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**MONTHLY LABOR REVIEW**

U.S. Department of Labor  
Bureau of Labor Statistics  
June 1986

*In this issue:*  
Deindustrialization and the shift to services  
Consumer expenditures



**"THE CARPENTER WORKER" BY JUDITH WELER**  
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# Labor Month In Review



**EMPLOYMENT BENCHMARK.** With computation of data for May 1986, the Bureau of Labor Statistics completed its annual revision of employment, hours, and earnings data from the establishment survey. The revision uses employment counts for March 1985 as a benchmark. As part of the usual annual benchmarking process, the Bureau also revised seasonally adjusted series for the past 5 years, and computed new seasonal adjustment factors.

**Adjustment procedure.** Monthly estimates from the Current Employment Statistics Survey are based on information collected from a sample of establishments. These sample estimates are "benchmarked"—adjusted to reflect actual employment counts—on an annual basis. Benchmarks are counts of employment based primarily on mandatory unemployment insurance reports submitted by employers to State employment security agencies. The current revision affects unadjusted series from April 1984 (the month following the previous benchmark) forward. Seasonally adjusted series are revised from January 1981 forward. Selected hours and earnings estimates in the trade and services divisions are revised beginning with January 1984 data.

**The current revisions.** In March 1985, the benchmark count for total nonagricultural employment was 96.0 million, only 3,000 below the sample-based estimate for the same month. This small aggregate adjustment is the result of offsetting corrections to the total private and government sectors. A downward adjustment of 131,000 in total private employment, stemming

primarily from manufacturing (down 104,000), was balanced by an upward revision of 128,000 in State and local government. Of the 255 3-digit Standard Industrial Classification industry groups for which the Bureau publishes employment estimates, only 35 were revised by 5 percent or more. As is generally the case, the largest industries in terms of employment tended to have the smallest percentage revisions.

**Sources of the difference.** Differences between the benchmark totals and the sample-based estimates are caused by both sampling and nonsampling error. Sampling error may occur whenever inferences are drawn from a sample about its universe.

Nonsampling error has three major sources: (1) bias, (2) procedures for handling changes in industrial classification, and (3) other errors of coverage, response, processing, and collection. Bias is inherent in establishment surveys largely because sample estimates do not readily capture employment growth from new firms. The survey's sample design also places a higher probability of selection on firms with greater employment. This too creates a bias problem, because small, young firms are responsible for much of employment growth. Coincident with this benchmark, the Bureau is introducing increased sample stratification by establishment size for trade and service industry estimates. With finer stratification by size, there is an increase in the relative weight assigned to small firms during estimation, thus lessening the large firm bias.

**Revisions to other data.** Benchmarks are not available for the series on women,

production or nonsupervisory workers, or hours and earnings. Women and production worker series are revised by applying the sample-derived ratio to the revised employment estimate at the basic cell level. These revisions are then summarized to the broader industry groupings.

Production and nonsupervisory worker employment estimates are used as weights in the estimation of hours and earnings at aggregate industry levels. Benchmark revisions to employment may cause shifts in these weights, affecting summary level estimates of hours and earnings. This year, the introduction of a new stratification pattern in trade and services has resulted in a slightly larger than usual hours and earnings revision.

**Seasonal adjustment.** Each year, employment, hours, and earnings data from the new benchmark are incorporated into the calculation of new seasonal adjustment factors. The Bureau uses the X-11 ARIMA seasonal adjustment method, an adaptation of the standard ratio-to-moving average method, which provides for "moving" adjustment factors to take changing seasonal patterns into account.

**Revised estimates** for employment, hours, and earnings by detailed industry appear in the June issue of *Employment and Earnings*, along with a more complete explanation of the benchmarking procedure and the new seasonal adjustment factors that will be used for the period April 1986–March 1987. Estimates reflecting the new benchmark will appear in the Current Labor Statistics section of the *Monthly Labor Review*, beginning with the July issue. □

# Deindustrialization and the shift to services

*Does the employment shift to services imply that the U.S. is losing its industrial base? Data show the industrial sector as a whole in healthy shape, but a few manufacturing industries in deep trouble*

RONALD E. KUTSCHER AND VALERIE A. PERSONICK

Much discussion and concern recently has been focused on the deindustrialization of the United States and the need for a national industrial policy.<sup>1</sup> The well-reported growth in employment in the service sector and the relative decline in employment in manufacturing industries implies to some a decrease in our industrial capacity. The deindustrialization argument points to a lack of investment in basic production, plant closings and layoffs, and the large negative merchandise trade balance as evidence that the United States is losing its manufacturing base.

But precisely how can deindustrialization be defined? Does the shift to a service economy imply the erosion of an industrial base? Should deindustrialization be described as a loss of manufacturing jobs or should production changes also be a criterion? Should these changes be measured in absolute terms or relative terms? These are some of the questions we examine in this article by reviewing data on both employment and production for manufacturing and other major sectors, first as a whole, and then for detailed industries.

Our findings indicate that the shift to a service economy is not really evidence of a declining industrial base, or "deindustrialization." The shift has largely been a relative one. Employment in the manufacturing sector in absolute

terms has not declined appreciably over the last two decades (except cyclically), and the most recent projections by the Bureau of Labor Statistics show manufacturing employment recovering most of its current recession-related losses. Furthermore, while employment in manufacturing is still off its previous peak, the same is not true for output. Manufacturing production in real terms has bounced back from the recession and by 1984 had reached a new peak level, hardly proof of a loss of our industrial base.<sup>2</sup>

While little evidence of deindustrialization is present at the macro or aggregate level, an additional finding is that for about 20 manufacturing industries, including steel, leather, and tires, the past 15 years have seen steady declines in both output and employment. Further, the BLS projections for these industries indicate little prospect for recovery. Thus, while it is possible to say from the data we have examined that the United States is not deindustrializing, this is not to conclude that declines in both production and employment have not hit certain industries particularly hard.

Although it is clear that there is little consensus on what is meant by deindustrialization, certain points in these discussions seem more important than others:

- Industrial base to most means the manufacturing sector.
- An absolute decline is more serious than a relative one.
- Production declines are a more alarming signal of a reduction in the industrial base than employment declines, because through efficiencies it is possible to have increasing output with stable or declining employment. Absolute

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declines in production may result from many factors, such as increasing competition from other products or from foreign producers, or a lack of capital investment. In this article, we only examine the observed production changes without looking at the reasons why.

- Production should be measured in quantity or real terms to eliminate price effects.

### Macro review

*Shifts in employment.* We begin this examination of America's possible deindustrialization by reviewing employment changes at the macro or most aggregate level over the past 25 years. Our analysis of data on changing job shares clearly indicates significant structural change occurring in the U.S. economy. Does this imply that the United States is losing its industrial capacity?

The goods-producing sector is defined here to include manufacturing, construction, mining, and agriculture; service-producing includes all other industries, including government. While beginning the overview of employment at the broad aggregations of goods-producing and service-producing, this article will focus more on manufacturing, because as noted earlier, this is the sector with which the deindustrialization argument is most concerned.

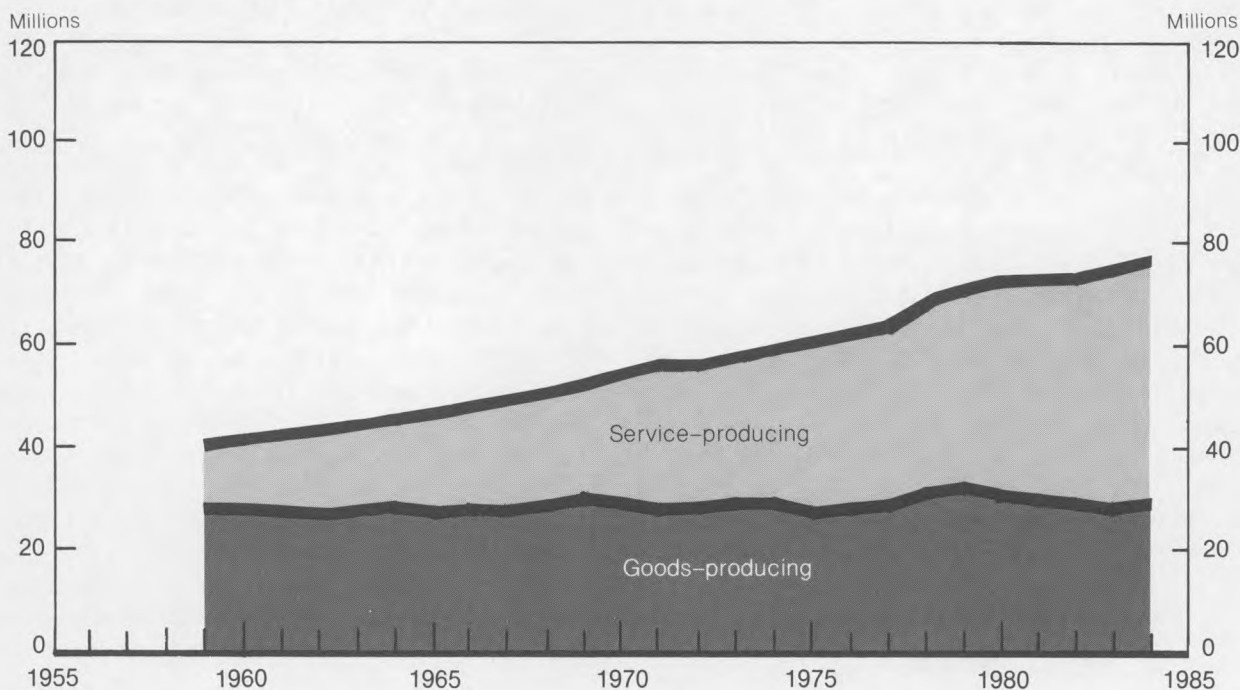
The first point to be made is that the shift to services has been largely a relative shift and not an absolute one. Job

gains in service-producing industries were not accomplished at the expense of any of the major goods-producing industries, except perhaps agriculture. Rather, employment has remained fairly stable in the goods-producing sector as a whole, including manufacturing, while increasing sharply in the service-producing sectors, as chart 1 shows. The stability in the level of jobs in the goods-producing sector and in manufacturing is evident throughout the 1959-84 period, except for times of cyclical decline such as 1974-75 or 1980-82.<sup>3</sup>

The point that the employment shift to services has largely been only a relative one has also been made by Bureau economist Michael Urquhart in a 1984 *Monthly Labor Review* article.<sup>4</sup> His examination of labor force data over the period of 1969 to 1979 showed that there had been no real net migration of workers from the goods to the services sector, but rather most of the growth in service sector jobs was attributable to the increase in women's labor force participation.

Despite the overall stability in the absolute number of goods-producing jobs, the change in shares between the goods- and service-producing sectors has been dramatic. In 1959, the latter sector accounted for 60 percent of all employment and the former, 40 percent; by 1984, that ratio had shifted to 72 percent of employment in the service-producing sector and only 28 percent in the goods-producing sector. (See table 1.)

Chart 1. Total employment, 1959-84



**Table 1. Employment by major sector, 1959-84**

Year	Total	Goods-producing							Service-producing		
		Total	Agriculture	Mining	Construction	Manufacturing			Total	Government	Private
						Total	Durable	Nondurable			
<b>Level (in thousands)</b>											
1959 .....	67,784	27,125	5,583	614	3,910	17,018	9,582	7,436	40,659	8,008	32,651
1969 .....	81,508	28,964	3,622	501	4,374	20,467	12,080	8,387	52,544	12,117	40,427
1979 .....	101,471	31,324	3,340	704	5,879	21,401	12,985	8,416	70,147	15,832	54,315
1980 .....	102,146	30,589	3,356	723	5,842	20,668	12,419	8,249	71,557	16,114	55,443
1981 .....	102,972	30,403	3,341	737	5,766	20,559	12,343	8,216	72,569	15,896	56,673
1982 .....	101,643	28,739	3,396	729	5,460	19,154	11,262	7,892	72,904	15,702	57,202
1983 .....	102,528	28,284	3,369	650	5,440	18,825	10,959	7,866	74,244	15,736	58,508
1984 .....	106,841	29,643	3,293	651	5,920	19,779	11,744	8,035	77,198	15,851	61,347
<b>Percent distribution</b>											
1959 .....	100.0	40.0	8.2	0.9	5.8	25.1	14.1	11.0	60.0	11.8	48.2
1969 .....	100.0	35.5	4.4	0.6	5.4	25.1	14.8	10.3	64.5	14.9	49.6
1979 .....	100.0	30.9	3.3	0.7	5.8	21.1	12.8	8.3	69.1	15.6	53.5
1980 .....	100.0	29.9	3.3	0.7	5.7	20.2	12.2	8.1	70.1	15.8	54.3
1981 .....	100.0	29.5	3.2	0.7	5.6	20.0	12.0	8.0	70.5	15.4	55.0
1982 .....	100.0	28.3	3.3	0.7	5.4	18.8	11.1	7.8	71.7	15.4	56.3
1983 .....	100.0	27.6	3.3	0.6	5.3	18.4	10.7	7.7	72.4	15.3	57.1
1984 .....	100.0	27.7	3.1	0.6	5.5	18.5	11.0	7.5	72.3	14.8	57.4
<b>Average annual rate of change</b>											
1959-84 .....	1.8	0.4	-2.1	0.2	1.7	0.6	0.8	0.3	2.6	2.8	2.6
1959-69 .....	1.9	0.7	-4.2	-2.0	1.1	1.9	2.3	1.2	2.6	4.2	2.2
1969-79 .....	2.2	0.8	-0.8	3.5	3.0	0.4	0.7	0.0	2.9	2.7	3.0
1979-84 .....	1.0	-1.1	-0.3	-1.6	0.1	-1.6	-2.0	-0.9	1.9	0.0	2.5

NOTE: Data include wage and salary, self-employed, and unpaid family workers.

For manufacturing alone, the share decline has not been as sharp, but still significant. While remaining fairly level at about the 19 to 20 million mark for the past two decades (except for the recessionary periods noted earlier), manufacturing employment fell from 25.1 percent of all jobs in 1959 to 18.5 percent in 1984. It is this widely reported decline in job share for manufacturing, along with reports of plant closings and high regional unemployment in some heavy manufacturing centers, which may have fostered much of the concern about a loss in our industrial base. Of course, these declines have resulted in many hardships among the workers displaced.<sup>5</sup>

The difference between a 12.3-percentage-point share loss for the goods sector as a whole between 1959 and 1984 and only a 6.6-percentage-point drop for manufacturing by itself is accounted for mostly by the loss of agricultural jobs. Agriculture was the only goods-producing sector to register actual employment decreases over the period. The agricultural sector has been shrinking dramatically since at least the 1940's. Low farm prices during the Great Depression of the 1930's eliminated many farm jobs and forced rapid consolidation, eventually leading to very high productivity gains in farming. The movement away from the farm gradually began to taper, and in the past decade the decline in agricultural employment has slowed appreciably.

It has also seemed that the shift to services has accelerated in recent years because of the 1980-82 recessions and because of the increase in imports, especially of manufactured goods, resulting in part from the high value of the dollar.

Employment in the goods-producing sector declined by 3 million from the pre-recession 1979 level to 1983's trough, while service-producing jobs increased every year during that time span, by a total of 4.1 million. Of the 3-million loss in jobs in the goods-producing sector, 2.6 million were in manufacturing, and only small amounts were in the other goods-producing components. Goods-producing employment recovered somewhat in 1984, rising 1.4 million, but this gain was dwarfed by the almost 3.0 million new service-producing jobs added in that single year. Within the goods sector, construction employment recovered to its pre-recession high, but manufacturing employment was still off 1.6 million.

Thus, from an employment perspective, there clearly has been a large *relative* decline in the share of employment in goods-producing industries and a similar *relative* decline in manufacturing. However, in absolute terms the employment levels in all goods-producing sectors except agriculture were relatively stable prior to 1979, and even increased in construction. Since 1979, manufacturing employment has declined appreciably, however, and only part of the cyclical losses of 1980-82 have been recovered to date.

*Shifts in output.* As noted, it may be more important for an examination of the deindustrialization debate to review production rather than just employment, on which most of the debate seems to have focused thus far. A decline in employment, whether absolute or relative, need not necessarily signify an erosion of the U.S. industrial base if real

output is still increasing. Using production as a criterion, the goods-producing sector, by reaching new peak levels in 1984, has clearly shown that it is not disappearing. In addition, although a shift away from goods production in relative terms has occurred, it can be seen from chart 2 that the magnitude of that relative shift is less for output than it is for employment. The goods-producing sector accounted for 54.9 percent of the real value of all production in 1959 and 46.7 percent in 1984, a drop of 8.2 percentage points. (See table 2.) The decrease in its job share over that span, however, was 12.3 percentage points. This differential comes about because productivity gains, although slowing down over time, have been more rapid in the goods-producing than in the service-producing sector.

These conclusions relating to output are based on data computed for the Bureau's economic and employment projections system.<sup>6</sup> Actual production, rather than sales in nominal dollars, should be the basis for this analysis, because different price movements among goods and services can distort actual production changes. However, it is impossible to measure the output of many industries' goods or services in actual production units.<sup>7</sup> A proxy for production that is widely used is sales or shipments in nominal prices, deflated by a price index appropriate to the particular industry's mix of goods and services. These data on real output, as well as data on employment, are available for each of 150

individual industries encompassing the total U.S. economy. Historical data are available from 1958 to 1984 and projected data through 1995.

Another conclusion drawn from looking at this data base is that more of the relative decline in goods-sector output is attributable to agriculture and construction than to manufacturing. In contrast, the loss in employment share occurred primarily for the agriculture and manufacturing components of the goods-producing sector. Manufacturing dropped 6.6 percentage points in its job share between 1959 and 1984, but only 2.3 points in its output share.

The trend for only the more recent 1979-84 span is also more positive for output than it is for employment. By 1984, goods-producing output in constant dollars had recovered from the 1980-82 recessions, surpassing the previous peak reached in 1979 and hitting an all-time high. As mentioned, employment in the goods-producing sector has also recovered from the 1980-82 downturns, but not enough to regain the 1979 level.<sup>8</sup>

Again, the more important point is whether a *relative* decline reflects the erosion of our industrial sector. If manufacturing production is still growing in absolute terms, then we cannot be said to be eliminating our industrial base, even though we are undergoing a relative structural shift in our economy. The data at the aggregate level for each of the major sectors show production levels for all compo-

**Chart 2. Share of private output and employment, goods- versus service-producing industries, 1959-84**

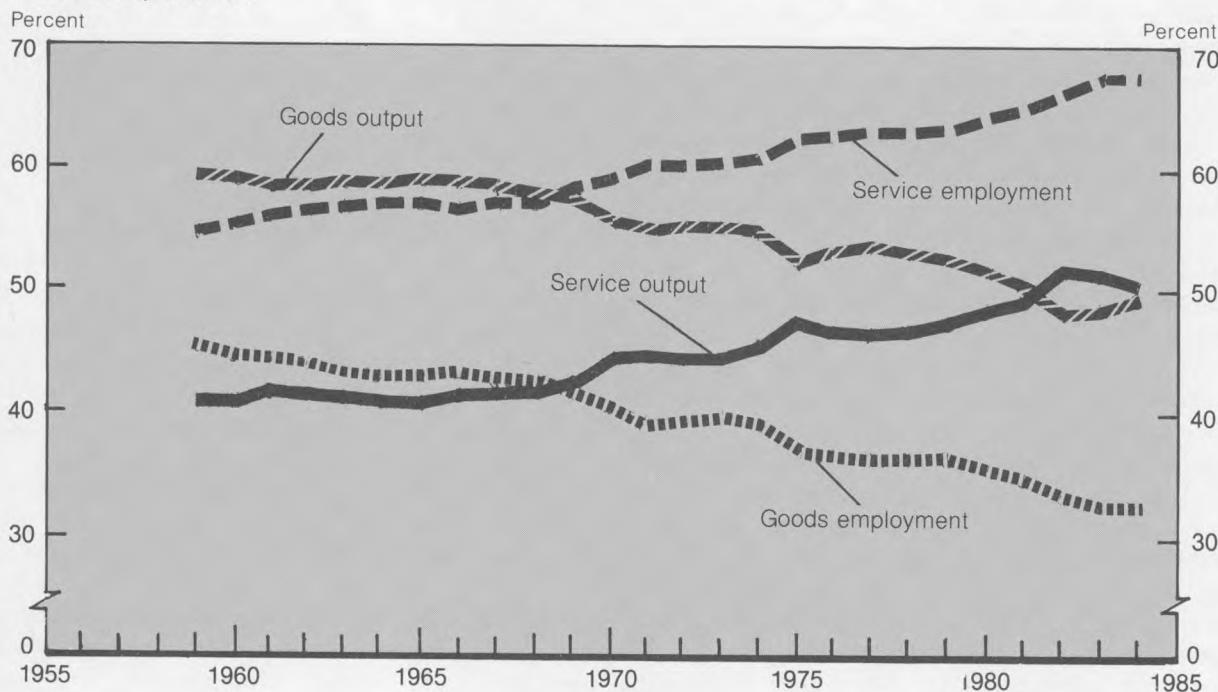




Table 2. Gross duplicated output (1977 dollars) by major sector, 1959-84

Year	Total	Goods-producing							Service-producing		
		Total	Agriculture	Mining	Construction	Manufacturing			Total	Government	Private
						Total	Durable	Nondurable			
<b>Level (in millions)</b>											
1959 .....	2,002,527	1,100,342	102,441	55,927	205,398	736,576	375,635	360,941	902,185	151,907	750,278
1969 .....	2,969,101	1,585,583	116,916	79,609	255,346	1,133,712	607,876	525,836	1,383,518	222,002	1,161,516
1979 .....	3,950,145	1,944,892	138,569	83,108	275,190	1,448,025	773,604	674,421	2,005,253	255,706	1,749,547
1980 .....	3,860,734	1,847,174	132,706	82,928	258,543	1,372,997	718,710	654,287	2,013,560	260,851	1,752,709
1981 .....	3,919,714	1,853,677	141,675	82,262	249,458	1,380,282	719,069	661,213	2,066,037	263,066	1,802,971
1982 .....	3,796,261	1,710,370	136,897	80,304	232,300	1,260,869	628,634	632,235	2,085,891	262,277	1,823,614
1983 .....	3,970,865	1,809,382	130,381	78,735	253,667	1,346,599	678,978	667,621	2,161,483	263,017	1,898,466
1984 .....	4,309,342	2,012,679	150,908	82,787	293,618	1,485,366	783,483	701,883	2,296,663	265,023	2,031,640
<b>Percent distribution</b>											
1959 .....	100.0	54.9	5.1	2.8	10.3	36.8	18.8	18.0	45.1	7.6	37.5
1969 .....	100.0	53.4	3.9	2.7	8.6	38.2	20.5	17.7	46.6	7.5	39.1
1979 .....	100.0	49.2	3.5	2.1	7.0	36.7	19.6	17.1	50.8	6.5	44.3
1980 .....	100.0	47.8	3.4	2.1	6.7	35.6	18.6	16.9	52.2	6.8	45.4
1981 .....	100.0	47.3	3.6	2.1	6.4	35.2	18.3	16.9	52.7	6.7	46.0
1982 .....	100.0	45.1	3.6	2.1	6.1	33.2	16.6	16.7	54.9	6.9	48.0
1983 .....	100.0	45.6	3.3	2.0	6.4	33.9	17.1	16.8	54.4	6.6	47.8
1984 .....	100.0	46.7	3.5	1.9	6.8	34.5	18.2	16.3	53.3	6.1	47.1
<b>Average annual rate of change</b>											
1959-84 .....	3.1	2.4	1.6	1.6	1.4	2.8	3.0	2.7	3.8	2.3	4.1
1959-69 .....	4.0	3.7	1.3	3.6	2.2	4.4	4.9	3.8	4.4	3.9	4.5
1969-79 .....	2.9	2.1	1.7	0.4	0.8	2.5	2.4	2.5	3.8	1.4	4.2
1979-84 .....	1.8	0.7	1.7	-0.1	1.3	0.5	0.3	0.8	2.8	0.7	3.0

nents growing in absolute terms. Real output in manufacturing in 1984 was actually more than double what it was in 1959—hardly evidence of a reduction of an industrial base. The impression that deindustrialization has accelerated recently because of the recession is also questionable. Real manufacturing output did drop by almost 13 percent over the 4 years from the 1979 peak to the 1982 trough, but in the 2 years since, it has gained almost 18 percent, surpassing the 1979 level. However, when looking at recent employment trends, the story differs. Manufacturing employment reached its low point in 1983, and in 1984, although 1 million jobs were added, it did not recover to the 1979 peak. Furthermore, preliminary data for 1985 indicate that little further gains in manufacturing employment have occurred. Thus, output increases have been made without corresponding increases in employment, the result of productivity gains. This loss of manufacturing jobs is a severe problem for certain industries and locales; however, the rise in manufacturing output overall seems to preclude a conclusion of deindustrialization—at least at the level of total manufacturing.

Another argument advanced in the discussion about deindustrialization is that the U.S. manufacturing sector has performed poorly in comparison with other industrialized countries. However, the evidence to support this impression is mixed. A recent Bureau study of manufacturing productivity trends in 12 countries shows that while the rate of gain in U.S. manufacturing output over the years 1973-84 was smaller than for four of the other countries, particularly Japan, the rate of employment decline in U.S. manufactur-

ing was the smallest of any of the countries studied.<sup>9</sup>

*Hours.* Another point to be made about the shift to services at the major sector level concerns hours. Because at least part of the growth in employment in the service-producing industries has been in part-time jobs, the amount of the shift can be overemphasized by looking only at employment. The share of worker-hours in the goods-producing sector dropped from 41.1 percent of the total in 1959 to 30.3 percent in 1984, or 10.8 percentage points. (See table 3.) This relative shift in hours is less than for employment, but more than for output.

*Quality of jobs.* One reason for the concern in the popular literature about the shift away from manufacturing industries toward service-producing industries, especially for employment, is the fear that this will lead to the disappearance of well-paying factory jobs. It is argued that the declining smokestack industries have a large proportion of middle-income earners, while the growing service and high-tech industries have a more bipolar wage structure, with more high or low earners. The shift among industries, therefore, will lead to a declining middle class.

Considerable doubt has been cast on this argument, however, by Neal Rosenthal in a previous *Monthly Labor Review* article.<sup>10</sup> He found through an analysis of occupational data that while middle-income jobs have declined slightly as a percentage of total employment, lower-paying jobs have declined even more. Furthermore, declines in high-paying smokestack industries (such as steel) have at least been matched by declines in lower-paying manufacturing indus-

tries (such as textiles, apparel, and leather).<sup>11</sup>

### Micro analysis

**Industry shifts.** In the above section, we discussed output and employment at the major sector or very aggregate level. At that level we showed that while the U.S. economy in relative terms is shifting in a very pronounced way towards the service-producing sector and away from the goods-producing sector, in absolute terms the manufacturing sector is nearly stable in jobs and growing in production—giving little evidence of a loss of the U.S. industrial base. However, this examination at the macro level could be masking important changes at the micro or industry level. In this section, we examine some of these divergent employment and output trends for individual industries, using the level of detail in the BLS projections system.

In reviewing these industry output and employment data closely for the period 1959–84, it appears that the time frame 1959–69 is quite different in its characteristics from either the 1969–79 or 1979–84 span. During the booming 1960's, manufacturing increased its share of output and held steady in its share of employment, whereas after 1969, several recessions and other factors forced manufacturing off its earlier upward path. Economic downturns in 1970, 1974–75, and 1980–82 had a larger impact on the cyclically sensitive manufacturing sector than on the more cyclically resistant service-producing sector. Because of the different characteristics of the earlier years, the analysis in this section of the article will focus on the more recent 1969–84 period. The analysis consisted of examining industries over the 15-year span and categorizing them into 1 of 3

groups: (1) consistent gainers in output and employment, (2) consistent gainers in output but employment losers, and (3) consistent losers of both output and employment.

**Output and employment gainers.** Table 4 lists those industries which have shown a positive trend in both output and employment during the last 15 years. (That is, the least squares rate of change over 1969–84 has been positive. This does not mean that these industries may not have shown declines for a few of the years but only that the overall trend for the span is positive.) One-half of the 150 industries in the data base examined fall into this category. Among the goods-producing industries which are included in the growing industries are 4 of the 7 agricultural industries, 2 mining industries, maintenance construction, and numerous manufacturing industries. Most of the latter on the list of output and employment gainers are durable goods industries, particularly those which are included in 1 of the 3 high-technology definitions developed earlier by BLS.<sup>12</sup> These designations identify high-tech industries on the basis of expenditures for research and development, the ratio of scientific and technical personnel to all workers in the industry, and the degree of product sophistication. Many of the electrical machinery and electronic equipment industries which meet one of the high-tech definitions have experienced both production and employment advances in the last 15 years.

The rest of the industries on the list include virtually all of the individual service-producing industries in the data base. Only a few of the transportation industries, gas utilities, or service industries have lost either jobs or production, or both, between 1969 and 1984. All the communications

**Table 3. Worker hours by major sector, 1959–84**

Year	Total	Goods-producing							Service-producing		
		Total	Agriculture	Mining	Construction	Manufacturing			Total	Government	Private
						Total	Durable	Nondurable			
<b>Level (in millions)</b>											
1959 .....	140,710	57,791	12,991	1,285	7,969	35,546	20,162	15,384	82,919	16,718	66,201
1969 .....	163,320	61,462	8,328	1,109	9,036	42,989	25,671	17,318	101,858	25,159	76,699
1979 .....	196,381	65,805	7,626	1,555	11,956	44,668	27,425	17,243	130,576	32,951	97,625
1980 .....	196,153	63,202	7,574	1,566	11,443	42,619	25,838	16,781	132,951	33,528	99,423
1981 .....	197,268	62,924	7,563	1,603	11,276	42,482	25,723	16,759	134,344	33,070	101,274
1982 .....	192,992	58,639	7,522	1,564	10,591	38,962	23,093	15,869	134,353	32,670	101,683
1983 .....	195,250	58,508	7,362	1,406	10,659	39,081	22,972	16,109	136,742	32,756	103,986
1984 .....	204,741	61,983	7,303	1,427	11,784	41,469	24,938	16,531	142,758	33,020	109,738
<b>Percent distribution</b>											
1959 .....	100.0	41.1	9.2	0.9	5.7	25.3	14.3	10.9	58.9	11.9	47.0
1969 .....	100.0	37.6	5.1	0.7	5.5	26.3	15.7	10.6	62.4	15.4	47.0
1979 .....	100.0	33.5	3.9	0.8	6.1	22.7	14.0	8.8	66.5	16.8	49.7
1980 .....	100.0	32.2	3.9	0.8	5.8	21.7	13.2	8.6	67.8	17.1	50.7
1981 .....	100.0	31.9	3.8	0.8	5.7	21.5	13.0	8.5	68.1	16.8	51.3
1982 .....	100.0	30.4	3.9	0.8	5.5	20.2	12.0	8.2	69.6	16.9	52.7
1983 .....	100.0	30.0	3.8	0.7	5.5	20.0	11.8	8.3	70.0	16.8	53.3
1984 .....	100.0	30.3	3.6	0.7	5.8	20.3	12.2	8.1	69.7	16.1	53.6
<b>Average annual rate of change</b>											
1959–84 .....	1.5	0.3	-2.3	0.4	1.6	0.6	0.9	0.3	2.2	2.8	2.0
1959–69 .....	1.5	0.6	-4.3	-1.5	1.3	1.9	2.4	1.2	2.1	4.2	1.5
1969–79 .....	1.9	0.7	-0.9	3.4	2.8	0.4	0.7	0.0	2.5	2.7	2.4
1979–84 .....	0.8	-1.2	-0.9	-1.7	-0.3	-1.5	-1.9	-0.8	1.8	0.0	2.4

**Table 4. Positive output trend and positive employment trend, average annual rate of change,<sup>1</sup> 1969–84**

Industry	Output	Employment	Industry	Output	Employment
<b>Agriculture:</b>			<b>Durable goods manufacturing—Continued</b>		
Food and feed grains .....	2.4	0.6	Aircraft .....	1.3	0.3
Agricultural products, n.e.c. ....	1.7	1.4	Ship and boat building and repair .....	3.1	1.0
Forestry and fishery products .....	0.3	3.0	Motorcycles, bicycles, and parts .....	2.0	0.1
Agricultural, forestry, and fishery services .....	1.7	3.8	Scientific and controlling instruments .....	4.3	1.9
			Medical and dental instruments and supplies .....	5.5	5.7
<b>Mining:</b>			Optical and ophthalmic equipment .....	8.6	1.5
Coal mining .....	2.8	3.3	Photographic equipment and supplies .....	6.0	1.2
Chemical and fertilizer mineral mining .....	1.6	2.5			
			<b>Transportation and utilities:</b>		
<b>Construction:</b>			Trucking and warehousing .....	2.5	1.7
Maintenance and repair construction .....	2.2	3.3	Air transportation .....	2.8	2.4
			Pipelines, except natural gas .....	2.0	1.4
<b>Nondurable goods manufacturing:</b>			Transportation services .....	4.0	6.1
Meat products .....	2.1	0.3	Radio and television broadcasting .....	2.6	4.1
Canned and frozen foods .....	2.4	0.1	Communication, except radio and television .....	7.5	1.3
Soft drinks and flavorings .....	2.7	0.5	Electric utilities, public and private .....	4.3	2.9
Food products, n.e.c. ....	2.1	0.4	Water and sanitary services .....	4.3	1.8
Fabricated textile products, n.e.c. ....	1.3	0.5			
Paper products .....	2.5	0.1	<b>Trade:</b>		
Periodical and book printing, publishing .....	3.3	2.0	Wholesale trade .....	2.9	2.5
			Eating and drinking places .....	2.5	5.0
Printing and publishing, n.e.c. ....	3.2	2.0	Retail trade, except eating and drinking .....	2.5	1.7
Industrial inorganic and organic chemicals .....	1.4	0.9			
Agricultural chemicals .....	2.2	0.5	<b>Finance, insurance, and real estate:</b>		
Drugs .....	5.0	2.4	Banking .....	5.0	3.8
Cleaning and toilet preparations .....	2.7	1.4	Credit agencies and financial brokers .....	5.7	4.5
Petroleum refining and related products .....	1.6	0.4	Insurance .....	3.3	2.4
Plastics products, n.e.c. ....	4.9	3.7	Real estate .....	4.5	3.6
<b>Durable goods manufacturing:</b>			<b>Services:</b>		
Logging .....	4.5	0.3	Hotels and lodging places .....	2.8	3.9
Millwork, plywood, and wood products, n.e.c. ....	3.1	0.8	Personal and repair services .....	2.0	1.0
Furniture and fixtures, except household .....	3.5	2.1	Business services .....	6.8	7.0
Primary aluminum and aluminum products .....	1.5	0.2	Advertising .....	3.6	3.0
Fabricated structural metal products .....	0.2	0.5	Professional services, n.e.c. ....	5.7	5.6
Fabricated metal products, n.e.c. ....	2.0	0.9	Automobile repair and services .....	2.1	4.2
Construction, mining, and oilfield machinery .....	1.5	0.7	Motion pictures .....	5.6	2.2
Metalworking machinery .....	0.8	0.4			
			Amusements and recreation services .....	6.1	4.2
General industrial machinery .....	1.4	0.2	Doctors' and dentists' services .....	4.3	5.0
Nonelectrical machinery, n.e.c. ....	3.0	2.4	Hospitals .....	5.3	3.9
Computers and peripheral equipment .....	16.3	5.8	Medical services, n.e.c. ....	5.4	6.8
Typewriters and office equipment .....	5.6	0.2	Educational services .....	3.2	3.5
Service industry machines .....	2.1	0.8	Noncommercial and membership organizations .....	4.0	1.7
Electric transmission equipment .....	2.1	1.0			
Radio and communication equipment .....	6.4	1.9	<b>Government:</b>		
Electronic components and accessories .....	11.3	4.2	Local government passenger transit .....	4.5	5.4
			State and local enterprises, n.e.c. ....	1.8	2.3
Electrical machinery and supplies, n.e.c. ....	3.6	1.9	General government .....	1.2	2.0

<sup>1</sup> Based on least squares trend line.

n.e.c. = Not elsewhere classified.

industries, electric and water utilities, trade, finance, and most other service industries have had positive trends in both output and employment during the last 15 years.

Of course, even within services, some industries have not grown as rapidly as others. The biggest gainers in both output and employment were business services and medical services. Personal services and private educational services, in contrast, have posted only moderate growth.

*Output gainers and employment losers.* In the second category of industries selected in our review process are 37 of the 150 industries in the data base. These industries have experienced real production increases between 1969 and 1984 but have had declining job trends. (See table 5.) This category still could indicate relatively healthy industries, where greater efficiency has allowed more output to be produced with fewer workers. Many of the food processing, textile, chemical, metal products, and industrial machinery

industries are on this list, as well as motor vehicles. Demand for these products continued to be strong, but new manufacturing technologies or better use of existing technologies permitted increases in production with less employment.

*Output and employment losers.* Finally, table 6 shows those industries which have declining trends for both production and employment over the 1969-84 period, 24 in all. Chart 3 graphs that decline for a few of these industries. Most of the industries included in table 6 are those well-recognized as having long-term problems. The steel industry, for example, began its decline long before the last recession. Because of large international wage differentials and the failure to invest in more efficient new technologies, the domestic steel industry lost out to cheaper-priced imports or to substitute materials, especially after the energy crisis in 1973-74 forced transportation equipment manufacturers and others to turn to lighter-weight materials. Other

industries on this list of output and employment losers have also faced either declining demand for their products or stiff competition from imports or both, leading to a long-run decline. Included would be some of the mining industries, tobacco, leather products, rubber, wooden containers, metal cans, and watches and clocks.

The troubled industries listed in table 6 lost a combined total of 1.5 million jobs between 1969 and 1984, but of that total, two-fifths was in one industry, the private household industry—and that industry, of course, is not considered part of our industrial base. Of the rest of the troubled industries, blast furnaces and basic steel products dominates in terms of both output and employment lost. The job decline in this industry totaled .3 million between 1969 and 1984, (one-fifth of the total loss for all troubled industries), and production losses were 34 percent. Other industries in table 6 with more than a 20-percent reduction in output over the 15-year span included iron and ferroalloy ores mining, copper ore mining, wooden containers, rubber products except tires, leather tanning and finishing, leather products

**Table 5. Positive output trend and negative employment trend, average annual rate of change,<sup>1</sup> 1969–84**

Industry	Output	Employment
<b>Agriculture:</b>		
Dairy and poultry products	1.0	-4.9
Meat animals and livestock	0.0	-2.9
Cotton	1.9	-8.9
<b>Nondurable goods manufacturing:</b>		
Dairy products	1.6	-2.9
Grain mill products	2.8	-0.1
Bakery products	0.0	-1.6
Confectionery products	3.3	-0.8
Alcoholic beverages	3.1	-1.4
Fabric, yarn, and thread mills	0.6	-2.2
Floor covering mills	3.1	-1.1
Textile mill products, n.e.c.	2.0	-1.8
Hosiery and knit goods	1.1	-1.7
Apparel	1.1	-1.4
Paperboard containers and boxes	1.3	-1.1
Chemical products, n.e.c.	2.2	-0.6
Plastic materials and synthetic rubber	2.3	-1.4
Synthetic fibers	4.0	-2.5
Paints and allied products	1.2	-0.9
<b>Durable goods manufacturing:</b>		
Sawmills and planing mills	0.8	-0.9
Household furniture	1.9	-0.8
Glass	0.6	-0.5
Stone and other mineral products, n.e.c.	1.6	-0.3
Primary copper and copper products	0.1	-1.2
Screw machine products	0.9	-0.6
Cutlery, handtools, and general hardware	0.4	-0.5
Farm and garden machinery	1.0	-0.6
Household appliances	1.5	-1.8
Electric lighting and wiring equipment	0.7	-0.1
Radio and television receiving equipment	5.6	-3.2
Telephone and telegraph apparatus	5.3	-0.5
Motor vehicles	0.9	-0.7
Musical instruments, toys, and sporting goods	3.0	-0.6
Manufactured products, n.e.c.	0.2	-0.5
<b>Transportation and utilities:</b>		
Railroad transportation	0.7	-3.0
Water transportation	2.9	-0.2
<b>Government:</b>		
U.S. Postal Service	2.4	-0.6
Federal enterprises, n.e.c.	3.3	-1.4

<sup>1</sup>Based on least squares trend line.

n.e.c. = Not elsewhere classified.

**Table 6. Negative output trend and negative employment trend, average annual rate of change,<sup>1</sup> 1969–84**

Industry	Output	Employment
<b>Mining:</b>		
Iron and ferroalloy ores mining	-3.9	-3.1
Copper ore mining	-1.7	-4.1
Stone and clay mining and quarrying	-0.8	-0.7
<b>Nondurable goods manufacturing:</b>		
Sugar	-0.2	-2.3
Tobacco manufacturing	-0.2	-1.4
Tires and inner tubes	-1.3	-1.5
Rubber products except tires and tubes	-3.3	-0.9
Leather tanning and finishing	-2.7	-2.9
Leather products including footwear	-1.8	-3.1
<b>Durable goods manufacturing:</b>		
Wooden containers	-4.1	-5.9
Structural clay products	-1.2	-3.6
Pottery and related products	-0.4	-0.1
Blast furnaces and basic steel products	-2.9	-3.5
Iron and steel foundries and forgings	-1.3	-2.3
Primary nonferrous metals and products, n.e.c.	-1.7	-0.2
Metal cans and containers	-0.6	-2.6
Heating equipment and plumbing fixtures	-1.8	-0.9
Metal stampings	-0.2	-1.3
Materials handling equipment	-0.6	-0.5
Special industry machinery	-2.0	-0.6
Railroad equipment	-5.1	-1.6
Transportation equipment, n.e.c.	-0.8	-2.5
Watches, clocks, and clock-operated devices	-1.7	-4.8
<b>Households:</b>		
Household industry	-3.2	-2.7

<sup>1</sup>Based on least squares trend line.

n.e.c. = Not elsewhere classified.

