimates still provide the most complete profile available of nursing home and resident characteristics.

[9] *Ibid.*, tables 18, 28, 36, and 41.

[10] In its 1985 comprehensive study of the elderly, the U.S. Congress, Office of Technology Assessment conducted an indepth review of five chronic health conditions: dementia (such as Alzheimer's disease), urinary incontinence, hearing impairments, osteoporosis (thinning bones), and osteoarthritis (degenerative joint disease). See *Technology and Aging in America,* ch. 3, pp. 61–116, for basic discussions of these diseases and many references to journal articles on each condition.

[11] About one-fifth had at least one hospital stay while a resident in a nursing home. See *The National Nursing Home Survey: 1985 Summary for the United States,* tables 20–21.

[12] *Ibid.*, table 1. Of the 19,100 facilities (3 beds or more) covered by the National Center for Health Statistics survey, three-fourths were proprietary, one-fifth were voluntary nonprofit, and the rest, government-owned. By comparison, the American Hospital Association reported about 5,600 short-term general hospitals in the following ownership categories: three-fifths are not for profit, one-fourth are State/local government, and one-sixth are investor (for profit). See *Hospital Statistics, American Hospital Association, 1988 edition* (Chicago, American Hospital Association, 1988), table 5A.

The "privatization" of the American nursing home industry dates back to colonial times when, for a fee, some indigent elderly were boarded out to private households. This practice grew somewhat in the depression years of the 1930's when, of necessity, some homeowners (unemployed nurses, in particular) took in and cared for small numbers of the elderly. Also in the same era, the Bureau of Labor Statistics counted more than 1,000 nonprofit homes for the aged (homes sponsored by private and public organizations); these homes commonly employed resident nurses and had in-house infirmaries. For the first systematic survey of these homes, see *Care of Aged Persons in United States,* Bulletin 489 (Bureau of Labor Statistics, 1929).

During the mid-1950's, the building of proprietary nursing homes accelerated, largely spurred by new construction loans and loan guarantees from the Federal Government. These and other public policy issues, including the evolution of medicaid as the primary reimbursement mechanism for nursing home care, receive a thorough airing in Bruce C. Vladeck, *Unloving Care: The Nursing Home Tragedy* (New York, Basic Books Inc., 1980).

[13] *County Business Patterns, 1986: United States,* CBP-86-1 (Bureau of the Census, 1988), table 1b.

[14] Occupational data, which cover private and State and local government hospitals for April 1986 and private nursing homes for April 1987, are available upon request from the Office of Employment and Unemployment Statistics, Bureau of Labor Statistics.

[15] Several other studies have found that nursing aides rank high among occupational groups experiencing disabling back disorders. See, for example, B. P. Klein, R. C. Jensen, and L. M. Sanderson, "Assessment of workers' compensation claims for back strains/sprains," *Journal of Occupational Medicine,* vol. 26, 1984, pp. 443–48; and R. C. Jensen, "Disabling back injuries among nursing personnel: research needs and justification," *Research in Nursing and Health,* vol. 10, 1987, pp. 29–38. The latter work also found an especially high rate of disabling back injuries, specifically for aides in nursing homes.

[16] In addition to hospitals and nursing homes, the health services industry includes offices of physicians, medical laboratories, outpatient care facilities, and other health and allied services (such as blood banks).

[17] See *Occupational Injuries and Illnesses in the United States by Industry, 1980,* Bulletin 2130 (Bureau of Labor Statistics, 1982), table 1, pp. 11–13.

[18] The Supplementary Data System (SDS) is not statistically representative of the Nation as a whole because the

data cover only the jurisdictions participating in the system. In 1987, the latest year for which detailed information is available, these were the Virgin Islands and the following 24 States: Alaska, Arizona, California, Colorado, Hawaii, Indiana, Iowa, Kentucky, Louisiana, Maine, Maryland, Michigan, Mississippi, Missouri, Nebraska, New Mexico, Ohio, Oklahoma, Oregon, Tennessee, Virginia, Washington, Wisconsin, and Wyoming.

States differ, moreover, in the kinds of cases they require by law to be reported to workers' compensation agencies. While some States require reports for all occupational injuries and illnesses, regardless of the length of disability, others require reports only for cases of sufficient duration to qualify for indemnity compensation payments, and still other States require reporting of cases involving a specific number of lost workdays, regardless of the indemnity "waiting period." Thus, the SDS file is not a complete census of all "disabling" injuries and illnesses in the jurisdictions studied.

The SDS, however, does standardize the classification of data using the *1972 Standard Industrial Classification Manual,* the *1980 Census of Population, Alphabetical Index of Industries and Occupations,* and the *1962 American National Standards Method of Recording Basic Facts Relating to the Nature and Occurrence of Work Injuries,* published by the American National Standards Institute (ANSI) and often referred to as the Z16.2–1962 Standards, or simply, Z16.2.

[19] The total for the 25 SDS jurisdictions is two-fifths of the annual survey estimate of 79,000 lost workday cases in nursing homes in 1987. See footnote 18 for some limitations pertaining to the range of cases included in SDS.

Directly reflecting increased workers' compensation claims, the number of SDS-recorded cases in nursing homes has risen sharply in recent years. For 13 States permitting comparison over this period, for example, the combined total of 18,600 cases in 1987 was about 46 percent higher than the 12,700 SDS-recorded cases in 1981.

[20] Proportions for sex of injured worker are based on the full 1987 SDS case file; those for work experience, defined here as time with employer (or on the job) when injured, relate to cases in the 16 SDS jurisdictions recording such data.

[21] For example, see Norman Root and Michael Hoefer, "The first work injury data available from new BLS study," *Monthly Labor Review,* January 1979, pp. 76–80.

[22] *Industry Wage Survey: Nursing and Personal Care Facilities, September 1985,* Bulletin 2275 (Bureau of Labor Statistics, 1987); and *Industry Wage Survey: Hospitals, August 1985,* Bulletin 2273 (Bureau of Labor Statistics, 1987).

A forthcoming BLS study, *White-Collar Pay in Private Service-Producing Industries, March 1989,* will show that, nationwide, salary levels for full-time nursing assistants were about two-fifths higher in private hospitals than in private nursing homes.

[23] For a comprehensive compilation and summary of some six dozen articles on back injuries to nursing staff (including several on the "lifting process"), see R.C. Jensen, D. Nestor, A.H. Myers, and J. Rattiner, *Low Back Injuries Among Nursing Personnel: An Annotated Bibliography* (Baltimore, The Johns Hopkins University, 1988). More recently, the Industrial Commission of Ohio's Division of Safety and Hygiene studied this problem in that State, as detailed in S. Valles-Pankrantz, "What's in back of nursing-home injuries?" *Ohio Monitor,* February 1989, pp. 4–8.

[24] B. D. Owen, "Patient Handling Devices: An Ergonomic Approach to Lifting" in F. Aghazadeh, ed., *Trends in Ergonomics/Human Factors V* (North-Holland, Elsevier Science Publishers, 1988).

[25] B. D. Owen and A. Garg, "Patient handling tasks perceived to be most stressful by nursing assistants," in Anil Mital, ed., *Advances in Industrial Ergonomics and Safety I* (New York, Taylor & Francis, 1989). Professors Owen and Garg found the most stressful tasks to involve transferring patients from one location to another, such as from toilet or bathtub to chair.

[26] A. Garg, "Patient-handling devices used for the health-care industries," paper presented at the Annual American Industrial Hygiene Conference, St. Louis, MO, May 1989. To filter these experimental methods through a "prism of pragmatism," nursing aides in nursing homes were asked to try these new patient-handling procedures; a report on the outcome is expected in 1990.

[27] See, for example, *General Industry: OSHA Safety and Health Standards (29 CFR 1910),* OSHA 2206 (Occupational Safety and Health Administration, Rev. 1981). Based on 1987–89 safety and health inspections conducted by the U.S. Department of Labor, some nursing homes had one or more problems addressed in OSHA standards; these usually related to improper waste disposal (Standard 1910.141 A04), deficiencies in personal protective equipment (Standard 1910.132 A), or gaps in communicating the potential hazards of chemicals (Standard 1910.1200, various sections).

[28] See the Omnibus Budget Reconciliation Act of 1987, P. L. 100–203, Subtitle C: Nursing Home Reform.

APPENDIX: Work injury definitions

In this article, definitions of occupational injuries and illnesses and lost workdays conform to the recording and reporting requirements of the Occupational Safety and Health Act of 1970 and Part 1904 of Title 29, Code of Federal Regulations. Supplemental information pertaining to these definitions is in the booklet, *Recordkeeping Guidelines for Occupational Injuries and Illnesses* (Bureau of Labor Statistics, 1986).

Recordable occupational injuries and illnesses are:

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

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

Occupational illness is any abnormal condition or disorder, other than one resulting from an occupational injury, caused by exposure to environmental factors associated with employment. It in-

cludes acute and chronic illnesses or disease which may be caused by inhalation, absorption, ingestion, or direct contact.

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

1. ***Lost workday cases involving days away from work*** are those cases which result in days away from work, or a combination of days away from work and days of restricted work activity.
2. ***Lost workday cases involving restricted work activity*** are those cases which result in restricted work activity only.

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

Lost workdays—restricted work activity are the number of workdays (consecutive or not) on which, because of injury or illness:

1. The employee was assigned to another job on a temporary basis; or
2. The employee worked at a permanent job less than full time; or
3. The employee worked at a permanently assigned job but could not perform all duties normally connected with it.

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

Implementation of labor market policies

In the early 1980's, rising unemployment was so widespread across OECD countries and all the labor markets within them that regional differences tended to attract little special attention. Interest focused more upon developments in the world-wide economic situation. However, in the subsequent period of steady economic growth and relative stabilization of the areawide unemployment rate, many of the significant changes in labor markets have been localized to particular countries, and even to particular regions. At the same time, continued caution in macroeconomic policy has led to increased emphasis on the improvement of labor market structure, often involving a reduced role for central government compared with local bodies. Policies based upon education and training, upon tackling the particular problems of displaced workers and other groups at high risk of unemployment, and upon encouraging the virtuous circle of growth and entrepreneurship at the local level, require implementation at the local level. However, local initiatives are inevitably more energetic and successful in some areas than in others, and can increase regional differences as well as counteracting them. Special attention may therefore be necessary to the way particularly disadvantaged regions can generate growth.

—OECD Employment Outlook, July 1989

(Washington, OECD Publications and Information Center, 1989), p. 98.

Compensation trends into the 21st century

Changing family characteristics and labor force trends suggest more flexible and more varied pay and benefit packages as the U.S. enters a new century

George L. Stelluto
and
Deborah P. Klein

To help mark the Monthly Labor Review*'s 75th year, the editors asked both data users and data producers to speculate about programs and data needs in 2015, when the* Review *will mark its centennial. This article and the article beginning on page 46, deal with the Bureau's compensation programs.*

Are recent changes in the ways employers compensate their employees prologue to a new compensation system in the 21st century? In the 1980's, we have seen the waxing and waning of two-tier wage and benefit systems, the surge of lump-sum payments made to employees in place of wage-rate increases, and the appearance of flexible employee benefit plans. Whether such changes will endure is still being debated.

The debate is well framed within the broader context of U.S. industrial relations in two May 1988 *Monthly Labor Review* articles. John Dunlop argues that "no fundamental change" occurred in the 1980's, while Audrey Freedman insists, "This change is for good."[1] No doubt, employer-employee relations will be a central force in determining the size and makeup of future employee compensation packages, but the shape of these packages also will be influenced by the changing needs of employees and their families.

This article reviews compensation trends and speculates on how compensation packages in the next century might respond to the changing characteristics of the U.S. work force and to the needs of workers and their employers. Will pay for time worked continue to make up the lion's share of total compensation costs? Will the relative importance of individual employee benefits (such as paid leave, insurance, pensions, legally required benefits) remain constant or change? Will flexible or discretionary forms of employee compensation become more prevalent?

The emergence of benefits

The way American workers are compensated for their labor underwent dramatic changes in the middle third of this century.[2] In the early 1930's, compensation of the Nation's workers was made up almost entirely of wages for time worked or pay for units of output. Benefits as we know them today were virtually nonexistent except for workers' compensation programs in several States. Workers had to seek ways to protect themselves and their families from the hazards of life and work—sickness, accident, unemployment, and old age.[3]

The turmoil of the Great Depression highlighted the vulnerability of workers and their families in coping with economic uncertainty. These conditions led to passage of the Social

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Security Act in 1935, providing workers with protection against loss of income from old age and temporary unemployment.[4] The protection—funded by payroll taxes—became a widespread, legally required benefit beyond direct pay.

The Second World War brought inflationary pressures, stemming from intense competition among employers for scarce labor resources, and pent-up demand for very limited supplies of domestic goods. To deal with these pressures, the War Labor Board controlled increases in cash wages, while employers were encouraged to offer forms of compensation that were considered "noninflationary." Thus, compensation practices began to shift from direct pay to "fringe" benefits such as paid holidays and vacations, insurance, and pensions.

Employee benefits became even more widespread in the postwar years. Such compensation items were incorporated in package settlements hammered out by labor and management. The growth of employee benefits also was spurred by 1948–49 court interpretations of the Wagner Act of 1935, which expanded the act's scope to benefits in addition to its traditional coverage of wages, hours, and working conditions.[5]

Post-World War II trends

The spread of employee benefits during the post-World War II years also was aided by tax incentives and group purchase discounts. Employer-paid health insurance, for example, had a threefold appeal to workers: (1) protection from the relatively high costs of medical and hospital expenses for themselves and their families, (2) lower rates for group insurance purchases than those available to individuals, and (3) tax advantages for those who received insurance benefits from their employers, rather than cash subject to income taxes.

Compensation packages emerging from the 1930–60 period were made up of pay for time worked and a group of employee benefits that had almost universal appeal to American workers of that time. The benefits were particularly attractive to the typical worker—a husband supporting a nonworking wife and children. The benefit group featured: supplemental pay, including nonproduction bonuses; paid holidays and vacations; life, health, and sickness and accident insurance; retirement and savings plans; and legally required benefits such as Social Security, Federal and State unemployment insurance, and workers' compensation.

The shape of employee compensation packages continued to evolve throughout the 1960's, the 1970's, and into 1980, with wages and salaries rising at a slower pace than employer costs for employee benefits. As a result, benefit costs made up a larger share of compensation costs. (See chart 1.) The growth of benefits during the 1960–80 period typically occurred through improvements to existing plans rather than the introduction of new ones.

A major influence on benefits during this period came from the government. In 1974, the Employee Retirement Income Security Act (ERISA) became law, setting standards for benefit plans. One effect of ERISA was to bring stability to existing benefits, through required funding standards and mandatory provisions. Later Federal legislation, as well as action on the State level, continued this trend of securing benefits under employer-provided plans, rather than mandating benefit coverage.

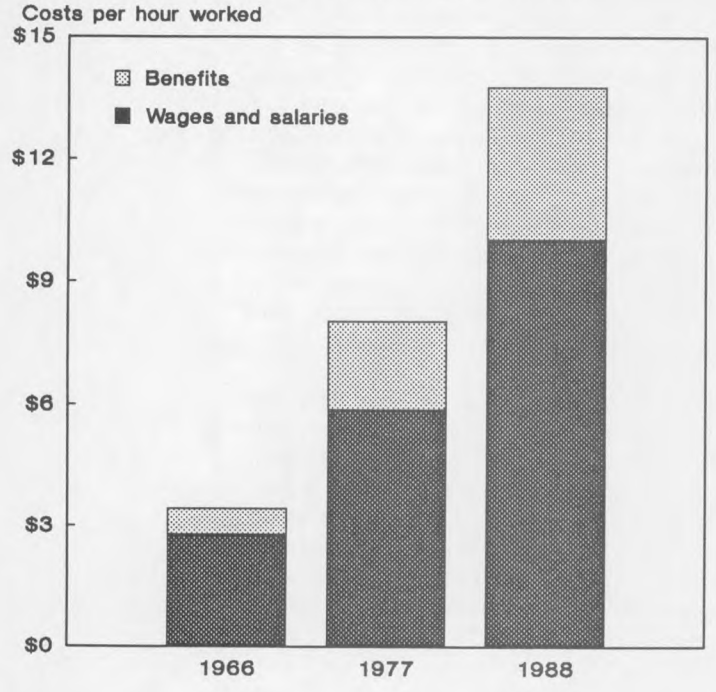
The role of unions. The structure of employee compensation in the 20th century also was influenced by other institutions, including organized labor. The development of legally required insurance programs in the 1930's and the emergence and growth of private insurance programs and paid leave in the 1940's and 1950's coincided with the growth of the labor movement, which worked to improve the lot of its members.

Union membership as a proportion of nonagricultural employment was 11.3 percent in 1933, rose to a peak of 35.5 percent in 1945, and remained around 33 percent through the 1950's. Beginning in 1960, however, union membership declined as a proportion of nonagricultural employment. By 1988, labor organization membership had fallen to 16.8 percent of employment.[6]

The way American workers are compensated for their labor underwent dramatic changes in the middle third of this century.

Union membership losses during the 1980's partly resulted from economic conditions which not only affected organized labor, but had a particularly strong influence in shaping employee compensation packages. The U.S. economy slipped into a mild downturn in 1980, briefly recovered, then plunged into the longest and deepest recession in the post-World War II era. Employment declined by nearly 3 million, with job losses heavily concentrated in manufacturing. With the unemployment rate reaching nearly 11 percent, coupled with a steep drop in the rate of price increases, the industrial relations focus (and collective bargaining strategy) shifted from pay increases and improved benefits to job security. This shift occurred against a backdrop of concerns about the growing national debt, the international imbalance of payments, foreign competition in domestic markets, outdated plant and equipment, and deregulation of several industries such as transportation and communications.

Chart 1. Components of employer costs for employee compensation, private industry, 1966, 1977, and 1988



Developments in the eighties. The 1981–82 economic climate was reflected in the 1983 round of collective bargaining settlements. There were pay cuts and freezes, lump-sum payments to workers instead of wage-rate increases, and benefit reductions. Two-tier wage and benefit systems (typically providing higher wages and richer benefits for current employees than for the newly hired) began to emerge. It was these developments that sparked debate over whether fundamental changes were occurring in the way U.S. workers are compensated.

Bargaining settlements over the 1983–88 period showed mixed patterns in their treatment of nonwage items. Lump-sum payments, including those based on profit sharing, were introduced or became a more important part of the compensation package. Health plan cost containment measures (for example, higher deductibles, second surgical opinions) became more widespread. Employer-employee joint funding of health insurance became more pronounced, as plans financed entirely by employers began to wane. Two-tier wage and benefit systems began to fade as well, after a brief surge of popularity.

Reaction to the economic conditions of the 1980's had an impact on employee compensation packages, but more subtle (perhaps more durable) influences were beginning to emerge. These emerging trends, found in the nonunion setting as well as in collective bargaining settlements, appear to be related to individual needs of workers and their families. A change in family structure has made the traditional benefit package less appealing, and has led to the growth of flexible benefit plans and reimbursement accounts, child care benefits, and parental leave.

The incidence of flexible benefit plans and reimbursement accounts rose from 5 percent of full-time workers in 1986 to 13 percent in 1988, according to a BLS Employee Benefits Survey in medium and large firms.[7] Flexible benefit plans (often called cafeteria plans) allow workers to choose from a menu of benefits offered, which they can tailor to their own needs. The most common benefits offered under flexible plans were life, health, and long-term disability insurance, along with the option to receive cash instead of benefits.

Reimbursement accounts provide funds from which workers pay for expenses not covered by their regular benefit package. The accounts are financed either wholly or partly by the employer, or entirely by the worker. The accounts typically cover such expenses as the worker's share of insurance premiums, dependent care, or health care deductibles and coinsurance expenses. Funds for the accounts usually come from workers seeking tax advantages through salary reduction arrangements; employer contributions are less frequently found. (It should be noted that reimbursement accounts are separate from savings and thrift plans, under which employer and employee contributions are not taxed until they are withdrawn from the plan. Savings and thrift plans covered about a fourth of the employees in medium and large firms in 1988.)

Family concerns. The 1988 Employee Benefits Survey indicated a slight increase in workers eligible for employer-subsidized child care benefits—4 percent, up from 1 percent in 1985. Such benefits included reimbursement for child care expenses, as well as facilities provided by the employer.

Another emerging benefit provides leave to new mothers or fathers to care for their children during the early days of infancy. The leave is separate from that granted under other leave plans, such as short-term disability coverage and paid vacations, which also might be used as parental leave. In 1988, *unpaid* maternity leave was available to 33 percent of the employees in medium and large firms, while *unpaid* paternity

leave covered 16 percent. Both maternity and paternity leave benefits averaged 4 months in duration. *Paid* parental leave provisions rarely were found in the firms surveyed.

Reimbursement accounts, child care benefits, and parental leave also are beginning to emerge in collective bargaining settlements. For example, the widely reported settlement between the American Telephone and Telegraph Co. (AT&T) and the Communication Workers of America (CWA) and International Brotherhood of Electrical Workers (IBEW) focused on "family care benefits."[8] AT&T said the need for such benefits was obvious from a 1987 survey of its employees (53 percent of whom are women), which reflected growing concern about caring for their families, particularly children.[9]

The Federal legislative docket also directs attention to the changing needs of the U.S. workers and their families. Some child care proposals would provide direct cash assistance to families for day care, while others include tighter restrictions on health and safety standards for child care providers. Leave proposals may require employers to provide unpaid time off to be used after the birth or adoption of a child and during illness of the employee or his or her child or parent.

Another consideration that might help shape compensation packages offered by U.S. employers is the diversity of these packages across national boundaries. Pay for time worked, for example, accounts for as little as 50 percent of total compensation costs in some countries and as much as 80 percent in others. Other types of pay, primarily vacation and seasonal bonuses, comprise more than one-fourth of Japanese compensation costs, with workers often receiving the equivalent of about 3 months of regular wages in summer and New Year's bonuses.[10] The incidence of social insurance expenditures by employers depends both on the extent of such coverage in each country and on whether the coverage is financed directly by the government or through payroll taxes. These differences can affect the competitive position of businesses in international markets.

Labor force and employment trends

Employee compensation packages, particularly the benefit components, also have been influenced by the dramatic changes that have occurred in the work force and society over the last three or four decades. In 1950, men constituted nearly 70 percent of the civilian labor force and employers could reasonably assume that most of these workers were the sole support of their families, that these families were not likely to experience divorce, and that workers would stay on the job at least until they reached age 65. Subsequently, dramatic changes in society and in labor force behavior have challenged such assumptions.

Today, men account for only 55 percent of the work force, and more than half of all families have two or more wage and salary earners. The rate of divorce has doubled since 1950, and nearly half of all men leave the labor force before reaching their 65th birthday. Thus, three intertwining threads have been woven in the fabric of labor force changes in the second half of the 20th century: the increasing participation of women, particularly women with children; the growth of multi-earner families; and the ability of more men to retire at earlier ages.

Women workers. Probably the most dramatic and far-reaching change is the extraordinary rise in labor force activity among women with very young children. The historical pattern in the United States had been for many women to work for a few years upon completing school, leave the labor force upon marriage or childbirth, and sometimes return after their children were grown.

What is different today is not only that a much greater proportion of young women enter the work force, but that most of them leave very briefly, or not at all, following the birth of their children. For example, it took two decades, from 1950 to 1970, for the labor force participation rate of married women with preschool children to increase from 12 to 30 percent, but by 1984, more than half of such mothers were working; by 1988, the proportion was at 57 percent. Among wives with school-age children, the proportion engaged in labor market work exceeded 72 percent. Even more striking is the fact that mothers of toddlers were more likely to work than not.[11]

With the increased labor force activity of women has come an increase in the number of families with more than one wage earner. In fully 57 percent of all married-couple families, both the husband and the wife are earners. Naturally, the more earners in the family, the higher the family income. In 1988, in traditional married-couple families, where the husband worked but the wife was not a labor force participant, median weekly family earnings were $489; in families where both the husband and wife worked, earnings averaged $824. On average, working wives contribute about 30 percent of family income. This ranges from 13 percent for wives who work only at part-time or part-year jobs to 40 percent for those who work year round, full time.

Reaction to the economic conditions of the 1980's had an impact on employee compensation packages, but more subtle influences were beginning to emerge.

There also has been a marked increase in the number of families maintained by women on their own. About 10 percent of the 1988 labor force consisted of people living in such families; another 3 percent consisted of people living in families maintained by men on their own. Another one-fifth of the work force lived alone or with nonrelatives. Nonetheless, two-thirds of all workers still live in married-couple families in which a little more than half the working members are wives and children.

A change in family structure has made the traditional benefit package less appealing.

Early retirement. At the same time that the labor force participation of women has been increasing, participation of men declined. This was primarily due to earlier retirement, as the increased availability of retirement income from private and public pensions and from disability benefits gave more men the option to retire. The rapid decline began to taper off starting in 1985. Still, only a little more than half of all men between 60 and 64 are currently working; in 1950, more than 80 percent of men in this age group were still in the labor force.

Age 62, the first year of eligibility for Social Security benefits, seems to be a watershed for labor force behavior. Up until that age, older men work in similar jobs and for about the same number of hours as younger men. But, once eligible for Social Security income, many men leave the labor force and many of those who continue to work move from full-time, year-round jobs to less demanding schedules. This movement often requires a job switch because part-time opportunities are much more common in retail sales and some service industries than in other sectors of the economy.[12]

Structural changes. Structural changes in the economy and changes in employer-employee relationships also have had substantial impact on the compensation package. The rapid growth in the service-producing sector coupled with slower growth, and even some declines, in the goods-producing sector have affected the industry and occupational mix. Since 1950, the proportion of our work force engaged in agriculture has declined from 14 percent to 3 percent. The rest of the goods-producing sector—manufacturing, construction, and mining—used to provide jobs for more than one-third of our workers; now it provides less than one-fourth of all jobs. The number of government jobs has grown slightly (primarily at the State and local level), while private service-producing jobs have increased sharply, and currently account for nearly 60 percent of all jobs.

The needs of employers in these fast-growing industries, coupled with the needs of many of today's labor force entrants, have led to an increase in the number of what are often called contingent workers. While there is not as yet consensus on either a definition or a complete count of these workers, there is general agreement that the term should refer to workers whose tie to their employer is relatively loose. Workers employed by temporary help supply firms, who are recruited and paid by one firm but actually provide their services to another company, are often cited as an example of this new contingent relationship. Other examples include on-call workers, leasing arrangements, and contracting out.[13]

There has also been a dramatic shift in the age composition of the labor force. In the 1960's and 1970's, the labor force grew rapidly as the baby-boom generation reached labor force age. From 1960 to 1979, the number of young people (ages 16–24) in the labor force more than doubled, and the youth share of the labor force rose from less than 17 percent to more than 24 percent. Subsequently, the number of young people has declined. In 1988, young people accounted for 19 percent of the labor force, and their share is projected to decline to 16 percent by the year 2000. With relatively fewer young people in the population, the overall labor force is expected to grow more slowly in the future, and employers may have to be more creative in designing attractive compensation packages as a recruitment strategy.

The next 25 years and beyond

As we project these demographic and economic trends through the next 25 years and beyond, we expect a diverse labor force with varying family concerns, on the one hand, and tight labor markets demanding highly educated and skilled workers, on the other. These converging developments suggest a match-up of a highly trained labor force having diverse needs with flexible compensation packages designed to attract and retain these scarce labor resources.

Traditional approaches to employee pay and benefits (targeted to the "traditional" worker of the mid-20th century) may well become impractical. In their place, employers, either unilaterally or through the collective bargaining process, may try to design compensation packages that can be tailored to individual workers' needs, while continuing to seek ways to control labor costs.

To keep its surveys relevant, the Bureau of Labor Statistics must be mindful of these emerging developments in compensation structures. In times of flux, it is both more important and more difficult to design surveys that will

capture new forms of wages and benefits. The greater flexibility that employers have offered in benefit plans over the past several decades has resulted in more options to the employee, but also more complex administration for the employer and more difficulty in data collection for the Bureau. For example, instead of obtaining information on one health plan that covers all workers in the establishment, BLS now must obtain information for several plans, some of which may contain multiple options. Measurement becomes even more complex when employees get to choose among different categories of benefits. Should BLS measure the number of workers eligible for a benefit or the number receiving the benefit? Or must we measure both, because each provides useful information? Issues such as these affect not only survey design, and questionnaire development, but also collection procedures, data processing, and analysis.

Although we cannot, of course, predict the future with certainty, the persistence of long-term trends suggests the likely shape of the major components of employee compensation packages.

Basic and supplemental pay. Pay for time worked or for units of output currently makes up about 70 percent of employer costs for employee compensation. Basic pay will very likely continue as the major component of employee compensation, but its relative importance may diminish as employers seek more control over labor costs.

Basic pay rates are one of the most rigid forms of employee compensation. Once rates are established and upward adjustment practices are put in place, it takes major economic upheavals or dire circumstances at the firm to break expected patterns. Until the 1981–82 recession, for example, wage-rate freezes and cuts were a rarity in the post-World War II era.

Rigidity in basic pay was, no doubt, a major consideration in employers' decisions in the 1980's to pursue the payment of lump-sums to workers, along with bonuses tied to a firm's profits or other favorable contingencies, instead of wage rate increases. These and other flexible forms of compensation may continue to appeal to employers in the next century.

Supplemental payments also may appeal to certain workers (such as those living in families with other wage earners), particularly if they are designed to provide tax advantages through salary reduction arrangements. For example, reimbursement accounts funded by employers in lieu of wage increases can provide flexibility among employees and also a means of adjustment as individual circumstances change over time. An employee might choose to use the account initially for child care expenses, then shift to elder care expenses when children are grown and parents become invalid.

Supplemental pay also includes traditional items such as shift differential pay, overtime premiums, and nonproduction bonuses, as well as various types of lump-sum payments that arose in the 1980's. Supplemental pay now makes up less than 5 percent of compensation costs; its potential for flexibility may encourage its future growth.[14]

Paid leave. Now accounting for about 7 percent of compensation costs, paid leave offers another opportunity for building flexibility into future employee compensation packages. Traditional approaches to paid leave provide separate plans for holiday, vacation, personal, sick, jury duty, funeral, and military leave. Comprehensive leave plans designed to cover virtually all types of leave were considered by some employers in the past, but have not taken hold despite their potential for flexibility, except in some health services industries. Annual leave plans, akin to comprehensive leave plans, are found in Federal, State, and local governments where they cover vacation, personal, and funeral leave with holidays and sick leave under separate plans.

Employers and employees may revisit the idea of comprehensive leave plans in the next century. Such plans offer leave-accumulation features, allowing individual workers to forgo vacations and holidays to save leave for an upcoming event such as childbirth or parental care.

Insurance. Life, health, and disability insurance accounts for about 6 percent of compensation costs, but this component is growing with the rapid rise in health care costs.

Features adopted in the past decade tended to emphasize health care cost containment by requiring that medical services be certified as necessary before they are performed. Provisions for second surgical opinions covered nearly three-fifths of all health plan participants in 1988, up from one-fourth in 1982. The incidence of provisions requiring prior approval for a hospital stay and incentives to use generic prescription drugs also increased.

If health care costs continue to rise at a faster rate than the general price levels, the quest for cost containment approaches could continue into the next century. One approach may be increased use of "core" benefits for hospitalization and surgery, with employer-financed

Structural changes in the economy and changes in employer-employee relationships also have had substantial impact on the compensation package.

accounts (supplemental pay) from which employees pay for other health care expenses. This approach will afford employers more control over outlays for health care benefits, while giving employees the flexibility to pay for the health care they need.

This so-called defined contribution approach to health care also may be considered for retiree benefits, giving employees the opportunity to set aside pretax funds to purchase health care for their retirement years.

Retirement and savings. During the past decade, the incidence of traditional defined benefit retirement plans (such as those providing specified annuities based on a formula) declined, while defined contribution plans became more popular. Slightly more than 80 percent of full-time employees in medium and large firms participated in traditional retirement plans in 1980, compared with 70 percent in 1988. When smaller firms and all service industries were added to survey coverage in 1988, the proportion dropped to just over 60 percent. This trend is likely to continue as employers attempt to control liabilities tied to retirement formulas (such as salary and length of service).

Although we cannot predict future compensation packages with certainty, we are sure to see greater variety and fuzzier lines between pay and benefits.

Defined contribution plans commit the employer to a specified outlay of funds, which are invested for the benefit of the employee. Such plans, most often taking the form of savings or profit-sharing accounts, are increasing in popularity. In 1988, about half of the employees in medium and large firms participated in at least one type of defined contribution plan (sometimes in conjunction with a defined benefit plan). These plans typically offer features which encourage employees to participate, such as tax breaks and matching employer contributions.

Future designs in retirement plans will have to deal with ongoing work force trends, including perhaps a looser attachment of employees to one employer. Traditional defined benefit pension plans generally inhibit portability, that is, benefits accrued by the employee are not easily transferred from one employer to another. In such cases, a small benefit from the employee's existing plan is guaranteed years into the future (through vesting), or the employee receives an immediate lump sum equal to the present value of future benefits. In either case, benefits typically are smaller than those available to an employee staying with one employer for an entire worklife.

Defined contribution plans have more built-in portability. The existing value of the employees' accounts is known, and can be taken with them when they transfer to another establishment. In many cases, the employees' accounts are transferred to an Individual Retirement Account, giving the employee control of how funds are invested while limiting access to the funds until retirement age.

The future of defined benefit plans may depend on whether portability features can be incorporated in them. Universal portability systems have been discussed by academics and policymakers, with no action taken as yet. Such a system would transfer service credits from one establishment to another, allowing an employee to build credits from all employers and paying an eventual benefit based on a lifetime of work.

Legally required benefits. These benefits currently account for about 9 percent of total compensation costs. The big-ticket items, in order of relative costs, are Social Security, workers' compensation, and State unemployment insurance. This alignment is likely to continue into the 21st century, unless there are major downswings in the economy causing unemployment insurance costs to rise as funds are drawn down. The relative importance of legally required benefits also will depend on the outcome of public debate over how to deal with rising health care costs and with the needs of the elderly for long-term custodial care.

THIS ARTICLE HAS reviewed historical trends in employee compensation and pointed to some future directions suggested by expected labor force and economic developments. Although we cannot predict future compensation packages with certainty, we are sure to see greater variety and fuzzier lines between pay and benefits.

The Bureau's current compensation programs are being modernized to respond to these developments. In 1987, the Bureau initiated a comprehensive review of concepts and definitions used in its programs. In addition to calling on its own staff, the Bureau solicited help from a wide spectrum of data users, representing business, labor, academe, and Federal, State, and local government. Based upon this review, the Bureau has developed linkages between several of its wage surveys, and is testing the feasibility of obtaining information from employers on the demographic characteristics of their workers, the type and amount of lump-sum payments, and the components of the benefit package for a sample of individual workers. New data collection and processing techniques also are being tested.

By the time the *Monthly Labor Review* marks its 100th anniversary in 2015, we expect that refined concepts and new collection and processing techniques will provide data users with improved measures of both pay and benefits. □

Footnotes

[1] See John T. Dunlop, "Have the 1980's changed U.S. industrial relations?" pp. 29–34; and Audrey Freedman, "How the 1980's have changed industrial relations," *Monthly Labor Review,* May 1988, pp. 35–38.

[2] See Alvin Bauman, "Measuring employee compensation in U.S. industry," *Monthly Labor Review,* October 1970, pp. 17–24.

[3] See Bauman, "Measuring employee compensation."

[4] The Social Security Act of 1935 provided two nationwide systems of social insurance to protect wage earners and their families against loss of income due to unemployment, old age, disability, and death: (1) Retirement, survivors, and disability insurance, and (2) a Federal-State unemployment insurance program.

[5] See Bauman, "Measuring employee compensation."

[6] Labor organizations include members of traditional trade unions and associations, such as the National Education Association, the American Nurses Association, and a variety of government employee associations that bargain for their members.

[7] *Employee Benefits in Medium and Large Firms, 1988,* Bulletin 2336 (Bureau of Labor Statistics, August 1989).

[8] See George Ruben, "Developments in industrial relations," *Monthly Labor Review,* August 1989, pp. 49–50.

[9] "Family care benefits" found in the 1989 settlement—covering about 175,000 employees—also were negotiated at seven regional companies that were part of the Bell System prior to its court-ordered breakup in 1984.

[10] *International Comparisons of Hourly Compensation Costs for Production Workers in Manufacturing, 1975–88,* Report 771 (Bureau of Labor Statistics, August 1989).

[11] For a review of trends in women's labor force participation, see Susan E. Shank, "Women and the labor market: the link grows stronger," *Monthly Labor Review,* March 1988, pp. 3–8.

[12] For more on the discussion of long-term trends in retirement patterns for men, see two MLR articles by Philip L. Rones, "The retirement decision: a question of opportunity?" November 1980, pp. 14–17; and "Older men—the choice between work and retirement," November 1978, pp. 3–10. Labor force developments for older men in recent years and projections for the next decade all are described in Howard N Fullerton, Jr., "New labor force projections, spanning 1988 to 2000," *Monthly Labor Review,* November 1989, pp. 3–12.

[13] For a discussion of the concept and measurement of contingent workers, see Anne E. Polivka and Thomas Nardone, "On the definition of 'contingent work'," *Monthly Labor Review,* December 1989, pp. 3–12.

[14] For a discussion of this issue, see Michael Schuster, "Innovative Compensation Systems: Implications for Employees, Unions, and Government," in *Investing in People,* report of the Commission on Workforce Quality and Labor Market Efficiency, Background Papers Vol. II, pp. 1728–73, September 1989.

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.

BLS compensation programs: what will users need?

An academic analyst speculates on the future needs of labor-management practitioners, academic researchers, and government policymakers for BLS compensation data

Daniel J.B. Mitchell

To help mark the Monthly Labor Review*'s 75th year, the editors asked both data users and data producers to speculate about programs and data needs in 2015, when the* Review *will mark its centennial. This article, and the one beginning on page 38, deal with the Bureau's compensation programs.*

Data on wages and compensation often have been less visible than data on price inflation and unemployment.[1] During the 1990's and beyond, however, changes in compensation systems may well play a critical role in reconciling conflicting pressures in the American labor market. This will make it crucial for the Bureau of Labor Statistics to monitor and disseminate compensation data.

Although I am a frequent user of BLS data on compensation, I am not in a good position to know about the cost/benefit side of data collection. Judgments about that are made by the Bureau and the political process. My role here is to put forward user preferences, against a backdrop of current BLS compensation programs and likely changes in the labor market.

Who needs what?

BLS currently operates nine primary programs which gather compensation information as shown in exhibit 1. The data produced by these programs are of varying degrees of interest to three constituency groups: (1) practitioners who set pay (managers, unions, and sometimes neutrals), (2) academics (researchers), and (3) government macro policymakers (along with private forecasters). Although their data needs overlap, their demands for further compensation information differ in many ways. Thus, BLS, faced with resource constraints, must make decisions concerning competing needs.

Practitioners' views are officially presented to BLS by union and management advisory committees. Federal Government policymakers are obviously in position to make their needs known and to influence resource allocation.[2] Academics lack formal channels of input and, of course, have no direct control over resources. They have, nonetheless, been active supporters of BLS programs, particularly when budget cuts have been threatened.[3] Development of formal communications between BLS and academic users of BLS compensation data would assist in balancing competing demands from users.

Here are ways in which each program might be improved from the viewpoint of their primary constituencies, especially in light of changing compensation practices and changing information technology.

Practitioners. In stylized terms, practitioners primarily want information on who is being paid what. Surveys of compensation-setting behavior suggest that a first step is commonly to find out what other employers (within similar industries or locations) currently are paying related

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Exhibit 1. Nine major BLS compensation programs

1) *Current Employment Statistics survey.* A monthly establishment survey providing information on average hourly and weekly earnings of production and nonsupervisory workers by detailed industry, with some manufacturing industries by region and metropolitan areas.

2) *Current Population Survey (CPS).* A monthly household survey conducted by the Bureau of the Census for BLS. It now provides quarterly data on usual weekly earnings with some occupational detail and demographic characteristics (race, age, and sex). Detailed occupational information is available on an annual basis. Annual data also are available by union status with limited industrial and occupational information for full-time workers.

3) *Employment Cost Index (ECI).* A quarterly survey of the rate of change in compensation per hour, which includes wage and salary and benefits costs with a union/nonunion breakdown and some occupational and industrial detail. ECI information recently has been extended to include actual (dollar) costs of wages and various broad benefit categories by union/nonunion status.

4) *Compensation per hour.* A quarterly series of total labor costs per hour (including benefits and employer-paid payroll taxes) linked to related productivity and unit labor cost information. As published, the series does not separate wages from other forms of compensation. Information is available only for very broad industrial sectors.

5) *Major union settlements.* Quarterly survey of private industry, and semiannual survey of State and local government union-management agreements involving 1,000 or more workers. Related data on individual settlements and deferred and cost-of-living adjustments are also published.

6) *Area and industry wage surveys.* A program of periodic collection of occupational data for selected urban areas and industries. Area wage surveys are conducted annually or semiannually and provide data on a limited number of occupations. Industry wage surveys provide substantial occupational detail, with some regional breakdown, on a 3- or 5-year cycle.

7) *National Survey of Professional, Administrative, Technical, and Clerical Pay (PATC).* An annual survey of white-collar salaries in private industry for selected occupations, by work level within each field. This survey is designed primarily for guidance in setting Federal civil service salaries.

8) *Foreign hourly compensation costs.* An annual survey of pay of manufacturing production workers in the United States and in selected industrial countries, and of related information on productivity and unit labor costs.

9) *Employee Benefits Survey.* An annual survey of certain benefit practices in medium and large firms. Data are presented by broad occupational categories. The private sector is surveyed in even years and State and local government, in odd years.

groups of workers.[4] Information so obtained is not necessarily slavishly applied; the ultimate pay decision might be to pay more or less than some perceived going rate or market average. But knowledge of the outside market is a starting point in the decision process.

To be most helpful to the practitioner, surveyed compensation information must first be detailed. This involves disaggregation by occupation, location (or labor market), and by the type of pay practice under which payment is made. Apart from detail, there is the issue of frequency of data collection and the speed of publication. Information on wage rates paid a year or two ago, even if provided on a detailed basis, will be of limited interest. Finally, of relevance to practitioners is the intent of other firms regarding future compensation decisions. Unfortunately, BLS does not survey salary intentions, a significant gap in its compensation data base.[5]

Of the three user categories, compensation-setting practitioners are most likely to want data on the traditional printed page; they do not feel a need to subject the data to further processing. However, practitioners will want to know of emerging trends for competitive reasons. Which of the nine programs in exhibit 1 are likely to be of most concern to practitioners? The Current Employment Statistics survey provides information on pay levels and trends by detailed industry, but does not include benefits and lacks straight-time hourly earnings estimates outside of manufacturing. This is troublesome, given the growth of benefits relative to wages since World War II and the growth of the service

sector industries, which are less likely than manufacturing industries to have nationwide paysetting practices. On the plus side, earnings data from the establishment survey have a fast turnaround.

Current Population Survey data on usual weekly earnings potentially are available on a detailed occupational basis. (Most practitioners are probably unaware of this source of pay information which could be valuable, especially to those who need data on occupations with national labor markets.) The key issue is speed of publication. Much annual labor market information from the CPS is available immediately after each year closes, and is published in the January issue of *Employment and Earnings*. Inclusion of detailed annual occupational earnings data on the same schedule would be valuable to practitioners (although practitioners' understandings of who is in a given occupation may not always be in accord with CPS methodology).

In the future, practitioners will need more timely compensation data by occupation and labor market area.

For practitioners in the union sector, the existing system of tracking major collective bargaining settlements (those involving 1,000 or more workers) is helpful. It provides relatively frequent data with quick turnaround. And it permits tracking of such items as the frequency of use of cost-of-living adjustments and lump-sum payments. The listings of contract settlements in *Current Wage Developments* provides the ability to track individual bargaining situations.

Generally, it has been assumed that the major agreements set patterns for smaller units. However, significant divergences between major agreements within manufacturing were found when BLS kept track of the smaller settlements (late 1950's through late 1970's).[6] Just as firm and establishment size seemed to shrink in the 1980's, so too did the number of workers covered by major agreements relative to overall union representation.[7] Major union settlements may thus have less importance, even within the union sector, than was once the case.

Industry wage surveys provide substantial occupational detail and sometimes indicate generally what type of pay system is involved, time or incentive. Obviously, these surveys are of greatest potential use to paysetters within the covered industries. Unfortunately, the long intervals between surveys and the lag between collection and publication limit the usefulness of industry wage surveys to practitioners.

Area wage surveys provide data only on certain widely used occupations. The surveys are taken regularly and have quicker turnaround time than do industry wage surveys. Both area and industry wage surveys provide information on the dispersion of pay, information of potential value to the firm in considering its pay policy relative to others in the labor market.

The Employee Benefits Surveys provide substantial information on the degree to which particular types of benefit programs cover the work force. Emerging benefit programs, such as profit-sharing and employee stock ownership plans are reported in the surveys, but more detail is provided about traditional pension and health care programs.

BLS does not survey employers concerning their intent to establish new pay and benefit plans or terminate old ones. Information on such plans, to the extent that it exists, has been provided by the private data collection firms, often as part of surveys with questionable sampling techniques. Sometimes such surveys are undertaken by organizations which advocate use of particular kinds of compensation programs. A well sampled, periodic survey of this type from BLS would be of great interest to paysetting practitioners.

In the future, practitioners will need more timely compensation data on occupation and labor market area. At present, the surveys which provide the most rapid turnaround tend to be those which give general compensation trends in the labor market, but which are not sufficiently detailed for many compensation-setting purposes. Those with great detail, such as the industry wage surveys, tend to be published with a considerable lag.

Academics. If practitioners need to know who and what, academics need who, what, and why. They are also interested in the *effects* of particular pay policies. Timeliness is less of an issue for academics, who are more likely to be concerned with completeness of information and the ability to link compensation data sets with other information on the firms or establishments supplying them. Alternatively, they are likely to need a combination of compensation data sets and information on the characteristics of the firms, establishments, or work forces from which they are gathered.[8]

Modern computer technology makes possible the linking of data sets, provided issues of confidentiality do not prove to be insurmountable hurdles.[9] Because of their interest in probing the reasons for and effects of compensation outcomes, academics are likely to want information that can be accessed by computers. Such dissemination facilitates statistical analysis of data sets.

Although academics often have made use of earnings data from the establishment survey, questions of "why" (as opposed to "what" and "who") are not easily addressed from this source. Information is not available by establishment characteristics, such as size or union or

nonunion status. Other than the categories of nonsupervisory employees and others, there is no occupational information.

The Current Population Survey has been used by academics for exploring such issues as racial or sex discrimination in pay, or union/nonunion pay differentials. An issue that will need to be addressed in the future, however, is the relationship between CPS-reported earnings and data from other earnings series. For example, the heavy volume of concession bargaining suggests that union/nonunion wage differentials fell during the 1980's. Although other data sources reflect the impact of concession bargaining, it has been, at best, weakly and unevenly reflected in CPS data.[10] Because of the growing use of CPS earnings data to research such policy issues as comparable worth, it would be helpful if BLS itself undertook research on the reliability of these data as trend indicators.

The Employment Cost Index also could be a more valuable source for academics. A limited sample of establishments is repeatedly surveyed, potentially allowing for longitudinal analysis. From the academic viewpoint, an ability to link compensation outcomes with establishment characteristics would be a boon for research. Similar issues can be raised with regard to area and industry wage surveys and the PATC survey.

Academics have devoted substantial research to union wage determination, even during the era of declining unionization. Among the reasons for this interest is the fact that the field of labor economics was very heavily focused on the union sector until the 1960's. Also, there is the advantage that the union sector continues to provide researchers with wage information because of its relative openness. One can still track union settlements through *Current Wage Developments* and use the employer's name to link to other data on the firm. The discontinued series of "wage chronologies" was helpful in pulling such information together for certain major firms. Access to a data base containing the history of settlements reported in *Current Wage Developments* could enable users to generate their own wage chronologies.

There are significant differences between union and nonunion pay practices, for example, regarding cost-of-living adjustments.[11] Academics would thus greatly benefit from a data set tracking nonunion pay adjustments comparable to those in the union sector.

From the Employee Benefits Survey, academics would want to find out why particular benefits programs were offered. Unfortunately, as currently structured, the survey does not provide information on the employers' costs of benefits. There are admittedly substantial difficulties with the measurement of employer costs, especially for pay practices such as defined benefit pensions in which unfunded liabilities may accrue. And there is a conceptual difference between cost to the employer and value to the employee. Nonetheless, the marriage of benefit/cost figures—such as those now available from the Employment Cost Index—with benefit/incidence data will be a boon to academic research. The development of these data presently is in progress.[12]

Although academic interests in the effects of pay practices often seem abstract to practitioners, such information could have direct payoffs for those in the human resource area. Involving the human resource area in the strategic plan of the employer became a popular notion in the 1980's, at least among human resource executives. However, to achieve involvement in the future, human resource executives will need evidence on how (or if) compensation-setting policy (and other issues) affects the economic performance of the enterprise.

Policymakers. Macroeconomic policy relies heavily on aggregated information which, in the compensation area, involves measures of labor cost. Accuracy is important, because critical economic policy decisions may be made based on the data produced. Quick turnaround time between data gathering and dissemination is essential as policy is updated.

In the past, macroeconomic studies of wage determination relied heavily on data from the establishment survey, because that was the main source available. Aggregate establishment data, however, varied because of such factors as shifts in employment across industries and variations in overtime usage, along with adjustments in actual pay scales. From the macro viewpoint, the latter type of adjustment is most critical. In addition, benefit information was omitted.

The Employment Cost Index (ECI) has offered a better alternative for macro judgments in recent years than either establishment survey data or even the more comprehensive index of compensation per hour.[13] Indeed, a case can be made for computing unit labor cost trends utilizing the ECI rather than compensation per hour.[14] The ECI could provide still more useful information to policymakers in the future if data showing the dispersion of pay change were published along with the movement of the average. For example, a widening of the dispersion of pay decisions might indicate a growing diversity of labor market conditions, with some employers experiencing tight labor markets while others still operated in soft markets.

From the Employee Benefits Survey, academics would want to find out why particular benefits programs were offered.

ECI data on benefits reflect only current employer expenditures, not necessarily the value of promised future benefits. In the area of pension plans, such values can be significant where there are unfunded liabilities. Although private sector pension plans are subject to the Employee Retirement Income Security Act (ERISA) regulations concerning funding adequacy, State and local government plans are not. While it would be difficult to reflect the true value of promised benefits in the quarterly ECI, periodic reports on the unfunded liability issue could be useful supplements. The expenditure versus value dichotomy will become progressively more important as the aging American work force nears retirement age.

Because of the shrinkage in the union sector, the heavy emphasis once placed on trends in union pay settlements by macro policymakers has been diminished. However, the visibility of collective bargaining ensures that there will continue to be some macro interest in the aggregate settlement data, and in particular settlements seen as bellwethers. From the macro viewpoint, the lack of base wage information for the individual settlements reported in *Current Wage Developments* has long been a problem; it is difficult to compute percentage pay increases for individual settlements from the cents-per-hour increments that are often reported.

Another longstanding problem has been the exclusion of possible cost-of-living adjustments from reported new settlements data. BLS understandably is reluctant to forecast inflation rates. However, the index might be reported with an adjustment assuming that the current inflation rate will continue, or a menu of inflation assumptions might be provided.[15] Consideration should be given to parallel treatment of other forms of contingent pay, notably profit sharing. To the extent that data on union settlements are made available for computer use, options might be provided for the user to plug in alternative assumptions about inflation and profitability.

The growth of lump-sum payments in the union sector has posed a similar difficulty. Given the frequency with which such payments are now made, lump sums can no longer be considered a temporary aberration. Indeed, one survey of larger firms suggests these bonuses are used in the nonunion sector almost as frequently as in the union sector.[16] BLS plans to reflect lump-sum payments in the collective bargaining statistics, average hourly earnings (from the Current Employment Statistics survey), and occupational wage survey programs.[17]

The BLS data on foreign labor costs in manufacturing are valuable tools for policymakers and economists interested in understanding swings in international trade competitiveness. Data are presented in indexes although the absolute values are also of great use. Because of the interest in contingent pay and lump-sum bonus arrangements in the United States, it would be useful to provide more information on this component of foreign pay.[18] The existence of large bonus payments relative to total compensation has been a noteworthy feature of pay practices in Japan and certain other industrial countries.

The lump-sum issue points to a more general need on the part of macro policymakers. Macroeconomics inherently involves the use of aggregate indexes and data. But exactly what should be included in the aggregate series can be debated. As both macro theory and institutional arrangements change, the kind of data demanded will also vary. Indeed, policymakers and analysts may require different aggregations. As in the case of academic needs, access to the data base can resolve the problem of changing demands in the future. With appropriate access, users can calculate customized indexes which meet their analytical requirements.

A future perspective

Because of the difficulties in predicting how employers will compensate employees, the best approaches to gathering such data are those which preserve options for users. With regard to dissemination, the best approaches are open ones which provide users with the ability to tap into the data set within the limits of confidentiality. Even when resource constraints make publication of a BLS data set difficult, options should be preserved for private sector dissemination of related data.[19] □

Footnotes

[1] See Joseph P. Goldberg and William T. Moye, *The First Hundred Years of the Bureau of Labor Statistics* (Washington, Superintendent of Documents, 1985). In this official historical account, the authors devote substantially more space and attention to controversies and developments surrounding the Consumer Price Index and data relating to employment and unemployment than to compensation. A general history of BLS wage gathering and dissemination can be found in H.M. Douty, "A century of wage statistics: the BLS contribution," *Monthly Labor Review,* November 1984, pp. 16–28.

[2] Thus, when the issue arose of publishing information on the absolute levels of wage and benefit costs as part of the Employment Cost Index, a combination of practitioner and government users were the main force in obtaining the new data. See G. Donald Wood, "A New Measure of the Cost of

Compensation Components," *Survey of Current Business,* November 1988, p. 43. Academic researchers had long been interested in wage-versus-fringe tradeoffs, but their need for such data was frustrated when BLS stopped producing an earlier series on wage and fringe costs in the 1970's. The only private source of such data, an annual survey by the Chamber of Commerce of the United States, is not made available for academic use. Despite their concerns, academics had no formal avenues to express their continuing interest in data on wage and benefit costs.

[3] Academic members of the Executive Board of the Industrial Relations Research Association (IRRA) made various efforts to have the IRRA take positions against proposed budget cutbacks affecting BLS. Because of the IRRA's tripartite structure, it was not possible to achieve consensus on this issue, but the organization has since maintained a statistical subcommittee to monitor budget and other developments affecting Federal statistical programs. (Records of the Board debates on this issue can be found in the association's 1981 and 1982 annual *Proceedings* volumes.) A related organization made up of major academic industrial relations programs, then known as the IR Center Directors, took a more active role in making contact with congressional representatives and staff and administration officials.

[4] One study found that 93 percent of respondent employers reported using wage surveys as part of the paysetting process. Only 34 percent of those using such surveys reported that they used BLS data, perhaps because of some of the problems related to speed and detail discussed in this article. See Bureau of National Affairs, *Wage & Salary Administration*, PPF Survey, 131 (Washington, Bureau of National Affairs, 1981), p. 3.

[5] There are precedents in other settings for data collection about intentions by government agencies. For example, information is collected about intended future investment outlays, and persons not in the labor force are asked about their future jobseeking plans.

[6] In the 1970's, median percentage wage adjustments in manufacturing were generally higher for major union agreements than for all union agreements. Thus, the nonmajor agreements apparently provided smaller adjustments than the major agreements. See *Handbook of Labor Statistics,* Bulletin 2070 (Bureau of Labor Statistics, 1980), pp. 306–07.

[7] BLS estimates the number of workers represented under major union agreements as part of its annual bargaining calendar. An estimate of total union representation is made as part of the Current Population Survey. In 1980, the ratio of workers under major agreements to those who were union represented was 60 percent in the private nonagricultural sector. By 1988, the ratio had fallen to 52 percent.

[8] Alice Nakamura and Masao Nakamura, "New Measures of Nonwage Compensation Components: Are They Needed?" *Survey of Current Business,* March 1989, p. 61.

[9] Because of budgetary pressures, concern has been expressed concerning duplication of surveying efforts by different government agencies. If these difficulties can be overcome, one byproduct could be more information about the surveyed establishments which would be linked to their pay practices. See the statement of Courtenay Slater in U.S. Joint Economic Committee, *The Quality of the Nation's Economic Statistics,* hearings of March 17 and April 17, 1988, 99th Cong., 2d session (Washington, Superintendent of Documents, 1986), pp. 27–28, 83–84.

[10] Union workers' wage and salary increases reported by the Employment Cost Index have been lower than those of nonunion workers since 1983. Yet the CPS-reported ratio of union to nonunion usual median weekly earnings for full-time employees has shown comparatively little change during the 1980's. For example, the CPS ratio for the private nonagricultural sector rose from 34 percent in 1984 (the first year available) to 36 percent in 1986, and then dropped to 33 percent in 1988. During this period, the ratio as calculated from the ECI dropped steadily and showed a decline of more than 5 percent from June 1984 to June 1988. For discussion of the lack of evidence of concession bargaining in CPS data, see Richard B. Freeman, "In Search of Union Wage Concessions in Standard Data Sets," *Industrial Relations,* Spring 1985, pp. 131–45.

[11] William M. Davis and Fehmida Sleemi, "Collective bargaining in 1989: negotiators will face diverse issues," *Monthly Labor Review,* January 1989, p. 14.

[12] The first set of data, relating to establishments with fewer than 100 employees, is scheduled for publication in the summer of 1991. Publication of data on State and local government is scheduled for the fall of 1991, and for the entire economy (private industry and State and local government), 1992.

[13] To assist in the evaluation of establishment survey hourly earnings data, BLS published an hourly earnings index through 1988 which adjusted for interindustry employment shifts and overtime in manufacturing. The ECI is intended as a replacement for the hourly earnings index and the latter is no longer published.

[14] Because the currently used measure of output per hour reflects changes in the mix of industry output, it might be desirable to match the ECI with a fixed-base index of output per hour. The two indexes in combination would permit calculation of a consistent measure of unit labor costs.

[15] This suggestion is made in Donald A. Nichols, "Wage Measurement Questions Raised by an Incomes Policy," in Jack E. Triplett, ed., *The Measurement of Labor Cost* (Chicago, University of Chicago Press, 1983), p. 461.

[16] See John Thomas Delaney, David Lewin, and Casey Ichniowski, *Human Resource Management Policies and Practices in American Firms,* reprint series (Columbia University, Industrial Relations Research Center, Graduate School of Business, 1988), p. 22.

[17] Under special agreement with the aerospace industry, information on such topics as lump sums has been provided recently on that industry in both the establishment survey and the ECI.

[18] BLS does have information on this component of pay, although it has not been prominently featured when the foreign pay data have been disseminated.

[19] For example, the Industrial Relations Center for Cleveland State University has revived the discontinued BLS bulletins on characteristics of major collective bargaining agreements—which contained information on a variety of paysetting and other practices—using BLS contracts collected by the center. See "Characteristics of Major Private Sector Collective Bargaining Agreements as of January 1988," Report 8801–1 (Cleveland, Cleveland State University, Contract Library and Information Services, Industrial Relations Center, May 1989).

Significant decisions in labor cases

Civil rights

Two of the Federal laws used most frequently to fight employment discrimination are Title VII of the Civil Rights Act of 1964[1] and 42 U.S.C. § 1981.[2] Title VII, among other things, prohibits employers from hiring or firing workers on the basis of race and from discriminating against them in regard to the terms and conditions of employment.[3] Section 1981, a Reconstruction-era civil rights law, grants to all persons "the same right . . . to make and enforce contracts . . . as is enjoyed by white citizens."[4]

Although these two statutes overlap, significant differences exist between them. Title VII, which applies only to businesses that employ at least 15 workers, has a complex procedure under which the U.S. Equal Employment Opportunity Commission investigates, conciliates, and sometimes litigates "charges" of discrimination.[5] Only after the Commission issues a "right-to-sue letter" may an alleged victim of discrimination file a private suit against his or her employer.[6] If the plaintiff is successful in a Title VII suit, which must be tried before a judge, not a jury,[7] the employer must pay the plaintiff's attorney's fees;[8] the employer also may be forced to pay wages dating as far back as 2 years before the charge was filed with the Commission.[9]

By contrast, under section 1981, suit may be filed more quickly, because no administrative mechanism is required (or even exists) to investigate complaints. Once filed, a section 1981 suit may be tried before a jury.[10] Also, State personal injury statutes of limitations apply to these suits,[11] so awards of backpay can be larger than under Title VII if the State statute of limitations exceeds 2 years. In addition, compensatory and punitive damages, which are not allowed under Title VII, may be recovered under section 1981. Finally, all employers are covered by section 1981 as a result of the Supreme Court's 1976 decision in *Runyon* v. *McCrary*,[12] which extended section 1981 to private, as well as public, contracts.

As a result of *Runyon*, plaintiffs came to rely on section 1981 as a powerful tool for fighting racial discrimination in many purely private contexts, including private employment contracts. However, in 1988, the Supreme Court issued an unexpected order in the case of *Patterson* v. *McLean Credit Union*,[13] asking the parties to brief and argue the issue of whether *Runyon* should be reconsidered.[14] Many concluded that the Court would overrule *Runyon* and limit the reach of section 1981 to public contracts only. However, after the issue was briefed and argued, the Court declined to overrule *Runyon*, five Justices concluding that adherence to Court precedent—and not necessarily the correctness of *Runyon*—dictated this result.[15]

Although the *Patterson* Court let stand the *Runyon* principle that section 1981 applies to private contracts, it construed the statute in such a way that far fewer cases will be brought under this provision.[16] More specifically, the majority held that the section 1981 right to contract applies only to discrimination in contract formation (hiring) and not to postformation conduct. Based upon this distinction, the Court concluded that on-the-job racial harassment is not prohibited by section 1981, because it occurs after the parties have entered into the contract.[17]

The formation-postformation dichotomy proved more difficult for the *Patterson* Court to apply in the context of discrimination in promotions. Ultimately, it concluded that such discrimination is not prohibited under section 1981 unless the promotion would create a new and distinct employment relationship.[18] Only in this limited situation, the Court said, does discrimination in promotions impair the right to contract.[19]

Patterson is important for several reasons. As a result of the decision, victims of on-the-job racial harassment no longer have the option of seeking remedies under section 1981. For victims who work in businesses that employ fewer than 15 persons, this means that they may have no Federal remedy at all.[20] For the remainder of the work force, only the more limited Title VII remedies may be available.[21] Finally, section 1981 is not limited to employment contracts, so *Patterson*'s narrow construction of this law may limit its use as an antidiscrimination measure in other contractual situations.

In an earlier decision, *Ward's Cove Packing Co.* v. *Atonio*,[22] the Supreme court held that Title VII plaintiffs may not rely on internal work force comparisons to make out their initial, or prima facie, case that their employer's racially neutral employment practices have a disparate impact on minorities. The plaintiffs in this case were unskilled, nonwhite Alaskan cannery workers. They claimed that their company's employment practices violated Title VII because they had the effect of funneling minorities into unskilled and low-paying cannery jobs, rather than into higher paid, mostly skilled noncannery positions.

To support their allegations, the

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plaintiffs offered statistics showing a high percentage of nonwhite workers in cannery jobs, but a low percentage in noncannery jobs. The Supreme Court rejected this comparison, calling it inappropriate under Title VII. It held that the plaintiffs should have compared the racial composition of the group that held the jobs at issue to the racial composition of the qualified applicant pools or to the racial composition of the qualified labor force population. The Court indicated that the plaintiffs must also identify and show that a particular employment practice caused the statistical disparity.

Because the lower court had not required the plaintiffs to make their prima facie case under the correct legal standard, the Supreme Court remanded the case for further proceedings. If, on remand, the plaintiffs make out a prima facie case of disparate impact under the correct standard, then the case will shift to what the Court labeled the "justification stage."[23] Before *Ward's Cove*, it was generally thought that the employer had the "burden of persuasion" during this stage, meaning that to prevail, the employer had to persuade the court that the challenged employment practice was justified by "business necessity."[24] Under this analysis, an employer who failed to meet the burden lost the case.

According to the Court in *Ward's Cove*, the plaintiff, not the defendant, bears the burden of persuasion during the justification stage. The employer, the Court held, must only meet a lesser "burden of production."[25] Thus, once the employer introduces evidence of business necessity, which the Court said means a practice that serves, in a significant way, the legitimate employment goals of the employer,[26] the plaintiff must either disprove the employer's stated justification or show that a less discriminatory practice could achieve the same business purpose.

Plaintiffs may have a more difficult time prevailing in Title VII disparate-impact cases as a result of *Ward's Cove*. Proving that a particular employment practice caused the disparate impact will be difficult, particularly where many practices are challenged. Plaintiffs may also find it difficult proving that the employer's practices are not supported by a legitimate business purpose. Much of the evidence on this issue will consist of records that the employer may resist disclosing. Finally, employers will find Title VII disparate-impact cases easier to defend because they need only produce evidence showing that their practices are in substantial service of legitimate goals.

Age discrimination

In *Public Employees Retirement System* v. *Betts*,[27] the Supreme Court was faced with defining the extent to which age-based discrimination in benefit plans is prohibited under the Age Discrimination in Employment Act.[28] In general, the act prohibits public and private employers from hiring or firing any worker on account of the worker's age; it also prohibits age-based discrimination in compensation and in any other terms, conditions, or privileges of employment.[29] The act does not apply, however, to "bona fide" retirement plans that are not a "subterfuge" for age-based discrimination.[30] The dispute in *Betts* focused on whether provisions of an Ohio public employees' retirement plan were a subterfuge for age discrimination.

Under Ohio's retirement scheme, public servants can retire under one of two plans. The first plan allows workers to retire if they satisfy certain age and length-of-service requirements.[31] The second allows permanently disabled workers to retire on a separate disability pension, but only if they are under the age of 60.[32] Disability benefits, unlike age-and-service benefits, must total at least 30 percent of the worker's final salary.

June Betts, a county speech pathologist, became permanently disabled at age 61. Because of her age, Betts was not allowed to collect disability retirement benefits, which would have totaled $355 per month. Instead, she was forced to accept the less generous age-and-service benefits, which amounted to only $158 per month. Because she thought that the State's denial of disability benefits amounted to illegal age discrimination, Betts filed suit under the Age Discrimination in Employment Act.

Writing for a 7–2 majority of the Court, Justice Anthony Kennedy ruled against Betts. First, he interpreted the Age Discrimination in Employment Act narrowly, holding that its prohibition against discrimination in "compensation, terms, conditions, or privileges of employment" covers only discrimination in nonfringe benefit aspects of employment. The result is that the act usually will not apply to retirement plans, unless they are a subterfuge for discrimination in nonfringe benefits.[33]

In addition to interpreting the scope of the Age Discrimination in Employment Act's prohibition against discrimination in retirement plans in a narrow fashion, Justice Kennedy reversed the lower court and significantly increased the plaintiff's burden of proof by holding that the plaintiff must show that the plan is a subterfuge for discrimination.[34] Perhaps even more important, Justice Kennedy held that in meeting this burden, the employee must prove that the plan resulted from the employer's specific intent to evade the act. In formulating this standard, he rejected the Government's construction of the term "subterfuge" because it failed to take into account that the term connotes intent.[35] Thus, he held invalid a Government regulation that states that a plan is a subterfuge for discrimination if benefit reductions are not justified by corresponding cost increases.[36]

The effect of *Betts* may be significant. Because of the decision, far fewer pension, retirement, and other fringe benefit plans will be subject to challenge under the Age Discrimination in Employment Act.[37] Also, any plan that is challenged will be easier to defend because of the plaintiff's increased burden of proof. Finally, it remains to be seen whether employers will attempt to change fringe benefit plans to reflect the *Betts* decision, and if so, to what extent. □

Footnotes

[1] 42 U.S.C. § 2000e (1982).

[2] 42 U.S.C. § 1981 (1982).

[3] 42 U.S.C. § 2000e–2(a)(1) (1982).

[4] 42 U.S.C. § 1981 (1982).

[5] 42 U.S.C. § 2000e–5(b) (1982).

[6] 42 U.S.C. § 2000e–5(f)(1) (1982). Generally speaking, the Commission must issue the right-to-sue letter 180 days after the charge is filed if it has not already dismissed the charge, conciliated an agreement, or filed its own suit.

[7] See *Slack* v. *Havens*, 522 F.2d 1091 (9th Cir. 1975).

[8] 42 U.S.C. § 2000e–5(k) (1982).

[9] 42 U.S.C. § 2000e–5(g) (1982).

[10] See *Laskaris* v. *Thornburgh*, 733 F.2d 260 (3d Cir.), *cert. denied,* 469 U.S. 883 (1984).

[11] See *Goodman* v. *Lukens Steel Co.*, 482 U.S. 656 (1987).

[12] 427 U.S. 160 (1976). *Runyon* itself was not an employment case. At issue was whether the section 1981 right to contract prevented private schools from discriminating in admissions. A similar issue arises in the employment context when private employers discriminate in hiring or in other terms or conditions of employment.

[13] 108 S. Ct. 1419 (1988).

[14] The Court's order in *Patterson* was unexpected because the parties had not asked the Court to address the issue. The order was particularly unusual because the case had already been briefed and argued in the Supreme Court on two other issues: (1) Is on-the-job harassment prohibited under section 1981? and (2) Must the plaintiff prove that she was more highly qualified than the person who was promoted in order to show that the employer's stated reason for not promoting her was a pretext for racial discrimination?

[15] *Patterson* v. *McLean Credit Union*, 109 S. Ct. 2363 (1989). The majority held that it would not overrule *Runyon* because no party had shown that the decision was unworkable or confusing, that it was inconsistent with a sense of justice or social welfare, or that its conceptual underpinnings had been undermined by intervening decisions of the Court. *Id.* at 2369–72. Three other Justices found that this inquiry was unnecessary because *Runyon* was correctly decided. *Id.* at 2379 (Justice Brennan, dissenting).

[16] The dissenting Justice William J. Brennan, Jr., complained, "What the Court declines to snatch away with one hand, it takes with the other." *Id.* at 2379 (Justice Brennan, dissenting).

[17] The Court was not asked to decide whether section 1981 prohibits discriminatory discharges. Its formation-postformation framework for resolving section 1981 coverage issues provides little help in this context. Although a discharge is postformation conduct, a persuasive argument can be made that it also impedes the right to make or enforce a contract. It is therefore not surprising that within 2 months of the decision in *Patterson*, lower courts reached conflicting results on this issue. See *Padilla* v. *United Air Lines*, 716 F. Supp. 485 (D. Colo. 1989) (a discriminatory discharge is prohibited by section 1981); *Greggs* v. *Hillman Distrib. Co.*, 719 F. Supp. 552 (S.D. Tex. 1989) (a discriminatory discharge is not prohibited by section 1981); and *English* v. *General Dev. Corp.*, 717 F. Supp. 628 (N.D. Ill. 1989) (a discriminatory discharge is prohibited by section 1981 if the discriminatory practice was in effect at the time of contract formation).

[18] Shortly after *Patterson* was decided, a lower court held that section 1981 prohibits discrimination in promotions when the current and the sought-after jobs are substantially different in supervisory responsibilities, duties, qualifications, and pay. See *Luna* v. *City of Denver*, 50 Fair Empl. Prac. Cases (BNA) 1198 (D. Colo. 1989). These differences, the court held, showed that the sought-after job presented an opportunity for a new and distinct contractual relationship.

[19] The Court also addressed two other issues. First, it held that the section 1981 right to enforce contracts on an equal basis only prohibits efforts to impede access to the courts or nonjudicial adjudicatory mechanisms and does not prohibit racially based harassment in the workplace or discrimination in promotions. 109 S. Ct. at 2373. It is not clear whether this means that retaliation for making claims of racial harassment will be covered by section 1981. See *Jordan* v. *U.S. West Direct Co.*, 716 F. Supp. 1366 (D. Colo. 1989) (section 1981 covers such claims); and *Williams* v. *National R. R. Passenger Corp.*, 716 F. Supp. 49 (D. D.C. 1989) (section 1981 does not cover such claims). Second, the Court held that in proving that the employer's stated reason for not promoting the plaintiff was a pretext for racially based discrimination, the plantiff cannot be limited to proving that he or she was more qualified than the person who was promoted.

[20] The dissent in *Patterson* noted that nearly 15 percent of the work force is not covered by Title VII because these individuals work in businesses that employ fewer than 15 workers. 109 S. Ct. at 2391 (Justice Brennan, dissenting).

[21] Even the more limited Title VII remedies will be unavailable if the alleged victim of discrimination does not complain to the Equal Employment Opportunity Commission in a timely manner. Before *Patterson*, such persons often were still able to file section 1981 suits because the time allowed for filing them was generally longer than that for filing Title VII complaints.

[22] 109 S. Ct. 2115 (1989).

[23] *Id.* at 2125.

[24] See *Griggs* v. *Duke Power Co.*, 401 U.S. 424 (1971).

[25] The Court's discussion of the burdens of proof during the justification stage is dictum, meaning that such discussion was more in the nature of advice and was not essential to the outcome of the case. Generally speaking, dictum has no precedential weight. However, lower courts probably will follow it until the Supreme Court rules to the contrary. See *Evans* v. *City of Evanston*, 881 F.2d 382 (7th Cir. 1989).

[26] The Court in *Ward's Cove* construed "business necessity" somewhat differently than it had in previous cases, where it had held that in order to be justified by business necessity, an employment practice must have a "manifest relationship" to the job. See *Griggs*, 401 U.S. at 432. In *Ward's Cove*, the Court indicated that although business necessity means more than "a mere insubstantial justification," it means something less than that the practice is "essential" or "indispensable." 109 S. Ct. at 2126.

[27] 109 S. Ct. 2854 (1989).

[28] 29 U.S.C. § 621 (1982).

[29] 29 U.S.C. § 623(a)(1) (1982).

[30] 29 U.S.C. § 623(f)(2) (1982).

[31] Ohio Rev. Code Ann. § 145.33 (Anderson 1987 Supp.).

[32] Ohio Rev. Code Ann. § 145.36 (Anderson 1987 Supp.).

[33] Justice Kennedy said that such a subterfuge could be shown if, for example, the employer had reduced all employees' salaries while, at the same time, it had increased fringe benefits for younger workers only. 109 S. Ct. at 2867–68.

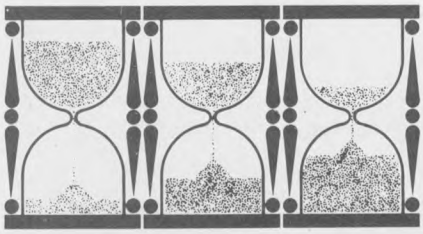
[34] The court of appeals had held that the employer had the burden of proving that the retirement plan is not a subterfuge for discrimination. *Betts* v. *County Bd. of Mental Retardation*, 848 F.2d 692 (6th Cir. 1988). The Supreme Court disagreed, holding that the provision of the Age Discrimination in Employment Act making it lawful for an employer "to observe the terms of . . . any bona fide employee benefit plan . . . which is not a subterfuge" is actually a description of prohibited conduct, and thus the employee bears the burden of showing that the employer engaged in such conduct. 109 S. Ct. at 2868.

[35] The Court held that the outcome on the issue of subterfuge is required under the reasoning of its earlier decision in *United Air Lines* v. *McMann*, 434 U.S. 192 (1977), where the Court held that a subterfuge is "a scheme, plan, strategem, or artifice of evasion." *Id.* at 203. Thus, *McMann* had held that a plan adopted before enactment of the Age Discrimination in Employment Act could not be a subterfuge because there was no statute to evade.

[36] See 29 CFR 1625.10 (1988).

[37] The dissent indicated that the majority opinion "immunizes virtually all employee benefit programs from liability" under the act. 109 S. Ct. at 2869 (Justice Marshall, dissenting).

Major agreements expiring next month



This list of selected collective bargaining agreements expiring in March is based on information collected by the Bureau's Office of Compensation and Working Conditions. The list includes agreements covering 1,000 workers or more. Private industry is arranged in order of Standard Industrial Classification. Labor organizations listed are affiliated with the AFL–CIO, except where noted as independent (Ind.)

Private industry

Construction

Associated Building Contractors of Terre Haute, IN; Operating Engineers, 2,200 workers

Associated General Contractors, Baltimore, MD; Carpenters, 2,000 workers

Associated General Contractors, Baltimore, MD; Laborers, 2,000 workers

Associated General Contractors of Southern Florida; Carpenters, 4,000 workers

Associated General Contractors, Cattaraugus, Chautaugua, Genesee, Orleans, and Wyoming Counties, NY; Operating Engineers, 1,200 workers

Associated General Contractors, Baltimore, MD; Operating Engineers, 1,225 workers

Associated General Contractors and independent contractors, Baltimore, MD; Operating Engineers, 1,225 workers

Associated General Contractors and other contractors, Southern Florida; Laborers, 1,800 workers

Builders Association of Kansas City, MO; Painters, 1,100 workers

Builders Association of Kansas City, MO; Carpenters, 2,000 workers

Builders Association of Kansas City, MO; Iron Workers, 1,200 workers

Builders Association of Missouri, Kansas City, MO; Laborers, 3,000 workers

Builders Construction Agreement, New York, NY; Carpenters, 20,000 workers

Connecticut Construction Industries Association, Connecticut; Carpenters, 1,000 workers

Indiana Contractors, Inc., Indiana; Operating Engineers, 1,800 workers

Indiana Highway Contractors, Indiana; Laborers, 4,000 workers

Mechanical Contractors Association of New Mexico, Albuquerque, NM; Plumbers, 1,200 workers

Food products

Campbell Soup Co., Camden, NJ; Food and Commercial Workers, 1,400 workers

Nestle Co., Fulton, NY; Retail, Wholesale and Department Store Workers, 1,170 workers

Textile mill products

Fieldcrest Mills, Inc., Georgia; Clothing and Textile Workers, 4,800 workers

Paper and paper products

Weyerhauser Co., Interstate; Paperworkers, 1,900 workers

Printing and publishing

New York Daily News, New York, NY; The Newspaper Guild, 1,120 workers

Publishers Association of New York, New York, NY; Newspaper and Mail Deliverers' Union (Ind.), 1,150 workers

Chemicals and allied products

Lever Brothers Co., Interstate; Chemical Workers, 1,400 workers

Petroleum

Exxon Co., U.S.A., Baton Rouge, LA; Baton Rouge Oil and Chemical Workers (Ind.), 1,800 workers

Rubber

Gates Rubber Co., Denver, CO; Rubber Workers, 1,100 workers

Glass products

Glass Container Corp., Interstate; Glass, Pottery, Plastics and Allied Workers, 4,900 workers

Electrical and electronic equipment

United Technologies, Columbus, MS; Electronic Workers, 1,400 workers

Transportation equipment

FMC Corp., San Jose Division, San Jose, CA; Machinists, 1,900 workers

Pacific Coast Shipbuilders Association, Seattle, WA; Metal Trades Council, 1,150 workers

Local and interurban passenger transportation

Greyhound Lines, Interstate; Transit Workers, 7,500 workers

Milwaukee Transport Services, Inc., Milwaukee, WI; Transit Workers, 1,350 workers

Television broadcasting

National Broadcasting Co., Interstate; Broadcast Employees and Technicians, 2,800 workers

Utilities

Wisconsin Electric Power Co., Milwaukee, WI; United Association of Office, Sales and Technical Employees (Ind.), 1,400 workers

Wholesale trade—durable goods

Rock Products and Ready-Mix Concrete Employers of Southern California; Teamsters, 2,500 workers

Insurance

Metropolitan Life Insurance Co., Interstate; Food and Commercial Workers, 2,000 workers

Services

Greater New York Health Care Facilities Association, New York, NY; Service Employees, 1,000 workers

Kaiser Foundation Hospitals, Richmond, CA; Office and Professional Employees, 1,500 workers

Kaiser–Permanente, Los Angeles and Orange Counties, CA; Service Employees 7,400 workers

Public activities

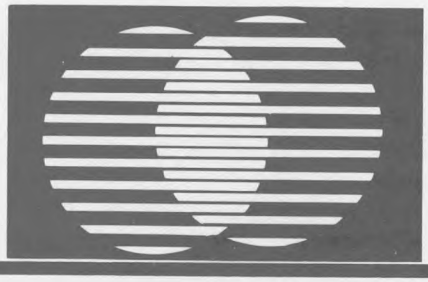
Transportation

Milwaukee County Transit System, Milwaukee, WI; Transit Union, 1,300 workers

General government

Columbus general unit, Columbus, OH; State, County and Municipal Employees, 3,000 workers □

Developments in industrial relations



Boeing–Machinists accord

The first settlement in the 1989 bargaining in the aerospace industries was between The Boeing Co. and the Machinists. The 3-year accord, ratified in November, ended a 7-week work stoppage involving 57,000 workers at facilities in seven States. The stoppage was one of the longest in company history, and came when the company had a backlog of $70 billion in aircraft orders. It revolved around three issues: pay, pensions, and mandatory overtime.

In regard to pay, the union had pressed for elimination of the practice of giving employees annual lump-sum payments in lieu of specified wage increases, as had occurred in the 1983 and 1986 contracts. Under the 1989 settlement, each employee received an immediate lump-sum payment equal to 10 percent of his or her earnings during the preceding 12 months, followed by a similar 5-percent payment in December 1990 and a 4-percent payment in December 1991. In addition, they received a 4-percent immediate wage increase, followed by 3-percent increases in October of 1990 and 1991. (Under the 1983 settlement, the workers received three annual lump sums, calculated at 3 percent of earnings; while the 1986 settlement provided for an immediate lump sum calculated at 12 percent of earnings and second- and third-year payments calculated at 5 percent of earnings.)

The 1989 accord provided for an immediate 60-cent-an-hour prepaid cost-of-living adjustment, to be offset against any regular quarterly adjustments that might otherwise occur during the first year of the contract. During the balance of the contract, the employees will receive quarterly adjustments at the rate of 1 cent an hour for each 0.075-point movement in the BLS Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI–W).

Under the 1983 contract, employees received a prepayment equal to 3 percent of their individual hourly pay rate and a total of $1.34 an hour in quarterly adjustments. Under the 1986 agreement, they received a 40-cent-an-hour prepayment and a total of 91 cents an hour in quarterly adjustments. Both contracts provided for the quarterly adjustments to be calculated at 1 cent an hour for each 0.3-point movement in the CPI–W (1967=100).

Boeing agreed to limit mandatory overtime work to 144 hours (formerly 200 hours) in a quarter and to no more than two consecutive weekends (formerly four) and to pay double time after 160 hours of overtime in a quarter. In meeting the two consecutive weekends requirement, employees will now be credited with a full weekend if they work only one of the two weekend days. Other changes included a 16-hour limit on mandatory overtime on a weekend and a pledge of no reprisals for rejecting voluntary overtime.

These changes are related to family care benefits because they ease some employees' concern about not spending enough time with their families. The contract also established formal family care benefits in the form of provisions for referral, consultation, and educational materials regarding child care and elder care.

Changes in the two retirement benefit formulas under the company-sponsored retirement plan were made for employees retiring on or after January 1, 1990, under the standard benefit formula and on or after January 1, 1989, under the alternate benefit formula. Under the standard benefit formula, the monthly pension rate for each year of service was increased to $30, from a range of $22 to $26 under the 1986 contract. Under the alternate formula, improvements ranged from 2 percent to 8 percent. The alternate formula applies if it is more beneficial to a retiring worker than is the standard benefit formula. Other revisions included 3-percent to 16-percent increases (to a maximum $200 a month) in current retirees' benefits, and improvement in survivor benefits for spouses of employees who die after becoming eligible for a pension.

Other benefit changes include a $2,000 increase (to $20,000) in life and accidental death and dismemberment insurance benefits; a $25 increase in weekly disability payments for employees not covered by workers' compensation, and a $12.50 weekly increase for employees covered by workers' compensation; various improvements in the medical plan, including the addition of coverage for routine physical examinations, organ donor expenses, and treatment of eating disorders, as well as benefit increases for vision care and substance abuse treatment; and a $500 increase in both the annual maximum benefits under the dental incentive plan and lifetime orthodontic care.

Elsewhere in the aerospace industry, the Machinists was bargaining with McDonnell Douglas' California operations, and with several units of Lockheed Aircraft Corp. Based on past practice, the Boeing accord may influence the outcome at these companies, as well as at other aerospace companies scheduled to bargain in 1990.

Nynex settlement

The 1989 bargaining round in the telecommunications industry ended when Nynex Corp. settled with the Communications Workers and the International Brotherhood of Electrical

"Developments in Industrial Relations" is prepared by Michael H. Cimini of the Division of Developments in Labor-Management Relations, Bureau of Labor Statistics, and is largely based on information from secondary sources.

Workers. (See *Monthly Labor Review*, November 1989, pp. 79–81, for terms of the settlements with the seven other regional companies and with American Telephone and Telegraph Co.) Nynex is the parent company of both the New York Telephone Co., which serves the State of New York, and the New England Telephone Co., which serves Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, and Vermont. The Communications Workers bargains for 40,000 workers at the New York Telephone Co., and the Electrical Workers bargains for 20,000 workers at the New England Telephone Co.

The settlements, like those at some of the other regional companies, were preceded by a work stoppage, which began on August 6 and ended on November 20 at New England Telephone, and on December 4 at New York Telephone.

The end of the stoppage came when the companies dropped their demand that employees pay part of health insurance premiums. The same issue generally dominated negotiations at the other regional companies, with the same result. However, some settlements—like those at New York Telephone and New England Telephone—require that employees switch to a preferred provider organization when it becomes available. If they do not do so, they become obligated for coinsurance payments, which amount to 20 percent of treatment costs for the Nynex employees. The two Nynex companies could also realize some savings from initiatives of new joint health care cost containment committees.

The settlements with both unions were almost identical. Terms included an immediate 3-percent wage increase and 1.5-percent increases in October 1990 and September 1991. In addition, the contract provided for cost-of-living adjustments in October 1990 and September 1991 equal to 0.6 percent of an employee's basic weekly wage rate for each potential full or partial percentage-point increase between 2 percent and 5 percent in the BLS Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI–W) during the preceding 12 months ending in May.

Like the other settlements in the communications industry, the Nynex accords included a package of family-oriented provisions. Effective immediately, employees became eligible for unpaid leaves of absence of up to 1 year to care for newborn or adopted children. In 1990, employees will also be able to take up to 24 months of unpaid leave in a 10-year period to care for seriously disabled family members. In that same year, employees will be reimbursed up to $2,500 for adoption expenses of minor children, and will be able to deduct up to $4,800 from their pay on a tax-free basis for dependent care programs. In 1991, employees and other family members will be eligible for educational loans of $1,550 to $25,000 each year, up to a $100,000 maximum. In addition, the parties agreed to establish a joint committee to deal with problems of day care, elderly care, work schedules, and balancing work and family responsibilities.

Other benefit improvements included a 14-percent increase in pension rates effective in 1990, and an additional 6-percent increase for those eligible employees retiring before January 1, 1990. The company's contribution to the savings and security plan was increased from 50 percent to 60 percent of the employee's investment, effective in 1990. In that same year, Nynex will approve a network of hospitals and facilities for treatment of mental and nervous disorders, including chemical dependency treatment, on an inpatient basis, and in the following year, on an outpatient basis. In the last year of the contract, company payments to retirees' health care cost will range from $670 for employees age 65 or older with single coverage to $4,860 for employees under age 65 with family coverage.

Prudential Insurance Co.

The Prudential Insurance Co. of America settled with the Food and Commercial Workers on a 2-year contract covering about 15,000 sales agents in 35 States and the District of Columbia. According to the company, the pact raised wages and benefits an average of $50 over the term.

Other provisions included quarterly lump-sum payments totaling $1,471, beginning with a payment calculated at $23 a week in the first quarter, progressively declining to a final payment calculated at $6 a week in the final quarter; pension rate increases ranging from 9.4 percent to 100 percent, depending on the employee's years of service and average earnings at retirement (the Social Security offset was cut to no more than 50 percent); full health insurance coverage of expenses up to $25,000 a year (formerly $10,000), and 80-percent coverage of expenses over $25,000, reverting to full coverage after the employee's out-of-pocket cost exceeds $1,000 to $2,000, depending on the employee's earnings; a new compensation system with more emphasis on productivity and less on flat salaries; and a joint labor-management committee to assess the need to establish child care and paternal leave.

A&P settlements

More than 9,000 clerks and meat department employees of about 125 A&P supermarkets in northern New Jersey and in Westchester and Rockland counties in New York are covered by a new agreement negotiated by Local 1776 of the Food and Commercial Workers. The 42-month pact provides for a $90 increase (to $285) in the monthly company payment to the health and welfare fund for each full-time employee to maintain the current level of benefits. These benefits are fully funded by the company, and were the key issue in the negotiations.

Other important contract provisions were:

- Wage gains of $85 to $95 per week over the life of the contract: $95 for meat department managers, to $790; $90 for journeyman meatcutters and apprentice butchers, to $731; and $85 for top-rated clerks, to $611.
- Wage increases of $1.35 an hour for part-timers at the top rate of the wage progression, and a $2.35 hourly increase for part-timers not at the top.
- Paid jury duty leave for part-timers, as well as 1 day of paid leave to attend the funeral of family members.

- A $600 increase (to $1,350) in the maximum monthly pension for future retirees. Employees retiring in the near future, who would not benefit from the new maximum, will receive two flat increases in the monthly pension, totaling, by the end of the contract, $100 per month for employees retiring at age 62 with 35 years of service, and $150 for employees retiring at age 62 with 40 years of service. Pensions for part-time workers were increased by $70 per month, to $280.

Weirton Steel accord

Weirton Steel Co., the Nation's largest employee-controlled steel producer, and the Independent Steelworkers Union restored the 14.1-percent wage cut the 6,800 employees accepted in 1983 to help finance the purchase of the company from National Steel Corp. In addition to the $2.09 total hourly wage boost, which included a 35-cent "new money" increase in the final year, the new 4-year contract also partly restored cuts in paid holidays and vacations accepted in 1983.

Under the 5-year agreement that expired in September, employees had received profit-sharing payments to help compensate for their wage and benefit concessions. The average profit-sharing distribution was $9,100 in 1988. The profit-sharing formula was continued in the 1989 contract, but was modified in January 1989 to cut the workers' share of net corporate income to 35 percent (from 50 percent) to help finance capital improvements.

Other contract terms included a new plan intended to increase employees' productivity by assisting them in gaining new skills; and improvements in health insurance benefits, including major medical coverage.

Timken, Steelworkers settle

Ending a 34-day job action, 5,800 employees at Timken Co. returned to work under a 4-year agreement negotiated by the Steelworkers. The accord was reached against the backdrop of a layoff for some 1,000 workers that had been announced before the work stoppage began.

The major stumbling blocks to settlement reportedly were pension benefits and cost-of-living adjustments. In the new contract, minimum monthly pension for retirees with more than 30 years of service will increase by $408 a month, to $1,000. The pact also provides for potential cost-of-living adjustments in each year.

Other important settlement terms included incorporation of the existing 43-cent-an-hour cost-of-living allowance into basic wage rates; hourly wage increases of 25 cents in 1989, and average increases of 25 cents per hour in 1990 and 50 cents per hour in 1991; and a 4-year contract, more in line with recent settlements in the industry, rather than the 3-year duration of previous agreements.

Unusual rail accord

The Atchison, Topeka, & Santa Fe Railway and the Brotherhood of Locomotive Engineers, who chose not to participate in the 1988 national round of negotiations that is still continuing, settled on terms that may influence the national bargaining. The parties negotiated a profit-sharing plan (reportedly, the first ever at a major railroad), a freeze on wages for the 5-year term of the contract, and an increase in the basic workday from 108 to 120 miles. In addition, the agreement provides for a 401(k) savings plan, a company-sponsored savings plan, 6 paid personal days each year to engineers who have spotless safety records, and a $10,000 lump-sum payment effective upon ratification. Under the 401(k) plan, the company will match 25 percent of each engineer's investment to the plan, up to 1 percent of the employee's income. The company also will contribute $15,000 per worker to the savings plan, which can be withdrawn when the employee leaves the carrier's service. Unlike most local agreements, the accord does not contain an "escape clause" assuring that the employees would receive any more favorable terms resulting from a national settlement.

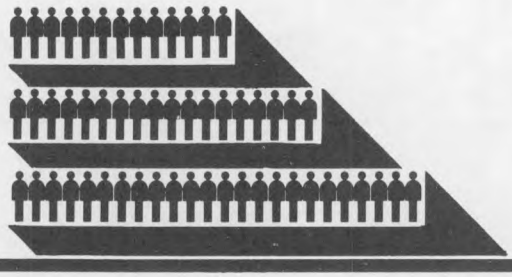
There has been no indication of a settlement in the national negotiations, which began prior to the June 1988 date that contracts became subject to change under provisions of the Railway Labor Act. Most large railroads bargain with their unions on a national level through the National Railway Labor Conference, the bargaining arm of the industry.

Farm workers settle

Some 3,000 farm workers in southern and central California and in the Yuma, AZ, area ended an 18-day job action against Bud Co. of California, a division of Dole Foods. The dispute centered on the company's proposal to reduce wages and benefits for about 8,000 seasonal employees, half of whom are actually employed on any given day. According to Teamsters Local 890, Bud's proposal would have required each employee to work a minimum of 1,250 hours a year to be eligible for any benefits and, in addition, at least 90 hours a month to be eligible for paid vacations and holidays. The union claimed this "double eligibility standard" would exclude about half of the Bud employees because they do not work for Bud year round. The company had also proposed that wage increases be held to 8 cents per hour over 3 years, and that daily overtime begin after 9 hours worked instead of the current 8 hours.

Under the 3-year accord, reached with the assistance of a Federal mediator, benefit eligibility was preserved and the company pledged to substantially increase work opportunity for its employees. The contract also called for wage increases of 8 cents an hour over the term for lettuce workers, except those in California's Imperial Valley and in the Yuma, AZ, area, where the rates were cut 60 cents an hour, to $6.60. Wage rates for all other field workers were maintained at $7.20 per hour. The agreement also covered about 350 mechanics and drivers, who received wage boosts totaling 40 cents and 18 cents an hour, respectively. □

Current labor statistics



Notes on Current Labor Statistics

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

General notes

The following notes apply to several tables in this section:

Seasonal adjustment. Certain monthly and quarterly data are adjusted to eliminate the effect on the data of such factors as climatic conditions, industry production schedules, opening and closing of schools, holiday buying periods, and vacation practices, which might prevent short-term evaluation of the statistical series. Tables containing data that have been adjusted are identified as "seasonally adjusted." (All other data are not seasonally adjusted.) Seasonal effects are estimated on the basis of past experience. When new seasonal factors are computed each year, revisions may affect seasonally adjusted data for several preceding years.

Seasonally adjusted data appear in tables 1–3, 4–10, 13–15, 17–18, 44, and 48. Seasonally adjusted labor force data in tables 1 and 4–10 were revised in the February 1990 issue of the *Review* and reflect the experience through 1989. Seasonally adjusted establishment survey data shown in tables 13–15 and 17–18 were revised in the July 1989 *Review* and reflect the experience through March 1989. A brief explanation of the seasonal adjustment methodology appears in "Notes on the data."

Revisions in the productivity data in table 44 are usually introduced in the September issue. Seasonally adjusted indexes and percent changes from month-to-month and quarter-to-quarter are published for numerous Consumer and Producer Price Index series. However, seasonally adjusted indexes are not published for the U.S. average All Items CPI. Only seasonally adjusted percent changes are available for this series.

Adjustments for price changes. Some data—such as the "real" earnings shown in table 15—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 1977 = 100, the hourly rate expressed in 1977 dollars is $2 ($3/150 × 100 = $2). The $2 (or any other resulting values) are described as "real," "constant," or "1977" dollars.

Additional information

Data that supplement the tables in this section are published by the Bureau in a variety of sources. News releases provide the latest statistical information published by the Bureau; the major recurring releases are published according to the schedule preceding these general notes. More information about labor force, employment, and unemployment data and the household and establishment surveys underlying the data are available in *Employment and Earnings*, a monthly publication of the Bureau. More data from the household survey are published in the data books—*Revised Seasonally Adjusted Labor Force Statistics*, Bulletin 2306, and *Labor Force Statistics Derived From the Current Population Survey*, Bulletin 2307. More data from the establishment survey appear in two data books—*Employment, Hours, and Earnings, United States*, and *Employment, Hours, and Earnings, States and Areas*, and the supplements to these data books. More detailed information on employee compensation and collective bargaining settlements is published in the monthly periodical, *Current Wage Developments*. More detailed data on consumer and producer prices are published in the monthly periodicals, *The CPI Detailed Report*, and *Producer Price Indexes*. Detailed data on all of the series in this section are provided in the *Handbook of Labor Statistics*, which is published biennally by the Bureau. BLS bulletins are issued covering productivity, injury and illness, and other data in this section. Finally, the *Monthly Labor Review* carries analytical articles on annual and longer term developments in labor force, employment, and unemployment; employee compensation and collective bargaining; prices; productivity; international comparisons; and injury and illness data.

Symbols

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

Comparative Indicators

(Tables 1–3)

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

Labor market indicators include employment measures from two major surveys and information on rates of change in compensation provided by the Employment Cost Index (ECI) program. The labor force participation rate, the employment-to-population ratio, and unemployment rates for major demographic groups based on the Current Population ("household ") Survey are presented, while measures of employment and average weekly hours by major industry sector are given using nonagricultural payroll data. The Employment Cost Index (compensation), by major sector and by bargaining status, is chosen from a variety of BLS compensation and wage measures because it provides a comprehensive measure of employer costs for hiring labor, not just outlays for wages, and it is not affected by employment shifts among occupations and industries.

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

productivity (output per hour of all persons) are provided for major sectors.