(mainly shoes), primary nonferrous metals and products, heating equipment and plumbing fixtures, railroad equipment, and watches and clocks. Combined, the troubled industries in table 6 accounted for 6.7 percent of total real production in the economy in 1969, but by 1984 they had declined to only 3.7 percent. For jobs, the share drop was equally sharp—from 6.0 to 3.1 percent. For the manufacturing industries only among the group of output and employment losers, output dropped from a 6.1-percent share in 1969 to 3.4 percent in 1984, and employment from 3.5 to 1.8 percent. Thus, while we have shown that restructuring does not necessarily mean “deindustrialization” or the loss of an industrial base at the macro level, these data clearly isolate a group of individual industries within the manufacturing sector which are in deep trouble.

*Recent problem industries.* In addition to the long-term declining industries, several other manufacturing industries seem to have been hit especially hard in the 1980–82 recessions and have not recovered previous production or employment levels. Many machinery producers in addition to those listed in table 6 are in this category, along with basic chemicals, construction-related industries, and some textile industries (but not apparel). The construction-related industries showed good output growth in 1984, however, and are on their way to surpassing 1979’s peaks. The chemical, textile, and many of the metals and machinery industries also showed gains in 1984 and may be expected to eventually fully recover. The exceptions are nonferrous metal ores

mining, petroleum refining, and miscellaneous manufactured products. Demand for these items has not picked up much, and output is still depressed. Also, although all the metal and machinery industries did experience production upturns in 1984, the recovery was weak for many and they are still far from pre-recession levels. Examples not already identified as long-term losers include fabricated structural metal; cutlery and handtools; engines and turbines; farm and garden machinery; construction, mining, and oilfield machinery; electrical transmission equipment; and electrical industrial apparatus. For all of these industries, as well as several on the long-term declining list, production in 1984 was still at least 10 percent below pre-recession levels.

### Outlook for the future

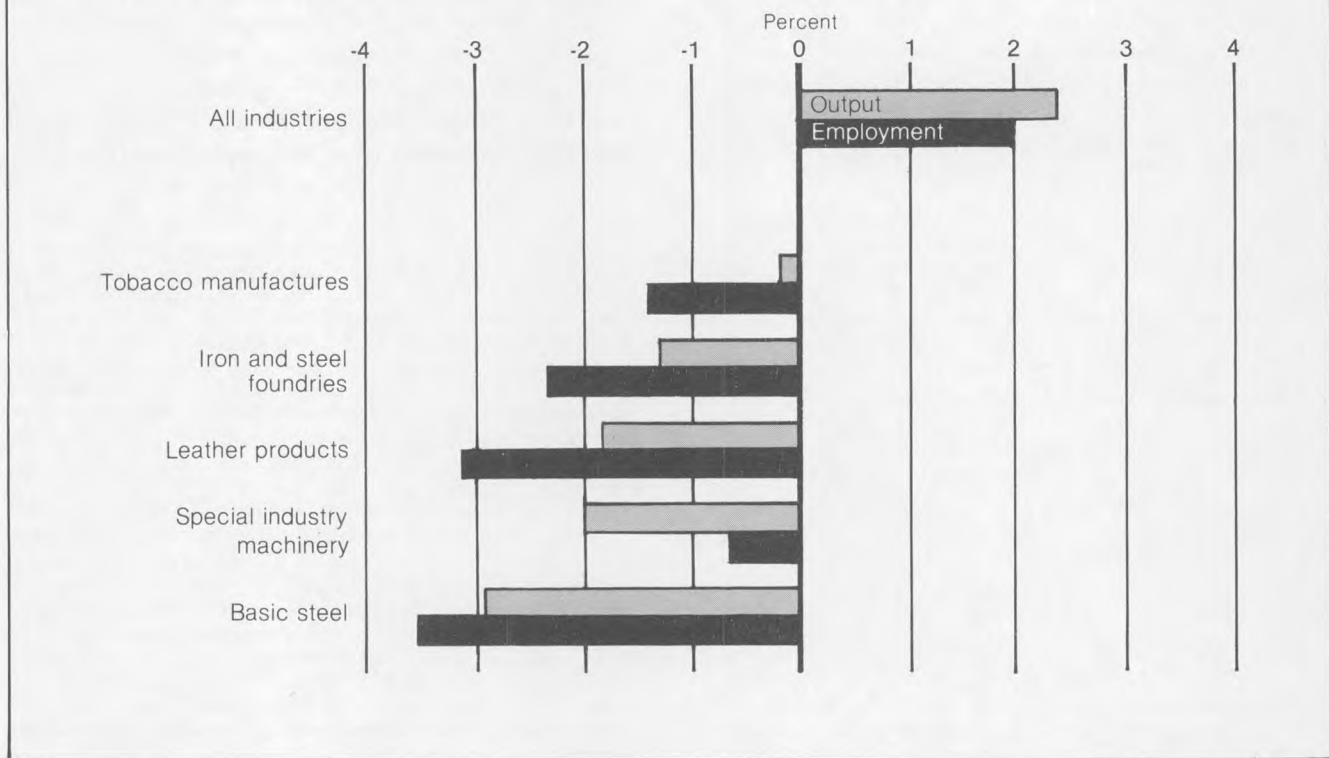
BLS projections of output and employment, published in the November 1985 *Monthly Labor Review*, indicate that the goods-producing sector (under the assumptions of the middle projections scenario) is expected to grow in absolute terms in both production and jobs, but to continue to decline as a share of total. The share decline will be more rapid for employment than for output. The goods-producing sector is projected to gain 1.8 million jobs by 1995, but drop from 27.7 percent of all jobs to just 25.6 percent. Production in goods-producing industries, in contrast, is projected to almost keep pace with total output growth, and the decline in

the goods-producing share of output will be smaller than for employment.

The decrease in the total employment share projected for the goods-producing sector will be concentrated in agriculture, mining, construction, and nondurable manufacturing industries. Durable goods industries, however, are projected to account for greater shares of both output and employment in 1995, contrary to past trends. This results from the macroeconomic assumptions of strong growth in capital spending for producers' durable equipment, continued increases in defense purchases, and relatively faster growth in exports than in imports of manufactured capital goods as the high value of the dollar continues to fall. Productivity is also projected to increase over the next 10 years, but demand for durable manufacturing products is projected to be high enough to stimulate job growth.

A look at the BLS individual industry projections reinforces the conclusion that the goods-producing sector and manufacturing in particular will not be shrinking in absolute terms. (See table 7.) Among the top 15 fastest-growing employment industries projected, 8 are in manufacturing, and for output, that figure is 11 of 15. The manufacturing industries on these lists of fastest-growing output and employment reflect the assumptions of strong demand for sophisticated capital equipment, medical supplies and drugs, and defense materiel.

**Chart 3. Output and job trends, selected long-term declining industries, least squares rate of change, 1969-84**



The outlook for the troubled industries identified in table 6 is not so rosy. Some of the industries experiencing long-term loss of markets are projected to continue their decline through 1995. Some small production increases are expected for the steel industry, but only if more efficient technologies are implemented. Employment in steel is projected to drop by more than 20 percent between 1984 and 1995. No production comebacks are anticipated for wooden containers, leather products, tobacco, or the household industry.

Some of the machinery and defense-related sectors on the list, however, are projected to reverse trend and rebound from current low levels. Demand for materials handling equipment is projected to be so strong as to rank that industry among the top 10 in terms of projected output growth. This turnaround is expected to occur as many factories add new, highly engineered, computer-controlled production systems, incorporating industrial robots and automatic material handling.

OUR ANALYSIS HAS SHOWN that while there has clearly been a long-term employment shift to the service sector, that shift has for the most part been a relative shift only, and not an absolute one. Only with the last cyclical downturn did the manufacturing sector fail to hold a steady job level. Furthermore, the relative shift to services has been far less pronounced for output than for employment, and manufacturing production has even been growing in absolute levels. While some manufacturing industries clearly have been in a long-term decline, and the 1980–82 recessionary period may have exacerbated their problems, our data indicate that the United States is not losing its industrial base. Most manufacturing industries, indeed many that would be considered “heavy” manufacturing, are at least expanding production, if not employment. Higher productivity has allowed domestic production of manufactured

**Table 7. Fastest-growing employment industries and output industries, 1984–95**

Industry	Average annual rate of change
<b>Employment</b>	
Medical services, n.e.c. ....	4.3
Business services ....	4.2
Computers and peripheral equipment ....	3.7
Materials handling equipment ....	3.7
Transportation services ....	3.5
Professional services, n.e.c. ....	3.5
Scientific and controlling instruments ....	2.9
Medical instruments and supplies ....	2.8
Doctors' and dentists' services ....	2.6
Plastics products ....	2.5
Credit agencies and financial brokers ....	2.5
Amusement and recreation services ....	2.5
Radio and communication equipment ....	2.3
Complete guided missiles and space vehicles ....	2.2
Electronic components and accessories ....	2.1
<b>Output</b>	
Computers and peripheral equipment ....	8.4
Electronic components and accessories ....	7.6
Communications except radio and television ....	6.6
Telephone and telegraph apparatus ....	6.0
Complete guided missiles and space vehicles ....	5.7
Materials handling equipment ....	5.6
Business services ....	5.1
Radio and communication equipment ....	5.0
Scientific and controlling instruments ....	4.8
Medical instruments and supplies ....	4.6
Drugs ....	4.5
Medical services, n.e.c. ....	4.5
Optical equipment and supplies ....	4.3
Plastics products ....	4.3
Amusement and recreation services ....	4.2

n.e.c. = Not elsewhere classified.

goods to increase without corresponding increases in employment. Future expenditures for new capital equipment and a return to more balanced international currency exchange rates are projected to boost demand for U.S. goods for many years. □

—FOOTNOTES—

<sup>1</sup> See, for example, Barry Bluestone and Bennett Harrison, *The Deindustrialization of America* (Basic Books, Inc., 1982); Robert B. Reich, “Industrial policy,” *New Republic*, Mar. 31, 1982; “Do we need an industrial policy?” *Harper's*, February 1985; “The hollow corporation,” *Business Week*, Mar. 3, 1986; and numerous other articles.

<sup>2</sup> These conclusions are supported by similar studies of structural change, for example, Robert Z. Lawrence, *Can America Compete?* (The Brookings Institution, 1984); and John E. Cremeans, “Three measures of structural change,” U.S. Department of Commerce Working Paper, 1985.

<sup>3</sup> The last year of actual data referenced in this article is 1984, because even though preliminary 1985 employment data were available at time of publication, 1985 output data were not.

<sup>4</sup> Michael Urquhart, “The employment shift to services: where did it come from?” *Monthly Labor Review*, April 1984, pp. 15–22.

<sup>5</sup> Paul O. Flaim and Ellen Sehgal, “Displaced workers of 1979–83: how well have they fared?” *Monthly Labor Review*, June 1985, pp. 3–16.

<sup>6</sup> For a description of the output data and the latest projections, see “Employment Projections for 1995: Data and Methods,” BLS Bulletin 2253, March 1986.

<sup>7</sup> One limitation in the type of analysis presented in this article is the difficulty of accurately measuring real output. When possible, real output is based on some physical measure of production, such as units in manufacturing, or tons in mining, or passenger- or freight-miles in transportation. In many cases, however, output data are based on sales or receipts, deflated by a producer or consumer price index, if available. In some industries, such as noncommercial (or nonprofit) establishments, for example, output data must be based on changes in employment. When the data are this limited, any measure of productivity change is very questionable. Presentation of these data should not be interpreted to mean all measurement problems have been solved. Many difficult issues still remain for measuring output in many industries, as well as measuring price changes in those industries.

<sup>8</sup> The industry output data used in the BLS projections system can be defined as “gross duplicated output,” because they include not only the value added in each industry but also the value of all intermediate inputs into the production process. A different definition of output, “gross product originating,” measures just that portion of industry output that is value added, that is, labor compensation, profits, rents, interest, and indirect business taxes. This latter measure for all industries sums to Gross National Product (GNP).

Gross product originating, or value added, is not used in the BLS model system for several reasons. For one, it is not available for detailed industries. In addition, total or duplicated output is probably a better variable to use in estimating each industry's demand for labor than just the value-added portion of output. Duplicated output can be more closely related to total demand for an industry's products, whether the demand is from final consumers or from intermediate producers.

Gross product originating data can be used to analyze broad sectoral shifts, however, and the results are quite similar to those just described using duplicated output data. Because the former type of data excludes all intermediate products, for each year the percent of total output (or GNP) accounted for by the goods-producing sector is smaller than the percentage based on gross product originating data (which double counts the value of intermediate inputs, more of which are goods than services). However, over time the percentages for both types of data in the goods-producing sector have declined about the same relative amount.

As noted, the goods-producing gross duplicated output share fell from 54.9 percent of total output in 1959 to 46.7 percent in 1984, a loss of 8.2 percentage points. The gross product originating share fell from 37.8 per-

cent to 32.6 percent, or 5.2 percentage points. However, employment fell from 40 to 27.7 percent, a drop of 12.3 percentage points. Thus, no matter which measure of output is used, the shift between goods- and service-producing industries has been considerably less pronounced for output than it has been for employment.

<sup>9</sup> Edwin Dean, Harry Boissevain, and James Thomas, "Productivity and labor cost trends in manufacturing, 12 countries," *Monthly Labor Review*, March 1986, pp. 3-10.

<sup>10</sup> Neal H. Rosenthal, "The shrinking middle class: myth or reality?" *Monthly Labor Review*, March 1985, pp. 3-10.

<sup>11</sup> This analysis is being extended in a Bureau study by Patrick McMahon and John Tschetter, currently underway. Their study reinforces the conclusions of Rosenthal and further examines earnings shifts based on demographic and structural changes.

<sup>12</sup> Richard W. Riche, Daniel E. Hecker, and John U. Burgan, "High-technology today and tomorrow; a small slice of the employment pie," *Monthly Labor Review*, November 1983, pp. 50-58.

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### A note on communications

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

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# Consumer expenditures: results from the Diary and Interview surveys

*Data from the Consumer Expenditure Survey show that urban consumers spent about two-thirds of their total expenditures on food, housing, and transportation*

RAYMOND GIESEMAN AND JOHN ROGERS

Historically, the Bureau of Labor Statistics Consumer Expenditure Survey has been of importance largely for its role in periodically revising the Bureau's Consumer Price Index. Results from the survey are used to select new market baskets of goods and services for the CPI, and to determine the relative importance of the items selected. While this remains an important use of the Consumer Expenditure Survey, the increasing demand for more timely information about the spending habits of different kinds of households has expanded the role of the survey, making it an important source of information in its own right.

In the past, the expenditure survey was conducted about every 10 years, the previous one being in 1972-73. However, sharp increases in the costs of energy and housing during the 1970's highlighted the need for timely expenditure data in order to observe consumers' response to these phenomena. The BLS recognized the need for a survey that would provide a continuous flow of data, and began the current survey in 1980. Data from this ongoing survey allow analysts to track expenditures classified by household characteristics over a period of time and to link expenditure changes to changes in economic and social conditions. Among the characteristics by which the expenditures may be classified are: before-tax income, consumer unit size, age of reference person, region of residence, and number of earners.<sup>1</sup>

Data from the 1982-83 Survey of Consumer Expenditures show that urban American consumers spent about two-thirds of their total expenditures on food, housing, and

transportation; they spent more than a third of their food dollar on food away from home; and average transportation expenditures increased 7 percent from 1980-81 to 1982-83, despite a 10-percent decline in gasoline expenditures. These are among the results that the Consumer Expenditure Survey provides and that this article describes.

## Description of the survey

The expenditure survey consists of two separate components, each with its own questionnaire and sample: a quarterly interview survey in which each of the sampled consumer units reports information to an interviewer every 3 months for five consecutive quarters, and a diary survey in which consumer units are asked to complete a diary of expenses for two consecutive 1-week periods. At the same time, a great deal of information is obtained about the characteristics of the members of the consumer unit. The Interview survey is designed to obtain data on expenditures and income that respondents can be expected to recall for a period of 3 months or longer, such as property or automobile purchases, and those that occur on a regular basis, such as rent, utility bills, or insurance premiums. It is estimated that about 95 percent of expenditures are covered in the Interview survey. The Diary survey obtains data on frequently purchased items such as food and beverages, housekeeping supplies, and so forth, that respondents are less likely to be able to recall over long periods of time. Expenditures incurred away from home overnight or longer are excluded from the Diary survey. Spending on trips is obtained in the Interview survey. To obtain a complete picture of consumer spending, it is necessary to integrate results from both survey components. Data collection for both components of the

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survey is carried out by the Bureau of the Census under contract to the Bureau of Labor Statistics.

### Average expenditure levels

Expenditures and income of consumer units classified by five household characteristics—income quintile, age of reference person, region of residence, size of consumer unit, and number of earners—are shown in tables 1 and 2. Table 1 includes Interview survey data and table 2 shows Diary survey data for 1982–83. The tables also include the number of consumer units and average consumer unit size for each class.

The interview data show that expenditures can vary substantially when classified by different consumer unit characteristics. The amount spent for food and housing by consumer units in the highest income quintile was more than three times the amount spent by those in the lowest income quintile. Consumer units with reference persons aged 65 and over spent four times as much on health care as those with reference persons under 25 years of age. Consumer units in the West spent 20 percent more on average for transportation than those in the Northeast, and four-person consumer

units spent twice as much on housing as single persons.

Results from the Diary survey show that consumer units in the highest income quintile spent more than 2½ times as much on food at home as the lowest income quintile consumer units, and more than 4½ times as much on food away from home. Consumer units whose reference person was under 25 years of age spent about 38 percent less for food at home than those with reference persons over 65 years of age, but spent 48 percent more for food away from home. Consumer units in the South spent about 11 percent less for food than those in the Northeast.

### Budget shares

While actual expenditure levels are revealing to some users, others may find budget shares more appropriate. Budget shares are the portion of total expenditures spent on a component or the portion of an average component expenditure spent on a subcomponent.

For example, the interview data show that the highest income quintile consumer units spent more than three times the amount for food and housing than did those in the lowest quintile, but that amount accounted for only a 44-percent

**Table 1. Average annual income and expenditures by selected household characteristics, urban United States, Interview survey, 1982–83**

Characteristic	Number of consumer units (thousands)	Income before taxes <sup>1</sup>	Consumer unit size	Expenditures								
				Total	Food and alcoholic beverages	Housing	Apparel and services	Transportation	Health care	Entertainment	Personal insurance and pensions	Other
All consumer units	71,570	\$22,702	2.6	\$18,892	\$3,422	\$ 5,784	\$1,030	\$3,712	\$ 822	\$ 870	\$1,625	\$1,628
Income quintile: <sup>1</sup>												
Lowest 20 percent	12,328	4,097	1.8	8,324	1,887	2,980	429	1,231	514	284	191	807
Second 20 percent	12,321	10,611	2.3	12,155	2,529	3,994	612	2,259	807	429	570	954
Third 20 percent	12,373	18,129	2.6	16,793	3,150	5,032	870	3,451	825	710	1,301	1,395
Fourth 20 percent	12,337	28,231	3.0	22,425	3,965	6,466	1,174	4,604	882	1,123	2,347	1,864
Highest 20 percent	12,403	52,267	3.3	35,171	5,302	10,188	2,054	6,950	1,074	1,851	4,548	3,204
Age of reference person:												
Under 25	7,013	11,537	1.8	11,617	2,178	3,410	782	2,623	307	581	722	1,013
25–34	17,210	23,835	2.7	19,271	3,305	6,409	1,071	4,052	547	977	1,724	1,186
35–44	13,028	29,718	3.5	24,296	4,368	7,494	1,428	4,758	753	1,294	2,209	1,991
45–54	10,034	31,198	3.2	24,718	4,473	6,870	1,366	4,991	936	1,075	2,469	2,537
55–64	10,436	24,450	2.4	19,497	3,588	5,374	993	3,656	1,056	799	2,155	1,877
65 and over	13,849	13,583	1.7	12,346	2,421	4,123	515	1,972	1,228	390	401	1,296
Region of residence:												
Northeast	16,236	21,704	2.5	18,038	3,535	5,677	1,002	3,360	758	779	1,354	1,573
Midwest	18,666	22,318	2.6	18,881	3,358	5,731	987	3,667	786	876	1,793	1,683
South	22,833	22,472	2.7	18,444	3,254	5,479	1,033	3,798	863	793	1,645	1,581
West	13,835	24,655	2.5	20,650	3,653	6,484	1,118	4,044	876	1,097	1,685	1,693
Size of consumer unit:												
One person	20,523	13,361	1.0	11,469	2,058	3,827	608	2,046	539	499	775	1,117
Two persons	20,946	23,423	2.0	19,377	3,328	5,909	992	3,851	1,023	850	1,740	1,684
Three persons	11,344	26,970	3.0	21,472	3,816	6,490	1,163	4,367	866	955	2,000	1,813
Four persons	10,726	30,992	4.0	24,959	4,610	7,575	1,473	4,891	858	1,248	2,326	1,979
Five persons	4,801	29,803	5.0	25,656	4,965	7,365	1,437	5,354	926	1,319	2,181	2,110
Six or more persons	3,230	26,086	6.8	23,658	5,080	6,628	1,418	4,735	882	1,142	1,818	1,955
Number of earners:												
One-person consumer units:												
No earner	7,060	7,130	1.0	7,707	1,519	3,107	300	926	756	205	47	846
One earner	13,463	16,400	1.0	13,442	2,341	4,205	770	2,633	425	653	1,156	1,259
Consumer units of two or more persons:												
No earner	7,252	12,278	2.5	12,759	2,854	4,324	542	2,071	1,167	447	161	1,193
One earner	15,059	22,107	3.1	19,289	3,639	6,159	1,054	3,492	948	918	1,504	1,576
Two earners	21,476	30,661	3.1	24,175	4,081	7,301	1,341	5,055	804	1,161	2,565	1,867
Three or more earners	7,260	38,130	4.6	29,556	5,445	7,511	1,742	6,545	1,068	1,383	2,964	2,898

<sup>1</sup> Includes only consumer units providing complete reports of income.

share of their total expenditures, compared with a 58-percent share of the total for those in the lowest quintile. Almost 10 percent of the total expenditures of consumer units with reference persons aged 65 and over were spent on health care, compared with less than 3 percent spent by those with reference persons under 25. The youngest consumer unit class spent 23 percent of their total on transportation, compared with 16 percent spent by the oldest class of consumer units. Food and housing expenditures accounted for a relatively constant share of total expenditures across consumer unit size classes. Single persons spent 51 percent of their total on food and housing, two-person consumer units spent about 48 percent, and shares for other size classes fell within that range.

The diary data show that consumer units spent over a third of their total food dollar on food away from home. The youngest class of consumer units spent about 47 percent of their food dollar on food away from home, compared with only 27 percent for the oldest class.

Food expenditures away from home were also influenced by the number of wage earners in the consumer unit. Single-

person consumer units in which the individual was not a wage earner—primarily elderly persons—spent 31 percent of total food expenditures away from home, compared with 58 percent for those in which the individual was a wage earner. Consumer units of two or more persons with no wage earner spent 23 percent of their food budget away from home, compared with 30 percent for those with one earner, and 37 percent for those with two earners.

Income also influences expenditures for food away from home. Consumer units in the lowest income quintile spent 30 percent of their total food expenditures on food away from home, compared with 42 percent for those in the highest quintile. For the middle income quintile, the proportion was about 33 percent.

### Aggregate expenditure shares

Some users of expenditure data may be interested in the aggregate amount spent on a component by a particular class of consumer units. Or they may be interested in the portion that amount is of aggregate spending by all consumer units. For such users, aggregate expenditure shares are another

**Table 2. Average weekly income and expenditures by selected consumer unit characteristics, urban United States, Diary survey, 1982-83**

Characteristic	Number of consumer units (thousands)	Income before taxes <sup>1</sup>	Consumer unit size	Items of expenditure							
				Food, total	Food at home	Food away from home	Alcoholic beverages	Tobacco products and smoking supplies	Personal care products and services	Nonprescription drugs and supplies	Housekeeping supplies
All consumer units . . . . .	73,145	\$418.25	2.5	\$55.11	\$35.51	\$19.60	\$ 5.46	\$3.24	\$4.46	\$1.85	\$5.44
Income quintile: <sup>1</sup>											
Lowest 20 percent . . . . .	11,367	72.02	1.7	28.08	19.74	8.34	2.64	2.00	2.35	1.12	2.71
Second 20 percent . . . . .	11,374	192.77	2.3	41.95	30.01	11.94	3.62	2.79	3.20	1.31	3.92
Third 20 percent . . . . .	11,380	336.71	2.6	54.39	36.39	18.00	5.29	3.66	4.20	1.90	5.57
Fourth 20 percent . . . . .	11,387	524.67	2.9	67.86	43.44	24.42	6.48	4.16	5.34	2.41	6.84
Highest 20 percent . . . . .	11,393	963.90	3.2	91.16	52.99	38.17	10.61	4.22	8.08	2.98	9.37
Age of reference person:											
Under 25 . . . . .	8,467	216.83	1.8	32.33	17.00	15.34	5.11	2.33	2.63	.53	2.43
25-34 . . . . .	16,767	433.90	2.7	54.22	33.20	21.03	6.46	3.07	3.95	1.78	5.02
35-44 . . . . .	13,465	557.63	3.4	71.27	46.01	25.26	6.16	4.16	5.42	1.79	7.00
45-54 . . . . .	9,744	593.87	3.1	74.48	48.78	25.70	6.64	4.41	6.04	2.60	7.43
55-64 . . . . .	10,498	469.42	2.3	59.59	39.28	20.31	5.78	3.81	5.18	2.29	5.97
65 and over . . . . .	14,203	246.02	1.7	37.80	27.42	10.37	2.80	1.87	3.63	1.96	4.50
Region of residence:											
Northeast . . . . .	17,307	429.83	2.5	58.48	38.48	20.00	5.58	3.51	4.41	1.67	5.53
Midwest . . . . .	18,981	394.92	2.6	53.23	34.73	18.50	4.86	3.39	4.45	1.57	6.05
South . . . . .	21,637	404.44	2.5	52.24	33.30	18.94	5.14	3.18	4.37	1.93	4.86
West . . . . .	15,219	452.65	2.4	57.68	36.23	21.45	6.54	2.81	4.66	2.32	5.41
Size of consumer unit:											
One person . . . . .	22,181	239.46	1.0	28.12	13.98	14.14	4.60	1.78	2.60	.93	2.51
Two persons . . . . .	20,416	451.94	2.0	53.97	33.77	20.20	6.22	3.32	4.97	2.06	5.84
Three persons . . . . .	12,472	482.58	3.0	62.14	42.62	19.53	5.44	3.90	4.61	2.66	6.06
Four persons . . . . .	10,626	576.44	4.0	81.21	53.90	27.31	6.30	4.30	6.14	2.43	8.25
Five persons . . . . .	4,681	535.50	5.0	87.65	63.07	24.58	4.91	4.48	6.13	1.93	7.81
Six or more persons . . . . .	2,769	496.50	6.7	92.72	71.58	21.14	4.69	5.12	5.69	1.78	8.47
Number of earners:											
One-person consumer units:											
No earner . . . . .	8,155	128.96	1.0	22.51	15.49	7.03	1.69	1.32	2.51	1.14	2.58
One earner . . . . .	14,026	298.17	1.0	31.39	13.10	18.28	6.29	2.05	2.65	.80	2.46
Consumer units of two or more persons:											
No earner . . . . .	7,137	231.60	2.5	45.40	34.98	10.42	2.68	2.42	3.71	1.89	5.25
One earner . . . . .	16,186	403.35	3.1	62.53	43.96	18.56	4.59	3.54	4.82	2.49	6.57
Two earners . . . . .	21,216	590.19	3.1	68.16	43.11	25.05	7.16	4.17	5.53	1.96	6.57
Three or more earners . . . . .	6,424	716.25	4.5	97.25	64.03	33.22	8.15	5.31	7.32	3.06	9.24

<sup>1</sup> Includes only consumer units providing complete reports of income.

way of analyzing the consumer expenditure data.

Aggregate expenditures on a component are determined by multiplying the mean expenditure on that component by the total number of consumer units. The aggregate expenditure share of a class of consumer units is determined by multiplying the class's mean expenditure on the component by the number of consumer units in the class and dividing by the aggregate expenditure. This differs from the budget share of a class of consumer units which is the average amount spent on a component as a portion of the average total expenditures of the class. Even though the class's component budget share may be large, the aggregate expenditure share will be relatively small if the class size is small or the class mean expenditure for the component is low relative to that of other classes. For example, the interview data show that consumer units with reference persons under age 25 spent 23 percent of their average total expenditures on transportation, compared with 20 percent spent by all consumer units. However, because the dollar value of their mean expenditure is low relative to most other classes, the aggregate expenditure share for units in the under-25 class was only about 7 percent of total aggregate transportation expenditures, although they account for 10 percent of the total number of consumer units.

The Diary survey data show that consumer units with reference persons age 65 or over had an aggregate expenditure share for food of 13 percent even though the class made up about 19 percent of the population. When classified by income quintile, each income class has a 20-percent population share (of complete income reporters), but aggregate food expenditure shares varied from 10 percent for consumer units in the lowest quintile to 32 percent for those in the highest quintile.<sup>2</sup> By size of household, one- and two-person households accounted for 43 percent of aggregate food expenditures, but 51 percent of aggregate expenditures for food away from home. By age of reference person, consumer units with reference persons age 65 or over accounted for 21 percent of aggregate expenditures for non-prescription drugs and supplies, compared with 3 percent for consumer units with reference persons under 25.<sup>3</sup>

### Per capita expenditures

Average consumer unit size varies by classifications of consumer units according to age of reference person, number of earners, and so forth. It may be useful to also consider per capita expenditures because consumer unit size may contribute to differences in expenditures among classes.

For age classes, mean expenditure levels per consumer unit generally increase with age until they peak in the middle age classes, then decline. However, per capita expenditures show a different pattern. Per capita expenditures for housing are highest, \$2,425, for the age class with reference persons age 65 or over, compared with the lowest per capita housing expenditure of \$1,894 by consumer units with reference persons under 25.

Data from the Diary survey show that expenditure levels

for food at home are highest for age classes with reference persons ages 35 to 44 and 45 to 54. However, the highest per capita expenditures are for those classes with reference persons ages 55 to 64 and 65 or over. Average expenditures for nonprescription drugs and supplies are highest for the class with reference persons ages 45 to 54, but per capita expenditures are highest for the class with reference persons age 65 or over.

### Expenditure changes over time

Consumer Expenditure Survey data are used to document changes in the expenditure patterns of American consumers over a period of time. Changes in expenditure patterns can be attributed to such factors as shifts in relative prices and wage rates, changes in tastes and habits, changes in lifestyles, and the availability of new products. Demo-

**Table 3. Characteristics and average annual expenditures of urban consumer units, and percent change in consumer expenditures, interview survey, and Consumer Price Index, 1972-73 and 1982-83<sup>1</sup>**

Item	1972-73	1982-83	Percent change	
			Consumer expenditures	CPI-U
Number of consumer units (in thousands)	58,948	70,329	19	—
Consumer unit characteristics:				
Income before taxes <sup>2</sup>	\$12,388	\$23,027	86	—
Size of consumer unit	2.8	2.6	—	—
Age of reference person	47.1	46.6	—	—
Number in consumer unit:				
Earners	1.3	1.4	—	—
Vehicles	1.8	1.8	—	—
Children under 18	1.0	.7	—	—
Persons 65 and over	.3	.3	—	—
Total expenditures	\$9,421	\$19,128	103	—
Food	1,675	3,175	90	118
Food at home	1,313	2,238	70	113
Food away from home	362	937	159	130
Alcoholic beverages	89	286	221	76
Housing	2,638	5,869	122	—
Shelter	1,507	3,309	120	—
Owned dwellings	746	1,947	161	—
Rented dwellings	644	1,065	65	389
Other lodging	117	296	153	3164
Fuels, utilities, and public services	581	1,512	160	3192
Household operations	138	275	99	127
Housefurnishings and equipment	411	773	88	71
Apparel and services	732	1,039	42	56
Transportation	1,762	3,766	114	142
Vehicles	709	1,425	101	3130
Gasoline and motor oil	404	1,076	166	232
Other vehicle expenses	540	1,034	91	3102
Public transportation	110	231	110	146
Health care	432	834	93	154
Entertainment	389	879	126	88
Personal care services	106	178	68	103
Reading	50	128	156	3119
Education	126	257	104	3126
Tobacco	131	208	59	98
Miscellaneous	102	274	169	—
Cash contributions	372	586	58	—
Personal insurance and pensions	818	1,651	104	—
Life and other personal insurance	367	262	-29	—
Retirement, pensions, Social Security	451	1,388	208	—

<sup>1</sup> Expenditure categories for 1972-73 were adjusted to correspond with 1982-83 definitions; estimates for 1982-83 exclude students.

<sup>2</sup> Income before taxes is calculated using complete income reporters.

<sup>3</sup> Estimated.

graphic trends such as changes in average family size, age, and earner composition can also affect expenditures. The current, ongoing survey allows users to recognize trends more quickly than was possible in the past, and to identify trends that might have been missed altogether using data that were only infrequently available.

Tables 3 and 4 show Interview and Diary survey results from 1972-73 and 1982-83 and percent changes between the two periods. Also shown are CPI changes. The interview data show that gasoline and motor oil expenditures increased 166 percent from 1972-73 to 1982-83, while total expenditures rose 103 percent. This reflects the large increases in energy costs in the 1970's resulting from oil price increases. While the increase in gasoline and motor oil expenditures was somewhat higher than the increase in total expenditures, it was still well below the 232-percent price rise measured by the CPI. That was the result of consumers

modifying their behavior in response to price increases by reducing their gasoline and motor oil consumption, and adjusting their longer term buying habits, as by purchasing more fuel-efficient automobiles.

Although gasoline and motor oil expenditures rose sharply over the decade 1972-73 to 1982-83, they actually decreased by 10 percent from 1980-81 to 1982-83. This recent decline can be attributed to falling prices and conservation measures over that period. These are the kinds of trends that might have been missed had data for 1980-81 not been available.

Diary survey data show that average weekly expenditures for food increased 70 percent between 1972-73 and 1982-83, well below the 104-percent price rise for food measured by the CPI. Expenditures for food away from home increased 113 percent over the period, compared with a more modest increase of 53 percent for food at home. The changes in the expenditure data and the CPI for food away from home were quite similar (113 percent, compared with 120 percent), while there was a sharp difference in the changes for food at home (53 percent, compared with 99 percent).

Between 1972-73 and 1982-83, CPI-measured prices increased more than average expenditures for all food at home categories. Food categories with the largest price increases tended to have the largest expenditure increases. However, prices for meats, poultry, fish, and eggs rose 70 percent, while expenditures for those items rose only 24 percent.

While not presented in this article, expenditure data for specific products and services keep track of the speed with which new products are disseminated. Such data are available on public use tapes. The following tabulation shows mean expenditures from the Interview survey, for selected items:

	1980	1981	1982	1983
VCR .....	\$ 8	\$ 10	\$ 23	\$ 21
Cable TV .....	31	43	59	79
Child care and babysitting .....	76	91	91	108

This article has presented some of the ways of analyzing the consumer expenditure data. As speed and efficiency in processing the data improve, the uses of the data and the number of users are expected to multiply. The timeliness of this ongoing survey enhances its application not only in revising the CPI, but also as a valuable information source for public and private analysts examining the relationships of family characteristics, income, and expenditures. □

**Table 4. Characteristics and average weekly expenditures of urban consumer units, and percent change in consumer expenditures, Diary survey, and Consumer Price Index, July 1972-June 1974 and 1982-83**

Item	July 1972-June 1974	1982-83 <sup>1</sup>	Percent change	
			Consumer expenditures	CPI
Number of consumer units (in thousands) .....	59,159	71,356	—	—
Consumer unit characteristics:				
Income before taxes <sup>2</sup> .....	\$187.46	\$427.21	128	—
Size of consumer unit .....	2.8	2.6	—	—
Age of reference person .....	47.1	46.4	—	—
Number in consumer unit:				
Earners .....	1.3	1.3	—	—
Children under 18 .....	.9	.7	—	—
Persons 65 and over .....	.3	.3	—	—
Average weekly expenditures:				
Food, total .....	\$33.11	\$56.16	70	104
Food at home, total .....	23.79	36.32	53	99
Cereals and bakery products .....	2.79	4.82	73	118
Meats, poultry, fish, and eggs .....	9.35	11.55	24	70
Dairy products .....	3.23	4.90	52	89
Fruits and vegetables .....	3.48	5.99	72	102
Other food at home .....	4.93	9.06	84	160
Food away from home .....	9.32	19.83	113	120
Alcoholic beverages .....	2.32	5.51	138	72
Tobacco products and smoking supplies .....	2.19	3.30	51	95
Personal care products and services .....	2.92	4.53	55	102
Nonprescription drugs and supplies .....	1.19	1.89	59	103
Housekeeping supplies .....	2.99	5.55	86	144

<sup>1</sup> Excludes students.

<sup>2</sup> Income before taxes is calculated using complete income reporters.

—FOOTNOTES—

<sup>1</sup> A consumer unit is defined as a single person or group of persons in a sample household, related by blood, marriage, adoption, or other legal arrangement, or who share responsibility for at least two out of three major types of expenses—food, housing, and other expenses.

<sup>2</sup> The distinction between complete and incomplete income reporters is based in general on whether the respondent provided values for major

sources of income, such as wages and salaries, self-employment income, and Social Security income. Even complete income reporters may not have provided a full accounting of all income from all sources.

<sup>3</sup> For a more detailed discussion of aggregate expenditure shares, including data tables, see Kirk Kaneer, "Distribution of consumption examined using aggregate expenditure shares," *Monthly Labor Review*, April 1986, pp. 50-53.

# BLS area wage surveys will cover more areas

*Earnings data for blue- and white-collar occupations will be published for 90 areas instead of the current 70, but about two-thirds of the areas will be surveyed on a 2-year rather than 1-year cycle*

LAURA SCOFEA

The Bureau of Labor Statistics will restructure the probability sample of labor markets for its area wage survey program to reflect changes in the number and geographic boundaries of the Nation's metropolitan statistical areas. The new area sample will be phased in over a 4-year period beginning in January 1987, and will contain 90 areas when fully implemented. The 32 largest areas in terms of nonfarm employment will be surveyed annually, and two groups of 29 areas will be surveyed in alternate years.

Currently, 70 areas are surveyed annually. Of these areas, 56 will remain in the program; geographic boundaries, however, will change for 34 of them.

This article gives a brief description of the Bureau's area wage survey program and the changes to be made in the probability sample of areas surveyed. The article covers area wage survey program objectives and program evolution from initial 1947-48 studies of pay for office clerical occupations in 11 large cities. It also describes the metropolitan area concept used in the program, reasons for changes in the area sample, the method for selecting the new sample, and the differences between the old and new area samples.

## Program background

The Bureau's area wage survey program is designed to shed light on the level and structure of occupational pay

rates within a local labor market by studying occupations common to many industries.<sup>1</sup> The areas surveyed are a representative cross-section of the wide variety of local labor markets found throughout the United States. The surveys, relating to specific payroll periods, focus on pay relationships among occupations, industries, and areas of the country. Successive survey findings are also useful in reviewing pay changes over time.

Using a standard set of job descriptions, the Bureau designs surveys which cover narrowly defined occupations selected from four categories—office clerical (such as secretaries, typists, and accounting clerks); professional and technical (for example, computer programmers and electronics technicians); maintenance, toolroom, and powerplant (maintenance electricians and stationary engineers); and material movement and custodial (order fillers and guards). Estimates of average straight-time hourly or weekly earnings and distributions of workers by their earnings are developed for each of approximately 50 occupations studied. (Fifteen of the occupations—for example, word processors, computer systems analysts, and guards—are divided into two work levels or more.)

In addition, every third year the surveys yield information on the prevalence of provisions for cost-of-living adjustments in pay rates; minimum entrance salaries for inexperienced typists and other inexperienced clerical workers; pay differentials for work on late shifts; work schedules; extent of collective bargaining agreement coverage; holiday, vaca-

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tion, and other paid leave provisions; and the incidence of health, insurance, retirement, severance pay, and supplemental unemployment benefits. Data typically are developed separately for production and office workers; information on shift pay differentials, however, is restricted to production workers in manufacturing.

Findings for each area wage survey are published in a separate BLS bulletin.<sup>2</sup> To aid in interarea pay comparisons, average area pay levels in four employment groups—office clerical, electronic data processing, skilled maintenance, and unskilled plant jobs—are related to pay levels for all metropolitan areas combined, in index form, that is, all metropolitan area pay levels = 100. Results are published in an annual summary release.<sup>3</sup> Results of the individual surveys, after appropriate weighting to account for areas not surveyed, are also combined to develop pay levels for the narrowly defined occupations in all metropolitan areas combined; separate data are presented for major industry divisions and for four broad geographic regions.<sup>4</sup> Also, special articles appear in the *Monthly Labor Review*, with in-depth analyses of specific survey findings.<sup>5</sup>

The area wage survey program has grown considerably since it started in fiscal year 1948 as part of a restructuring of the Bureau's occupational wage survey activities. That year's surveys provided information on salaries in office clerical occupations in 11 large cities. In 1950, the geographic scope of the surveys expanded from cities to the larger metropolitan areas as defined by the U.S. Bureau of the Budget (now the Office of Management and Budget). A year later, professional and technical, maintenance, and custodial and material movement occupations were added.<sup>6</sup>

These developments roughly coincided with the outbreak of the Korean conflict. Resources for area wage surveys were expanded as a result of this emergency in order to provide data for administering wage stabilization policies. During the 1950's, between 11 and 40 areas of various sizes were studied in a given year, with the number depending on resources available for the program.

### Current program emerges

In fiscal year 1960, the current program emerged when there was a conversion from studies in judgmentally selected areas to a statistically selected sample of areas chosen to represent all metropolitan areas in the contiguous 48 States. Consequently, findings of individual areas could be combined, after appropriate weighting, to yield national and regional estimates. The sample selected for fiscal 1960 contained 60 areas, representative of the 188 areas then in the scope of the program. A year later, the sample included 80 areas, and gradually grew to 85 areas, representing the 229 areas in scope for 1969.<sup>7</sup>

The major thrust of the 1960's expansion was a need for nationwide estimates of office clerical pay in private industry for use in evaluating Federal white-collar salaries. Data obtained for plant jobs in the individual areas surveyed also

were used by the Department of Defense and other agencies in setting pay rates for their blue-collar "wage board" employees.

The most recent change in the program occurred after the Office of Management and Budget made major changes in its list of metropolitan areas, based on results of the 1970 Census of Population. The Bureau selected a new 70-area sample and introduced it in July 1974.<sup>8</sup> These 70 areas will continue as the area sample through December 1986, representing the 262 metropolitan areas (excluding those in Alaska, Hawaii, and Puerto Rico) recognized and defined by the Office of Management and Budget as of February 1974.

### Changing metropolitan area definitions

With few exceptions, area wage surveys have been conducted since 1950 in metropolitan areas as defined by the Office of Management and Budget or its predecessor, the Bureau of the Budget.<sup>9</sup> Standard metropolitan area definitions were first developed by the Bureau of the Budget shortly before the 1950 census, primarily to provide a common set of geographic definitions for Federal statistical agencies.

The metropolitan area concept recognizes that large population concentrations often extend beyond the borders of a single city. Under this concept, a metropolitan area consists of one county or more, containing the area's main population center, and may also include adjacent counties that have close economic and social ties to the central counties. (In New England, metropolitan areas are composed of cities and towns rather than counties.) Areas are designated and defined by the Office of Management and Budget based on a set of criteria developed by the interagency Federal Committee on Standard Metropolitan Statistical Areas.

The number of recognized metropolitan areas has grown substantially, from 172 in 1950 to 288 as of January 1, 1980. In part, this growth stems from changes in the criteria for designating metropolitan areas that have been made at the time of each population census since 1950.<sup>10</sup> Although these changes have not significantly altered the basic metropolitan area concept, they have resulted in the recognition of new areas and in changes in the boundaries of existing areas. However, most of the growth in the number of metropolitan areas is the result of population growth and increased urbanization in the United States.

The most recent revision in standards for designating and defining metropolitan areas was published in the *Federal Register* on January 3, 1980.<sup>11</sup> The new standards introduced revised terminology. The existing term, "Standard Metropolitan Statistical Area" (SMSA), was replaced by "Metropolitan Statistical Area" (MSA) and "Primary Metropolitan Statistical Area" (PMSA). Areas such as San Antonio, TX (Bexar, Comal, and Guadalupe Counties), which are not closely related to other metropolitan areas, and are typically surrounded by nonmetropolitan counties, are

called MSA's. PMSA's are components of larger "Consolidated Metropolitan Statistical Areas" (CMSA's). For example, Seattle (King and Snohomish Counties) and Tacoma (Pierce County) are PMSA's that jointly form the Seattle-Tacoma, Washington CMSA. CMSA's, not studied in the area wage survey program, have replaced the former "Standard Consolidated Statistical Areas" (SCSA's).

### Restructuring the program

Using the new standards and data from the 1980 census, the Office of Management and Budget defined a total of 326 MSA's and PMSA's in the contiguous 48 States, as of October 31, 1984.<sup>12</sup> As a result, BLS' area sample for its area wage surveys became outdated.

A principal consideration in planning for a revised sample of areas was maximizing the usefulness of survey results, given the level of resources available for area wage surveys. The Bureau and its business and labor advisory groups explored three alternatives: (1) a 70-area sample of the 326 metropolitan areas within the scope of the program, each area to be surveyed annually; (2) a 70-area sample of the 155 areas with populations of 250,000 or more, surveyed annually; and (3) a 90-area sample of all 326 areas, the 32 largest areas of the United States to be surveyed annually and two groups of 29 smaller areas each to be surveyed in alternate years. Each of these options, requiring about the same level of resources annually, was designed to represent areas differing in employment size, industrial composition, and geographic location. Provision for probability sampling permitted the development of national and regional estimates each year as in the past.

The third option was chosen because it provides information for the largest number of areas with the resources available. Also, the burden on individual respondents is reduced by rotating between the two groups of 29 areas.

To select the sample of 90 areas, all 326 MSA's and PMSA's as of October 1984 were grouped into 90 statistical "cells." One area in each of the cells was then selected to represent all areas in the cell. The 32 largest areas in terms of nonagricultural employment were the sole occupants of their cells and thus were automatically included in the sample.

The 294 remaining areas were grouped into 58 (90 minus 32) cells according to the following criteria, which are listed in descending order of importance:

- Broad geographic region—Northeast, South, Midwest, and West;
- Similarity of manufacturing industries (with emphasis on similarity of average earnings of production workers);
- Approximate equality of total nonagricultural employment; and
- Boundaries of BLS regional offices.

One area was randomly selected from each cell. An area's chance of selection was proportionate to its share of the total

nonagricultural employment in the cell. For example, an area with a quarter of the employment in its cell had a 1-in-4 chance of selection. A statistical technique known as Key-fitting was used to obtain as much overlap as possible between areas in the current and new samples.<sup>13</sup>

Exhibit 1 shows the result of the 90-area selection. Fifty-six of the areas in the new sample have been surveyed since 1974; 34 have not. Geographic boundaries stayed the same in 22 of the 56 retained areas; in the remaining 34, new boundaries resulted in nonagricultural employment increases or decreases of fewer than 10 percent in 23 areas; between 10 and 20 percent in 8 areas; and decreases of more than 25 percent in Dallas, Huntsville, and San Francisco. (Decreases in Dallas and San Francisco reflect splits of the former Dallas-Fort Worth and San Francisco-Oakland areas. Two counties formerly in the Huntsville, AL, metropolitan area are now nonmetropolitan counties.)

The new sample, reflecting population shifts in the United States, contains a slightly higher proportion of Southern and Western areas than does the current sample. Among the additions to the area wage survey program are Phoenix, AZ, Riverside-San Bernardino, CA, and Tampa-St. Petersburg-Clearwater, FL, which now rank among the 25 most populated areas.

### Implementing the new sample

The 90-area sample will be phased into the area wage survey program over a 4-year period, beginning in January 1987. Each year, surveys will be conducted in 61 areas—the 32 largest areas and half of the smaller areas.

In the largest areas, wage and benefit data will be obtained from surveyed establishments through personal visits by BLS field representatives once every 3 years. In the intervening years, collection (primarily by mail or telephone) will be limited to wage information.

The smaller areas will be divided into two groups of 29 areas. The groups will be surveyed in alternating years. Thus, an individual area will be studied twice in a 4-year cycle: a survey of wages and benefits will be conducted by personal visit one year; and a survey of wages only will be conducted by mail and telephone 2 years later.

As new areas enter the program, those no longer in the sample will be dropped. For areas retained in the program, changes in the geographic boundaries of metropolitan areas will be reflected in the year an area is surveyed by personal visit.

Most of the areas to be dropped from the area wage survey program will still be surveyed by BLS, but not as part of its own program. Each year the Bureau conducts about 100 locality wage surveys for the Employment Standards Administration of the U.S. Department of Labor.<sup>14</sup> Results from these surveys are used in administering the Service Contract Act, which sets minimum wages by occupation for employees of firms providing services to the Federal Government. □

**Exhibit 1. Revised area sample for BLS area wage surveys**

Northeast	South	Midwest	West
<b>Areas retained in program</b>			
Boston, MA <sup>1</sup> Buffalo, NY Hartford, CT Nassau-Suffolk, NY <sup>1</sup> Newark, NJ <sup>1</sup> New York, NY <sup>1</sup> Philadelphia, PA-NJ <sup>1</sup> Pittsburgh, PA <sup>1</sup> Portland, ME Poughkeepsie, NY Scranton-Wilkes-Barre, PA <sup>3</sup> Trenton, NJ Worcester, MA York, PA	Atlanta, GA <sup>1</sup> Baltimore, MD <sup>1</sup> Corpus Christi, TX Dallas, TX <sup>1,2</sup> Gainesville, FL Houston, TX <sup>1</sup> Huntsville, AL Jackson, MS Louisville, KY-IN Memphis, TN-AR-MS Miami-Hialeah, FL <sup>1</sup> New Orleans, LA <sup>1</sup> Richmond-Petersburg, VA San Antonio, TX Washington, DC-MD-VA <sup>1</sup>	Chicago, IL <sup>1</sup> Cincinnati, OH-KY-IN <sup>1</sup> Cleveland, OH <sup>1</sup> Columbus, OH Davenport-Rock Island-Moline, IA-IL Detroit, MI <sup>1</sup> Gary-Hammond, IN Indianapolis, IN Kansas City, MO-KS <sup>1</sup> Milwaukee, WI <sup>1</sup> Minneapolis-St. Paul, MN-WI <sup>1</sup> Omaha, NE-IA St. Louis, MO-IL <sup>1</sup> South Bend-Mishawaka, IN Toledo, OH	Anaheim-Santa Ana, CA <sup>1</sup> Billings, MT Denver, CO <sup>1</sup> Fresno, CA Los Angeles-Long Beach, CA <sup>1</sup> Portland, OR Sacramento, CA Salt Lake City-Ogden, UT San Diego, CA <sup>1</sup> San Francisco, CA <sup>1</sup> San Jose, CA <sup>1</sup> Seattle, WA <sup>1</sup>
<b>Areas new to program</b>			
Bergen-Passaic, NJ <sup>1,4</sup> Danbury, CT Lawrence-Haverhill, MA-NH Middlesex-Somerset-Hunterdon, NJ Monmouth-Ocean, NJ Pawtucket-Woonsocket-Attleboro, RI-MA <sup>6</sup> Rochester, NY	Augusta, GA-SC Austin, TX Bradenton, FL Charleston, SC Charlotte-Gastonia-Rock Hill, NC-SC Florence, SC Little Rock-North Little Rock, AR Longview-Marshall, TX Mobile, AL Nashville, TN Orlando, FL San Angelo, TX Shreveport, LA Tampa-St. Petersburg-Clearwater, FL <sup>1</sup> Wilmington, DE-NJ-MD	Appleton-Oshkosh-Neenah, WI Champaign-Urbana-Rantoul, IL Decatur, IL Elkhart-Goshen, IN Joliet, IL Kokomo, IN St. Cloud, MN	Boise City, ID Oakland, CA <sup>1,5</sup> Phoenix, AZ <sup>1</sup> Riverside-San Bernardino, CA Visalia-Tulare-Porterville, CA
<b>Areas dropped from program</b>			
Albany-Schenectady-Troy, NY Paterson-Clifton-Passaic, NJ Providence-Warwick-Pawtucket, RI-MA	Chattanooga, TN-GA Daytona Beach, FL Greensboro-Winston-Salem-High Point, NC Greenville-Spartanburg, SC Jacksonville, FL Norfolk-Virginia Beach-Portsmouth, VA-NC Oklahoma City, OK	Dayton, OH Green Bay, WI Saginaw, MI Wichita, KS	
<sup>1</sup> Surveyed annually. All other areas will be surveyed twice in a 4-year cycle.			
<sup>2</sup> Formerly included Fort Worth, TX.			
<sup>3</sup> Formerly titled Northeast Pennsylvania.			
<sup>4</sup> Formerly included in New York, NY-NJ, and Paterson-Clifton-Passaic, NJ.			
<sup>5</sup> Formerly included in San Francisco-Oakland, CA.			
<sup>6</sup> Formerly included in Providence-Warwick-Pawtucket, RI-MA.			



<sup>1</sup> The surveys include establishments in six broad industry divisions: manufacturing; transportation, communication, and other public utilities; wholesale trade; retail trade; finance, insurance, and real estate; and selected services. Major exclusions from the survey are construction, extractive industries, and government. Establishments employing 50 workers or more are included except in the 13 largest areas where the minimum establishment size is 100 workers in manufacturing; transportation, communication, and other public utilities; and retail trade.

<sup>2</sup> See, for example, *Area Wage Survey: New York, New York–New Jersey, Metropolitan Area, May 1985*, Bulletin 3030–32 (Bureau of Labor Statistics, September 1985). Summaries of each of the 70 surveyed areas are also reported in a single volume. See *Area Wage Surveys: Selected Metropolitan Areas, 1984*, Bulletin 3025–72 (Bureau of Labor Statistics, June 1985).

<sup>3</sup> See *Wage Differences Among Metropolitan Areas, 1984*, Summary 85–7 (Bureau of Labor Statistics, June 1985).

<sup>4</sup> See *Occupational Earnings in All Metropolitan Areas, July 1984*, Summary 85–4 (Bureau of Labor Statistics, May 1985).

<sup>5</sup> See, for example, John E. Buckley, "Wage differences among workers in the same job and establishment," *Monthly Labor Review*, March 1985, pp. 11–16. An annual report compares wage levels in the areas surveyed. A more detailed description of the area wage survey program, including a discussion of uses and limitations of survey findings, is in *BLS Handbook of Methods*, Vol. I, Bulletin 2134–1 (Bureau of Labor Statistics, December 1982), pp. 67–73.

<sup>6</sup> Test surveys including blue-collar jobs were conducted successfully in 1949 in six cities.

<sup>7</sup> The program also included surveys in two nonmetropolitan areas—Boise, Idaho, and Burlington, Vermont—located in States without metropolitan areas. In addition, several surveys not part of the regular area program were conducted under contract.

<sup>8</sup> See Virginia L. Ward, "Area sample changes in the area wage survey program," *Monthly Labor Review*, May 1975, pp. 49–50.

<sup>9</sup> The Chicago survey was limited to Cook County and the New York survey to the five boroughs until 1963.

<sup>10</sup> At times, changes have been made between census years.

<sup>11</sup> They are also contained in the *Statistical Reporter*, December 1979, pp. 33–45. For background information, see Federal Committee on Standard Metropolitan Statistical Areas, "Documents Relating to the Metropolitan Statistical Area Classification for the 1980's," *Statistical Reporter*, August 1980, pp. 335–84.

<sup>12</sup> MSA definitions generally do not change except after the decennial census. Each year, however, a few new MSA's may be announced, usually because of population growth.

<sup>13</sup> See Nathan Keyfitz, "Sampling with Probabilities Proportional to Size: Adjusting for Changes in the Probabilities," *Journal of the American Statistical Association*, No. 46, 1951, pp. 105–09.

<sup>14</sup> See, for example, *Area Wage Survey: Fort Wayne, IN, June 1985* (Bureau of Labor Statistics, August 1985).

# BLS and Alice Hamilton: pioneers in industrial health

*In the early years of the century,  
BLS contracted for and published studies  
of industrial health and safety;  
its most active agent was Alice Hamilton,  
'special investigator for industrial diseases'*

WILLIAM T. MOYE

In September 1910, Alice Hamilton, chief medical examiner for the Illinois State Commission on Occupational Diseases, was in Brussels attending the International Congress on Occupational Diseases, at which the Belgian delegate dismissed U.S. activities in the field of industrial hygiene with the comment, "Ça n'existe pas [They do not exist]".<sup>1</sup> But that condition had already begun to change, and at the International Congress, Hamilton met Charles P. Neill, Commissioner of Labor, one of the persons primarily responsible for the recent surge in publicity on industrial poisons. Shortly thereafter, Hamilton accepted Neill's proposal that she undertake investigations for the Bureau of Labor, launching a decade of cooperation in which she studied diseases and hazards associated with the lead, explosives, pottery, and dye industries.

## Early career

Hamilton was born in New York City in 1869, but was raised in Fort Wayne, IN, one of four sisters with a much younger brother. From her youth, she was determined to be useful. Indeed, at one point, she hoped to become a medical missionary in Persia.<sup>2</sup> In her activities, she was able to combine her medical work with humanitarian services.

Upon graduation from medical school at the University of Michigan in 1893, she worked at hospitals in Minneapolis and Boston before returning to Michigan for graduate work.

Then she went to Europe for a year of study, followed by a year at Johns Hopkins. In 1897, she accepted a teaching position in Chicago and made the crucial decision to live at Hull House, a settlement house where she found "an intense and humane concern for people, especially for those who had small chance in this world."<sup>3</sup> There she found activities that married her research interests with social concerns.

During a typhoid epidemic in 1902, Hamilton surveyed homes in the Hull House district, capturing flies around open, undrained privies. When her tests confirmed the presence of the typhoid bacillus, she published the results of her research in the *Journal of the American Medical Association*, and along with other Hull House residents, urged the Chicago Board of Health to clean up the area.<sup>4</sup>

In 1908, Hamilton published her first article on industrial hygiene in *Charities and The Commons*.<sup>5</sup> She had to turn to Great Britain and Europe for information on the subject, "as there is so little available in our own country where we are still too much absorbed in the industrial battle to stop and take stock of the killed and wounded."<sup>6</sup> Later that year, Charles S. Deneen, governor of Illinois, appointed the Illinois Commission on Occupational Diseases—Hamilton and eight men. She served on the commission for about 2 years, resigning to accept the post of medical investigator for the Commission's Survey of Occupational Diseases.

Hamilton later wrote that her visit to European factories in 1911 had been an eye-opener. She had previously thought that U.S. factories provided better working conditions and that American workers enjoyed better health and, therefore, less industrial poisoning. However, after studying the sick-

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ness records and dwellings of English and German workers, she realized that she had found "a far larger number of cases" during her Illinois surveys.<sup>7</sup>

According to Hamilton, when she entered the industrial-hygiene field, "You could have counted the published articles on industrial poisoning on the fingers of one hand." Employers eager to improve conditions could find but little advice from medical experts. Many supervisors simply relied on a large floating pool of foreigners and a high labor turnover rate to cut exposure time in hazardous trades.<sup>8</sup>

### Efforts at the Bureau

Carroll D. Wright, first chief of the Bureau, had commissioned the first Federal report on industrial hygiene and published it in 1903. But the American awakening came later as part of the national push for social and economic reform known as the "Progressive Movement." Bureau activity in industrial hygiene was further spurred by the assumption of administrative functions under the Federal employees' compensation act of 1908. Neill placed special emphasis on industrial health and safety issues, and the Bureau participated in and encouraged research on these issues.

In 1909, the Bureau cooperated with the American Association for Labor Legislation in examining the effects of white phosphorus in the production of matches. The subsequent report, published by the Bureau in 1910, spurred the introduction of legislation banning phosphorus matches from interstate commerce and eventually resulted in passage of a law placing a heavy tax on such matches.<sup>9</sup>

In accepting Neill's proposal to associate with the Bureau of Labor, Hamilton assumed the title of "special investigator for industrial diseases," producing first "White-Lead Industry in the United States, With an Appendix on the Lead-Oxide Industry." She investigated 23 of the 25 U.S. factories known to manufacture white lead and discovered 358 specific cases of lead poisoning, 16 of them fatal, occurring between January 1910 and April 1911.<sup>10</sup> She then moved on to study problems of lead poisoning in potteries, tile works, and porcelain enameled sanitary ware, as well as in the painters' trade.

Royal Meeker, who succeeded Neill as Commissioner, lauded the results of Hamilton's work, "The studies of lead poisoning, made by the Federal Bureau of Labor Statistics, have induced some of the manufacturers of lead paints, pottery, tile, and storage batteries to eliminate or modify some of the most dangerous processes in their industries which subjected workers to needless hazards from lead poisoning."<sup>11</sup> Meeker wanted the Bureau to become a central clearinghouse, declaring, "This Bureau should be in a position to furnish at any time advice as to the best methods of preventing industrial accidents and occupational diseases."<sup>12</sup>

Hamilton's association with the Bureau continued, focusing first on problems in the lead industries, then the rubber industry, the printing trades, the manufacture of explosives,

and the production of aniline dyes. She later wrote of the independence which Meeker allowed her and the support that he gave her: "I look back to my service under him with pleasure and gratitude. He gave me a free hand, but was always ready to help in any difficulty; he never edited my stuff and when nervous manufacturers asked to see it before publication, he would arrange a conference with them, call me in to defend my statements, and stand by me."<sup>13</sup>

Hamilton may have enjoyed the independence and freedom from red tape, but she suffered from a lack of reliable funding. She was employed by the Bureau on a contract, not a salary basis, selling each study for a negotiated amount. The Bureau itself suffered from limited appropriations, prompting Hamilton to write to her sister in 1914, "They are so poor they cannot make a contract with me for an investigation of rubber, but I mean to do it anyway and trust to their making it in July, the new fiscal year."<sup>14</sup> Preferring the freedom and variety afforded by her association with the Bureau, she turned down job offers carrying larger salaries but with more restrictions. However, she did supplement her income by writing articles for *The Survey*.<sup>15</sup>

Early on, Hamilton developed her techniques of "shoe-leather epidemiology." Of her experiences in Illinois, she said, "No one method of investigation can be adopted. One must simply grope and catch at anything which offers the least help." She noted that England and Germany kept official records of workers' sicknesses. By contrast, "In Illinois, one must simply grope again, and one must carefully check up and control every bit of information one gets."<sup>16</sup>

Hamilton's biographer wrote of her procedures: thorough investigation of factories, correlation of illness with specific industrial processes, and compilation of medically diagnosed cases of poisoning. Before heading to the field, she learned the technical side of an industry. Then, she would observe all processes, carefully check hospital and dispensary records, and talk to the workers in their homes and union halls—and saloons, if necessary.<sup>17</sup>

Hamilton wrote her sister of "the risky things one has to do" as part of an investigation of Arizona copper mines: "climb steep ladders down into black holes, or scramble up through low caves on one's hands and knees, or pick one's way over rails laid across a deep dump, or be hauled up a rock that has no foothold." She was 50 years old at the time.<sup>18</sup>

She adamantly defended her work. When one of her early studies was attacked by a company doctor who was also a member of the State board of health as "a striking example of exaggeration, either a false and apparently a malicious and slanderous report, or an erroneous one," Hamilton wrote her superior at the Bureau of her distress. She supported her findings, naming sources and doctors she had interviewed and listing the establishments she had visited.<sup>19</sup>

She readily adopted the Bureau's tradition of objectivity as the best way to ensure the good will of the business community—and, therefore, entrance to the plants, as no Federal law granted entry and businessmen gave access at

their own discretion. (She later wrote that she could remember only two large factories refusing her entrance.) She made it a point to discuss her observations and criticisms with plant managers in private consultations.

Some plant managers did try to cover up poor conditions, for example, one lead works in the Middle West. Hamilton described that company's village as "the most depressing industrial community I have ever seen." One woman informed her, "We all knew you was coming. They've been cleaning up for you something fierce. Why, in the room where my husband works, they tore out the ceiling because they couldn't cover up the red lead. And a doctor came and looked at all the men and them that's got lead, forty of them, has got to keep to home the day you're there." When Hamilton told the management of her findings, the company admitted the fraud, showed her the doctor's report, and promised permanent improvements, including regular medical examinations for all employees.<sup>20</sup>

World War I brought new concerns to the fore, and Hamilton surveyed conditions in such war-related industries as munitions and airplane manufacturing. She also studied aniline and other coal-tar dyes, in which U.S. manufacturers were replacing the German products previously imported.<sup>21</sup>

In a 1917 article in *The Survey*, she discussed "a new form of industrial poisoning from the manufacture of airplane wings, which, so it appears, has caused a good deal of trouble in England." The BLS asked her to investigate the kinds of "dope" used to treat the wings of planes manufactured in the United States, and the conditions under which it was applied. She toured 18 factories and reported, "on the whole, my findings were reassuring."<sup>22</sup>

Because of the secrecy surrounding munitions plants, Hamilton herself had to discover where the plants were located and what they produced. For example, her search for picric acid led her to the marshes of New Jersey where she followed the chemical's characteristic fumes to their source, or she would spot the orange- and yellow-stained men, known as "canaries," who would then lead her to the site.<sup>23</sup>

The Bureau participated in joint projects with agencies in the War Labor Administration of the Department of Labor. For the Working Conditions Service, Hamilton chaired a committee of experts studying health problems arising from industrial poisons. The Bureau also worked with the Woman in Industry Service, teaming with the Public Health Service. Both Meeker and Hamilton participated in an investigation of conditions at Niagara Falls, where plants wanted to work women at night to speed deliveries to the military and other war industries, action prohibited by New York State labor law.

Hamilton worked with the Committee on Industrial Diseases, Poisons, and Explosives organized by the Committee on Labor of the Advisory Commission of the Council of National Defense. She also designed studies for the Committee on Industrial Poisons of the National Research Council's Division of Medicine and Related Services.

She was appalled by "the sight of men sickening and dying in the effort to produce something that would wound or kill other men like themselves."<sup>24</sup> However, she chose not to protest the war as conspicuously as she might otherwise so she could keep her job with the Bureau where she could continue to expose hazards and establish protective standards, characterizing her investigations as "a patriotic duty, as a piece of real war work and yet not the destructive side of war but the saving of life."<sup>25</sup>

After the war, Hamilton wrote, "England and France, facing an emergency infinitely greater than ours, took thought to protect their munitions workers, but we did not."<sup>26</sup> As one writer has said, Hamilton cast her lot with those institutions primarily concerned with "workers' welfare, not industrial productivity."<sup>27</sup>

### The later years

The Bureau gradually lost control of Federal occupational health programs to the better financed and equipped Public Health Service. Hamilton, so active during the war years, hesitated to return to the peace-time Bureau, saying, "it will be too depressing to go back to general oblivion again."<sup>28</sup>

Fortuitously, during her wartime work, she had met David L. Edsall, dean of the Harvard Medical School, who had launched the first degree program in the United States in industrial hygiene. In 1919, Edsall offered Hamilton an appointment to teach industrial medicine, and she became the first woman on the Harvard faculty.

Edsall wrote the president of Harvard that Hamilton's studies were "unquestionably both more extensive and of finer quality than those of anyone else who has done work of this kind in this country."<sup>29</sup> Hamilton commented, "going to Harvard is very grand. If one could wear it as a decoration, like the Order of the Garter, I would love it."<sup>30</sup>

She worked only part time at Harvard, but she was so active on so many fronts that one writer labeled her "the Tinker Bell of industrial medicine."<sup>31</sup> She contributed articles to the *Journal of Industrial Hygiene*, edited at Harvard. In 1925, she published *Industrial Hygiene in the United States*, the first American textbook in the field, following it in 1934 with *Industrial Toxicology*. Also during that period, several lead companies, at Hamilton's initiative, agreed to fund a 3-year study of lead poisoning to be headed by a Harvard physiologist.<sup>32</sup>

Hamilton helped stimulate Federal action leading to two conferences, one on tetra-ethyl lead in 1925 and the other on radium in 1928. She praised the "informal and extra-legal method" of investigation, conference, and agreement between manufacturers and State and Federal health officials as "the only way a quick and effective reform can be brought about in several different States simultaneously." However, she warned, the method worked only on "a new striking danger which lends itself to newspaper publicity"—not old familiar dangers or newer, less spectacular poisons.<sup>33</sup>

Therefore, she continued to urge passage of adequate

compensation laws as "the best preventive measure for industrial diseases," pointing to the powerful influence of insurance companies on employers with excessive numbers of claims because of poor conditions.<sup>34</sup>

Upon retirement from Harvard in 1935, Hamilton returned to the Department of Labor—whose chief was Frances Perkins, a fellow member of the social reform network. In accepting the part-time job as medical consultant to the Division of Labor Standards, she rejected a full-time offer from the BLS rival, the Public Health Service.

As consultant, she conducted surveys, offered advice, attended conferences, testified at hearings, and brought neglected problems to the Department's attention. Her most important work during the period involved a study of poisons in the manufacture of viscose rayon. Years earlier, she

had discovered cases of carbon disulphide poisoning arising from the process for vulcanizing rubber. Yet, despite her efforts and considerable European literature on the subject, there had been no systematic investigation in the United States. In the face of industry opposition, Hamilton conducted a survey in Pennsylvania and extended the work to cover nine other States, resulting in *Occupational Poisoning in the Viscose Rayon Industry*, published by the Division of Labor Standards in 1940.<sup>35</sup>

Alice Hamilton died at her home in Hadlyme, Connecticut, September 22, 1970, a few months before the Occupational Safety and Health Act was signed into law. The previous year, on her 100th birthday, President Richard Nixon had praised her "lasting contributions to the well being of our people and of men and women everywhere."<sup>36</sup> □

—FOOTNOTES—

NOTE: Information on the Bureau of Labor Statistics comes from BLS files and publications, as well as Department of Labor archives.

Information on Alice Hamilton is based largely on two works: Barbara Sicherman, *Alice Hamilton: A Life in Letters* (Cambridge, MA, Harvard University Press, 1984); and Angela Nugent Young, "Interpreting the Dangerous Trades, Workers' Health in America and the Career of Alice Hamilton, 1910–1935" (Ph.D. dissertation, Department of History, Brown University, 1982).

<sup>1</sup> Alice Hamilton, *Exploring the Dangerous Trades, An Autobiography of Alice Hamilton, M.D.* (Boston, MA, Little, Brown & Co., 1943), p. 128.

<sup>2</sup> Barbara Sicherman, *Alice Hamilton: A Life in Letters* (Cambridge, MA, Harvard University Press, 1984), p. 33.

<sup>3</sup> Elizabeth Shepley Sergeant, "Alice Hamilton, M.D., Crusader for Health in Industry," *Harper's Monthly Magazine*, May 1926, p. 767.

<sup>4</sup> Jane Addams, *Twenty Years at Hull-House* (New York, The Macmillan Co., 1912), pp. 292–98; and Sicherman, *Alice Hamilton: A Life in Letters*, pp. 145–46.

<sup>5</sup> *Charities and The Commons* was published in New York by the Charity Organization Society, which consisted of social reform and settlement house leaders.

<sup>6</sup> Alice Hamilton, "Industrial Diseases, With Special Reference to the Trades in Which Women Are Employed," *Charities and The Commons*, Sept. 5, 1908, p. 655.

<sup>7</sup> Alice Hamilton, "Nineteen Years in the Poisonous Trades," *Harper's Magazine*, October 1929, p. 582.

<sup>8</sup> *Ibid.*, pp. 582–83; Alice Hamilton, "Occupational Diseases," *Proceedings, National Conference of Charities and Correction, 1911*, p. 198; and "Forty Years in the Poisonous Trades," *American Industrial Hygiene Association Quarterly*, March 1948, p. 9.

<sup>9</sup> John B. Andrews, "Phosphorous Poisoning in the Match Industry in the United States," *Bulletin of the Bureau of Labor*, January 1910, pp. 31–140.

<sup>10</sup> Alice Hamilton, "The White-Lead Industry in the United States, with an Appendix on the Lead-Oxide Industry," *Bulletin of the Bureau of Labor*, July 1911, pp. 189–259.

<sup>11</sup> Royal Meeker, "The Why and How of Uniform Industrial Accident Statistics for the United States," *Proceedings, International Association of Industrial Accident Boards and Commissions, 1919*, Bulletin 210 (Bureau of Labor Statistics, 1917), pp. 92–93.

<sup>12</sup> Woodrow Wilson Papers, Library of Congress, Manuscript Division. Royal Meeker to Joseph Tumulty, Feb. 6, 1914.

<sup>13</sup> Hamilton, *Exploring the Dangerous Trades*, p. 129.

<sup>14</sup> Sicherman, *Alice Hamilton, A Life in Letters*, p. 174; and Young, "Interpreting the Dangerous Trades."

<sup>14</sup> Sicherman, *Alice Hamilton, A Life in Letters*, pp. 182–83. *The Survey* grew out of the Pittsburgh survey and was published in New York by Survey Associates, Inc., a group of social reform and settlement house leaders.

<sup>16</sup> Hamilton, "Occupational Diseases," pp. 200–01.

<sup>17</sup> Sicherman, *Alice Hamilton, A Life in Letters*, pp. 166–67.

<sup>18</sup> *Ibid.*, p. 25.

<sup>19</sup> *Ibid.*, pp. 169–72.

<sup>20</sup> Hamilton, "Nineteen Years," pp. 583–84.

<sup>21</sup> For example, see *Industrial Poisons Used or Produced in the Manufacture of Explosives*, Bulletin 219 (Bureau of Labor Statistics, 1917); and *Industrial Poisoning in Making Coal-Tar Dyes and Dye Intermediates*, Bulletin 280 (Bureau of Labor Statistics, 1921).

<sup>22</sup> Alice Hamilton, "Dope Poisoning," *The Survey*, Nov. 17, 1917, p. 168.

<sup>23</sup> Sicherman, *Alice Hamilton, A Life in Letters*, p. 200.

<sup>24</sup> Hamilton, "Nineteen Years," p. 584.

<sup>25</sup> Young, "Interpreting the Dangerous Trades," p. 96.

<sup>26</sup> Hamilton, "Nineteen Years," p. 584.

<sup>27</sup> Young, "Interpreting the Dangerous Trades," pp. 82–83.

<sup>28</sup> *Ibid.*, pp. 42, 84, and 95.

<sup>29</sup> Sicherman, *Alice Hamilton, A Life in Letters*, p. 210.

<sup>30</sup> *Ibid.*, p. 237.

<sup>31</sup> Carey P. McCord, "Alice Hamilton," *Journal of Occupational Medicine*, February 1972, p. 101.

<sup>32</sup> Sicherman, *Alice Hamilton, A Life in Letters*, p. 238.

<sup>33</sup> Hamilton, "Nineteen Years," p. 587; and "Forty Years in the Poisonous Trades," p. 9.

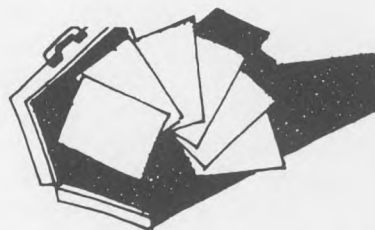
<sup>34</sup> Hamilton comments in *American Federation of Labor Postwar Forum* (Washington, DC, American Federation of Labor, 1944), p. 38.

<sup>35</sup> Alice Hamilton, *Occupational Poisoning in the Viscose Rayon Industry*, Bulletin 34 (U.S. Division of Labor Standards, 1940).

<sup>36</sup> *The New York Times*, Feb. 28, 1969, p. 35.

# Conference Papers

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The following excerpts, closely related to the work of BLS, are adapted from papers presented at the Thirty-Eighth Annual Meeting of the Industrial Relations Research Association, December 1985, in New York.

The full text of the papers appears in the copyrighted IRRA publication, *Proceedings of the Thirty-Eighth Annual Meetings*, available from IRRA, University of Wisconsin, Social Science Building, Madison, WI 53706.

## Labor-market data: supplementary sources

SANFORD M. JACOBY AND DANIEL J.B. MITCHELL

In the past, private organizations and State government agencies attempted to fill some of the statistical gaps left by the Bureau of Labor Statistics. Current evidence suggests that the same tendency still exists: if there is a market for data, some organization often steps in to provide them, either for reasons of public relations, or as a direct item for sale. In addition, State statistical agencies will provide information felt to be useful within their jurisdictions.

To illustrate these sources—and their pitfalls—two areas are discussed below: salary intention surveys and State industrial relations data.<sup>1</sup>

### Salary intention surveys

Although it is possible to collect data on expectations and intentions (as the Commerce Department does with regard to plant and equipment expenditures), BLS has not collected data on *planned* pay adjustments. Some information is of potential use to pay setters and to economic forecasters, and some management consulting firms do survey such information.

As an example, data are collected by Hewitt Associates on pay adjustments planned and under way for salaried employees. We compared the Hewitt figures with realized wage adjustments for white-collar workers taken from the Employment Cost Index. It appears that surveyed personnel

managers at first underestimated the degree of wage disinflation occurring in the early 1980's, but then stabilized their expectations in line with actual results. Thus, the Hewitt data provide insight into the shift of wage norms that developed during the economic downturn of 1980–82.

Unfortunately, use of salary intention surveys is hindered by the misunderstanding common among personnel managers concerning the cost of “merit” increases. Particularly among nonunion employers, there is often a confusion between the gross and net effects of merit pay awards. In a steady-state situation, a properly operated merit system (in which across-the-board adjustments are segregated from merit awards) should not raise average pay.<sup>2</sup> Yet respondents to the Hewitt and other surveys seem to include gross merit awards in their estimates, thus biasing up the figures by roughly 1 to 2 percent. These upward-biased estimates are then cited, giving a misleading indication of likely wage trends.<sup>3</sup> The merit problem illustrates the more general methodological weakness sometimes associated with private data suppliers.

### State industrial relations data

Although some State labor statistics agencies predate the BLS, they have had a much less visible role collecting data in modern times. Often, data available from State agencies are derived from BLS or Census series. But in some States, the agency collects industrial relations data on its own. For example, the California Department of Industrial Relations puts out data on union wage settlements and union membership by industry and region.

It is unlikely, however, that State agencies will quickly fill gaps left by the reduction of BLS data collection. For example, eight States were reported to have issued union membership data during 1984, according to the *Statistical Reference Index*. But closer inspection reveals that all but three (California, South Carolina, and Wyoming) are still reproducing the now-discontinued BLS series from 1978 or 1980. States which collected their own membership prior to the BLS discontinuation continue to do so; the others have not been motivated to undertake the effort.

TO THE EXTENT that a market or a public relations value is perceived for collecting labor market data, private sector organizations often undertake the task. However, general availability of such data for research purposes can be a problem. And problems of methodology (sampling, precise

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definitions, technical explanations) are less likely to concern private suppliers than BLS. Private organizations have less authority than a government agency in requesting cooperation with surveys; potential respondents may have concerns about confidentiality and the use to which data will be put; and the users themselves may be less sophisticated than statistical technicians about methodological issues. These factors suggest that private collection—while playing a useful role in data provision—is really a complement to, rather than a substitute for, Federally collected data.

State government statistical bureaus do have a level of authority not found in the private sector. But they have tended to become reliant on breakdowns from Federal data sources for much of their output. And the statistical output which State agencies produce is largely applicable only within their borders. □

<sup>1</sup> References to non-BLS data sources can be found in Margaret A. Chaplan, *Labor Statistics: The BLS and Beyond* (Champaign, University of Illinois, 1984), Reprint 322; and Katherine I. Bagin and Kevin P. Barry, *Unexpected Sources of Information in Industrial Relations: A Current Awareness Approach* (Princeton, NJ, Princeton University, Industrial Relations Section, 1984).

<sup>2</sup> Imagine a formal progression plan with a series of defined merit steps. As long as the proportion of employees at each step is constant, the average wage will not change. In the steady state, the number of employees retiring from the top will be offset by those entering from the bottom. Thus, although existing workers may be receiving large merit increases (depending on the gap between steps), the average wage will remain constant. Confusion over this issue is rampant because managers are often given "merit budgets" as a control device to prevent them from finding "too many" employees to be especially meritorious. These merit budgets often are based on gross cost or may include what amounts to across-the-board money designed to raise the average wage. See Arnold R. Weber and Daniel J.B. Mitchell, *The Pay Board's Progress: Wage Controls in Phase II* (Washington, The Brookings Institution, 1978), pp. 89–93.

<sup>3</sup> Hewitt's questionnaire asks respondents to calculate a salary structure increase based on the movement of the midpoint of salary ranges and an average base salary increase. The former is essentially a rate range adjustment and should be free of any merit system "taint." The latter, defined as the increase in the average wage per employee, ought to include only the net cost of merit (which in the steady state should be zero). Yet, it is typically 1 to 2 percent higher than the former, suggesting respondents are using a gross cost of merit in their calculations. (When Hewitt asked its respondents in late 1984 whether they were following the precise instructions of the questionnaire, 70 percent said "yes," suggesting that the problem is based on inadvertent misunderstanding of the impact of merit pay.) Unfortunately, it is the base salary increase (and similar estimates from other surveys) that tends to be reported. (See, for example, Audrey Freedman and others, *Labor Outlook 1985* (New York, The Conference Board, 1984), p. 9.

## Airline deregulation and labor relations

WILLIAM J. CURTIN

Over the past 6 years, the process of deregulation has placed great stress on the system of industrial relations in the airline industry. Numerous commentators have described the scenario by which deregulation has led to an increase in competition in the product market by encouraging new entrants and by allowing existing carriers to expand their routes. Some of

the new entrants have successfully operated on a nonunion basis and, as such, have enjoyed significant cost advantages because of lower wages, lower benefit costs, and less stringent work rules.<sup>1</sup> This, in turn, has created industrial relations pressure on established carriers with unionized operations to seek significant concessions from unions in order to compete with the nonunion entrants.

Professor John T. Dunlop has properly asserted that the industrial relations problems created by deregulation have been exacerbated by the fact that, prior to deregulation, inadequate consideration was given to the question of how deregulation would impact the relevant labor markets and the process of collective bargaining.<sup>2</sup> Initially, the theoretical case for deregulation focused on the need for competition in the product market. Little attention was paid to the fact that collective bargaining in the airline industry traditionally operated as a form of labor market regulation that allowed unions to capture a portion of the monopoly profits generated by regulation of the product market. As a consequence, the disequilibrium that followed the withdrawal of product market regulation was not anticipated.