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

Notes on the data

Definitions of each series and notes on the data are contained in later sections of these notes describing each set of data. For detailed descriptions of each data series, see *BLS Handbook of Methods,* Bulletin 2285 (Bureau of Labor Statistics, 1988), as well as the additional bulletins, articles, and other publications noted in the separate sections of the *Review*'s "Current Labor Statistics Notes." Users may also wish to consult *Major Programs, Bureau of Labor Statistics,* Report 718 (Bureau of Labor Statistics, 1985).

Employment and Unemployment Data

(Tables 1; 4–21)

Household survey data

Description of the series

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

Definitions

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

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

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

Notes on the data

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

Labor force data in tables 1 and 4–10 are seasonally adjusted based on the experience through December 1989. Since January 1980, national labor force data have been seasonally adjusted with a procedure called X–11 ARIMA which was developed at Statistics Canada as an extension of the standard X–11 method previously used by BLS. A detailed description of the procedure appears in the *X–11 ARIMA Seasonal Adjustment Method*, by Estela Bee Dagum (Statistics Canada, Catalogue No. 12–564E, February 1980).

At the end of each calendar year, seasonally adjusted data for the previous 5 years are revised, and projected seasonal adjustment factors are calculated for use during the January–June period. In July, new seasonal adjustment factors, which incorporate the experience through June, are produced for the July–December period but no revisons are made in the historical data.

Additional sources of information

For detailed explanations of the data, see *BLS Handbook of Methods*, Bulletin 2285 (Bureau of Labor Statistics, 1988), and for additional data, *Handbook of Labor Statistics*, Bulletin 2340 (Bureau of Labor Statistics, 1989). Historical unadjusted data from 1948 to 1987 are available in *Labor Force Statistics Derived from the Current Population Survey,* Bulletin 2307 (Bureau of Labor Statistics, 1988). Historical seasonally adjusted data appear in *Labor Force Statistics Derived from the Current Population Survey: A Databook,* Vol. II, Bulletin 2096 (Bureau of Labor Statistics, 1982), and *Revised Seasonally Adjusted Labor Force Statistics, 1978–87,* Bulletin 2306 (Bureau of Labor Statistics, 1988).

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

Establishment survey data

Description of the series

EMPLOYMENT, HOURS, AND EARNINGS DATA in this section are compiled from payroll records reported monthly on a voluntary basis to the Bureau of Labor Statistics and its cooperating State agencies by more than 300,000 establishments representing all industries except agriculture. In most industries, the sampling probabilities are based on the size of the establishment; most large establishments are therefore in the sample. (An establishment is not necessarily a firm; it may be a branch plant, for example, or warehouse.) Self-employed persons and others not on a regular civilian payroll are outside the scope of the survey because they are excluded from establishment records. This largely accounts for the difference in employment figures between the household and establishment surveys.

Definitions

An **establishment** is an economic unit which produces goods or services (such as a factory or store) at a single location and is

engaged in one type of economic activity.

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

Production workers in manufacturing include working supervisors and nonsupervisory workers closely associated with production operations. Those workers mentioned in tables 12–17 include production workers in manufacturing and mining; construction workers in construction; and nonsupervisory workers in the following industries: transportation and public utilities; wholesale and retail trade; finance, insurance, and real estate; and services. These groups account for about four-fifths of the total employment on private nonagricultural payrolls.

Earnings are the payments production or nonsupervisory workers receive during the survey period, including premium pay for overtime or late-shift work but excluding irregular bonuses and other special payments. **Real earnings** are earnings adjusted to reflect the effects of changes in consumer prices. The deflator for this series is derived from the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI–W).

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 average weekly hours which was in excess of regular hours and for which overtime premiums were paid.

The Diffusion Index represents the percent of industries in which employment was rising over the indicated period, plus one-half of the industries with unchanged employment; 50 percent indicates an equal balance between industries with increasing and decreasing employment. In line with Bureau practice, data for the 1-, 3-, and 6-month spans are seasonally adjusted, while those for the 12-month span are unadjusted. Data are centered within the span. The March 1989 *Review* introduced an expanded index on private nonagricultural employment based on 349 industries, and a new manufacturing index based on 141 industries. These indexes are useful for measuring the dispersion of economic gains or losses and are also economic indicators.

Notes on the data

Establishment survey data are annually adjusted to comprehensive counts of employment (called "benchmarks"). The latest adjustment, which incorporated March 1988 benchmarks, was made with the release of May 1989 data, published in the July 1989 issue of the *Review*. Coincident with the benchmark adjustments, seasonally adjusted data were revised to reflect the experience through March 1989. Unadjusted data have been revised back to April 1987; seasonally adjusted data back to January 1984. These revisions were published in the *Supplement to Employment and Earnings* (Bureau of Labor Statistics, 1989). Unadjusted data from April 1988 forward and seasonally adjusted data from January 1985 forward are subject to revision in future benchmarks.

The BLS also uses the X–11 ARIMA methodology to seasonally adjust establishment survey data. Beginning in June 1989, projected seasonal adjustment factors are calculated only for the first 6 months after benchmarking, rather than for 12 months (April–March) as was previously done. A second set of projected factors, which incorporate the experience though September, will be produced for the subsequent period and introduced with the publication of data for October. The change makes the procedure used for the establishment survey data more parallel to that used in adjusting the household survey data. Revisions of historical data will continue to be made once a year coincident with the benchmark revisions.

In the establishment survey, estimates for the 2 most recent months are based on incomplete returns and are published as preliminary in the tables (13 to 18 in the *Review*). When all returns have been received, the estimates are revised and published as "final" (prior to any benchmark revisions) in the third month of their appearance. Thus, December data are published as preliminary in January and February and as final in March. For the same reasons, quarterly establishment data (table 1) are preliminary for the first 2 months of publication and final in the third month. Thus, fourth-quarter data are published as preliminary in January and February and final in March.

Additional sources of information

Detailed national data from the establishment survey are published monthly in the BLS periodical, *Employment and Earnings*. Earlier comparable unadjusted and seasonally adjusted data are published in *Employment, Hours, and Earnings, United States, 1909–84*, Bulletin 1312–12 (Bureau of Labor Statistics, 1985) and its annual supplement. For a detailed discussion of the methodology of the survey, see *BLS Handbook of Methods*, Bulletin 2285 (Bureau of Labor Statistics, 1988). For additional data, see *Handbook of Labor Statistics*, Bulletin 2340 (Bureau of Labor Statistics, 1989).

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

Unemployment data by State

Description of the series

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

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

Notes on the data

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

Additional sources of information

Information on the concepts, definitions, and technical procedures used to develop labor force data for States and sub-State areas as well as additional data on sub-States are provided in the monthly Bureau of Labor Statistics periodical, *Employment and Earnings*, and the annual report, *Geographic Profile of Employment and Unemployment* (Bureau of Labor Statistics). See also *BLS Handbook of Methods*, Bulletin 2285 (Bureau of Labor Statistics, 1988).

Compensation and Wage Data

(Tables 1–3; 22–30)

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

Employment Cost Index

Description of the series

The **Employment Cost Index** (ECI) is a quarterly measure of the rate of change in compensation per hour worked and includes wages, salaries, and employer costs of employee benefits. It uses a fixed market basket of labor—similar in concept to the Consumer Price Index's fixed market basket of goods and services—to measure change over time in employer costs of employing labor. The index is not seasonally adjusted.

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

The Employment Cost Index probability sample consists of about 4,200 private nonfarm establishments providing about 22,000 occupational observations and 800 State and local government establishments providing 4,200 occupational observations selected to represent total employment in each sector. On average, each reporting unit provides wage and compensation information on five well-specified occupations. Data are collected each quarter for the pay period including the 12th day of March, June, September, and December.

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

Definitions

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

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

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

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

Notes on the data

The Employment Cost Index for changes in wages and salaries in the private nonfarm economy was published beginning in 1975. Changes in total compensation cost—wages and salaries and benefits combined—were published beginning in 1980. The series of changes in wages and salaries and for total compensation in the State and local government sector and in the civilian nonfarm economy (excluding Federal employees) were published beginning in 1981. Historical indexes (June 1981=100) of the quarterly rates of change are presented in the March issue of the BLS periodical, *Current Wage Developments*.

Additional sources of information

For a more detailed discussion of the Employment Cost Index, see the *Handbook of Methods*, Bulletin 2285 (Bureau of Labor Statistics, 1988), *Employment Cost Indexes and Levels, 1975–88*, Bulletin 2319 (Bureau of Labor Statistics, 1988), and the following *Monthly Labor Review* articles: "Estimation procedures for the Employment Cost Index," May 1982; and "Introducing new weights for the Employment Cost Index," June 1985.

Data on the ECI are also available in BLS quarterly press releases issued in the month following the reference months of March, June, September, and December; and from the *Handbook of Labor Statistics*, Bulletin 2340 (Bureau of Labor Statistics, 1989).

Collective bargaining settlements

Description of the series

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

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

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

Definitions

Wage rate changes are calculated by dividing newly negotiated wages by the average straight-time hourly wage rate plus shift premium at the time the agreement is reached. Compensation changes are calculated by dividing the change in the value of the newly negotiated wage and benefit package by existing average hourly compensation, which includes the cost of previously negotiated benefits, legally required

social insurance programs, and average hourly earnings.

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

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

Notes on the data

Comparisons of major collective bargaining settlements for State and local government with those for private industry should note differences in occupational mix, bargaining practices, and settlement characteristics. Professional and white-collar employees, for example, make up a much larger proportion of the workers covered by government than by private industry settlements. Lump-sum payments and cost-of-living adjustments (COLA) clauses, on the other hand, are rare in government but common in private industry settlements. Also, State and local government bargaining frequently excludes items such as pension benefits and holidays, that are prescribed by law, while these items are typical bargaining issues in private industry.

Additional sources of information

For a more detailed discussion on the series, see the *BLS Handbook of Methods*, Bulletin 2285 (Bureau of Labor Statistics, 1988). Comprehensive data are published in press releases issued quarterly (in January, April, July, and October) for private industry, and semiannually (in February and August) for State and local government. Historical data and additional detailed tabulations for the prior calendar year appear in the April issue of the BLS periodical, *Current Wage Developments*.

Work stoppages

Description of the series

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

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

Definitions

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

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

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

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

Notes on the data

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

Additional sources of information

Data for each calendar year are reported in a BLS press release issued in the first quarter of the following year. Monthly and historical data appear in the BLS periodical, *Current Wage Developments*. Historical data appear in the *Handbook of Labor Statistics*, Bulletin 2340 (Bureau of Labor Statistics, 1989).

Other compensation data

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

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

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

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

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

Price Data

(Tables 2; 31–43)

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 (1982 = 100 for many Producer Price Indexes or 1982 – 84 = 100 for many Consumer Price Indexes, unless otherwise noted).

Consumer Price Indexes

Description of the series

The **Consumer Price Index** (CPI) is a measure of the average change in the prices paid by urban consumers for a fixed market basket of goods and services. The CPI is calculated monthly for two population groups, one consisting only of urban households whose primary source of income is derived from the employment of wage earners and clerical workers, and the

other consisting of all urban households. The wage earner index (CPI–W) is a continuation of the historic index that was introduced well over a half-century ago for use in wage negotiations. As new uses were developed for the CPI in recent years, the need for a broader and more representative index became apparent. The all urban consumer index (CPI–U), introduced in 1978, is representative of the 1982–84 buying habits of about 80 percent of the noninstitutional population of the United States at that time, compared with 32 percent represented in the CPI–W. In addition to wage earners and clerical workers, the CPI–U covers professional, managerial, and technical workers, the self-employed, short-term workers, the unemployed, retirees, and others not in the labor force.

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

Data collected from more than 21,000 retail establishments and 60,000 housing units in 91 urban areas across the country are used to develop the "U.S. city average." Separate estimates for 27 major urban centers are presented in table 32. The areas listed are as indicated in footnote 1 to the table. The area indexes measure only the average change in prices for each area since the base period, and do not indicate differences in the level of prices among cities.

Notes on the data

In January 1983, the Bureau changed the way in which homeownership costs are measured for the CPI–U. A rental equivalence method replaced the asset-price approach to homeownership costs for that series. In January 1985, the same change was made in the CPI–W. The central purpose of the change was to separate shelter costs from the investment component of homeownership so that the index would reflect only the cost of shelter services provided by owner-occupied homes. An updated CPI–U and CPI–W were introduced with release of the January 1987 data.

Additional sources of information

For a discussion of the general method for computing the CPI, see BLS *Handbook of Methods,* Bulletin 2285 (Bureau of Labor Statistics, 1988). The recent change in the measurement of homeownership costs is discussed in Robert Gillingham and Walter Lane, "Changing the treatment of shelter costs for homeowners in the CPI," *Monthly Labor Review,* July 1982, pp. 9–14. An overview of the recently introduced revised CPI, reflecting 1982–84 expenditure patterns, is contained in *The Consumer Price Index: 1987 Revision*, Report 736 (Bureau of Labor Statistics, 1987).

Additional detailed CPI data and regular analyses of consumer price changes are provided in the *CPI Detailed Report,* a monthly publication of the Bureau. Historical data for the overall CPI and for selected groupings may be found in the *Handbook of Labor Statistics*, Bulletin 2340 (Bureau of Labor Statistics, 1989).

Producer Price Indexes

Description of the series

Producer Price Indexes (PPI) measure average changes in prices received by domestic producers of commodities in all stages of processing. The sample used for calculating these indexes currently contains about 3,100 commodities and about 75,000 quotations per month, selected to represent the movement of prices of all commodities produced in the manufacturing, agriculture, forestry, fishing, mining, gas and electricity, and public utilities sectors. The stage of processing structure of Producer Price Indexes organizes products by class of buyer and degree of fabrication (that is, finished goods, intermediate goods, and crude materials). The traditional commodity structure of PPI organizes products by similarity of end use or material composition. The industry and product structure of PPI organizes data in accordance with the Standard Industrial Classification (SIC) and the product code extension of the SIC developed by the U.S. Bureau of the Census.

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

Since January 1987, price changes for the various commodities have been averaged together with implicit quantity weights representing their importance in the total net selling value of all commodities as of 1982. The detailed data are aggregated to obtain indexes for stage-of-processing groupings, commodity groupings, durability-of-product groupings, and a number of special composite groups. All Producer Price Index data are subject to revision 4 months after original publication.

Notes on the data

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

The Bureau has completed the first major stage of its comprehensive overhaul of the theory, methods, and procedures used to construct the Producer Price Indexes. Changes include the replacement of judgment sampling with probability sampling techniques; expansion to systematic coverage of the net output of virtually all industries in the mining and manufacturing sectors; a shift from a commodity to an industry orientation; the exclusion of imports from, and the inclusion of exports in, the survey universe; and the respecification of commodities priced to conform to Bureau of the Census definitions. These and other changes have been phased in gradually since 1978. The result is a system of indexes that is easier to use in conjunction with data on wages, productivity, and employment and other series that are organized in terms of the Standard Industrial Classification and the Census product class designations.

Additional sources of information

For a discussion of the methodology for computing Producer Price Indexes, see *BLS Handbook of Methods*, Bulletin 2285 (Bureau of Labor Statistics, 1988).

Additional detailed data and analyses of price changes are provided monthly in *Producer Price Indexes*. Selected historical data may be found in the *Handbook of Labor Statistics,* Bulletin 2340 (Bureau of Labor Statistics, 1989).

International Price Indexes

Description of the series

The BLS **International Price Program** produces quarterly export and import price indexes for nonmilitary goods traded between the United States and the rest of the world. The export price index provides a measure of price change for all products sold by U.S. residents to foreign buyers. ("Residents" is defined as in the national income accounts: it includes corporations, businesses, and individuals but does not

require the organizations to be U.S. owned nor the individuals to have U.S. citizenship.) The import price index provides a measure of price change for goods purchased from other countries by U.S. residents. With publication of an all-import index in February 1983 and an all-export index in February 1984, all U.S. merchandise imports and exports now are represented in these indexes. The reference period for the indexes is 1985 = 100, unless otherwise indicated.

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

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

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

Notes on the data

The export and import price indexes are weighted indexes of the Laspeyres type. Price relatives are assigned equal importance within each weight category and are then aggregated to the SITC level. The values assigned to each weight category are based on trade value figures compiled by the Bureau of the Census. The trade weights currently used to compute both indexes relate to 1985.

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

For the export price indexes, the preferred pricing basis is f.a.s. (free alongside ship) U.S. port of exportation. When firms report export prices f.o.b. (free on board), production point information is collected which enables the Bureau to calculate a shipment cost to the port of exportation. An attempt is made to collect two prices for imports. The first is the import price f.o.b. at the foreign port of exportation, which is consistent with the basis for valuation of imports in the national accounts. The second is the import price c.i.f. (cost, insurance, and freight) at the U.S. port of importation, which also includes the other costs associated with bringing the product to the U.S. border. It does not, however, include duty charges. For a given product, only one price basis series is used in the construction of an index.

Beginning in 1988, the Bureau has also been publishing a series of indexes which represent the price of U.S. exports and imports in foreign currency terms.

Additional sources of information

For a discussion of the general method of computing International Price Indexes, see *BLS Handbook of Methods*, Bulletin 2285 (Bureau of Labor Statistics, 1988).

Additional detailed data and analyses of international price developments are presented in the Bureau's quarterly publication *U.S. Import and Export Price Indexes* and in occasional *Monthly Labor Review* articles prepared by BLS analysts. Selected historical data may be found in the *Handbook of Labor Statistics*, Bulletin 2340 (Bureau of Labor Statistics, 1989). For further information on the foreign currency indexes, see "BLS publishes average exchange rate and foreign currency price indexes," *Monthly Labor Review*, December 1987, pp. 47–49.

Productivity Data

(Tables 2; 44–47)

Business sector and major sectors

Description of the series

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

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

Definitions

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

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

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

Unit labor costs are the labor compensation costs expended in the production of a unit of output and are derived by dividing compensation by output. **Unit nonlabor payments** include profits, depreciation, interest, and indirect taxes per unit of output. They are computed by subtracting compen-

sation of all persons from current dollar value of output and dividing by output. **Unit nonlabor costs** contain all the components of unit nonlabor payments *except* unit profits.

Unit profits include corporate profits with inventory valuation and capital consumption adjustments per unit of output.

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

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

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

Notes on the data

The output measure for the **business sector** is equal to constant-dollar gross national product but excludes the rental value of owner-occupied dwellings, the rest-of-world sector, the output of nonprofit institutions, the output of paid employees of private households, general government, and the statistical discrepancy. Output of the **nonfarm business sector** is equal to business sector output less farming. The measures are derived from data supplied by the Bureau of Economic Analysis, U.S. Department of Commerce, and the Federal Reserve Board. Quarterly manufacturing output indexes are adjusted by the Bureau of Labor Statistics to annual estimates of manufacturing output (gross product originating) from the Bureau of Economic Analysis. Compensation and hours data are developed from data of the Bureau of Labor Statistics and the Bureau of Economic Analysis.

The productivity and associated cost measures in tables 44–47 describe the relationship between output in real terms and the labor time and capital services involved in its production. They show the changes from period to period in the amount of goods and services produced per unit of input. Although these measures relate output to hours and capital services, they do not measure the contributions of labor, capital, or any other specific factor of production. Rather, they reflect the joint effect of many influences, including changes in technology; capital investment; level of output; utilization of capacity, energy, and materials; the organization of production; managerial skill; and the characteristics and efforts of the work force.

Additional sources of information

Descriptions of methodology underlying the measurement of output per hour and multifactor productivity are found in the BLS *Handbook of Methods,* Bulletin 2285 (Bureau of Labor Statistics, 1988). Historical data are provided in *Handbook of Labor Statistics,* Bulletin 2340 (Bureau of Labor Statistics, 1989).

Industry productivity measures

Description of the series

The BLS industry productivity data supplement the measures for the business economy and major sectors with annual measures of labor productivity for selected industries at the 3- and 4-digit levels of the Standard Industrial Classification system. The industry measures differ in methodology and data sources from the productivity measures for the major sectors because the industry measures are developed independently of the National Income and Product Accounts framework used for the major sector measures.

Definitions

Output per employee hour is derived by dividing an index of industry output by an index of aggregate hours of all employees. Output indexes are based on quantifiable units of products or services, or both, combined with fixed-period weights. Whenever possible, physical quantities are used as the unit of measurement for output. If quantity data are not available for a given industry, data on the constant-dollar value of production are used.

The labor input series consist of the hours of all employees (production and nonproduction workers), the hours of all persons (paid employees, partners, proprietors, and unpaid family workers), or the number of employees, depending upon the industry.

Notes on the data

The industry measures are compiled from data produced by the Bureau of Labor Statistics, the Departments of Commerce, Interior, and Agriculture, the Federal Reserve Board, regulatory agencies, trade associations, and other sources.

For most industries, the productivity indexes refer to the output per hour of all employees. For some transportation industries, only indexes of output per employee are prepared. For some trade and service industries, indexes of output per hour of all persons (including the self-employed) are constructed.

Additional sources of information

For a complete listing of available industry productivity indexes and their components, see *Productivity Measures for Selected Industries and Government Services*, Bulletin 2322 (Bureau of Labor Statistics, 1989). For additional information about the methodology for computing the industry productivity measures, see *Handbook of Methods*, Bulletin 2285 (Bureau of Labor Statistics, 1988), chapter 11.

International Comparisons

(Tables 48–50)

Labor force and unemployment

Description of the series

Tables 48 and 49 present comparative measures of the labor force, employment, and unemployment—approximating U.S. concepts—for the United States, Canada, Australia, Japan, and several European countries. The unemployment statistics (and, to a lesser extent, employment statistics) published by other industrial countries are not, in most cases, comparable to U.S. unemployment statistics. Therefore, the Bureau adjusts the figures for selected countries, where necessary, for all known major definitional differences. Although precise comparability may not be achieved, these adjusted figures provide a better basis for international comparisons than the figures regularly published by each country.

Definitions

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

Notes on the data

The adjusted statistics have been adapted to the age at which compulsory schooling ends in each country, rather than to the U.S. standard of 16 years of age and over. Therefore, the adjusted statistics relate to the population age 16 and over in France,

Sweden, and from 1973 onward, the United Kingdom; 15 and over in Canada, Australia, Japan, Germany, the Netherlands, and prior to 1973, the United Kingdom; and 14 and over in Italy. The institutional population is included in the denominator of the labor force participation rates and employment-population ratios for Japan and Germany; it is excluded for the United States and the other countries.

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

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

There are breaks in the data series for Germany (1983 and 1987), Italy (1986), the Netherlands (1983), and Sweden (1987). For both Germany and the Netherlands, the 1983 breaks reflect the replacement of labor force survey results tabulated by the national statistical offices with those tabulated by the European Community Statistical Office (EUROSTAT). The Dutch figures for 1983 onward also reflect the replacement of man-year employment data with data from the Dutch Survey of Employed Persons. The impact of the changes was to lower the adjusted unemployment rate by 0.3 percentage point for Germany and by about 2 percentage points for the Netherlands. The 1987 break for Germany reflects the incorporation of employment statistics based on the 1987 Population Census, which indicated that the level of employment was about 1 million higher than previously estimated. The impact of this change was to lower the adjusted unemployment rate by 0.3 percentage point. When historical data benchmarked to the 1987 census became available, BLS will revise its comparative measures for Germany.

For Italy, the break in series reflects more accurate enumeration of time of last job search. This resulted in a significant increase in the number of people reported as seeking work in the last 30 days. The impact was to increase the Italian unemployment rates approximating U.S. concepts by about 1 percentage point.

Sweden introduced a new questionnaire. Questions regarding current availability were added and the period of active work-seeking was reduced from 60 days to 4 weeks. These changes result in lowering Sweden's unemployment rate by 0.5 percentage point.

Additional sources of information

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

Occupational Injury and Illness Data

(Table 51)

Description of the series

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

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

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

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

Definitions

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

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

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

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

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

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

Lost workdays—restricted work activity are the number of workdays (consecutive or not) on which, because of injury or illness: (1) the employee was assigned to another job on a temporary basis; or (2) the employee worked at a permanent job less than full time; or (3) the employee worked at a permanently assigned job but could not perform all duties normally connected with it.

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

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

Notes on the data

Estimates are made for industries and employment-size classes and for severity

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

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

Comparable data for individual States are available from the BLS Office of Safety, Health, and Working Conditions.

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

Additional sources of information

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

The definitions of occupational injuries and illnesses and lost workdays are from *Recordkeeping Requirements under the Occupational Safety and Health Act of 1970*. For additional data, see *Occupational Injuries and Illnesses in the United States, by Industry*, annual Bureau of Labor Statistics bulletin; BLS *Handbook of Methods*, Bulletin 2285 (Bureau of Labor Statistics, 1988); *Handbook of Labor Statistics*, Bulletin 2340 (Bureau of Labor Statistics, 1989), pp. 411–14; annual reports in the *Monthly Labor Review*; and annual U.S. Department of Labor press releases.

1. Labor market indicators

Selected indicators	1987	1988	1987	1988				1989		
			IV	I	II	III	IV	I	II	III
Employment data										
Employment status of the civilian noninstitutionalized population (household survey):[1]										
Labor force participation rate	65.6	65.9	65.7	65.8	65.8	66.0	66.1	66.3	66.5	66.5
Employment-population ratio	61.5	62.3	61.9	62.0	62.2	62.3	62.6	62.9	63.0	63.0
Unemployment rate	6.2	5.5	5.8	5.7	5.5	5.5	5.3	5.2	5.3	5.3
Men	6.2	5.5	5.7	5.6	5.4	5.5	5.3	5.2	5.1	5.2
16 to 24 years	12.6	11.4	11.8	11.9	11.2	11.5	11.1	11.2	11.1	11.4
25 years and over	4.8	4.2	4.4	4.3	4.2	4.2	4.1	3.9	3.9	3.9
Women	6.2	5.6	6.0	5.8	5.6	5.5	5.3	5.2	5.4	5.4
16 to 24 years	11.7	10.6	11.2	11.0	10.7	10.5	10.3	10.2	10.4	10.5
25 years and over	4.8	4.3	4.6	4.5	4.3	4.3	4.1	4.1	4.2	4.2
Unemployment rate, 15 weeks and over	1.7	1.3	1.5	1.4	1.3	1.3	1.2	1.1	1.1	1.1
Employment, nonagricultural (payroll data), in thousands:[1]										
Total	102,200	105,584	103,491	104,355	105,184	105,976	106,799	107,680	108,339	108,917
Private sector	85,190	88,212	86,336	87,111	87,851	88,577	89,288	90,104	90,661	91,110
Goods-producing	24,708	25,249	24,961	25,022	25,202	25,313	25,452	25,634	25,664	25,659
Manufacturing	19,024	19,403	19,199	19,271	19,360	19,435	19,550	19,659	19,663	19,617
Service-producing	77,492	80,335	78,530	79,333	79,983	80,663	81,346	82,047	82,676	83,258
Average hours:										
Private sector	34.8	34.7	34.8	34.7	34.7	34.7	34.7	34.7	34.7	34.7
Manufacturing	41.0	41.1	41.2	41.0	41.1	41.1	41.1	41.1	41.1	41.0
Overtime	3.7	3.9	3.9	3.8	3.9	3.9	3.9	3.9	3.8	3.8
Employment Cost Index										
Percent change in the ECI, compensation:										
All workers (excluding farm, household, and Federal workers)	3.6	5.0	.8	1.4	1.1	1.3	1.0	1.2	1.1	1.6
Private industry workers	3.3	4.9	.7	1.5	1.2	1.0	1.0	1.3	1.2	1.2
Goods-producing[2]	3.1	4.4	1.0	1.8	1.1	.6	.8	1.0	1.1	1.1
Service-producing[2]	3.7	5.1	.5	1.3	1.4	1.2	1.2	1.5	1.2	1.3
State and local government workers	4.4	5.6	.9	1.3	.3	2.7	1.1	1.2	.6	3.3
Workers by bargaining status (private industry):										
Union	2.8	3.9	1.1	1.6	1.0	.7	.5	.8	1.0	.9
Nonunion	3.6	5.1	.6	1.5	1.3	1.1	1.2	1.5	1.2	1.4

[1] Quarterly data seasonally adjusted.

[2] Goods-producing industries include mining, construction, and manufacturing. Service-producing industries include all other private sector industries.

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

Selected measures	1987	1988	1987	1988				1989		
			IV	I	II	III	IV	I	II	III
Compensation data [1, 2]										
Employment Cost Index--compensation (wages, salaries, benefits):										
Civilian nonfarm	3.6	5.0	0.8	1.4	1.1	1.3	1.0	1.2	1.1	1.6
Private nonfarm	3.3	4.9	.7	1.5	1.2	1.0	1.0	1.3	1.2	1.2
Employment Cost Index--wages and salaries										
Civilian nonfarm	3.5	4.3	.7	1.0	.9	1.3	1.0	1.1	.8	1.6
Private nonfarm	3.3	4.1	.6	1.0	1.1	1.0	1.0	1.1	1.0	1.2
Price data[1]										
Consumer Price Index (All urban consumers): All items	4.4	4.4	.3	1.0	1.3	1.5	.6	1.5	1.5	.7
Producer Price Index:										
Finished goods	2.2	4.0	.1	.5	1.3	.8	1.3	1.9	2.0	-.7
Finished consumer goods	2.6	4.0	-.2	.4	1.4	1.0	1.1	2.2	2.3	-.9
Capital equipment	1.3	3.6	1.1	.7	.6	.4	1.8	.9	1.1	.0
Intermediate materials, supplies, components	5.4	5.6	.9	1.1	2.6	1.2	.6	1.9	1.1	-.3
Crude materials	8.9	3.1	-1.4	-.3	4.0	-1.2	.6	6.1	.9	-2.0
Productivity data[3]										
Output per hour of all persons:										
Business sector	1.2	1.7	2.8	2.5	-2.1	3.1	.2	1.1	1.6	1.7
Nonfarm business sector	1.1	2.0	2.5	2.8	-1.6	3.3	1.9	-1.3	1.1	2.5
Nonfinancial corporations [4]	2.2	2.3	1.6	3.9	.4	1.3	-.4	-1.7	.1	2.9

[1] Annual changes are December-to-December change. Quarterly changes are calculated using the last month of each quarter. Compensation and price data are not seasonally adjusted and the price data are not compounded.
[2] Excludes Federal and private household workers.
[3] Annual rates of change are computed by comparing annual averages. Quarterly percent changes reflect annual rates of change in quarterly indexes. The data are seasonally adjusted.
[4] Output per hour of all employees.

3. Alternative measures of wage and compensation changes

Components	Quarterly average						Four quarters ended--					
	1988			1989			1988			1989		
	II	III	IV	I	II	III	II	III	IV	I	II	III
Average hourly compensation:[1]												
All persons, business sector	5.7	5.8	5.2	4.8	6.8	4.7	5.1	5.3	4.8	5.4	5.6	5.4
All persons, nonfarm business sector	5.4	5.4	5.9	4.9	5.6	5.3	4.9	5.1	4.8	5.4	5.5	5.4
Employment Cost Index--compensation:												
Civilian nonfarm [2]	1.1	1.3	1.0	1.2	1.1	1.6	4.6	4.7	5.0	4.8	4.8	5.1
Private nonfarm	1.2	1.0	1.0	1.3	1.2	1.2	4.5	4.5	4.9	4.6	4.5	4.7
Union	1.0	.7	.5	.8	1.0	.9	4.3	4.5	3.9	3.0	3.1	3.2
Nonunion	1.3	1.1	1.2	1.5	1.2	1.4	4.5	4.5	5.1	5.1	5.0	5.3
State and local governments	.3	2.7	1.1	1.2	.6	3.3	5.0	5.4	5.6	5.5	5.8	6.4
Employment Cost Index--wages and salaries:												
Civilian nonfarm[2]	.9	1.3	1.0	1.1	.8	1.6	3.9	3.9	4.3	4.4	4.3	4.6
Private nonfarm	1.1	1.0	1.0	1.1	1.0	1.2	3.7	3.7	4.1	4.2	4.1	4.4
Union	.8	.7	.4	.7	.8	.6	2.9	2.9	2.2	2.5	2.6	2.5
Nonunion	1.2	1.0	1.1	1.3	1.0	1.3	4.0	3.9	4.5	4.8	4.6	4.9
State and local governments	.3	2.6	1.0	.8	.5	3.1	4.4	4.7	4.8	4.8	5.0	5.5
Total effective wage adjustments[3]	.9	.8	.5	.5	1.0	1.0	3.0	2.9	2.6	2.7	2.8	3.0
From current settlements	.3	.2	.1	.1	.3	.4	1.0	1.0	.7	.7	.7	.9
From prior settlements	.5	.4	.2	.3	.5	.4	1.6	1.4	1.3	1.3	1.3	1.3
From cost-of-living provision	.1	.2	.2	.1	.2	.2	.5	.5	.6	.6	.8	.8
Negotiated wage adjustments from settlements:[3]												
First-year adjustments	2.6	2.7	2.6	3.2	3.9	3.6	2.4	2.5	2.5	2.7	3.2	3.5
Annual rate over life of contract	2.2	2.8	2.2	3.1	3.4	3.0	2.0	2.2	2.4	2.5	2.9	3.0
Negotiated wage and benefit adjustments from settlements:[4]												
First-year adjustment	3.1	3.4	3.5	3.2	5.0	3.9	3.0	3.1	3.1	3.3	3.8	4.0
Annual rate over life of contract	2.4	3.2	2.1	3.4	3.4	2.7	2.3	2.5	2.5	2.6	3.0	2.8

[1] Seasonally adjusted.
[2] Excludes Federal and household workers.
[3] Limited to major collective bargaining units of 1,000 workers or more. The most recent data are preliminary.
[4] Limited to major collective bargaining units of 5,000 workers or more. The most recent data are preliminary.

4. Employment status of the total population, by sex, monthly data seasonally adjusted

(Numbers in thousands)

Employment status	Annual average		1988	1989											
	1988	1989	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
TOTAL															
Noninstitutional population [1, 2]	186,322	188,081	187,098	187,340	187,461	187,581	187,708	187,854	187,995	188,149	188,286	188,428	188,580	188,721	188,865
Labor force [2]	123,378	125,557	124,346	124,961	124,801	124,929	125,299	125,224	125,777	125,679	125,758	125,725	125,857	126,192	126,246
Participation rate [3]	66.2	66.8	66.5	66.7	66.6	66.6	66.8	66.7	66.9	66.8	66.8	66.7	66.7	66.9	66.8
Total employed [2]	116,677	119,030	117,837	118,336	118,441	118,731	118,768	118,805	119,208	119,102	119,238	119,121	119,294	119,540	119,588
Employment-population ratio [4]	62.6	63.3	63.0	63.2	63.2	63.3	63.3	63.2	63.4	63.3	63.3	63.2	63.3	63.3	63.3
Resident Armed Forces [1]	1,709	1,688	1,696	1,696	1,684	1,684	1,684	1,673	1,666	1,666	1,688	1,702	1,709	1,704	1,700
Civilian employed	114,968	117,342	116,141	116,640	116,757	117,047	117,084	117,132	117,542	117,436	117,550	117,419	117,585	117,836	117,888
Agriculture	3,169	3,199	3,192	3,268	3,196	3,185	3,144	3,137	3,138	3,217	3,275	3,219	3,197	3,160	3,197
Nonagricultural industries	111,800	114,142	112,949	113,372	113,561	113,862	113,940	113,995	114,404	114,219	114,275	114,200	114,388	114,676	114,691
Unemployed	6,701	6,528	6,509	6,625	6,360	6,198	6,531	6,419	6,569	6,577	6,520	6,604	6,563	6,652	6,658
Unemployment rate [5]	5.4	5.2	5.2	5.3	5.1	5.0	5.2	5.1	5.2	5.2	5.2	5.3	5.2	5.3	5.3
Not in labor force	62,944	62,523	62,752	62,379	62,660	62,652	62,409	62,630	62,218	62,470	62,528	62,703	62,723	62,529	62,619
Men, 16 years and over															
Noninstitutional population [1, 2]	89,404	90,283	89,792	89,914	89,973	90,032	90,094	90,167	90,237	90,315	90,384	90,456	90,535	90,606	90,678
Labor force [2]	68,474	69,360	68,695	68,936	69,033	69,100	69,293	69,142	69,542	69,366	69,404	69,360	69,599	69,635	69,725
Participation rate [3]	76.6	76.8	76.5	76.7	76.7	76.8	76.9	76.7	77.1	76.8	76.8	76.7	76.9	76.9	76.9
Total employed [2]	64,820	65,835	65,145	65,296	65,529	65,814	65,727	65,713	66,078	65,939	65,919	65,681	66,046	66,011	66,143
Employment-population ratio [4]	72.5	72.9	72.6	72.6	72.8	73.1	73.0	72.9	73.2	73.0	72.9	72.6	73.0	72.9	72.9
Resident Armed Forces [1]	1,547	1,520	1,534	1,532	1,521	1,521	1,521	1,511	1,501	1,499	1,519	1,531	1,533	1,529	1,525
Civilian employed	63,273	64,315	63,611	63,764	64,008	64,293	64,206	64,202	64,577	64,440	64,400	64,150	64,513	64,482	64,618
Unemployed	3,655	3,525	3,550	3,640	3,504	3,286	3,566	3,429	3,464	3,427	3,485	3,679	3,553	3,624	3,582
Unemployment rate [5]	5.3	5.1	5.2	5.3	5.1	4.8	5.1	5.0	5.0	4.9	5.0	5.3	5.1	5.2	5.1
Women, 16 years and over															
Noninstitutional population [1, 2]	96,918	97,798	97,306	97,427	97,488	97,550	97,614	97,687	97,758	97,834	97,902	97,972	98,045	98,115	98,187
Labor force [2]	54,904	56,198	55,651	56,025	55,768	55,829	56,006	56,082	56,235	56,313	56,354	56,365	56,258	56,557	56,521
Participation rate [3]	56.6	57.5	57.2	57.5	57.2	57.2	57.4	57.4	57.5	57.6	57.6	57.5	57.4	57.6	57.6
Total employed [2]	51,858	53,195	52,692	53,040	52,912	52,917	53,041	53,092	53,130	53,163	53,319	53,440	53,248	53,529	53,445
Employment-population ratio [4]	53.5	54.4	54.2	54.4	54.3	54.2	54.3	54.3	54.3	54.3	54.5	54.5	54.3	54.6	54.4
Resident Armed Forces [1]	162	168	162	164	163	163	163	162	165	167	169	171	176	175	175
Civilian employed	51,696	53,027	52,530	52,876	52,749	52,754	52,878	52,930	52,965	52,996	53,150	53,269	53,072	53,354	53,270
Unemployed	3,046	3,003	2,959	2,985	2,856	2,912	2,965	2,990	3,105	3,150	3,035	2,925	3,010	3,028	3,076
Unemployment rate [5]	5.5	5.3	5.3	5.3	5.1	5.2	5.3	5.3	5.5	5.6	5.4	5.2	5.4	5.4	5.4

[1] The population and Armed Forces figures are not adjusted for seasonal variation.
[2] Includes members of the Armed Forces stationed in the United States.
[3] Labor force as a percent of the noninstitutional population.
[4] Total employed as a percent of the noninstitutional population.
[5] Unemployment as a percent of the labor force (including the resident Armed Forces).

5. Employment status of the civilian population, by sex, age, race and Hispanic origin, monthly data seasonally adjusted

(Numbers in thousands)

Employment status	Annual average		1988	1989										
	1988	1989	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
TOTAL															
Civilian noninstitutional population[1]	184,613	186,393	185,402	185,644	185,777	185,897	186,024	186,181	186,329	186,483	186,598	186,726	186,871	187,017	187,165
Civilian labor force	121,669	123,869	122,650	123,265	123,117	123,245	123,615	123,551	124,111	124,013	124,070	124,023	124,148	124,488	124,546
Participation rate	65.9	66.5	66.2	66.4	66.3	66.3	66.5	66.4	66.6	66.5	66.5	66.4	66.4	66.6	66.5
Employed	114,968	117,342	116,141	116,640	116,757	117,047	117,084	117,132	117,542	117,436	117,550	117,419	117,585	117,836	117,888
Employment-population ratio[2]	62.3	63.0	62.6	62.8	62.8	63.0	62.9	62.9	63.1	63.0	63.0	62.9	62.9	63.0	63.0
Unemployed	6,701	6,528	6,509	6,625	6,360	6,198	6,531	6,419	6,569	6,577	6,520	6,604	6,563	6,652	6,658
Unemployment rate	5.5	5.3	5.3	5.4	5.2	5.0	5.3	5.2	5.3	5.3	5.3	5.3	5.3	5.3	5.3
Not in labor force	62,944	62,523	62,752	62,379	62,660	62,652	62,409	62,630	62,218	62,470	62,528	62,703	62,723	62,529	62,619
Men, 20 years and over															
Civilian noninstitutional population[1]	80,553	81,619	81,001	81,162	81,256	81,333	81,413	81,524	81,592	81,679	81,754	81,790	81,905	81,968	82,055
Civilian labor force	62,768	63,704	63,048	63,285	63,393	63,468	63,638	63,535	63,874	63,736	63,717	63,771	63,918	63,967	64,071
Participation rate	77.9	78.1	77.8	78.0	78.0	78.0	78.2	77.9	78.3	78.0	77.9	78.0	78.0	78.0	78.1
Employed	59,781	60,837	60,133	60,398	60,566	60,783	60,716	60,774	61,072	60,915	60,861	60,729	61,026	61,033	61,154
Employment-population ratio[2]	74.2	74.5	74.2	74.4	74.5	74.7	74.6	74.5	74.9	74.6	74.4	74.2	74.5	74.5	74.5
Agriculture	2,271	2,307	2,292	2,286	2,312	2,309	2,270	2,295	2,279	2,329	2,340	2,330	2,304	2,292	2,293
Nonagricultural industries	57,510	58,530	57,841	58,112	58,254	58,474	58,446	58,479	58,793	58,586	58,521	58,399	58,722	58,741	58,861
Unemployed	2,987	2,867	2,915	2,887	2,827	2,685	2,922	2,761	2,802	2,821	2,856	3,042	2,892	2,934	2,917
Unemployment rate	4.8	4.5	4.6	4.6	4.5	4.2	4.6	4.3	4.4	4.4	4.5	4.8	4.5	4.6	4.6
Women, 20 years ond over															
Civilian noninstitutional population[1]	89,532	90,550	89,954	90,072	90,153	90,242	90,318	90,432	90,526	90,607	90,684	90,771	90,860	90,952	91,042
Civilian labor force	50,870	52,212	51,613	51,961	51,816	51,876	52,009	52,120	52,219	52,385	52,352	52,358	52,281	52,541	52,586
Participation rate	56.8	57.7	57.4	57.7	57.5	57.5	57.6	57.6	57.7	57.8	57.7	57.7	57.5	57.8	57.8
Employed	48,383	49,745	49,199	49,517	49,455	49,467	49,560	49,649	49,687	49,817	49,875	49,984	49,796	50,043	50,048
Employment-population ratio[2]	54.0	54.9	54.7	55.0	54.9	54.8	54.9	54.9	54.9	55.0	55.0	55.1	54.8	55.0	55.0
Agriculture	625	642	660	704	646	647	638	633	622	639	642	660	641	624	618
Nonagricultural industries	47,757	49,103	48,539	48,813	48,809	48,820	48,922	49,016	49,065	49,178	49,233	49,324	49,155	49,419	49,430
Unemployed	2,487	2,467	2,414	2,444	2,361	2,409	2,449	2,471	2,532	2,568	2,477	2,374	2,485	2,498	2,538
Unemployment rate	4.9	4.7	4.7	4.7	4.6	4.6	4.7	4.7	4.8	4.9	4.7	4.5	4.8	4.8	4.8
Both sexes, 16 to 19 years															
Civilian noninstitutional population[1]	14,527	14,223	14,447	14,410	14,367	14,323	14,293	14,224	14,211	14,196	14,160	14,166	14,107	14,097	14,067
Civilian labor force	8,031	7,954	7,989	8,019	7,908	7,901	7,968	7,896	8,018	7,892	8,001	7,894	7,949	7,980	7,889
Participation rate	55.3	55.9	55.3	55.6	55.0	55.2	55.7	55.5	56.4	55.6	56.5	55.7	56.3	56.6	56.1
Employed	6,805	6,759	6,809	6,725	6,736	6,797	6,808	6,709	6,783	6,704	6,814	6,706	6,763	6,760	6,686
Employment-population ratio[2]	46.8	47.5	47.1	46.7	46.9	47.5	47.6	47.2	47.7	47.2	48.1	47.3	47.9	48.0	47.5
Agriculture	273	250	240	278	238	229	236	209	237	249	293	229	252	244	286
Nonagricultural industries	6,532	6,510	6,569	6,447	6,498	6,568	6,572	6,500	6,546	6,455	6,521	6,477	6,511	6,516	6,400
Unemployed	1,226	1,194	1,180	1,294	1,172	1,104	1,160	1,187	1,235	1,188	1,187	1,188	1,186	1,220	1,203
Unemployment rate	15.3	15.0	14.8	16.1	14.8	14.0	14.6	15.0	15.4	15.1	14.8	15.0	14.9	15.3	15.2
White															
Civilian noninstitutional population[1]	158,194	159,338	158,705	158,865	158,947	159,020	159,098	159,200	159,297	159,400	159,470	159,549	159,644	159,736	159,832
Civilian labor force	104,756	106,355	105,454	105,999	105,760	105,926	106,208	106,152	106,474	106,384	106,485	106,393	106,618	106,834	106,896
Participation rate	66.2	66.7	66.4	66.7	66.5	66.6	66.8	66.7	66.8	66.7	66.8	66.7	66.8	66.9	66.9
Employed	99,812	101,584	100,649	101,137	101,187	101,413	101,400	101,432	101,683	101,546	101,684	101,579	101,862	101,991	102,032
Employment-population ratio[2]	63.1	63.8	63.4	63.7	63.7	63.8	63.7	63.7	63.8	63.7	63.8	63.7	63.8	63.8	63.8
Unemployed	4,944	4,770	4,805	4,862	4,573	4,513	4,808	4,720	4,791	4,838	4,801	4,814	4,756	4,843	4,864
Unemployment rate	4.7	4.5	4.6	4.6	4.3	4.3	4.5	4.4	4.5	4.5	4.5	4.5	4.5	4.5	4.6
Black															
Civilian noninstitutional population[1]	20,692	21,021	20,842	20,877	20,905	20,930	20,956	20,986	21,012	21,038	21,060	21,085	21,108	21,136	21,164
Civilian labor force	13,205	13,497	13,407	13,447	13,443	13,429	13,336	13,454	13,569	13,548	13,476	13,518	13,507	13,576	13,522
Participation rate	63.8	64.2	64.3	64.4	64.3	64.2	63.6	64.1	64.6	64.4	64.0	64.1	64.0	64.2	63.9
Employed	11,658	11,953	11,872	11,867	11,883	11,952	11,872	11,962	11,969	12,063	11,961	11,938	11,923	11,954	11,920
Employment-population ratio[2]	56.3	56.9	57.0	56.8	56.8	57.1	56.7	57.0	57.0	57.3	56.8	56.6	56.5	56.6	56.3
Unemployed	1,547	1,544	1,535	1,580	1,560	1,477	1,464	1,492	1,600	1,485	1,515	1,580	1,584	1,622	1,602
Unemployment rate	11.7	11.4	11.4	11.7	11.6	11.0	11.0	11.1	11.8	11.0	11.2	11.7	11.7	11.9	11.8

See footnotes at end of table.

5. Continued— Employment status of the civilian population, by sex, age, race and Hispanic origin, monthly data seasonally adjusted

(Numbers in thousands)

Employment status	Annual average		1988	1989											
	1988	1989	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Hispanic origin															
Civilian noninstitutional population[1]	13,325	13,791	13,533	13,564	13,606	13,649	13,690	13,731	13,772	13,813	13,853	13,894	13,936	13,977	14,019
Civilian labor force	8,982	9,323	9,135	9,211	9,192	9,201	9,288	9,359	9,289	9,403	9,361	9,342	9,339	9,424	9,495
Participation rate	67.4	67.6	67.5	67.9	67.6	67.4	67.8	68.2	67.4	68.1	67.6	67.2	67.0	67.4	67.7
Employed	8,250	8,573	8,445	8,452	8,549	8,581	8,531	8,619	8,543	8,579	8,541	8,564	8,595	8,672	8,691
Employment-population ratio[2]	61.9	62.2	62.4	62.3	62.8	62.9	62.3	62.8	62.0	62.1	61.7	61.6	61.7	62.0	62.0
Unemployed	732	750	690	759	643	620	757	740	746	824	820	778	744	752	804
Unemployment rate	8.2	8.0	7.6	8.2	7.0	6.7	8.2	7.9	8.0	8.8	8.8	8.3	8.0	8.0	8.5

[1] The population figures are not seasonally adjusted.
[2] Civilian employment as a percent of the civilian noninstitutional population.
NOTE: Detail for the above race and Hispanic-origin groups will not sum to totals because data for the "other races" groups are not presented and Hispanics are included in both the white and black population groups.