In examining the impact of deregulation on the airline industry, it is important to remember that much of the process of deregulation occurred during one of the worst economic recessions in recent memory. This economic downturn undoubtedly compounded the industrial relations problems.

### Deregulation's early impact

Early in the process of deregulation, the disequilibrium described above presented a severe threat to the traditional economic power of certain airline unions. Additionally, there were events that caused some concern over the continuing viability of the process of collective bargaining under the Railway Labor Act.

The experience at Continental Airlines reinforced these perceptions. On September 24, 1983, Continental, the eighth largest passenger airline in the United States, filed a petition for bankruptcy under Chapter 11 of the Bankruptcy Code. Pursuant to its perceived powers under Chapter 11, Continental unilaterally implemented drastic changes in wages, benefits, and work rules.<sup>3</sup> In response, the Air Line Pilots Association, the International Association of Machinists, and the Union of Flight Attendants went on strike. Although these strikes dragged on for many months, they did not halt Continental's operations and they eventually were discontinued without a restoration of prepetition wages and benefits.

A surprising aspect of the Continental experience was that significant reductions in wages and benefits were imposed unilaterally and outside the traditional process of collective bargaining. To support the assertion that the Continental case was perceived as a threat to the entire process of collec-

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tive bargaining, one only need recall the vigor with which both National Labor Relations Act and Railway Labor Act unions sought Congressional action to amend the Bankruptcy Code to prevent repetitions of the Continental initiative.<sup>4</sup>

Moreover, union setbacks were not limited to bankruptcy context. During late 1983, the Allied Pilots Association, as representative of American Airlines' pilots, agreed to a two-tier wage scale. This scale reduced pay for new hires by nearly 50 percent.<sup>5</sup> In addition, the scales at American did not merge at any set time in the future. New hires remained permanently on a separate and lower scale.<sup>6</sup> In the wake of the American agreement, Eastern, Delta, Western, Republic, and Pan Am also sought concessionary packages.

### More recent developments

Recently there have been significant developments in airline labor relations that may indicate a trend toward stabilization. First, it appears that Chapter 11 no longer exists as an easy method to reduce labor costs without undertaking the rigors of concessionary bargaining. In 1984, Congress amended the Bankruptcy Code by adding section 1113, regulating the rejection of collective bargaining agreements.<sup>7</sup> In a review of section 1113, two points are most significant. First, as a prerequisite to the rejection of any collective bargaining agreement, an employer must engage in collective bargaining with its union(s). The new statute specifically requires that an employer seeking rejection must (1) make a proposal to the union; (2) provide the union with information to evaluate that proposal; and (3) engage in good-faith negotiations prior to rejection.<sup>8</sup> Second, if this bargaining is not successful, an employer must seek court approval before unilaterally changing the contract.<sup>9</sup> In short, the type of swift, unilateral action undertaken by Continental Airlines is now impossible.

In addition to these changes in the applicable legal framework, there have been changes in the labor market, particularly for pilots, that would make it very difficult for another carrier to duplicate the coup accomplished by Continental. One of the keys to Continental's success in the face of the Air Line Pilots Association's strike was its ability to hire outside replacements.<sup>10</sup> Today, many airlines are experiencing a shortage of qualified pilot applicants. Indeed, the market is so tight that some carriers have been forced to reduce qualifications and increase pay.<sup>11</sup>

If a carrier were to attempt to reject its collective bargaining agreement in this type of labor market, the Air Line Pilots Association probably would be able to mount a more effective strike effort. Moreover, the recent experience at Wheeling-Pittsburgh<sup>12</sup> suggests that the rejection of a collective bargaining agreement under the Bankruptcy Code may not result in tremendous cost savings if a union is able to conduct an effective strike in the face of that rejection. Therefore, for both legal and economic reasons, it is unlikely that another carrier would be able to duplicate Continental's experience.

Other recent developments in airline bargaining indicate that airline unions may be regaining a measure of their former vigor and that it may become more difficult for carriers to exact cost-saving concessions. For example, since late 1984, the Air Line Pilots Association has undergone something of a transformation. Most significant in this regard is that the international union has attempted to assert greater control over the substance of collective bargaining agreements negotiated by Master Executive Councils, the subordinate Air Line Pilots Association groups existing at each carrier. To this end, the international union has adopted guidelines for crisis or concessionary bargaining.<sup>13</sup> The Association also amended its constitution to give its president the right to approve all pilot contracts before they take effect and to put dissident locals into trusteeship. Finally, the Association has undertaken a program to improve communications with members. During the recent strike at United Airlines, the Air Line Pilots Association engaged in a series of nationwide "teleconferences" to keep pilots informed about the latest developments and to secure support for the strike.

Some time ago, Professor John Dunlop predicted that the significant disruptions in airline labor relations caused by deregulation and concessionary bargaining would be concentrated in a transitional period.<sup>14</sup> The foregoing discussion indicates that the airline industry may be approaching the end of this transitional period and entering a new stage of relative stability. □

<sup>1</sup> See *In re: Continental Airlines Corp.*, No. 83-04019-H2-5, slip. op. at 4 (Bankr. S.D. Tex. Aug. 17, 1984). In addition, some new entrants have cost advantages that are not labor-related, for example, lower overhead due to their ability to use secondary airports. See address by John T. Dunlop, National Academy of Sciences, Transportation Research Board (Jan. 14, 1985) (hereinafter "Dunlop Speech").

<sup>2</sup> See "Dunlop Speech."

<sup>3</sup> For example, Continental decreased average earnings for pilot captains from \$90,000 per year to \$42,000 per year. Similarly, "hard hours" for captains were increased from 52 to 68 per month. See *In re: Continental Airlines Corp.*, Findings of Fact 30-38.

<sup>4</sup> See *Daily Labor Report*, No. 193, p. A-6 (Oct. 10, 1983).

<sup>5</sup> See *Daily Labor Report*, No. 217, p. A-7 (Nov. 8, 1983).

<sup>6</sup> The system at American Airlines was subsequently changed so that the two tiers of the wage scale merged after 17 years. See "The Pilots Are Finally Throwing Their Weight Around," *Business Week*, Oct. 28, 1985, pp. 36-37.

<sup>7</sup> See 11 U.S.C. § 1113 (1984 supp.).

<sup>8</sup> See *In re: Wheeling-Pittsburgh Steel Corp.*, 50 B.R. 969, 975 (Bankr. W.D. Pa. 1985). It is unlikely that the bargaining requirements under section 1113 will be interpreted to require exhaustion of the procedures under the Railway Labor Act prior to the rejection of a collective bargaining agreement.

<sup>9</sup> See 11 U.S.C. § 1113(f).

<sup>10</sup> See *In re: Continental Airlines Corp.*, No. 83-04019-H2-5, slip. op. at 23; see also Alton K. Marsh, "Continental Luring Passengers With Low Fares, Credit Plans," *Aviation Week*, Nov. 7, 1983, pp. 31-32 (describing hiring efforts by Continental).

<sup>11</sup> The shortage of pilots can be explained by a combination of two factors: (1) major route expansions and (2) a dramatic reduction in military training activities. See *The Wall Street Journal*, Aug. 5, 1985, p. 6.

<sup>12</sup> See *Business Week*, Aug. 5, 1985, pp. 26-27.

<sup>13</sup> See *Business Week*, Dec. 31, 1984, p. 49.

<sup>14</sup> See "Dunlop Speech."



## The 1984 postal arbitration: issues surrounding the award

J. JOSEPH LOEWENBERG

The 1984 interest arbitration was the first time that the United States Postal Service (USPS) and its two largest unions, the American Postal Workers Union and the National Association of Letter Carriers, implemented the legislated impasse procedure of the Postal Reorganization Act of 1970 to resolve all economic issues raised in bargaining. As such, it represented a significant development in postal labor relations and resulted in an award for more than 500,000 employees, the largest number of workers involved in a single arbitration in the United States. It also raised questions about standards to be employed in wage-setting and in interest arbitration.

### The 1984 negotiations

The 1984 postal negotiations were the first postal labor talks since the air traffic controllers' strike of 1981. The tone for the negotiations was set by a policy statement issued by the Board of Governors of USPS 2 weeks before the initial bargaining meeting which found that postal workers' compensation exceeded that of comparable private-sector employees and which therefore directed USPS management "to seek correction of this situation."<sup>1</sup> The mandate of the Board was reflected in management's economic proposals which included a two-tier wage structure, with the scale for new hires 33 percent below the current base.

The unions' Joint Bargaining Committee (JBC) believed that the USPS proposal was regressive and unwarranted by the economic success of USPS. Postal volume had continued to climb in spite of rate hikes and of doomsayers who had predicted a decline in hard mail copy. Annual productivity had also increased beyond that in the private sector in 7 of the last 10 years. USPS had accumulated more than \$1.5 billion in surplus in 3 successive years, even though congressional subsidies had ended. Moreover, the unions claimed that employees had received an overly modest economic settlement in the 1981 agreement. JBC wanted significant improvements in wages and benefits.

Negotiations were unsuccessful. Impasse procedures were initiated. Another attempt at negotiations proved no more successful than the earlier one, leading the parties to mandated binding arbitration.

### Interest arbitration

The statutory arbitration format is a three-member panel, with each party choosing one member and those two selecting a third; if the two are unable to agree, the director of the

Federal Mediation and Conciliation Service designates the impartial neutral. The tripartite panel has 45 days in which to issue its award. In 1984, the statutory scheme was complicated by the presence of a joint bargaining team of two unions and by a time frame much shorter than the statute envisioned. The parties eventually agreed on a five-member panel: each union would nominate a member to the panel; USPS would nominate two members to balance the union representation; and one impartial chairman would be selected. Each representative arbitrator would cast a half vote; the chairman would be entitled to a full vote. The impartial chairman was Clark Kerr, an arbitrator and former chancellor of the University of California at Berkeley. The deadline for the arbitration award according to the statutory timetable was December 25. The hearings began December 11 and concluded on December 19.

The central question addressed by the parties during the arbitration hearings was the interpretation of Section 1003 of the Postal Reorganization Act of 1970:

It shall be the policy of the Postal Service to maintain compensation and benefits for all officers and employees on a standard of comparability to the compensation and benefits paid for comparable levels of work in the private sector of the economy.

To demonstrate that postal employees were paid a premium over comparable private-sector employees, USPS presented expert witnesses to testify on econometric studies, job evaluation studies, occupational wage surveys, and package industry wage surveys. JBC denied that the statutory mandate should be the sole criterion guiding the arbitrators, but was willing to present evidence to counter that presented by USPS.

The key witnesses were Michael Wachter for USPS and Joel Popkin for JBC. Their testimony centered on the validity of their respective econometric studies about the existence and size of a premium of postal wages over private sector wages and about the applicability or utility of their findings to collective bargaining.<sup>2</sup> The importance attached to these witnesses and an unusual departure from typical arbitration hearing procedure was, following their testimony, a joint seminar before the arbitration panel to allow Wachter and Popkin to discuss their studies, point out areas of agreement, and challenge each other on areas of disagreement.

Wachter asked the research question, "What wage would a postal employee get in alternative sources of employment?" and concluded that USPS paid a premium of 19.8 percent over the private sector. If only the wages of unionized workers in the private sector were used as a comparison, the wage premium for postal employees would still be 12.2 percent. Wachter validated his results by looking at the large number of applicants for postal jobs, low quit rates, lack of unemployment, and a comparison of wages of new hires as postal mail handlers and material handlers in private industry.

Popkin noted that 20.5 percent of represented employees were nonwhite and 27 percent were women. He hypothesized that private industry discriminated in setting wages,

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particularly against female and nonwhite employees performing work similar to that of white men. Given that USPS was not a discriminatory employer, the white-male wage comparison was the appropriate one for determining comparability. The addition of race and sex variables in the regression analysis accounted for the major portion of postal-private sector wage differentials. In addition, Popkin included variables for firm size, proportion of industry unionized, and tenure in current job, all of which had been shown to affect wage levels. He found no statistical significance between the wages of white men in USPS and those of white men comparably situated in the private sector.

The arbitration award provided for a 3-year agreement retroactive to July 20, 1984. The award increased the salaries in the current wage schedule by 2.7 percent annually for incumbent employees. New employees in the first seven grades would start at steps below those currently in the wage schedule: three new steps for grades 1-3 and two new steps for grades 4-7. The time for a newly hired employee to reach step 1 of the 1981-84 wage scale would be 272 weeks for grades 1-3, 184 weeks for grade 4, and 140 weeks for grades 5-7. To reach the top of scale would require from 13 years in grades 1-3 to 10.5 years in grades 5-7. The award added a new step at the top of the grade 8 wage scale and two new steps at the top of the wage scales for grades 9 and 10. The COLA formula and times of computation were maintained. COLA accumulated under the 1981-84 agreement would be rolled into the basic salary schedule in October 1987, except that employees eligible for retirement by 1990 could elect an earlier roll-in. Martin Luther King Day was added as a holiday beginning in 1986. The uniform allowance was increased 10 percent. No change was awarded in leave, benefit plans, and premium pay provisions. It was estimated that the award would add approximately \$4 billion in postal costs.<sup>3</sup> Kerr explained the basis for the award:

This award reflects a policy of "moderate restraint" . . . This award interprets moderate restraint as a slowing of wage increases, as against the private sector, by 1 percent a year or for 3 percent in total over the life of this agreement.<sup>4</sup>

### Issues raised

The 1984 postal arbitration raised fundamental questions about the interpretation of statutory provisions for wage-setting in USPS, the relative roles of these provisions and collective bargaining, and the criteria to be used by arbitrators. The issues were identified and discussed; all were not answered clearly.

Several aspects of Section 1003 of the Postal Reorganization Act may be ambiguous. First, the provision calls for USPS "to maintain" comparable compensation and benefits. Does this suggest a minimum, a general guide, or an absolute standard for setting compensation? As might be expected, JBC argued the first approach, while USPS adopted the last one. Second, what is the base period for comparisons? Wachter advocated 1969 because that was the last year before postal reorganization was discussed seriously by

the Congress. Counsel for USPS used 1970 on the ground that the Congress awarded postal employees wage raises following the end of the 1970 strike to establish comparable rates. The unions adopted 1971 since that was the first time the parties bargained collectively and interpreted freely the meaning of the statutory language. The choice of a base period for comparisons affects the results, especially because postal wages rose significantly between 1969 and 1971. Third, how does one define "comparable levels of work in the private sector of the economy?" The USPS utilized a broad, all-inclusive definition to measure comparability. The unions preferred a more limited definition for comparative purposes.

Even if these thorny issues regarding interpretation of Section 1003 could be resolved, the question remains of the significance of the statutory standards for collective bargaining. Congress granted postal employees the right to bargain collectively on wages, hours, and conditions of employment. If wages were determined by an agreed-upon definition of comparability, what would remain for the negotiation of wages? Collective bargaining would then be subordinated to the interpretation of Section 1003 promoted by USPS at the arbitration hearings.

For the arbitrators, the issue was further compounded by that of appropriate arbitral standards. The USPS contended that comparability was the sole standard before the panel. The unions argued for a more flexible approach, suggesting that the arbitrators refer to past collective bargaining settlements between the parties as a guide in their decision. The award also raised additional questions. If postal employees had gained a premium of the amount suggested by Wachter, what reason could there have been to award incumbent employees any wage increase, let alone one more generous than the parties had negotiated in their prior agreement? How are the parties to interpret these results in future negotiations? And is it simply coincidental that the cost of the award was \$4 billion, the same as that of the 1981-84 agreement and the amount USPS projected in its filings with the Postal Rate Commission earlier in 1984?

It is easier to raise questions than to fashion interest arbitration awards. Issuing an interest award 5 days after the end of hearings is an accomplishment. The Kerr panel indicated some directions, provided solace to the parties, and carefully avoided direct answers to fundamental questions. While neither side achieved all it had sought, each could live with the result. Perhaps no more should be expected from interest arbitration. □

<sup>1</sup> Bureau of National Affairs, *Government Employment Relations*, No. 1058 (Washington, Apr. 9, 1984), p. 685.

<sup>2</sup> For earlier studies, see Michael Asher and Joel Popkin, "The Effect of Gender and Race Differentials of Public-Private Wage Comparisons: A Study of Postal Workers," *Industrial and Labor Relations Review*, October 1984, pp. 16-25; and Jeffrey M. Perloff and Michael L. Wachter, "Wage Comparability in the U.S. Postal Service," *Industrial and Labor Relations Review*, October 1984, pp. 26-35.

<sup>3</sup> Bureau of National Affairs, *Government Employment Relations Report*, No. 1095 (Washington, Dec. 31, 1984), p. 2329.

<sup>4</sup> "Arbitration Opinion and Award, U.S. Postal Service and National Association of Letter Carriers and American Postal Workers Union," Dec. 24, 1984, pp. 20-21.

## Union membership trends: a study of the Garment Workers

SHULAMIT KAHN

Aggregation obscures. When union growth and contraction are studied on the national level, many systematic influences on union growth within particular industries are lost. This is both because union membership's sensitivity to these influences differs widely among industries, and because changes in the influencing factors are often distributed very unevenly among industries.

One factor that will be particularly difficult to consider on a nationally aggregated level is imports. Imports have been blamed for the last decade's sharply decreasing unionization rate. To evaluate this assertion empirically, it is necessary to study the impact of imports in particular industries rather than the impact of the overall U.S. balance of trade on the national unionization rate. A related reason to study union changes within specific industries is to separate the two kinds of factors that influence aggregate union membership: changes in the size of heavily unionized industries versus the strength of the unions within the industries.

This paper studies changes in the size of one specific industry and union, the International Ladies' Garment Workers' Union (ILGWU). The ILGWU is a mature union both with regard to age and waning strength, and is located in an industry undergoing many changes that have weakened the union's position. Membership in the ILGWU has decreased sharply since 1970, both absolutely and as a percentage of industry employment.

### Modeling membership in the ILGWU

Econometric studies of aggregate union membership began with Orley Ashenfelter and John H. Pencavel's seminal 1969 paper,<sup>1</sup> which considered the impact of both economic and political factors. Numerous subsequent studies attempt to test this model and to increase explanatory power by changing both the dependent and independent variables. Do these aggregate models explain ILGWU membership adequately?

Equation 1 of table 1 replicates for the ILGWU a model similar to Ashenfelter and Pencavel's, but incorporates some modifications from the later literature.<sup>2</sup> The period covered is limited to post-1950, because of data availability.<sup>3</sup> In equation 1, the rate of change in ILGWU membership is modeled as a function of: a) the rate of change in the Consumer Price Index (PCCPI); b) separate variables for the percentage increases (UP) and decreases (UN) in the non-durable manufacturing unemployment rate<sup>4</sup>; c) the density or saturation of the industry (lagged 1 year),<sup>5</sup> measured as the inverse of the level of union density, or [ILGWU membership/employment in the women's apparel industry]<sup>-1</sup>; and,

d) a political variable, DEMOC, the percent of Democrats in the House of Representatives.

Because equation 1 exhibits substantial serial correlation, the Cochrane-Orcutt technique was used to correct for first-order autocorrelation.<sup>6</sup> The reestimated version appears as equation 2.

Neither model explains a large proportion of the changes in ILGWU membership, with adjusted R<sup>2</sup>'s of 30 percent and 43 percent, respectively. In contrast, the Ashenfelter-Pencavel model and other subsequent studies of aggregate union growth explained as much as 75 percent of the 20th century variation in U.S. union membership. Possible reasons for the relative success of the latter models are presented in the paper from which this discussion is excerpted.

We can explain far more of the growth in ILGWU membership by including other industry-specific factors in the equation. To this end, the results of several alternative models of

**Table 1. Results of regression analysis of Ladies' Garment Workers' Union membership, 1953-81**

Independent variables <sup>1</sup>	Dependent variable and equation number					
	%CMEM					C%CMEM
	12.3	2 <sup>3</sup>	3	4	5	6
CONSTANT . . .	0.062 (0.82)	0.076 (1.44)	-0.170 (-1.59)	-0.106 (-2.58)	-0.112 (-2.93)	-0.065 (-2.01)
UP . . . . .	-0.0011 (-2.02)	-0.0010 (-2.11)	-0.0020 (-3.34)	-0.002 (-4.20)	-0.002 (-4.59)	-0.0016 (-4.20)
UN . . . . .	0.0002 (0.39)	0.0001 (0.20)	0.0008 (1.43)	0.0008 (1.53)	0.0007 (1.44)	0.0005 (1.40)
PCEMP . . . . .	-0.036 (-0.29)	-0.009 (-0.09)	-0.068 (-0.38)	-0.153 (-1.26)	-0.112 (-1.18)	-0.926 (-11.76)
PCCPI <sub>(-1)</sub> . . . .	-0.403 (-1.86)	-0.412 (-2.63)	0.298 (0.85)	0.317 (0.93)	—	—
PCCPI <sub>(-2)</sub> . . . .	—	—	-0.264 (-0.84)	-0.267 (-0.89)	—	—
DENSITY <sub>(-1)</sub> . . .	-0.003 (-0.05)	-0.026 (-0.73)	0.056 (0.85)	—	—	—
DEMOC . . . . .	-0.0007 (-0.68)	-0.0005 (-0.65)	0.0002 (0.23)	—	—	—
IMPORTS <sub>(-1)</sub> . . .	—	—	-0.492 (-2.34)	-0.354 (-3.34)	-0.373 (-4.84)	-0.216 (-3.28)
KL <sub>(-1)</sub> . . . . .	—	—	0.638 (3.06)	0.609 (3.20)	0.655 (3.80)	0.368 (2.53)
LC/TC <sub>(-1)</sub> . . . .	—	—	1.452 (2.66)	1.607 (3.18)	1.660 (3.47)	1.026 (2.54)
PCNW <sub>(-1)</sub> . . . .	—	—	-0.476 (-1.47)	-0.545 (-1.80)	—	—
PCNW <sub>(-2)</sub> . . . .	—	—	0.472 (1.45)	0.544 (1.94)	—	—
PCRW <sub>(-1)</sub> . . . .	—	—	—	—	-0.495 (-1.77)	-0.308 (-1.33)
PCRW <sub>(-2)</sub> . . . .	—	—	—	—	0.431 (1.97)	0.215 (1.17)
Adjusted R <sup>2</sup> . . .	.30	.43	.64	.66	.69	.87
Durbin-Watson statistic . . . .	2.78	2.54	2.51	2.59	2.69	2.57

<sup>1</sup> Subscript indicates number of periods for which the variable is lagged.

<sup>2</sup> Equation 1 is not corrected for first-order autocorrelation.

<sup>3</sup> Results pertain to the period 1951-81.

NOTE: t statistics in parentheses.

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ILGWU union membership also are presented in table 1. There are two versions of the dependent variable: the first is the percentage change in union membership (%CMEM), which is used by most aggregate time series models; the alternative is the change in the percentage of all (production) workers in the female garment industry who are unionized (C%MEM). The latter is conceptually a better measure of the unionization of the industry, because it focuses on the percentage of the industry unionized. However, movements in this variable are generally caused by short-term cyclical shocks in the denominator, the employment level, which varies more than union membership. Therefore, because C%MEM may simply be measuring movements in employment, I concentrate on the alternative dependent variable, %CMEM. The models reported also differ in the explanatory variables included. (All of the alternative versions correct for first-order serial correlation.)

Of central interest here are the explanatory variables that do not appear in studies of aggregate time series union growth and are expected to affect the elasticity of demand for labor in the ladies' garment industry. The first of these is the level of imports, which is claimed to affect unionization adversely. Imports are measured as the ratio of clothing imports to the total value added in the U.S. apparel manufacturing industry, lagged 1 year to avoid simultaneity problems. All of the model specifications corroborate the widely held perception that foreign competition has substantially weakened the ILGWU. The coefficient on IMPORTS is large and statistically significant in all equations. Indeed, if *only* imports are included in the regression, 25 percent of the variance in the change in union membership is explained.

A second factor that can weaken unions is the substitutability of capital for labor. There is no straightforward way to measure this substitutability. However, the capital/labor ratio may indicate future opportunities for substitution, because if the capital/labor ratio is already high, future capital substitutability is not a substantial threat. Thus, the capital/labor ratio is expected to be positively correlated with union membership. The variable used to measure the capital/labor ratio,  $\kappa/L$ , is the lagged change in the capital stock of the industry divided by the employment level.<sup>7</sup> The expected positive relationship is confirmed by all model specifications.

A third factor that should affect the elasticity of demand for labor, and thereby have an influence on union strength, is the ratio of labor costs to total costs. Unions have more strength when the demand for their labor is inelastic, and a smaller ratio of labor costs to total costs is one factor that leads to inelastic demand for labor. Therefore, we expect a negative relationship between the (lagged) ratio of labor costs to total cost (LC/TC) and union membership. However, the empirical results measure a significant positive relationship. One possible explanation for this result is that firms may hire more workers when they anticipate that union strength may be growing, in order to dilute union gains.<sup>8</sup> Alternatively, the LC/TC variable may be measuring an un-

employment effect in the apparel industry that is not already being captured by the less specific nondurable manufacturing unemployment rate variables.

Equation 3 also includes all variables in the Ashenfelter-Pencavel model. As in the simpler specifications, a positive increase in unemployment rates consistently causes ILGWU membership to fall, while decreases are never significant. Increases in unemployment rates deter unionization both because workers are concerned about being laid off in the downturn and because they realize that the chances of finding a job if laid off are lower when unemployment rates are higher.

The sign on the lagged saturation (or density) variable used by Ashenfelter-Pencavel, defined above, is positive as expected, but not significant at any conventional level. Both because of the insignificant result and because there are theoretical problems in using and interpreting this variable, which is basically a lagged version of the dependent variable (percent unionized), it was not included in subsequent specifications. The Democratic percentage of the House has no effect on ILGWU membership, so it too was dropped from further specifications.

As in many of the aggregate time series studies, a measure of actual wage levels (in women's outerwear) was included. The variable PCNW denotes percentage change in the nominal wage in the industry, while PCRW is the percent change in the real wage. In specifications 3 and 4, nominal wages and prices are included in the specification separately, allowing nominal and real wages to have differing effects. In specifications 5 and 6, only real wages appear, thus constraining nominal wages to have no separate effect. This constraint cannot be rejected, that is, real wages are the only wage variable that significantly affects ILGWU size.

Both definitions of wages are lagged to avoid measuring the direct effect of unionization on workers' wages. Rising prices erode workers' earning power and are expected to create incentives to unionize; falling wages in the apparel industry may have the same effect. However, in a heavily unionized industry, falling wages may indicate that the union has not been successful in achieving its goals, and inhibit further unionization. In fact, results in specifications 3 through 6 weakly indicate that last year's wages may be negatively related to union membership change, while wages 2 years ago may be positively related. (Recall that with the degrees of freedom in the model, for .95 significance the *t* statistic must be larger than 2.1.)

The percentage change in industry employment, PCEMP, has a different interpretation and expected sign with the two different dependent variables. When %CMEM, the percentage change in union membership, is the dependent variable, the change in employment measures the increase in potential membership. It is expected to have a positive sign, yet is insignificantly different from zero in specifications 1 through 5. Other specifications not reported in table 1 also included a 1-year lagged percentage change in industry employment, or PCEMP<sub>(-1)</sub>; this coefficient was also indistin-

guishable from zero at any conventional significance level. These results suggest that during the postwar period, increases and subsequent decreases of ILGWU membership were not affected by changes in the available pool of unionizable workers. People entering the industry did not immediately enter the union, and new plants were not immediately organized. Instead, the size of the membership depended completely on prospects for the union's bargaining strength.

In equation 6, the dependent variable is  $C\%MEM$ , the change in the percentage of the industry unionized. This equation includes the independent variable  $PCOMP$ , percentage change in industry employment, to capture changes in the denominator of  $C\%MEM$  caused by short-term fluctuations in the employment level. The sign, as expected, is negative—that is, higher industry employment increases the denominator of the dependent variable. □

<sup>1</sup> Orley Ashenfelter and John H. Pencavel, "American Trade Union Growth: 1900–1960," *Quarterly Journal of Economics*, August 1969, pp. 434–48.

<sup>2</sup> See, for example, Jack Fiorito and Charles R. Greer, "Determinants of U.S. Unionism: Past Research and Future Needs," *Industrial Relations*, Winter 1982, pp. 1–19.

<sup>3</sup> The lack of prewar data for individual industries is a major drawback in moving to a disaggregated level to study union membership. It cannot be presumed that the model developed here would necessarily predict the prewar growth of the ILGWU.

<sup>4</sup> This variation on the Ashenfelter-Pencavel model was introduced in Farouk Elsheikh and George S. Bain, "American Trade Union Growth: An Alternative Model," *Industrial Relations*, February 1978, pp. 75–79.

<sup>5</sup> The structure of this variable follows the Ashenfelter-Pencavel variable.

<sup>6</sup> For a discussion of this technique, see J. Johnston, *Econometric Methods*, 3rd edition (New York, McGraw-Hill, 1984).

<sup>7</sup> The exact measure is new capital expenditures on machines and equipment in women's outerwear, deflated by the GNP deflator for nonresidential fixed investment in producers' durable equipment and divided by employment in the women's outerwear industry.

<sup>8</sup> See William T. Dickens, "Wages, Employment, and the Threat of Collective Action by Workers," paper presented at the North American Meeting of the Econometric Society, December 1984.

## Labor market segmentation in Japan: how rigid is it?

KOJI TAIRA

In Japan, segmentation largely refers to two sets of firms, large and small, rather than to two sets of jobs, primary and secondary, as in the United States. The size of a firm in Japan is an unusually powerful factor that makes firms and employees behave differently. These differences are observable in all aspects of management, technology, and human

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resource utilization. Large firms are characterized by elaborate rules, procedures, and processes of "internal labor markets." They can therefore be considered constituting an "internal labor-market sector." This syndrome is entrenched in firms large enough to employ 1,000 or more workers; however it may begin to appear in firms with 500 or so employees. Five or six hundred workers are considered about the maximum size of work force that an owner-manager or a general manager can personally manage.

Three distinct features of employment practices in the internal labor-market sector are already well-known: lifetime employment, seniority wages, and enterprise-based and -confined labor unions. Quantitatively, firms in this sector show a higher degree of employment security and a more powerful role of the length of service as a wage determining factor than their U.S. counterparts. The prominence of the sector relative to the rest of the economy may be seen from more pronounced productivity and wage differentials by size of firm in Japan than in the United States (manufacturing census figures). These defining characteristics of labor market segmentation are not free of controversy, but a brief look at past events would leave far less doubt for Japan than for the United States about the plausibility of labor market segmentation as a real phenomenon.

Japan in 1920 was one of the five leading powers of the world. Its development was certainly that of a market economy, though with State guidance and participation. However, it was not yet a full-fledged "capitalist" development: the tardy growth of the labor market limited the growth of a proletariat much needed for exploitation by the capitalists. Japan's difficulty in generating a proletariat appropriate to a capitalist economy was attributed in large part to the nature of Japan's absolutist state under the imperial Constitution (1889–1947) as a family system, "meaning a [state] system of legal and political organization whereby the family is the major unit of social organization, is a legal personality in which property rights and duties are vested, and is represented externally by a family head who exercises wide powers of control over family members."

Before the Second World War, many large Japanese firms were family-owned or controlled. Their organizational form was *Zaibatsu*, a conglomerate of diversified enterprises held by interlocking directorates under a family-controlled holding company (or its equivalent). The four largest *Zaibatsu* were household names throughout the world: Mitsui, Mitsubishi, Sumitomo, and Yasuda. How families control giant firms even today can be seen from the examples of Matsushita and Toyota.

### Company acculturation

During the postwar period into the 1970's, the transaction-cost minimizing advantages of "the family" metaphor weakened, and management could no longer depend upon worker incentives and discipline resulting from the shared image of the company as a family. Furthermore, the postwar family was no model for any organization that

required authority and responsibility for getting work done.

The Japanese employment system that emerged from the consolidation of labor market may well be called "management by company culture." Culture now takes the place of erstwhile paternalism. It is well known that well-run Japanese companies are making constant efforts to shape and maintain a corporate identity that is distinct and unique enough to motivate employee identification with it. The culture-conscious Japanese companies devote enormous attention to the recruitment of compatible employees. The general practice is to recruit employees once a year in the spring, fresh out of schools or colleges, according to careful long-run manpower plans. These companies regularly hire from the nation's best universities and maintain a stable mix of employees by university origin. Blue-collar recruitment also runs by school or regional origin. Informal groups formed by college, school, or regional ties mesh with formal work groups. The "old boys" network is automatically stratified by year of graduation and can be used as an instrument for orderly acculturation and training of employees through senior-junior (*senpai-kohai*) relationships. Several "old boys" groups in a company also generate competition for performance among them. Each group probably desires to maximize its share in good positions and promotions. So long as personnel procedures and evaluations are objective and unbiased, competition among these groups may be channeled into higher aggregate performance (although it might also degenerate into dysfunctional office politics). The role of a company culture is to integrate competing groups and individuals into a harmonious whole to ensure the aggregate vitality of the firm.

The enterprise labor union also facilitates this cultural integration by taking up all nonmanagerial white-collar and blue-collar workers, regardless of their educational backgrounds. The union then can be viewed as a crucible of social democracy within the enterprise, although managers and organized employees of the internal labor-market sector as a whole constitute an elite of the labor force vis-a-vis the rest of the working population of the national economy.

### Large versus small and medium

The modernization of "the family" and interpersonal relations within it since the postwar democratic revolution has proceeded unevenly in different socioeconomic strata. Studies of lower middle-class merchants and artisans indicate a strong survival of the prewar type of family and its application to employment relationships. Generally, small and medium-sized enterprises constitute a noninternal labor-market sector (the dual of the internal labor-market sector where the Japanese employment system obtains) and labor-market indicators like labor turnover, length of service, cyclical sensitivity of employment, and so forth which are those of relatively open, fluid labor markets. These enterprises obviously make up for the lower wages and less attractive working conditions than in the internal labor-market sector by offering a "psychic income" of a family

atmosphere, familiar to their employees. Furthermore, employees in the noninternal labor-market sector are, in a sense, residuals, dropouts or failures vis-a-vis their peers picked by firms in the internal labor-market sector.

They are likely to be from the social strata which, because of their relative backwardness, have lagged in modernization and still retain relatively greater doses of traditional values and practices. The familiar syndrome of factors that generates "occupational inheritance" is also observed in Japan.

From a different point of view, the employers and employees in small and medium-sized enterprises are the average Japanese, and those in the internal labor-market sector, an exception. On the basis of employment statistics by establishment size, regular employees in private establishments (employing 500 or more regular employees), public enterprises, and civil service amounted to 16 percent of the Japanese labor force in 1981. This is roughly the size of the internal labor-market sector in Japan by sheer head count (9 million). The smallness of this sector enables it to choose the cream of the crop. The employees of this internal labor-market sector themselves are also conscious of their elitist position. The labor market segmentation of this kind does not generate the classic classes of capitalists (or corporations) and workers with distrust, misgivings, or even animosity between them. The major divide is between large bureaucratized firms in this sector and the small and middle enterprises, mostly family-run or -controlled, in the noninternal labor-market sector. Tensions exist and occasionally flare up between large firms and small firms as in the case of an organized protest by local store owners against the plan of a large national distributor to open a branch in their midst. Large firms have long since realized the limits to direct expansion at the expense of smaller firms and, instead, actively organized the smaller ones into networks of close business relationships known as *Keiretsu* (lining them up). However, the transaction costs in getting things done through a *Keiretsu*, involving hundreds of smaller, but independent firms, are apparently lower than the large firm itself expanding in the equivalent scale to internalize the network. Thus, some workable peace obtains between large and small firms. It is noteworthy that resilience and political sophistication of small firms limit the physical growth of large firms and direct the attention of the latter to "social" leadership over a multiplicity of lesser firms.

The employees of the internal labor-market sector are organized into enterprise employee unions and largely coopted into a sharing system of the elite sector through collective bargaining and joint consultation. Enterprise unions see no community of interest with the unorganized employees of smaller enterprises as exemplified by an almost total absence of effort on the part of the established unions to organize the unorganized. The basic behavioral determinant is the union's "enterprise consciousness" meaning that for their well-being, employees depend on their

employer's prosperity and that the union's role is to ensure a "fair share" in the employer's prosperity.

With no horizontal (class) solidarity among workers, employees in the noninternal labor-market sector perceive themselves as being in the employee status only as long as they learn the skills and accumulate the resources to strike out on their own. This "Japanese dream" does not become a reality for a majority of wage-earners in this sector, but it does for a substantial number of them, who set and maintain the entrepreneurial propensity. For a major capitalist-market economy, Japan still has an unusual proportion of the labor force in self-employment (together with family workers, 27 percent of the labor force in 1981) and an unusual proportion of the nonagricultural private regular employment in the smallest establishments with fewer than 30 employees (48 percent in 1981).

For more than half of Japan's economically active population, "employer" and "employee" do not imply sharp status differences, let alone "class consciousness." Where class consciousness should have arisen, and did for a while after the war, namely the internal labor-market sector, *employees* are the secure members of the nation's elite. Labor market segmentation has thus created in Japan a social stratification that the known formulae of differentiation have difficulty in explaining. However, the upshot of certain developments in Japan: inflation; employment cutbacks, despite lifetime employment; more extensive use of part-time, temporary, or seasonal workers; equal employment opportunity legislation for women; the raising of the mandatory retirement age from 55 to 60; and weakened union activity at the enterprise level (causing them to turn to national consolidation and economic policy) is the prospect of less segmentation. The internal labor markets of major firms cease to be the monopoly of standard male regular workers, recruited fresh out of schools and colleges with expectations to serve out their term until mandatory retirement. □

## How do Australian unions maintain standing during adverse periods?

JOHN NILAND

Australian unions are organized on a craft or occupational basis, much more than along industry or enterprise lines as in the United States. Because unions typically enroll members from more than one industry, workers in a medium-sized factory of 500 or so typically will be covered by 5 to 10 unions: the production or process workers gravitate to 1

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or 2 unions, white-collar and clerical people go to another, and maintenance personnel join a further group of unions. Also, supervisors and front-line managers increasingly have been joining trade unions, primarily from fears generated by increased redundancy and corporate rationalization, but also as a defense mechanism against the growth in industrial democracy practices which supervisors often perceive as a challenge to their own job territory. Overall, 320 unions are registered within the tribunal system.

Australian trade unionism has continued to be a numerical force in the past decade, although the two main sets of official statistics indicate marginally contradictory trends. One set of data is based on a labor market survey of employees in 1976 and again in 1982. Unionization declined slightly from 51 percent to 49 percent, with women maintaining a rate at 43 percent and that for men decreasing from 56 percent to 53 percent. The alternate official series, with statistics collected annually from the trade unions themselves, shows that the overall union participation rate increased slightly from 56 percent in 1975 to 57 percent in 1982.

### Unionization by industry

An analysis of industry shift in unionization between 1976 and 1982 reveals that, as in some other industrialized market economies, the manufacturing sector is in some difficulty with a drop of 3 percentage points, entailing a loss of some 45,000 unionists. Debate over the causes covers many possibilities, including deindustrialization through crowding out by the nonmarket sector or through the influence of multinational companies; the Gregory Thesis of booming minerals sector deindustrialization; and the Cambridge Effect, involving exports and balance of payments problems. These lines of argument have little to do with unions directly, although two other schools of thinking do: the rise of inefficient protection policy which itself is linked to wages policy that emphasizes standardization and uniformity; and the real wage overhang effect through which many wage rises in the past decade have outstripped appropriate productivity movements. Whatever the primary cause, unionism in its most important sector has lost ground. However, this is almost offset by a 3-percentage-point rise in the incidence of community services employment. Unionism has made distinct gains in the wholesale/retail area, and has held its own in the finance/insurance business services sector. In both cases, negotiation of compulsory unionism agreements has been important. For example, the union participation rate in the private banking industry had been 57 percent in 1973, but toward the end of that decade it had risen to 84 percent with the introduction of a closed shop arrangement.

### The labor market

The unionization picture is particularly noteworthy in the light of movements in Australian unemployment figures. From a rate of 2.4 percent in 1974, unemployment peaked in 1983 at 9.9 percent, thereafter dropping to 7.9 percent in

1985. As one researcher points out, few Australian unions provide advantages that would encourage displaced workers to maintain membership:

... unlike some United States unions ... few Australian unions act as employment centers; nor do they provide unemployment or other benefits. This, together with the fact that most forms of ... union shops are confined to a small number of industries, means that unemployed workers usually see little point retaining union membership.

However, Australian unions have held their membership coverage despite considerable erosion of their recruitment base by unemployment. Indeed, a leading school of thought contends that unions have preserved their position at the expense of the unemployed, particularly the hardest hit category of youth, whose rate of unemployment rose from 5.8 percent in 1974 to 22.6 percent in 1983.

The age profile on unionization trends is important in the sense that disenchantment among the young could herald future difficulties. At first sight, Australian unions might well be concerned on this score, as the membership incidence varies sharply with age cohort: the figure in 1982 for youth (15 to 19 years) was 31 percent, compared with 44 percent for young adults (20 to 24 years) and 53 percent for adults (25 and over). However, up to 5 percentage points of the gap between youth and adult unionization may be accounted for by the fact that apprentices (an avenue through which 25 percent of all boys enter the labor market) traditionally are nonunionized. Another factor is the tendency for youth to concentrate in low unionized sectors, such as wholesale/retail trade and entertainment: "If manufacturing is excluded, differences in the employment composition between teenagers and adults account for half the difference in their unionization." Finally, high turnover rates among young employees, who in adulthood presumably will settle down, is also a significant factor for lower youth unionization rates.

### Wages and conditions

The Australian system of industrial regulation is based on the process of conciliation and arbitration which entails government-appointed tribunals determining wages and other conditions of employment. Because the industrial tribunals have official standing and operate in a semijudicial environment, the propensity for standardization and centralization is strong. These pressures have been particularly pronounced in the past decade.

Commencing in March 1975, the Australian Conciliation and Arbitration Commission (hereafter Arbitration Commission) has awarded wage increases to closely reflect movements in the Consumer Price Index, the main indicator of inflation. Of the 19 National Wage Case decisions in the Indexation Era, the Arbitration Commission awarded full CPI adjustments on 7 occasions, with the remainder producing either partial percentage adjustment or some plateauing arrangement in which only those from lower paid classifications received real wage maintenance. Inevitably, this led to compression of skill margins, particularly as it was the

stronger unions covering such groups as transport workers and open cut coal miners rather than those covering trade classifications which managed to breach the Arbitration Commission's "substantial compliance" guideline, and negotiated privately to achieve wage increases beyond the national minima. In the end, too many groups were running outside the national guidelines, and in July 1981, the Arbitration Commission abandoned the Indexation Era, leaving the parties to a form of disheveled bargaining.

Indexation had been introduced in 1975 to help spike wage expectations which at that time were beginning to run rampant. Fears were held of a repetition in 1982, and with all parties increasingly cautious in light of a forthcoming election, the Federal Government managed to sell the idea of a wage pause. So crucial are industrial relations issues to political fortunes in Australia that the subsequent success of the Australian Labor Party in the March 1983 election owes much to its deal with the Australian Council of Trades Unions to re-introduce an orderly wage fixing arrangement. The Prices and Incomes Accord provided the way for a return to centralized wage fixing, and by September 1983, the Arbitration Commission had worked out a set of guidelines to put the arrangement into operation. This virtually guaranteed full CPI wage adjustment, although now the interdiction on groups negotiating private deals beyond the national standard became much more effective. Even so, classification creep and some increase in overtime enabled average weekly earnings to keep ahead of inflation. The period between 1971-72 and 1982-83 saw substantial wage increases, with money wage aggregate growth of 129.9 percent well outstripping the aggregate CPI growth of 111.1 percent.

A significant development in the decade to 1985 has been the growing authority of the Australian Council of Trade Unions in national wage policy. In the mid-1970's, this peak union body resisted, unsuccessfully, maneuvers of the Whitlam Labor Government and the Arbitration Commission to locate wage fixing back within the Arbitration Commission. Initially, wage indexation meant holding wage increases below their recent trend line; 10 years later, with rising unemployment and the salutary effect of the economically awkward Whitlam years (1972-75), the council came to see considerable merit in CPI-linked wage adjustment, particularly as it became the joint-administrator in the transformed central system.

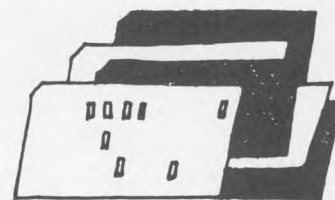
These developments hardly suggest a labor movement losing ground in the face of economic adversity, as much as theory might suggest such would be the outcome. What is perhaps more important, the growth of real wages in such difficult times was not achieved through trading off other conditions: not since the early 1930's have the industrial tribunals attempted to meet unemployment concerns with across-the-board reductions in industrial conditions, and only in isolated instances do they now roll back provisions for particular firms in trouble. Indeed, over the past decade, unions have made gains in various nonwage conditions,



which further reflect unionism's enhanced standing. Perhaps most important has been the 35-hour week campaign. Begun in the mid-1970's, shorter hour gains were widespread by the early 1980's, although many groups eventually had to settle for 38 hours as their new regular working week. This is now the standard accepted by the Arbitration Commission, although cost savings through revised work practices are a mandatory *quid pro quo*. This arrangement—the linking of work efficiency to further reduced hours—is perhaps one of only two developments in the formal industrial relations system over the past decade with appeal to employers. The other is the emergence of the no-further-claims clause by which unions agree to hold the line on wage claims for a designated period, and in other ways, to abide the agreements.

Several other sets of improved conditions should also be mentioned. While Australia lagged much of Europe in the provision of job protection, advance notice of redundancy, and compensating termination packages, a 1984 decision of

the Arbitration Commission in the Termination Change and Redundancy Case, changed the picture somewhat. Also, as part of its accord commitments, the Australian Government in 1984 established the National Occupational Health and Safety Commission to “develop national standards and priorities, upgrade research and training efforts, and provide a basis for unions and employers to work together to make workplaces safer.” Another development linked to the accord is the program to more widely infuse industry with the precepts and practices of industrial democracy, although here the main initiatives will be in the Accord Mark II (1985–87) more than in the Accord Mark I (1983–85). The same can be said for the introduction of nationwide super-annuation schemes, due to start in July 1986, where all unionists will have 3 percent of their wages paid by their employer into the pension fund of the worker's choice. The arrangements for pension trust management, yet to be finalized, could give unions the basis for further enhanced standing. □



## Aggregate export price comparisons developed for U.S., Germany, Japan

DAVID S. JOHNSON

In February 1986, the Bureau of Labor Statistics began producing aggregate export price index comparisons between the United States and Japan and the United States and Germany on a quarterly basis. Previously, BLS had been producing export price index comparisons only for detailed commodity categories.

Export price comparison measures are ratios of the foreign export price indexes in dollar terms to specially calculated U.S. export price indexes. The measures, in index form, are designed to show relative price movements between the United States and Germany and the United States and Japan for designated market baskets of products.

An increase in a comparison index represents an increase in the price of the foreign export basket of goods compared to the U.S. price of an export basket consisting of the same volume and similar types of commodities. The opposite is true in the case of a decrease in an index. Changes in relative price movements are of interest because of their influence on changes in relative export quantities.

Comparison measures are calculated by first translating the foreign export price indexes into dollar terms and then dividing these indexes by the special U.S. export price indexes matching the foreign export categories.<sup>1</sup> The exchange rates used in converting the foreign price indexes to dollar terms are monthly averages of certified noon buying rates in New York as published by the Federal Reserve Board.<sup>2</sup>

The indexes for periods in which different export value weights were used have been linked together. The German-U.S. export price index comparisons use 1970 German export value weights from June 1970 through March 1976; 1976 weights from June 1976 through December 1979; and 1980 weights from March 1980 to the present. The Japan-U.S. export price index comparisons have been calculated using 1975 Japanese export value weights from June 1970 through December 1979, and 1980 weights from March 1980 to the present.

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The comparison measures have been aggregated according to foreign country export trade weights in order to match the classification systems of the published foreign export price indexes.<sup>3</sup> Other weighting schemes, such as the use of U.S. export trade weights or world trade weights, would produce different results. Aggregating according to other weighting schemes would require access to price data for individual export commodities from Germany and Japan which are not available at the present time.

German export price indexes are published by the Statistisches Bundesamt [Federal Statistical Office] of the Federal Republic of Germany in the monthly publication, *Preise und Preisindizes fuer die Ein- und Ausfuhr* [Prices and Price Indexes for Imports and Exports]. The German export price indexes used in the comparison measures are taken from table 2.6 for the detailed product categories and from table 2.5 (SITC, Rev. II) for the aggregate categories. Currently, Germany calculates its export price indexes from approximately 6,100 individual export price series. These prices refer to export transactions concluded during the reporting month for specified commodities on an F.O.B. (free on board) German border basis, and are adjusted for quality changes. Individual price relatives are aggregated by means of the Laspeyres formula using export value weights.

The Japanese export price indexes used in the comparison measures are taken from Section II, table 3 of *Price Indexes Monthly*, published by the Bank of Japan. This table contains 319 export categories at different levels of aggregation. Approximately 530 export prices are surveyed by the Bank of Japan on a monthly basis. These prices are contract prices on an F.O.B. port basis and are adjusted for quality changes. The individual price relatives are aggregated as above using Japanese export value weights.

The specially constructed U.S. export price indexes used in the comparison measures have been designed to match the commodity coverage of the German and Japanese published export price indexes. The price series used in these indexes have been selected from approximately 7,700 export prices collected from U.S. exporters by the Bureau of Labor Statistics' International Price Program. The prices collected are either F.O.B. or F.A.S. (free alongside ship) transaction prices which are adjusted for quality changes. The individual price relatives are aggregated by means of the Laspeyres formula using the respective foreign export trade weights.

The Statistisches Bundesamt, producer of Germany's export and import price indexes, has furnished BLS with a table

of weights and subclassifications within its published export price index categories. By using this information along with the description of Germany's Commodity Classification for Industrial Statistics (WI),<sup>4</sup> it was possible to select export products collected by the BLS International Price Program which were judged to be similar to the products represented in the German published series. A similar procedure was used for the correct classification of U.S. products within the Japanese classification scheme. The Bank of Japan supplied BLS with a complete listing of product specifications used in the production of Japanese export price indexes. From this listing it was possible to construct special U.S. export price indexes with comparable commodity coverage.<sup>5</sup>

In regard to product coverage, it should be noted that the BLS export price data base is a sample designed to represent U.S. export price trends at the level of 4- or 5-digit SITC (Rev. II) product categories. Although a selection of export prices from this data base has been used to produce the special U.S. export price indexes for the comparison measures, the product samples were not originally drawn for this purpose. However, the mappings of products to foreign

export categories have been thoroughly examined to ensure the fullest product coverage possible.<sup>6</sup> □

—FOOTNOTES—

ACKNOWLEDGMENT: The author gratefully acknowledges the helpful comments of Kim Zieschang of the Bureau's Division of Index Number Research, and William Alterman and John Goth of the Division of International Prices.

<sup>1</sup>  $FXPI * ER / USXPI$ , where  $FXPI$  is a foreign published export price index series;  $ER$  is the exchange rate; and  $USXPI$  is the U.S. export price index calculated to match the commodity coverage of the foreign published index series.

<sup>2</sup> Data are published monthly in the *Federal Reserve Bulletin*; and *Statistical Release G.5: Foreign Exchange Rates* (Board of Governors of the Federal Reserve System).

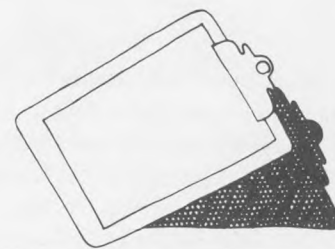
<sup>3</sup> Three levels of aggregation above the detailed commodity level were developed for Germany, and four levels were developed for Japan.

<sup>4</sup> *Systematisches Warenverzeichnis fuer die Industriestatistik*, Ausgabe 1975 [*Commodity Classification for Industry Statistics*, 1975 Edition] (Wiesbaden, Statistisches Bundesamt, 1976).

<sup>5</sup> "List of Commodity Descriptions of 1980-Based Price Indexes" (Tokyo, The Bank of Japan, Statistics Department).

<sup>6</sup> *Comparisons of United States, German, and Japanese Export Price Indexes*, Bulletin 2046 (Bureau of Labor Statistics, 1980).

# Research Notes



## Measuring wage premiums for job risks

During the past 10 years, a large amount of research has been devoted to measuring the wage premiums which workers receive as a result of bearing additional occupational injury and illness risks. Improved estimates of the premiums are of value for policy evaluation because they are used to assess the benefits of proposed occupational safety and health regulations.

The motivation for this research is the idea that, in general, if a worker has a choice between two jobs of different riskiness, he will choose the riskier one only if it pays a sufficiently higher wage. The wage premium for bearing extra risk is known as a compensating wage differential, because the premium is viewed as being paid to compensate for the additional riskiness. A compensating differential should not be confused with workers' compensation benefits. The former is paid as a component of wages, while the latter is an indemnity benefit paid only if a worker is injured. They are related, however, in that both are paid to compensate a worker for the costs he bears in the event of an injury or illness.

Research on measuring compensating differentials endeavors to explain observed variations in wages by means of an equation which relates worker and job characteristics to wage levels. Let  $W$  represent the wage level,  $X$  represent worker and job characteristics known to affect wages, such as education or experience, and let  $R$  represent the riskiness of a job. It is hypothesized that wages are related to  $X$  and  $R$  through the equation

$$W = a + bX + cR$$

where  $b$  and  $c$  are coefficients which indicate by how much wages change with unit increases in  $X$  and  $R$ . For example, suppose that  $R$  measures the number of injuries and illnesses incurred by 100 workers in 1 year, that  $W$  measures weekly wages, and that  $c$  has a value of 5. Then the equation indicates that an increase in the riskiness of a job of 1 case per 100 workers per year is associated with an increase in weekly wages of \$5. The object of empirical work on compensating differentials is to obtain better estimates of  $c$  from data sets containing information on wages and worker and job characteristics.

In a recent paper, we examine two issues in the measurement of compensating differentials. First, we study to what extent the differentials differ for men and women and for

union and nonunion workers. Second, we analyze the impact of including a measure of workers' compensation benefits in the wage equations used to estimate the differentials.

The primary source of the data was a sample of private nonagricultural blue-collar and service workers drawn from the May 1980 Current Population Survey. Separate wage equations were estimated for union men, nonunion men, union women, and nonunion women. Standard education, experience, and demographic characteristics were included as  $X$  variables in the wage equations. In addition, two measures of job risk and a measure of workers' compensation benefits were included as variables explaining wage variations. The job risk variables, obtained from the Bureau of Labor Statistics' 1980 Annual Survey of Occupational Injuries and Illnesses, measure the number of lost workday injury and illness cases per 100 full-time workers and the number of lost workdays per lost workday case. These measure the frequency and severity of injury and illness cases by industry, respectively. The workers' compensation variable measures the proportion of weekly wages replaced by total temporary disability benefits. It was imputed from information on the workers' weekly wages and characteristics and the State laws regarding benefit payments.

Three principal conclusions emerge. First, there is strong evidence of compensating wage differentials for both union and nonunion men. Men receive higher pay to work at riskier jobs; for women, however, the evidence is not as conclusive. Only female union members appear to receive higher wages for riskier jobs, and even here the evidence is not as strong as for men. It is conceivable that the lack of evidence for women suggests that they indeed do not receive wage premiums for job risk. It is equally possible, however, that the poor results for women suggest that the industry job risk variables, which are not available by sex, do not adequately represent the job risks faced by female employees of high-risk industries. Women tend to be underrepresented in these industries and, within them, they tend to work in the low-risk occupations.

A second finding of the research is that, everything else being the same, an increase in the proportion of wages replaced by workers' compensation income benefits leads to a drop in the wage level. This result is stronger for women than for men. A final surprising result is that the inclusion of the workers' compensation benefit variable in the wage equations has no effect on estimated compensating wage differentials. Also, coefficients on the interaction of work-

ers' compensation benefits with the risk variables are generally statistically insignificant.

The study and its results are described in full in the paper "Workers' Compensation Benefits and Compensating Wage Differentials," by John W. Ruser, BLS Working Paper No. 153.—*John W. Ruser, Office of Research and Evaluation, Bureau of Labor Statistics.* □

### Interview group bias

In the Current Population Survey, like many data sets used in studies of labor force behavior, respondents are interviewed repeatedly. Previous research has shown that responses systematically differ with the number of times that individuals are interviewed. With the current and growing emphasis on dynamic models of labor force behavior and the increasing use of panel data, it is important to examine the quality of the data and potential survey response error that can be confounded with the measurement of systematic changes in behavior over time.

Empirical estimates of time-related bias in the Current Population Survey (CPS) have grouped together all respondents who enter the sample at the same time. In the CPS, these groups are referred to as rotation groups. This procedure requires the implicit assumptions that respondents never miss interviews and that there is no mobility in and out of

the sample. If these assumptions are not supported by the data, they can lead to significant underestimates of time-related effects on reported labor force status.

Microdata from the CPS are used to provide empirical evidence of the effects of repeated interviewing on survey responses. Using 3- and 4-month matches of three different rotation groups from the CPS, we found that a substantial number of respondents have not been surveyed in every month. Respondents who have been interviewed the same number of times are classified as members of the same interview group. Estimates of the magnitude of bias within these rotation groups of the CPS show that the unemployment rate for respondents interviewed for the first time can be more than 50 percent higher than for respondents interviewed for the fourth time. The paper includes a discussion of the relative importance of rotation group bias and interview group bias in the CPS and concludes that interview group bias can explain the patterns of rotation group bias commonly observed. While this research focuses only on the CPS, the same types of problems may arise in any panel data set.

The study and its results are described in full in the paper "Interview Group Bias: Effects of Repeated Interviewing on Estimation of Labor Force Status," by Janice Shack-Marquez, BLS Working Paper No. 154.—*Janice Shack-Marquez, Office of Research and Evaluation, Bureau of Labor Statistics.* □



# Major Agreements Expiring Next Month

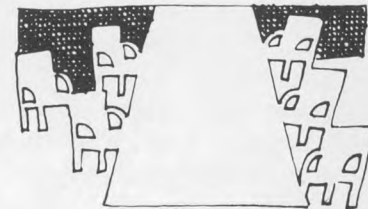
This list of selected collective bargaining agreements expiring in July is based on information collected by the Bureau's Office of Wages and Industrial Relations. The list includes agreements covering 1,000 workers or more. Private industry is arranged in order of Standard Industrial Classification.

Employer and location	Industry or activity	Labor organization <sup>1</sup>	Number of workers
<b>Private</b>			
Iron Ore Mining Companies (Interstate)	Mining	Steelworkers	3,000
Climax Molybdenum Co. (Climax, CO)	Mining	Oil, Chemical and Atomic Workers	2,000
Nassau and Suffolk Contractors Association (New York)	Construction	Laborers	2,000
Association of Mechanical Contractors (Georgia)	Construction	Plumbers	1,150
Construction Industry Combined Committee and 2 others (St. Louis, MO)	Construction	Iron Workers	1,200
Mechanical Contractors Association (Utah)	Construction	Plumbers	1,000
Miller Brewing Co. (Milwaukee, WI)	Food products	Brewery Workers	1,000
Michigan Sugar Co. (Michigan)	Food products	Grain Millers	1,200
E.J. Brach & Sons, Inc. (Chicago, IL)	Food products	Teamsters (Ind.)	3,000
Winery Employers Association (California)	Food products	Distillery Workers	3,500
Southern California Cabinet Manufacturers (California)	Furniture	Carpenters	1,500
Kimberly-Clark Corp. (Tennessee)	Paper	Paperworkers	1,000
Weyerhaeuser Co. (Plymouth, NC)	Paper	Paperworkers	1,600
James River Co., KVP Division (Michigan)	Paper	Paperworkers	1,000
James River Co., Board and Carton Division (Michigan)	Paper	Paperworkers	1,200
Hammermill Paper Co., Thilmany Pulp & Paper (Wisconsin)	Paper	Paperworkers	1,250
Phoenix Steel Corp. (Interstate)	Primary metals	Steelworkers	1,000
Armco Steel Corp. (Butler, PA)	Primary metals	Butler Armco Independent Union (Ind.)	2,000
Armco Steel Corp. (Ohio)	Primary metals	Armco Employees Independent Federation (Ind.)	4,800
Martin Marietta Aluminum Inc. (Interstate)	Primary metals	Steelworkers	1,900
FMC Corp., Northern Ordnance Division (Fridley, MN)	Fabricated metals	Auto Workers	2,200
Briggs and Stratton Corp. (Milwaukee, WI)	Machinery	Industrial Workers	8,200
Caterpillar Tractor Co. (Joliet, IL)	Machinery	Machinists	1,300
Sealed Power Corp. (Muskegon, MI)	Machinery	Auto Workers	1,000
Eltra Corp., Prestolite Division (Interstate)	Electrical products	Auto Workers	1,200
Hayes International Corp. (Birmingham, AL)	Transportation equipment	Auto Workers	2,200
Pacific Coast Shipbuilding and Ship Repair Firms (Interstate)	Transportation equipment	Various	10,000
Rouge Steel Co. (Michigan)	Transportation equipment	Auto Workers	15,000
Frontier Airlines, agents (Interstate) <sup>2</sup>	Air transportation	Air Line Pilots	2,400
Brooklyn Union Gas Co. (New York)	Utilities	Transport Workers	2,200
Ohio Edison Co. (Ohio)	Utilities	Various	2,100
Food Employers Association, Inc., warehouse (Oregon)	Wholesale trade	Teamsters (Ind.)	1,700
Montgomery Ward Co. (Interstate)	Retail trade	Teamsters (Ind.)	9,600
Fred Meyer Inc. (Portland, OR)	Retail trade	Food and Commercial Workers	1,700
Association of Private Hospitals (New York, NY)	Hospitals	Service Employees	7,000
<b>Public</b>			
Illinois: Cook County Community College, faculty	Education	Teachers	1,400
Maryland: Baltimore police	Law enforcement	Police	2,500
Iowa: Des Moines Independent Community School District, professionals	Education	Education Association (Ind.)	2,000
Michigan: Wayne State University, faculty	Education	University Professors (Ind.)	1,400
Tennessee: Chattanooga Board of Education, teachers	Education	Education Association (Ind.)	1,500
Texas: Houston Metropolitan Transit Authority	Transit	Transport Workers	1,450

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

<sup>2</sup> Information is from newspaper reports.

# Developments in Industrial Relations



## First of the steel contracts

The first round of negotiations in the steel industry since the 1985 breakup of the Coordinating Committee Steel Companies, the industry's pattern-setting bargaining association, led off with settlements at LTV Steel Co. and National Steel Corp. In keeping with the Steelworkers acknowledgment that the severity of problems afflicting the industry varies among the companies, the union agreed to different terms at LTV Steel and National Steel.

In the past, the Coordinating Committee Steel Companies, comprising U.S. Steel Corp. and other large companies, had negotiated uniform terms that were followed by nonmember companies. Deviation from the pattern terms occurred in 1985 when Wheeling-Pittsburgh Steel Corp. negotiated a substantial permanent cut in wages and benefits. Afterwards, U.S. Steel and other producers said that in their 1986 negotiations, they would seek similar compensation cuts in order to maintain production cost parity with Wheeling-Pittsburgh. Steelworkers' President Lynn Williams said the union would tailor each settlement to the condition of the particular company.

At LTV Steel, which has suffered \$1.7 billion in operating losses since 1982, including \$227 million in 1985, the union agreed to a \$3.15 cut in hourly compensation—a \$1.14 cut in pay and a \$2.01 cut in benefits. The company estimated that an additional 45 cents an hour would be saved in indirect costs because it will pay less social security and other taxes and benefits from lower administrative costs, bringing its total savings to \$3.60. In addition to the pay cut, the employees will forgo the final increment of the pay restoration required to bring wages back to the level that prevailed prior to the 1983 settlements, which called for a temporary pay cut of \$1.25 an hour. The final increment (45 cents an hour) was restored to employees of the other companies on February 1, 1986, as scheduled, but the payment date had been postponed to April 1, 1986, at LTV Steel as a result of a 1986 contract modification. (See *Monthly Labor Review*, April 1986, p. 57.)

In return for the \$3.15 in direct savings, LTV agreed to a Profit-Sharing and Stock Ownership Plan that will give the

employees a "dollar-for-dollar payback in equity" for their sacrifice. A union official noted that the accord provides for "guaranteed job security opportunities and more worker involvement in decisionmaking at all levels of company policy."

Other cost cuts accepted by the union include:

- A reduction in shift premiums to 20 cents an hour, from 30 cents, for the second shift and to 30 cents, from 40 cents, for the third shift.
- Suspension of the cost-of-living pay adjustment provision.
- Elimination of 3 of the 10 paid holidays.
- Elimination of 1 week of paid vacation for all employees currently eligible for at least 2 weeks.
- Elimination of vision care benefits.
- A reduction in sickness and accident benefits, to a range of \$175–\$229 a week.

Employees weekly pay statements will now indicate their accumulating wage and benefit sacrifices. In April of each year, they will receive the accrued value from company profits, if any. The cash available for distribution will equal 10 percent of the first \$100 million of LTV Steel profits plus 20 percent of all profits in excess of \$100 million. If profits are insufficient, workers will receive the balance in dividend-bearing shares of the LTV Steel preferred stock. After 2 years, the shares can be sold or exchanged (at \$16 a share) for common shares of the parent LTV Corp.

One of the major issues in the negotiations was resolved by adoption of a restriction on subcontracting of work (except construction) if it can be performed by members of the bargaining unit. To bypass this restriction, the company must prove that proposed subcontracting is consistent with past practice and the work must pass a "reasonableness test," excluding comparisons of costs.

Also in return for the wage and benefit cuts, LTV Steel agreed to a program of monitoring overtime levels and to give the local union a monthly accounting of the amount and reasons for overtime work.

In a related job security provision, the company agreed not to sell or transfer a plant covered by the agreement unless the new owner recognizes the unit as bargaining agent. Also, the new owner must negotiate an agreement acceptable to the union before the sale can be completed.

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

The settlement covered 30,500 employees—including 8,500 on layoff—in 24 plants in seven States.

The contract at National Steel differed markedly from the LTV Steel contract, apparently reflecting National's smaller losses. National, which is half owned by the Nippon Kokan KK steel company of Japan, lost \$88 million in 1985, including \$27.2 million in the fourth quarter. Reportedly, National Steel did not require compensation cuts as large as LTV Steel because National has already closed a higher proportion of its inefficient facilities.

The 39-month accord provides for a 42-cent-an-hour pay reduction, including suspension of the 11 cents cost-of-living adjustment that was effective February 1, 1986. The employees will receive no further cost-of-living-adjustments during the agreement, but will receive annual bonuses under a new profit-sharing plan. The distributions will range from 50 cents per hour worked during the year if the company loses money to a maximum of \$1.75 per hour if its net income is \$300 million or more.

The workers also will be eligible for quarterly bonuses based on future increases in productivity. The separate plans at each of the three locations are based on any local increase in tons shipped per worker, local cuts in the work force, and corporate-wide cuts in the work force. These three factors, weighted 30, 20, and 50 percent, will be compared with a base level to determine possible improvements in productivity. The quarterly payouts will range from 1 percent of each employee's pay if productivity rises 1 to 5 percent to 17 percent if the rise is 60 percent.

From the union's viewpoint, probably the most important contract provision is a new employment security plan which prohibits layoffs during the contract term. Workers who would otherwise have been laid off will be placed in an employment security pool for retraining or for a new assignment.

In another change important to the employees, the contract provides that "work capable of being performed by bargaining unit members shall be performed by [them]." Further, the company cannot contract out work "unless it demonstrates that such work meets one of the [limited] exceptions." Similarly, contractors can not perform work in the National Steel plants unless the work has consistently been performed by contractors in the past and the company can prove that it is more reasonable for the contractor than plant employees to perform the work.

Other contract terms include—

- Tighter restrictions on use of overtime.
- Assurances that sacrifices of employees not in the bargaining unit will equal those made by employees in the unit.
- Personnel reductions only by mutual agreement and then only by attrition.
- A Cooperative Partnership Agreement calling for the creation of joint committees to solve problems quickly and

in a cooperative manner.

- Adoption of a cost containment program for health care benefits.
- Elimination of the company's 25-cent-an-hour payment into the Supplemental Unemployment Benefits fund until it is drawn down to its required level. At the time of settlement, the fund was at 200 percent of the required level.

Although not a part of the basic agreement, another important development during the negotiations was National Steel's confirmation that it planned to continue a 5-year, \$1.2 billion capital investment plan started in 1985.

The 7,200 workers covered by the accord are employed by three National Steel subsidiaries located in Illinois, Indiana, and Michigan. They are Midwest Steel, Great Lakes Steel, and Granite City Steel.

### General Telephone contract 'concession-free'

The first settlement in the 1986 round of bargaining in the telecommunications industry occurred when General Telephone Co. of California and the Communications Workers of America (CWA) agreed on a 3-year contract for 20,000 workers. Based on past practice, the settlement was expected to set a pattern for 30,000 employees of other General Telephone companies. It also could influence the CWA's current bargaining with American Telephone and Telegraph Co. and the various operating and manufacturing companies resulting from the court-ordered 1984 breakup of the Bell Telephone System. CWA President Morton Bahr said the most important aspect of the accord was its "concession-free" nature, which would also be the guiding principle in the union's talks with the former Bell System companies.

Bahr said the key to the settlement was General Telephone's withdrawal of its demands for adoption of a two-tier pay system and a provision automatically raising employee deductibles under the health care plan as premiums rise. Instead, deductibles were raised by a fixed amount and a joint health care cost containment committee was established.

The contract, running to March 5, 1989, provides for wage increases of 3 percent retroactive to March 5, 1986, and 2 percent in September of 1987 and 1988. Some employees will receive additional increases as a result of job reclassifying.

### More railroad accords

The prolonged round of bargaining in the railroad industry inched closer to a conclusion when the Brotherhood of Railway and Airline Clerks (BRAC) settled with the 25 major carriers represented by the National Railway Labor Conference. The 4-year accord provided for smaller general wage increases but larger lump-sum payments than those negotiated in October 1985 by the United Transportation Union. (See *Monthly Labor Review*, January 1986, pp. 7-8.)



Announcing that 85 percent of BRAC members had voted in favor of the 4-year contract, union president Richard I. Kilroy called the negotiations "the toughest. . . I've ever had in my years in rail labor. I believe this contract is the absolute best we could obtain in today's tough economic and political climate."

The contract is retroactive to the June 30, 1984, date when wage and benefit terms were subject to change. It provides for lump-sum payments of \$565 within 60 days of ratification, \$335 on December 15, 1986, and \$217 on June 15, 1988. The specified pay increases are 2 percent retroactive to December 1, 1985, and 2.25 percent on December 1 of 1986 and 1987. The increases will raise the average hourly clerical pay rate to \$13.94, from \$13.08. The 85,000 workers covered by the accord also will continue to be eligible for possible semiannual cost-of-living pay increases of up to 8 percent a year, offset by the value of the specified pay increases and lump-sum payments during the year.

New employees will start at 75 percent of the standard rate for their job and progress to the standard rate in annual 5-percentage-point steps. Previously, workers started at 80 percent and attained the standard rate after 2 years of service. In a related action, a commission was established to determine if current clerical pay rates are too high or too low.

Other provisions included the formation of a joint committee to study health care cost containment.

It was not clear when the other 11 unions would settle with the carriers. The Brotherhood of Locomotive Engineers, which had rejected an earlier tentative accord, was in arbitration under provisions of the Railway Labor Act, and the other unions were negotiating.

### **Growers, pickers end 8-year dispute**

A dispute noted for its duration and the number of parties involved ended when Campbell Soup Co., tomato and cucumber growers in Ohio and Michigan, and the Farm Labor Organizing Committee agreed on new labor contracts for 550 workers. The dispute began in 1978, when the Committee began pressing Campbell Soup to support its efforts to organize employees of the growers, who sell their crops to Campbell. Campbell disagreed, contending that any collective bargaining relationship should be strictly between the farmers and the Committee.

As a result, the Committee instituted a boycott of Campbell products that was joined by the AFL-CIO and other organizations. The boycott was ineffective, according to a company public relations director, but in 1985, the company and the Committee agreed on elections in which the workers voted to be represented by the Committee. Contract negotiations then began, assisted by a five-member mediation panel headed by former Secretary of Labor John T. Dunlop. The panel was selected by the National Council of Churches, which will continue to assist the bargainers during the

course of the new contracts by conducting representation elections at growers not now covered by the agreements. Expenses of the panel were covered by the Carnegie Corp. and further expenses will be covered by a grant from the William Penn Foundation.

The nearly 3-year agreement signed by Campbell, the Farm Labor Organizing Committee, and the Campbell Tomato Growers Association provides for wage rates for hand pickers to be set through further negotiations, and referred to the Dunlop panel if not settled by June 15, 1986. Machine harvesters receive \$4.50 an hour for the 1986 season, increasing to \$4.60 for the 1987 season. Other terms for the 150 employees in Ohio cover grievance procedures, dues checkoff, union recognition, housing conditions, day care, health and safety programs, and a joint study of the effect of pesticides.

A nearly 4-year cucumber contract between Vlastic Foods, Inc. (a Campbell subsidiary) and the Committee covers 400 workers in Michigan. It includes grievance procedures, dues checkoff, and other terms similar to the tomato contract.

The cucumber pickers will continue to receive basic pay equal to 50 percent of the gross value of the crop. In addition, they will now receive bonus compensation, contingent on a rise in cucumber prices. The size of the bonus will increase over the term. For the 1989 season, the possible bonus will range from 6 to 9 percent of basic pay.

### **Transportation Union leaves AFL-CIO**

The United Transportation Union has disaffiliated from the AFL-CIO. In the letter of withdrawal to AFL-CIO President Lane Kirkland, Transportation Union President Fred A. Hardin attributed the action to a recent decision against the union under the Federation's procedures for resolving inter-union disputes over organizing workers; the election of a Federation official to head a group supporting coal-slurry pipelines, which the union opposes; alleged Federation support of a plan for purchasing Conrail that the Transportation Union did not favor; the Federation's adoption of new regulatory procedures viewed as inimical to the union's organizing efforts; and opposition to some of the Federation's political endorsements.

In response, Kirkland contended that the Transportation Union had misconstrued the Federation's position on some of the points, or that the position was not a major threat to the union. He maintained that their differences are reconcilable and that he was hopeful that the Transportation Union might someday rejoin the Federation.

### **Company pays premium to bilingual employees**

The Chemical Workers Union and the Utility Workers Union of America jointly negotiated a 2-year contract with

Southern California Gas Co. for 7,200 workers. The new agreement provides for a 4.5-percent wage increase effective April 1, 1986. On April 1, 1987, the workers will receive a 3.5-percent guaranteed increase and an additional possible increase of up to 2.5 percent, contingent on the movement of the Consumer Price Index.

A new provision the company characterized as unique to the industry provides for a 32-cent-an-hour premium for about 40 bilingual employees who answer telephone inquiries from persons who do not speak English.

In a cost-containment move, doctors planning to hospitalize an employee or dependent covered by the health insurance plan will have to clear the action with doctors hired by Southern California Gas. In other benefit changes, two free teeth cleanings per year were added to dental coverage and the amount of vacation time that can be carried over from year to year was increased to 3 weeks, from 2 weeks.

### **Philadelphia transit workers end strike**

In the Philadelphia area, a 5-day transit strike ended when the Southeastern Pennsylvania Transportation Authority and the Transport Workers agreed on a contract.

"Harassment" by supervisors, the most significant issue from the workers' viewpoint, was dealt with by adoption of a provision requiring the Transit Authority to pay the cost of grievance arbitration proceedings in which the arbitrator rules in favor of the union. If the ruling favors management, the union pays the full cost. If there is no clear winner, the arbitration costs will be paid from a \$50,000 a year fund that Philadelphia Mayor Wilson Goode promised to set up. Any unexpended portion of the annual allocation will be used to provide joint labor-management training for supervisors and stewards. Under the prior agreement, all arbitration costs were shared by the Transportation Authority and the Transport Workers.

According to a union official, the 5,100 members of the bargaining unit were involved in about 10,000 informal grievance filings per year, with about 1,200 of them ending as formal grievances and 120 going to arbitration.

The accord did not provide for a pay increase during the first year, but the employees will receive four increases totaling \$1 an hour during the balance of the 3-year term. Their pay, which reportedly averaged \$11.12 an hour at the time of settlement, also will be subject to possible changes during the second and third years as a result of the continuation of the provision for cost-of-living pay adjustments.

The major change in benefits was liberalization of the pension formula for early retirement. Now, pensions will be reduced by 4 percent for each year an employee is under age 65 at retirement. Previously, the reduction factor was 6 percent.

### **Electric workers negotiate wage increase**

On the East Coast, three unions negotiated 3-year agree-

ments for 3,300 employees of the New England Electric System. The contracts, which contained similar terms, provided for wage increases of 4.3 percent in March 1986, 4.2 percent in March 1987, and 4.1 percent in March 1988.

The normal annual pension was raised to 1.8 percent (from 1.7 percent) of average annual earnings during the highest consecutive 5 years of the final 10 years of service, multiplied by years of service to a maximum of 30. Also, the early retirement age requirement was reduced to age 60, from 61.

Other terms included an increase in employer financing of health insurance and continuation of a program to contain premium costs; and a 5- to 12-cent-an-hour increase in shift premiums, varying by job category and union.

The three unions are the Brotherhood of Utility Workers of New England, representing 1,600 workers, the Utility Workers Union of America (525 workers), and the International Brotherhood of Electrical Workers (1,050 workers). New England Electric comprises Granite State Electric, Co., Massachusetts Electric Co., Narragansett Electric, New England Power Co., and New England Power Service. The companies provide electrical service in Massachusetts, New Hampshire, and Rhode Island.

### **Grocery clerks get five lump-sum payments**

In Northern California, 40,000 grocery clerks were covered by a contract between several grocery store chains and 13 locals of the United Food and Commercial Workers. Over the 3-year term, employees will receive five lump-sum payments based on their hours worked (up to 40 hours per week) during the preceding 6 months. The first payment will be calculated at 25 cents for each hour worked during March 1 to August of 1986. The four succeeding payments will be calculated at 42 cents per hour worked by top-rated clerks, 28 cents for general merchandise clerks, and 20 cents for courtesy clerks. All five payments for courtesy clerks hired after the effective date of the contract will be calculated at 15 cents per hour worked.

On the last day of the contract, February 28, 1989, there will be a wage increase of 25 cents for general merchandise clerks, 30 cents for top-rate clerks, and 35 cents for head clerks.

The terms, which were similar to those negotiated by the union's meatcutters locals with the same companies in 1985, also include an \$800,000 increase in major medical coverage (to \$1 million) and a new individual retirement account plan supplementing the regular pension plan.

### **Spiegel contract contains 'no move' provision**

About 2,800 catalogue sales employees in the Chicago area were covered by a settlement between Spiegel, Inc., and local 743 of the Teamsters union. General wage increases total \$1.15 over the 3-year term, with 700 workers

under the company's production bonus system being eligible to earn about a third more than \$1.15.

Other terms included continuation of the provision for annual cost-of-living pay adjustments calculated at 1 cent an hour for each 0.4-point movement in the Consumer Price Index for the Chicago area; a \$50 bonus for full-time employees and \$25 for part-timers; a \$2 increase in the pension rate to \$10 a month for each year of credited service; and continuation of a "no-move" provision, requiring the company to operate the covered facilities until February 29, 1991.

### **Department store workers in DC area settle**

In the Washington, DC-Baltimore, MD, area, 5,500 department store employees were covered by a settlement between Woodward & Lothrop, Inc., and the United Food and Commercial Workers. The 39-month contract, scheduled to run to May 1, 1989, provided for hourly paid employees to receive three wage increases over the term, each averaging about 5 percent. According to the company, the increases will range from 55 cents to \$1.70 an hour, varying by job classification.

Rates were not changed for employees paid on a commission basis, but they received a lump-sum bonus equal to 1.5 percent of their 1985 earnings.

Benefit changes for all employees included a 5-percent increase in pension rates for past service and a 25- to 30-percent increase for future service; adoption of changes in the health insurance plan intended to slow the rise in costs; increases in sick leave pay; and increases in premium pay for Sunday work.

### **Minneapolis grocery workers get new contract**

A wide-ranging 3-year contract between Minneapolis grocery chains and the United Food and Commercial Workers provided for a two-tier pay system for part-time workers, lump-sum payments for all 8,000 workers, a joint committee to consider the introduction of new meat department sales items, changes in job rules and duties, and additional employee protection against layoffs.

During the first contract year, the workers will not receive a pay increase, but in the second year they will receive a 3-percent increase, and in the final year will receive two lump-sum payments together equal to 3 percent of their earnings during a 12-month period. The pension rate was increased to \$26.67 a month for each year of credited service (from \$20) and the service requirement was changed to permit retirement after 30 years, regardless of age.

Part-time clerks and delicatessen workers hired after the March 1 effective date of the contract will start at \$5 an hour, and advance to \$8 after 5,200 hours of work. Part-time clerks hired earlier started at \$5.76 and have a top rate of \$9.38.

In a move to control labor costs, stores with three or fewer

meatcutters will now be permitted to operate meat departments without a top-rated cutter present after 6 p.m. weekdays and all day on Sunday. Other efforts to control labor costs included establishment of a joint committee authorized to introduce new meat items during the contract term; a program for moderating increases in health insurance costs; and establishment of a "meat service" job category expanding the duties performed by a meat wrapper.

In return for these cost-cutting measures, the employers gave up the right to lay off employees hired after August 31, 1985, except in cases where they decide to close a store or can demonstrate a persistent and irreversible decline in sales.

### **Health care industry agreements**

In Chicago, a settlement between Northwestern Memorial Hospital and the Hospital Employees Labor Program (HELP) increased the incentive for the 1,000 service and maintenance workers to use Northwestern when they are sick or injured. Under the 3-year contract, employees will not be required to pay any medical care costs incurred in Northwestern. If they use another hospital, they will have to pay the first \$800 of costs and 20 percent of the balance. Under the prior contract, employees who used other hospitals were required to pay the first \$50 of daily room and board for up to 6 days and the health care plan paid all additional costs.

Other terms included wage increases totaling 62 cents an hour that will reportedly raise average pay to \$8.22; a \$5 a month increase in single employees' financing of health benefits and a \$10 increase for family coverage; and adoption of a two-tier pay system under which new employees will start at an average of \$1.10 an hour below the top rate for their job and will receive regular progression increases, but will not attain the top rate during the agreement term.

HELP is a joint organization of Service Employees Local 73 and Teamsters Local 743.