6. Selected employment indicators, monthly data seasonally adjusted

(In thousands)

Selected categories	Annual average		1988	1989											
	1988	1989	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
CHARACTERISTIC															
Civilian employed, 16 years and over	114,968	117,342	116,141	116,640	116,757	117,047	117,084	117,132	117,542	117,436	117,550	117,419	117,585	117,836	117,888
Men	63,273	64,315	63,611	63,764	64,008	64,293	64,206	64,202	64,577	64,440	64,400	64,150	64,513	64,482	64,618
Women	51,696	53,027	52,530	52,876	52,749	52,754	52,878	52,930	52,965	52,996	53,150	53,269	53,072	53,354	53,270
Married men, spouse present	40,472	40,760	40,567	40,794	40,880	40,976	40,857	40,932	41,025	41,067	40,723	40,649	40,839	40,886	41,041
Married women, spouse present	28,756	29,404	29,118	29,557	29,379	29,485	29,563	29,608	29,499	29,520	29,259	29,506	29,544	29,767	29,695
Women who maintain families	6,211	6,338	6,390	6,396	6,381	6,267	6,263	6,354	6,401	6,446	6,371	6,429	6,354	6,351	6,349
MAJOR INDUSTRY AND CLASS OF WORKER															
Agriculture:															
Wage and salary workers	1,621	1,665	1,686	1,667	1,644	1,651	1,630	1,647	1,557	1,685	1,723	1,680	1,678	1,687	1,677
Self-employed workers	1,398	1,403	1,355	1,395	1,411	1,403	1,414	1,377	1,411	1,424	1,410	1,424	1,406	1,373	1,369
Unpaid family workers	150	131	147	177	146	137	126	127	126	127	133	132	124	122	125
Nonagricultural industries:															
Wage and salary workers	103,021	105,259	103,954	104,380	104,815	104,948	104,981	105,232	105,430	105,353	105,317	105,476	105,504	105,960	105,643
Government	17,114	17,469	17,352	17,346	17,318	17,376	17,266	17,305	17,328	17,501	17,559	17,613	17,595	17,681	17,728
Private industries	85,907	87,790	86,602	87,034	87,497	87,572	87,715	87,927	88,102	87,852	87,758	87,863	87,909	88,279	87,915
Private households	1,153	1,101	1,206	1,187	1,131	1,149	1,118	1,123	1,128	1,094	1,147	1,065	987	1,051	1,077
Other	84,754	86,689	85,396	85,847	86,366	86,423	86,597	86,804	86,974	86,758	86,611	86,798	86,922	87,228	86,838
Self-employed workers	8,519	8,605	8,588	8,681	8,541	8,631	8,643	8,573	8,578	8,602	8,621	8,581	8,610	8,528	8,653
Unpaid family workers	260	279	279	298	290	319	277	299	245	248	272	279	280	264	251
PERSONS AT WORK PART TIME[1]															
All industries:															
Part time for economic reasons	5,206	4,894	5,350	5,082	4,987	4,978	5,086	4,883	4,928	4,773	4,802	4,864	4,767	4,803	4,802
Slack work	2,350	2,303	2,564	2,328	2,314	2,283	2,346	2,314	2,315	2,301	2,281	2,321	2,314	2,297	2,277
Could only find part-time work	2,487	2,233	2,417	2,363	2,339	2,368	2,375	2,307	2,269	2,172	2,142	2,161	2,082	2,162	2,106
Voluntary part time	14,963	15,393	15,355	15,386	15,150	15,510	15,405	15,350	15,466	15,577	15,550	15,506	15,368	15,254	15,388
Nonagricultural industries:															
Part time for economic reasons	4,965	4,657	5,047	4,831	4,722	4,720	4,855	4,643	4,738	4,583	4,567	4,605	4,526	4,552	4,554
Slack work	2,199	2,143	2,379	2,168	2,129	2,095	2,198	2,137	2,183	2,164	2,129	2,165	2,166	2,132	2,111
Could only find part-time work	2,408	2,166	2,318	2,287	2,272	2,290	2,310	2,246	2,198	2,104	2,076	2,095	2,021	2,097	2,051
Voluntary part time	14,509	14,963	14,912	14,947	14,707	15,074	14,975	14,977	15,016	15,138	15,071	15,076	14,936	14,805	14,983

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

7. Selected unemployment indicators, monthly data seasonally adjusted

(Unemployment rates)

Selected categories	Annual average		1988	1989											
	1988	1989	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
CHARACTERISTIC															
Total, all civilian workers	5.5	5.3	5.3	5.4	5.2	5.0	5.3	5.2	5.3	5.3	5.3	5.3	5.3	5.3	5.3
Both sexes, 16 to 19 years	15.3	15.0	14.8	16.1	14.8	14.0	14.6	15.0	15.4	15.1	14.8	15.0	14.9	15.3	15.2
Men, 20 years and over	4.8	4.5	4.6	4.6	4.5	4.2	4.6	4.3	4.4	4.4	4.5	4.8	4.5	4.6	4.6
Women, 20 years and over	4.9	4.7	4.7	4.7	4.6	4.6	4.7	4.7	4.8	4.9	4.7	4.5	4.8	4.8	4.8
White, total	4.7	4.5	4.6	4.6	4.3	4.3	4.5	4.4	4.5	4.5	4.5	4.5	4.5	4.5	4.6
Both sexes, 16 to 19 years	13.1	12.7	12.6	13.8	12.3	11.9	12.4	12.8	12.9	12.7	12.7	12.2	12.4	12.9	13.0
Men, 16 to 19 years	13.9	13.7	13.5	15.9	13.9	13.0	13.2	14.1	13.5	12.8	13.1	13.3	13.8	14.3	14.0
Women, 16 to 19 years	12.3	11.5	11.6	11.6	10.7	10.7	11.5	11.4	12.3	12.6	12.3	11.1	10.9	11.3	11.9
Men, 20 years and over	4.1	3.9	4.1	3.9	3.8	3.6	3.9	3.7	3.8	3.8	3.9	4.2	3.9	3.9	3.9
Women, 20 years and over	4.1	4.0	3.9	4.0	3.7	3.9	4.1	4.1	4.1	4.2	4.1	3.8	4.0	4.0	4.1
Black, total	11.7	11.4	11.4	11.7	11.6	11.0	11.0	11.1	11.8	11.0	11.2	11.7	11.7	11.9	11.8
Both sexes, 16 to 19 years	32.4	32.4	30.7	33.9	32.2	31.5	31.7	32.4	35.1	27.9	31.9	36.3	33.4	32.5	30.7
Men, 16 to 19 years	32.7	31.9	30.8	35.6	32.6	29.0	34.8	35.4	33.8	23.2	30.3	33.8	32.0	32.3	30.1
Women, 16 to 19 years	32.0	33.0	30.6	31.9	31.7	34.3	28.5	29.6	36.8	33.1	33.6	38.8	34.9	32.7	31.4
Men, 20 years and over	10.1	10.0	9.9	10.2	10.2	9.8	9.9	9.5	9.6	9.5	9.9	10.1	10.3	10.6	10.8
Women, 20 years and over	10.4	9.8	10.2	10.2	10.0	9.3	9.1	9.6	10.5	9.9	9.6	9.7	9.9	10.2	10.0
Hispanic origin, total	8.2	8.0	7.6	8.2	7.0	6.7	8.2	7.9	8.0	8.8	8.8	8.3	8.0	8.0	8.5
Married men, spouse present	3.3	3.0	3.1	3.1	3.0	2.9	3.2	2.9	2.9	3.0	3.1	3.3	3.0	3.1	3.0
Married women, spouse present	3.9	3.7	3.6	3.7	3.4	3.5	4.0	3.8	3.8	3.8	3.9	3.8	3.9	3.8	3.9
Women who maintain families	8.1	8.1	8.2	7.9	8.0	7.9	7.8	8.2	7.9	8.5	8.0	7.7	7.8	8.2	8.1
Full-time workers	5.2	4.9	5.0	5.0	4.8	4.8	5.0	4.9	4.9	5.0	4.9	5.0	4.9	5.0	5.0
Part-time workers	7.6	7.3	7.0	7.7	7.2	6.4	7.2	6.9	7.7	7.2	7.1	7.3	7.1	7.4	7.5
Unemployed 15 weeks and over	1.3	1.1	1.2	1.2	1.1	1.1	1.1	1.1	1.0	1.2	1.1	1.1	1.1	1.1	1.1
Labor force time lost[1]	6.3	5.9	6.2	6.1	6.0	5.9	6.0	6.0	6.0	6.0	6.0	6.0	5.9	5.9	6.0
INDUSTRY															
Nonagricultural private wage and salary workers	5.5	5.3	5.3	5.5	5.2	5.1	5.3	5.2	5.3	5.4	5.4	5.4	5.3	5.4	5.4
Mining	7.9	5.8	7.6	6.2	7.6	7.0	5.8	4.6	3.9	5.8	6.4	8.4	4.8	6.2	4.4
Construction	10.6	10.0	10.3	10.3	10.0	9.6	9.8	9.5	10.0	10.3	10.2	10.1	9.3	9.8	9.8
Manufacturing	5.3	5.1	5.1	5.2	4.9	4.8	5.0	4.9	5.1	5.1	5.2	5.2	5.4	5.4	5.6
Durable goods	5.0	4.8	4.9	4.8	4.5	4.6	4.7	4.6	4.6	4.7	4.9	4.9	5.2	5.4	5.4
Nondurable goods	5.7	5.5	5.4	5.6	5.5	5.1	5.3	5.5	5.8	5.6	5.7	5.5	5.6	5.3	5.9
Transportation and public utilities	3.9	3.9	3.9	3.9	3.9	3.9	3.9	4.0	4.1	4.1	3.7	4.5	3.9	3.6	3.4
Wholesale and retail trade	6.2	6.0	6.1	6.4	5.7	5.7	5.9	5.6	6.0	6.1	6.0	5.9	5.9	6.4	6.3
Finance and service industries	4.5	4.4	4.2	4.6	4.3	4.3	4.6	4.6	4.3	4.4	4.4	4.5	4.3	4.3	4.2
Government workers	2.8	2.7	2.8	2.7	2.7	2.7	2.7	2.9	2.9	2.8	2.7	2.8	2.7	2.7	2.6
Agricultural wage and salary workers	10.6	9.6	9.0	9.5	9.1	8.9	9.8	9.9	10.4	8.9	9.0	7.8	9.8	12.1	9.7

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

8. Unemployment rates by sex and age, monthly data seasonally adjusted

(Civilian workers)

Sex and age	Annual average		1988	1989											
	1988	1989	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Total, 16 years and over	5.5	5.3	5.3	5.4	5.2	5.0	5.3	5.2	5.3	5.3	5.3	5.3	5.3	5.3	5.3
16 to 24 years	11.0	10.9	10.9	11.6	10.6	10.0	10.6	10.5	11.1	10.9	11.0	11.1	11.1	11.3	11.2
16 to 19 years	15.3	15.0	14.8	16.1	14.8	14.0	14.6	15.0	15.4	15.1	14.8	15.0	14.9	15.3	15.2
16 to 17 years	17.4	17.2	16.6	17.8	17.6	15.8	15.9	16.6	17.4	17.7	17.5	17.2	16.9	17.4	18.1
18 to 19 years	13.8	13.6	13.5	15.0	12.7	12.9	13.7	14.3	14.6	13.1	12.8	14.2	13.5	13.8	13.4
20 to 24 years	8.7	8.6	8.7	9.1	8.2	7.9	8.4	7.9	8.7	8.6	8.8	8.8	8.9	9.0	8.9
25 years and over	4.3	4.0	4.1	4.0	4.0	3.9	4.1	4.0	4.0	4.0	4.0	4.1	4.1	4.1	4.1
25 to 54 years	4.5	4.2	4.3	4.2	4.2	4.2	4.3	4.2	4.1	4.2	4.1	4.3	4.2	4.2	4.3
55 years and over	3.1	3.1	3.0	3.0	3.0	2.7	3.0	2.9	3.3	3.1	3.1	3.0	3.0	3.2	3.2
Men, 16 years and over	5.5	5.2	5.3	5.4	5.2	4.9	5.3	5.1	5.1	5.0	5.1	5.4	5.2	5.3	5.3
16 to 24 years	11.4	11.4	11.1	12.5	11.2	10.0	10.8	10.9	11.4	10.9	11.5	11.9	11.7	12.0	11.8
16 to 19 years	16.0	15.9	15.4	18.3	16.4	14.6	15.6	16.3	15.9	14.7	15.1	15.7	15.9	16.7	16.1
16 to 17 years	18.2	18.6	17.7	19.9	18.8	16.5	17.5	18.7	19.5	17.8	17.7	19.5	18.5	19.0	19.6
18 to 19 years	14.6	14.2	13.7	17.2	14.7	13.6	14.3	15.1	13.7	12.1	13.1	13.7	14.2	15.1	13.8
20 to 24 years	8.9	8.8	8.6	9.3	8.3	7.5	8.2	8.0	8.9	8.9	9.4	9.8	9.3	9.4	9.5
25 years and over	4.2	3.9	4.1	4.0	4.0	3.8	4.1	3.8	3.7	3.8	3.8	4.1	3.9	4.0	3.9
25 to 54 years	4.4	4.1	4.3	4.2	4.1	4.0	4.3	3.9	3.8	3.9	3.8	4.1	4.0	4.1	4.0
55 years and over	3.3	3.2	3.2	3.0	3.3	2.8	3.2	3.0	3.1	3.1	3.3	3.5	3.2	3.5	3.6
Women, 16 years and over	5.6	5.4	5.3	5.3	5.1	5.2	5.3	5.3	5.5	5.6	5.4	5.2	5.4	5.4	5.5
16 to 24 years	10.6	10.4	10.6	10.6	9.9	10.1	10.4	10.0	10.8	10.9	10.4	10.2	10.4	10.4	10.4
16 to 19 years	14.4	14.0	14.1	13.9	13.1	13.3	13.5	13.7	14.9	15.5	14.6	14.4	13.8	13.8	14.3
16 to 17 years	16.6	15.7	15.4	15.7	16.3	15.1	14.1	14.3	15.2	17.6	17.2	14.7	15.0	15.7	16.5
18 to 19 years	12.9	13.0	13.2	12.7	10.4	12.0	12.9	13.4	15.6	14.2	12.5	14.6	12.8	12.3	13.0
20 to 24 years	8.5	8.3	8.7	8.8	8.1	8.3	8.7	7.9	8.5	8.3	8.1	7.7	8.5	8.5	8.2
25 years and over	4.3	4.2	4.1	4.1	4.0	4.1	4.1	4.3	4.3	4.3	4.2	4.1	4.2	4.2	4.3
25 to 54 years	4.6	4.4	4.3	4.3	4.2	4.3	4.4	4.6	4.5	4.5	4.5	4.4	4.4	4.4	4.6
55 years and over	2.8	2.8	2.7	3.1	2.6	2.6	2.7	2.9	3.6	3.1	2.8	2.4	2.8	2.9	2.7

9. Unemployed persons by reason for unemployment, monthly data seasonally adjusted

(Numbers in thousands)

Reason for unemployment	Annual average		1988	1989											
	1988	1989	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Job losers	3,092	2,983	3,021	3,088	2,879	2,852	2,932	2,798	2,820	2,916	2,964	2,932	2,979	3,092	3,097
On layoff	851	850	806	813	783	806	833	805	813	829	865	852	780	969	957
Other job losers	2,241	2,133	2,215	2,275	2,096	2,046	2,099	1,993	2,007	2,087	2,099	2,080	2,199	2,123	2,140
Job leavers	983	1,024	994	973	980	902	985	1,103	1,021	1,016	1,031	1,034	994	1,049	1,055
Reentrants	1,809	1,843	1,740	1,827	1,767	1,774	1,882	1,853	1,993	1,901	1,772	1,920	1,890	1,845	1,853
New entrants	816	677	785	768	757	713	692	696	726	723	643	648	685	695	686
PERCENT OF UNEMPLOYED															
Job losers	46.1	45.7	46.2	46.4	45.1	45.7	45.2	43.4	43.0	44.5	46.2	44.9	45.5	46.3	46.3
On layoff	12.7	13.0	12.3	12.2	12.3	12.9	12.8	12.5	12.4	12.6	13.5	13.0	11.9	14.5	14.3
Other job losers	33.4	32.7	33.9	34.2	32.8	32.8	32.3	30.9	30.6	31.8	32.7	31.8	33.6	31.8	32.0
Job leavers	14.7	15.7	15.2	14.6	15.4	14.5	15.2	17.1	15.6	15.5	16.1	15.8	15.2	15.7	15.8
Reentrants	27.0	28.2	26.6	27.4	27.7	28.4	29.0	28.7	30.4	29.0	27.6	29.4	28.9	27.6	27.7
New entrants	12.2	10.4	12.0	11.5	11.9	11.4	10.7	10.8	11.1	11.0	10.0	9.9	10.5	10.4	10.3
PERCENT OF CIVILIAN LABOR FORCE															
Job losers	2.5	2.4	2.5	2.5	2.3	2.3	2.4	2.3	2.3	2.4	2.4	2.4	2.4	2.5	2.5
Job leavers	.8	.8	.8	.8	.8	.7	.8	.9	.8	.8	.8	.8	.8	.8	.8
Reentrants	1.5	1.5	1.4	1.5	1.4	1.4	1.5	1.5	1.6	1.5	1.4	1.5	1.5	1.5	1.5
New entrants	.7	.5	.6	.6	.6	.6	.6	.6	.6	.6	.5	.5	.6	.6	.6

10. Duration of unemployment, monthly data seasonally adjusted

(Numbers in thousands)

Weeks of unemployment	Annual average		1988	1989											
	1988	1989	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Less than 5 weeks	3,084	3,174	3,000	3,140	3,212	3,072	3,113	3,070	3,279	3,156	3,125	3,169	3,166	3,258	3,302
5 to 14 weeks	2,007	1,978	2,039	1,998	1,894	1,849	2,006	1,993	2,006	1,965	2,002	2,030	1,995	1,991	2,013
15 weeks and over	1,610	1,375	1,476	1,499	1,300	1,335	1,391	1,331	1,295	1,461	1,338	1,359	1,378	1,422	1,362
15 to 26 weeks	801	730	740	761	660	672	667	711	684	838	759	769	743	765	730
27 weeks and over	809	646	736	738	640	663	724	620	611	623	579	590	635	657	632
Mean duration in weeks	13.5	11.9	12.8	12.6	12.3	12.4	12.6	11.9	11.2	11.9	11.4	11.5	11.7	11.6	11.5
Median duration in weeks	5.9	4.8	5.7	5.6	5.4	5.5	5.4	5.3	5.4	5.4	5.0	5.0	5.0	4.8	4.8

11. Unemployment rates of civilian workers by State, data not seasonally adjusted

State	Nov. 1988	Nov. 1989	State	Nov. 1988	Nov. 1989
Alabama	7.2	6.3	Montana	5.6	6.0
Alaska	9.1	6.9	Nebraska	3.0	2.9
Arizona	5.7	4.4	Nevada	4.2	4.8
Arkansas	6.3	6.1	New Hampshire	2.3	4.1
California	5.1	4.9	New Jersey	3.5	4.7
Colorado	6.2	4.8	New Mexico	6.4	5.8
Connecticut	2.7	3.4	New York	4.3	5.1
Delaware	2.7	2.8	North Carolina	3.6	2.8
District of Columbia	4.4	4.7	North Dakota	4.4	4.1
Florida	5.2	5.6	Ohio	5.3	5.9
Georgia	5.4	5.7	Oklahoma	5.5	4.6
Hawaii	3.3	2.8	Oregon	4.9	5.2
Idaho	4.6	4.4	Pennsylvania	4.3	5.1
Illinois	6.5	6.3	Rhode Island	2.5	4.1
Indiana	4.8	4.8	South Carolina	3.9	4.5
Iowa	3.8	4.1	South Dakota	3.8	3.9
Kansas	4.5	3.9	Tennessee	5.2	4.5
Kentucky	6.5	5.2	Texas	6.6	6.9
Louisiana	10.4	7.2	Utah	3.7	3.5
Maine	3.8	4.3	Vermont	2.9	3.7
Maryland	4.0	3.6	Virginia	4.0	4.1
Massachusetts	3.5	4.0	Washington	5.5	5.5
Michigan	6.8	6.9	West Virginia	8.4	8.1
Minnesota	3.2	3.5	Wisconsin	3.6	4.1
Mississippi	9.1	6.9			
Missouri	5.4	5.3	Wyoming	6.3	5.8

NOTE: Some data in this table may differ from data published elsewhere because of the continual updating of the database.

12. Employment of workers on nonagricultural payrolls by State, data not seasonally adjusted

(In thousands)

State	Nov. 1988	Oct. 1989	Nov. 1989[p]	State	Nov. 1988	Oct. 1989	Nov. 1989[p]
Alabama	1,586.1	1,587.9	1,593.6	Nebraska	705.3	722.6	727.2
Alaska	209.0	222.8	215.9	Nevada	558.9	587.1	591.0
Arizona	1,440.4	1,464.2	1,474.8	New Hampshire	538.6	537.3	535.2
Arkansas	873.9	899.1	896.7				
California	12,310.8	12,570.9	12,634.3	New Jersey	3,696.4	3,714.0	3,720.1
				New Mexico	553.2	563.2	564.6
Colorado	1,437.1	1,455.7	1,461.9	New York	8,318.0	8,309.3	8,337.7
Connecticut	1,700.1	1,706.1	1,717.3	North Carolina	3,040.2	3,073.8	3,087.0
Delaware	337.2	343.6	345.6	North Dakota	259.8	266.2	265.4
District of Columbia	678.0	692.6	694.9				
Florida	5,236.5	5,327.5	5,395.5	Ohio	4,834.7	4,869.6	4,888.3
				Oklahoma	1,141.1	1,150.0	1,152.3
Georgia	2,929.5	2,953.2	2,961.2	Oregon	1,189.1	1,225.0	1,221.9
Hawaii	484.8	496.5	503.4	Pennsylvania	5,109.3	5,158.2	5,168.1
Idaho	359.4	378.4	376.8	Rhode Island	462.7	458.9	459.9
Illinois	5,173.2	5,200.0	5,203.9				
Indiana	2,453.0	2,491.4	2,494.4	South Carolina	1,484.1	1,523.8	1,530.0
				South Dakota	266.4	271.4	270.1
Iowa	1,187.9	1,209.7	1,213.1	Tennessee	2,099.8	2,102.0	2,101.9
Kansas	1,057.5	1,068.8	1,073.6	Texas	6,742.2	6,832.8	6,857.6
Kentucky	1,402.3	1,415.2	1,419.5	Utah	680.9	706.7	711.0
Louisiana	1,518.8	1,525.1	1,531.6				
Maine	531.4	536.0	535.0	Vermont	258.1	257.4	256.3
				Virginia	2,849.4	2,938.3	2,954.2
Maryland	2,127.9	2,152.4	2,158.9	Washington	1,986.2	2,087.3	2,091.1
Massachusetts	3,169.3	3,143.4	3,145.9	West Virginia	628.8	624.9	626.1
Michigan	3,917.3	3,915.6	3,917.8	Wisconsin	2,193.6	2,233.4	2,232.0
Minnesota	2,067.0	2,122.0	2,119.2				
Mississippi	920.7	925.4	926.1	Wyoming	188.3	193.9	190.4
Missouri	2,273.7	2,297.1	2,291.7	Puerto Rico	829.6	822.0	826.4
Montana	286.1	288.0	286.4	Virgin Islands	41.2	37.9	39.1

[p] = preliminary

NOTE: Some data in this table may differ from data published elsewhere because of the continual updating of the database.

13. Employment of workers on nonagricultural payrolls by industry, monthly data seasonally adjusted

(In thousands)

Industry	Annual average		1988	1989											
	1988	1989[p]	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.[p]	Dec.[p]
TOTAL	105,584	108,573	107,097	107,442	107,711	107,888	108,101	108,310	108,607	108,767	108,887	109,096	109,171	109,393	109,535
PRIVATE SECTOR	88,212	90,847	89,574	89,897	90,124	90,291	90,475	90,623	90,884	91,016	91,083	91,230	91,328	91,567	91,675
GOODS-PRODUCING	25,249	25,634	25,513	25,626	25,629	25,646	25,671	25,672	25,648	25,669	25,694	25,614	25,603	25,607	25,543
Mining	721	722	711	711	711	714	720	722	715	706	729	730	731	737	736
Oil and gas extraction	406	403	394	393	394	397	400	401	402	404	405	408	409	414	413
Construction	5,125	5,302	5,213	5,267	5,270	5,252	5,279	5,283	5,283	5,314	5,321	5,325	5,335	5,360	5,322
General building contractors	1,368	1,391	1,380	1,404	1,398	1,380	1,377	1,388	1,384	1,391	1,403	1,396	1,386	1,391	1,397
Manufacturing	19,403	19,611	19,589	19,648	19,648	19,680	19,672	19,667	19,650	19,649	19,644	19,559	19,537	19,510	19,485
Production workers	13,254	13,377	13,385	13,423	13,426	13,442	13,430	13,426	13,400	13,410	13,401	13,319	13,307	13,279	13,272
Durable goods	11,437	11,536	11,565	11,605	11,594	11,604	11,600	11,594	11,567	11,549	11,551	11,480	11,457	11,436	11,409
Production workers	7,635	7,688	7,730	7,758	7,749	7,749	7,744	7,735	7,706	7,697	7,696	7,632	7,615	7,597	7,584
Lumber and wood products	765	769	780	784	778	777	772	771	769	767	763	759	764	766	764
Furniture and fixtures	530	531	532	532	534	535	537	534	534	536	529	528	525	524	520
Stone, clay, and glass products	600	603	607	607	608	607	606	604	603	602	601	597	600	601	599
Primary metal industries	774	782	785	786	786	788	788	787	787	785	786	777	776	772	770
Blast furnaces and basic steel products	277	274	276	276	276	276	275	276	276	277	276	273	271	268	268
Fabricated metal products	1,431	1,445	1,449	1,458	1,458	1,457	1,454	1,452	1,449	1,446	1,443	1,438	1,434	1,431	1,426
Machinery, except electrical	2,082	2,145	2,126	2,134	2,138	2,143	2,144	2,150	2,151	2,154	2,152	2,147	2,139	2,145	2,143
Electrical and electronic equipment	2,070	2,038	2,067	2,065	2,062	2,060	2,058	2,050	2,041	2,040	2,034	2,023	2,018	2,012	1,999
Transportation equipment	2,051	2,053	2,063	2,079	2,067	2,071	2,073	2,076	2,062	2,046	2,068	2,038	2,031	2,018	2,018
Motor vehicles and equipment	857	856	867	882	871	869	875	876	861	844	873	843	833	823	823
Instruments and related products	749	777	767	770	772	776	777	778	779	781	782	780	779	778	777
Miscellaneous manufacturing industries	386	391	389	390	391	390	391	392	392	392	393	393	391	389	393
Nondurable goods	7,967	8,075	8,024	8,043	8,054	8,076	8,072	8,073	8,083	8,100	8,093	8,079	8,080	8,074	8,076
Production workers	5,619	5,689	5,655	5,665	5,677	5,693	5,686	5,691	5,694	5,713	5,705	5,687	5,692	5,682	5,688
Food and kindred products	1,636	1,664	1,646	1,650	1,650	1,655	1,657	1,656	1,663	1,678	1,667	1,674	1,676	1,669	1,668
Tobacco manufactures	56	53	56	56	56	56	54	53	52	53	52	51	51	51	51
Textile mill products	729	726	724	728	728	729	728	728	729	730	727	723	724	722	721
Apparel and other textile products	1,092	1,092	1,090	1,092	1,096	1,101	1,098	1,095	1,093	1,094	1,095	1,088	1,084	1,084	1,086
Paper and allied products	693	697	696	696	696	697	696	697	697	701	700	697	697	697	698
Printing and publishing	1,561	1,607	1,588	1,595	1,595	1,600	1,601	1,603	1,607	1,609	1,611	1,612	1,612	1,616	1,618
Chemicals and allied products	1,065	1,093	1,079	1,084	1,085	1,088	1,090	1,094	1,096	1,091	1,097	1,095	1,096	1,098	1,102
Petroleum and coal products	162	162	162	160	161	161	162	162	163	163	163	163	164	164	162
Rubber and misc. plastics products	829	840	840	839	843	845	843	843	841	841	841	837	837	835	831
Leather and leather products	144	141	143	143	144	144	143	142	142	140	140	139	139	138	139
SERVICE-PRODUCING	80,335	82,938	81,584	81,816	82,082	82,242	82,430	82,638	82,959	83,098	83,193	83,482	83,568	83,786	83,992
Transportation and public utilities	5,548	5,703	5,634	5,654	5,667	5,666	5,682	5,700	5,716	5,736	5,618	5,709	5,729	5,745	5,818
Transportation	3,334	3,513	3,421	3,439	3,453	3,452	3,467	3,484	3,500	3,524	3,539	3,546	3,566	3,587	3,601
Communication and public utilities	2,214	2,190	2,213	2,215	2,214	2,214	2,215	2,216	2,216	2,212	2,079	2,163	2,163	2,158	2,217
Wholesale trade	6,029	6,234	6,125	6,146	6,171	6,197	6,206	6,222	6,230	6,237	6,256	6,264	6,278	6,297	6,311
Durable goods	3,561	3,696	3,626	3,638	3,657	3,676	3,676	3,685	3,693	3,700	3,708	3,717	3,721	3,737	3,748
Nondurable goods	2,467	2,538	2,499	2,508	2,514	2,521	2,530	2,537	2,537	2,537	2,548	2,547	2,557	2,560	2,563
Retail trade	19,110	19,573	19,328	19,407	19,460	19,488	19,489	19,528	19,551	19,586	19,621	19,632	19,679	19,725	19,713
General merchandise stores	2,461	2,482	2,460	2,472	2,481	2,490	2,492	2,491	2,493	2,482	2,484	2,486	2,478	2,478	2,470
Food stores	3,098	3,270	3,182	3,200	3,212	3,223	3,233	3,245	3,262	3,274	3,293	3,294	3,321	3,335	3,345
Automotive dealers and service stations	2,090	2,157	2,136	2,143	2,150	2,155	2,159	2,159	2,155	2,155	2,152	2,157	2,169	2,169	2,163
Eating and drinking places	6,282	6,370	6,328	6,323	6,332	6,322	6,335	6,348	6,362	6,370	6,385	6,397	6,403	6,417	6,432
Finance, insurance, and real estate	6,676	6,814	6,744	6,746	6,763	6,774	6,776	6,790	6,808	6,815	6,836	6,852	6,851	6,872	6,885
Finance	3,290	3,329	3,307	3,308	3,311	3,316	3,312	3,320	3,320	3,324	3,336	3,343	3,345	3,356	3,359
Insurance	2,082	2,128	2,110	2,109	2,116	2,117	2,119	2,123	2,129	2,131	2,137	2,137	2,134	2,140	2,145
Real estate	1,304	1,357	1,327	1,329	1,336	1,341	1,345	1,347	1,359	1,360	1,363	1,372	1,372	1,376	1,381
Services	25,600	26,889	26,230	26,318	26,434	26,520	26,651	26,711	26,931	26,973	27,058	27,159	27,188	27,321	27,405
Business services	5,571	5,788	5,715	5,707	5,729	5,736	5,760	5,776	5,799	5,786	5,800	5,836	5,827	5,843	5,857
Health services	7,144	7,635	7,359	7,396	7,442	7,488	7,528	7,570	7,616	7,648	7,695	7,739	7,778	7,835	7,882
Government	17,372	17,726	17,523	17,545	17,587	17,597	17,626	17,687	17,723	17,751	17,804	17,866	17,843	17,826	17,860
Federal	2,971	2,988	2,981	2,978	2,982	2,982	2,982	2,999	2,995	3,000	2,999	2,996	2,984	2,978	2,976
State	4,063	4,136	4,085	4,084	4,095	4,102	4,111	4,119	4,136	4,145	4,154	4,182	4,153	4,163	4,174
Local	10,339	10,603	10,457	10,483	10,510	10,513	10,533	10,569	10,592	10,606	10,651	10,688	10,706	10,685	10,710

[p] = preliminary

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

14. Average weekly hours of production or nonsupervisory workers on private nonagricultural payrolls by industry, monthly data seasonally adjusted

Industry	Annual average		1988	1989											
	1988	1989[p]	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.[p]	Dec.[p]
PRIVATE SECTOR	34.7	34.7	34.7	34.8	34.6	34.7	34.9	34.6	34.6	34.8	34.6	34.7	34.7	34.6	34.5
MANUFACTURING	41.1	41.0	41.0	41.1	41.1	41.0	41.3	41.0	41.0	41.0	41.0	41.0	40.8	40.7	40.7
Overtime hours	3.9	3.8	3.9	3.9	3.9	4.0	3.9	3.8	3.8	3.9	3.8	3.8	3.7	3.7	3.7
Durable goods	41.8	41.6	41.7	41.8	41.8	41.7	41.9	41.5	41.5	41.5	41.6	41.6	41.2	41.2	41.2
Overtime hours	4.1	3.9	4.1	4.1	4.1	4.1	4.1	3.9	3.9	4.0	3.9	3.9	3.8	3.7	3.7
Lumber and wood products	40.3	40.0	40.3	40.3	39.6	40.0	40.5	39.7	39.8	39.6	40.2	40.2	40.4	40.1	39.8
Furniture and fixtures	39.4	39.5	39.4	39.8	39.7	39.8	39.9	39.4	39.4	39.5	39.6	39.6	39.2	39.3	39.1
Stone, clay, and glass products	42.3	42.3	42.4	42.5	42.2	42.2	42.5	41.9	42.2	42.3	42.5	42.2	42.3	42.3	41.7
Primary metal industries	43.6	43.0	43.5	43.6	43.4	43.5	43.3	43.2	43.3	43.0	42.9	42.8	42.5	42.4	42.5
Blast furnaces and basic steel products	44.0	43.4	43.8	44.0	43.8	44.1	43.5	43.6	43.7	43.2	43.4	42.9	42.8	42.6	43.0
Fabricated metal products	41.9	41.6	41.8	41.9	41.9	41.8	41.9	41.7	41.5	41.5	41.5	41.6	41.5	41.4	41.0
Machinery except electrical	42.6	42.4	42.5	42.5	42.6	42.5	42.7	42.5	42.5	42.4	42.2	42.3	42.0	42.1	42.1
Electrical and electronic equipment	41.0	40.8	40.8	40.9	40.9	40.6	41.0	40.7	40.7	40.6	40.9	41.1	40.9	40.8	40.6
Transportation equipment	42.7	42.4	42.8	42.8	43.1	43.1	42.8	42.5	42.5	42.6	42.7	42.8	41.2	40.9	42.2
Motor vehicles and equipment	43.5	43.1	43.7	43.6	43.9	43.9	43.3	42.8	42.7	42.6	43.0	43.4	42.9	42.3	42.0
Instruments and related products	41.5	41.3	41.1	41.5	41.5	41.1	41.5	41.1	41.3	41.4	41.1	41.0	41.1	41.2	41.0
Miscellaneous manufacturing	39.2	39.5	39.0	39.4	39.5	39.5	39.8	39.6	39.4	39.3	39.4	39.2	39.3	39.8	39.5
Nondurable goods	40.1	40.2	40.0	40.1	40.2	40.1	40.4	40.2	40.3	40.2	40.2	40.2	40.2	40.1	39.9
Overtime hours	3.7	3.7	3.6	3.6	3.7	3.8	3.8	3.7	3.6	3.8	3.6	3.7	3.7	3.6	3.6
Food and kindred products	40.3	40.7	40.2	40.1	40.3	40.4	40.7	40.5	40.7	41.0	40.8	41.0	40.8	40.8	40.6
Textile mill products	41.1	41.0	40.5	40.9	40.8	41.1	41.7	41.4	41.4	41.2	41.0	40.6	40.7	40.4	40.3
Apparel and other textile products	37.0	37.0	36.8	37.0	37.1	36.9	37.6	37.1	37.1	37.0	37.0	37.0	36.9	36.9	36.3
Paper and allied products	43.2	43.3	43.2	43.1	43.2	43.3	43.4	43.3	43.3	43.2	43.5	43.2	43.4	43.4	43.2
Printing and publishing	38.0	37.8	37.8	38.0	38.0	37.9	37.9	37.7	37.8	37.6	37.7	37.9	37.8	37.9	37.7
Chemicals and allied products	42.3	42.4	42.3	42.3	42.3	42.3	42.6	42.1	42.5	42.5	42.4	42.5	42.4	42.4	42.8
Rubber and miscellaneous plastics products	41.7	41.5	41.4	41.7	41.7	41.6	41.6	41.5	41.5	41.4	41.5	41.5	41.4	41.3	41.0
Leather and leather products	37.5	37.9	37.7	38.0	38.6	38.0	38.3	37.4	37.9	37.7	38.1	38.1	37.7	37.4	37.8
TRANSPORTATION AND PUBLIC UTILITIES	39.3	39.4	39.4	39.6	39.4	39.4	40.1	39.5	39.4	39.4	39.0	39.3	39.3	39.1	39.3
WHOLESALE TRADE	37.4	–	38.1	38.1	38.1	38.1	38.3	37.9	38.0	38.1	38.0	38.1	38.1	38.1	38.0
RETAIL TRADE	29.1	28.9	29.1	29.1	28.9	28.9	29.1	28.9	28.9	29.2	28.8	28.8	29.0	28.8	28.5
SERVICES	32.6	32.6	32.7	32.7	32.5	32.6	32.8	32.5	32.5	32.8	32.6	32.7	32.8	32.6	32.6

– Data not available.
[p] = preliminary

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

15. Average hourly earnings of production or nonsupervisory workers on private nonagricultural payrolls by industry, seasonally adjusted

Industry	Annual average		1988	1989											
	1988	1989[p]	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.[p]	Dec.[p]
PRIVATE SECTOR (in current dollars)[1]	$9.29	$9.66	$9.45	$9.49	$9.52	$9.54	$9.61	$9.60	$9.62	$9.69	$9.69	$9.74	$9.78	$9.78	$9.84
Construction	13.01	13.37	13.15	13.18	13.22	13.26	13.33	13.32	13.32	13.42	13.37	13.39	13.44	13.53	13.64
Manufacturing	10.18	10.47	10.31	10.33	10.37	10.40	10.40	10.42	10.45	10.48	10.52	10.55	10.55	10.57	10.61
Excluding overtime	9.72	10.01	9.85	9.87	9.89	9.92	9.92	9.97	9.99	10.01	10.05	10.08	10.08	10.11	10.14
Transportation and public utilities	12.32	12.57	12.36	12.45	12.48	12.50	12.52	12.54	12.54	12.61	12.57	12.67	12.68	12.65	12.69
Wholesale trade	9.94	10.37	10.11	10.19	10.18	10.21	10.36	10.28	10.33	10.44	10.39	10.47	10.54	10.54	10.57
Retail trade	6.31	6.54	6.43	6.44	6.45	6.47	6.51	6.49	6.52	6.54	6.57	6.58	6.61	6.60	6.64
Finance, insurance, and real estate	9.09	9.57	9.35	9.40	9.35	9.36	9.54	9.45	9.53	9.68	9.57	9.66	9.77	9.67	9.79
Services	8.91	9.40	9.10	9.15	9.19	9.24	9.32	9.33	9.34	9.46	9.43	9.49	9.58	9.54	9.63
PRIVATE SECTOR (in constant (1977) dollars)[1]	4.84	–	4.82	4.81	4.81	4.80	4.80	4.77	4.77	4.79	4.79	4.81	4.81	4.79	–

[1] Includes mining, not shown separately
– Data not available.
[p] = preliminary

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

16. Average hourly earnings of production or nonsupervisory workers on private nonagricultural payrolls by industry

Industry	Annual average		1988	1989											
	1988	1989[p]	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.[p]	Dec.[p]
PRIVATE SECTOR	$9.29	$9.66	$9.46	$9.54	$9.55	$9.56	$9.62	$9.59	$9.58	$9.63	$9.61	$9.77	$9.81	$9.81	$9.85
MINING	12.75	13.13	13.03	13.20	13.22	13.15	13.19	13.13	13.03	12.95	13.11	13.15	13.10	13.12	13.28
CONSTRUCTION	13.01	13.37	13.19	13.26	13.21	13.26	13.30	13.28	13.24	13.33	13.33	13.48	13.52	13.52	13.68
MANUFACTURING	10.18	10.47	10.37	10.37	10.38	10.41	10.41	10.42	10.44	10.47	10.44	10.55	10.52	10.58	10.67
Durable goods	10.71	11.00	10.90	10.90	10.91	10.93	10.93	10.94	10.98	10.99	10.98	11.10	11.06	11.10	11.21
Lumber and wood products	8.61	8.86	8.76	8.71	8.69	8.68	8.76	8.79	8.85	8.92	8.93	8.98	8.99	9.00	8.98
Furniture and fixtures	7.94	8.25	8.06	8.10	8.08	8.13	8.12	8.16	8.23	8.26	8.29	8.40	8.39	8.40	8.39
Stone, clay, and glass products	10.47	10.74	10.57	10.59	10.62	10.62	10.71	10.69	10.73	10.75	10.77	10.79	10.82	10.87	10.87
Primary metal industries	12.15	12.36	12.26	12.27	12.27	12.27	12.26	12.25	12.32	12.40	12.36	12.47	12.43	12.50	12.49
Blast furnaces and basic steel products	13.97	14.23	14.07	14.04	14.13	14.13	14.06	14.06	14.18	14.33	14.27	14.38	14.40	14.47	14.33
Fabricated metal products	10.26	10.54	10.44	10.45	10.46	10.47	10.48	10.49	10.51	10.53	10.50	10.64	10.57	10.61	10.71
Machinery, except electrical	11.01	11.35	11.24	11.21	11.23	11.25	11.26	11.29	11.32	11.35	11.32	11.41	11.43	11.48	11.62
Electrical and electronic equipment	10.13	10.38	10.29	10.27	10.26	10.30	10.31	10.33	10.37	10.41	10.40	10.47	10.43	10.47	10.52
Transportation equipment	13.31	13.71	13.59	13.58	13.59	13.65	13.60	13.58	13.65	13.61	13.70	13.89	13.84	13.85	14.06
Motor vehicles and equipment	14.00	14.29	14.23	14.20	14.19	14.28	14.20	14.17	14.22	14.07	14.18	14.48	14.45	14.44	14.61
Instruments and related products	9.98	10.27	10.13	10.12	10.14	10.17	10.17	10.17	10.25	10.31	10.29	10.32	10.35	10.37	10.52
Miscellaneous manufacturing	8.01	8.31	8.20	8.22	8.23	8.23	8.21	8.24	8.24	8.29	8.20	8.39	8.38	8.49	8.61
Nondurable goods	9.43	9.73	9.61	9.62	9.62	9.66	9.65	9.68	9.70	9.77	9.71	9.80	9.80	9.86	9.92
Food and kindred products	9.10	9.33	9.25	9.27	9.26	9.33	9.32	9.34	9.37	9.35	9.28	9.32	9.27	9.38	9.48
Tobacco manufactures	14.68	15.37	14.31	14.39	14.75	15.34	15.87	16.13	16.48	16.34	15.72	14.69	14.91	15.02	15.26
Textile mill products	7.37	7.68	7.52	7.60	7.59	7.59	7.60	7.62	7.65	7.66	7.69	7.76	7.77	7.82	7.86
Apparel and other textile products	6.12	6.36	6.29	6.32	6.32	6.34	6.32	6.32	6.33	6.28	6.32	6.41	6.39	6.44	6.48
Paper and allied products	11.65	11.92	11.81	11.78	11.80	11.84	11.83	11.89	11.91	12.04	11.90	11.99	11.97	12.07	12.03
Printing and publishing	10.52	10.87	10.70	10.73	10.74	10.79	10.73	10.76	10.75	10.83	10.89	11.05	11.04	11.04	11.12
Chemicals and allied products	12.67	13.06	12.90	12.85	12.88	12.91	12.92	12.98	12.98	13.12	13.08	13.18	13.25	13.26	13.28
Petroleum and coal products	14.98	15.43	15.21	15.24	15.45	15.46	15.50	15.34	15.23	15.34	15.23	15.43	15.63	15.64	15.64
Rubber and miscellaneous plastics products	9.14	9.42	9.31	9.32	9.31	9.33	9.35	9.40	9.41	9.45	9.44	9.46	9.47	9.50	9.57
Leather and leather products	6.27	6.57	6.44	6.48	6.49	6.54	6.55	6.58	6.59	6.54	6.53	6.63	6.64	6.67	6.57
TRANSPORTATION AND PUBLIC UTILITIES	12.32	12.57	12.42	12.47	12.50	12.46	12.51	12.49	12.48	12.58	12.56	12.70	12.69	12.71	12.74
WHOLESALE TRADE	9.94	10.37	10.14	10.23	10.23	10.21	10.36	10.28	10.31	10.40	10.35	10.47	10.50	10.55	10.60
RETAIL TRADE	6.31	6.54	6.43	6.48	6.47	6.48	6.52	6.49	6.49	6.49	6.50	6.61	6.62	6.63	6.65
FINANCE, INSURANCE, AND REAL ESTATE	9.09	9.57	9.32	9.46	9.47	9.43	9.59	9.48	9.48	9.59	9.50	9.62	9.71	9.69	9.76
SERVICES	8.91	9.40	9.16	9.25	9.28	9.29	9.34	9.30	9.26	9.33	9.29	9.49	9.59	9.61	9.70

[p] = preliminary
NOTE: See "Notes on the data" for a description of the most recent benchmark revision.