Elsewhere in the health care industry, 2,500 doctors, dentists, optometrists, podiatrists, and veterinarians employed by the City of New York were covered by a 3-year contract that provided for a 5-percent salary increase retroactive to July 1, 1984, another 5-percent increase retroactive to July 1, 1985, and a 6-percent increase on July 1, 1986. This will bring the maximum annual salary to \$88,807 for "attending III physicians" with at least 15 years of service. Previously, their maximum was \$72,709.

The contract was negotiated by a Doctors Council and the city's Health and Hospitals Corporation.

### **New York State, University Professions settle**

A round of bargaining between the State of New York and various unions was finally concluded when the United University Professions, an affiliate of the American Federation of Teachers, settled with the university system, ending an impasse of more than 8 months. The other unions had settled

with various State agencies in 1985. (See *Monthly Labor Review*, October 1985, p. 52.)

The 3-year accord for the 17,000 academic and related professional employees provides for 5-percent wage increases in each contract year. The union also joined a new "preferred provider network" that went into operation on January 1, 1986, in an effort to contain rising health care costs.

### **Police officers get arbitrated pay increase**

Police officers in Pittsburgh, PA, received a 4-percent immediate pay increase under a 2-year arbitration award. Resulting annual salaries included \$25,792 for fourth-year

officers, \$28,288 for sergeants, \$30,992 for lieutenants, and \$34,112 for captains. There also is a provision for reopening the contract on wages in 1987.

Other terms for the 1,200 officers, represented by the Fraternal Order of Police, included longevity pay ranging from 2 percent of annual pay after 5 years' service to 8 percent after 35 years; a 10-percent pay differential between the ranks; a \$4 a month city payment into the legal services fund (formerly \$2); and a \$5 a month increase in the city's payment into a supplemental pension fund, bringing the rates to \$20 for each year of service for 20 through 24 years and to \$25 for each additional year.

The award was handed down under a State law permitting arbitration when bargainers cannot reach an agreement. □

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### **Those other workers**

Migrant workers usually have less security of tenure than the local workers. If there are national economic difficulties, and workers have to be dismissed, the migrant workers are likely to have to return home. Their working conditions may be similar to those of others around them, but their housing and entitlement to social services are usually inferior. They are made aware daily that they are in a strange land, and enjoy few of the rights of a citizen.

—INTERNATIONAL LABOR ORGANIZATION

*Working Conditions and Environment:*

*A Worker's Education Manual*

(Washington, International Labor Organization, 1983), p. 44.

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# Book Reviews



## A positive approach

*Economic Statecraft.* By David A. Baldwin. Princeton, NJ, Princeton University Press, 1985. 409 pp. \$12.50 (us), paper.

David Baldwin's aggressively scholarly book should become required reading for anyone making a serious study of economics as an instrument of international politics. Baldwin cites three main purposes in writing this book: (1) to submit the conventional wisdom—that economic instruments are poor instruments of statecraft—to critical review; (2) to stimulate increased awareness of the many forms of economic statecraft; and (3) to develop an analytical framework within which the utility of economic instruments of policy can be discussed. Baldwin is successful to varying degrees at each of these tasks, but it is his excellent handling of the first that makes the book.

The conventional wisdom holds that "economic boycotts never work," "economic 'sticks' do not increase leverage and control over another nation," "sanctions end up making the target country more self-sufficient and strengthening its resolve to continue its policies." These statements are so categorical that one's first suspicion is that they must be, at the very least, overstatements. Indeed, Baldwin's secondary research indicates that close examination of existing case studies finds conflicting evaluations of the efficacy of economic statecraft. His reexamination of several cases widely cited in support of the conventional wisdom convinces the reader that even these "classic" cases are not the definitive evidence against economic statecraft they purport to be. The widely cited "failures" often reflect the analyst's evaluation of the ends of a particular policy, with the specific instruments of that policy fallaciously branded as "ineffective." Baldwin dismisses this confusion of ends and means with the disdain such errors deserve. The perception of policy failure may also reflect an expectation that a narrow economic tool—usually a trade embargo—can be used to effect profound changes in the internal and external behavior of states. Baldwin extends the concept of economic statecraft to include a wider variety of sanctions and rewards and with respect to the conventional literature's preoccupation with single, sweeping goals, reminds the reader that "a given influence attempt may involve multiple goals and targets of varying generality and significance."

Baldwin's third objective, introduction of the basic meth-

ods of social power analysis to the study of instruments of statecraft, is attempted in the second chapter. This is one of the weaker points in this work. I did not feel I came away from this chapter well enough briefed on "modern social power analysis" to meaningfully distinguish it from the simple application of generic critical analysis to the field of economic statecraft.

In the end, Baldwin's point is that economic statecraft is a far subtler discipline than the conventional, oversimplified cases suggest. Rather than ask, did a boycott get Castro to step down, or did an embargo drive Israel to abolish itself, a foreign policy analyst might have to be content asking if costs were imposed by one nation for another's noncompliance with relatively modest policy goals. The important question is whether foreign policy is well served by economic instruments in an environment where, as Baldwin sums up, "targets and goals are usually multiple," "success is usually a matter of degree," "alternatives matter," and "the bases of power are many and varied." Given that the most frequently cited alternatives to economic instruments are military adventures, every serious foreign policy analyst should read *Economic Statecraft*.

—RICHARD M. DEVENS, JR.  
Office of Employment and  
Unemployment Statistics  
Bureau of Labor Statistics

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### Economic growth and development

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Semyonov, Moshe and Noah Lewin-Epstein, "Economic Development, Investment Dependence, and the Rise of Services in Less Developed Nations," *Social Forces*, March 1986, pp. 582–98.

### Health

Haglund, Claudia L. and others, "Out-of-Plan Use of Medicare Enrollees in a Risk-Sharing Health Maintenance Organization," *Health Care Financing Review*, Winter 1985, pp. 39–49.

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McDevitt, Roland and others, "Medicaid Program Characteristics: Effects on Health Care Expenditures and Utilization," *Health Care Financing Review*, Winter 1985, pp. 1-2.

U.S. Department of Health and Human Services, *20 Years of Medicare and Medicaid: A Symposium (1985 Annual Supplement)*. Baltimore, U.S. Department of Health and Human Services, Health Care Financing Administration, Office of Research and Demonstrations, 1985, 132 pp.

### Industrial relations

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Johnson, George E., *Work Rules, Featherbedding, and Pareto-Optimal Union-Management Bargaining*. Cambridge, MA, National Bureau of Economic Research, Inc., 1986, 32 pp. (NBER Working Paper Series, 1820.) \$2, paper.

Krislov, Joseph, "Comparing Two Estimates of Strike Incidence in Kentucky," *Kentucky Economy Review & Perspective*, Fall 1985, pp. 8-10.

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Zieger, Robert H., *American Workers, American Unions, 1920-1985*. Baltimore, MD, The Johns Hopkins University Press, 1986, 233 pp. \$25, cloth; \$9.95, paper.

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Chowdhury, Abdur R., James S. Fackler, W. Douglas McMillin, "Monetary Policy, Fiscal Policy, and Investment Spending: An Empirical Analysis," *Southern Economic Journal*, January 1986, pp. 794-806.

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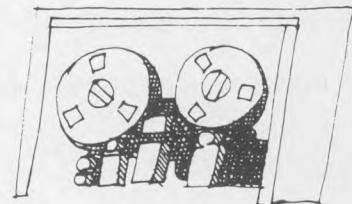
### Productivity and technological change

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# Current Labor Statistics



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Employment situation .....	June 6	May	July 3	June	August 1	July	1; 4-21
Producer Price Index .....	June 13	May	July 11	June	August 15	July	2; 33-35
Consumer Price Index .....	June 20	May	July 23	June	August 21	July	2; 30-32
Real earnings.....	June 20	May	July 23	June	August 21	July	14-17
Major collective bargaining settlements.....			July 28	1st 6 mos.			3; 25-28
Employment Cost Index .....			July 29	2nd qtr.			1-3; 22-24
Productivity and costs: Nonfarm business and manufacturing .....			July 30	2nd qtr.			2; 42-44
Nonfinancial corporations .....					August 27	2nd qtr.	2; 42-44
U.S. Import and Export Price Indexes ..			July 31	2nd qtr.			2; 36-41



## NOTES ON CURRENT LABOR STATISTICS

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

### General notes

The following notes apply to several tables in this section:

**Seasonal adjustment.** Certain monthly and quarterly data are adjusted to eliminate the effect on the data of such factors as climatic conditions, industry production schedules, opening and closing of schools, holiday buying periods, and vacation practices, which might prevent short-term evaluation of the statistical series. Tables containing data that have been adjusted are identified as "seasonally adjusted." (All other data are not seasonally adjusted.) Seasonal effects are estimated on the basis of past experience. When new seasonal factors are computed each year, revisions may affect seasonally adjusted data for several preceding years. (Seasonally adjusted data appear in tables 1-3, 4-10, 13, 14, and 18.) Beginning in January 1980, the BLS introduced two major modifications in the seasonal adjustment methodology for labor force data. First, the data are being seasonally adjusted with a new procedure called  $X-11$  ARIMA, which was developed at Statistics Canada as an extension of the standard  $X-11$  method previously used by BLS. A detailed description of the procedure appears in *The X-11 ARIMA Seasonal Adjustment Method* by Estla Bee Dagum (Statistics Canada, Catalogue No. 12-564E, January 1983). The second change is that seasonal factors are now being calculated for use during the first 6 months of the year, rather than for the entire year, and then are calculated at mid-year for the July-December period. However, revisions of historical data continue to be made only at the end of each calendar year.

Seasonally adjusted labor force data in tables 1 and 4-10 were revised in the February 1986 issue of the *Review*, to reflect experience through 1985.

Annual revisions of the seasonally adjusted payroll data shown in tables 13, 14, and 18 were made in July 1985 using the  $X-11$  ARIMA seasonal adjustment methodology. New seasonal factors for productivity data in table 42 are usually introduced in the September issue. Seasonally adjusted indexes and percent changes from month to month and from quarter to quarter are published for numerous Consumer and Producer Price Index series. However, seasonally adjusted indexes are not published for the U.S. average All Items CPI. Only seasonally adjusted percent changes are available for this series.

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

### Additional information

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

### Symbols

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

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

n.e.c. = not elsewhere classified.

n.e.s. = not elsewhere specified.

## COMPARATIVE INDICATORS (Tables 1-3)

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

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

hours by major industry sector are given using nonagricultural payroll data. The Employment Cost Index (compensation), by major sector and by bargaining status, is chosen from a variety of BLS compensation and wage measures because it provides a comprehensive measure of employer costs for hiring labor, not just outlays for wages, and it is not affected by employment shifts among occupations and industries.

Data on **changes in compensation, prices, and productivity** are presented in table 2. Measures of rates of change of compensation and wages from the Employment Cost Index program are provided for all civilian

nonfarm workers (excluding Federal and household workers) and for all private nonfarm workers. Measures of changes in: consumer prices for all urban consumers; producer prices by stage of processing; and the overall export and import price indexes are given. Measures of productivity (output per hour of all persons) are provided for major sectors.

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

## EMPLOYMENT DATA

(Tables 1; 4–21)

### Household survey data

#### Description of the series

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

#### Definitions

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

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

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

#### Notes on the data

From time to time, and especially after a decennial census, adjustments

#### Notes on the data

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

are made in the Current Population Survey figures to correct for estimating errors during the preceding years. These adjustments affect the comparability of historical data. A description of these adjustments and their effect on the various data series appear in the Explanatory Notes of *Employment and Earnings*.

Data in tables 4–10 are seasonally adjusted, based on the seasonal experience through December 1984.

#### Additional sources of information

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

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

### Establishment survey data

#### Description of the series

EMPLOYMENT, HOURS, AND EARNINGS DATA in this section are compiled from payroll records reported monthly on a voluntary basis to the Bureau of Labor Statistics and its cooperating State agencies by more than 200,000 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 blue-collar worker supervisors and all nonsupervisory workers closely associated with production operations. Those workers mentioned in tables 12–16 include production workers in manufacturing and mining; construction workers in construction; and nonsupervisory workers in the following industries: transportation and public utilities; wholesale and retail trade; finance, insurance, and real estate; and services. These groups account for about four-fifths of the total employment on private nonagricultural payrolls.

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

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

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

### Notes on the data

Establishment data collected by the Bureau of Labor Statistics are periodically adjusted to comprehensive counts of employment (called "benchmarks"). The latest complete adjustment was made with the release of May 1985 data, published in the July 1985 issue of the *Review*. Consequently, data published in the *Review* prior to that issue are not necessarily comparable to current data. Unadjusted data have been revised back to April 1983; seasonally adjusted data have been revised back to January 1980. These revisions were published in the *Supplement to Employment and Earnings* (Bureau of Labor Statistics, 1985). Unadjusted data from April 1984 forward, and seasonally adjusted data from January 1981 forward are subject to revision in future benchmarks.

## COMPENSATION AND WAGE DATA

(Tables 1–3; 22–29)

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

### Employment Cost Index

#### Description of the series

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

#### Additional sources of information

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

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

### Unemployment data by State

#### Description of the series

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

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

#### Notes on the data

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

#### Additional sources of information

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

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

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

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

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

Fixed employment weights from the 1970 Census of Population are used each quarter to calculate the indexes for civilian, private, and State and local governments. 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 1970 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 costs for employee benefits.

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

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

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

## Notes on the data

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

## Additional sources of information

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

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

## Collective bargaining settlements

### Description of the series

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

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

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

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

## Definitions

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

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

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

## Notes on the data

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

## Additional sources of information

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

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

## Work stoppages

### Description of the series

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

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

### Definitions

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

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

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

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

### Notes on the data

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

### Additional sources of information

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

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

## Other compensation data

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

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

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

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

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

## PRICE DATA

(Tables 2; 30-41)

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

## Consumer Price Indexes

### Description of the series

The **Consumer Price Index (CPI)** is a measure of the average change in the prices paid by urban consumers for a fixed market basket of goods and services. The CPI is calculated monthly for two population groups, one consisting only of urban households whose primary source of income is derived from the employment of wage earners and clerical workers, and the other consisting of all urban households. The wage earner index (CPI-W) is a continuation of the historic index that was introduced well over a half-century ago for use in wage negotiations. As new uses were developed for the CPI in recent years, the need for a broader and more representative index became apparent. The all urban consumer index (CPI-U) introduced in 1978 is representative of the 1972-73 buying habits of about 80 percent of the noninstitutional population of the United States at that time, compared with 40 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 24,000 retail establishments and 24,000 tenants in 85 urban areas across the country are used to develop the "U.S. city average." Separate estimates for 28 major urban centers are presented in table 31. The areas listed are as indicated in footnote 1 to the table. The area indexes measure only the average change in prices for each area since the base period, and do not indicate differences in the level of prices among cities.

### Notes on the data

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

asset-price approach to homeownership costs for that series. In January 1985, the same change was made in the CPI-w. The central purpose of the change was to separate shelter costs from the investment component of homeownership so that the index would reflect only the cost of shelter services provided by owner-occupied homes.

### Additional sources of information

For a discussion of the general method for computing the CPI, see *BLS Handbook of Methods, Volume II, The Consumer Price Index*, Bulletin 2134-2 (Bureau of Labor Statistics, 1984). The recent change in the measurement of homeownership costs is discussed in Robert Gillingham and Walter Lane, "Changing the treatment of shelter costs for homeowners in the CPI," *Monthly Labor Review*, June 1982, pp. 9-14.

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

## Producer price indexes

### Description of the series

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

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

Since January 1976, price changes for the various commodities have been averaged together with implicit quantity weights representing their importance in the total net selling value of all commodities as of 1972. The detailed data are aggregated to obtain indexes for stage-of-processing groupings, commodity groupings, durability-of-product groupings, and a number of special composite groups. All Producer Price Index data are subject to revision 4 months after original publication.

### Notes on the data

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

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

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

### Additional sources of information

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

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

## International price indexes

### Description of the series

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

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

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

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

### Notes on the data

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

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

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

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

## PRODUCTIVITY DATA

(Tables 2; 42-47)

### U. S. productivity and related data

#### Description of the series

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

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

#### Definitions

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

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

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

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

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

#### Additional sources of information

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

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

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

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

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

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

#### Notes on the data

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

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

#### Additional sources of information

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

## International comparisons

### Description of the series

Comparative measures of labor force, employment, and unemployment (tables 45 and 46) are prepared regularly for the United States, Canada, Australia, Japan, France, Germany, Great Britain, Italy, the Netherlands, and Sweden. Unemployment rates, approximating U.S. concepts, are prepared monthly for most of the countries; the other measures, annually.

The Bureau of Labor Statistics also prepares international comparisons of manufacturing labor productivity and labor costs (table 47) that cover the United States and 11 foreign countries—those listed above plus Belgium and Norway. These measures are limited to trend comparisons; that is, intercountry series of changes over time, rather than level comparisons because reliable international comparisons of the levels of manufacturing are unavailable. The U.S. measures are described in the notes on U.S. productivity measurement; the measures for foreign countries are compiled from various national and international data sources.

### Definitions

**Output** measures are constant value output (value added) from the national accounts of each country, except for those for Japan prior to 1970 and for the Netherlands for 1969 forward, which are indexes of industrial production. The national accounting methods for measuring real output differ considerably among the 12 countries, but the use of different procedures does not, in itself, connote lack of comparability—rather, it reflects differences among countries in the availability and reliability of underlying data series.

**Hours and compensation** measures refer to all employed persons including the self-employed in the United States and Canada, and to all wage and salary employees in the other countries. *Hours* refer to hours *paid* in the United States, hours *worked* in the other countries. *Compensation (labor costs)* includes not only all payments made directly to employees and employer expenditures for social insurance and private benefit plans, but changes in significant employment or payroll taxes that are not compensation to employees but are labor costs to employers (France, Sweden, and the United Kingdom). Self-employed workers are included in the U.S. and

Canadian figures by assuming that their hourly compensation is equal to the average for wage and salary employees.

### Notes on the data

The data for the foreign countries in tables 45 and 46 have been adjusted, where necessary, for greater comparability with U.S. definitions of employment and unemployment. The adjusted statistics have been adapted to the age at which compulsory schooling ends in each country. Therefore, the adjusted statistics relate to the civilian population age 16 and over in the United States, France, and Sweden, and from 1973 forward, Great Britain; 15 and over in Canada, Australia, Japan, Germany, and the Netherlands; and 14 and over in Italy. Prior to 1973, the data for Great Britain related to persons age 15 and over. The institutional population is included in the denominator of the labor force participation rates and employment-population ratios for Japan and Germany.

For most of the countries in table 47, the measures refer to total manufacturing as defined by the International Standard Industrial Classification. However, the measures for France (beginning 1959), Italy (beginning 1970), and the United Kingdom (beginning 1976) refer to manufacturing and mining less energy-related products. For all countries, manufacturing includes the activities of government enterprises.

In addition, for all countries, preliminary estimates for recent years are generally based on current indicators of manufacturing output, employment and hours, and hourly compensation until national accounts and other statistics used for the long-term measures become available.

### 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. Additional detail is also found in the *BLS Handbook of Methods*, Bulletin 2134-1 (Bureau of Labor Statistics, 1982), chapter 16. Additional international comparison statistics are available in the *Handbook of Labor Statistics*, Bulletin 2217 (Bureau of Labor Statistics, 1985). The most recent statistics are presented and analyzed annually in the *Monthly Labor Review*, typically in the December issue (for the previous year) and in February.

## OCCUPATIONAL INJURY AND ILLNESS DATA

(Table 48)

### Description of the series

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

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

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

The survey is based on stratified random sampling with a Neyman

allocation and a ratio estimator. The characteristics used to stratify the establishments are the Standard Industrial Classification (SIC) code and size of employment.

### Definitions

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

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

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

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

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



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

**Lost workdays—restricted work activity** are the number of workdays (consecutive or not) on which, because of injury or illness: (1) the employee was assigned to another job on a temporary basis; or (2) the 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 Occupational Safety and Health Statistics.

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

### Additional sources of information

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

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

## 1. Labor market indicators

Selected indicators	1984	1985	1984			1985				1986
			II	III	IV	I	II	III	IV	I
<b>Employment data</b>										
Employment status of the civilian noninstitutionalized population (household survey) <sup>1</sup>										
Labor Force participation rate .....	64.4	64.8	64.5	64.4	64.5	64.8	64.7	64.7	64.9	65.1
Employment-population ratio .....	59.5	60.1	59.6	59.7	59.8	60.1	60.0	60.1	60.4	60.5
Unemployment rate .....	7.5	7.2	7.5	7.4	7.2	7.3	7.3	7.2	7.0	7.1
Men .....	7.4	7.0	7.4	7.3	7.1	7.1	7.1	7.0	6.9	6.8
16 to 24 years .....	14.4	14.1	14.3	14.5	13.8	14.1	14.2	14.0	14.0	13.3
25 years and over .....	5.7	5.3	5.7	5.5	5.4	5.4	5.4	5.3	5.2	5.3
Women .....	7.6	7.4	7.6	7.6	7.5	7.6	7.5	7.4	7.2	7.3
16 to 24 years .....	13.3	13.0	13.5	13.1	12.9	13.1	13.0	12.7	13.1	13.2
25 years and over .....	6.0	5.9	5.9	6.0	5.9	6.0	6.0	5.9	5.5	5.7
Unemployment rate, 15 weeks and over .....	2.4	2.0	2.5	2.3	2.1	2.0	2.0	2.0	1.9	1.9
Employment, nonagricultural (payroll data): <sup>2</sup>										
Total .....	94,461	97,699	94,013	94,915	95,849	96,640	97,338	97,967	98,815	-
Private sector .....	78,477	81,404	78,082	78,896	79,745	80,522	81,143	81,588	82,321	-
Goods-producing .....	24,730	25,057	24,680	24,861	24,973	25,077	25,055	24,986	25,098	-
Manufacturing .....	19,412	19,426	19,394	19,509	19,564	19,564	19,430	19,331	19,384	-
Service-producing .....	69,731	72,643	69,333	70,055	70,876	71,563	72,283	72,981	73,717	-
Average hours										
Private sector .....	35.3	35.1	35.3	35.3	35.2	35.1	35.1	35.1	35.1	-
Manufacturing .....	40.7	40.5	40.8	40.5	40.5	40.4	40.3	40.5	40.8	-
Overtime .....	3.4	3.3	3.5	3.5	3.6	3.4	3.3	3.2	3.4	3.6
<b>Employment Cost Index</b>										
Percent change in the ECI, compensation: <sup>3</sup>										
All workers (excluding farm, household, and Federal workers) .....	-	-	.8	1.3	1.2	1.3	.7	1.6	.6	1.1
Private industry workers .....	-	-	.9	.8	1.3	1.2	.8	1.3	.6	1.1
Goods-producing <sup>4</sup> .....	-	-	.9	.9	1.1	1.5	.7	.6	.6	1.1
Servicing-producing <sup>4</sup> .....	-	-	1.0	.7	1.4	1.0	1.0	1.8	.5	1.1
State and local government workers .....	-	-	.4	3.5	1.0	1.2	.2	3.4	.7	1.0
Workers by bargaining status (private industry)										
Union .....	-	-	.9	.7	1.1	.7	.6	.8	.5	1.0
Nonunion .....	-	-	1.0	.9	1.3	1.6	1.0	1.4	.6	1.2

<sup>1</sup> Quarterly data seasonally adjusted.

<sup>2</sup> Data for final quarter are preliminary.

<sup>3</sup> Quarterly changes calculated using the last month of each quarter.

<sup>4</sup> Goods-producing industries include mining, construction, and manufacturing. Service-producing industries include all other private sector industries.

- Data not available.

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

Selected measures	1984	1985	1984			1985				1986
			II	III	IV	I	II	III	IV	
<b>Compensation data:</b> <sup>1, 2</sup>										
Employment Cost Index--Compensation (wages, salaries, benefits)										
Civilian nonfarm .....	-	-	0.8	1.3	1.2	1.3	0.7	1.6	0.6	1.1
Private nonfarm .....	-	-	.9	.8	1.3	1.2	.8	1.3	.6	1.1
Employment Cost Index--Wages and Salaries										
Civilian nonfarm .....	-	-	.8	1.3	1.2	1.2	.9	1.7	.6	1.0
Private nonfarm .....	-	-	.9	.8	1.2	1.2	1.1	1.3	.6	1.0
<b>Price data</b> <sup>1</sup>										
Consumer Price Index (All urban consumers): All items .....	4.0	3.8	1.1	1.2	.3	1.0	1.1	.7	.9	-4
Producer Price Index										
Finished goods .....	1.7	1.8	-2	-5	.9	.0	.7	-1.4	2.5	-3.1
Finished consumer goods .....	1.6	1.5	-3	-5	.8	-3	.7	-1.4	2.5	-4.0
Capital equipment .....	1.8	2.7	.5	-5	1.1	1.3	.4	-1.4	2.5	.2
Intermediate materials, supplies, components .....	1.3	-3	.6	-4	-1	-4	.2	-5	.4	-3.0
Crude materials .....	-1.6	-5.6	-1.7	-2.0	-1.2	-3.1	-2.1	-4.5	4.3	-7.7
U.S. Export Price Index .....	-	-	-	-	-	-	-	-	-	-
U.S. Import Price Index .....	-	-	-	-	-	-	-	-	-	-
<b>Productivity data</b> <sup>1</sup>										
Output per hour of all persons:										
Business sector .....	4.0	.2	4.5	1.0	.0	1.3	.7	2.1	-4.0	2.5
Nonfarm business sector <sup>3</sup> .....	3.0	-6	3.9	-5	-5	1.1	-2	.5	-4.7	3.4
Nonfinancial corporations .....	4.2	-4	5.0	-8	-3	-2	-1.1	3.2	-2.3	-

<sup>1</sup> 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. Productivity data are seasonally adjusted.

<sup>2</sup> Excludes Federal and private household workers.

<sup>3</sup> Output per hour of all employees.  
- Data not available.

## 3. Alternative measures of wage and compensation changes

Components	Quarterly average						Four quarters ended in--					
	1984	1985				1986	1984	1985				1986
	IV	I	II	III	IV	I	IV	I	II	III	IV	I
Average hourly compensation: <sup>1</sup>												
All persons, business sector .....	-	-	-	-	-	-	-	-	-	-	-	-
All employees, nonfarm business sector .....	-	-	-	-	-	-	-	-	-	-	-	-
Hourly earnings Index: <sup>2</sup>												
All private nonfarm .....	-	-	-	-	-	-	-	-	-	-	-	-
Employment Cost Index--compensation:												
Civilian nonfarm <sup>3</sup> .....	1.2	1.3	0.7	1.6	0.6	1.1	5.2	4.8	4.6	4.9	4.3	4.1
Private nonfarm .....	1.3	1.2	.8	1.3	.6	1.1	4.9	4.4	4.2	4.7	3.9	3.8
Union .....	1.1	.7	.6	.8	.5	1.0	4.3	3.5	3.1	3.2	2.6	2.9
Nonunion .....	1.3	1.6	1.0	1.4	.6	1.2	5.2	4.9	4.9	5.4	4.6	4.2
State and local governments .....	1.0	1.2	.2	3.4	.7	1.0	6.6	6.3	6.1	6.0	5.7	5.5
Employment Cost Index--wages and salaries:												
Civilian nonfarm <sup>3</sup> .....	1.2	1.2	.9	1.7	.6	1.0	4.5	4.4	4.5	5.0	4.4	4.2
Private nonfarm .....	1.2	1.2	1.1	1.3	.6	1.0	4.1	4.1	4.3	4.8	4.1	3.9
Union .....	.9	.7	1.1	.9	.5	.7	3.4	3.0	3.4	3.6	3.1	3.2
Nonunion .....	1.3	1.4	1.1	1.5	.6	1.1	4.5	4.6	4.8	5.4	4.6	4.3
State and local governments .....	.8	1.0	.2	3.5	.8	1.0	5.9	5.6	5.5	5.6	5.6	5.5
Total effective wage adjustments <sup>4</sup>	.7	.7	.8	1.2	.5	.6	3.7	3.6	3.5	3.5	3.3	3.1
From current settlements .....	.3	.1	.2	.2	.1	.0	.8	.7	.9	.9	.7	-
From prior settlements .....	.2	.6	.5	.5	.2	.4	2.0	2.2	1.9	1.8	1.8	1.7
From cost-of-living provision .....	.2	.1	.1	.4	.1	.2	.9	.7	.7	.8	.7	.8
Negotiated wage adjustments from settlements <sup>4</sup>												
First-year adjustments .....	2.3	3.3	2.5	2.0	2.1	.8	2.4	2.4	2.4	2.4	2.3	2.0
Annual rate over life of contract .....	1.5	3.2	2.8	3.1	1.9	1.6	2.4	2.3	2.4	2.5	2.7	2.5
Negotiated wage and benefit adjustments from settlements: <sup>5</sup>												
First-year adjustment .....	3.7	3.6	3.5	2.0	2.0	.3	3.6	3.4	3.4	3.1	2.7	2.3
Annual rate over life of contract .....	2.0	2.7	3.4	3.0	1.4	1.2	2.8	2.6	2.7	2.7	2.8	2.6

<sup>1</sup> Seasonally adjusted.

<sup>2</sup> Production or nonsupervisory workers.

<sup>3</sup> Excludes Federal and household workers.

<sup>4</sup> Limited to major collective bargaining units of 1,000 workers or more. The

most recent data are preliminary.

<sup>5</sup> Limited to major collective bargaining units of 5,000 workers or more. The most recent data are preliminary.

- Data not available.

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

(Number in thousands)

Employment status	Annual average		1985										1986			
	1984	1985	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	
<b>TOTAL</b>																
Noninstitutional population <sup>1, 2</sup> .....	178,080	179,912	179,501	179,649	179,798	179,967	180,131	180,304	180,470	180,642	180,810	181,361	181,512	181,678	181,843	
Labor force <sup>2</sup> .....	115,241	117,167	116,958	117,044	116,726	116,976	117,069	117,522	117,814	117,832	117,927	118,477	118,779	118,900	118,929	
Participation rate <sup>3</sup> .....	64.7	65.1	65.2	65.2	64.9	65.0	65.0	65.2	65.3	65.2	65.2	65.3	65.4	65.4	65.4	
Total employed <sup>2</sup> .....	106,702	108,856	108,574	108,644	108,303	108,575	108,936	109,251	109,513	109,671	109,904	110,646	110,252	110,481	110,587	
Employment-population ratio <sup>4</sup> .....	59.9	60.5	60.5	60.5	60.2	60.3	60.5	60.6	60.7	60.7	60.8	61.0	60.7	60.8	60.8	
Resident Armed Forces <sup>1</sup> .....	1,697	1,706	1,702	1,705	1,702	1,704	1,726	1,732	1,700	1,702	1,698	1,691	1,691	1,693	1,695	
Civilian employed .....	105,005	107,150	106,872	106,939	106,601	106,871	107,210	107,519	107,813	107,969	108,206	108,955	108,561	108,788	108,892	
Agriculture .....	3,321	3,179	3,353	3,284	3,140	3,120	3,095	3,017	3,058	3,070	3,151	3,299	3,096	3,285	3,222	
Nonagricultural industries .....	101,685	103,971	103,519	103,655	103,461	103,751	104,115	104,502	104,755	104,899	105,055	105,655	105,465	105,503	105,670	
Unemployed .....	8,539	8,312	8,384	8,400	8,423	8,401	8,133	8,271	8,301	8,161	8,023	7,831	8,527	8,419	8,342	
Unemployment rate <sup>5</sup> .....	7.4	7.1	7.2	7.2	7.2	7.2	6.9	7.0	7.0	6.9	6.8	6.6	7.2	7.1	7.0	
Not in labor force .....	62,839	62,744	62,543	62,605	63,072	62,991	63,062	62,782	62,656	62,810	62,883	62,885	62,733	62,778	62,914	
<b>Men, 16 years and over</b>																
Noninstitutional population <sup>1, 2</sup> .....	85,156	86,025	85,827	85,898	85,970	86,052	86,132	86,217	86,293	86,374	86,459	86,882	86,954	87,035	87,120	
Labor force <sup>2</sup> .....	65,386	65,967	65,929	66,012	65,808	65,884	65,945	66,074	66,227	66,176	66,139	66,679	66,838	66,864	66,757	
Participation rate <sup>3</sup> .....	76.8	76.7	76.8	76.8	76.5	76.6	76.6	76.6	76.7	76.6	76.5	76.7	76.9	76.8	76.6	
Total employed <sup>2</sup> .....	60,642	61,447	61,373	61,498	61,175	61,273	61,510	61,629	61,656	61,731	61,793	62,458	62,243	62,288	62,254	
Employment-population ratio <sup>4</sup> .....	71.2	71.4	71.5	71.6	71.2	71.2	71.4	71.5	71.4	71.5	71.5	71.9	71.6	71.6	71.5	
Resident Armed Forces <sup>1</sup> .....	1,551	1,556	1,553	1,556	1,552	1,554	1,574	1,580	1,551	1,552	1,549	1,539	1,539	1,540	1,541	
Civilian employed .....	59,091	59,891	59,820	59,942	59,623	59,719	59,936	60,049	60,105	60,179	60,244	60,919	60,704	60,748	60,713	
Unemployed .....	4,744	4,521	4,556	4,514	4,633	4,611	4,435	4,445	4,571	4,445	4,346	4,221	4,595	4,577	4,503	
Unemployment rate <sup>5</sup> .....	7.3	6.9	6.9	6.8	7.0	7.0	6.7	6.7	6.9	6.7	6.6	6.3	6.9	6.8	6.7	
<b>Women, 16 years and over</b>																
Noninstitutional population <sup>1, 2</sup> .....	92,924	93,886	93,674	93,751	93,828	93,915	93,999	94,087	94,177	94,266	94,351	94,479	94,558	94,643	94,723	
Labor force <sup>2</sup> .....	49,855	51,200	51,029	51,032	50,918	51,092	51,124	51,448	51,587	51,655	51,788	51,797	51,941	52,036	52,172	
Participation rate <sup>3</sup> .....	53.7	54.5	54.5	54.4	54.3	54.4	54.4	54.7	54.8	54.8	54.9	54.8	54.9	55.0	55.1	
Total employed <sup>2</sup> .....	46,061	47,409	47,201	47,146	47,128	47,302	47,426	47,622	47,857	47,939	48,111	48,187	48,009	48,194	48,333	
Employment-population ratio <sup>4</sup> .....	49.6	50.5	50.4	50.3	50.2	50.4	50.5	50.6	50.8	50.9	51.0	51.0	50.8	50.9	51.0	
Resident Armed Forces <sup>1</sup> .....	146	150	149	149	150	150	152	152	149	149	149	152	152	153	154	
Civilian employed .....	45,915	47,259	47,052	46,997	46,978	47,152	47,274	47,470	47,708	47,790	47,962	48,035	47,857	48,041	48,179	
Unemployed .....	3,794	3,791	3,828	3,886	3,790	3,790	3,698	3,826	3,730	3,716	3,677	3,610	3,932	3,842	3,839	
Unemployment rate <sup>5</sup> .....	7.6	7.4	7.5	7.6	7.4	7.4	7.2	7.4	7.2	7.2	7.1	7.0	7.6	7.4	7.4	

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

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

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

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

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

**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		1985									1986			
	1984	1985	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.
<b>TOTAL</b>															
Civilian noninstitutional population <sup>1</sup>	176,383	178,206	177,799	177,944	178,096	178,263	178,405	178,572	178,770	178,940	179,112	179,670	179,821	179,985	180,148
Civilian labor force	113,544	115,461	115,256	115,339	115,024	115,272	115,343	115,790	116,114	116,130	116,229	116,786	117,088	117,207	117,234
Participation rate	64.4	64.8	64.8	64.8	64.6	64.7	64.7	64.8	65.0	64.9	64.9	65.1	65.1	65.1	65.1
Employed	105,005	107,150	106,872	106,939	106,601	106,871	107,210	107,519	107,813	107,969	108,206	108,955	108,561	108,788	108,892
Employment-population ratio <sup>2</sup>	59.5	60.1	60.1	60.1	59.9	60.0	60.1	60.2	60.3	60.3	60.4	60.6	60.4	60.4	60.4
Unemployed	8,539	8,312	8,384	8,400	8,423	8,401	8,133	8,271	8,301	8,161	8,023	7,831	8,527	8,419	8,342
Unemployment rate	7.5	7.2	7.3	7.3	7.3	7.3	7.1	7.1	7.1	7.0	6.9	6.7	7.3	7.2	7.1
Not in labor force	62,839	62,744	62,543	62,605	63,072	62,991	63,062	62,782	62,656	62,810	62,883	62,885	62,733	62,778	62,914
<b>Men, 20 years and over</b>															
Civilian noninstitutional population <sup>1</sup>	76,219	77,195	76,988	77,068	77,135	77,243	77,306	77,389	77,498	77,566	77,651	78,101	78,171	78,236	78,309
Civilian labor force	59,701	60,277	60,165	60,240	60,246	60,158	60,269	60,407	60,526	60,553	60,548	61,212	61,183	61,268	61,053
Participation rate	78.3	78.1	78.1	78.2	78.1	77.9	78.0	78.1	78.1	78.1	78.0	78.4	78.3	78.3	78.0
Employed	55,769	56,562	56,390	56,544	56,384	56,403	56,636	56,751	56,849	56,897	56,982	57,706	57,384	57,459	57,391
Employment-population ratio <sup>2</sup>	73.2	73.3	73.2	73.4	73.1	73.0	73.3	73.3	73.4	73.4	73.4	73.9	73.4	73.4	73.3
Agriculture	2,418	2,278	2,358	2,352	2,260	2,230	2,231	2,171	2,188	2,210	2,278	2,349	2,258	2,411	2,347
Nonagricultural industries	53,351	54,284	54,032	54,192	54,124	54,173	54,405	54,580	54,661	54,687	54,704	55,356	55,127	55,048	55,043
Unemployed	3,932	3,715	3,775	3,696	3,862	3,755	3,633	3,656	3,677	3,656	3,566	3,507	3,799	3,809	3,663
Unemployment rate	6.6	6.2	6.3	6.1	6.4	6.2	6.0	6.1	6.1	6.0	5.9	5.7	6.2	6.2	6.0
<b>Women, 20 years and over</b>															
Civilian noninstitutional population <sup>1</sup>	85,429	86,506	86,274	86,380	86,477	86,575	86,652	86,727	86,810	86,901	86,988	87,112	87,185	87,263	87,355
Civilian labor force	45,900	47,283	47,103	47,082	47,185	47,190	47,340	47,558	47,663	47,713	47,870	47,895	47,921	47,952	48,107
Participation rate	53.7	54.7	54.6	54.5	54.5	54.5	54.6	54.8	54.9	54.9	55.0	55.0	55.0	55.0	55.1
Employed	42,793	44,154	43,925	43,883	44,033	44,070	44,197	44,363	44,609	44,656	44,882	44,980	44,710	44,797	45,009
Employment-population ratio <sup>2</sup>	50.1	51.0	50.9	50.8	50.9	50.9	51.0	51.2	51.4	51.4	51.6	51.6	51.3	51.3	51.5
Agriculture	595	596	633	600	572	596	581	557	609	591	597	696	593	598	576
Nonagricultural industries	42,198	43,558	43,292	43,283	43,461	43,474	43,616	43,806	44,000	44,065	44,285	44,284	44,117	44,199	44,433
Unemployed	3,107	3,129	3,178	3,199	3,152	3,120	3,143	3,195	3,054	3,057	2,988	2,915	3,211	3,155	3,097
Unemployment rate	6.8	6.6	6.7	6.8	6.7	6.6	6.6	6.7	6.4	6.4	6.2	6.1	6.7	6.6	6.4
<b>Both sexes, 16 to 19 years</b>															
Civilian noninstitutional population <sup>1</sup>	14,735	14,506	14,538	14,496	14,483	14,445	14,448	14,456	14,463	14,472	14,474	14,458	14,465	14,485	14,484
Civilian labor force	7,943	7,901	7,988	8,017	7,593	7,924	7,734	7,825	7,925	7,864	7,811	7,678	7,984	7,987	8,074
Participation rate	53.9	54.5	54.9	55.3	52.4	54.9	53.5	54.1	54.8	54.3	54.0	53.1	55.2	55.1	55.7
Employed	6,444	6,434	6,557	6,512	6,184	6,398	6,377	6,405	6,355	6,416	6,342	6,269	6,467	6,532	6,492
Employment-population ratio <sup>2</sup>	43.7	44.4	45.1	44.9	42.7	44.3	44.1	44.3	43.9	44.3	43.8	43.4	44.7	45.1	44.8
Agriculture	309	305	362	332	308	294	283	289	261	269	276	254	246	276	298
Nonagricultural industries	6,135	6,129	6,195	6,180	5,876	6,104	6,094	6,116	6,094	6,147	6,066	6,015	6,221	6,256	6,194
Unemployed	1,499	1,468	1,431	1,505	1,409	1,526	1,357	1,420	1,570	1,448	1,469	1,409	1,517	1,455	1,582
Unemployment rate	18.9	18.6	17.9	18.8	18.6	19.3	17.5	18.1	19.8	18.4	18.8	18.4	19.0	18.2	19.6
<b>White</b>															
Civilian noninstitutional population <sup>1</sup>	152,347	153,679	153,388	153,489	153,597	153,717	153,819	153,938	154,082	154,203	154,327	154,784	154,889	155,005	155,122
Civilian labor force	98,492	99,926	99,718	99,771	99,527	99,705	99,817	100,179	100,533	100,478	100,533	100,961	101,232	101,248	101,249
Participation rate	64.6	65.0	65.0	65.0	64.8	64.9	64.9	65.1	65.2	65.2	65.1	65.2	65.4	65.3	65.3
Employed	92,120	93,736	93,470	93,574	93,132	93,378	93,684	94,055	94,369	94,507	94,585	95,165	94,803	94,958	95,081
Employment-population ratio <sup>2</sup>	60.5	61.0	60.9	61.0	60.6	60.7	60.9	61.1	61.2	61.3	61.3	61.5	61.2	61.3	61.3
Unemployed	6,372	6,191	6,248	6,197	6,395	6,327	6,133	6,124	6,164	5,971	5,948	5,796	6,429	6,290	6,168
Unemployment rate	6.5	6.2	6.3	6.2	6.4	6.3	6.1	6.1	6.1	5.9	5.9	5.7	6.4	6.2	6.1
<b>Black</b>															
Civilian noninstitutional population <sup>1</sup>	19,348	19,664	19,594	19,620	19,646	19,675	19,700	19,728	19,761	19,790	19,819	19,837	19,863	19,889	19,916
Civilian labor force	12,033	12,364	12,364	12,372	12,317	12,354	12,289	12,378	12,412	12,457	12,522	12,548	12,545	12,656	12,740
Participation rate	62.2	62.9	63.1	63.1	62.7	62.8	62.4	62.7	62.8	62.9	63.2	63.3	63.2	63.6	64.0
Employed	10,119	10,501	10,489	10,466	10,538	10,499	10,560	10,500	10,566	10,518	10,657	10,737	10,690	10,791	10,856
Employment-population ratio <sup>2</sup>	52.3	53.4	53.5	53.3	53.6	53.4	53.6	53.2	53.5	53.1	53.8	54.1	53.8	54.3	54.5
Unemployed	1,914	1,864	1,875	1,906	1,779	1,855	1,729	1,878	1,846	1,939	1,865	1,810	1,855	1,865	1,884
Unemployment rate	15.9	15.1	15.2	15.4	14.4	15.0	14.1	15.2	14.9	15.6	14.9	14.4	14.8	14.7	14.8

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		1985									1986			
	1984	1985	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.
<b>Hispanic origin</b>															
Civilian noninstitutional population <sup>1</sup> .....	11,478	11,915	11,826	11,862	11,897	11,933	11,969	12,004	12,040	12,075	12,111	12,148	12,184	12,219	12,255
Civilian labor force .....	7,451	7,698	7,607	7,616	7,669	7,713	7,781	7,844	7,854	7,782	7,772	7,787	7,943	7,920	7,975
Participation rate .....	64.9	64.6	64.3	64.2	64.5	64.6	65.0	65.3	65.2	64.4	64.2	64.1	65.2	64.8	65.1
Employed .....	6,651	6,888	6,814	6,806	6,856	6,870	6,973	7,026	6,982	6,953	6,962	6,998	6,969	7,105	7,144
Employment-population ratio <sup>2</sup> .....	57.9	57.8	57.6	57.4	57.6	57.6	58.3	58.5	58.0	57.6	57.5	57.6	57.2	58.2	58.3
Unemployed .....	800	811	793	810	813	843	808	818	872	829	810	789	974	815	832
Unemployment rate .....	10.7	10.5	10.4	10.6	10.6	10.9	10.4	10.4	11.1	10.7	10.4	10.1	12.3	10.3	10.4

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

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

because data for the "other races" groups are not presented and Hispanics are included in both the white and black population groups.

NOTE: Detail for the above race and Hispanic-origin groups will not sum to totals

**6. Selected employment indicators, monthly data seasonally adjusted**

(In thousands)

Selected categories	Annual average		1985									1986			
	1984	1985	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.
<b>CHARACTERISTIC</b>															
Civilian employed, 16 years and over .....	105,005	107,150	106,872	106,939	106,601	106,871	107,210	107,519	107,813	107,969	108,206	108,955	108,561	108,788	108,892
Men .....	59,091	59,891	59,820	59,942	59,623	59,719	59,936	60,049	60,105	60,179	60,244	60,919	60,704	60,748	60,713
Women .....	45,915	47,259	47,052	46,997	46,978	47,152	47,274	47,470	47,708	47,790	47,962	48,035	47,857	48,041	48,179
Married men, spouse present ..	39,056	39,248	39,362	39,260	38,966	39,096	39,142	39,103	39,272	39,314	39,278	39,615	39,382	39,365	39,555
Married women, spouse present .....	25,636	26,336	26,087	26,036	26,174	26,316	26,392	26,531	26,702	26,721	26,804	26,958	26,593	26,656	26,802
Women who maintain families ..	5,465	5,597	5,603	5,626	5,643	5,607	5,627	5,556	5,514	5,605	5,693	5,702	5,733	5,771	5,812
<b>MAJOR INDUSTRY AND CLASS OF WORKER</b>															
<b>Agriculture:</b>															
Wage and salary workers .....	1,555	1,535	1,653	1,582	1,530	1,479	1,456	1,438	1,465	1,537	1,572	1,673	1,519	1,689	1,587
Self-employed workers .....	1,553	1,458	1,493	1,498	1,451	1,474	1,444	1,414	1,436	1,361	1,409	1,492	1,444	1,453	1,475
Unpaid family workers .....	213	185	219	196	159	170	176	179	172	158	164	163	156	172	180
<b>Nonagricultural industries:</b>															
Wage and salary workers .....	93,565	95,871	95,493	95,660	95,391	95,523	95,791	96,546	96,530	96,676	96,921	97,911	97,516	97,698	97,831
Government .....	15,770	16,031	15,955	15,936	16,000	15,949	16,075	16,145	16,213	16,157	16,194	16,418	16,104	16,095	16,187
Private industries .....	77,794	79,841	79,538	79,724	79,391	79,574	79,716	80,401	80,317	80,519	80,727	81,494	81,412	81,604	81,643
Private households .....	1,238	1,249	1,218	1,255	1,228	1,251	1,295	1,266	1,271	1,197	1,131	1,256	1,197	1,213	1,321
Other .....	76,556	78,592	78,320	78,469	78,163	78,323	78,421	79,135	79,046	79,322	79,596	80,238	80,216	80,390	80,322
Self-employed workers .....	7,785	7,811	7,717	7,711	7,728	7,724	7,874	7,846	7,991	8,013	7,903	7,655	7,669	7,644	7,571
Unpaid family workers .....	335	289	305	290	292	277	303	266	248	249	250	273	270	240	253
<b>PERSONS AT WORK PART TIME<sup>1</sup></b>															
<b>All industries:</b>															
Part time for economic reasons ..	5,744	5,590	5,690	5,876	5,544	5,596	5,680	5,554	5,475	5,498	5,494	5,543	5,377	5,538	5,923
Slack work .....	2,430	2,430	2,567	2,607	2,524	2,414	2,480	2,433	2,251	2,306	2,303	2,364	2,369	2,330	2,603
Could only find part-time work ..	2,948	2,819	2,767	2,871	2,751	2,766	2,835	2,815	2,897	2,883	2,864	2,883	2,703	2,953	2,974
Voluntary part time .....	13,169	13,489	13,356	13,078	13,439	13,634	13,822	13,496	13,713	13,645	13,556	13,958	13,817	13,754	13,933
<b>Nonagricultural industries:</b>															
Part time for economic reasons ..	5,512	5,334	5,402	5,550	5,278	5,328	5,413	5,299	5,241	5,295	5,294	5,275	5,158	5,301	5,621
Slack work .....	2,291	2,273	2,380	2,418	2,334	2,251	2,319	2,292	2,115	2,196	2,195	2,208	2,224	2,159	2,430
Could only find part-time work ..	2,866	2,730	2,679	2,785	2,675	2,686	2,740	2,730	2,801	2,784	2,760	2,776	2,636	2,861	2,849
Voluntary part time .....	12,704	13,038	12,926	12,612	12,995	13,235	13,179	13,053	13,277	13,194	13,122	13,441	13,369	13,285	13,599

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

## 7. Selected unemployment indicators, monthly data seasonally adjusted

(Unemployment rates)

Selected categories	Annual average		1985									1986			
	1984	1985	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.
<b>CHARACTERISTIC</b>															
Total, all civilian workers .....	7.5	7.2	7.3	7.3	7.3	7.3	7.1	7.1	7.1	7.0	6.9	6.7	7.3	7.2	7.1
Both sexes, 16 to 19 years .....	18.9	18.6	17.9	18.8	18.6	19.3	17.5	18.1	19.8	18.4	18.8	18.4	19.0	18.2	19.6
Men, 20 years and over .....	6.6	6.2	6.3	6.1	6.4	6.2	6.0	6.1	6.1	6.0	5.9	5.7	6.2	6.2	6.0
Women, 20 years and over .....	6.8	6.6	6.7	6.8	6.7	6.6	6.6	6.7	6.4	6.4	6.2	6.1	6.7	6.6	6.4
White, total .....	6.5	6.2	6.3	6.2	6.4	6.3	6.1	6.1	6.1	5.9	5.9	5.7	6.4	6.2	6.1
Both sexes, 16 to 19 years .....	16.0	15.7	15.2	16.0	16.0	16.1	15.2	15.3	17.0	15.5	15.9	14.9	16.2	14.5	16.4
Men, 16 to 19 years .....	16.8	16.5	15.7	16.7	16.7	17.1	17.2	16.2	18.5	15.8	16.2	14.7	16.5	15.3	17.2
Women, 16 to 19 years .....	15.2	14.8	14.5	15.1	15.2	15.0	13.0	14.4	15.3	15.1	15.5	15.1	15.8	13.7	15.6
Men, 20 years and over .....	5.7	5.4	5.4	5.2	5.7	5.6	5.3	5.2	5.2	5.2	5.1	5.0	5.4	5.5	5.2
Women, 20 years and over .....	5.8	5.7	5.8	5.8	5.8	5.7	5.7	5.7	5.5	5.4	5.4	5.3	5.9	5.8	5.5
Black, total .....	15.9	15.1	15.2	15.4	14.4	15.0	14.1	15.2	14.9	15.6	14.9	14.4	14.8	14.7	14.8
Both sexes, 16 to 19 years .....	42.7	40.2	39.3	40.4	39.5	41.2	35.3	38.8	39.7	40.8	41.6	41.9	39.1	43.7	42.6
Men, 16 to 19 years .....	42.7	41.0	39.4	39.3	41.0	43.1	34.9	41.1	41.0	45.2	41.0	41.3	38.7	44.1	41.4
Women, 16 to 19 years .....	42.6	39.2	39.3	41.5	37.8	39.0	35.9	36.1	38.2	36.0	42.3	42.4	39.5	43.4	43.7
Men, 20 years and over .....	14.3	13.2	13.3	13.4	12.5	12.8	11.9	13.3	13.7	13.7	13.1	12.7	13.3	12.6	12.6
Women, 20 years and over .....	13.5	13.1	13.2	13.5	12.7	13.1	13.1	13.5	12.1	13.6	12.6	12.0	12.5	12.2	12.5
Hispanic origin, total .....	10.7	10.5	10.4	10.6	10.6	10.9	10.4	10.4	11.1	10.7	10.4	10.1	12.3	10.3	10.4
Married men, spouse present .....	4.6	4.3	4.3	4.0	4.6	4.4	4.1	4.3	4.2	4.3	4.3	4.3	4.5	4.5	4.2
Married women, spouse present .....	5.7	5.6	5.8	5.7	5.8	5.7	5.4	5.6	5.3	5.5	5.3	5.1	5.5	5.6	5.3
Women who maintain families .....	10.3	10.4	10.7	10.8	9.9	10.3	10.8	11.3	10.4	10.0	9.4	9.9	9.9	10.1	9.4
Full-time workers .....	7.2	6.8	6.9	6.9	6.9	7.0	6.8	6.8	6.8	6.7	6.6	6.4	6.9	6.9	6.7
Part-time workers .....	9.3	9.3	9.7	10.0	9.5	9.4	9.0	9.3	9.6	8.8	9.0	8.4	9.4	9.1	9.6
Unemployed 15 weeks and over .....	2.4	2.0	2.1	2.0	2.0	2.0	2.0	2.0	2.0	1.9	1.9	1.8	2.0	1.9	1.8
Labor force time lost <sup>1</sup> .....	8.6	8.1	8.2	8.3	8.2	8.2	8.1	8.1	7.9	7.9	7.8	7.6	8.1	8.1	8.1
<b>INDUSTRY</b>															
Nonagricultural private wage and salary workers ....	7.4	7.2	7.3	7.2	7.3	7.3	7.1	7.2	7.1	7.0	6.9	6.7	7.2	7.2	7.2
Mining .....	10.0	9.5	10.6	7.5	10.9	9.9	8.6	8.9	7.7	7.3	10.3	10.9	9.2	10.4	12.8
Construction .....	14.3	13.1	13.3	11.0	13.5	13.4	13.1	13.6	13.5	13.4	12.6	12.9	13.2	13.0	12.0
Manufacturing .....	7.5	7.7	7.9	7.8	7.7	7.9	7.8	7.7	7.5	7.7	7.3	7.0	7.2	7.2	6.8
Durable goods .....	7.2	7.6	7.7	7.8	7.9	7.9	7.9	7.7	7.3	7.6	7.3	7.0	7.4	6.8	6.8
Nondurable goods .....	7.8	7.8	8.2	7.8	7.5	7.9	7.6	7.8	7.8	7.8	7.3	7.1	7.0	7.7	6.8
Transportation and public utilities .....	5.5	5.1	5.4	5.2	5.3	5.7	4.5	5.3	5.1	5.1	5.0	4.3	5.3	6.1	5.6
Wholesale and retail trade .....	8.0	7.6	7.4	7.8	7.7	7.6	7.7	7.8	7.7	7.5	7.6	7.2	7.8	7.6	8.1
Finance and service industries .....	5.9	5.6	5.7	6.1	5.7	5.6	5.5	5.5	5.4	5.4	5.3	5.2	5.9	5.7	5.9
Government workers .....	4.5	3.9	3.9	3.9	3.9	4.0	3.9	3.8	3.9	3.6	3.8	3.4	3.8	4.0	3.5
Agricultural wage and salary workers .....	13.5	13.2	13.2	11.9	12.5	14.0	14.0	13.3	12.9	12.5	10.6	10.9	14.3	11.9	13.4

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

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

(Civilian workers)

Sex and age	Annual average		1985									1986			
	1984	1985	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.
Total, 16 years and over .....	7.5	7.2	7.3	7.3	7.3	7.3	7.1	7.1	7.1	7.0	6.9	6.7	7.3	7.2	7.1
16 to 24 years .....	13.9	13.6	13.4	14.0	13.6	13.9	13.0	13.3	13.9	13.5	13.3	13.0	13.6	13.2	13.9
16 to 19 years .....	18.9	18.6	17.9	18.8	18.6	19.3	17.5	18.1	19.8	18.4	18.8	18.4	19.0	18.2	19.6
16 to 17 years .....	21.2	21.0	20.8	21.2	21.6	21.7	19.1	20.3	22.7	21.4	21.1	20.9	21.8	19.4	20.9
18 to 19 years .....	17.4	17.0	16.3	17.1	16.4	17.3	16.8	16.7	17.8	16.9	17.5	16.4	17.2	17.1	18.9
20 to 24 years .....	11.5	11.1	11.1	11.6	11.2	11.2	10.8	10.9	10.9	11.0	10.6	10.4	10.8	10.6	10.9
25 years and over .....	5.8	5.6	5.7	5.5	5.8	5.6	5.5	5.6	5.4	5.4	5.3	5.1	5.7	5.7	5.4
25 to 54 years .....	6.1	5.8	6.1	5.8	6.0	5.9	5.8	5.8	5.7	5.6	5.5	5.4	5.9	5.9	5.8
55 years and over .....	4.5	4.1	4.1	4.3	4.3	4.4	4.1	4.1	3.9	3.8	3.9	3.9	4.4	4.3	3.9
Men, 16 years and over .....	7.4	7.0	7.1	7.0	7.2	7.2	6.9	6.9	7.1	6.9	6.7	6.5	7.0	7.0	6.9
16 to 24 years .....	14.4	14.1	13.8	14.7	14.2	14.6	13.8	13.8	14.6	13.9	13.5	12.8	13.6	13.6	14.5
16 to 19 years .....	19.6	19.5	18.5	19.4	19.2	20.5	19.6	19.3	21.5	19.4	19.3	18.2	19.3	18.9	20.2
16 to 17 years .....	21.9	21.9	21.4	22.2	23.2	22.1	21.9	20.7	24.0	20.9	21.6	20.9	23.2	20.0	21.2
18 to 19 years .....	18.3	17.9	16.8	17.6	16.4	18.7	18.1	18.3	19.9	18.7	18.0	16.2	16.6	17.8	19.7
20 to 24 years .....	11.9	11.4	11.4	12.3	11.7	11.6	10.9	11.0	11.1	11.2	10.6	10.3	10.7	11.0	11.6
25 years and over .....	5.7	5.3	5.5	5.1	5.6	5.4	5.3	5.3	5.3	5.2	5.1	5.0	5.5	5.5	5.2
25 to 54 years .....	5.9	5.6	5.8	5.3	5.8	5.6	5.6	5.5	5.5	5.4	5.4	5.3	5.7	5.7	5.5
55 years and over .....	4.6	4.1	4.0	4.1	4.4	4.6	3.8	4.0	4.1	4.0	3.9	3.9	4.4	4.3	3.9
Women, 16 years and over .....	7.6	7.4	7.5	7.6	7.5	7.4	7.3	7.5	7.3	7.2	7.1	7.0	7.6	7.4	7.4
16 to 24 years .....	13.3	13.0	12.9	13.3	12.9	13.1	12.2	12.9	13.1	13.1	13.2	13.2	13.6	12.7	13.2
16 to 19 years .....	18.0	17.6	17.2	18.1	17.8	17.9	15.3	16.9	17.9	17.4	18.3	18.5	18.6	17.5	19.0
16 to 17 years .....	20.4	20.0	20.0	20.1	19.9	21.2	15.8	19.8	21.2	22.0	20.6	20.8	20.2	18.7	20.5
18 to 19 years .....	16.6	16.0	15.7	16.5	16.4	15.7	15.3	14.9	15.5	15.1	16.9	16.5	17.7	16.3	18.1
20 to 24 years .....	10.9	10.7	10.7	10.8	10.6	10.7	10.7	10.9	10.7	10.8	10.6	10.5	11.0	10.1	10.0
25 years and over .....	6.0	5.9	6.0	6.1	6.0	5.9	5.8	6.0	5.6	5.6	5.4	5.3	5.9	5.9	5.8
25 to 54 years .....	6.3	6.2	6.3	6.4	6.3	6.2	6.1	6.2	5.9	5.9	5.7	5.6	6.2	6.3	6.2
55 years and over .....	4.2	4.1	4.2	4.4	4.1	4.2	4.5	4.2	3.7	3.6	3.9	3.8	4.4	4.4	3.8

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

(Numbers in thousands)

Reason for unemployment	Annual average		1985									1986			
	1984	1985	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.
Job losers .....	4,421	4,139	4,229	3,994	4,167	4,206	4,144	4,142	4,040	4,081	3,933	3,776	4,162	4,246	4,034
On layoff .....	1,171	1,157	1,182	1,068	1,135	1,134	1,112	1,167	1,161	1,175	1,132	1,163	1,152	1,164	1,028
Other job losers .....	3,250	2,982	3,047	2,926	3,032	3,072	3,032	2,975	2,879	2,906	2,801	2,613	3,010	3,082	3,006
Job leavers .....	823	877	852	870	883	894	875	852	911	808	876	996	1,001	1,002	1,110
Reentrants .....	2,184	2,256	2,283	2,378	2,233	2,184	2,191	2,335	2,237	2,226	2,225	2,066	2,292	2,197	2,191
New entrants .....	1,110	1,039	1,051	1,142	1,018	1,098	941	918	1,045	1,055	1,033	1,025	1,097	1,000	1,059
<b>PERCENT OF UNEMPLOYED</b>															
Job losers .....	51.8	49.8	50.3	47.6	49.6	50.2	50.8	50.2	49.1	50.0	48.8	48.0	48.7	50.3	48.1
On layoff .....	13.7	13.9	14.0	12.7	13.5	13.5	13.6	14.2	14.1	14.4	14.0	14.8	13.5	13.8	12.2
Other job losers .....	38.1	35.9	36.2	34.9	36.1	36.6	37.2	36.1	35.0	35.6	34.7	33.2	35.2	36.5	35.8
Job leavers .....	9.6	10.6	10.1	10.4	11.7	10.7	10.7	10.3	11.1	9.9	10.9	12.7	11.7	11.9	13.2
Reentrants .....	25.6	27.1	27.1	28.4	26.6	26.1	26.9	28.3	27.2	27.2	27.6	26.3	26.8	26.0	26.1
New entrants .....	13.0	12.5	12.5	13.6	12.1	13.1	11.5	11.1	12.7	12.9	12.8	13.0	12.8	11.8	12.6
<b>PERCENT OF CIVILIAN LABOR FORCE</b>															
Job losers .....	3.9	3.6	3.7	3.5	3.6	3.6	3.6	3.6	3.5	3.5	3.4	3.2	3.6	3.6	3.4
Job leavers .....	.7	.8	.7	.8	.9	.8	.8	.7	.8	.7	.8	.9	.9	.9	.9
Reentrants .....	1.9	2.0	2.0	2.1	1.9	1.9	1.9	2.0	1.9	1.9	1.9	1.8	2.0	1.9	1.9
New entrants .....	1.0	.9	.9	1.0	.9	1.0	.8	.8	.9	.9	.9	.9	.9	.9	.9

**10. Duration of unemployment, monthly data seasonally adjusted**

(Numbers in thousands)

Weeks of unemployment	Annual average		1985									1986			
	1984	1985	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.
Less than 5 weeks .....	3,350	3,498	3,528	3,607	3,466	3,525	3,422	3,484	3,430	3,465	3,374	3,311	3,562	3,589	3,628
5 to 14 weeks .....	2,451	2,509	2,516	2,594	2,536	2,514	2,508	2,505	2,536	2,448	2,460	2,441	2,622	2,640	2,685
15 weeks and over .....	2,737	2,305	2,374	2,274	2,328	2,329	2,274	2,307	2,277	2,205	2,188	2,056	2,340	2,258	2,135
15 to 26 weeks .....	1,104	1,025	1,031	1,063	1,033	1,078	1,047	1,035	1,057	894	973	969	1,149	1,099	1,001
27 weeks and over .....	1,634	1,280	1,343	1,211	1,295	1,251	1,227	1,272	1,220	1,311	1,215	1,087	1,191	1,159	1,134
Mean duration in weeks .....	18.2	15.6	16.1	15.0	15.5	15.5	15.5	15.4	15.7	15.4	15.4	14.9	15.3	14.4	14.3
Median duration in weeks .....	7.9	6.8	6.8	6.7	6.8	7.1	7.2	6.9	7.0	6.9	6.9	6.8	6.9	6.8	6.5



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

State	Mar. 1985	Mar. 1986	State	Mar. 1985	Mar. 1986
Alabama .....	10.0	9.6	Montana .....	9.2	9.2
Alaska .....	11.1	11.3	Nebraska .....	6.0	6.5
Arizona .....	6.2	6.4	Nevada .....	8.4	7.5
Arkansas .....	9.6	8.6	New Hampshire .....	4.2	3.8
California .....	7.3	7.1	New Jersey .....	6.6	4.9
Colorado .....	6.2	-	New Mexico .....	9.0	9.2
Connecticut .....	5.1	4.0	New York .....	7.2	7.3
Delaware .....	6.2	5.5	North Carolina .....	5.6	5.7
District of Columbia .....	8.9	7.0	North Dakota .....	7.8	8.1
Florida .....	5.9	5.8	Ohio .....	9.7	7.9
Georgia .....	6.6	5.7	Oklahoma .....	7.4	8.0
Hawaii .....	5.3	5.7	Oregon .....	9.9	9.8
Idaho .....	9.3	9.8	Pennsylvania .....	8.4	7.9
Illinois .....	8.1	9.1	Rhode Island .....	5.7	4.7
Indiana .....	8.9	7.4	South Carolina .....	7.3	7.3
Iowa .....	9.3	8.6	South Dakota .....	6.0	5.2
Kansas .....	5.4	6.2	Tennessee .....	8.5	8.2
Kentucky .....	10.0	11.3	Texas .....	7.2	8.4
Louisiana .....	11.7	13.1	Utah .....	6.8	5.7
Maine .....	6.6	6.6	Vermont .....	5.7	5.2
Maryland .....	4.9	4.5	Virginia .....	5.9	5.5
Massachusetts .....	4.7	4.3	Washington .....	8.9	8.2
Michigan .....	10.4	9.6	West Virginia .....	15.0	11.7
Minnesota .....	7.0	7.2	Wisconsin .....	8.5	8.3
Mississippi .....	11.3	11.2	Wyoming .....	7.9	10.6
Missouri .....	7.1	6.1			

- Data not available.

NOTE: Some data in this table may differ from data

published elsewhere because of the continued updating of the database.

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

(In thousands)

State	Mar., 1985	Feb., 1986	Mar., 1986 <sup>P</sup>	State	Mar., 1985	Feb., 1986	Mar., 1986 <sup>P</sup>
Alabama .....	1,404.2	1,432.7	1,428.1	Nebraska .....	643.5	642.0	648.0
Alaska .....	219.4	218.4	220.8	Nevada .....	436.3	448.9	453.5
Arizona .....	1,262.4	1,320.7	1,332.9	New Hampshire .....	447.7	471.8	473.9
Arkansas .....	785.3	809.7	814.3	New Jersey .....	3,343.4	3,408.0	3,443.9
California .....	10,830.1	11,072.5	11,120.7	New Mexico .....	513.1	519.1	519.9
Colorado .....	1,414.9	1,430.3	1,441.7	New York .....	7,633.9	7,749.8	7,798.7
Connecticut .....	1,543.2	1,568.5	1,581.1	North Carolina .....	2,620.9	2,675.1	2,695.6
Delaware .....	284.9	287.6	292.0	North Dakota .....	245.1	243.7	244.7
District of Columbia .....	621.4	632.1	635.2	Ohio .....	4,282.7	4,387.1	4,421.6
Florida .....	4,430.3	4,540.2	4,569.6	Oklahoma .....	1,181.1	1,158.3	1,159.8
Georgia .....	2,519.3	2,596.1	2,600.1	Oregon .....	1,008.3	1,024.4	1,029.1
Hawaii .....	424.6	427.9	430.0	Pennsylvania .....	4,652.0	4,706.9	4,738.1
Idaho .....	328.1	331.4	333.3	Rhode Island .....	417.6	421.0	422.2
Illinois .....	4,727.2	4,692.7	4,724.5	South Carolina .....	1,278.5	1,313.8	1,327.6
Indiana .....	2,128.2	2,184.5	2,203.1	South Dakota .....	243.6	242.0	244.5
Iowa .....	1,057.3	1,063.2	1,069.8	Tennessee .....	1,831.0	1,878.9	1,900.5
Kansas .....	964.2	967.9	979.8	Texas .....	6,630.2	6,709.0	6,714.1
Kentucky .....	1,228.3	1,247.8	1,257.0	Utah .....	614.3	629.4	634.0
Louisiana .....	1,593.1	1,570.7	1,569.6	Vermont .....	218.8	229.8	229.0
Maine .....	440.1	455.9	456.3	Virginia .....	2,392.6	2,478.8	2,496.5
Maryland .....	1,849.1	1,869.3	1,890.3	Washington .....	1,670.8	1,715.8	1,729.4
Massachusetts .....	2,888.2	2,917.9	2,945.6	West Virginia .....	583.9	583.8	586.7
Michigan .....	3,446.1	3,524.2	3,528.7	Wisconsin .....	1,927.8	1,958.9	1,967.2
Minnesota .....	1,823.0	1,844.5	1,850.5	Wyoming .....	196.0	194.9	196.5
Mississippi .....	825.9	842.4	846.0	Puerto Rico .....	691.9	696.7	-
Missouri .....	2,051.7	2,085.9	2,111.6	Virgin Islands .....	37.6	37.3	37.0
Montana .....	271.8	270.8	272.4				

- Data not available.

<sup>P</sup> = preliminary

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

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

(In thousands)

Industry	Annual average		1985									1986			
	1984	1985	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar. <sup>P</sup>	Apr. <sup>P</sup>
<b>TOTAL</b>	94,461	97,699	97,120	97,421	97,473	97,707	97,977	98,217	98,559	98,801	99,086	99,496	99,656	99,834	100,040
<b>PRIVATE SECTOR</b>	78,477	81,404	80,962	81,208	81,260	81,366	81,634	81,765	82,073	82,317	82,573	82,992	83,108	83,295	83,499
<b>GOODS PRODUCING</b>	24,730	25,057	25,090	25,066	25,010	24,980	25,015	24,962	25,051	25,089	25,155	25,300	25,251	25,161	25,182
Mining	974	969	982	982	974	969	965	962	960	954	952	947	929	902	866
Oil and gas extraction	613	616	623	624	619	619	615	615	610	605	603	598	580	556	522
<b>Construction</b>	4,345	4,662	4,641	4,658	4,638	4,660	4,688	4,721	4,753	4,754	4,770	4,906	4,883	4,870	4,954
General building contractors	1,158	1,240	1,233	1,234	1,223	1,228	1,242	1,252	1,262	1,269	1,274	1,329	1,327	1,304	1,308
<b>Manufacturing</b>	19,412	19,426	19,467	19,426	19,398	19,351	19,362	19,279	19,338	19,381	19,433	19,447	19,439	19,389	19,362
Production workers	13,310	13,214	13,249	13,203	13,169	13,137	13,145	13,087	13,140	13,169	13,219	13,222	13,216	13,175	13,167
<b>Durable goods</b>	11,522	11,566	11,608	11,586	11,560	11,509	11,519	11,449	11,493	11,512	11,534	11,541	11,527	11,480	11,470
Production workers	7,749	7,692	7,730	7,704	7,671	7,630	7,638	7,586	7,627	7,636	7,651	7,650	7,631	7,592	7,596
Lumber and wood products	707	703	694	697	694	697	700	701	708	712	715	720	719	716	715
Furniture and fixtures	487	497	497	493	494	494	499	494	496	497	499	499	499	500	500
Stone, clay, and glass products	595	600	600	599	598	599	601	598	600	601	604	607	610	607	610
Primary metal industries	858	816	823	819	815	806	798	795	799	804	810	804	802	792	787
Blast furnaces and basic steel products	334	303	306	305	304	302	289	291	292	299	303	300	299	292	288
Fabricated metal products	1,464	1,472	1,479	1,477	1,472	1,467	1,467	1,462	1,465	1,466	1,463	1,462	1,457	1,456	1,455
Machinery, except electrical and electronic equipment	2,197	2,181	2,207	2,203	2,191	2,175	2,167	2,143	2,143	2,137	2,133	2,137	2,128	2,118	2,108
Transportation equipment	2,208	2,208	2,223	2,216	2,205	2,190	2,194	2,175	2,179	2,180	2,186	2,188	2,187	2,185	2,181
Motor vehicles and equipment	1,906	1,990	1,982	1,981	1,990	1,985	1,995	1,986	2,008	2,017	2,025	2,023	2,020	2,000	2,010
Instruments and related products	860	872	876	873	875	868	868	861	872	868	875	868	860	846	850
Miscellaneous manufacturing industries	714	724	726	723	725	724	725	722	722	723	725	725	726	728	727
<b>Nondurable goods</b>	384	376	377	378	376	372	373	373	373	375	374	376	379	378	377
Production workers	7,890	7,860	7,859	7,840	7,838	7,842	7,843	7,830	7,845	7,869	7,899	7,906	7,912	7,909	7,892
Food and kindred products	5,561	5,523	5,519	5,499	5,498	5,507	5,507	5,501	5,513	5,533	5,568	5,572	5,585	5,583	5,571
Tobacco manufactures	1,619	1,637	1,630	1,634	1,644	1,630	1,638	1,633	1,636	1,638	1,655	1,652	1,664	1,665	1,655
Textile mill products	65	65	66	66	66	65	64	65	64	65	64	64	64	64	64
Apparel and other textile products	746	703	707	701	699	696	697	695	698	700	700	701	703	705	702
Paper and allied products	1,197	1,162	1,164	1,153	1,142	1,160	1,152	1,155	1,158	1,160	1,171	1,173	1,161	1,154	1,155
Printing and publishing	681	683	681	682	684	684	683	681	682	688	686	687	688	688	689
Chemicals and allied products	1,372	1,422	1,411	1,414	1,419	1,426	1,429	1,427	1,431	1,442	1,442	1,447	1,454	1,457	1,460
Petroleum and coal products	1,048	1,042	1,049	1,044	1,042	1,040	1,038	1,040	1,036	1,033	1,033	1,032	1,031	1,029	1,026
Rubber and misc. plastics products	189	177	182	181	180	178	176	170	170	169	169	168	167	167	166
Leather and leather products	782	795	795	791	789	787	792	790	795	800	804	810	810	811	809
Wholesale trade	192	175	174	174	173	176	174	174	175	174	175	172	170	169	166
<b>SERVICE-PRODUCING</b>	69,731	72,643	72,030	72,355	72,463	72,727	72,962	73,255	73,508	73,712	73,931	74,196	74,405	74,673	74,858
<b>Transportation and public utilities</b>	5,171	5,300	5,278	5,301	5,295	5,302	5,282	5,317	5,327	5,342	5,350	5,357	5,344	5,348	5,345
Transportation	2,929	3,059	3,037	3,057	3,052	3,060	3,038	3,078	3,087	3,106	3,115	3,123	3,109	3,116	3,110
Communication and public utilities	2,242	2,241	2,241	2,244	2,243	2,242	2,244	2,239	2,240	2,236	2,235	2,234	2,235	2,232	2,235
<b>Wholesale trade</b>	5,550	5,769	5,733	5,748	5,768	5,773	5,791	5,805	5,830	5,833	5,848	5,872	5,886	5,897	5,920
Durable goods	3,272	3,417	3,388	3,402	3,414	3,426	3,434	3,442	3,454	3,464	3,473	3,487	3,498	3,506	3,521
Nondurable goods	2,278	2,352	2,345	2,346	2,354	2,347	2,357	2,363	2,376	2,369	2,375	2,385	2,388	2,391	2,399
<b>Retail trade</b>	16,584	17,425	17,280	17,392	17,425	17,453	17,514	17,539	17,610	17,640	17,702	17,825	17,904	17,986	18,019
General merchandise stores	2,278	2,354	2,348	2,371	2,361	2,344	2,354	2,356	2,365	2,367	2,353	2,359	2,377	2,389	2,387
Food stores	2,655	2,827	2,794	2,823	2,831	2,842	2,849	2,852	2,869	2,865	2,882	2,920	2,924	2,944	2,958
Automotive dealers and service stations	1,802	1,892	1,884	1,890	1,895	1,895	1,902	1,906	1,912	1,914	1,916	1,930	1,936	1,940	1,953
Eating and drinking places	5,403	5,692	5,642	5,660	5,692	5,728	5,725	5,740	5,758	5,774	5,803	5,821	5,855	5,888	5,899
<b>Finance, insurance, and real estate</b>	5,682	5,924	5,858	5,888	5,906	5,932	5,959	5,987	6,011	6,048	6,068	6,098	6,131	6,159	6,206
Finance	2,855	2,978	2,941	2,956	2,968	2,984	2,998	3,011	3,023	3,038	3,054	3,068	3,086	3,095	3,123
Insurance	1,753	1,816	1,799	1,808	1,814	1,817	1,827	1,831	1,837	1,850	1,852	1,863	1,874	1,885	1,896
Real estate	1,074	1,130	1,118	1,124	1,124	1,131	1,134	1,145	1,151	1,160	1,162	1,167	1,171	1,179	1,187
<b>Services</b>	20,761	21,930	21,723	21,813	21,856	21,926	22,073	22,155	22,244	22,365	22,450	22,540	22,592	22,744	22,827
Business services	4,076	4,453	4,402	4,424	4,441	4,446	4,489	4,504	4,539	4,571	4,607	4,625	4,652	4,690	4,716
Health services	6,104	6,267	6,218	6,240	6,243	6,260	6,291	6,308	6,333	6,363	6,389	6,409	6,435	6,473	6,503
<b>Government</b>	15,984	16,295	16,158	16,213	16,213	16,341	16,343	16,452	16,486	16,484	16,513	16,504	16,548	16,539	16,541
Federal	2,807	2,875	2,859	2,873	2,872	2,878	2,886	2,904	2,892	2,904	2,914	2,918	2,915	2,917	2,921
State	3,712	3,780	3,749	3,759	3,765	3,788	3,789	3,818	3,827	3,833	3,827	3,844	3,849	3,853	3,860
Local	9,465	9,640	9,550	9,581	9,576	9,675	9,668	9,730	9,767	9,747	9,772	9,742	9,784	9,769	9,760

<sup>P</sup> = preliminary

revision.

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

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

Industry	Annual average		1985										1986			
	1984	1985	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar. <sup>P</sup>	Apr. <sup>P</sup>	
	<b>PRIVATE SECTOR</b> .....	35.3	35.1	35.0	35.1	35.1	35.0	35.1	35.1	35.1	35.0	35.1	35.2	35.0	35.0	35.0
<b>CONSTRUCTION</b> .....	37.7	37.7	38.0	37.6	37.2	37.6	37.5	37.9	37.9	37.4	37.1	38.5	36.3	36.9	38.0	
<b>MANUFACTURING</b> .....	40.7	40.5	40.2	40.4	40.4	40.3	40.6	40.7	40.7	40.7	41.0	41.0	40.6	40.7	40.6	
Overtime hours .....	3.4	3.3	3.4	3.1	3.2	3.2	3.3	3.3	3.4	3.4	3.6	3.6	3.4	3.4	3.5	
<b>Durable goods</b> .....	41.4	41.2	40.9	41.1	41.2	41.0	41.3	41.3	41.3	41.3	41.7	41.7	41.3	41.4	41.2	
Overtime hours .....	3.6	3.5	3.6	3.2	3.3	3.3	3.4	3.5	3.5	3.6	3.8	3.7	3.5	3.6	3.7	
Lumber and wood products .....	39.9	39.8	39.5	39.8	40.1	39.7	40.0	40.1	40.3	39.9	40.2	40.4	39.9	40.2	40.1	
Furniture and fixtures .....	39.7	39.4	39.3	38.9	38.9	38.8	39.2	39.4	39.4	39.4	40.1	40.4	39.7	39.6	39.2	
Stone, clay, and glass products .....	42.0	41.9	42.0	42.1	41.9	42.0	42.0	42.0	42.1	41.6	41.7	42.8	41.8	41.8	42.5	
Primary metal industries .....	41.7	41.5	41.0	41.2	41.6	41.4	41.7	41.5	41.8	41.8	42.2	41.8	42.1	42.0	41.0	
Blast furnaces and basic steel products .....	40.6	41.1	40.2	40.7	41.2	41.2	41.8	41.0	41.7	42.0	41.9	41.6	41.7	41.7	40.1	
Fabricated metal products .....	41.4	41.3	41.1	41.1	41.3	41.3	41.4	41.6	41.5	41.4	41.6	41.6	41.5	41.3	41.2	
Machinery except electrical .....	41.9	41.5	41.2	41.4	41.6	41.3	41.6	41.6	41.6	41.6	41.8	41.7	41.5	41.6	41.6	
Electrical and electronic equipment .....	41.0	40.6	40.2	40.4	40.6	40.3	40.7	40.5	40.6	41.0	41.4	41.2	40.8	41.0	40.9	
Transportation equipment .....	42.7	42.7	42.3	42.6	42.3	42.5	42.9	42.9	42.8	42.6	43.2	43.0	42.7	42.6	42.2	
Motor vehicles and equipment .....	43.8	43.5	43.3	43.5	42.7	43.3	43.8	43.8	43.8	43.7	44.2	43.6	43.5	43.3	42.7	
Instruments and related products .....	41.3	41.0	40.7	40.9	41.1	40.7	40.7	40.9	40.8	41.1	41.9	41.2	41.1	41.3	41.2	
Miscellaneous manufacturing .....	39.4	39.4	39.0	39.3	39.4	39.0	39.3	39.8	39.9	39.7	40.0	40.4	39.8	39.9	39.9	
<b>Nondurable goods</b> .....	39.6	39.5	39.1	39.4	39.4	39.4	39.6	39.8	39.9	39.8	40.1	40.0	39.6	39.8	39.7	
Overtime hours .....	3.1	3.1	3.0	2.9	3.0	3.0	3.1	3.1	3.2	3.2	3.4	3.4	3.2	3.3	3.3	
Food and kindred products .....	39.8	40.0	39.6	40.1	39.6	40.0	39.9	40.2	40.3	39.9	40.3	40.2	39.7	39.9	39.8	
Tobacco manufactures .....	38.9	37.2	35.4	37.0	36.6	34.6	36.8	36.9	38.2	35.2	38.0	38.7	38.3	38.7	37.6	
Textile mill products .....	39.9	39.7	38.8	38.9	39.4	39.1	40.0	40.7	40.7	41.0	41.3	40.9	40.4	40.6	41.2	
Apparel and other textile products .....	36.4	36.3	35.6	36.2	36.3	36.3	36.4	36.5	36.6	36.8	37.0	37.0	36.2	36.5	36.5	
Paper and allied products .....	43.1	43.1	43.0	43.0	42.9	42.7	43.0	43.1	43.3	43.3	43.6	43.7	43.6	43.6	43.1	
Printing and publishing .....	37.9	37.7	37.6	37.4	37.5	37.5	37.9	38.0	37.9	37.8	38.2	38.0	37.8	38.0	37.9	
Chemicals and allied products .....	41.9	41.9	41.9	41.9	42.0	41.8	41.8	41.6	41.7	41.9	42.0	41.9	41.8	42.1	41.9	
Petroleum and coal products .....	43.7	43.0	42.0	41.7	42.6	42.9	43.3	43.4	44.3	43.1	43.7	43.6	43.7	44.5	44.5	
Leather and leather products .....	36.8	37.3	37.0	37.1	37.0	37.0	37.3	37.8	37.9	37.7	37.8	37.6	36.6	36.9	36.3	
<b>TRANSPORTATION AND PUBLIC UTILITIES</b> .....	39.4	39.4	39.4	39.5	39.5	39.2	39.6	39.5	39.5	39.4	39.5	39.4	39.5	39.5	39.4	
<b>WHOLESALE TRADE</b> .....	38.6	38.7	38.6	38.7	38.8	38.6	38.6	38.7	38.6	38.7	38.7	38.8	38.7	38.7	38.8	
<b>RETAIL TRADE</b> .....	30.0	29.7	29.7	29.9	29.9	29.7	29.6	29.6	29.5	29.5	29.3	29.5	29.4	29.4	29.3	
<b>SERVICES</b> .....	32.8	32.8	32.7	32.8	32.8	32.7	32.8	32.8	32.9	32.8	32.8	32.9	32.9	33.0	32.8	

<sup>P</sup> = preliminary

benchmark adjustment.