17. Average weekly earnings of production or nonsupervisory workers on private nonagricultural payrolls by industry

Industry	Annual average		1988	1989											
	1988	1989[p]	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.[p]	Dec.[p]
PRIVATE SECTOR															
Current dollars	$322.36	$335.20	$330.15	$329.13	$327.57	$328.86	$334.78	$330.86	$333.38	$338.01	$335.39	$339.02	$341.39	$338.45	$340.81
Seasonally adjusted	–	–	327.92	330.25	329.39	331.04	335.39	332.16	332.85	337.21	335.27	337.98	339.37	338.39	339.48
Constant (1977) dollars	167.81	–	168.70	167.41	165.94	165.76	167.39	164.53	165.37	167.08	165.79	167.00	167.43	165.66	–
MINING	539.33	561.96	557.68	557.04	551.27	552.30	564.53	551.46	555.08	550.38	566.35	574.66	575.09	570.72	580.34
CONSTRUCTION	493.08	506.72	491.99	483.99	478.20	495.92	504.07	500.66	503.12	518.54	519.87	520.33	529.98	513.76	507.53
MANUFACTURING															
Current dollars	418.40	429.27	432.43	425.17	423.50	426.81	426.81	426.18	429.08	424.04	425.95	434.66	430.27	433.78	440.67
Constant (1977) dollars	217.80	–	220.97	216.26	214.54	215.13	213.41	211.92	212.84	209.61	210.55	214.12	211.02	212.33	–
Durable goods	447.68	457.60	463.25	455.62	452.77	455.78	455.78	454.01	457.87	449.49	453.47	462.87	457.88	460.65	470.82
Lumber and wood products	346.98	354.40	353.90	345.79	338.91	345.46	354.78	352.48	357.54	352.34	360.77	362.79	364.99	359.10	358.30
Furniture and fixtures	312.84	325.88	326.43	319.14	315.93	321.95	319.12	318.24	324.26	320.49	329.94	336.84	334.76	333.48	337.28
Stone, clay, and glass products	442.88	454.30	446.05	439.49	436.48	444.98	456.25	453.26	457.10	456.88	460.96	459.65	464.18	460.89	452.19
Primary metal industries	529.74	531.48	540.67	536.20	532.52	533.75	529.63	527.98	533.46	528.24	525.30	534.96	527.03	532.50	538.32
Blast furnaces and basic steel products	614.68	617.58	621.89	617.76	617.48	621.72	613.02	613.02	622.50	619.06	613.61	619.78	612.00	616.42	621.92
Fabricated metal products	429.89	438.46	445.79	438.90	435.14	436.60	437.02	435.34	438.27	428.57	432.60	443.69	439.71	443.50	448.75
Machinery, except electrical	469.03	481.24	488.94	477.55	477.28	479.25	478.55	477.57	482.23	475.57	472.04	482.64	480.06	486.75	500.82
Electrical and electronic equipment	415.33	423.50	430.12	422.10	416.56	417.15	419.62	417.33	423.10	416.40	423.28	430.32	427.63	431.36	437.63
Transportation equipment	568.34	581.30	591.17	582.58	584.37	591.05	584.80	579.87	581.49	566.18	572.66	594.49	571.59	573.39	603.17
Motor vehicles and equipment	609.00	615.90	633.24	619.12	621.52	631.18	620.54	613.56	611.46	582.50	589.89	628.43	621.35	618.03	623.85
Instruments and related products	414.17	424.15	425.46	420.99	420.81	419.00	420.02	414.94	423.33	420.65	419.83	423.12	425.39	431.39	440.79
Miscellaneous manufacturing	313.99	328.25	325.54	323.05	322.62	324.26	325.12	324.66	324.66	319.99	321.44	329.73	332.69	342.15	346.12
Nondurable goods	378.14	391.15	389.21	383.84	382.88	385.43	386.97	387.20	390.91	390.80	391.31	396.90	394.94	398.34	400.77
Food and kindred products	366.73	379.73	377.40	369.87	366.70	372.27	372.80	377.34	381.36	382.42	382.34	386.78	381.00	386.46	390.58
Tobacco manufactures	584.26	591.75	570.97	546.82	557.55	556.84	604.65	637.14	660.85	619.29	586.36	592.01	599.38	585.78	564.62
Textile mill products	302.91	314.88	308.32	309.32	307.40	311.19	313.12	313.94	318.24	311.00	317.60	318.16	317.79	319.06	319.90
Apparel and other textile products	226.44	235.32	233.99	232.58	233.21	233.95	234.47	233.84	236.74	230.48	234.47	237.17	237.07	239.57	237.82
Paper and allied products	503.28	516.14	519.64	508.90	506.22	509.12	509.87	512.46	514.51	516.52	514.08	523.96	520.70	527.46	529.32
Printing and publishing	399.76	410.89	410.88	404.52	404.90	408.94	405.59	402.42	402.05	405.04	411.64	423.22	418.42	420.62	425.90
Chemicals and allied products	535.94	553.74	553.41	544.84	544.82	546.09	549.10	546.46	551.65	553.66	550.67	560.15	560.48	566.20	576.35
Petroleum and coal products	665.11	678.92	673.80	662.94	679.80	667.87	686.65	673.43	679.26	679.56	665.55	685.09	704.91	695.98	664.70
Rubber and miscellaneous plastics products	381.14	390.93	391.95	390.51	387.30	387.20	388.03	390.10	391.46	385.56	388.93	392.59	393.01	395.20	399.07
Leather and leather products	235.13	249.00	246.65	244.94	245.32	244.60	247.59	247.41	255.03	247.21	250.75	252.60	251.66	249.46	251.63
TRANSPORTATION AND PUBLIC UTILITIES	484.18	495.26	490.59	490.07	488.75	488.43	497.90	490.86	494.21	500.68	494.86	500.38	499.99	496.96	500.68
WHOLESALE TRADE	378.71	395.10	387.35	387.72	386.69	386.96	395.75	389.61	392.81	398.32	394.34	398.91	402.15	401.96	404.92
RETAIL TRADE	183.62	189.01	190.33	184.03	183.10	184.68	188.43	186.91	189.51	194.05	192.40	191.03	191.32	189.62	192.85
FINANCE, INSURANCE, AND REAL ESTATE	326.33	343.56	333.66	341.51	339.03	337.59	348.12	337.49	339.38	348.12	340.10	343.43	350.53	345.93	349.41
SERVICES	290.47	306.44	298.62	301.55	300.67	301.00	306.35	301.32	302.80	308.82	305.64	309.37	314.55	313.29	315.25

– Data not available.
[p] = preliminary

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

18. Diffusion indexes of employment change, seasonally adjusted

(In percent)

Time span and year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
	Private nonagricultural payrolls, 349 industries											
Over 1-month span:												
1988	60.7	63.5	63.0	62.8	61.3	67.2	63.6	58.0	55.4	63.9	68.2	64.6
1989	68.3	60.5	61.0	58.2	55.6	59.7	55.6	57.4	47.9	55.3	59.3	53.3
1990	–	–	–	–	–	–	–	–	–	–	–	–
Over 3-month span:												
1988	64.8	65.6	69.5	70.2	71.1	71.9	71.2	64.2	65.2	70.1	73.4	74.6
1989	71.6	70.1	64.5	61.9	61.6	60.7	61.6	53.4	54.6	54.4	58.5	–
1990	–	–	–	–	–	–	–	–	–	–	–	–
Over 6-month span:												
1988	69.9	70.2	71.5	73.9	73.9	69.1	70.2	74.6	73.5	73.9	74.5	75.8
1989	75.1	69.5	68.2	66.0	63.0	57.9	57.7	59.6	55.2	–	–	–
1990	–	–	–	–	–	–	–	–	–	–	–	–
Over 12-month span:												
1988	76.2	76.1	74.8	74.6	75.8	74.9	78.1	75.5	75.5	74.8	74.9	74.1
1989	73.2	73.6	69.6	67.6	65.5	63.0	–	–	–	–	–	–
1990	–	–	–	–	–	–	–	–	–	–	–	–
	Manufacturing payrolls, 141 industries											
Over 1-month span:												
1988	58.5	56.0	55.0	59.9	58.5	61.7	59.6	51.1	49.3	62.8	64.9	58.5
1989	62.4	53.5	53.2	49.6	46.8	48.6	49.6	45.4	34.8	52.1	46.5	45.0
1990	–	–	–	–	–	–	–	–	–	–	–	–
Over 3-month span:												
1988	63.1	61.0	62.4	64.9	67.4	67.0	64.5	58.2	62.1	66.7	71.3	70.9
1989	67.4	63.8	55.7	51.8	49.3	48.6	47.9	34.0	41.8	40.1	47.2	–
1990	–	–	–	–	–	–	–	–	–	–	–	–
Over 6-month span:												
1988	66.3	66.3	67.7	69.5	66.7	64.2	66.0	70.9	68.8	69.9	71.6	74.1
1989	69.5	58.5	55.7	52.8	48.9	39.0	40.1	41.1	35.5	–	–	–
1990	–	–	–	–	–	–	–	–	–	–	–	–
Over 12-month span:												
1988	73.8	70.2	70.9	71.6	72.0	69.9	70.9	69.1	71.6	70.2	69.9	67.0
1989	63.1	63.8	57.1	53.5	47.5	43.3	–	–	–	–	–	–
1990	–	–	–	–	–	–	–	–	–	–	–	–

– Data not available.

NOTE: Figures are the percent of industries with employment increasing plus one-half of the industries with unchanged employment, where 50 percent indicates an equal balance between industries with increasing and decreasing employment. Data for the 2 most recent months shown in each span are preliminary. See the "Definitions" in this section. See "Notes on the data" for a description of the most recent benchmark revision.

19. Annual data: Employment status of the noninstitutional population

(Numbers in thousands)

Employment status	1981	1982	1983	1984	1985	1986	1987	1988	1989[p]
Noninstitutional population	171,775	173,939	175,891	178,080	179,912	182,293	184,490	186,322	188,081
Labor force:									
Total (number)	110,315	111,872	113,226	115,241	117,167	119,540	121,602	123,378	125,557
Percent of population	64.2	64.3	64.4	64.7	65.1	65.6	65.9	66.2	66.8
Employed:									
Total (number)	102,042	101,194	102,510	106,702	108,856	111,303	114,177	116,677	119,030
Percent of population	59.4	58.2	58.3	59.9	60.5	61.1	61.9	62.6	63.3
Resident Armed Forces	1,645	1,668	1,676	1,697	1,706	1,706	1,737	1,709	1,688
Civilian									
Total	100,397	99,526	100,834	105,005	107,150	109,597	112,440	114,968	117,342
Agriculture	3,368	3,401	3,383	3,321	3,179	3,163	3,208	3,169	3,199
Nonagricultural industries	97,030	96,125	97,450	101,685	103,971	106,434	109,232	111,800	114,142
Unemployed:									
Total (number)	8,273	10,678	10,717	8,539	8,312	8,237	7,425	6,701	6,528
Percent of labor force	7.5	9.5	9.5	7.4	7.1	6.9	6.1	5.4	5.2
Not in labor force (number)	61,460	62,067	62,665	62,839	62,744	62,752	62,888	62,944	62,523

20. Annual data: Employment levels by industry

(Numbers in thousands)

Industry	1981	1982	1983	1984	1985	1986	1987	1988	1989[p]
Total employment	91,156	89,566	90,200	94,496	97,519	99,525	102,200	105,584	108,573
Private sector	75,126	73,729	74,330	78,472	81,125	82,832	85,190	88,212	90,847
Goods-producing	25,497	23,813	23,334	24,727	24,859	24,558	24,708	25,249	25,634
Mining	1,139	1,128	952	966	927	777	717	721	722
Construction	4,188	3,905	3,948	4,383	4,673	4,816	4,967	5,125	5,302
Manufacturing	20,170	18,781	18,434	19,378	19,260	18,965	19,024	19,403	19,611
Service-producing	65,659	65,753	66,866	69,769	72,660	74,967	77,492	80,335	82,938
Transportation and public utilities	5,165	5,082	4,954	5,159	5,238	5,255	5,372	5,548	5,703
Wholesale trade	5,358	5,278	5,268	5,555	5,717	5,753	5,844	6,029	6,234
Retail trade	15,189	15,179	15,613	16,545	17,356	17,930	18,483	19,110	19,573
Finance, insurance, and real estate	5,298	5,341	5,468	5,689	5,955	6,283	6,547	6,676	6,814
Services	18,619	19,036	19,694	20,797	22,000	23,053	24,236	25,600	26,889
Government	16,031	15,837	15,869	16,024	16,394	16,693	17,010	17,372	17,726
Federal	2,772	2,739	2,774	2,807	2,875	2,899	2,943	2,971	2,988
State	3,640	3,640	3,662	3,734	3,832	3,893	3,967	4,063	4,136
Local	9,619	9,458	9,434	9,482	9,687	9,901	10,100	10,339	10,603

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

21. Annual data: Average hours and earnings of production or nonsupervisory workers on nonagricultural payrolls, by industry

Industry	1981	1982	1983	1984	1985	1986	1987	1988	1989[p]
Private sector:									
Average weekly hours	35.2	34.8	35.0	35.2	34.9	34.8	34.8	34.7	34.7
Average hourly earnings (in dollars)	7.25	7.68	8.02	8.32	8.57	8.76	8.98	9.29	9.66
Average weekly earnings (in dollars)	255.20	267.26	280.70	292.86	299.09	304.85	312.50	322.36	335.20
Mining:									
Average weekly hours	43.7	42.7	42.5	43.3	43.4	42.2	42.4	42.3	42.8
Average hourly earnings (in dollars)	10.04	10.77	11.28	11.63	11.98	12.46	12.54	12.75	13.13
Average weekly earnings (in dollars)	438.75	459.88	479.40	503.58	519.93	525.81	531.70	539.33	561.96
Construction:									
Average weekly hours	36.9	36.7	37.1	37.8	37.7	37.4	37.8	37.9	37.9
Average hourly earnings (in dollars)	10.82	11.63	11.94	12.13	12.32	12.48	12.71	13.01	13.37
Average weekly earnings (in dollars)	399.26	426.82	442.97	458.51	464.46	466.75	480.44	493.08	506.72
Manufacturing:									
Average weekly hours	39.8	38.9	40.1	40.7	40.5	40.7	41.0	41.1	41.0
Average hourly earnings (in dollars)	7.99	8.49	8.83	9.19	9.54	9.73	9.91	10.18	10.47
Average weekly earnings (in dollars)	318.00	330.26	354.08	374.03	386.37	396.01	406.31	418.40	429.27
Transportation and public utilities:									
Average weekly hours	39.4	39.0	39.0	39.4	39.5	39.2	39.2	39.3	39.4
Average hourly earnings (in dollars)	9.70	10.32	10.79	11.12	11.40	11.70	12.03	12.32	12.57
Average weekly earnings (in dollars)	382.18	402.48	420.81	438.13	450.30	458.64	471.58	484.18	495.26
Wholesale trade:									
Average weekly hours	38.5	38.3	38.5	38.5	38.4	38.3	38.1	38.1	38.1
Average hourly earnings (in dollars)	7.56	8.09	8.55	8.89	9.16	9.35	9.60	9.94	10.37
Average weekly earnings (in dollars)	291.06	309.85	329.18	342.27	351.74	358.11	365.76	378.71	395.10
Retail trade:									
Average weekly hours	30.1	29.9	29.8	29.8	29.4	29.2	29.2	29.1	28.9
Average hourly earnings (in dollars)	5.25	5.48	5.74	5.85	5.94	6.03	6.12	6.31	6.54
Average weekly earnings (in dollars)	158.03	163.85	171.05	174.33	174.64	176.08	178.70	183.62	189.01
Finance, insurance, and real estate:									
Average weekly hours	36.3	36.2	36.2	36.5	36.4	36.4	36.3	35.9	35.9
Average hourly earnings (in dollars)	6.31	6.78	7.29	7.63	7.94	8.36	8.73	9.09	9.57
Average weekly earnings (in dollars)	229.05	245.44	263.90	278.50	289.02	304.30	316.90	326.33	343.56
Services:									
Average weekly hours	32.6	32.6	32.7	32.6	32.5	32.5	32.5	32.6	32.6
Average hourly earnings (in dollars)	6.41	6.92	7.31	7.59	7.90	8.18	8.49	8.91	9.40
Average weekly earnings (in dollars)	208.97	225.59	239.04	247.43	256.75	265.85	275.93	290.47	306.44

22. Employment Cost Index, compensation,[1] by occupation and industry group

(June 1981=100)

Series	1987		1988				1989			Percent change	
	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	3 months ended	12 months ended
										Sept. 1989	
Civilian workers [2]	137.5	138.6	140.6	142.1	144.0	145.5	147.3	148.9	151.3	1.6	5.1
Workers, by occupational group:											
White-collar workers	141.2	142.2	144.2	145.7	147.9	149.7	151.9	153.4	156.4	2.0	5.7
Blue-collar workers	131.3	132.5	134.7	136.2	137.2	138.2	139.6	141.3	142.9	1.1	4.2
Service occupations	139.9	140.8	142.9	144.3	147.2	148.5	150.0	151.2	153.7	1.7	4.4
Workers, by industry division:											
Goods-producing	132.2	133.5	135.8	137.3	138.2	139.3	140.7	142.3	143.9	1.1	4.1
Manufacturing	132.7	134.1	136.8	138.1	139.0	140.1	141.9	143.5	145.1	1.1	4.4
Service-producing	140.8	141.7	143.6	145.1	147.6	149.2	151.4	152.9	155.9	2.0	5.6
Services	149.2	150.6	152.8	153.8	157.7	159.7	161.8	163.1	167.5	2.7	6.2
Health services	–	–	–	–	–	–	–	–	–	2.2	6.7
Hospitals	–	–	–	–	–	–	–	–	–	2.3	7.0
Public administration [3]	146.4	148.1	150.3	151.2	154.0	154.4	156.7	157.9	161.8	2.5	5.1
Nonmanufacturing	139.6	140.5	142.3	143.9	146.1	147.7	149.7	151.2	154.0	1.9	5.4
Private industry workers	135.1	136.0	138.1	139.8	141.2	142.6	144.4	146.1	147.9	1.2	4.7
Excluding sales occupations	135.5	136.6	138.7	140.2	141.7	142.9	144.7	146.2	147.9	1.2	4.4
Workers, by occupational group:											
White-collar workers	138.5	139.3	141.2	143.0	144.6	146.3	148.6	150.3	152.4	1.4	5.4
Excluding sales occupations	140.0	141.1	143.0	144.6	146.4	147.6	149.9	151.4	153.3	1.3	4.7
Professional specialty and technical occupations	–	–	–	–	–	–	–	–	–	1.8	5.0
Executive, administrative, and managerial occupations	–	–	–	–	–	–	–	–	–	.9	4.5
Sales occupations	–	–	–	–	–	–	–	–	–	1.9	8.4
Administrative support occupations, including clerical	–	–	–	–	–	–	–	–	–	1.2	4.7
Blue-collar workers	130.6	131.8	134.1	135.6	136.5	137.6	138.9	140.6	142.2	1.1	4.2
Precision production, craft, and repair occupations	–	–	–	–	–	–	–	–	–	1.2	4.0
Machine operators, assemblers, and inspectors	–	–	–	–	–	–	–	–	–	.9	4.5
Transportation and material moving occupations	–	–	–	–	–	–	–	–	–	1.2	3.3
Handlers, equipment cleaners, helpers, and laborers	–	–	–	–	–	–	–	–	–	1.3	4.4
Service occupations	135.9	136.7	138.6	140.1	142.2	143.9	145.4	146.5	148.1	1.1	4.1
Workers, by industry division:											
Goods-producing	131.9	133.2	135.6	137.1	137.9	139.0	140.4	142.0	143.6	1.1	4.1
Excluding sales occupations	131.6	132.9	135.2	136.8	137.6	138.7	140.2	141.7	143.3	1.1	4.1
Construction	–	–	–	–	–	–	–	–	–	1.2	4.0
Manufacturing	132.7	134.1	136.8	138.1	139.0	140.1	141.9	143.5	145.1	1.1	4.4
Durables	–	–	–	–	–	–	–	–	–	1.1	4.1
Nondurables	–	–	–	–	–	–	–	–	–	1.2	4.9
Service-producing	137.7	138.4	140.2	142.1	143.8	145.5	147.7	149.5	151.5	1.3	5.4
Excluding sales occupations	139.1	140.0	141.9	143.5	145.4	146.7	148.8	150.4	152.2	1.2	4.7
Transportation and public utilities	–	–	–	–	–	–	–	–	–	.7	3.3
Transportation	–	–	–	–	–	–	–	–	–	.5	3.0
Public utilities	–	–	–	–	–	–	–	–	–	1.0	3.8
Communications	–	–	–	–	–	–	–	–	–	1.0	–
Electric, gas, and sanitary services	–	–	–	–	–	–	–	–	–	1.0	–
Wholesale and retail trade	–	–	–	–	–	–	–	–	–	1.6	4.9
Excluding sales occupations	–	–	–	–	–	–	–	–	–	1.3	4.1
Wholesale trade	–	–	–	–	–	–	–	–	–	2.6	7.3
Excluding sales occupations	–	–	–	–	–	–	–	–	–	1.8	4.8
Retail trade	–	–	–	–	–	–	–	–	–	1.1	3.9
Food stores	–	–	–	–	–	–	–	–	–	.8	–
Finance, insurance, and real estate	–	–	–	–	–	–	–	–	–	.4	8.0
Excluding sales occupations	–	–	–	–	–	–	–	–	–	.1	4.8
Banking, savings and loan, and other credit agencies	–	–	–	–	–	–	–	–	–	.6	3.7
Insurance	–	–	–	–	–	–	–	–	–	–.1	–
Service	–	–	–	–	–	–	–	–	–	1.8	5.6
Business services	–	–	–	–	–	–	–	–	–	.7	4.7
Health services	–	–	–	–	–	–	–	–	–	1.9	6.6
Hospitals	–	–	–	–	–	–	–	–	–	1.9	7.1
Nonmanufacturing	136.4	137.1	138.9	140.8	142.4	143.9	145.9	147.6	149.5	1.3	5.0
State and local government workers	149.7	151.1	153.1	153.6	157.8	159.6	161.5	162.5	167.9	3.3	6.4
Workers, by occupational group:											
White-collar workers	151.2	152.7	154.8	155.2	159.6	161.8	163.7	164.6	170.5	3.6	6.8
Blue-collar workers	143.3	144.3	145.9	145.9	148.4	149.1	151.9	153.0	156.2	2.1	5.3

See footnotes at end of table.

22. Continued—Employment Cost Index, compensation,[1] by occupation and industry group

(June 1981=100)

Series	1987		1988				1989			Percent change	
	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	3 months ended	12 months ended
										Sept. 1989	
Workers, by industry division:											
Services	151.8	153.1	155.2	155.6	160.5	163.0	164.6	165.5	171.8	3.8	7.0
Hospitals and other services[4]	145.1	146.3	150.3	150.4	153.2	155.2	157.2	158.7	162.6	2.5	6.1
Health services	–	–	–	–	–	–	–	–	–	3.1	6.8
Schools	154.1	155.5	156.8	157.3	163.1	165.7	167.2	167.8	175.1	4.4	7.4
Elementary and secondary	156.5	157.8	158.9	159.4	165.4	168.3	169.3	169.9	177.7	4.6	7.4
Public administration[3]	146.4	148.1	150.3	151.2	154.0	154.4	156.7	157.9	161.8	2.5	5.1

[1] Cost (cents per hour worked) measured in the Employment Cost Index consists of wages, salaries, and employer cost of employee benefits.
[2] Consist of private industry workers (excluding farm and household workers) and State and local government (excluding Federal Government) workers.
[3] Consist of legislative, judicial, administrative, and regulatory activities.
[4] Includes, for example, library, social, and health services.
– Data not available.

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

(June 1981=100)

Series	1987		1988				1989			Percent change	
	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	3 months ended	12 months ended
										Sept. 1989	
Civilian workers [1]	135.2	136.1	137.4	138.7	140.5	141.9	143.4	144.6	146.9	1.6	4.6
Workers, by occupational group:											
White-collar workers	139.4	140.2	141.5	143.0	145.2	146.8	148.6	149.8	152.6	1.9	5.1
Blue-collar workers	128.3	129.4	130.4	131.6	132.5	133.4	134.6	136.0	137.4	1.0	3.7
Service occupations	136.0	136.6	138.0	139.3	141.8	142.9	143.9	144.8	146.8	1.4	3.5
Workers, by industry division:											
Goods-producing	129.8	131.0	132.2	133.4	134.1	135.1	136.3	137.7	139.0	.9	3.7
Manufacturing	130.8	132.2	133.3	134.4	135.1	136.2	137.4	138.8	140.0	.9	3.6
Service-producing	138.5	139.2	140.5	141.9	144.2	145.8	147.5	148.7	151.4	1.8	5.0
Services	146.8	148.2	149.5	150.4	154.0	155.7	157.4	158.4	162.4	2.5	5.5
Health services	–	–	–	–	–	–	–	–	–	2.0	6.1
Hospitals	–	–	–	–	–	–	–	–	–	2.2	6.5
Public administration [2]	142.6	143.8	145.5	146.4	148.9	149.4	150.9	151.8	155.0	2.1	4.1
Nonmanufacturing	137.1	137.8	139.0	140.5	142.7	144.1	145.8	147.0	149.6	1.8	4.8
Private industry workers	133.0	133.8	135.1	136.6	137.9	139.3	140.8	142.2	143.9	1.2	4.4
Excluding sales occupations	133.6	134.7	135.9	137.2	138.6	139.7	141.2	142.5	144.0	1.1	3.9
Workers, by occupational group:											
White-collar workers	137.0	137.6	139.0	140.8	142.4	144.0	145.9	147.3	149.3	1.4	4.8
Excluding sales occupations	139.1	140.1	141.5	142.9	144.7	146.0	147.8	149.0	150.8	1.2	4.2
Professional specialty and technical occupations	141.2	142.6	144.0	145.8	148.1	148.9	151.0	152.1	154.6	1.6	4.4
Executive, administrative, and managerial occupations	138.6	139.2	139.9	141.3	142.5	144.4	146.2	147.3	148.5	.8	4.2
Sales occupations	127.0	126.1	127.5	130.8	131.5	134.4	136.7	138.7	141.6	2.1	7.7
Administrative support occupations, including clerical	137.1	138.1	140.2	141.2	143.2	144.1	146.0	147.4	149.0	1.1	4.1
Blue-collar workers	127.7	128.9	129.9	131.1	131.9	132.9	134.0	135.4	136.7	1.0	3.6
Precision production, craft, and repair occupations	130.2	131.1	132.1	133.4	134.0	134.9	136.1	137.8	139.2	1.0	3.9
Machine operators, assemblers, and inspectors	127.5	129.2	129.9	131.2	131.9	133.3	134.5	135.9	136.7	.6	3.6
Transportation and material moving occupations	122.3	122.9	123.7	125.4	126.7	126.9	127.8	128.7	130.2	1.2	2.8
Handlers, equipment cleaners, helpers, and laborers	123.7	125.0	126.7	127.5	128.4	129.3	130.4	131.6	133.0	1.1	3.6
Service occupations	132.6	133.2	134.5	135.8	137.6	139.1	140.0	140.9	142.1	.9	3.3
Workers, by industry division:											
Goods-producing	129.6	130.8	132.0	133.2	133.9	134.9	136.1	137.4	138.8	1.0	3.7
Excluding sales occupations	129.5	130.8	131.8	133.2	133.8	134.9	136.1	137.4	138.8	1.0	3.7
Construction	123.8	124.7	125.9	127.6	128.6	129.4	130.4	131.6	133.0	1.1	3.4

See footnotes at end of table.

23.Continued— Employment Cost Index, wages and salaries, by occupation and industry group

(June 1981=100)

Series	1987		1988				1989			Percent change	
	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	3 months ended	12 months ended
										Sept. 1989	
Manufacturing	130.8	132.2	133.3	134.4	135.1	136.2	137.4	138.8	140.0	0.9	3.6
Durables	129.7	131.1	132.1	133.1	133.7	134.6	135.9	137.3	138.3	.7	3.4
Nondurables	132.8	134.1	135.6	136.7	137.6	139.1	140.2	141.6	143.1	1.1	4.0
Service-producing	135.7	136.2	137.5	139.3	141.0	142.6	144.5	145.8	147.8	1.4	4.8
Excluding sales occupations	137.3	138.1	139.4	140.8	142.7	143.9	145.7	146.9	148.6	1.2	4.1
Transportation and public utilities	130.0	130.2	131.3	132.5	133.5	133.4	134.6	135.3	136.3	.7	2.1
Transportation	–	–	–	–	–	–	–	–	–	.6	1.5
Public utilities	–	–	–	–	–	–	–	–	–	1.1	2.8
Communications	–	–	–	–	–	–	–	–	–	1.1	–
Electric, gas, and sanitary services	–	–	–	–	–	–	–	–	–	1.0	–
Wholesale and retail trade	130.6	130.7	131.9	134.6	136.0	136.9	138.6	139.9	142.1	1.6	4.5
Excluding sales occupations	131.7	132.3	133.4	135.2	136.5	137.8	139.2	140.0	141.6	1.1	3.7
Wholesale trade	137.8	138.5	139.0	141.7	143.2	143.6	147.5	149.0	153.2	2.8	7.0
Excluding sales occupations	134.9	136.0	136.8	138.2	139.6	140.4	141.8	142.9	145.3	1.7	4.1
Retail trade	127.8	127.7	129.2	131.7	133.2	134.3	135.1	136.3	137.7	1.0	3.4
Food stores	–	–	–	–	–	–	–	–	–	.4	–
Finance, insurance, and real estate	131.8	131.6	132.9	134.9	134.9	139.9	142.7	145.2	146.0	.6	8.2
Excluding sales occupations	131.8	131.6	132.9	134.9	134.9	139.9	142.7	145.2	146.0	.6	8.2
Banking, savings and loan, and other credit agencies	–	–	–	–	–	–	–	–	–	1.1	4.3
Insurance	–	–	–	–	–	–	–	–	–	–.4	–
Services	145.9	147.1	148.6	149.8	152.9	154.4	156.4	157.8	160.4	1.6	4.9
Business services	–	–	–	–	–	–	–	–	–	.9	4.6
Health services	–	–	–	–	–	–	–	–	–	1.9	6.1
Hospitals	–	–	–	–	–	–	–	–	–	1.9	6.6
Nonmanufacturing	134.2	134.8	136.0	137.8	139.4	140.8	142.6	143.9	145.9	1.4	4.7
State and local government workers	146.1	147.4	148.7	149.1	153.0	154.5	155.8	156.6	161.4	3.1	5.5
Workers, by occupational group:											
White-collar workers	147.7	149.3	150.5	150.8	154.9	156.8	158.0	158.7	164.1	3.4	5.9
Blue-collar workers	139.0	139.6	141.1	141.1	143.5	144.1	146.1	146.8	149.6	1.9	4.3
Workers, by industry division:											
Services	148.2	149.5	150.7	151.1	155.6	157.6	158.6	159.3	165.0	3.6	6.0
Hospitals and other services [3]	141.2	142.2	144.5	144.7	147.4	148.7	150.2	151.5	155.3	2.5	5.4
Health services	–	–	–	–	–	–	–	–	–	2.7	6.3
Schools	150.3	151.8	152.6	153.0	158.0	160.3	161.2	161.7	168.1	4.0	6.4
Elementary and secondary	152.0	153.4	154.0	154.3	159.7	162.1	162.8	163.3	170.2	4.2	6.6
Public administration [2]	142.6	143.8	145.5	146.4	148.9	149.4	150.9	151.8	155.0	2.1	4.1

[1] Consists of private industry workers (excluding farm and household workers) and State and local government (excluding Federal Government) workers.
[2] Consists of legislative, judicial, administrative, and regulatory activities.
[3] Includes, for example, library, social and health services.
– Data not available.

24. Employment Cost Index, benefits, private industry workers by occupation and industry group

(June 1981 = 100)

Series	1987		1988				1989			Percent change	
	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	3 months ended	12 months ended
										Sept. 1989	
Private industry workers	140.3	141.7	146.1	148.2	149.7	151.3	154.0	156.5	158.7	1.4	6.0
Workers, by occupational group:											
White-collar workers	142.4	143.7	147.3	149.3	150.9	152.7	156.1	158.8	161.1	1.4	6.8
Blue-collar workers	137.3	138.7	144.1	146.3	147.5	148.9	150.7	152.9	155.1	1.4	5.2
Workers, by industry group:											
Goods-producing	137.4	138.8	144.1	146.1	147.3	148.6	150.7	152.7	155.0	1.5	5.2
Service-producing	143.1	144.4	148.1	150.1	151.9	153.9	157.2	160.1	162.3	1.4	6.8
Manufacturing	136.9	138.4	144.5	146.4	147.8	149.0	152.3	154.2	156.6	1.6	6.0
Nonmanufacturing	142.6	143.8	147.2	149.3	150.9	152.9	155.2	158.0	160.2	1.4	6.2

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

(June 1981 = 100)

Series	1987		1988				1989			Percent change	
	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	3 months ended	12 months ended
										Sept. 1989	
COMPENSATION											
Workers, by bargaining status[1]											
Union	132.0	133.4	135.6	136.9	137.9	138.6	139.7	141.1	142.3	0.9	3.2
Goods-producing	129.5	131.3	134.1	135.3	136.2	137.2	137.9	139.4	140.6	.9	3.2
Service-producing	135.9	136.7	138.0	139.4	140.5	140.9	142.6	143.9	145.1	.8	3.3
Manufacturing	129.5	131.5	135.0	136.2	137.0	138.2	139.9	141.3	142.5	.8	4.0
Nonmanufacturing	134.3	135.1	136.2	137.5	138.6	138.9	139.5	141.0	142.1	.8	2.5
Nonunion	136.1	136.9	138.9	140.7	142.2	143.9	146.0	147.7	149.8	1.4	5.3
Goods-producing	133.1	134.1	136.2	137.8	138.7	139.9	141.6	143.2	145.0	1.3	4.5
Service-producing	137.9	138.6	140.5	142.5	144.4	146.3	148.6	150.5	152.7	1.5	5.7
Manufacturing	134.6	135.6	137.8	139.2	140.1	141.3	143.1	144.8	146.5	1.2	4.6
Nonmanufacturing	136.8	137.5	139.4	141.5	143.2	145.0	147.3	149.1	151.2	1.4	5.6
Workers, by region [1]											
Northeast	140.3	141.9	143.7	145.9	147.8	150.4	153.5	155.5	158.3	1.8	7.1
South	134.2	135.4	137.1	139.3	140.4	141.3	142.7	144.1	145.8	1.2	3.8
Midwest (formerly North Central)	131.2	131.7	134.4	135.5	136.7	138.0	139.3	140.9	142.3	1.0	4.1
West	135.8	136.3	138.3	139.5	140.6	141.5	143.2	144.9	146.4	1.0	4.1
Workers, by area size [1]											
Metropolitan areas	135.8	136.7	138.9	140.5	142.0	143.6	145.6	147.4	149.4	1.4	5.2
Other areas	131.3	132.0	133.6	135.5	136.2	136.8	137.5	138.3	139.4	.8	2.3
WAGES AND SALARIES											
Workers, by bargaining status [1]											
Union	129.1	130.5	131.0	132.0	132.9	133.4	134.3	135.4	136.2	.6	2.5
Goods-producing	126.5	128.5	128.7	129.7	130.4	131.2	132.0	133.4	134.2	.6	2.9
Service-producing	132.9	133.6	134.4	135.4	136.7	136.8	137.8	138.4	139.3	.7	1.9
Manufacturing	127.0	129.3	129.6	130.4	131.0	132.1	133.0	134.4	135.1	.5	3.1
Nonmanufacturing	130.8	131.5	132.1	133.3	134.5	134.6	135.4	136.2	137.1	.7	1.9
Nonunion	134.3	135.0	136.4	138.1	139.5	141.1	142.9	144.4	146.3	1.3	4.9
Goods-producing	131.1	132.1	133.6	135.0	135.7	136.8	138.2	139.5	141.1	1.1	4.0
Service-producing	136.2	136.7	138.0	140.0	141.8	143.6	145.6	147.2	149.3	1.4	5.3
Manufacturing	133.0	133.9	135.5	136.7	137.4	138.6	139.9	141.4	142.8	1.0	3.9
Nonmanufacturing	134.9	135.4	136.8	138.8	140.4	142.2	144.1	145.6	147.7	1.4	5.2
Workers, by region [1]											
Northeast	138.3	139.7	140.9	142.9	144.6	147.3	150.1	152.0	154.7	1.8	7.0
South	132.1	133.0	134.0	136.1	137.1	137.8	138.9	140.0	141.7	1.2	3.4
Midwest (formerly North Central)	129.6	129.9	131.3	132.1	133.3	134.5	135.6	136.9	138.0	.8	3.5
West	133.1	133.5	134.9	136.0	137.4	138.1	139.4	140.7	141.8	.8	3.2
Workers, by area size[1]											
Metropolitan areas	133.7	134.6	135.8	137.3	138.7	140.2	141.9	143.4	145.2	1.3	4.7
Other areas	129.1	129.8	130.9	133.0	133.5	133.7	134.6	135.2	136.1	.7	1.9

[1] The indexes are calculated differently from those for the occupation and industry groups. For a detailed description of the index calculation, see the *Monthly Labor Review* Technical Note, "Estimation procedures for the Employment Cost Index," May 1982.

26. Specified compensation and wage adjustments from contract settlements, and effective wage adjustments, private industry collective bargaining situations covering 1,000 workers or more (in percent)

Measure	Annual average		Quarterly average							
	1987	1988	1987	1988				1989		
			IV	I	II	III	IV	I[p]	II[p]	III[p]
Specified adjustments:										
Total compensation [1] adjustments, [2] settlements covering 5,000 workers or more:										
First year of contract	3.0	3.1	3.4	1.8	3.1	3.4	3.5	3.2	5.0	3.9
Annual rate over life of contract	2.6	2.5	2.4	1.8	2.4	3.2	2.1	3.4	3.4	2.7
Wage adjustments, settlements covering 1,000 workers or more:										
First year of contract	2.2	2.5	2.4	2.1	2.6	2.7	2.6	3.2	3.9	3.6
Annual rate over life of contract	2.1	2.4	1.8	2.3	2.2	2.8	2.2	3.1	3.4	3.0
Effective adjustments:										
Total effective wage adjustment [3]	3.1	2.6	.8	.4	.9	.8	.5	.5	1.0	1.0
From settlements reached in period	.7	.7	.3	.1	.3	.2	.1	.1	.3	.4
Deferred from settlements reached in earlier periods	1.8	1.3	.3	.3	.5	.4	.2	.3	.5	.4
From cost-of-living-adjustments clauses	.5	.6	.2	.1	.1	.2	.2	.1	.2	.2

[1] Compensation includes wages, salaries, and employers' cost of employee benefits when contract is negotiated.
[2] Adjustments are the net result of increases, decreases, and no changes in compensation or wages.
[3] Because of rounding, total may not equal sum of parts.
[p] = preliminary.

27. Average specified compensation and wage adjustments, major collective bargaining settlements in private industry situations covering 1,000 workers or more during 4-quarter periods (in percent)

Measure	Average for four quarters ending--							
	1987	1988				1989		
	IV	I	II	III	IV	I[p]	II[p]	III[p]
Specified total compensation adjustments, settlements covering 5,000 workers or more, all industries:								
First year of contract	3.0	3.1	3.0	3.1	3.1	3.3	3.8	4.0
Annual rate over life of contract	2.6	2.5	2.3	2.5	2.5	2.6	3.0	2.8
Specified wage adjustments, settlements covering 1,000 workers or more:								
All industries:								
First year of contract	2.2	2.4	2.4	2.5	2.5	2.7	3.2	3.5
Contracts with COLA clauses	2.3	2.2	2.4	2.4	2.4	2.4	2.2	2.6
Contracts without COLA clauses	2.1	2.5	2.4	2.6	2.7	2.9	3.4	3.7
Annual rate over life of contract	2.1	2.2	2.0	2.2	2.4	2.5	2.9	3.0
Contracts with COLA clauses	1.5	1.4	1.5	1.5	1.8	1.8	1.8	2.0
Contracts without COLA clauses	2.5	2.7	2.5	2.8	2.8	2.9	3.2	3.2
Manufacturing:								
First year of contract	2.1	2.4	2.5	2.6	2.2	2.2	2.6	2.6
Contracts with COLA clauses	2.4	2.4	2.5	2.4	2.1	2.1	2.1	2.1
Contracts without COLA clauses	1.3	2.4	2.5	3.0	2.5	2.4	3.1	2.8
Annual rate over life of contract	1.3	1.5	1.6	1.9	2.1	2.1	2.4	2.5
Contracts with COLA clauses	1.0	1.0	1.3	1.4	1.8	1.8	1.7	1.7
Contracts without COLA clauses	2.1	2.7	2.5	3.1	2.6	2.7	3.1	2.9
Nonmanufacturing:								
First year of contract	2.3	2.3	2.3	2.4	2.8	3.0	3.5	3.8
Contracts with COLA clauses	1.9	1.6	2.2	2.4	2.9	2.9	3.0	3.0
Contracts without COLA clauses	2.4	2.5	2.4	2.5	2.7	3.0	3.5	3.9
Annual rate over life of contract	2.7	2.7	2.4	2.4	2.5	2.7	3.2	3.1
Contracts with COLA clauses	2.7	2.4	1.9	1.8	1.7	1.7	2.5	2.1
Contracts without COLA clauses	2.7	2.7	2.6	2.7	2.8	3.0	3.3	3.3
Construction:								
First year of contract	2.9	2.9	2.6	2.1	2.2	2.4	2.4	2.6
Contracts with COLA clauses	[1]	[1]	[2]	[2]	[2]	[2]	[2]	[1]
Contracts without COLA clauses	[1]	[1]	2.6	2.1	2.2	2.4	2.4	[1]
Annual rate over life of contract	3.1	3.1	2.7	2.4	2.6	2.7	2.9	2.9
Contracts with COLA clauses	[1]	[1]	[2]	[2]	[2]	[2]	[2]	[1]
Contracts without COLA clauses	[1]	[1]	2.7	2.4	2.6	2.7	2.9	[1]

[1] Data do not meet publication standards.
[2] Between -0.05 and 0.05 percent.
[p] = preliminary.

28. Average effective wage adjustments, private industry collective bargaining situations covering 1,000 workers or more during 4-quarter periods (in percent)

Effective wage adjustment	Average for four quarters ending--						
	1988				1989		
	I	II	III	IV	I[p]	II[p]	III[p]
For all workers:[1]							
Total	3.2	3.0	2.9	2.6	2.7	2.8	3.0
From settlements reached in period	.8	1.0	1.0	.7	.7	.7	.9
Deferred from settlements reached in earlier period	1.8	1.6	1.4	1.3	1.3	1.3	1.3
From cost-of-living-adjustments clauses	.5	.5	.5	.6	.6	.8	.8
For workers receiving changes:							
Total	3.8	3.7	3.5	3.3	3.5	3.8	4.0
From settlements reached in period	2.9	2.9	2.9	3.1	3.2	3.5	3.7
Deferred from settlements reached in earlier period	3.3	3.3	3.0	3.0	3.2	3.2	3.4
From cost-of-living-adjustments clauses	2.7	2.3	2.5	2.7	2.9	3.2	3.8

[1] Because of rounding, total may not equal sum of parts.

[p] = preliminary.

29. Specified compensation and wage adjustments from contract settlements, and effective wage adjustments, State and local government collective bargaining situations covering 1,000 workers or more (in percent)

Measure	Annual average		First 6 months 1989
	1987	1988	
Specified adjustments:			
Total compensation [1] adjustments, [2] settlements covering 5,000 workers or more:			
First year of contract	4.9	5.4	4.3
Annual rate over life of contract	4.8	5.3	4.4
Wage adjustments, settlements covering 1,000 workers or more:			
First year of contract	4.9	5.1	4.7
Annual rate over life of contract	5.1	5.3	4.7
Effective adjustments:			
Total effective wage adjustment [3]	4.9	4.7	1.6
From settlements reached in period	2.7	2.3	.5
Deferred from settlements reached in earlier periods	2.2	2.4	1.1
From cost-of-living-adjustment clauses	(4)	(4)	(4)

[1] Compensation includes wages, salaries, and employers' cost of employee benefits when contract is negotiated.

[2] Adjustments are the net result of increases, decreases, and no changes in compensation or wages.

[3] Because of rounding, total may not equal sum of parts.

[4] Less than 0.05 percent.

– Data not available.

30. Work stoppages involving 1,000 workers or more

Measure	Annual totals		1988	1989[p]										
	1987	1988	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Number of stoppages:															
Beginning in period	46	40	0	3	0	2	4	7	0	4	7	6	4	5	1
In effect during period	51	43	1	4	2	4	8	13	5	9	11	13	7	14	9
Workers involved:															
Beginning in period (in thousands)	174.4	118.0	.0	7.4	.0	30.3	6.6	54.7	.0	43.3	235.6	14.5	59.9	8.0	5.0
In effect during period (in thousands)	377.7	121.4	2.5	9.9	7.7	37.0	43.6	94.3	44.7	100.0	204.0	107.1	160.5	130.2	62.6
Days idle:															
Number (in thousands)	4,468.8	4,381.0	52.5	152.7	137.8	949.6	1,064.2	1,227.1	938.2	1,370.7	3,480.2	1,909.4	3,097.9	2,380.5	402.5
Percent of estimated working time[1]	.02	.02	.02	.01	.01	.04	.05	.05	.04	.06	.14	.08	.01	.05	.02

[1] Agricultural and government employees are included in the total employed and total working time: private household, forestry, and fishery employees are excluded. An explanation of the measurement of idleness as a percentage of the total time worked is found in "'Total economy' measure of strike idleness," *Monthly Labor Review,* October 1968, pp. 54-56.

– Data not available.

[p] = preliminary.

31. Consumer Price Indexes for All Urban Consumers and for Urban Wage Earners and Clerical Workers: U.S. city average, by expenditure category and commodity or service group

(1982-84=100, unless otherwise indicated)

Series	Annual average		1988	1989											
	1988	1989	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
CONSUMER PRICE INDEX FOR ALL URBAN CONSUMERS:															
All items	118.3	124.0	120.5	121.1	121.6	122.3	123.1	123.8	124.1	124.4	124.6	125.0	125.6	125.9	126.1
All items (1967=100)	354.3	371.3	360.9	362.7	364.1	366.2	368.8	370.8	371.7	372.7	373.1	374.6	376.2	377.0	377.6
Food and beverages	118.2	124.9	120.6	122.0	122.7	123.3	124.0	124.7	124.9	125.4	125.6	125.9	126.3	126.7	127.2
Food	118.2	125.1	120.7	122.2	122.9	123.5	124.2	124.9	125.0	125.5	125.8	126.1	126.5	126.9	127.4
Food at home	116.6	124.2	119.1	121.2	122.0	122.7	123.5	124.4	124.3	124.8	124.9	125.0	125.4	125.8	126.5
Cereals and bakery products	122.1	132.4	126.6	127.9	128.9	129.7	130.4	131.5	132.1	133.3	134.1	134.6	135.0	135.3	136.1
Meats, poultry, fish, and eggs	114.3	121.3	116.1	118.5	118.2	120.5	120.6	120.7	121.4	121.6	122.3	122.9	122.4	122.8	123.8
Dairy products	108.4	115.6	111.4	112.6	113.4	113.8	114.1	113.8	113.6	114.1	114.5	116.1	118.2	120.2	122.9
Fruits and vegetables	128.1	138.0	131.0	134.8	137.1	135.7	138.0	142.7	140.2	140.1	138.8	136.6	137.1	137.8	136.7
Other foods at home	113.1	119.1	115.3	116.6	117.8	118.1	119.0	118.9	119.2	119.7	119.7	119.7	120.3	119.9	120.1
Sugar and sweets	114.0	119.4	116.7	117.2	117.8	118.0	117.9	118.1	119.2	120.1	120.6	120.8	121.3	120.7	121.1
Fats and oils	113.1	121.2	118.5	119.6	120.5	120.4	121.6	121.6	121.6	121.6	121.7	121.3	121.6	121.0	121.6
Nonalcoholic beverages	107.5	111.3	107.8	109.6	111.3	111.3	111.8	111.5	111.6	112.3	111.2	111.0	111.8	111.2	111.0
Other prepared foods	118.0	125.5	120.7	121.9	123.0	123.7	125.2	125.2	125.5	125.9	126.7	126.7	127.2	127.3	127.6
Food away from home	121.8	127.4	124.1	124.7	125.2	125.7	126.2	126.7	127.1	127.8	128.1	128.8	129.1	129.5	129.8
Alcoholic beverages	118.6	123.5	119.9	120.3	121.1	121.8	122.3	123.1	123.5	124.0	124.5	124.8	125.2	125.5	125.6
Housing	118.5	123.0	120.2	120.7	121.1	121.5	121.6	122.1	122.9	123.9	124.2	124.3	124.4	124.5	124.9
Shelter	127.1	132.8	129.3	129.8	130.3	131.2	131.2	131.8	132.3	133.6	134.1	134.1	134.8	135.2	135.6
Renters' costs (12/82=100)	133.6	138.9	134.1	135.2	136.3	138.6	137.9	137.8	138.7	141.5	141.5	139.4	140.0	140.1	140.1
Rent, residential	127.8	132.8	130.1	130.5	130.9	131.1	131.4	131.7	132.3	133.0	133.5	133.9	134.7	135.2	135.5
Other renters' costs	134.8	140.7	130.0	132.7	136.2	144.7	140.7	139.7	141.5	150.5	148.8	139.1	139.2	138.0	137.2
Homeowners' costs (12/82=100)	131.1	137.3	134.0	134.4	134.7	135.0	135.4	136.2	136.5	137.3	138.1	138.9	139.7	140.3	140.9
Owners' equivalent rent (12/82=100)	131.1	137.4	134.1	134.5	134.8	135.1	135.5	136.3	136.6	137.4	138.2	139.0	139.9	140.5	141.0
Household insurance (12/82=100)	129.0	132.6	130.6	130.9	131.2	131.3	131.4	132.1	132.8	133.1	133.3	133.6	133.7	133.8	134.0
Maintenance and repairs	114.7	118.0	115.8	116.1	117.1	117.1	117.3	117.4	118.3	118.4	118.5	118.6	118.6	119.3	119.5
Maintenance and repair services	117.9	120.6	118.4	118.7	119.9	119.6	119.8	120.2	121.0	121.1	121.3	120.9	121.0	121.7	122.2
Maintenance and repair commodities	110.4	114.6	112.4	112.8	113.4	113.8	114.1	113.8	114.7	115.0	114.8	115.6	115.5	116.2	115.8
Fuel and other utilities	104.4	107.8	105.0	106.0	105.9	105.9	106.2	107.0	109.2	109.7	109.7	109.7	108.0	107.5	108.4
Fuels	98.0	100.9	97.4	98.7	98.6	98.5	98.8	99.6	103.2	103.7	103.7	103.5	101.0	99.9	101.2
Fuel oil, coal, and bottled gas	78.1	81.7	76.8	80.5	81.4	81.5	82.5	81.5	80.2	79.7	78.9	79.3	82.0	83.9	88.7
Gas (piped) and electricity	104.6	107.5	104.1	105.1	104.9	104.8	105.0	106.1	110.5	111.1	111.3	111.0	107.6	106.1	107.0
Other utilities and public services	122.9	127.1	125.5	125.9	126.0	125.9	126.2	127.0	127.1	127.7	127.8	128.1	127.6	127.9	128.2
Household furnishings and operations	109.4	111.2	110.6	110.9	110.9	110.5	110.7	110.8	111.1	111.4	111.4	111.7	111.9	111.9	111.7
Housefurnishings	105.1	105.5	105.9	106.0	105.9	105.1	105.0	104.7	105.1	105.5	105.2	105.7	106.1	106.0	105.5
Housekeeping supplies	114.7	120.9	117.0	117.5	117.7	118.5	119.6	120.9	121.2	121.7	122.3	122.3	122.5	122.5	123.6
Housekeeping services	114.3	117.3	115.9	116.6	116.8	116.9	117.1	117.3	117.4	117.3	117.5	117.5	117.4	117.6	117.6
Apparel and upkeep	115.4	118.6	118.0	115.3	115.3	119.3	120.9	120.4	117.8	115.0	115.0	120.0	122.7	122.1	119.2
Apparel commodities	113.7	116.7	116.3	113.3	113.3	117.5	119.3	118.6	115.8	112.9	112.8	118.2	121.1	120.4	117.1
Men's and boys' apparel	113.4	117.0	117.3	115.1	114.2	115.9	117.2	117.8	115.9	114.7	114.7	117.7	120.3	121.1	118.8
Women's and girls' apparel	114.9	116.4	116.5	111.6	111.4	119.4	121.5	119.5	114.8	109.6	109.5	119.0	123.1	121.3	116.4
Infants' and toddlers' apparel	116.4	119.1	117.3	115.6	118.8	118.5	123.6	125.4	123.9	117.9	116.7	118.0	118.3	117.2	115.3
Footwear	109.9	114.4	113.5	112.2	112.7	114.1	115.3	114.9	114.0	113.4	112.6	114.1	117.6	116.6	114.7
Other apparel commodities	116.0	122.1	119.1	119.2	120.4	120.4	121.5	121.7	121.6	122.5	124.1	124.5	123.0	123.5	122.8
Apparel services	123.7	129.4	126.7	127.3	127.8	128.5	128.9	129.9	130.0	129.4	129.5	129.7	129.8	130.8	131.3
Transportation	108.7	114.1	110.8	111.1	111.6	111.9	114.6	116.0	115.9	115.4	114.3	113.7	114.5	115.0	115.2
Private transportation	107.6	112.9	109.6	109.8	110.3	110.7	113.6	115.0	114.9	114.3	113.1	112.4	113.3	113.7	113.9
New vehicles	116.5	119.2	119.0	119.4	119.5	119.4	119.2	119.2	118.9	118.5	117.7	117.1	118.5	120.6	121.9
New cars	116.9	119.2	119.1	119.5	119.6	119.6	119.4	119.5	119.1	118.6	117.7	117.0	118.6	120.5	121.8
Used cars	118.0	120.4	120.2	120.5	120.5	120.5	120.7	121.0	121.3	121.1	120.3	119.8	119.7	120.1	119.7
Motor fuel	80.9	88.5	80.3	79.6	80.3	81.5	92.1	96.6	96.0	94.4	91.0	88.8	88.9	87.2	85.8
Gasoline	80.8	88.5	80.3	79.4	80.1	81.3	92.1	96.7	96.2	94.6	91.1	88.8	88.8	87.0	85.5
Maintenance and repair	119.7	124.9	121.5	122.4	123.3	123.5	123.8	124.3	124.5	124.8	125.4	126.2	126.7	126.7	126.9
Other private transportation	127.9	135.8	132.5	133.5	134.3	134.5	134.7	135.6	135.9	135.6	135.7	135.7	137.1	138.2	139.0
Other private transportation commodities	98.9	101.5	100.3	101.0	101.2	100.1	100.8	101.5	101.9	101.3	102.0	102.0	101.9	102.1	102.3
Other private transportation services	133.9	143.2	139.3	140.4	141.4	141.9	142.0	142.9	143.2	143.0	142.9	142.9	144.8	146.0	146.9
Public transportation	123.3	129.5	126.5	127.5	128.1	128.2	128.4	128.9	129.6	129.7	130.1	130.1	130.6	131.3	131.7
Medical care	138.6	149.3	142.3	143.8	145.2	146.1	146.8	147.5	148.5	149.7	150.7	151.7	152.7	153.9	154.4
Medical care commodities	139.9	150.8	144.2	145.0	145.8	147.2	148.4	150.0	151.0	151.4	152.1	153.3	154.1	155.3	156.0
Medical care services	138.3	148.9	141.9	143.5	145.1	145.9	146.4	146.9	147.9	149.3	150.4	151.3	152.3	153.6	154.1
Professional services	137.5	146.4	140.8	142.2	143.5	144.4	144.9	145.2	146.1	147.0	147.5	148.0	148.6	149.3	149.9
Hospital and related services	143.9	160.5	150.8	152.9	155.1	155.8	156.6	157.3	158.5	160.8	162.7	164.3	166.0	167.9	167.9
Entertainment	120.3	126.5	122.8	123.8	124.3	124.7	125.4	125.5	126.2	126.9	127.3	127.8	128.4	128.6	129.1
Entertainment commodities	115.0	119.8	117.5	118.1	118.4	118.5	119.0	119.3	119.5	119.9	120.0	120.5	121.2	121.3	121.6
Entertainment services	127.7	135.4	130.0	131.6	132.3	132.9	134.0	133.9	135.0	136.1	136.7	137.2	137.8	138.2	138.8
Other goods and services	137.0	147.7	141.3	143.4	144.1	144.4	144.7	145.4	146.3	147.3	148.7	151.2	151.8	151.9	152.9
Tobacco products	145.8	164.4	149.9	157.0	158.5	159.2	159.5	161.1	164.2	167.5	168.8	168.2	168.8	168.6	171.9
Personal care	119.4	125.0	122.4	122.8	123.2	123.6	124.1	124.8	124.5	124.8	125.6	125.9	126.4	127.0	127.1
Toilet goods and personal care appliances	118.1	123.2	121.6	121.7	121.9	122.4	122.6	122.7	122.2	122.8	123.8	124.0	124.4	125.1	124.7
Personal care services	120.7	126.8	123.1	123.8	124.4	124.8	125.4	126.8	127.0	126.9	127.3	127.7	128.5	129.0	129.7
Personal and educational expenses	147.9	158.1	153.0	154.0	154.4	154.6	154.9	155.2	155.8	156.3	158.1	162.9	163.5	163.5	164.0
School books and supplies	148.1	158.0	152.2	153.3	155.0	155.1	155.2	155.2	155.6	155.8	156.6	163.0	163.6	163.9	164.0
Personal and educational services	148.0	158.3	153.2	154.2	154.6	154.7	155.1	155.4	156.0	156.5	158.4	163.1	163.7	163.7	164.2

31. Continued— Consumer Price Indexes for All Urban Consumers and for Urban Wage Earners and Clerical Workers: U.S. city average, by expenditure category and commodity or service group

(1982-84=100, unless otherwise indicated)

Series	Annual average		1988	1989											
	1988	1989	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
All items	118.3	124.0	120.5	121.1	121.6	122.3	123.1	123.8	124.1	124.4	124.6	125.0	125.6	125.9	126.1
Commodities	111.5	116.7	113.5	113.9	114.3	115.2	116.7	117.5	117.2	117.0	116.7	117.3	118.1	118.3	118.2
Food and beverages	118.2	124.9	120.6	122.0	122.7	123.3	124.0	124.7	124.9	125.4	125.6	125.9	126.3	126.7	127.2
Commodities less food and beverages	107.3	111.6	109.0	108.9	109.1	110.1	112.2	112.9	112.4	111.7	111.1	111.9	113.0	113.0	112.6
Nondurables less food and beverages	105.2	111.2	106.9	106.4	106.9	108.9	112.5	113.6	112.7	111.6	110.9	112.4	113.6	113.1	112.0
Apparel commodities	113.7	116.7	116.3	113.3	113.3	117.5	119.3	118.6	115.8	112.9	112.8	118.2	121.1	120.4	117.1
Nondurables less food, beverages, and apparel	103.2	111.0	104.5	105.3	106.1	106.9	111.5	113.6	113.7	113.6	112.5	112.0	112.4	111.9	112.0
Durables	110.4	112.2	112.2	112.5	112.4	111.9	111.8	111.9	112.1	111.9	111.4	111.3	112.1	113.0	113.5
Services	125.7	131.9	128.1	128.9	129.4	130.0	130.2	130.8	131.6	132.5	133.1	133.4	133.7	134.1	134.6
Rent of shelter (12/82=100)	132.0	138.0	134.3	134.8	135.4	136.3	136.3	136.9	137.4	138.8	139.3	139.3	140.1	140.5	140.9
Household services less rent of' shelter (12/82=100)	115.3	118.7	116.2	117.0	116.9	116.9	117.2	118.0	120.1	120.6	120.7	120.7	119.0	118.5	119.0
Transportation services	128.0	135.6	132.1	133.0	133.9	134.3	134.5	135.2	135.6	135.5	135.7	135.9	137.1	138.0	138.6
Medical care services	138.3	148.9	141.9	143.5	145.1	145.9	146.4	146.9	147.9	149.3	150.4	151.3	152.3	153.6	154.1
Other services	132.6	140.9	136.2	137.3	137.8	138.2	138.8	139.2	139.8	140.4	141.5	143.8	144.3	144.6	145.1
Special indexes:															
All items less food	118.3	123.7	120.4	120.8	121.3	122.0	122.9	123.5	123.9	124.2	124.3	124.8	125.4	125.6	125.8
All items less shelter	115.9	121.6	118.1	118.7	119.2	119.9	121.0	121.7	122.0	122.0	122.0	122.6	123.1	123.3	123.5
All items less homeowners' costs (12/82=100)	119.5	125.3	121.6	122.3	122.9	123.7	124.7	125.3	125.6	125.9	125.9	126.3	126.8	127.0	127.1
All items less medical care	117.0	122.4	119.1	119.7	120.1	120.8	121.7	122.3	122.6	122.9	123.0	123.4	124.0	124.2	124.4
Commodities less food	107.7	112.0	109.4	109.2	109.5	110.5	112.5	113.2	112.8	112.1	111.6	112.4	113.4	113.4	113.0
Nondurables less food	105.8	111.7	107.5	107.1	107.6	109.4	112.8	113.9	113.1	112.2	111.5	112.9	114.1	113.6	112.6
Nondurables less food and apparel	104.0	111.3	105.3	106.0	106.8	107.6	111.7	113.6	113.8	113.7	112.8	112.4	112.8	112.4	112.5
Nondurables	111.8	118.2	113.9	114.3	114.9	116.2	118.4	119.3	119.0	118.7	118.4	119.3	120.1	120.0	119.8
Services less rent of' shelter (12/82=100)	128.3	135.1	131.1	132.1	132.7	133.0	133.4	134.0	135.2	135.8	136.3	137.0	137.0	137.2	137.8
Services less medical care	124.3	130.1	126.6	127.3	127.8	128.3	128.5	129.1	129.9	130.8	131.3	131.6	131.8	132.1	132.6
Energy	89.3	94.3	88.7	89.0	89.3	89.8	94.9	97.4	99.0	98.5	97.0	95.9	94.6	93.2	93.2
All items less energy	122.3	128.1	124.8	125.5	126.0	126.7	127.1	127.6	127.7	128.2	128.5	129.1	129.9	130.4	130.6
All items less food and energy	123.4	129.0	126.0	126.4	126.9	127.6	128.0	128.3	128.5	129.0	129.3	130.0	130.9	131.3	131.5
Commodities less food and energy	115.8	119.6	118.0	117.9	118.1	119.0	119.6	119.7	119.3	118.8	118.8	120.1	121.2	121.6	121.2
Energy commodities	80.8	87.9	80.1	79.9	80.6	81.7	91.2	95.0	94.4	92.9	89.8	88.0	88.3	87.0	86.4
Services less energy	127.9	134.4	130.6	131.4	132.0	132.7	132.9	133.4	133.9	134.8	135.4	135.8	136.5	137.0	137.5
Purchasing power of the consumer dollar:															
1982-84=$1.00	84.6	80.7	83.0	82.6	82.3	81.8	81.2	80.8	80.6	80.4	80.3	80.0	79.6	79.5	79.3
1967=$1.00	28.2	26.9	27.7	27.6	27.5	27.3	27.1	27.0	26.9	26.8	26.8	26.7	26.6	26.5	26.5
CONSUMER PRICE INDEX FOR URBAN WAGE EARNERS AND CLERICAL WORKERS:															
All items	117.0	122.6	119.2	119.7	120.2	120.8	121.8	122.5	122.8	123.2	123.2	123.6	124.2	124.4	124.6
All items (1967=100)	348.4	365.2	355.0	356.7	358.0	360.0	362.9	364.9	365.9	366.8	367.0	368.3	369.8	370.6	371.1
Food and beverages	117.9	124.6	120.3	121.7	122.4	123.1	123.7	124.4	124.6	125.1	125.3	125.6	126.0	126.4	126.9
Food	117.9	124.8	120.4	121.9	122.6	123.3	123.9	124.6	124.8	125.3	125.5	125.8	126.2	126.6	127.1
Food at home	116.2	123.9	118.8	120.8	121.7	122.4	123.2	124.0	123.9	124.4	124.6	124.6	125.0	125.5	126.2
Cereals and bakery products	122.2	132.4	126.7	128.0	129.0	129.7	130.5	131.5	132.0	133.3	134.1	134.6	135.1	135.3	136.0
Meats, poultry, fish, and eggs	114.1	121.2	115.8	118.3	118.0	120.3	120.4	120.5	121.2	121.5	122.1	122.7	122.2	122.9	123.8
Dairy products	108.1	115.4	111.2	112.4	113.3	113.6	114.0	113.6	113.3	113.8	114.2	115.9	118.0	120.0	122.8
Fruits and vegetables	127.6	137.6	130.8	134.3	136.8	135.4	137.7	142.5	140.0	139.9	138.6	136.1	136.5	137.0	135.8
Other foods at home	113.0	119.0	115.1	116.5	117.7	118.0	118.9	118.8	119.0	119.6	119.6	119.6	120.2	119.8	120.1
Sugar and sweets	113.9	119.5	116.7	117.3	117.8	118.0	118.1	118.4	119.2	120.1	120.6	120.9	121.4	120.7	121.1
Fats and oils	113.0	121.1	118.3	119.5	120.4	120.3	121.5	121.5	121.5	121.5	121.6	121.2	121.5	120.9	121.5
Nonalcoholic beverages	107.7	111.4	107.8	109.8	111.4	111.4	111.9	111.5	111.6	112.2	111.1	111.0	112.0	111.3	111.2
Other prepared foods	117.8	125.3	120.5	121.7	122.8	123.6	125.0	125.0	125.3	125.7	126.5	126.6	127.0	127.1	127.4
Food away from home	121.6	127.3	124.0	124.6	125.1	125.5	126.1	126.5	127.0	127.6	128.0	128.6	129.0	129.4	129.7
Alcoholic beverages	118.3	123.1	119.5	119.8	120.8	121.4	122.0	122.8	123.2	123.6	124.0	124.4	124.7	125.1	125.2
Housing	116.8	121.2	118.5	119.0	119.3	119.6	119.8	120.3	121.1	122.1	122.4	122.5	122.5	122.7	123.1
Shelter	124.3	129.8	126.5	126.9	127.4	128.1	128.3	128.8	129.3	130.5	131.0	131.1	131.8	132.3	132.6
Renters' costs (12/84=100)	119.2	123.9	120.0	120.7	121.5	123.0	122.7	122.8	123.6	125.7	125.9	124.6	125.1	125.3	125.4
Rent, residential	127.5	132.3	129.7	130.1	130.4	130.7	131.0	131.2	131.8	132.5	133.0	133.4	134.2	134.6	135.0
Other renters' costs	135.2	141.5	129.2	131.8	135.2	144.2	140.9	139.9	142.3	153.7	152.0	140.9	140.4	139.1	137.6
Homeowners' costs (12/84=100)	119.5	125.1	122.2	122.5	122.8	123.0	123.4	124.1	124.4	125.2	125.8	126.6	127.3	127.8	128.3
Owners' equivalent rent (12/84=100)	119.5	125.2	122.2	122.5	122.8	123.1	123.5	124.2	124.5	125.2	125.9	126.7	127.4	128.0	128.5
Household insurance (12/84=100)	118.2	121.4	119.6	119.9	120.0	120.1	120.2	120.9	121.5	121.8	122.0	122.4	122.5	122.5	122.7
Maintenance and repairs	114.0	117.6	115.2	115.6	116.7	116.7	116.7	116.9	117.9	118.2	117.9	118.0	118.1	118.9	119.0
Maintenance and repair services	117.7	120.4	117.8	118.3	119.5	119.2	119.3	119.8	121.0	121.2	121.3	120.7	120.9	121.7	122.4
Maintenance and repair commodities	108.3	112.6	110.6	110.9	111.8	112.1	112.1	112.0	112.7	113.2	112.5	113.3	113.4	114.0	113.6
Fuel and other utilities	104.1	107.5	104.8	105.7	105.7	105.7	105.9	106.7	109.0	109.4	109.5	109.5	107.6	107.2	108.0
Fuels	97.7	100.6	97.2	98.4	98.3	98.2	98.5	99.2	103.0	103.4	103.5	103.3	100.6	99.5	100.7
Fuel oil, coal, and bottled gas	77.9	81.4	76.7	80.3	81.0	81.2	82.1	81.2	80.1	79.6	78.8	79.2	81.8	83.6	88.1
Gas (piped) and electricity	104.4	107.3	103.9	104.8	104.6	104.6	104.8	105.8	110.3	110.8	111.0	110.7	107.2	105.8	106.7
Other utilities and public services	122.9	127.4	125.6	126.2	126.3	126.2	126.5	127.2	127.4	127.9	128.0	128.3	127.8	128.2	128.4
Household furnishings and operations	108.9	110.6	110.2	110.4	110.4	110.0	110.1	110.1	110.4	110.8	110.8	111.0	111.2	111.2	111.1
Housefurnishings	104.5	104.8	105.4	105.5	105.4	104.5	104.3	104.0	104.4	104.8	104.6	105.0	105.3	105.2	104.7
Housekeeping supplies	115.1	121.2	117.4	117.9	118.1	118.9	120.0	121.2	121.6	122.0	122.6	122.6	122.7	122.7	123.8
Housekeeping services	115.0	117.4	116.5	116.9	117.0	117.1	117.2	117.4	117.6	117.4	117.6	117.6	117.5	117.7	117.8
Apparel and upkeep	114.9	117.9	117.6	114.8	114.7	118.4	120.0	119.4	116.9	114.4	114.5	119.3	122.0	121.4	118.5

31. Continued— Consumer Price Indexes for All Urban Consumers and for Urban Wage Earners and Clerical Workers: U.S. city average, by expenditure category and commodity or service group

(1982-84=100, unless otherwise indicated)

Series	Annual average		1988	1989										
	1988	1989	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Apparel commodities	113.4	116.1	116.0	113.0	112.8	116.7	118.4	117.7	115.0	112.3	112.4	117.6	120.5	119.8	116.6
Men's and boys' apparel	112.8	116.1	116.5	114.4	113.4	115.1	116.4	116.9	115.0	113.7	113.9	116.9	119.6	120.2	118.0
Women's and girls' apparel	114.5	115.5	116.2	111.3	110.7	118.3	120.2	118.1	113.5	108.7	108.9	118.1	122.0	120.5	115.5
Infants' and toddlers' apparel	118.6	122.5	120.3	118.5	121.8	121.7	126.7	128.3	126.7	121.9	120.4	122.0	122.2	121.0	119.3
Footwear	110.4	114.7	114.0	112.8	113.1	114.1	115.2	115.0	114.1	113.9	113.1	114.5	118.0	117.0	115.4
Other apparel commodities	114.9	120.5	117.8	117.8	119.0	118.5	119.6	119.8	119.8	120.7	122.4	122.5	121.9	122.4	121.5
Apparel services	123.0	128.6	125.8	126.4	126.8	127.7	128.1	128.9	129.0	128.6	128.7	128.8	129.0	130.0	130.6
Transportation	108.3	113.9	110.4	110.7	111.2	111.6	114.5	116.0	116.0	115.4	114.2	113.5	114.3	114.6	114.8
Private transportation	107.5	113.0	109.5	109.7	110.3	110.6	113.7	115.3	115.2	114.6	113.3	112.6	113.3	113.7	113.8
New vehicles	116.2	119.0	118.8	119.2	119.3	119.2	118.9	119.0	118.7	118.3	117.6	117.1	118.4	120.5	122.0
New cars	116.6	119.1	118.9	119.3	119.5	119.4	119.2	119.3	118.9	118.4	117.6	116.9	118.4	120.2	121.7
Used cars	117.9	120.3	120.1	120.3	120.4	120.3	120.5	120.9	121.1	120.9	120.1	119.6	119.5	119.9	119.5
Motor fuel	80.9	88.6	80.4	79.6	80.3	81.5	92.3	96.7	96.1	94.5	91.0	89.0	89.1	87.3	85.9
Gasoline	80.8	88.6	80.4	79.5	80.2	81.4	92.3	96.9	96.3	94.7	91.2	89.0	89.0	87.2	85.6
Maintenance and repair	119.8	124.9	121.5	122.4	123.3	123.5	123.9	124.4	124.6	124.8	125.4	126.2	126.7	126.8	126.9
Other private transportation	125.8	133.7	130.4	131.4	132.2	132.5	132.7	133.5	133.9	133.7	133.7	133.6	134.9	136.0	136.8
Other private transportation commodities	98.6	101.1	99.9	100.5	100.7	99.8	100.4	101.1	101.5	101.0	101.6	101.6	101.5	101.7	101.9
Other private transportation services	131.7	141.0	137.1	138.2	139.2	139.8	139.8	140.7	141.2	141.0	140.8	140.6	142.5	143.8	144.7
Public transportation	122.5	128.2	125.4	126.1	126.8	126.9	127.1	127.5	128.2	128.3	129.1	129.1	129.4	129.7	130.1
Medical care	139.0	149.6	142.8	144.2	145.6	146.5	147.2	147.9	148.8	150.1	151.1	152.1	153.0	154.2	154.7
Medical care commodities	139.0	149.7	143.1	143.9	144.7	146.0	147.4	148.9	149.9	150.3	150.9	152.2	153.1	154.2	154.8
Medical care services	139.0	149.6	142.7	144.2	145.8	146.7	147.2	147.6	148.6	150.0	151.1	152.1	153.0	154.2	154.7
Professional services	137.7	146.7	141.0	142.4	143.7	144.7	145.1	145.5	146.4	147.3	147.8	148.4	149.0	149.6	150.2
Hospital and related services	143.3	159.4	150.0	151.9	154.2	154.8	155.6	156.2	157.3	159.7	161.6	163.3	164.7	166.5	166.8
Entertainment	119.7	125.8	122.2	123.1	123.6	124.1	124.8	124.9	125.5	126.1	126.5	127.0	127.7	127.9	128.4
Entertainment commodities	115.1	119.9	117.6	118.1	118.4	118.7	119.1	119.5	119.7	120.1	120.1	120.6	121.3	121.4	121.7
Entertainment services	127.2	135.1	129.7	131.3	131.9	132.7	133.8	133.6	134.6	135.7	136.4	137.1	137.6	138.0	138.7
Other goods and services	136.5	147.4	140.6	143.0	143.7	144.0	144.4	145.2	146.3	147.5	148.8	150.8	151.4	151.5	152.7
Tobacco products	146.0	164.2	150.2	156.9	158.2	158.9	159.2	160.7	163.8	167.3	168.5	168.0	168.6	168.5	171.8
Personal care	119.3	124.8	122.3	122.7	123.0	123.5	123.9	124.7	124.4	124.6	125.4	125.7	126.3	126.8	126.9
Toilet goods and personal care appliances	118.0	123.3	121.5	121.7	121.9	122.3	122.7	122.9	122.4	122.8	123.8	124.1	124.6	125.1	124.7
Personal care services	120.5	126.6	123.0	123.6	124.2	124.6	125.2	126.7	126.9	126.8	127.1	127.5	128.2	128.7	129.4
Personal and educational expenses	147.4	157.3	152.3	153.3	153.7	153.9	154.3	154.6	155.3	155.7	157.3	161.8	162.5	162.5	163.1
School books and supplies	147.1	156.9	151.1	152.0	153.9	154.0	154.1	154.1	154.5	154.7	155.6	161.7	162.8	162.8	162.9
Personal and educational services	147.7	157.7	152.7	153.7	154.0	154.1	154.6	154.9	155.7	156.1	157.8	162.1	162.7	162.8	163.4
All items	117.0	122.6	119.2	119.7	120.2	120.8	121.8	122.5	122.8	123.2	123.2	123.6	124.2	124.4	124.6
Commodities	111.0	116.3	113.0	113.5	113.9	114.7	116.4	117.1	116.9	116.8	116.4	116.9	117.7	117.8	117.8
Food and beverages	117.9	124.6	120.3	121.7	122.4	123.1	123.7	124.4	124.6	125.1	125.3	125.6	126.0	126.4	126.9
Commodities less food and beverages	106.8	111.2	108.6	108.4	108.7	109.5	111.8	112.6	112.2	111.6	110.9	111.6	112.5	112.5	112.1
Nondurables less food and beverages	104.6	110.9	106.3	105.9	106.3	108.1	112.1	113.4	112.6	111.7	110.8	112.0	113.2	112.6	111.6
Apparel commodities	113.4	116.1	116.0	113.0	112.8	116.7	118.4	117.7	115.0	112.3	112.4	117.6	120.5	119.8	116.6
Nondurables less food, beverages, and apparel	102.9	110.9	104.1	104.9	105.6	106.5	111.6	113.9	114.0	113.9	112.6	112.0	112.3	111.7	111.7
Durables	108.9	110.8	110.7	111.0	111.0	110.6	110.5	110.6	110.7	110.6	110.1	110.0	110.6	111.6	112.0
Services	124.7	130.8	127.2	127.9	128.4	128.9	129.1	129.7	130.6	131.5	132.0	132.3	132.6	132.9	133.4
Rent of shelter (12/84=100)	119.4	124.8	121.5	121.9	122.4	123.1	123.2	123.7	124.2	125.4	125.9	126.0	126.7	127.1	127.5
Household services less rent of shelter (12/84=100)	105.9	109.1	106.8	107.5	107.4	107.4	107.6	108.3	110.5	110.9	111.0	111.0	109.3	108.8	109.3
Transportation services	127.1	134.8	131.2	132.2	133.1	133.5	133.7	134.4	134.8	134.8	134.9	135.0	136.3	137.1	137.8
Medical care services	139.0	149.6	142.7	144.2	145.8	146.7	147.2	147.6	148.6	150.0	151.1	152.1	153.0	154.2	154.7
Other services	131.4	139.6	135.0	136.1	136.5	137.0	137.6	137.9	138.6	139.1	140.1	142.3	142.9	143.2	143.8
Special indexes:															
All items less food	116.7	122.0	118.8	119.2	119.6	120.2	121.3	122.0	122.3	122.6	122.6	123.1	123.6	123.8	124.0
All items less shelter	115.2	120.9	117.4	118.0	118.5	119.1	120.4	121.1	121.3	121.4	121.3	121.8	122.3	122.5	122.6
All items less homeowners' costs (12/84=100)	110.4	115.7	112.4	113.0	113.4	114.1	115.2	115.8	116.1	116.3	116.3	116.6	117.1	117.3	117.4
All items less medical care	115.8	121.2	117.9	118.5	118.9	119.5	120.5	121.2	121.5	121.8	121.8	122.2	122.7	122.9	123.1
Commodities less food	107.2	111.6	108.9	108.8	109.0	109.9	112.1	112.9	112.5	112.0	111.4	112.0	112.9	112.9	112.6
Nondurables less food	105.3	111.3	106.9	106.5	107.0	108.7	112.4	113.6	113.0	112.1	111.4	112.5	113.6	113.1	112.2
Nondurables less food and apparel	103.7	111.2	104.9	105.6	106.4	107.2	111.7	113.8	114.0	113.9	112.8	112.3	112.7	112.1	112.2
Nondurables	111.5	118.0	113.5	114.0	114.6	115.8	118.1	119.1	118.8	118.6	118.3	119.1	119.8	119.7	119.5
Services less rent of shelter (12/84=100)	115.6	121.7	118.1	119.0	119.5	119.8	120.1	120.7	121.9	122.3	122.7	123.3	123.2	123.4	123.9
Services less medical care	123.3	129.0	125.6	126.3	126.7	127.2	127.4	128.0	128.9	129.7	130.1	130.4	130.6	130.9	131.4
Energy	88.6	93.9	88.1	88.3	88.6	89.2	94.8	97.4	98.9	98.3	96.6	95.5	94.2	92.8	92.7
All items less energy	121.0	126.7	123.6	124.2	124.7	125.3	125.8	126.2	126.4	126.8	127.1	127.7	128.5	128.9	129.1
All items less food and energy	121.9	127.3	124.4	124.8	125.3	125.9	126.3	126.6	126.8	127.3	127.6	128.3	129.1	129.6	129.7
Commodities less food and energy	114.7	118.6	117.0	116.9	117.1	117.9	118.4	118.5	118.2	117.9	117.9	119.0	120.1	120.5	120.2
Energy commodities	80.9	88.2	80.3	79.9	80.6	81.7	91.6	95.6	94.9	93.5	90.2	88.4	88.7	87.2	86.4
Services less energy	127.0	133.4	129.8	130.5	131.1	131.6	131.9	132.4	132.9	133.8	134.4	134.8	135.5	136.0	136.4
Purchasing power of the consumer dollar:															
1982-84=$1.00	85.5	81.6	83.9	83.5	83.2	82.8	82.1	81.6	81.4	81.2	81.2	80.9	80.5	80.4	80.3
1967=$1.00	28.7	27.4	28.2	28.0	27.9	27.8	27.6	27.4	27.3	27.3	27.2	27.2	27.0	27.0	26.9

32. Consumer Price Index: U.S. city average and available local area data: all items

(1982-84=100, unless otherwise indicated)

Area[1]	Pricing schedule[2]	All Urban Consumers							Urban Wage Earners						
		1988	1989						1988	1989					
		Dec.	Jan.	Aug.	Sept.	Oct.	Nov.	Dec.	Dec.	Jan.	Aug.	Sept.	Oct.	Nov.	Dec.
U.S. city average	M	120.5	121.1	124.6	125.0	125.6	125.9	126.1	119.2	119.7	123.2	123.6	124.2	124.4	124.6
Region and area size[3]															
Northeast urban	M	124.5	125.4	129.1	130.0	130.6	131.1	131.3	123.3	124.1	128.0	128.8	129.4	129.9	130.1
Size A - More than 1,200,000	M	125.3	126.1	129.5	130.6	131.1	131.6	131.6	123.2	124.0	127.5	128.7	129.1	129.5	129.5
Size B - 500,000 to 1,200,000	M	122.2	123.1	129.1	128.9	130.0	130.7	130.9	121.0	121.9	127.9	127.6	128.6	129.3	129.5
Size C - 50,000 to 500,000	M	123.3	124.4	127.8	128.1	128.9	129.7	130.7	125.7	126.8	130.2	130.8	131.5	132.3	133.1
North Central urban	M	118.2	118.7	122.0	122.5	123.0	123.2	123.2	116.3	116.8	120.0	120.4	120.9	121.2	121.1
Size A - More than 1,200,000	M	119.2	119.8	123.5	124.1	124.3	124.4	124.3	116.6	117.1	120.7	121.2	121.4	121.5	121.5
Size B - 360,000 to 1,200,000	M	118.2	118.3	120.9	121.0	122.5	123.0	123.0	115.8	116.0	118.6	118.6	120.0	120.5	120.4
Size C - 50,000 to 360,000	M	118.2	118.8	122.1	122.2	122.9	123.3	123.2	117.1	117.7	120.8	120.9	121.6	122.0	122.0
Size D - Nonmetropolitan (less than 50,0000	M	114.0	114.5	117.1	117.8	118.2	118.6	118.8	113.8	114.3	116.9	117.7	118.1	118.4	118.6
South urban	M	118.5	118.9	122.1	122.5	123.0	123.2	123.4	118.0	118.3	121.6	121.9	122.4	122.5	122.7
Size A - More than 1,200,000	M	119.2	119.7	122.8	123.5	123.9	124.0	124.0	118.4	118.8	122.0	122.5	122.9	123.0	123.0
Size B - 450,000 to 1,200,000	M	119.7	119.9	123.4	123.9	124.5	124.7	125.1	117.8	117.9	121.2	121.7	122.1	122.4	122.7
Size C - 50,000 to 450,000	M	117.6	117.8	121.0	120.9	121.7	121.6	122.0	118.1	118.4	121.6	121.5	122.2	122.1	122.5
Size D - Nonmetropolitan (less than 50,000)	M	116.3	116.9	120.0	120.2	120.7	121.3	121.4	117.0	117.7	121.1	121.0	121.6	122.0	122.1
West urban	M	120.9	121.7	125.3	125.6	126.1	126.3	126.8	119.6	120.3	123.9	124.2	124.6	124.8	125.3
Size A - More than 1,250,000	M	122.5	123.3	127.1	127.5	127.8	127.8	128.3	119.7	120.5	124.3	124.6	124.9	124.9	125.4
Size C - 50,000 to 330,000	M	119.0	119.8	122.6	122.8	123.7	124.5	125.3	118.4	119.3	121.9	122.1	123.0	123.7	124.4
Size classes:															
A (12/86=100)	M	109.4	110.0	113.2	113.8	114.2	114.3	114.4	109.3	109.9	113.1	113.7	114.0	114.1	114.2
B	M	119.8	120.1	124.0	124.2	125.2	125.6	125.9	118.5	118.8	122.6	122.8	123.6	124.0	124.3
C	M	119.1	119.6	122.9	122.9	123.7	124.1	124.5	119.4	120.0	123.1	123.3	124.0	124.3	124.7
D	M	116.8	117.5	120.5	120.8	121.3	121.8	122.0	117.1	117.8	120.9	121.2	121.7	122.1	122.4
Selected local areas															
Chicago, IL-Northwestern IN	M	121.3	121.5	126.4	127.1	126.8	126.7	126.5	117.7	117.9	122.5	123.1	122.9	122.9	122.8
Los Angeles-Long Beach, Anaheim, CA	M	124.2	124.6	128.9	130.1	130.0	130.0	130.6	121.1	121.4	125.5	126.5	126.5	126.4	127.0
New York, NY-Northeastern NJ	M	126.0	127.0	130.9	132.2	132.8	133.2	133.3	124.1	125.1	128.9	130.3	130.8	131.3	131.3
Philadelphia, PA-NJ	M	125.6	125.7	129.1	130.2	130.5	130.1	129.9	125.2	125.5	129.3	130.4	130.6	130.1	130.0
San Francisco-Oakland, CA	M	122.6	124.0	128.1	126.8	127.5	127.2	127.4	121.5	122.8	127.0	126.1	126.7	126.4	126.6
Baltimore, MD	M	–	121.3	–	125.9	–	126.6	–	–	120.9	–	125.4	–	126.0	–
Boston, MA	1	–	129.0	–	132.2	–	134.3	–	–	128.9	–	132.6	–	134.7	–
Cleveland, OH	1	–	118.9	–	123.7	–	123.4	–	–	113.8	–	118.2	–	118.0	–
Miami, FL	1	–	120.0	–	122.9	–	123.0	–	–	118.8	–	121.4	–	121.5	–
St. Louis, MO-IL	1	–	118.4	–	123.9	–	123.1	–	–	118.0	–	123.5	–	122.6	–
Washington, DC-MD-VA	1	–	124.3	–	130.1	–	130.5	–	–	123.7	–	129.5	–	129.6	–
Dallas-Ft. Worth, TX	1	117.2	–	120.0	–	121.4	–	120.5	117.0	–	119.8	–	121.1	–	120.1
Detroit, MI	2	118.3	–	122.2	–	124.6	–	124.4	115.7	–	119.2	–	121.5	–	121.4
Houston, TX	2	111.3	–	114.4	–	115.7	–	115.5	111.4	–	114.9	–	115.8	–	115.8
Pittsburgh, PA	2	116.7	–	120.8	–	121.7	–	121.8	112.2	–	116.0	–	116.8	–	117.1

[1] Area is the Consolidated Metropolitan Statistical Area (CMSA), exclusive of farms and military. Area definitions are those established by the Office of Management and Budget in 1983, except for Boston-Lawrence-Salem, MA-NH Area (excludes Monroe County); and Milwaukee, WI Area (includes only the Milwaukee MSA). Definitions do not include revisions made since 1983.

[2] Foods, fuels, and several other items priced every month in all areas; most other goods and services priced as indicated:.
M - Every month.
1 - January, March, May, July, September, and November.
2 - February, April, June, August, October, and December.

[3] Regions are defined as the four Census regions.

– Data not available.

NOTE: Local area CPI indexes are byproducts of the national CPI program. Because each local index is a small subset of the national index, it has a smaller sample size and is, therefore, subject to substantially more sampling and other measurement error than the national index. As a result, local area indexes show greater volatility than the national index, although their long-term trends are quite similar. Therefore, the Bureau of Labor Statistics strongly urges users to consider adopting the national average CPI for use in escalator clauses.

33. Annual data: Consumer Price Index, U.S. city average, all items and major groups

(1982-84=100)

Series	1981	1982	1983	1984	1985	1986	1987	1988	1989
Consumer Price Index for All Urban Consumers:									
All items:									
Index	90.9	96.5	99.6	103.9	107.6	109.6	113.6	118.3	124.0
Percent change	10.3	6.2	3.2	4.3	3.6	1.9	3.6	4.1	4.8
Food and beverages:									
Index	93.5	97.3	99.5	103.2	105.6	109.1	113.5	118.2	124.9
Percent change	7.8	4.1	2.3	3.7	2.3	3.3	4.0	4.1	5.7
Housing:									
Index	90.4	96.9	99.5	103.6	107.7	110.9	114.2	118.5	123.0
Percent change	11.5	7.2	2.7	4.1	4.0	3.0	3.0	3.8	3.8
Apparel and upkeep:									
Index	95.3	97.8	100.2	102.1	105.0	105.9	110.6	115.4	118.6
Percent change	4.8	2.6	2.5	1.9	2.8	.9	4.4	4.3	2.8
Transportation:									
Index	93.2	97.0	99.3	103.7	106.4	102.3	105.4	108.7	114.1
Percent change	12.2	4.1	2.4	4.4	2.6	-3.9	3.0	3.1	5.0
Medical care:									
Index	82.9	92.5	100.6	106.8	113.5	122.0	130.1	138.6	149.3
Percent change	10.7	11.6	8.8	6.2	6.3	7.5	6.6	6.5	7.7
Entertainment:									
Index	90.1	96.0	100.1	103.8	107.9	111.6	115.3	120.3	126.5
Percent change	7.8	6.5	4.3	3.7	3.9	3.4	3.3	4.3	5.2
Other goods and services:									
Index	82.6	91.1	101.1	107.9	114.5	121.4	128.5	137.0	147.7
Percent change	9.8	10.3	11.0	6.7	6.1	6.0	5.8	6.6	7.8
Consumer Price Index for Urban Wage Earners and Clerical Workers:									
All items:									
Index	91.4	96.9	99.8	103.3	106.9	108.6	112.5	117.0	122.6
Percent change	10.3	6.0	3.0	3.5	3.5	1.6	3.6	4.0	4.8

34. Producer Price Indexes, by stage of processing

(1982=100)

Grouping	Annual average		1989											
	1988	1989	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Finished goods	108.0	113.5	111.1	111.7	112.1	113.0	114.2	114.3	114.1	113.4	113.5	114.8	114.8	115.3
Finished consumer goods	106.2	112.1	109.4	110.1	110.6	111.8	113.2	113.1	112.8	111.9	112.1	113.3	113.2	113.9
Finished consumer foods	112.6	118.7	116.7	117.2	118.3	117.7	119.1	118.6	119.0	118.7	118.5	119.5	120.2	120.9
Finished consumer goods excluding foods	103.1	108.9	105.8	106.6	106.8	108.8	110.3	110.4	109.8	108.5	109.0	110.3	109.8	110.4
Nondurable goods less food	97.3	103.8	100.0	100.9	101.3	104.2	106.0	106.0	105.3	103.5	104.4	104.8	104.2	105.1
Durable goods	113.8	117.6	116.6	117.0	116.6	116.4	117.1	117.5	116.9	117.0	116.7	120.1	119.7	119.8
Capital equipment	114.3	118.7	117.1	117.5	117.5	117.6	118.3	118.8	118.7	119.0	118.8	120.3	120.6	120.7
Intermediate materials, supplies, and components	107.1	112.0	110.6	111.0	111.5	112.4	112.7	112.7	112.5	112.0	112.4	112.3	112.2	112.0
Materials and components for manufacturing	113.2	118.2	118.0	118.3	118.7	118.9	118.9	118.4	118.1	117.7	117.8	117.9	117.9	117.3
Materials for food manufacturing	106.0	112.7	110.4	110.1	111.4	111.1	112.5	112.4	113.3	113.3	114.0	113.3	115.4	115.4
Materials for nondurable manufacturing	112.9	118.6	119.2	119.7	119.8	120.3	120.3	119.5	118.6	117.4	117.4	117.1	117.0	116.6
Materials for durable manufacturing	118.7	123.6	125.5	125.3	125.7	125.9	125.0	123.6	122.7	122.1	122.7	122.9	122.1	120.1
Components for manufacturing	112.3	116.4	114.9	115.3	115.7	115.8	116.1	116.4	116.6	116.9	116.9	117.1	117.3	117.4
Materials and components for construction	116.1	121.2	119.4	119.9	120.5	121.1	121.5	121.5	121.6	121.6	121.8	122.2	121.9	121.5
Processed fuels and lubricants	71.2	76.5	71.6	72.1	73.2	76.7	78.1	79.3	78.7	77.3	78.6	77.8	77.0	78.1
Containers	120.1	125.5	123.1	123.9	124.4	125.1	125.3	125.6	126.0	126.0	126.5	126.9	126.7	126.9
Supplies	113.7	118.1	117.2	117.4	118.0	118.0	118.2	118.1	118.5	118.3	118.4	118.3	118.3	118.3
Crude materials for further processing	96.0	103.0	101.4	101.2	103.2	104.4	106.1	104.1	103.9	101.1	102.0	101.8	102.3	104.0
Foodstuffs and feedstuffs	106.1	111.1	112.5	111.0	113.7	111.6	114.9	111.7	110.1	110.0	108.3	107.2	109.4	112.3
Crude nonfood materials	85.5	93.4	90.0	90.7	92.2	95.3	96.0	94.7	95.4	91.1	93.5	93.9	93.4	94.2
Special groupings:														
Finished goods, excluding foods	106.5	111.8	109.2	109.9	110.0	111.4	112.6	112.8	112.4	111.7	111.9	113.3	113.0	113.5
Finished energy goods	59.8	65.7	60.8	61.8	62.3	68.4	71.8	70.2	68.4	63.6	65.7	65.7	64.5	64.9
Finished goods less energy	115.8	121.2	119.2	119.8	120.1	120.0	120.8	121.2	121.3	121.4	121.2	122.7	122.9	123.5
Finished consumer goods less energy	116.3	122.1	120.0	120.6	121.1	120.9	121.8	122.1	122.2	122.3	122.1	123.5	123.8	124.5
Finished goods less food and energy	117.0	122.1	120.1	120.7	120.7	120.8	121.4	122.1	122.1	122.4	122.2	123.9	123.9	124.4
Finished consumer goods less food and energy	118.5	124.0	121.9	122.6	122.6	122.7	123.3	124.1	124.1	124.5	124.2	126.0	125.9	126.6
Consumer nondurable goods less food and energy	122.0	128.8	125.9	126.8	127.1	127.4	127.9	129.0	129.3	129.9	129.7	130.4	130.4	131.6
Intermediate materials less foods and feeds	106.9	111.9	110.4	110.8	111.4	112.3	112.6	112.7	112.4	112.0	112.3	112.3	112.1	112.0
Intermediate foods and feeds	109.5	113.8	115.6	114.0	115.2	113.7	114.2	112.9	114.5	113.1	114.0	112.4	113.3	113.0
Intermediate energy goods	70.9	76.2	71.2	71.8	72.9	76.4	77.7	78.9	78.3	76.9	78.2	77.4	76.7	77.7
Intermediate goods less energy	114.6	119.5	118.9	119.1	119.6	119.9	120.0	119.7	119.6	119.3	119.5	119.6	119.5	119.2
Intermediate materials less foods and energy	115.2	120.2	119.6	119.9	120.3	120.7	120.8	120.5	120.2	120.0	120.1	120.3	120.1	119.7
Crude energy materials	67.7	75.9	71.2	72.0	73.5	77.3	78.3	77.5	78.9	73.5	76.2	76.6	76.8	78.5
Crude materials less energy	112.6	117.5	119.3	118.1	120.4	118.8	121.0	118.0	116.2	116.4	115.4	114.6	115.4	116.9
Crude nonfood materials less energy	133.0	137.8	140.3	140.3	141.3	141.2	140.3	137.9	135.5	136.6	137.2	137.4	134.3	131.7

35. Producer Price Indexes, by durability of product

(1982=100)

Grouping	Annual average		1989											
	1988	1989	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Total durable goods	114.7	119.0	118.1	118.3	118.5	118.7	118.9	119.0	118.8	119.0	119.1	120.0	119.9	119.6
Total nondurable goods	101.1	107.1	104.8	105.2	106.1	107.4	108.6	108.2	108.1	106.7	107.2	107.2	107.3	108.0
Total manufactures	109.1	114.3	112.5	112.9	113.4	114.4	115.0	114.9	114.7	114.2	114.5	115.2	115.1	115.1
Durable	114.1	118.3	117.1	117.4	117.6	117.8	118.1	118.3	118.2	118.4	118.5	119.5	119.4	119.2
Nondurable	104.1	110.2	107.8	108.3	109.2	110.8	111.6	111.3	110.9	110.0	110.4	110.8	110.8	110.9
Total raw or slightly processed goods	95.9	101.3	99.9	100.1	101.1	101.5	103.3	102.6	102.7	100.4	101.0	100.2	100.4	102.1
Durable	148.0	151.5	162.6	161.9	161.0	159.0	157.5	151.5	146.0	146.5	146.9	145.8	141.3	137.4
Nondurable	93.4	98.9	97.0	97.2	98.2	98.8	100.8	100.3	100.6	98.3	98.9	98.0	98.4	100.4

36. Producer price indexes for the net output of major industry groups

(December 1984=100, unless otherwise indicated)

Industry	SIC	Annual average		1989											
		1988	1989	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Total mining industries		70.6	76.3	74.6	75.5	74.9	77.2	78.2	77.4	78.0	74.0	76.4	76.0	76.2	77.7
Metal mining	10	100.7	100.1	112.7	105.9	104.8	103.9	100.6	96.0	91.8	96.2	98.2	99.8	97.7	93.9
Anthracite mining (12/85=100)	11	100.2	102.7	102.8	102.7	103.0	102.5	102.4	102.4	102.6	102.6	102.6	103.0	103.0	103.3
Bituminous coal and lignite mining (12/85=100)	12	94.6	94.3	93.8	93.0	92.9	93.4	93.9	94.0	94.7	94.9	94.7	94.9	95.8	95.3
Oil and gas extraction (12/85=100)	13	68.5	75.7	73.0	74.5	73.8	76.7	78.1	77.2	78.1	72.8	75.7	75.1	75.3	77.5
Mining and quarrying of nonmetallic minerals, except fuels	14	108.0	111.2	109.9	110.8	110.9	111.3	111.6	112.1	111.3	111.4	111.0	111.2	111.2	111.3
Total manufacturing industries		104.4	109.6	107.5	107.9	108.5	109.4	110.1	110.1	109.9	109.6	109.8	110.7	110.7	111.0
Food and kindred products	20	107.1	112.2	110.8	110.9	111.9	111.6	112.2	112.1	112.5	112.3	112.4	112.4	113.2	113.6
Tobacco manufactures	21	141.8	161.5	154.9	155.0	155.0	155.1	155.1	163.5	164.4	164.6	164.9	165.8	165.7	174.0
Textile mill products	22	106.8	109.3	108.3	108.3	108.6	108.8	108.8	109.4	109.5	109.8	109.9	109.8	110.2	110.3
Apparel and other finished products made from fabrics and similar materials	23	107.2	110.2	108.9	109.3	109.3	109.5	109.6	109.8	110.4	110.7	110.9	111.1	111.2	111.4
Lumber and wood products, except furniture	24	109.2	115.3	110.7	112.3	113.1	114.4	115.4	115.9	117.1	116.7	116.6	117.9	117.1	115.9
Furniture and fixtures	25	111.4	115.6	113.6	114.0	114.4	114.7	115.2	115.5	115.7	116.3	116.3	116.8	116.9	117.2
Paper and allied products	26	113.7	120.8	118.2	119.7	120.4	120.6	121.1	121.2	120.9	121.1	121.2	121.7	121.8	121.7
Printing, publishing, and allied industries	27	118.2	124.7	122.6	123.2	123.6	124.0	124.2	124.6	124.9	125.4	125.6	125.9	126.2	126.3
Chemicals and allied products	28	113.0	119.7	119.6	119.9	120.6	121.0	120.9	120.6	119.4	119.0	119.1	118.8	118.8	118.6
Petroleum refining and related products	29	67.7	75.7	68.5	69.3	71.5	79.9	82.9	80.4	77.7	73.0	75.6	77.3	75.9	76.1
Rubber and miscellaneous plastic products	30	106.7	110.2	109.3	109.6	110.2	110.5	110.5	110.4	110.4	110.3	110.2	110.2	110.3	110.2
Leather and leather products	31	113.4	118.0	115.8	116.6	117.0	117.2	117.4	117.3	117.8	118.6	119.5	119.4	119.3	120.1
Stone, clay, glass, and concrete products	32	105.8	107.9	106.5	106.7	107.2	107.9	107.9	108.1	108.2	108.2	108.3	108.3	108.4	108.4
Primary metal industries	33	113.0	118.8	119.7	119.4	120.1	120.1	119.8	118.9	118.2	118.0	118.5	118.7	118.0	116.4
Fabricated metal products, except machinery and transportation equipment	34	107.4	112.5	110.6	111.1	111.5	112.0	112.5	112.5	112.8	113.0	113.2	113.8	113.7	113.8
Machinery, except electrical	35	106.4	110.6	108.9	109.3	109.7	109.8	110.2	110.3	110.9	111.3	111.5	111.6	112.0	112.1
Electrical and electronic machinery, equipment, and supplies	36	104.6	107.2	106.0	106.4	106.4	106.6	106.8	107.1	107.6	107.6	107.6	107.8	107.9	108.1
Transportation equipment	37	107.8	112.1	111.4	111.7	111.2	110.9	111.6	111.8	111.1	111.3	110.7	114.6	114.4	114.5
Measuring and controlling instruments; photographic, medical, optical goods; watches, clocks	38	107.0	110.7	108.8	109.1	109.7	110.1	110.6	110.9	111.0	111.2	111.2	111.8	112.0	112.2
Miscellaneous manufacturing industries (12/85=100)	39	107.5	111.8	110.1	110.6	110.9	111.2	111.5	111.7	112.0	112.4	112.6	112.7	112.8	113.1
Service industries:															
Pipelines, except natural gas (12/86=100)	46	94.8	94.4	94.5	94.5	94.5	94.4	94.4	94.4	94.4	94.4	94.4	94.4	94.4	94.4

37. Annual data: Producer Price Indexes, by stage of processing

(1982=100)

Index	1981	1982	1983	1984	1985	1986	1987	1988	1989
Finished goods:									
Total	96.1	100.0	101.6	103.7	104.7	103.2	105.4	108.0	113.5
Consumer goods	96.6	100.0	101.3	103.3	103.8	101.4	103.6	106.2	112.1
Capital equipment	94.6	100.0	102.8	105.2	107.5	109.7	111.7	114.3	118.7
Intermediate materials, supplies, and components:									
Total	98.6	100.0	100.6	103.1	102.7	99.1	101.5	107.1	112.0
Materials and components for manufacturing	98.7	100.0	101.2	104.1	103.3	102.2	105.3	113.2	118.2
Materials and components for construction	97.9	100.0	102.8	105.6	107.3	108.1	109.8	116.1	121.2
Processed fuels and lubricants	100.6	100.0	95.4	95.7	92.8	72.7	73.3	71.2	76.5
Containers	96.7	100.0	100.4	105.9	109.0	110.3	114.5	120.1	125.5
Supplies	96.9	100.0	101.8	104.1	104.4	105.6	107.7	113.7	118.1
Crude materials for further processing:									
Total	103.0	100.0	101.3	103.5	95.8	87.7	93.7	96.0	103.0
Foodstuffs and feedstuffs	103.9	100.0	101.8	104.7	94.8	93.2	96.2	106.1	111.1
Nonfood materials except fuel	101.8	100.0	100.7	102.2	96.9	81.6	87.9	85.5	93.4
Fuel	84.8	100.0	105.1	105.1	102.7	92.2	84.1	82.1	85.3

38. U.S. export price indexes by Standard International Trade Classification

(1985=100, unless otherwise indicated)

Category	1974 SITC	1987				1988				1989		
		Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.
ALL COMMODITIES		99.9	102.2	102.8	104.9	106.5	109.5	111.9	111.6	113.3	113.2	112.4
Food	0	87.3	89.9	86.7	94.6	95.2	103.4	118.7	114.2	117.6	115.5	110.4
Meat and meat preparations	01	115.0	121.2	118.8	116.8	122.8	131.0	137.0	130.3	132.9	128.2	119.5
Fish and crustaceans	03	117.1	125.8	131.1	138.5	140.9	145.0	175.9	174.0	169.1	158.9	137.2
Grain and grain preparations	04	68.3	71.0	67.8	77.4	79.8	87.2	108.5	102.0	108.4	106.4	101.5
Vegetables and fruit	05	115.3	112.4	101.1	100.5	97.5	104.3	109.9	110.3	108.8	113.6	113.9
Animal feeds, excluding unmilled cereals	08	117.0	123.8	123.1	145.2	134.6	158.1	161.0	157.0	154.1	144.0	139.3
Miscellaneous food products	09	100.1	100.6	100.3	100.3	102.3	102.8	105.2	104.9	107.0	108.0	107.7
Beverages and tobacco	1	102.6	105.0	105.5	107.0	109.6	110.6	112.0	111.7	117.2	117.6	120.4
Tobacco and tobacco products	12	102.6	105.0	105.5	107.0	109.8	110.7	112.1	111.8	117.6	117.9	120.8
Crude materials	2	105.7	114.5	118.7	125.2	130.0	139.9	140.8	135.8	142.6	143.0	139.2
Raw hides and skins	21	131.9	149.6	147.7	157.1	171.4	166.8	156.7	136.8	146.7	149.9	156.1
Oilseeds	22	90.4	101.6	95.1	109.6	115.6	143.0	154.7	135.7	139.3	129.8	111.5
Crude rubber	23	99.9	101.0	102.8	105.3	104.5	106.1	109.1	109.9	111.1	114.6	117.7
Wood	24	111.2	116.2	141.7	146.0	150.2	149.6	150.0	148.6	157.3	170.7	177.7
Pulp and waste paper	25	144.2	149.9	153.0	160.4	171.2	179.5	181.7	182.1	192.9	193.5	193.2
Textile fibers	26	97.8	112.4	116.5	111.6	107.5	109.9	100.8	103.6	106.7	115.5	118.1
Crude minerals	27	94.4	94.0	91.6	91.6	92.8	94.2	94.8	94.8	98.8	99.2	99.3
Metal ores and metal scrap	28	98.8	107.0	117.4	125.9	131.8	146.0	145.0	150.4	163.5	157.2	150.4
Fuels and related products	3	81.3	82.8	84.6	82.5	79.3	82.1	79.5	79.4	81.7	86.0	88.0
Coal and coke	32	92.6	88.2	91.0	89.8	90.6	92.0	92.9	93.4	93.7	94.3	95.6
Crude petroleum and petroleum products	33	–	–	–	100.0	90.8	97.2	89.2	88.4	94.5	105.4	108.8
Fats and oils	4	73.9	78.8	78.5	81.6	92.7	97.3	101.5	91.5	90.3	87.3	83.8
Animal oils and fats	41	81.1	86.7	86.7	88.7	101.3	101.6	104.3	95.7	91.8	89.6	84.6
Fixed vegetable oils and fats	42	67.3	71.9	71.2	75.4	85.7	93.7	99.1	87.1	88.2	84.4	81.6
Chemicals and related products	5	99.6	106.7	107.7	112.9	117.9	121.6	124.9	125.5	125.5	121.9	117.7
Organic chemicals	51	101.9	118.4	116.1	123.5	135.1	144.6	153.3	150.8	149.6	145.0	134.0
Dyeing, tanning, and coloring materials	53	103.6	104.2	105.5	108.5	109.1	110.1	111.5	113.0	115.5	116.5	120.5
Medicinal and pharmaceutical products (12/85=100)	54	101.0	101.4	102.2	105.4	109.3	106.3	105.9	107.5	109.0	108.9	109.4
Essential oils, polish, and cleaning preparations	55	105.5	105.7	107.3	108.4	111.2	113.6	120.2	122.4	125.3	124.7	122.4
Fertilizers, manufactured	56	85.6	91.6	100.9	106.5	110.6	109.8	116.4	119.9	119.4	108.0	108.9
Artificial resins, plastics and cellulose	57	104.8	111.9	116.4	124.8	129.4	137.5	138.2	132.5	125.8	118.6	111.4
Chemical materials and products, n.e.s.	58	97.5	97.7	97.1	98.2	100.3	101.7	104.1	105.4	108.4	109.4	109.4
Intermediate manufactured products	6	106.4	107.9	110.3	111.2	114.4	117.7	119.6	120.6	122.6	123.1	122.8
Leather and furskins	61	123.6	126.9	128.7	118.0	125.7	125.1	128.6	125.0	118.3	120.7	121.5
Rubber manufactures	62	102.0	102.5	103.9	104.1	105.2	108.8	109.4	110.4	113.0	112.9	113.4
Paper and paperboard products	64	114.7	117.0	120.1	122.4	126.2	129.0	130.2	131.1	132.5	133.7	132.8
Textiles	65	103.3	103.7	104.1	105.2	106.5	107.9	108.6	111.6	113.9	115.4	115.7
Non-metallic mineral manufactures (9/85=100)	66	106.8	108.7	110.4	111.3	113.4	114.1	115.6	116.8	120.4	122.4	123.9
Iron and steel	67	102.9	102.9	100.7	102.9	106.1	110.8	111.4	112.1	116.0	117.2	116.7
Nonferrous metals	68	106.6	113.0	123.0	124.4	134.0	143.5	149.1	150.0	151.7	145.8	140.4
Metal manufactures, n.e.s.	69	101.5	101.3	102.3	103.4	104.5	107.6	109.9	110.9	112.6	113.9	114.3
Machinery and transport equipment, excluding military and commercial aircraft	7	101.7	101.8	102.1	102.4	103.2	104.0	104.8	105.8	106.7	107.2	107.9
Power generating machinery and equipment	71	104.6	103.7	104.8	105.2	107.0	108.4	108.5	109.3	111.8	112.8	114.1
Machinery specialized for particular industries	72	100.0	100.1	100.5	100.9	102.1	103.6	104.7	106.0	107.3	108.8	109.8
Metalworking machinery	73	105.8	106.7	107.8	108.2	109.3	110.8	111.0	114.4	115.7	117.3	117.9
General industrial machines and parts, n.e.s.	74	104.2	104.5	104.6	105.4	106.7	108.1	109.3	110.3	112.7	113.3	114.0
Office machines and automatic data processing equipment	75	96.0	96.1	95.7	95.5	95.8	95.7	96.8	96.4	95.8	94.8	94.8
Telecommunications, sound recording and reproducing equipment	76	101.9	101.4	101.4	101.9	102.8	104.6	104.1	105.1	106.7	107.5	108.5
Electrical machinery and equipment	77	101.7	102.1	102.5	101.8	103.1	103.4	105.3	105.7	106.1	106.5	107.4
Road vehicles and parts	78	103.1	103.5	103.8	104.6	104.5	104.9	105.4	106.8	107.2	107.8	108.8
Other transport equipment, excluding military and commercial aviation	79	104.5	105.5	105.8	106.6	107.4	109.6	109.7	111.9	113.5	114.7	114.8
Miscellaneous manufactured articles	8	104.6	105.2	105.4	105.6	106.9	108.1	108.9	110.5	111.4	112.8	113.5
Furniture and parts	82	106.7	107.6	107.6	110.0	111.2	111.4	111.7	114.2	114.3	117.3	117.5
Professional, scientific, and controlling instruments and apparatus	87	104.4	105.5	106.3	107.1	110.0	111.1	112.5	113.9	115.5	118.2	119.4
Photographic apparatus and supplies, optical goods, watches, and clocks	88	102.7	102.5	99.0	97.9	97.6	100.1	99.4	99.9	98.5	99.2	99.5
Miscellaneous manufactured articles, n.e.s.	89	105.2	104.8	105.9	105.8	105.4	106.5	106.5	108.7	110.2	110.1	110.2

– Data not available.

39. U.S. import price indexes by Standard International Trade Classification

(1985=100, unless otherwise indicated)

Category	1974 SITC	1987		1988				1989		
		Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.
ALL COMMODITIES		110.9	112.5	113.8	116.8	115.3	117.6	119.7	119.8	118.2
ALL COMMODITIES, EXCLUDING FUELS		117.5	120.8	123.7	126.7	126.1	129.1	129.6	128.5	127.7
Food and live animals	0	109.1	112.5	114.1	114.0	112.7	114.3	114.1	111.3	106.1
Meat and meat preparations	01	114.4	113.4	111.5	107.0	111.2	108.7	111.2	109.7	124.1
Dairy products and eggs	02	121.7	125.1	125.6	125.0	122.2	125.8	124.0	120.2	119.7
Fish and crustaceans	03	130.4	131.0	132.5	129.3	125.9	126.7	127.0	122.7	121.6
Bakery goods, pasta products, grain, and grain preparations	04	124.8	130.7	135.8	139.8	136.9	142.2	140.4	140.2	141.6
Fruits and vegetables	05	110.0	116.2	115.4	120.3	123.7	127.7	123.4	123.2	119.1
Sugar, sugar preparations, and honey	06	109.0	107.0	109.6	110.0	112.1	110.8	109.8	111.8	114.5
Coffee, tea, cocoa	07	85.1	90.6	94.3	93.3	87.4	90.6	91.2	85.3	62.4
Beverages and tobacco	1	112.2	113.5	116.0	116.2	115.3	116.2	117.0	117.2	118.9
Beverages	11	114.8	116.2	118.7	120.0	118.9	119.9	120.7	120.7	122.8
Crude materials	2	120.3	122.1	129.2	137.8	135.4	143.2	146.2	144.3	137.5
Crude rubber (including synthetic and reclaimed)	23	110.7	120.1	121.7	151.1	133.3	121.5	123.0	103.4	98.3
Cork and wood	24	117.4	108.8	112.4	111.4	109.7	107.8	112.1	112.4	113.3
Pulp and waste paper	25	133.4	141.0	151.0	160.5	169.6	174.7	184.7	190.0	189.6
Textile fibers	26	128.1	135.2	137.8	145.5	141.9	145.6	151.5	145.4	141.9
Crude fertilizers and crude minerals	27	99.2	99.9	100.4	101.0	97.2	100.2	103.3	104.7	101.2
Metalliferous ores and metal scrap	28	128.7	137.9	151.2	167.6	172.2	205.4	204.3	212.3	185.4
Crude animal and vegetable materials, n.e.s.	29	107.6	118.3	135.8	148.2	122.0	139.5	138.5	110.3	108.5
Fuels and related products	3	74.3	67.2	60.6	63.4	57.7	56.4	66.8	73.3	67.9
Crude petroleum and petroleum products	33	75.2	67.8	60.4	63.6	57.7	56.1	67.3	74.4	68.6
Fats and oils	4	96.4	102.1	106.4	111.2	114.0	112.3	112.5	117.4	107.0
Fixed vegetable oils and fats (9/87=100)	42	100.0	105.7	111.1	116.1	119.2	117.4	117.3	122.6	111.0
Chemicals and related products	5	105.6	110.1	114.2	116.4	119.2	122.2	123.6	120.4	117.8
Organic chemicals	51	98.2	103.0	105.8	107.3	111.3	115.1	117.6	114.0	110.5
Inorganic chemicals	52	89.8	90.1	92.0	92.3	93.0	96.1	93.1	86.6	85.7
Medicinal and pharmaceutical products	54	124.3	126.3	135.3	140.3	145.4	146.4	154.9	153.5	150.1
Essential oils and perfumes	55	119.2	123.0	125.7	126.2	127.5	130.5	130.3	130.2	126.2
Manufactured fertilizers	56	109.3	133.6	133.7	136.3	136.5	139.9	143.5	142.1	132.4
Artificial resins and plastics and cellulose	58	114.4	117.6	121.6	124.3	127.6	129.5	129.5	129.8	130.5
Chemical materials and products, n.e.s.	59	120.6	124.8	138.7	148.5	153.4	156.5	154.8	151.6	149.8
Intermediate manufactured products	6	116.3	119.8	124.4	132.2	132.3	135.0	137.3	136.1	135.3
Leather and furskins	61	117.8	124.4	131.8	137.0	136.6	134.9	134.6	133.8	133.9
Rubber manufactures, n.e.s.	62	103.2	104.6	106.0	107.7	109.1	111.1	111.7	112.2	113.2
Cork and wood manufactures	63	128.3	128.2	133.8	138.2	136.1	134.1	136.9	139.8	141.5
Paper and paperboard products	64	110.3	112.3	117.2	118.3	119.5	119.9	120.6	120.8	119.9
Textiles	65	114.6	118.6	120.0	120.6	119.1	120.5	120.5	122.1	121.8
Nonmetallic mineral manufactures, n.e.s.	66	130.4	133.4	137.4	142.5	139.7	141.9	147.5	149.5	151.2
Iron and steel	67	109.4	114.0	120.0	127.2	129.9	130.7	132.6	133.6	133.7
Nonferrous metals	68	120.9	125.8	132.7	159.7	158.9	169.1	172.8	158.6	150.8
Metal manufactures	69	114.6	117.8	121.1	126.9	127.5	130.7	132.4	132.6	133.5
Machinery and transport equipment	7	119.9	123.1	125.4	127.3	126.7	129.9	130.1	129.2	129.0
Machinery (including SITC 71-77)	7hyb	118.7	122.6	124.6	126.4	125.9	128.7	129.2	128.4	127.9
Machinery specialized for particular industries	72	134.3	142.1	146.8	149.8	143.7	150.8	149.1	145.7	145.8
Metalworking machinery	73	130.2	135.5	139.9	142.4	139.7	144.1	142.9	139.5	144.0
General industrial machinery and parts, n.e.s.	74	130.1	137.0	140.4	143.7	139.6	144.2	144.7	143.0	143.3
Office machines and automatic data processing equipment	75	114.8	118.3	118.1	119.5	118.7	118.7	119.6	119.3	117.4
Telecommunications, sound recording and reproducing apparatus	76	110.2	112.1	112.8	113.8	113.9	115.5	115.7	115.7	115.0
Electrical machinery and equipment	77	115.1	118.2	122.2	124.2	125.9	129.3	130.5	129.6	129.0
Road vehicles and parts	78	120.6	122.6	125.5	127.6	127.1	130.8	130.5	129.6	129.5
Miscellaneous manufactured articles	8	118.5	121.8	124.2	125.7	124.2	126.6	126.6	126.6	127.2
Plumbing, heating, and lighting fixtures	81	116.2	121.0	123.4	126.9	124.5	127.2	130.0	131.5	132.8
Furniture and parts	82	119.0	124.3	125.4	129.6	128.0	129.1	127.2	127.9	128.7
Travel goods, handbags, and similar goods (6/85=100)	83	98.2	103.0	105.8	107.3	111.3	115.1	117.6	114.0	110.5
Clothing	84	111.9	112.3	115.6	114.9	116.7	117.2	118.5	119.9	120.9
Footwear	85	119.0	124.3	125.4	129.5	128.0	129.1	127.2	127.9	128.7
Professional, scientific, and controlling instruments and apparatus	87	132.7	138.7	140.0	142.5	135.8	141.9	141.1	136.5	136.5
Photographic apparatus and supplies, optical goods, watches, and clocks	88	122.1	127.3	129.2	129.3	125.4	130.6	130.2	127.9	126.4
Miscellaneous manufactured articles, n.e.s.	89	122.3	127.3	129.2	132.1	128.2	131.4	131.7	131.4	131.5

40. U.S. export price indexes by end-use category

(1985 = 100 unless otherwise indicated)

Category	1987		1988				1989		
	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.
Foods, feeds, and beverages	88.0	96.6	98.5	110.1	124.5	117.4	120.8	117.2	110.3
Industrial supplies and materials	109.1	111.8	114.2	118.3	118.7	118.6	120.7	120.9	119.5
Capital goods	101.8	102.1	103.4	104.3	104.9	105.7	106.7	107.4	108.2
Automotive	104.0	104.5	104.3	104.8	106.5	107.7	108.1	108.6	109.4
Consumer goods	106.9	108.0	110.1	110.6	111.3	112.9	115.3	115.6	116.4
Consumer nondurables, manufactured, except rugs	104.6	106.3	107.4	108.7	109.3	110.0	111.4	111.5	111.6
Consumer durables, manufactured	107.3	107.9	110.4	110.4	110.7	112.6	115.4	115.4	116.4
Agricultural (9/88=100)	92.1	99.3	101.1	110.9	120.6	114.0	117.7	116.1	111.2
All exports, excluding agricultural (9/88=100)	104.9	106.2	107.7	109.7	110.8	111.6	112.9	113.1	113.0

41. U.S. import price indexes by end-use category

(1985=100)

Category	1987		1988				1989		
	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.
All imports, excluding petroleum (6/88=100)	117.0	120.3	123.2	126.2	125.4	128.3	129.0	128.0	127.1
Foods, feeds, and beverages	109.0	112.1	113.7	113.7	112.7	114.2	113.8	111.7	107.1
Industrial supplies and materials	95.3	93.7	92.7	97.8	95.2	96.4	102.1	104.2	100.2
Petroleum and petroleum products, excluding natural gas	74.7	67.6	60.3	63.5	57.5	56.2	67.2	74.1	68.2
Industrial supplies and materials, excluding petroleum	112.6	115.6	119.6	126.4	126.4	129.6	131.2	129.4	126.9
Capital goods, except automotive	121.9	126.6	128.6	131.0	129.0	132.3	132.4	131.0	130.8
Automotive vehicles, parts and engines	118.4	120.6	123.7	125.8	126.0	129.2	129.1	128.2	128.2
Consumer goods except automotive	118.2	121.4	124.2	126.3	125.0	127.4	128.7	129.1	129.4
Nondurables, manufactured	116.8	120.2	123.3	124.2	123.8	125.4	126.5	127.5	128.5
Durables, manufactured	117.9	121.0	123.5	125.5	124.5	127.4	127.9	127.9	127.7

42. U.S. export price indexes by Standard Industrial Classification [1]

(1985=100)

Industry group	1987		1988				1989		
	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.
Manufacturing:									
Food and kindred products	107.1	116.3	120.8	125.1	128.9	123.5	124.5	122.7	119.4
Lumber and wood products, except furniture	138.9	142.5	146.1	145.4	146.1	144.0	151.7	164.4	171.2
Furniture and fixtures	108.7	111.2	112.5	112.9	112.9	115.3	115.2	116.0	116.2
Paper and allied products	115.5	119.3	124.6	129.8	133.1	135.6	139.9	141.4	141.5
Chemicals and allied products	108.7	113.8	118.4	122.3	125.4	125.5	125.9	122.5	118.6
Petroleum and coal products	81.4	78.8	73.0	77.8	73.7	75.4	79.8	86.9	88.8
Primary metal products	122.3	126.6	126.9	133.8	133.5	133.6	130.8	125.7	122.4
Machinery, except electrical	99.4	99.7	100.6	101.3	102.2	102.8	103.4	103.7	104.4
Electrical machinery	102.5	102.2	102.9	103.7	104.9	105.4	106.3	106.8	107.8
Transportation equipment	106.9	107.8	108.1	109.1	109.4	110.9	111.8	112.7	113.4
Scientific instruments; optical goods; clocks	106.6	107.1	109.2	110.8	112.0	113.4	114.5	116.7	117.6

[1] SIC-based classification.

43. U.S. import price indexes by Standard Industrial Classification [1]

(1985=100)

Industry group	1987		1988				1989		
	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.
Manufacturing:									
Food and kindred products	108.4	110.6	114.0	114.4	115.0	115.4	114.9	114.0	114.8
Textile mill products	119.4	124.3	127.4	128.9	127.0	127.8	139.0	139.8	137.6
Apparel and related products	112.3	113.4	116.6	115.8	117.0	117.5	118.9	120.3	121.3
Lumber and wood products, except furniture	120.3	115.4	119.5	120.3	118.6	117.0	120.5	122.2	123.6
Furniture and fixtures	118.3	118.9	122.2	124.0	124.8	128.0	126.3	126.1	128.7
Paper and allied products	110.9	113.6	119.1	121.3	123.8	125.2	127.4	128.2	127.4
Chemicals and allied products	107.2	112.2	116.8	121.3	123.5	130.6	130.7	130.0	123.8
Petroleum refining and allied products	138.4	127.4	114.5	119.2	110.8	111.6	121.3	139.1	127.3
Rubber and miscellaneous plastics products	112.3	115.7	117.2	119.0	117.7	122.6	122.3	123.1	124.1
Leather and leather products	113.3	118.4	120.8	124.6	123.7	124.0	122.8	123.5	124.6
Stone, clay, glass, and concrete products	129.6	133.9	138.2	141.5	140.5	144.3	145.1	144.8	147.4
Primary metal products	115.2	120.0	122.6	137.0	136.2	140.2	140.6	135.2	132.1
Fabricated metal products	119.8	123.2	127.3	133.3	133.0	136.3	138.9	140.3	141.2
Machinery, except electrical	127.8	133.9	135.9	138.2	135.0	138.4	138.6	136.7	135.8
Electrical machinery and supplies	110.2	112.5	114.7	116.1	116.7	119.0	119.7	119.4	119.0
Transportation equipment	122.5	124.6	127.3	129.5	129.3	132.8	132.6	131.9	132.0
Scientific instruments; optical goods; clocks	128.8	134.0	135.8	137.0	132.2	137.7	136.7	133.8	133.0
Miscellaneous manufactured commodities	121.4	123.8	127.7	133.1	130.6	132.2	136.6	137.7	138.1

[1] SIC - based classification.

44. Indexes of productivity, hourly compensation, and unit costs, quarterly data seasonally adjusted

(1977=100)

Item	Quarterly Indexes										
	1987				1988				1989		
	I	II	III	IV	I	II	III	IV	I	II	III
Business:											
Output per hour of all persons	110.0	110.7	111.7	112.5	113.2	112.6	113.4	113.5	113.8	114.2	114.7
Compensation per hour	188.3	189.5	191.8	195.1	196.4	199.1	201.9	204.5	206.9	210.4	212.8
Real compensation per hour	101.9	101.4	101.7	102.5	102.3	102.5	102.8	103.0	102.8	102.9	103.5
Unit labor costs	171.2	171.3	171.6	173.5	173.5	176.9	178.0	180.2	181.9	184.1	185.5
Unit nonlabor payments	162.6	166.5	168.9	167.2	168.9	168.8	171.8	173.7	174.7	176.3	176.7
Implicit price deflator	168.2	169.6	170.7	171.3	171.9	174.1	175.8	177.9	179.4	181.4	182.4
Nonfarm business:											
Output per hour of all persons	107.7	108.6	109.5	110.2	111.0	110.5	111.5	112.0	111.6	111.9	112.6
Compensation per hour	187.1	188.3	190.5	193.8	195.0	197.5	200.2	203.0	205.5	208.3	211.0
Real compensation per hour	101.3	100.7	101.0	101.8	101.5	101.7	101.9	102.3	102.1	101.9	102.7
Unit labor costs	173.6	173.4	173.9	175.8	175.7	178.7	179.6	181.3	184.1	186.1	187.4
Unit nonlabor payments	164.1	167.6	170.3	168.7	170.3	169.8	172.1	176.3	174.6	176.5	177.9
Implicit price deflator	170.3	171.4	172.6	173.4	173.8	175.6	177.0	179.6	180.8	182.8	184.1
Nonfinancial corporations:											
Output per hour of all employees	110.4	111.6	113.0	113.5	114.6	114.7	115.1	114.9	114.5	114.5	115.3
Compensation per hour	183.7	184.8	186.9	189.5	190.9	193.1	195.5	197.8	200.2	202.8	205.5
Real compensation per hour	99.4	98.9	99.1	99.6	99.4	99.5	99.5	99.6	99.5	99.3	100.0
Total unit costs	171.0	170.8	170.8	172.1	171.9	173.6	175.2	177.5	180.4	182.9	184.7
Unit labor costs	166.3	165.5	165.3	167.0	166.6	168.4	169.9	172.1	174.9	177.1	178.2
Unit nonlabor costs	185.0	186.3	186.9	187.2	187.8	188.9	191.0	193.3	196.9	200.1	204.0
Unit profits	118.1	122.5	129.3	122.0	127.0	129.1	127.5	131.6	119.6	116.6	113.1
Unit nonlabor payments	161.6	163.9	166.7	164.4	166.5	168.0	168.8	171.7	169.8	170.9	172.1
Implicit price deflator	164.7	165.0	165.8	166.1	166.5	168.2	169.5	172.0	173.1	175.0	176.1
Manufacturing:											
Output per hour of all persons	131.5	133.3	134.3	134.7	135.5	136.3	137.8	138.6	139.4	140.7	141.1
Compensation per hour	188.8	189.0	190.4	191.7	194.3	195.3	197.4	200.2	201.9	203.2	206.2
Real compensation per hour	102.2	101.1	100.9	100.7	101.2	100.6	100.5	100.8	100.3	99.4	100.3
Unit labor costs	143.5	141.8	141.8	142.3	143.4	143.3	143.2	144.4	144.8	144.4	146.2

45. Annual indexes of multifactor productivity and related measures, selected years

(1977=100)

Item	1960	1970	1973	1978	1980	1982	1983	1984	1985	1986	1987
Private business											
Productivity:											
Output per hour of all persons	67.3	88.4	95.9	100.8	99.2	100.3	103.0	105.6	107.9	110.3	111.2
Output per unit of capital services	103.7	102.7	105.6	101.9	94.1	86.6	88.3	92.7	92.9	93.0	93.7
Multifactor productivity	78.5	93.1	99.2	101.2	97.4	95.2	97.6	100.9	102.4	103.9	104.7
Output	55.3	80.2	93.0	105.8	106.6	105.4	109.9	119.2	124.3	128.7	133.4
Inputs:											
Hours of all persons	82.2	90.8	96.9	105.0	107.5	105.2	106.7	112.9	115.2	116.7	120.0
Capital services	53.3	78.1	88.0	103.8	113.3	121.8	124.4	128.6	133.8	138.5	142.4
Combined units of labor and capital input	70.5	86.1	93.7	104.6	109.4	110.7	112.6	118.1	121.4	123.9	127.4
Capital per hour of all persons	64.9	86.1	90.8	98.9	105.4	115.8	116.6	113.9	116.1	118.7	118.6
Private nonfarm business											
Productivity:											
Output per hour of all persons	70.7	89.2	96.4	100.8	98.7	99.1	102.5	104.7	106.2	108.3	109.1
Output per unit of capital services	104.9	103.5	106.3	101.9	93.3	85.1	87.3	91.3	91.0	90.8	91.5
Multifactor productivity	81.2	93.8	99.7	101.2	96.9	94.1	97.0	99.9	100.7	102.0	102.7
Output	54.4	79.9	92.9	106.0	106.6	104.8	110.1	119.3	124.0	128.3	133.2
Inputs:											
Hours of all persons	77.0	89.6	96.3	105.1	108.0	105.7	107.4	114.0	116.8	118.5	122.0
Capital services	51.9	77.2	87.3	104.0	114.2	123.3	126.1	130.6	136.3	141.3	145.5
Combined units of labor and capital input	67.1	85.2	93.2	104.7	110.0	111.4	113.5	119.4	123.1	125.8	129.6
Capital per hour of all persons	67.4	86.2	90.7	99.0	105.7	116.6	117.4	114.6	116.7	119.3	119.2
Manufacturing											
Productivity:											
Output per hour of all persons	62.2	80.8	93.4	101.5	101.4	105.9	112.0	118.1	123.6	127.7	131.9
Output per unit of capital services	103.0	99.1	112.0	102.0	91.0	81.6	86.7	95.5	97.3	98.4	102.0
Multifactor productivity	72.0	85.3	98.0	101.6	98.6	99.2	105.0	112.1	116.4	119.5	123.6
Output	52.5	78.6	96.3	106.0	103.2	98.4	104.7	117.5	122.0	124.7	130.1
Inputs:											
Hours of all persons	84.4	97.3	103.1	104.4	101.7	92.9	93.5	99.5	98.7	97.7	98.6
Capital services	51.0	79.3	86.0	103.9	113.4	120.5	120.8	123.0	125.4	126.8	127.6
Combined units of labor and capital inputs	72.9	92.1	98.3	104.2	104.6	99.2	99.7	104.8	104.8	104.4	105.3
Capital per hour of all persons	60.4	81.5	83.4	99.5	111.5	129.8	129.3	123.7	127.1	129.8	129.4

46. Annual indexes of productivity, hourly compensation, unit costs, and prices, selected years

(1977=100)

Item	1960	1970	1973	1977	1979	1981	1982	1983	1984	1985	1986	1987	1988
Business:													
Output per hour of all persons	66.1	87.6	95.2	100.0	99.7	101.0	100.2	102.6	105.2	107.3	109.8	111.1	113.0
Compensation per hour	32.9	57.2	70.3	100.0	119.3	144.1	154.9	160.8	167.4	174.8	183.8	191.0	200.2
Real compensation per hour	67.3	89.4	96.0	100.0	99.5	96.1	97.3	97.8	97.6	98.4	101.7	101.9	102.5
Unit labor costs	49.7	65.3	73.8	100.0	119.6	142.7	154.5	156.7	159.1	162.8	167.5	171.9	177.1
Unit nonlabor payments	46.4	59.4	72.6	100.0	112.3	134.4	136.3	146.2	156.4	160.9	162.1	166.3	170.9
Implicit price deflator	48.5	63.2	73.4	100.0	117.0	139.8	148.1	153.0	158.2	162.2	165.6	170.0	174.9
Nonfarm business:													
Output per hour of all persons	69.5	88.4	95.8	100.0	99.4	100.0	99.1	102.0	104.2	105.6	107.7	108.9	111.1
Compensation per hour	34.5	57.6	70.7	100.0	119.0	144.0	154.7	160.8	167.2	174.0	182.9	189.8	198.7
Real compensation per hour	70.7	90.0	96.4	100.0	99.3	96.0	97.1	97.8	97.5	98.0	101.1	101.2	101.8
Unit labor costs	49.7	65.2	73.8	100.0	119.8	144.0	156.1	157.6	160.4	164.9	169.8	174.2	178.8
Unit nonlabor payments	46.3	60.0	69.4	100.0	110.3	133.2	136.1	148.1	156.3	161.9	163.3	167.7	172.2
Implicit price deflator	48.5	63.4	72.3	100.0	116.5	140.3	149.2	154.3	159.0	163.8	167.6	172.0	176.5
Nonfinancial corporations:													
Output per hour of all employees	71.9	90.2	96.8	100.0	99.9	99.9	100.2	103.0	105.5	107.2	109.6	112.1	114.7
Compensation per hour	36.1	58.6	71.0	100.0	118.9	143.7	154.1	159.1	165.0	171.6	179.9	186.1	194.1
Real compensation per hour	74.0	91.6	96.9	100.0	99.3	95.8	96.8	96.8	96.3	96.7	99.5	99.3	99.4
Total unit costs	49.4	64.8	72.7	100.0	118.2	147.7	159.5	159.5	160.8	164.1	168.5	171.2	174.6
Unit labor costs	50.2	65.0	73.4	100.0	119.0	143.8	153.8	154.5	156.5	160.2	164.1	166.1	169.3
Unit nonlabor costs	47.0	64.2	70.7	100.0	115.8	159.1	176.4	174.3	173.6	175.8	181.7	186.4	190.3
Unit profits	59.8	52.3	65.6	100.0	94.5	98.1	78.5	110.9	136.5	133.0	123.1	123.0	128.8
Unit nonlabor payments	51.5	60.1	68.9	100.0	108.4	137.8	142.1	152.1	160.6	160.8	161.2	164.2	168.8
Implicit price deflator	50.7	63.3	71.9	100.0	115.4	141.7	149.8	153.7	157.9	160.4	163.1	165.4	169.1
Manufacturing:													
Output per hour of all persons	60.7	80.2	92.6	100.0	101.6	104.0	106.6	112.2	118.2	123.5	128.2	132.9	136.5
Compensation per hour	35.6	57.0	68.2	100.0	118.9	145.7	158.7	162.7	168.1	176.3	184.3	189.2	196.0
Real compensation per hour	73.0	89.0	93.1	100.0	99.2	97.1	99.6	99.0	98.1	99.3	101.9	100.9	100.4
Unit labor costs	58.7	71.0	73.7	100.0	117.0	140.1	148.8	145.1	142.3	142.7	143.8	142.3	143.6
Unit nonlabor payments	60.0	64.1	70.8	100.0	98.9	111.7	113.7	128.3	138.5	130.3	135.2	137.6	–
Implicit price deflator	59.1	69.0	72.8	100.0	111.7	131.8	138.6	140.2	141.2	139.1	141.3	141.0	–

– Data not available.

47. Annual productivity indexes for selected industries

(1977=100)

Industry	SIC	1970	1975	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Iron mining, crude ore	1011	99.9	112.7	122.7	124.7	132.8	100.9	139.0	173.3	187.9	200.3	254.5	258.8
Iron mining, usable ore	1011	111.1	117.8	122.8	123.2	130.6	98.2	138.6	171.7	187.9	197.8	250.4	248.2
Copper mining, crude ore	1021	84.8	87.2	109.1	99.5	102.0	106.4	129.9	140.3	164.2	195.4	197.0	206.9
Copper mining, recoverable metal	1021	85.5	77.2	98.2	91.6	97.7	116.2	130.9	155.4	193.1	228.9	211.2	229.9
Coal mining	111,121	141.5	105.3	99.4	112.5	122.3	119.4	136.5	151.7	154.3	167.7	181.3	200.7
Bituminous coal and lignite mining	121	142.3	105.2	99.6	112.6	122.7	120.0	136.9	152.3	154.6	168.2	182.4	201.9
Nonmetallic minerals, except fuels	14	89.7	90.6	102.7	96.5	94.7	89.3	98.2	105.5	107.5	108.4	115.3	114.0
Crushed and broken stone	142	83.1	91.4	106.9	101.3	96.7	94.1	103.9	105.8	104.5	104.9	121.3	120.1
Red meat products	2011,13	77.3	84.4	101.7	107.0	107.9	112.3	115.9	117.0	119.5	117.3	115.3	–
Meatpacking plants	2011	78.7	88.6	104.6	108.9	113.9	119.5	123.4	125.6	130.1	126.2	126.2	125.7
Sausages and other prepared meats	2013	72.8	74.8	95.0	102.3	95.0	96.5	100.0	99.5	98.8	98.7	94.5	–
Poultry dressing and processing	2016,17	78.3	87.9	106.1	105.7	116.4	125.6	131.7	130.3	133.2	127.3	135.4	–
Fluid milk	2026	73.7	95.5	115.6	123.9	128.0	135.3	143.1	149.5	155.0	162.4	168.0	176.1
Preserved fruits and vegetables	203	79.7	93.7	98.9	100.8	99.2	107.9	110.8	112.4	113.4	118.3	116.4	–
Grain mill products	204	79.7	87.1	101.0	105.3	110.9	121.0	125.5	132.8	140.9	142.1	149.6	–
Flour and other grain mill products	2041	76.6	85.8	97.3	94.8	96.7	104.1	110.4	114.9	122.9	126.6	129.9	132.3
Rice milling	2044	82.0	90.4	96.3	111.8	117.9	104.5	103.3	93.2	103.2	112.6	120.6	113.7
Bakery products	205	87.5	93.4	95.0	93.7	96.2	103.3	106.9	106.8	108.5	114.4	113.3	–
Sugar	2061,62,63	85.9	94.0	103.1	100.1	98.8	90.4	98.6	99.7	105.5	110.1	125.5	126.3
Raw and refined cane sugar	2061,62	86.1	90.8	101.5	99.3	98.8	87.6	100.0	94.7	108.7	109.6	117.1	118.9
Beet sugar	2063	92.9	98.1	104.6	102.1	98.7	94.8	94.5	108.8	100.7	111.8	139.2	138.2
Malt beverages	2082	56.7	86.1	109.9	116.0	118.3	122.6	131.3	137.9	130.3	152.3	165.7	163.6
Bottled and canned soft drinks	2086	70.0	89.5	103.4	106.9	110.6	114.1	121.5	131.0	136.7	146.6	158.1	166.7
Total tobacco products	2111,21,31	86.8	93.9	102.1	102.1	100.5	100.7	105.1	110.3	113.4	117.2	124.2	120.3
Cigarettes, chewing and smoking tobacco	2111,31	85.3	93.3	102.4	101.8	99.6	99.5	104.1	107.2	111.7	115.5	123.1	119.9
Cigars	2121	88.4	93.7	101.4	106.4	107.3	111.4	112.3	141.4	129.3	133.1	139.1	129.3
Cotton and synthetic broad woven fabrics	2211,21	–	86.7	100.7	105.0	107.4	112.5	121.6	119.8	123.7	132.8	132.1	131.4
Hosiery	2251,52	65.5	94.3	107.9	107.4	122.0	114.2	118.0	119.9	118.5	121.0	118.3	126.9
Nonwool yarn mills	2281	84.3	101.2	103.8	99.7	103.1	118.2	128.5	129.6	134.5	141.1	162.6	161.1
Men's and boys' suits and coats	2311	75.1	95.2	96.9	97.3	98.8	95.2	90.2	96.9	106.3	107.5	105.8	109.9
Sawmills and planing mills, general	2421	90.0	98.8	106.3	104.2	107.9	117.1	126.8	132.3	139.2	155.1	151.1	148.7
Millwork	2431	95.9	100.2	92.2	93.6	96.4	86.1	87.9	88.7	85.7	90.0	94.1	–
Veneer and plywood	2435,36	83.2	97.8	94.5	102.8	106.9	114.4	121.1	120.0	125.1	128.8	132.1	–
Household furniture	251	82.2	97.5	101.5	99.9	103.0	104.7	110.1	112.2	112.5	118.5	118.3	124.5
Wood household furniture	2511,7	83.5	98.0	101.6	97.2	97.3	98.2	103.8	105.5	104.4	111.9	110.5	–
Upholstered household furniture	2512	84.4	97.2	105.1	102.3	110.5	115.9	121.6	122.7	124.6	127.1	125.2	–
Mattresses and bedsprings	2515	67.7	96.9	102.8	112.1	114.0	104.3	108.6	109.5	108.8	117.9	130.9	123.7
Office furniture	252	78.2	85.5	107.2	112.1	108.8	107.4	112.0	117.8	116.7	117.8	118.7	113.9
Paper, paperboard, and pulp mills	2611,21,31,61	77.5	86.7	105.4	105.2	104.4	111.3	119.5	121.0	123.1	133.5	138.0	142.8
Paper and plastic bags	2643	75.8	99.8	98.0	94.6	92.3	95.3	102.9	105.6	107.1	112.3	110.5	–
Folding paperboard boxes	2651	77.4	98.5	104.6	101.6	104.5	104.2	104.5	102.4	99.6	101.4	98.1	98.7
Corrugated and solid fiber boxes	2653	73.1	96.2	106.9	111.0	109.8	111.9	114.0	118.9	122.5	126.7	123.3	124.3
Industrial inorganic chemicals	281	–	86.5	112.2	94.3	91.4	86.3	94.0	104.5	101.4	105.4	107.5	–
Industrial inorganic chemicals, not elsewhere classified	2819 pt.	–	84.0	114.6	90.3	89.3	80.8	85.8	95.0	91.5	90.6	92.0	–
Synthetic fibers	2823,24	53.8	84.5	115.0	115.7	120.9	103.6	126.2	125.3	135.8	146.2	156.4	156.6
Pharmaceutical preparations	2834	74.8	92.5	105.3	106.0	104.2	107.0	114.3	116.4	118.1	121.8	120.9	116.8
Cosmetics and other toiletries	2844	65.9	94.0	94.0	83.6	76.1	84.0	86.2	85.2	87.3	94.3	96.2	–
Paints and allied products	2851	74.9	94.2	104.8	100.8	99.8	106.5	113.8	121.5	125.6	127.7	135.3	138.2
Industrial organic chemicals, not elsewhere classified	2869	65.5	85.3	113.4	98.9	103.9	87.2	105.3	113.9	112.5	119.6	132.1	–
Agricultural chemicals	287	–	86.7	102.0	97.2	97.7	94.5	106.2	119.8	115.6	110.0	129.4	–
Petroleum refining	2911	73.8	88.7	94.9	94.2	83.7	79.4	81.8	92.5	102.6	113.8	120.1	125.7
Tires and inner tubes	3011	87.6	91.8	107.3	102.4	118.1	128.2	136.1	146.8	146.7	151.4	162.2	169.7
Miscellaneous plastic products	3079	–	86.2	94.8	95.7	98.5	110.1	107.2	110.5	113.0	114.1	125.4	–
Footwear	314	100.3	101.3	100.2	99.1	95.6	106.4	103.9	105.7	107.3	109.3	104.7	100.6
Glass containers	3221	87.2	98.5	102.4	105.2	110.1	105.8	108.5	128.0	127.0	138.9	153.6	153.3
Hydraulic cement	3241	84.8	84.7	96.0	87.0	91.1	94.0	108.4	125.3	128.3	135.5	143.8	147.6
Structural clay products	325	78.2	91.0	95.9	97.6	100.7	102.6	105.4	111.3	112.8	115.6	119.9	–
Clay construction products	3251,53,59	77.4	89.1	91.6	94.0	97.3	103.3	101.1	110.4	112.6	114.5	120.0	120.6
Brick and structural clay tile	3251	81.1	93.1	85.4	84.9	84.3	88.6	85.5	93.3	100.4	98.7	104.9	104.9
Clay refractories	3255	82.1	95.5	110.2	109.6	111.1	100.0	121.6	115.1	114.1	122.9	121.9	–
Concrete products	3271,72	82.3	91.9	92.7	90.4	88.5	91.0	97.6	99.2	100.5	105.9	102.1	–
Ready-mixed concrete	3273	91.1	97.5	99.9	93.1	95.4	90.6	93.7	96.3	97.4	100.1	104.5	–
Steel	331	87.6	93.3	106.9	102.9	112.0	90.9	116.8	131.3	139.5	141.8	152.3	168.3
Gray iron foundries	3321	79.8	97.0	96.8	90.8	92.7	93.7	98.3	106.8	104.2	107.4	108.8	–
Steel foundries	3324,25	90.6	107.5	100.6	99.8	91.6	89.0	89.9	98.8	95.6	100.3	95.0	–
Steel foundries, not elsewhere classified	3325	–	107.7	100.4	99.8	90.0	88.4	90.2	103.5	101.0	104.3	104.3	111.0
Primary copper, lead, and zinc	3331,32,33	78.1	85.3	106.5	103.7	118.6	128.0	141.2	148.0	181.5	210.8	259.8	–
Primary copper	3331	79.8	83.0	113.3	105.3	124.4	128.5	138.3	151.9	189.8	229.2	296.9	338.0
Primary aluminum	3334	92.5	96.2	99.7	100.0	103.8	103.0	111.5	125.4	125.4	134.0	133.3	134.9
Copper rolling and drawing	3351	76.8	76.8	98.1	94.1	97.9	106.0	121.1	128.1	122.0	130.4	135.5	135.7
Aluminum rolling and drawing	3353,54,55	66.0	87.5	100.3	100.0	96.8	99.2	110.4	116.2	115.6	125.0	128.4	128.4
Metal cans	3411	78.8	87.0	103.6	102.6	108.1	118.5	120.5	123.0	125.6	126.0	132.6	143.2
Hand and edge tools	3423	91.0	93.9	103.9	98.4	95.2	92.8	88.8	89.5	90.1	89.2	93.9	–
Heating equipment, except electric	3433	–	80.4	95.8	99.7	94.6	102.3	93.2	102.0	101.6	105.0	109.3	–
Fabricated structural metal	3441	102.2	97.4	102.1	102.1	98.5	99.5	103.0	107.9	117.7	117.7	117.7	–
Metal doors, sash, and trim	3442	82.1	89.3	92.8	90.6	90.4	96.0	99.7	102.8	106.3	104.1	104.9	–
Metal stampings	3465,66,69	86.4	93.2	102.3	99.9	101.4	98.1	104.7	110.4	104.7	108.7	115.6	–
Valves and pipe fittings	3494	93.6	92.4	105.3	102.8	105.4	101.3	103.6	105.1	104.5	104.4	110.8	–
Farm and garden machinery	352	75.7	97.7	100.5	93.3	95.1	94.9	95.1	105.2	101.5	103.0	109.6	–

See footnotes at end of table.

47. Continued—Annual productivity indexes for selected industries

(1977=100)

Industry	SIC	1970	1975	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Construction machinery and equipment	3531	83.4	93.9	100.3	97.4	96.1	88.9	88.2	102.6	104.1	107.1	100.8	101.6
Oilfield machinery and equipment	3533	86.4	107.9	105.6	104.0	104.7	98.4	91.8	87.5	79.9	73.2	75.6	72.0
Machine tools	3541,42	91.7	103.0	102.0	98.8	96.5	88.0	83.0	93.6	96.7	97.7	110.8	100.2
Metal-cutting machine tools	3541	89.5	102.9	103.0	100.6	98.9	89.2	81.1	93.3	96.4	97.6	112.4	93.3
Metal-forming machine tools	3542	98.5	104.0	99.2	93.5	89.4	85.0	87.6	93.7	96.6	97.1	105.9	112.9
Pumps and compressors	3561,63	85.8	91.4	102.9	100.2	102.4	95.9	100.2	106.1	106.8	108.3	115.4	–
Ball and roller bearings	3562	85.5	97.5	105.8	95.4	94.3	83.3	86.3	94.4	92.1	95.6	103.6	106.3
Refrigeration and heating equipment	3585	88.4	89.9	101.4	93.8	99.4	100.1	100.9	105.5	103.7	101.5	107.9	–
Carburetors, pistons, rings, and valves	3592	–	100.1	94.6	90.3	91.7	92.0	99.6	110.3	114.0	111.1	118.8	–
Transformers	3612	89.1	89.3	108.4	110.6	106.9	99.6	99.1	97.6	99.3	100.4	101.5	103.1
Switchgear and switchboard apparatus	3613	83.3	93.4	102.8	103.2	99.5	101.3	106.1	107.4	110.6	110.7	109.3	–
Motors and generators	3621	87.8	93.0	99.3	96.7	100.4	102.4	104.3	107.9	110.5	112.3	119.2	117.4
Major household appliances	3631,32,33,39	70.2	93.6	108.7	105.8	107.6	108.6	117.6	123.6	127.2	134.1	137.2	138.9
Household cooking equipment	3631	68.7	97.8	108.9	103.9	105.7	112.6	120.8	131.9	135.6	158.4	168.5	170.9
Household refrigerators and freezers	3632	71.7	94.5	112.3	114.4	117.4	116.1	127.1	127.5	136.8	133.5	129.0	131.2
Household laundry equipment	3633	70.7	93.6	108.1	102.1	103.9	105.4	112.2	117.5	118.2	123.1	125.3	129.8
Household appliances, not elsewhere classified	3639	70.4	88.8	102.6	99.1	100.4	94.7	103.7	109.8	110.0	113.1	120.1	117.7
Electric lamps	3641	88.3	96.4	105.2	103.2	106.9	108.4	124.8	131.9	126.9	131.1	144.5	150.4
Lighting fixtures	3645,46,47,48	78.1	89.2	94.6	93.3	88.7	91.0	96.3	102.2	107.1	113.9	109.9	109.8
Radio and television receiving sets	3651	70.6	90.1	118.5	116.9	133.6	163.9	196.1	236.9	249.8	278.1	257.7	258.5
Semiconductors and related devices	3674	–	56.0	138.1	149.4	171.6	197.9	211.5	229.2	206.1	210.5	260.1	–
Motor vehicles and equipment	371	70.5	87.7	97.8	90.8	93.1	96.9	109.6	115.7	121.2	121.7	129.1	133.8
Instruments to measure electricity	3825	–	95.9	100.2	108.4	111.9	119.2	121.8	133.7	130.4	122.2	132.2	–
Railroad transportation, revenue traffic	401 Class I	77.7	89.5	104.7	107.3	111.5	115.8	141.9	152.9	161.7	178.1	206.4	226.5
Railroad transportation, car-miles	401 Class I	89.1	98.3	102.9	107.9	107.6	110.1	128.9	137.7	138.9	148.2	167.5	179.4
Class 1 bus carriers	411,13,14 pts.	107.3	97.0	98.3	100.9	90.7	98.8	95.4	90.9	87.4	86.8	90.6	–
Intercity trucking	4213 pt.	83.5	89.2	116.7	107.7	116.3	108.0	130.7	135.1	130.2	134.5	138.9	–
Intercity trucking, general freight	4213 pt.	76.8	88.4	116.4	107.5	117.2	107.8	136.0	137.6	131.7	140.9	144.9	–
Air transportation	4511,4521 pt.	71.4	87.6	113.1	106.2	104.9	114.9	126.7	131.7	136.3	137.9	146.1	140.8
Petroleum pipelines	4612,13	79.5	95.7	101.7	93.0	86.0	89.2	94.3	104.5	104.9	107.0	104.9	109.9
Telephone communications	4811	62.1	85.9	110.8	118.1	124.4	129.1	145.1	143.0	149.8	161.3	165.9	176.7
Gas and electric utilities	491,92,93	83.1	94.7	97.6	96.2	94.4	89.3	88.4	91.6	90.9	90.6	93.5	97.9
Electric utilities	491,493 pt.	77.1	92.9	95.4	94.0	93.0	89.5	90.9	94.4	93.5	95.8	100.7	105.6
Gas utilities	492,493 pt.	102.1	101.4	103.4	102.1	98.1	89.0	81.1	83.6	82.1	74.1	71.6	74.7
Hardware stores	5251	–	97.8	114.8	111.6	107.5	109.2	111.4	121.1	124.6	137.4	140.3	150.6
Department stores	5311	77.5	89.7	104.4	103.8	109.9	112.4	119.5	126.6	129.2	135.3	138.5	141.7
Variety stores	5331	124.9	122.5	102.4	107.8	118.8	113.0	121.5	126.8	118.5	101.1	97.2	93.8
Retail food stores	54	107.0	98.8	98.3	100.3	97.1	95.5	95.2	95.6	95.8	93.7	92.7	91.8
Grocery stores	5411	–	98.6	99.0	100.1	97.9	97.9	98.6	100.1	98.4	96.3	93.8	92.1
Retail bakeries	546	–	93.1	98.6	102.5	97.9	90.6	88.4	78.9	69.8	73.6	78.9	76.9
Franchised new car dealers	5511	86.1	95.0	97.7	99.6	98.1	100.4	109.4	110.4	109.7	110.7	107.4	111.8
Auto and home supply stores	5531	–	89.9	103.2	106.7	109.2	107.2	118.9	118.4	124.7	125.6	134.1	136.6
Gasoline service stations	5541	74.6	85.3	107.4	105.1	106.7	111.8	122.5	129.1	134.3	143.9	139.8	141.5
Apparel and accessory stores	56	81.3	105.0	112.9	117.9	123.9	126.4	132.9	140.9	146.3	153.5	142.3	141.2
Men's and boys' clothing stores	5611	82.7	102.3	108.6	107.1	116.4	116.6	119.5	125.1	131.4	135.0	134.0	133.7
Women's ready-to-wear stores	5621	76.5	106.5	116.0	117.9	127.8	142.0	151.3	158.3	162.8	176.4	166.1	162.8
Family clothing stores	5651	75.2	109.5	108.2	123.7	132.4	140.7	149.2	145.8	138.5	136.0	128.8	128.0
Shoe stores	5661	95.3	95.1	112.8	110.3	114.2	110.2	107.9	110.9	118.7	127.5	119.9	118.2
Furniture, furnishings, and equipment stores	57	80.1	91.9	107.6	107.4	112.6	109.2	118.4	129.4	133.5	144.4	146.8	154.4
Furniture and home furnishings stores	571	79.3	90.1	104.8	98.0	101.2	97.6	104.1	113.1	108.7	115.5	113.0	111.0
Appliance, radio, television, and music stores	572,73	81.2	94.8	112.4	124.0	132.4	128.7	143.4	158.5	180.0	198.9	211.9	243.2
Household appliance stores	572	–	89.5	111.3	109.9	114.9	102.0	111.8	139.2	154.6	177.2	172.1	177.2
Radio, television, and music stores	573	–	98.0	112.7	131.5	140.5	142.4	159.5	165.9	190.2	206.5	226.7	269.5
Eating and drinking places	58	100.6	100.8	99.5	99.8	97.3	96.9	95.3	91.1	87.9	89.7	90.7	91.3
Drug and proprietary stores	5912	83.4	94.2	103.8	107.0	107.6	107.9	110.9	105.7	105.5	104.6	103.8	105.3
Liquor stores	5921	–	96.3	96.6	102.2	104.0	108.1	101.6	98.7	107.1	98.0	91.6	88.5
Commercial banking	602	85.5	90.0	99.3	92.7	90.5	93.2	101.3	104.3	109.7	111.8	116.5	–
Hotels, motels, and tourist courts	7011	85.1	89.7	100.0	95.0	91.6	88.8	95.4	102.1	97.5	92.8	88.0	–
Laundry and cleaning services	721	94.7	96.6	97.7	91.0	88.4	90.6	90.4	92.3	87.3	85.0	84.1	83.8
Beauty and barber shops	7231,41	–	98.7	107.4	102.9	109.2	108.3	114.0	103.9	98.6	97.3	99.1	96.0
Beauty shops	7231	–	100.1	108.0	106.2	114.7	113.1	120.1	112.3	104.1	98.8	100.1	96.2
Automotive repair shops	753	–	102.0	100.4	95.9	93.3	87.4	86.1	88.3	96.1	93.2	96.1	101.1

– Data not available.

48. Unemployment rates, approximating U.S. concepts, in nine countries, quarterly data seasonally adjusted

Country	Annual average		1988				1989		
	1987	1988	I	II	III	IV	I	II	III
Total labor force basis									
United States	6.1	5.4	5.6	5.4	5.4	5.2	5.1	5.2	5.2
Canada	8.8	7.7	7.8	7.6	7.8	7.7	7.5	7.6	7.3
Australia	8.0	7.2	7.5	7.4	6.9	6.8	6.6	6.1	6.0
Japan	2.9	2.5	2.7	2.5	2.6	2.4	2.4	2.3	2.3
France	10.5	10.1	10.2	10.1	10.2	10.0	9.9	9.9	9.9
Germany	6.2	6.2	6.3	6.3	6.2	6.1	5.7	5.6	5.6
Italy [1, 2]	7.7	7.8	7.8	7.8	7.8	7.8	7.6	7.8	7.7
Sweden	1.9	1.6	1.7	1.6	1.6	1.4	1.4	1.3	1.3
United Kingdom	10.2	8.2	9.0	8.6	8.0	7.5	7.0	6.5	6.2
Civilian labor force basis									
United States	6.2	5.5	5.7	5.5	5.5	5.3	5.2	5.3	5.3
Canada	8.8	7.8	7.8	7.7	7.8	7.7	7.6	7.6	7.4
Australia	8.1	7.2	7.6	7.5	7.0	6.8	6.6	6.1	6.0
Japan	2.9	2.5	2.7	2.5	2.6	2.4	2.4	2.3	2.3
France	10.8	10.4	10.4	10.4	10.4	10.2	10.1	10.1	10.2
Germany	6.4	6.3	6.4	6.4	6.3	6.2	5.8	5.7	5.7
Italy [1, 2]	7.9	7.9	7.9	7.9	8.0	7.9	7.7	8.0	7.8
Sweden	1.9	1.6	1.7	1.6	1.6	1.4	1.4	1.3	1.3
United Kingdom	10.2	8.3	9.0	8.6	8.0	7.6	7.0	6.6	6.2

[1] Quarterly rates are for the first month of the quarter.

[2] Many Italians reported as unemployed did not actively seek work in the past 30 days, and they have been excluded for comparability with U.S. concepts. Inclusion of such persons would about double the Italian unemployment rate in 1985 and earlier years and increase it to 11-12 percent for 1986 onward.

NOTE: Quarterly figures for France, Germany, and the United Kingdom are calculated by applying annual adjustment factors to current published data and therefore should be viewed as less precise indicators of unemployment under U.S. concepts than the annual figures.

49. Annual data: Employment status of the civilian working-age population, approximating U.S. concepts, 10 countries

(Numbers in thousands)

Employment status and country	1979	1980	1981	1982	1983	1984	1985	1986	1987	1988
Labor force										
United States	104,962	106,940	108,670	110,204	111,550	113,544	115,461	117,834	119,865	121,669
Canada	11,231	11,573	11,899	11,926	12,109	12,316	12,532	12,746	13,011	13,275
Australia	6,519	6,693	6,810	6,910	6,997	7,135	7,300	7,588	7,758	7,974
Japan	55,210	55,740	56,320	56,980	58,110	58,480	58,820	59,410	60,050	60,860
France	22,660	22,800	22,950	23,160	23,140	23,300	23,360	23,440	23,540	23,580
Germany	26,250	26,520	26,650	26,700	26,650	26,760	26,970	27,090	28,360	28,540
Italy	20,850	21,120	21,320	21,410	21,590	21,670	21,800	22,290	22,350	22,660
Netherlands	5,630	5,860	6,080	6,140	6,170	6,260	6,280	6,370	6,490	6,540
Sweden	4,262	4,312	4,327	4,350	4,369	4,385	4,418	4,443	4,480	4,530
United Kingdom	26,350	26,520	26,590	26,720	26,750	27,170	27,370	27,540	27,860	28,110
Participation rate[1]										
United States	63.7	63.8	63.9	64.0	64.0	64.4	64.8	65.3	65.6	65.9
Canada	63.4	64.1	64.8	64.1	64.4	64.8	65.3	65.7	66.2	66.7
Australia	61.6	62.1	61.9	61.7	61.4	61.5	61.8	63.0	63.0	63.3
Japan	62.7	62.6	62.6	62.7	63.1	62.7	62.3	62.1	61.9	61.9
France	57.5	57.2	57.1	57.1	56.6	56.6	56.3	56.1	55.8	55.6
Germany	53.3	53.2	52.9	52.6	52.3	52.4	52.6	52.6	55.0	55.2
Italy	48.0	48.2	48.3	47.7	47.5	47.3	47.2	47.8	47.9	48.4
Netherlands	54.1	55.3	56.6	56.5	56.1	56.2	55.7	55.9	56.3	56.2
Sweden	66.6	66.9	66.8	66.8	66.7	66.6	66.9	67.0	67.3	67.8
United Kingdom	62.6	62.5	62.2	62.2	61.9	62.5	62.6	62.6	63.0	63.3
Employed										
United States	98,824	99,303	100,397	99,526	100,834	105,005	107,150	109,597	112,440	114,968
Canada	10,395	10,708	11,001	10,618	10,675	10,932	11,221	11,531	11,861	12,244
Australia	6,111	6,284	6,416	6,415	6,300	6,494	6,697	6,974	7,129	7,398
Japan	54,040	54,600	55,060	55,620	56,550	56,870	57,260	57,740	58,320	59,310
France	21,300	21,330	21,200	21,240	21,170	20,980	20,920	20,950	21,010	21,140
Germany	25,470	25,750	25,560	25,140	24,750	24,790	24,960	25,230	26,550	26,730
Italy	19,930	20,200	20,280	20,250	20,320	20,390	20,490	20,610	20,590	20,870
Netherlands	5,340	5,510	5,540	5,510	5,410	5,490	5,640	5,730	5,840	5,920
Sweden	4,174	4,226	4,219	4,213	4,218	4,249	4,293	4,326	4,396	4,458
United Kingdom	24,940	24,670	23,800	23,720	23,610	23,990	24,310	24,460	25,010	25,780
Employment-population ratio[2]										
United States	59.9	59.2	59.0	57.8	57.9	59.5	60.1	60.7	61.5	62.3
Canada	58.7	59.3	59.9	57.1	56.8	57.5	58.5	59.4	60.4	61.6
Australia	57.8	58.3	58.4	57.3	55.3	56.0	56.6	57.9	57.9	58.7
Japan	61.4	61.3	61.2	61.2	61.4	61.0	60.6	60.4	60.1	60.4
France	54.0	53.5	52.8	52.3	51.8	51.0	50.4	50.2	49.8	49.9
Germany	51.7	51.7	50.8	49.6	48.6	48.5	48.7	49.0	51.5	51.7
Italy	45.9	46.1	45.9	45.2	44.7	44.5	44.4	44.2	44.1	44.6
Netherlands	51.3	52.0	51.6	50.7	49.2	49.3	50.0	50.2	50.6	50.9
Sweden	65.3	65.6	65.1	64.7	64.4	64.5	65.0	65.2	66.0	66.7
United Kingdom	59.2	58.1	55.7	55.2	54.7	55.2	55.6	55.6	56.6	58.0
Unemployed										
United States	6,137	7,637	8,273	10,678	10,717	8,539	8,312	8,237	7,425	6,701
Canada	836	865	898	1,308	1,434	1,384	1,311	1,215	1,150	1,031
Australia	408	409	394	495	697	641	603	613	629	576
Japan	1,170	1,140	1,260	1,360	1,560	1,610	1,560	1,670	1,730	1,550
France	1,360	1,470	1,750	1,920	1,970	2,320	2,440	2,490	2,530	2,440
Germany	780	770	1,090	1,560	1,900	1,970	2,010	1,860	1,800	1,810
Italy	920	920	1,040	1,160	1,270	1,280	1,310	1,680	1,760	1,790
Netherlands	290	350	540	630	760	770	640	640	650	620
Sweden	88	86	108	137	151	136	125	117	84	72
United Kingdom	1,420	1,850	2,790	3,000	3,140	3,180	3,060	3,080	2,850	2,330
Unemployment rate										
United States	5.8	7.1	7.6	9.7	9.6	7.5	7.2	7.0	6.2	5.5
Canada	7.4	7.5	7.5	11.0	11.8	11.2	10.5	9.5	8.8	7.8
Australia	6.3	6.1	5.8	7.2	10.0	9.0	8.3	8.1	8.1	7.2
Japan	2.1	2.0	2.2	2.4	2.7	2.8	2.6	2.8	2.9	2.5
France	6.0	6.4	7.6	8.3	8.5	10.0	10.4	10.6	10.8	10.4
Germany	3.0	2.9	4.1	5.8	7.1	7.4	7.5	6.9	6.4	6.3
Italy	4.4	4.4	4.9	5.4	5.9	5.9	6.0	7.5	7.9	7.9
Netherlands	5.2	6.0	8.9	10.3	12.3	12.3	10.2	10.0	10.0	9.5
Sweden	2.1	2.0	2.5	3.1	3.5	3.1	2.8	2.6	1.9	1.6
United Kingdom	5.4	7.0	10.5	11.2	11.7	11.7	11.2	11.2	10.2	8.3

[1] Labor force as a percent of the civilian working-age population.
[2] Employment as a percent of the civilian working-age population.

NOTE: See "Notes on the data" for information on breaks in series for Germany, Italy, the Netherlands, and Sweden.

50. Annual indexes of manufacturing productivity and related measures, 12 countries

(1977=100)

Item and country	1960	1970	1973	1976	1977	1978	1980	1981	1982	1983	1984	1985	1986	1987	1988
Output per hour															
United States	62.2	80.8	93.4	97.1	100.0	101.5	101.4	103.6	105.9	112.0	118.1	123.6	127.7	132.0	136.2
Canada	50.7	75.6	90.3	94.8	100.0	101.1	98.2	102.9	98.3	105.4	114.4	117.3	117.7	120.5	124.3
Japan	23.2	64.8	83.1	94.3	100.0	108.0	122.7	127.2	135.0	142.3	152.5	161.1	163.7	176.5	190.0
Belgium	33.0	60.4	78.8	95.3	100.0	106.1	119.2	127.6	135.2	148.1	155.0	158.6	164.5	170.5	–
Denmark	37.2	65.6	83.3	98.2	100.0	101.5	112.3	114.2	114.6	120.2	119.6	120.3	116.2	117.2	117.2
France	37.4	71.4	83.8	94.4	100.0	104.6	110.6	113.9	122.0	125.1	127.5	132.7	135.2	136.8	144.1
Germany	40.3	71.2	84.0	96.4	100.0	103.1	108.6	111.0	112.6	119.2	123.7	128.4	128.3	129.9	135.9
Italy	37.2	69.8	83.4	97.9	100.0	106.5	122.1	125.4	128.5	135.3	148.8	156.8	158.3	162.3	167.1
Netherlands	32.4	64.3	81.5	95.8	100.0	106.4	113.9	116.9	119.4	127.9	139.2	145.1	144.8	145.9	153.2
Norway	54.3	81.3	94.4	100.4	100.0	101.2	107.5	108.0	109.2	117.2	124.1	126.8	125.9	132.2	–
Sweden	42.3	80.7	94.8	101.7	100.0	102.8	112.7	113.2	116.5	125.5	131.0	136.1	136.0	141.8	145.0
United Kingdom	55.9	80.3	95.4	99.1	100.0	101.4	101.9	107.1	113.5	123.1	129.9	134.1	138.6	147.6	154.9
Output															
United States	52.5	78.6	96.3	93.1	100.0	106.0	103.2	104.8	98.4	104.7	117.5	122.0	124.7	130.1	138.1
Canada	41.3	73.5	93.5	96.5	100.0	104.6	103.6	107.4	93.6	99.6	112.5	118.8	121.9	128.5	136.0
Japan	19.2	69.9	91.9	94.8	100.0	106.7	124.1	129.8	137.3	148.2	165.4	177.0	177.8	190.8	212.3
Belgium	41.9	78.6	96.4	99.7	100.0	101.4	106.8	105.6	110.1	114.7	118.0	119.6	121.4	123.3	–
Denmark	49.2	82.0	95.9	99.6	100.0	99.7	110.1	106.6	108.3	115.6	121.0	124.9	125.9	121.1	118.4
France	36.5	75.5	90.5	95.6	100.0	102.3	104.6	102.9	104.0	103.8	102.6	103.0	102.8	101.8	105.7
Germany	50.0	86.6	96.1	98.0	100.0	101.8	106.6	104.9	102.4	103.6	106.4	110.0	110.8	111.6	116.3
Italy	33.0	69.0	83.5	96.5	100.0	104.9	121.9	119.9	118.7	119.7	125.3	129.0	131.9	137.3	145.3
Netherlands	44.8	84.4	95.8	99.0	100.0	102.8	106.6	106.7	105.0	107.0	113.3	116.7	118.1	118.7	123.8
Norway	54.8	86.5	99.2	102.1	100.0	97.7	99.5	98.6	96.8	97.2	102.7	106.5	106.9	108.3	–
Sweden	52.6	92.5	100.3	106.1	100.0	97.3	104.0	100.6	100.1	105.2	111.5	115.3	114.7	119.2	124.0
United Kingdom	71.2	94.9	104.7	98.1	100.0	100.6	91.8	86.3	86.4	88.8	92.5	94.8	95.6	101.0	108.2
Total hours															
United States	84.4	97.3	103.1	95.9	100.0	104.4	101.7	101.1	92.9	93.5	99.5	98.7	97.7	98.6	101.4
Canada	81.4	97.2	103.6	101.8	100.0	103.4	105.5	104.3	95.2	94.5	98.3	101.2	103.6	106.6	109.4
Japan	82.7	107.9	110.7	100.6	100.0	98.8	101.2	102.0	101.7	104.2	108.5	109.8	108.6	108.1	111.7
Belgium	127.1	130.2	122.3	104.6	100.0	95.5	89.6	82.8	81.4	77.5	76.1	75.4	73.8	72.3	–
Denmark	132.4	125.1	115.2	101.4	100.0	98.3	98.0	93.4	94.5	96.2	101.2	103.8	108.4	103.3	101.0
France	97.6	105.7	107.9	101.3	100.0	97.8	94.6	90.3	85.2	83.0	80.4	77.6	76.1	74.4	73.4
Germany	123.8	121.7	114.4	101.6	100.0	98.7	98.1	94.6	91.0	86.9	86.1	85.7	86.4	85.9	85.5
Italy	88.9	98.9	100.1	98.6	100.0	98.5	99.8	95.6	92.4	88.5	84.2	82.3	83.3	84.6	87.0
Netherlands	138.4	131.2	117.6	103.3	100.0	96.6	93.6	91.2	88.0	83.6	81.4	80.5	81.5	81.3	80.8
Norway	101.1	106.4	105.1	101.7	100.0	96.5	92.6	91.3	88.6	82.9	82.8	84.0	84.9	81.9	–
Sweden	124.4	114.6	105.7	104.3	100.0	94.6	92.3	88.9	85.9	83.9	85.1	84.7	84.3	84.0	85.5
United Kingdom	127.3	118.1	109.8	99.0	100.0	99.1	90.1	80.6	76.2	72.2	71.2	70.7	69.0	68.5	69.8
Compensation per hour															
United States	36.5	57.4	68.8	92.1	100.0	108.2	132.4	145.2	157.5	162.4	168.0	176.4	183.0	186.9	193.5
Canada	27.5	47.9	60.0	90.3	100.0	107.6	131.3	151.1	167.0	177.2	185.6	194.4	203.5	214.0	227.1
Japan	8.9	33.9	55.1	90.7	100.0	106.6	120.7	129.8	136.6	140.7	144.9	151.4	158.9	162.5	171.3
Belgium	13.8	34.9	53.5	89.5	100.0	107.8	130.2	144.5	150.7	159.8	173.1	183.6	190.8	194.7	–
Denmark	12.6	36.3	56.1	90.4	100.0	110.2	135.9	149.7	162.9	174.2	184.1	196.5	203.5	225.9	230.1
France	15.0	36.3	51.9	87.8	100.0	113.0	148.5	172.0	204.0	225.2	244.9	265.4	278.7	291.4	301.9
Germany	18.8	48.0	67.5	91.2	100.0	107.8	125.6	134.5	141.0	148.3	155.5	164.6	171.5	178.1	185.5
Italy	9.2	27.1	41.2	84.5	100.0	115.2	163.7	197.9	233.3	273.1	313.3	352.0	367.4	391.2	416.3
Netherlands	12.5	39.0	60.5	91.9	100.0	108.4	123.6	129.1	137.5	144.5	148.6	156.9	162.2	167.0	172.8
Norway	15.8	37.9	54.6	88.9	100.0	110.0	128.0	142.8	156.1	173.5	188.3	204.3	224.2	257.4	–
Sweden	14.7	38.5	54.2	91.5	100.0	111.4	133.6	148.1	158.9	173.3	189.7	212.4	228.7	244.8	261.1
United Kingdom	15.2	31.4	47.9	88.4	100.0	116.7	168.6	193.4	211.7	226.6	242.3	258.8	277.8	295.7	319.3
Unit labor costs: National currency basis															
United States	58.7	71.0	73.7	94.9	100.0	106.6	130.6	140.1	148.7	145.0	142.2	142.7	143.3	141.7	142.1
Canada	54.2	63.4	66.5	95.3	100.0	106.5	133.7	146.7	170.0	168.1	162.3	165.7	172.8	177.5	182.7
Japan	38.4	52.3	66.4	96.2	100.0	98.7	98.4	102.0	101.2	98.9	95.0	94.0	97.1	92.1	90.2
Belgium	41.7	57.8	67.9	93.9	100.0	101.6	109.2	113.2	111.5	107.9	111.7	115.8	116.0	114.2	–
Denmark	33.8	55.4	67.4	92.1	100.0	108.6	121.0	131.1	142.2	144.9	153.9	163.3	175.1	192.8	196.3
France	40.2	50.8	62.0	93.0	100.0	108.0	134.3	151.0	167.2	179.9	192.0	200.0	206.2	213.0	209.6
Germany	46.6	67.4	80.3	94.6	100.0	104.5	115.7	121.2	125.2	124.4	125.8	128.3	133.7	137.1	136.4
Italy	24.7	38.8	49.4	86.3	100.0	108.1	134.0	157.8	181.6	201.9	210.6	224.5	232.0	241.0	249.1
Netherlands	38.5	60.7	74.3	96.0	100.0	101.8	108.5	110.4	115.2	113.0	106.8	108.1	112.0	114.4	112.8
Norway	29.2	46.6	57.8	88.5	100.0	108.7	119.1	132.2	142.9	148.0	151.8	161.1	178.1	194.7	–
Sweden	34.8	47.7	57.2	90.0	100.0	108.4	118.6	130.9	136.3	138.1	144.8	156.1	168.2	172.6	180.0
United Kingdom	27.2	39.1	50.2	89.2	100.0	115.0	165.5	180.6	186.5	184.1	186.5	193.0	200.4	200.4	206.2
Unit labor costs: U.S. dollar basis															
United States	58.7	71.0	73.7	94.9	100.0	106.6	130.6	140.1	148.7	145.0	142.2	142.7	143.3	141.7	142.1
Canada	59.4	64.5	70.6	102.7	100.0	99.3	121.5	130.0	146.3	144.9	133.2	128.9	132.1	142.3	157.8
Japan	28.5	39.1	65.6	86.9	100.0	126.8	116.8	123.8	108.8	111.5	107.2	105.6	154.4	170.5	188.4
Belgium	30.0	41.7	62.7	87.2	100.0	115.8	134.0	109.6	87.2	75.6	69.3	69.9	93.1	109.5	–
Denmark	29.5	44.4	67.2	91.5	100.0	118.4	129.0	110.3	102.3	95.1	89.3	92.5	129.9	169.0	174.8
France	40.3	45.2	68.6	95.8	100.0	117.9	156.4	136.4	124.9	116.1	108.1	109.5	146.3	174.2	172.9
Germany	25.9	42.9	70.4	87.3	100.0	121.0	147.9	124.9	119.7	113.1	102.6	101.2	143.0	177.0	180.3
Italy	35.1	54.7	75.0	91.8	100.0	112.4	138.4	122.4	118.4	117.3	105.9	103.8	137.4	164.0	168.8
Netherlands	25.1	41.2	65.6	89.1	100.0	115.7	134.1	108.9	105.8	97.1	81.6	80.0	112.2	138.6	139.9
Norway	21.8	34.7	53.5	86.4	100.0	110.4	128.4	122.5	117.8	107.9	99.0	99.8	124.7	153.7	–
Sweden	30.1	41.1	58.7	92.3	100.0	107.2	125.3	115.4	96.9	80.4	78.2	81.1	105.4	121.5	131.1
United Kingdom	43.7	53.7	70.5	92.3	100.0	126.5	220.6	209.6	186.8	160.0	142.9	143.5	168.6	188.3	210.5

– Data not available.

51. Occupational injury and illness incidence rates by industry, United States

Industry and type of case[1]	Incidence rates per 100 full-time workers[2]								
	1980	1981	1982	1983	1984	1985	1986	1987	1988
PRIVATE SECTOR[3]									
Total cases	8.7	8.3	7.7	7.6	8.0	7.9	7.9	8.3	8.6
Lost workday cases	4.0	3.8	3.5	3.4	3.7	3.6	3.6	3.8	4.0
Lost workdays	65.2	61.7	58.7	58.5	63.4	64.9	65.8	69.9	76.1
Agriculture, forestry, and fishing[3]									
Total cases	11.9	12.3	11.8	11.9	12.0	11.4	11.2	11.2	10.9
Lost workday cases	5.8	5.9	5.9	6.1	6.1	5.7	5.6	5.7	5.6
Lost workdays	82.7	82.8	86.0	90.8	90.7	91.3	93.6	94.1	101.8
Mining									
Total cases	11.2	11.6	10.5	8.4	9.7	8.4	7.4	8.5	8.8
Lost workday cases	6.5	6.2	5.4	4.5	5.3	4.8	4.1	4.9	5.1
Lost workdays	163.6	146.4	137.3	125.1	160.2	145.3	125.9	144.0	152.1
Construction									
Total cases	15.7	15.1	14.6	14.8	15.5	15.2	15.2	14.7	14.6
Lost workday cases	6.5	6.3	6.0	6.3	6.9	6.8	6.9	6.8	6.8
Lost workdays	117.0	113.1	115.7	118.2	128.1	128.9	134.5	135.8	142.2
General building contractors:									
Total cases	15.5	15.1	14.1	14.4	15.4	15.2	14.9	14.2	14.0
Lost workday cases	6.5	6.1	5.9	6.2	6.9	6.8	6.6	6.5	6.4
Lost workdays	113.0	107.1	112.0	113.0	121.3	120.4	122.7	134.0	132.2
Heavy construction contractors:									
Total cases	16.3	14.9	15.1	15.4	14.9	14.5	14.7	14.5	15.1
Lost workday cases	6.3	6.0	5.8	6.2	6.4	6.3	6.3	6.4	7.0
Lost workdays	117.6	106.0	113.1	122.4	131.7	127.3	132.9	139.1	162.3
Special trade contractors:									
Total cases	15.5	15.2	14.7	14.8	15.8	15.4	15.6	15.0	14.7
Lost workday cases	6.7	6.6	6.2	6.4	7.1	7.0	7.2	7.1	7.0
Lost workdays	118.9	119.3	118.6	119.0	130.1	133.3	140.4	135.7	141.1
Manufacturing									
Total cases	12.2	11.5	10.2	10.0	10.6	10.4	10.6	11.9	13.1
Lost workday cases	5.4	5.1	4.4	4.3	4.7	4.6	4.7	5.3	5.7
Lost workdays	86.7	82.0	75.0	73.5	77.9	80.2	85.2	95.5	107.4
Durable goods									
Lumber and wood products:									
Total cases	18.6	17.6	16.9	18.3	19.6	18.5	18.9	18.9	19.5
Lost workday cases	9.5	9.0	8.3	9.2	9.9	9.3	9.7	9.6	10.0
Lost workdays	171.8	158.4	153.3	163.5	172.0	171.4	177.2	176.5	189.1
Furniture and fixtures:									
Total cases	16.0	15.1	13.9	14.1	15.3	15.0	15.2	15.4	16.6
Lost workday cases	6.6	6.2	5.5	5.7	6.4	6.3	6.3	6.7	7.3
Lost workdays	97.6	91.9	85.6	83.0	101.5	100.4	103.0	103.6	115.7
Stone, clay, and glass products:									
Total cases	15.0	14.1	13.0	13.1	13.6	13.9	13.6	14.9	16.0
Lost workday cases	7.1	6.9	6.1	6.0	6.6	6.7	6.5	7.1	7.5
Lost workdays	128.1	122.2	112.2	112.0	120.8	127.8	126.0	135.8	141.0
Primary metal industries:									
Total cases	15.2	14.4	12.4	12.4	13.3	12.6	13.6	17.0	19.4
Lost workday cases	7.1	6.7	5.4	5.4	6.1	5.7	6.1	7.4	8.2
Lost workdays	128.3	121.3	101.6	103.4	115.3	113.8	125.5	145.8	161.3
Fabricated metal products:									
Total cases	18.5	17.5	15.3	15.1	16.1	16.3	16.0	17.0	18.8
Lost workday cases	8.0	7.5	6.4	6.1	6.7	6.9	6.8	7.2	8.0
Lost workdays	118.4	109.9	102.5	96.5	104.9	110.1	115.5	121.9	138.8
Machinery, except electrical:									
Total cases	13.7	12.9	10.7	9.8	10.7	10.8	10.7	11.3	12.1
Lost workday cases	5.5	5.1	4.2	3.6	4.1	4.2	4.2	4.4	4.7
Lost workdays	81.3	74.9	66.0	58.1	65.8	69.3	72.0	72.7	82.8
Electric and electronic equipment:									
Total cases	8.0	7.4	6.5	6.3	6.8	6.4	6.4	7.2	8.0
Lost workday cases	3.3	3.1	2.7	2.6	2.8	2.7	2.7	3.1	3.3
Lost workdays	51.8	48.4	42.2	41.4	45.0	45.7	49.8	55.9	64.6
Transportation equipment:									
Total cases	10.6	9.8	9.2	8.4	9.3	9.0	9.6	13.5	17.7
Lost workday cases	4.9	4.6	4.0	3.6	4.2	3.9	4.1	5.7	6.6
Lost workdays	82.4	78.1	72.2	64.5	68.8	71.6	79.1	105.7	134.2
Instruments and related products:									
Total cases	6.8	6.5	5.6	5.2	5.4	5.2	5.3	5.8	6.1
Lost workday cases	2.7	2.7	2.3	2.1	2.2	2.2	2.3	2.4	2.6
Lost workdays	41.8	39.2	37.0	35.6	37.5	37.9	42.2	43.9	51.5
Miscellaneous manufacturing industries:									
Total cases	10.9	10.7	9.9	9.9	10.5	9.7	10.2	10.7	11.3
Lost workday cases	4.4	4.4	4.1	4.0	4.3	4.2	4.3	4.6	5.1
Lost workdays	67.9	68.3	69.9	66.3	70.2	73.2	70.9	81.5	91.0

See footnotes at end of table.

51. Continued— Occupational injury and illness incidence rates by industry, United States

Industry and type of case[1]	Incidence rates per 100 full-time workers[2]								
	1980	1981	1982	1983	1984	1985	1986	1987	1988
Nondurable goods									
Food and kindred products:									
Total cases	18.7	17.8	16.7	16.5	16.7	16.7	16.5	17.7	18.5
Lost workday cases	9.0	8.6	8.0	7.9	8.1	8.1	8.0	8.6	9.2
Lost workdays	136.8	130.7	129.3	131.2	131.6	138.0	137.8	153.7	169.7
Tobacco manufacturing:									
Total cases	8.1	8.2	7.2	6.5	7.7	7.3	6.7	8.6	9.3
Lost workday cases	3.8	3.9	3.2	3.0	3.2	3.0	2.5	2.5	2.9
Lost workdays	45.8	56.8	44.6	42.8	51.7	51.7	45.6	46.4	53.0
Textile mill products:									
Total cases	9.1	8.8	7.6	7.4	8.0	7.5	7.8	9.0	9.6
Lost workday cases	3.3	3.2	2.8	2.8	3.0	3.0	3.1	3.6	4.0
Lost workdays	62.8	59.2	53.8	51.4	54.0	57.4	59.3	65.9	78.8
Apparel and other textile products:									
Total cases	6.4	6.3	6.0	6.4	6.7	6.7	6.7	7.4	8.1
Lost workday cases	2.2	2.2	2.1	2.4	2.5	2.6	2.7	3.1	3.5
Lost workdays	34.9	35.0	36.4	40.6	40.9	44.1	49.4	59.5	68.2
Paper and allied products:									
Total cases	12.7	11.6	10.6	10.0	10.4	10.2	10.5	12.8	13.1
Lost workday cases	5.8	5.4	4.9	4.5	4.7	4.7	4.7	5.8	5.9
Lost workdays	112.3	103.6	99.1	90.3	93.8	94.6	99.5	122.3	124.3
Printing and publishing:									
Total cases	6.9	6.7	6.6	6.6	6.5	6.3	6.5	6.7	6.6
Lost workday cases	3.1	3.0	2.8	2.9	2.9	2.9	2.9	3.1	3.2
Lost workdays	46.5	47.4	45.7	44.6	46.0	49.2	50.8	55.1	59.8
Chemicals and allied products:									
Total cases	6.8	6.6	5.7	5.5	5.3	5.1	6.3	7.0	7.0
Lost workday cases	3.1	3.0	2.5	2.5	2.4	2.3	2.7	3.1	3.3
Lost workdays	50.3	48.1	39.4	42.3	40.8	38.8	49.4	58.8	59.0
Petroleum and coal products:									
Total cases	7.2	6.7	5.3	5.5	5.1	5.1	7.1	7.3	7.0
Lost workday cases	3.5	2.9	2.5	2.4	2.4	2.4	3.2	3.1	3.2
Lost workdays	59.1	51.2	46.4	46.8	53.5	49.9	67.5	65.9	68.4
Rubber and miscellaneous plastics products:									
Total cases	15.5	14.6	12.7	13.0	13.6	13.4	14.0	15.9	16.3
Lost workday cases	7.4	7.2	6.0	6.2	6.4	6.3	6.6	7.6	8.1
Lost workdays	118.6	117.4	100.9	101.4	104.3	107.4	118.2	130.8	142.9
Leather and leather products:									
Total cases	11.7	11.5	9.9	10.0	10.5	10.3	10.5	12.4	11.4
Lost workday cases	5.0	5.1	4.5	4.4	4.7	4.6	4.8	5.8	5.6
Lost workdays	82.7	82.6	86.5	87.3	94.4	88.3	83.4	114.5	128.2
Transportation and public utilities									
Total cases	9.4	9.0	8.5	8.2	8.8	8.6	8.2	8.4	8.9
Lost workday cases	5.5	5.3	4.9	4.7	5.2	5.0	4.8	4.9	5.1
Lost workdays	104.5	100.6	96.7	94.9	105.1	107.1	102.1	108.1	118.6
Wholesale and retail trade									
Total cases	7.4	7.3	7.2	7.2	7.4	7.4	7.7	7.7	7.8
Lost workday cases	3.2	3.1	3.1	3.1	3.3	3.2	3.3	3.4	3.5
Lost workdays	48.7	45.3	45.5	47.8	50.5	50.7	54.0	56.1	60.9
Wholesale trade:									
Total cases	8.2	7.7	7.1	7.0	7.2	7.2	7.2	7.4	7.6
Lost workday cases	3.9	3.6	3.4	3.2	3.5	3.5	3.6	3.7	3.8
Lost workdays	58.2	54.7	52.1	50.6	55.5	59.8	62.5	64.0	69.2
Retail trade:									
Total cases	7.1	7.1	7.2	7.3	7.5	7.5	7.8	7.8	7.9
Lost workday cases	2.9	2.9	2.9	3.0	3.2	3.1	3.2	3.3	3.4
Lost workdays	44.5	41.1	42.6	46.7	48.4	47.0	50.5	52.9	57.6
Finance, insurance, and real estate									
Total cases	2.0	1.9	2.0	2.0	1.9	2.0	2.0	2.0	2.0
Lost workday cases	.8	.8	.9	.9	.9	.9	.9	.9	.9
Lost workdays	12.2	11.6	13.2	12.8	13.6	15.4	17.1	14.3	17.2
Services									
Total cases	5.2	5.0	4.9	5.1	5.2	5.4	5.3	5.5	5.4
Lost workday cases	2.3	2.3	2.3	2.4	2.5	2.6	2.5	2.7	2.6
Lost workdays	35.8	35.9	35.8	37.0	41.1	45.4	43.0	45.8	47.7

[1] Total cases include fatalities.

[2] The incidence rates represent the number of injuries and illnesses or lost workdays per 100 full-time workers and were calculated as:
(N/EH) X 200,000, where:
N = number of injuries and illnesses or lost workdays.
EH = total hours worked by all employees during calendar year.
200,000 = base for 100 full-time equivalent workers (working 40 hours per week, 50 weeks per year.)

[3] Excludes farms with fewer than 11 employees since 1976.

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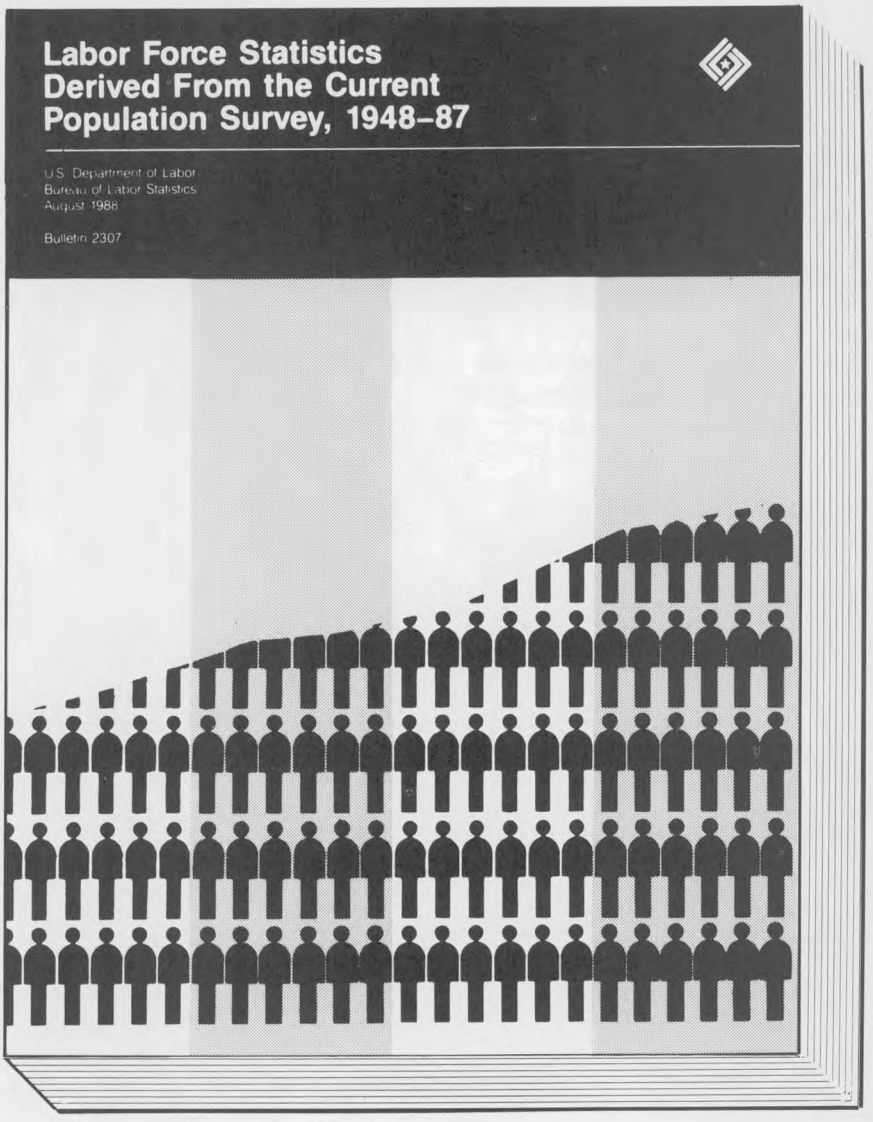

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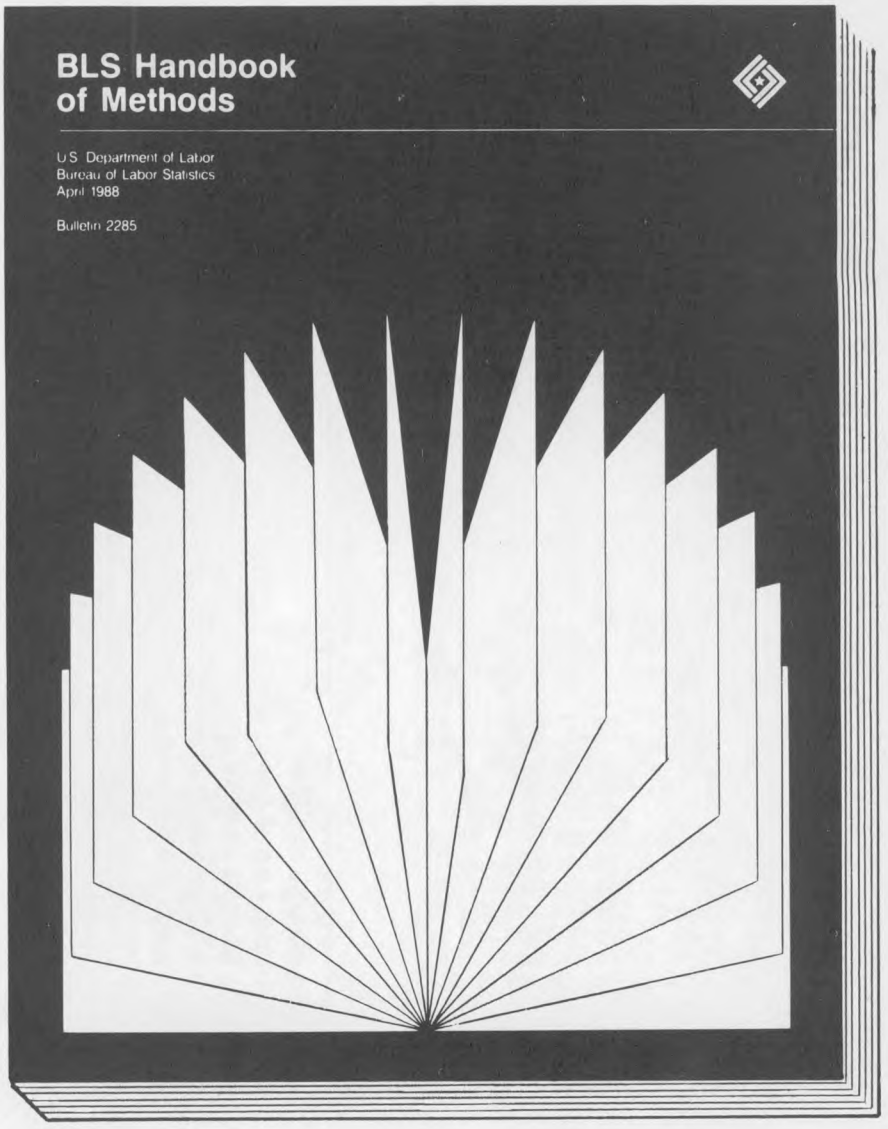

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A Special Competition

to mark the 75th year of the *Monthly Labor Review*

1. A prize of $1,000—separate from the annual Lawrence R. Klein Award—will be awarded for the best article manuscript submitted to this competition before May 1, 1990.

2. Entries will be judged on the basis of quality of writing and adherence to criteria of professional research and analysis.

3. The manuscript should not exceed 3,500 words, must be written exclusively for the *Monthly Labor Review* and must not have been submitted to or appeared in any form in any manner of publication prior to its submission to this competition.

4. The competition will be open to anyone except members of the Lawrence R. Klein Board of Trustees and members of their immediate families.

5. Manuscripts must be based on original research or analysis in a subject germane to the interests of the *Monthly Labor Review.*

6. To be eligible, entries must be submitted to the trustees with the entry form shown below, or a reproduction thereof.

7. The Board of Trustees of the Lawrence R. Klein Award will have first publication rights.

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Entry Form *Monthly Labor Review* 75th Anniversary Competition

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Series	Release date	Period covered	Release date	Period covered	Release date	Period covered	MLR table number
Productivity and costs:							
Nonfinancial corporations	March 7	4th quarter					2; 44–47
Nonfarm business and manufactoring					May 7	1st quarter	2; 44–47
Employment situation	March 9	February	April 6	March	May 4	April	1; 4–21
Producer Price Indexes	March 16	February	April 13	March	May 11	April	2; 34–37
Consumer Price Index	March 20	February	April 17	March	May 16	April	2; 31–33
Real earnings	March 20	February	April 17	March	May 16	April	14–17
U.S. Import and Export Price Indexes	March 22	February	April 26	1st quarter	May 24	April	38–43
Employment Cost Index			April 24	1st quarter			22–25
Major collective bargaining settlements			April 24	1st quarter			26–29