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

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

Industry	Annual average		1985									1986			
	1984	1985	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar. <sup>P</sup>	Apr. <sup>P</sup>
<b>PRIVATE SECTOR</b> .....	\$8.33	\$8.58	\$8.54	\$8.53	\$8.56	\$8.54	\$8.54	\$8.68	\$8.65	\$8.68	\$8.73	\$8.73	\$8.75	\$8.74	\$8.74
Seasonally adjusted .....	-	-	8.54	8.55	8.59	8.57	8.60	8.65	8.64	8.67	8.74	8.67	8.72	8.74	8.74
<b>MINING</b> .....	11.63	11.95	11.93	11.86	11.99	11.88	11.95	12.00	11.95	12.02	12.22	12.18	12.27	12.28	12.34
<b>CONSTRUCTION</b> .....	12.12	12.26	12.21	12.19	12.12	12.16	12.22	12.40	12.36	12.22	12.42	12.29	12.29	12.17	12.20
<b>MANUFACTURING</b> .....	9.18	9.52	9.48	9.48	9.50	9.53	9.48	9.55	9.54	9.61	9.72	9.68	9.68	9.70	9.70
<b>Durable goods</b> .....	9.74	10.09	10.03	10.04	10.08	10.10	10.05	10.15	10.14	10.21	10.34	10.27	10.28	10.29	10.28
Lumber and wood products .....	8.03	8.20	8.04	8.12	8.24	8.20	8.26	8.31	8.29	8.28	8.34	8.28	8.34	8.29	8.29
Furniture and fixtures .....	6.85	7.19	7.08	7.11	7.18	7.22	7.22	7.29	7.31	7.34	7.40	7.38	7.33	7.36	7.36
Stone, clay, and glass products .....	9.57	9.83	9.80	9.80	9.84	9.89	9.87	9.90	9.86	9.90	9.94	9.95	9.93	9.92	9.98
Primary metal industries .....	11.47	11.68	11.64	11.64	11.65	11.78	11.63	11.69	11.61	11.76	11.84	11.81	11.96	11.99	12.01
Blast furnaces and basic steel products .....	12.99	13.35	13.32	13.31	13.29	13.51	13.37	13.45	13.34	13.44	13.46	13.49	13.82	13.84	13.92
Fabricated metal products .....	9.38	9.66	9.64	9.63	9.65	9.66	9.61	9.70	9.68	9.73	9.88	9.82	9.81	9.83	9.81
Machinery, except electrical .....	9.96	10.29	10.17	10.22	10.28	10.31	10.27	10.39	10.41	10.48	10.55	10.50	10.53	10.58	10.57
Electrical and electronic equipment .....	9.04	9.47	9.40	9.39	9.46	9.47	9.50	9.55	9.56	9.61	9.68	9.61	9.60	9.63	9.63
Transportation equipment .....	12.22	12.71	12.63	12.63	12.66	12.65	12.65	12.78	12.77	12.83	13.06	12.90	12.87	12.89	12.86
Motor vehicles and equipment .....	12.74	13.44	13.40	13.38	13.39	13.38	13.34	13.51	13.46	13.55	13.84	13.69	13.62	13.71	13.64
Instruments and related products .....	8.85	9.19	9.11	9.13	9.15	9.20	9.22	9.28	9.27	9.30	9.42	9.35	9.42	9.42	9.39
Miscellaneous manufacturing .....	7.04	7.28	7.22	7.28	7.28	7.30	7.26	7.30	7.30	7.35	7.47	7.47	7.48	7.48	7.46
<b>Nondurable goods</b> .....	8.37	8.68	8.67	8.64	8.65	8.72	8.67	8.70	8.69	8.75	8.84	8.83	8.83	8.85	8.86
Food and kindred products .....	8.38	8.54	8.59	8.58	8.55	8.54	8.47	8.51	8.49	8.58	8.68	8.70	8.68	8.72	8.75
Tobacco manufactures .....	11.27	12.05	12.16	12.65	12.83	12.91	12.44	11.47	11.45	12.08	11.90	12.01	12.48	12.85	13.02
Textile mill products .....	6.46	6.71	6.70	6.68	6.69	6.69	6.72	6.75	6.76	6.79	6.83	6.84	6.83	6.86	6.86
Apparel and other textile products .....	5.55	5.73	5.74	5.69	5.70	5.70	5.68	5.75	5.73	5.75	5.80	5.81	5.78	5.79	5.80
Paper and allied products .....	10.41	10.82	10.72	10.75	10.79	10.91	10.86	10.90	10.91	10.97	11.07	11.02	10.99	11.02	11.04
Printing and publishing .....	9.40	9.69	9.60	9.60	9.61	9.67	9.73	9.79	9.75	9.81	9.90	9.83	9.84	9.90	9.87
Chemicals and allied products .....	11.08	11.57	11.48	11.46	11.52	11.60	11.62	11.67	11.72	11.82	11.87	11.87	11.83	11.79	11.82
Petroleum and coal products .....	13.43	14.04	14.18	14.00	13.97	14.03	13.99	14.07	13.97	14.06	14.22	14.24	14.19	14.23	14.29
Rubber and miscellaneous plastics products .....	8.29	8.53	8.48	8.45	8.50	8.54	8.51	8.55	8.53	8.62	8.72	8.68	8.68	8.71	8.68
Leather and leather products .....	5.70	5.82	5.84	5.83	5.83	5.83	5.80	5.82	5.76	5.83	5.83	5.85	5.83	5.86	5.88
<b>TRANSPORTATION AND PUBLIC UTILITIES</b> .....	11.11	11.38	11.27	11.24	11.32	11.35	11.40	11.52	11.46	11.57	11.60	11.58	11.63	11.60	11.62
<b>WHOLESALE TRADE</b> .....	8.96	9.26	9.24	9.24	9.28	9.27	9.25	9.33	9.25	9.32	9.41	9.38	9.42	9.38	9.36
<b>RETAIL TRADE</b> .....	5.88	5.97	5.96	5.97	5.94	5.93	5.91	5.99	5.97	6.00	6.02	6.05	6.07	6.06	6.05
<b>FINANCE, INSURANCE, AND REAL ESTATE</b> .....	7.62	7.93	7.85	7.83	7.95	7.87	7.90	8.03	8.00	8.05	8.14	8.13	8.27	8.27	8.23
<b>SERVICES</b> .....	7.64	7.95	7.89	7.88	7.91	7.86	7.87	8.04	8.04	8.10	8.16	8.17	8.22	8.22	8.18

- Data not available.  
P = preliminary

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

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

Industry	Annual average		1985										1986			
	1984	1985	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar. <sup>P</sup>	Apr. <sup>P</sup>	
	<b>PRIVATE SECTOR</b>															
Current dollars	\$294.05	\$301.16	\$298.05	\$298.55	\$303.02	\$301.46	\$302.32	\$305.54	\$303.62	\$302.93	\$308.17	\$303.80	\$302.75	\$304.15	\$304.15	
Seasonally adjusted	-	-	298.90	300.11	301.51	299.95	301.86	303.62	303.26	303.45	306.77	305.18	305.20	305.90	305.90	
Constant (1977) dollars	173.48	171.60	170.80	170.50	172.56	171.48	171.68	173.01	171.54	170.47	172.93	170.01	169.99	171.74	-	
<b>MINING</b>	503.58	518.63	516.57	515.91	523.96	509.65	517.44	524.40	516.24	520.47	535.24	540.79	520.25	520.67	521.98	
<b>CONSTRUCTION</b>	456.92	462.20	461.54	464.44	461.77	469.38	468.03	477.40	472.15	448.47	458.30	457.19	431.38	444.21	461.16	
<b>MANUFACTURING</b>																
Current dollars	373.63	385.56	380.15	382.04	385.70	382.15	382.99	389.64	388.28	393.05	404.35	393.98	389.14	394.79	392.85	
Constant (1977) dollars	220.43	219.69	217.85	218.18	219.65	217.38	217.48	220.63	219.37	221.19	226.91	220.47	218.50	222.92	-	
<b>Durable goods</b>	403.24	415.71	410.23	411.64	417.31	410.06	412.05	420.21	418.78	423.72	439.45	425.18	421.48	426.01	423.54	
Lumber and wood products	320.40	326.36	317.58	325.61	336.19	325.54	333.70	337.39	334.92	327.06	335.27	328.72	327.76	331.60	332.43	
Furniture and fixtures	271.95	283.29	276.83	275.16	281.46	276.53	285.19	290.14	292.40	292.13	304.14	290.77	285.14	289.98	287.04	
Stone, clay, and glass products	401.94	411.88	411.60	415.52	418.20	418.35	418.49	420.75	418.06	413.82	414.50	413.92	403.16	411.68	424.15	
Primary metal industries	478.30	484.72	480.73	479.57	486.97	485.34	480.32	487.47	480.65	491.57	504.38	493.66	503.52	505.98	496.01	
Blast furnaces and basic steel products	527.39	548.69	547.45	543.05	552.86	559.31	550.84	554.14	545.61	557.76	565.32	557.14	579.06	579.90	570.72	
Fabricated metal products	388.33	398.96	395.24	395.79	400.48	394.13	395.93	403.52	401.72	404.77	420.89	406.55	402.21	405.98	403.19	
<b>Machinery, except electrical</b>	417.32	427.04	417.99	421.06	427.65	420.65	422.10	432.22	430.97	438.06	451.54	437.85	435.94	442.24	438.66	
Electrical and electronic equipment	370.64	384.48	376.00	377.48	385.02	376.91	383.80	387.73	388.14	396.89	408.50	394.97	389.76	395.79	391.94	
Transportation equipment	521.79	542.72	538.04	539.30	539.32	531.30	531.30	544.43	545.28	550.41	578.56	554.70	544.40	551.69	546.55	
Motor vehicles and equipment	558.01	584.64	586.92	587.38	579.79	574.00	566.95	586.33	586.86	590.78	626.95	596.88	584.30	597.76	589.25	
Instruments and related products	365.51	376.79	368.96	372.50	376.07	370.76	373.41	381.41	377.29	384.09	400.35	384.29	386.22	389.99	384.99	
Miscellaneous manufacturing	277.38	286.83	280.86	285.38	286.10	281.78	284.59	292.00	294.19	295.47	303.28	297.31	293.96	299.20	296.91	
<b>Nondurable goods</b>	331.45	342.86	337.26	339.55	342.54	341.82	344.20	348.00	346.73	350.00	358.02	350.55	346.14	351.35	349.97	
Food and kindred products	333.52	341.60	336.73	343.20	340.29	341.60	341.34	347.21	343.00	344.92	353.28	347.13	338.52	343.57	344.75	
Tobacco manufactures	438.40	448.26	424.38	469.32	483.69	437.65	461.52	438.15	448.84	439.71	452.20	452.78	456.77	481.88	481.74	
Textile mill products	257.75	266.39	257.28	260.52	266.93	258.23	270.14	275.40	276.48	279.75	283.45	278.39	273.88	278.52	279.20	
Apparel and other textile products	202.02	208.00	203.20	205.98	209.19	206.34	207.32	209.88	210.86	212.18	215.18	212.65	206.92	211.34	209.96	
Paper and allied products	448.67	466.34	458.82	460.10	463.97	465.86	465.89	473.06	472.40	477.20	490.40	479.37	473.67	478.27	473.62	
Printing and publishing	356.26	365.31	360.00	358.08	358.45	360.69	369.74	373.98	369.53	373.76	384.12	370.59	369.00	377.19	373.09	
Chemicals and allied products	464.25	484.78	481.01	480.17	484.99	482.56	483.39	487.81	486.38	496.44	504.48	496.17	493.31	496.36	495.26	
Petroleum and coal products	586.89	603.72	595.56	583.80	596.52	606.10	605.77	620.49	620.27	610.20	621.41	615.17	611.59	626.12	635.91	
Rubber and miscellaneous plastics products	345.69	350.58	346.83	345.61	350.20	346.72	346.36	351.41	350.58	356.01	366.24	359.35	355.88	359.72	355.88	
Leather and leather products	209.76	217.09	215.50	218.04	221.54	218.63	216.92	219.41	216.58	219.79	221.54	217.04	209.88	212.72	212.86	
<b>TRANSPORTATION AND PUBLIC UTILITIES</b>	437.73	448.37	441.78	441.73	449.40	448.33	454.86	457.34	452.67	457.02	460.52	451.62	454.73	455.88	455.50	
<b>WHOLESALE TRADE</b>	345.86	358.36	354.82	357.59	360.99	359.68	358.90	362.00	357.98	361.62	366.99	362.07	360.79	361.13	361.30	
<b>RETAIL TRADE</b>	176.40	177.31	175.22	177.91	179.39	180.27	179.07	177.90	175.52	175.80	180.00	174.24	174.21	175.74	175.45	
<b>FINANCE, INSURANCE, AND REAL ESTATE</b>	278.13	288.65	285.74	284.23	291.77	285.68	286.77	292.29	290.40	291.41	298.74	295.93	303.51	302.68	298.75	
<b>SERVICES</b>	250.59	260.76	257.21	257.68	261.03	260.17	260.50	263.71	263.71	264.87	267.65	267.16	268.79	269.62	267.49	

- Data not available.  
P = preliminary

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

17. The Hourly Earnings Index for production or nonsupervisory workers on private nonagricultural payrolls by industry

Industry	Not seasonally adjusted				Seasonally adjusted						
	Apr. 1985	Feb. 1986	Mar. 1986 <sup>P</sup>	Apr. 1986 <sup>P</sup>	Apr. 1985	Dec. 1985	Jan. 1986	Feb. 1986	Mar. 1986	Apr. 1986 <sup>P</sup>	
	<b>PRIVATE SECTOR (in current dollars)</b>	164.7	168.8	168.7	168.8	164.8	168.4	167.4	168.5	168.9	168.8
Mining <sup>1</sup>	178.6	180.5	179.7	179.8	-	-	-	-	-	-	
Construction	149.2	149.1	147.8	148.8	150.4	150.5	149.2	150.0	148.8	150.0	
Manufacturing	167.9	171.5	171.9	172.1	167.9	170.8	170.8	171.4	172.0	172.1	
Transportation and public utilities	164.5	170.1	169.6	169.7	165.0	169.2	168.3	169.6	170.2	170.3	
Wholesale trade <sup>1</sup>	170.7	173.7	173.1	173.0	-	-	-	-	-	-	
Retail trade	156.1	158.3	158.3	158.6	155.6	158.9	157.1	157.8	158.1	158.1	
Finance, insurance, and real estate <sup>1</sup>	170.0	178.6	178.5	177.7	-	-	-	-	-	-	
Services	168.0	174.6	174.8	174.2	167.8	173.4	171.8	173.5	174.6	174.0	
<b>PRIVATE SECTOR (in constant dollars)</b>	94.4	94.8	95.3	-	94.4	94.4	93.5	94.6	95.3	-	

<sup>1</sup> This series is not seasonally adjusted because the seasonal component is small relative to the trend-cycle, irregular components, or both, and consequently cannot be separated with sufficient precision.  
- Data not available.

<sup>P</sup> = preliminary.  
NOTE: See "Notes on the data" for a description of the most recent benchmark revision.

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

(In percent)

Time span and year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
<b>Over 1-month span</b>												
1984 .....	67.3	72.7	66.8	67.3	60.5	64.3	65.7	58.1	48.4	66.5	55.1	63.5
1985 .....	57.6	50.3	55.9	44.6	50.3	47.0	54.9	56.8	45.7	63.5	61.6	63.2
1986 .....	63.0	51.6	53.0	45.7	-	-	-	-	-	-	-	-
<b>Over 3-month span</b>												
1984 .....	78.1	75.9	77.6	68.9	69.7	67.0	65.4	60.3	60.0	56.5	67.0	60.0
1985 .....	58.6	54.1	46.8	45.9	44.1	49.7	50.5	49.2	53.8	52.7	65.1	65.1
1986 .....	62.4	56.2	48.1	-	-	-	-	-	-	-	-	-
<b>Over 6-month span</b>												
1984 .....	79.2	77.8	77.3	75.4	69.2	64.9	63.2	64.1	67.0	59.7	57.6	60.3
1985 .....	52.2	49.5	44.3	44.6	44.3	42.4	46.8	50.0	56.8	60.0	56.2	61.4
1986 .....	56.8	-	-	-	-	-	-	-	-	-	-	-
<b>Over 12-month span</b>												
1984 .....	81.9	78.4	76.8	75.1	72.7	73.0	70.0	65.7	63.5	60.5	56.2	51.9
1985 .....	50.8	48.4	49.5	47.3	46.2	47.3	48.6	48.6	47.6	-	-	-
1986 .....	-	-	-	-	-	-	-	-	-	-	-	-

- Data not available.

NOTE: Figures are the percent of industries with employment rising. (Half of the unchanged components are counted as rising.) Data are centered within the

spans. 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	1977	1978	1979	1980	1981	1982	1983	1984	1985
Noninstitutional population .....	160,689	163,541	166,460	169,349	171,775	173,939	175,891	178,080	179,912
<b>Labor force</b>									
Total (number) .....	100,665	103,882	106,559	108,544	110,315	111,872	113,226	115,241	117,167
Percent of population .....	62.6	63.5	64.0	64.1	64.2	64.3	64.4	64.7	65.1
<b>Employed</b>									
Total (number) .....	93,673	97,679	100,421	100,907	102,042	101,194	102,510	106,702	108,856
Percent of population .....	58.3	59.7	60.3	59.6	59.4	58.2	58.3	59.9	60.5
Resident Armed Forces .....	1,656	1,631	1,597	1,604	1,645	1,668	1,676	1,697	1,706
Civilian									
Total .....	92,017	96,048	98,824	99,303	100,397	99,526	100,834	105,005	107,150
Agriculture .....	3,283	3,387	3,347	3,364	3,368	3,401	3,383	3,321	3,179
Nonagricultural industries .....	88,734	92,661	95,477	95,938	97,030	96,125	97,450	101,685	103,971
<b>Unemployed</b>									
Total (number) .....	6,991	6,202	6,137	7,637	8,273	10,678	10,717	8,539	8,312
Percent of labor force .....	6.9	6.0	5.8	7.0	7.5	9.5	9.5	7.4	7.1
Not in labor force (number) .....	60,025	59,659	59,900	60,806	61,460	62,067	62,665	62,839	62,744

**20. Annual data: Employment levels by industry**

(Numbers in thousands)

Industry	1977	1978	1979	1980	1981	1982	1983	1984	1985
<b>Total employment</b> .....	82,471	86,697	89,823	90,406	91,156	89,566	90,196	94,461	97,699
<b>Private sector</b> .....	67,344	71,026	73,876	74,166	75,126	73,729	74,330	78,477	81,404
<b>Goods-producing</b> .....	24,346	25,585	26,461	25,658	25,497	23,813	23,334	24,730	25,057
Mining .....	813	851	958	1,027	1,139	1,128	952	974	969
Construction .....	3,851	4,229	4,463	4,346	4,188	3,905	3,948	4,345	4,662
Manufacturing .....	19,682	20,505	21,040	20,285	20,170	18,781	18,434	19,412	19,426
<b>Service-producing</b> .....	58,125	61,113	63,363	64,748	65,659	65,753	66,862	69,731	72,643
Transportation and public utilities .....	4,713	4,923	5,136	5,146	5,165	5,082	4,954	5,171	5,300
Wholesale trade .....	4,708	4,969	5,204	5,275	5,358	5,278	5,268	5,550	5,769
Retail trade .....	13,808	14,573	14,989	15,035	15,189	15,179	15,613	16,584	17,425
Finance, insurance, and real estate .....	4,467	4,724	4,975	5,160	5,298	5,341	5,468	5,682	5,924
Services .....	15,303	16,252	17,112	17,890	18,619	19,036	19,694	20,761	21,930
<b>Government</b> .....	15,127	15,672	15,947	16,241	16,031	15,837	15,869	15,984	16,295
Federal .....	2,727	2,753	2,773	2,866	2,772	2,739	2,774	2,807	2,875
State .....	3,377	3,474	3,541	3,610	3,640	3,640	3,662	3,712	3,780
Local .....	9,023	9,446	9,633	9,765	9,619	9,458	9,434	9,465	9,640

NOTE: Data include Alaska and Hawaii beginning in 1959. 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	1977	1978	1979	1980	1981	1982	1983	1984	1985
<b>Private sector</b>									
Average weekly hours .....	36.0	35.8	35.7	35.3	35.2	34.8	35.0	35.3	35.1
Average hourly earnings .....	5.25	5.69	6.16	6.66	7.25	7.68	8.02	8.33	8.58
Average weekly earnings .....	189.00	203.70	219.91	235.10	255.20	267.26	280.70	294.05	301.16
<b>Mining</b>									
Average weekly hours .....	43.4	43.4	43.0	43.3	43.7	42.7	42.5	43.3	43.4
Average hourly earnings .....	6.94	7.67	8.49	9.17	10.04	10.77	11.28	11.63	11.95
Average weekly earnings .....	301.20	332.88	365.07	397.06	438.75	459.88	479.40	503.58	518.63
<b>Construction</b>									
Average weekly hours .....	36.5	36.8	37.0	37.0	36.9	36.7	37.1	37.7	37.7
Average hourly earnings .....	8.10	8.66	9.27	9.94	10.82	11.63	11.94	12.12	12.26
Average weekly earnings .....	295.65	318.69	342.99	367.78	399.26	426.82	442.97	456.92	462.20
<b>Manufacturing</b>									
Average weekly hours .....	40.3	40.4	40.2	39.7	39.8	38.9	40.1	40.7	40.5
Average hourly earnings .....	5.68	6.17	6.70	7.27	7.99	8.49	8.83	9.18	9.52
Average weekly earnings .....	228.90	249.27	269.34	288.62	318.00	330.26	354.08	373.63	385.56
<b>Transportation and public utilities</b>									
Average weekly hours .....	39.9	40.0	39.9	39.6	39.4	39.0	39.0	39.4	39.4
Average hourly earnings .....	6.99	7.57	8.16	8.87	9.70	10.32	10.79	11.11	11.38
Average weekly earnings .....	278.90	302.80	325.58	351.25	382.18	402.48	420.81	437.73	448.37
<b>Wholesale trade</b>									
Average weekly hours .....	38.8	38.8	38.8	38.5	38.5	38.3	38.5	38.6	38.7
Average hourly earnings .....	5.39	5.88	6.39	6.96	7.56	8.09	8.55	8.96	9.26
Average weekly earnings .....	209.13	228.14	247.93	267.96	291.06	309.85	329.18	345.86	358.36
<b>Retail trade</b>									
Average weekly hours .....	31.6	31.0	30.6	30.2	30.1	29.9	29.8	30.0	29.7
Average hourly earnings .....	3.85	4.20	4.53	4.88	5.25	5.48	5.74	5.88	5.97
Average weekly earnings .....	121.66	130.20	138.62	147.38	158.03	163.85	171.05	176.40	177.31
<b>Finance, insurance, and real estate</b>									
Average weekly hours .....	36.4	36.4	36.2	36.2	36.3	36.2	36.2	36.5	36.4
Average hourly earnings .....	4.54	4.89	5.27	5.79	6.31	6.78	7.29	7.62	7.93
Average weekly earnings .....	165.26	178.00	190.77	209.60	229.05	245.44	263.90	278.13	288.65
<b>Services</b>									
Average weekly hours .....	33.0	32.8	32.7	32.6	32.6	32.6	32.7	32.8	32.8
Average hourly earnings .....	4.65	4.99	5.36	5.85	6.41	6.92	7.31	7.64	7.95
Average weekly earnings .....	153.45	163.67	175.27	190.71	208.97	225.59	239.04	250.59	260.76

22. Employment Cost Index, compensation,<sup>1</sup> by occupation and industry group

(June 1981 = 100)

Series	1984				1985				1986	Percent change	
	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	3 months ended	12 months ended
	Mar., 1986										
<b>Civilian workers</b> <sup>2</sup> .....	119.8	120.8	122.4	123.9	125.5	126.4	128.4	129.2	130.6	1.1	4.1
Workers, by occupational group:											
White-collar workers .....	120.9	122.1	124.0	125.5	127.3	128.3	130.7	131.6	133.1	1.1	4.6
Blue-collar workers .....	117.7	118.6	119.6	120.9	122.2	123.1	124.4	124.9	126.2	1.0	3.3
Service workers .....	122.0	122.1	124.6	126.8	127.8	128.0	130.9	131.8	133.1	1.0	4.1
Workers, by industry division:											
Manufacturing .....	117.9	119.1	120.4	122.0	123.9	124.6	125.5	126.0	127.7	1.3	3.1
Nonmanufacturing .....	120.7	121.6	123.3	124.8	126.2	127.2	129.7	130.6	131.9	1.0	4.5
Services .....	125.0	125.5	128.8	130.9	131.9	132.6	136.4	137.1	138.8	1.2	5.2
Public administration <sup>3</sup> .....	122.9	123.7	126.9	128.6	130.1	130.3	134.2	134.8	136.8	1.5	5.1
<b>Private industry workers</b> .....	119.0	120.1	121.1	122.7	124.2	125.2	126.8	127.5	128.9	1.1	3.8
Workers, by occupational group:											
White-collar workers .....	119.9	121.4	122.4	123.9	125.8	127.1	128.8	129.8	131.3	1.2	4.4
Blue-collar workers .....	117.5	118.4	119.3	120.6	121.9	122.8	124.0	124.4	125.7	1.0	3.1
Service workers .....	121.5	121.2	123.2	125.7	126.3	126.5	128.8	129.5	130.9	1.1	3.6
Workers, by industry division:											
Manufacturing .....	117.9	119.1	120.4	122.0	123.9	124.6	125.5	126.0	127.7	1.3	3.1
Nonmanufacturing .....	119.6	120.7	121.6	123.1	124.4	125.6	127.6	128.4	129.7	1.0	4.3
<b>State and local government workers</b> .....	123.9	124.4	128.8	130.1	131.7	132.0	136.5	137.5	138.9	1.0	5.5
Workers, by occupational group:											
White-collar workers .....	124.5	125.0	129.7	131.1	132.5	132.9	137.6	138.6	140.0	1.0	5.7
Blue-collar workers .....	121.9	122.3	125.0	125.9	128.1	128.5	131.9	132.7	134.7	1.5	5.2
Workers, by industry division:											
Services .....	124.5	125.0	129.9	131.3	132.8	133.2	137.9	139.1	140.4	.9	5.7
Schools .....	124.5	124.7	130.6	132.0	133.4	133.7	139.1	140.3	141.5	.9	6.1
Elementary and secondary .....	125.4	125.7	132.1	133.5	134.4	134.6	140.9	142.0	143.0	.7	6.4
Hospitals and other services <sup>4</sup> .....	124.4	125.7	127.9	129.2	131.1	131.5	134.1	135.2	136.8	1.2	4.3
Public administration <sup>3</sup> .....	122.9	123.7	126.9	128.6	130.1	130.3	134.2	134.8	136.8	1.5	5.1

<sup>1</sup> Cost (cents-per-hour worked) measured in the Employment Cost Index consists of wages, salaries and employer cost of employee benefits.

<sup>2</sup> Consist of private industry workers (excluding farm and household workers)

and State and local government (excluding Federal Government) workers.

<sup>3</sup> Consists of legislative, judicial, administrative, and regulatory activities.

<sup>4</sup> Includes, for example, library, social, and health services.



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

(June 1981 = 100)

Series	1984				1985				1986	Percent change	
	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	3 months ended	12 months ended
										Mar., 1986	
<b>Civilian workers</b> <sup>1</sup> .....	117.9	118.8	120.3	121.7	123.1	124.2	126.3	127.0	128.3	1.0	4.2
Workers, by occupational group:											
White-collar workers .....	119.3	120.4	122.2	123.5	125.2	126.4	128.8	129.8	131.2	1.1	4.8
Blue-collar workers .....	115.3	116.1	117.0	118.2	119.3	120.5	122.0	122.3	123.4	.9	3.4
Service workers .....	120.0	119.8	122.3	124.3	124.8	125.3	128.0	128.6	129.8	.9	4.0
Workers, by industry division											
Manufacturing .....	115.7	116.8	118.0	119.5	121.0	122.3	123.2	123.8	125.3	1.2	3.6
Nonmanufacturing .....	118.9	119.7	121.3	122.6	123.9	125.0	127.6	128.4	129.6	.9	4.6
Services .....	123.3	123.8	127.2	128.9	129.7	130.5	134.2	134.8	136.4	1.2	5.2
Public administration <sup>2</sup> .....	120.4	121.3	124.4	125.7	127.0	127.2	131.4	132.0	133.8	1.4	5.4
<b>Private industry workers</b> .....	117.2	118.2	119.2	120.6	122.0	123.3	124.9	125.6	126.8	1.0	3.9
Workers, by occupational group:											
White-collar workers .....	118.5	119.9	120.9	122.3	124.0	125.5	127.3	128.3	129.6	1.0	4.5
Professional and technical .....	122.2	123.8	125.2	127.3	127.7	128.7	131.2	131.5	132.7	.9	3.9
Managers and administrators .....	118.0	119.2	121.0	122.2	123.8	126.5	127.7	128.4	130.5	1.6	5.4
Salesworkers .....	110.2	111.9	110.5	111.6	116.3	117.4	119.3	122.5	122.4	-.1	5.2
Clerical workers .....	119.8	120.7	122.0	122.9	124.7	125.6	127.1	127.9	129.6	1.3	3.9
Blue-collar workers .....	115.1	115.9	116.7	118.0	119.1	120.3	121.7	122.0	123.1	.9	3.4
Craft and kindred workers .....	116.5	117.3	118.0	119.4	120.8	122.0	123.7	123.8	125.3	1.2	3.7
Operatives, except transport .....	114.9	115.8	116.6	117.9	118.9	120.1	121.1	121.6	122.6	.8	3.1
Transport equipment operatives .....	111.7	112.7	113.4	114.0	114.5	115.7	117.7	117.8	118.0	.2	3.1
Nonfarm laborers .....	112.9	114.1	114.7	115.9	116.7	118.5	118.6	119.8	120.0	.2	2.8
Service workers .....	119.8	119.3	121.2	123.7	123.8	124.4	126.3	126.6	128.0	1.1	3.4
Workers, by industry division:											
Manufacturing .....	115.7	116.8	118.0	119.5	121.0	122.3	123.2	123.8	125.3	1.2	3.6
Durables .....	115.7	116.6	117.7	119.1	120.6	122.0	122.7	123.4	124.8	1.1	3.5
Nondurables .....	115.8	117.1	118.6	120.2	121.6	122.6	124.0	124.6	126.1	1.2	3.7
Nonmanufacturing .....	118.0	119.0	119.9	121.2	122.6	123.9	125.9	126.6	127.7	.9	4.2
Construction .....	113.3	114.0	114.3	114.4	115.5	116.6	117.3	117.9	118.3	.3	2.4
Transportation and public utilities .....	118.5	119.3	119.9	120.7	121.7	122.8	124.8	125.2	126.3	.9	3.8
Wholesale and retail trade .....	114.3	116.0	116.5	118.1	118.8	121.1	122.7	123.7	124.5	.6	4.8
Wholesale trade .....	118.2	120.0	120.7	122.9	123.7	126.8	127.7	128.3	129.7	1.1	4.9
Retail trade .....	112.8	114.4	114.9	116.2	116.9	118.9	120.8	121.9	122.5	.5	4.8
Finance, insurance, and real estate .....	116.1	116.9	115.3	115.8	122.0	121.7	124.1	126.5	126.6	.1	3.8
Services .....	124.2	124.7	127.1	129.5	129.9	131.0	133.9	134.1	136.2	1.6	4.8
<b>State and local government workers</b> .....	121.6	122.0	126.1	127.1	128.4	128.7	133.2	134.2	135.5	1.0	5.5
Workers, by occupational group											
White-collar workers .....	122.2	122.5	127.1	128.0	129.3	129.6	134.3	135.3	136.6	1.0	5.6
Blue-collar workers .....	119.1	119.6	121.9	122.5	124.2	124.5	127.9	128.4	130.4	1.6	5.0
Workers, by industry division											
Services .....	122.2	122.5	127.2	128.1	129.4	129.7	134.5	135.6	136.8	.9	5.7
Schools .....	122.2	122.3	127.8	128.7	129.9	130.2	135.8	137.0	138.0	.7	6.2
Elementary and secondary .....	122.9	123.0	129.3	130.2	130.8	131.1	137.5	138.5	139.4	.6	6.6
Hospitals and other services <sup>3</sup> .....	121.9	123.1	125.1	125.9	127.7	128.0	130.2	130.9	132.4	1.1	3.7
Public administration <sup>2</sup> .....	120.4	121.3	124.4	125.7	127.0	127.2	131.4	132.0	133.8	1.4	5.4

<sup>1</sup> Consists of private industry workers (excluding farm and household workers) and State and local government (excluding Federal Government) workers.

<sup>2</sup> Consists of legislative, judicial, administrative, and regulatory activities.

<sup>3</sup> Includes, for example, library, social and health services.

**24. Employment Cost Index, private nonfarm workers, by bargaining status, region, and area size**

(June 1981 = 100)

Series	1984				1985				1986	Percent change	
	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	3 months ended	12 months ended
											Mar., 1986
<b>COMPENSATION</b>											
<b>Workers, by bargaining status<sup>1</sup></b>											
Union .....	120.6	121.7	122.6	123.9	124.8	125.5	126.5	127.1	128.4	1.0	2.9
Manufacturing .....	119.3	120.5	121.6	123.2	124.2	124.2	125.0	125.5	127.0	1.2	2.3
Nonmanufacturing .....	121.9	122.8	123.6	124.5	125.3	126.6	127.8	128.6	129.7	.9	3.5
Nonunion .....	118.0	119.2	120.3	121.9	123.8	125.0	126.8	127.5	129.0	1.2	4.2
Manufacturing .....	116.6	117.9	119.3	120.8	123.6	124.8	125.7	126.3	128.1	1.4	3.6
Nonmanufacturing .....	118.6	119.8	120.7	122.4	123.9	125.1	127.3	128.1	129.5	1.1	4.5
<b>Workers, by region<sup>1</sup></b>											
Northeast .....	118.9	120.7	122.4	123.8	125.1	126.4	128.8	129.9	131.6	1.3	5.2
South .....	119.7	120.7	120.7	122.2	124.2	125.2	126.5	127.2	128.7	1.2	3.6
Midwest (formerly North Central) .....	117.2	117.9	119.7	120.8	122.0	122.7	124.2	124.6	125.9	1.0	3.2
West .....	121.0	122.2	122.5	124.9	126.8	127.9	129.1	129.8	130.8	.8	3.2
<b>Workers, by area size<sup>1</sup></b>											
Metropolitan areas .....	119.4	120.6	121.5	123.2	124.7	125.7	127.3	128.1	129.5	1.1	3.8
Other areas .....	116.7	117.4	119.0	119.8	121.4	122.5	123.9	123.9	125.5	1.3	3.4
<b>WAGES AND SALARIES</b>											
<b>Workers, by bargaining status<sup>1</sup></b>											
Union .....	118.1	119.0	119.8	120.9	121.7	123.0	124.1	124.7	125.6	.7	3.2
Manufacturing .....	116.1	117.1	118.1	119.5	120.4	121.7	122.8	123.3	124.2	.7	3.2
Nonmanufacturing .....	120.1	120.7	121.3	122.1	122.8	124.1	125.3	125.9	126.9	.8	3.3
Nonunion .....	116.7	117.8	118.8	120.4	122.1	123.4	125.2	125.9	127.3	1.1	4.3
Manufacturing .....	115.4	116.5	117.9	119.5	121.5	122.8	123.7	124.4	126.1	1.4	3.8
Nonmanufacturing .....	117.2	118.3	119.2	120.7	122.3	123.6	125.9	126.6	127.8	.9	4.5
<b>Workers, by region<sup>1</sup></b>											
Northeast .....	117.4	118.9	120.5	121.9	123.0	124.6	126.8	128.1	129.2	.9	5.0
South .....	117.9	119.0	119.0	120.2	122.3	123.4	124.8	125.4	126.8	1.1	3.7
Midwest (formerly North Central) .....	115.5	116.0	117.8	118.7	119.6	121.1	122.5	122.9	124.2	1.1	3.8
West .....	118.8	119.6	120.0	122.5	124.0	125.1	126.6	127.1	128.1	.8	3.3
<b>Workers, by area size<sup>1</sup></b>											
Metropolitan areas .....	117.6	118.6	119.5	121.0	122.4	123.8	125.5	126.3	127.4	.9	4.1
Other areas .....	115.1	116.0	117.5	118.3	119.6	120.6	121.9	122.0	123.6	1.3	3.3

<sup>1</sup> The indexes are calculated differently from those for the occupation and industry groups. For a detailed description of the index calculation, see the

Monthly Labor Review Technical Note, "Estimation procedures for the Employment Cost Index," May 1982.

**25. Specified compensation and wage adjustments from contract settlements, and effective wage adjustments, private industry collective bargaining situations covering 1,000 workers or more (in percent)**

Measure	Annual average		Quarterly average							
	1984	1985	1984			1985				1986
			II	III	IV	I	II	III	IV	
<b>Specified adjustments:</b>										
Total compensation <sup>1</sup> adjustments, <sup>2</sup> settlements covering 5,000 workers or more:										
First year of contract .....	3.6	2.6	3.5	2.7	3.7	3.6	3.5	2.0	2.0	0.3
Annual rate over life of contract .....	2.8	2.7	3.2	3.1	2.0	2.7	3.4	3.0	1.4	1.2
Wage adjustments, settlements covering 1,000 workers or more:										
First year of contract .....	2.4	2.3	2.6	2.1	2.3	3.3	2.5	2.0	2.1	.8
Annual rate over life of contract .....	2.4	2.7	2.7	2.6	1.5	3.2	2.8	3.1	1.9	1.6
<b>Effective adjustments:</b>										
Total effective wage adjustment <sup>3</sup> .....	3.7	3.3	.9	1.2	.7	.7	.8	1.2	.5	.6
From settlements reached in period .....	.8	.7	.1	.2	.3	.1	.2	.2	.1	.0
Deferred from settlements reached in earlier periods .....	2.0	1.8	.7	.7	.2	.6	.5	.5	.2	.4
From cost-of-living-adjustments clauses .....	.9	.7	.2	.3	.2	.1	.1	.4	.1	.2

<sup>1</sup> Compensation includes wages, salaries, and employers' cost of employee benefits when contract is negotiated.

<sup>2</sup> Adjustments are the net result of increases, decreases and no changes in

compensation or wages.

<sup>3</sup> Because of rounding total may not equal sum of parts.

P = preliminary.

**26. Average specified compensation and wage adjustments, major collective bargaining settlements in private industry situations covering 1,000 workers or more during 4-quarter periods (in percent)**

Measure	Average for four quarters ending--							
	1984			1985				1986
	II	III	IV	I	II	III	IV	
<b>Specified total compensation adjustments, settlements covering 5,000 workers or more, all industries:</b>								
First year of contract .....	4.7	4.2	3.6	3.4	3.4	3.1	2.6	2.3
Annual rate over life of contract .....	3.5	3.2	2.8	2.6	2.7	2.7	2.7	2.6
<b>Specified wage adjustments, settlements covering 1,000 workers or more:</b>								
<b>All industries</b>								
First year of contract .....	3.5	3.2	2.4	2.4	2.4	2.4	2.3	2.0
Contracts with COLA clauses .....	4.6	4.5	2.9	2.5	2.3	1.9	1.6	1.6
Contracts without COLA clauses .....	2.7	2.3	2.1	2.4	2.4	2.7	2.7	2.2
Annual rate over life of contract .....	3.1	2.8	2.4	2.3	2.4	2.5	2.7	2.5
Contracts with COLA clauses .....	2.9	2.8	1.8	1.3	1.5	1.8	2.5	2.6
Contracts without COLA clauses .....	3.2	2.8	2.7	2.8	2.8	3.0	2.8	2.5
<b>Manufacturing</b>								
First year of contract .....	3.0	2.6	2.3	2.1	2.0	1.5	.8	.8
Contracts with COLA clauses .....	3.2	1.5	2.1	2.0	1.9	1.5	.8	.8
Contracts without COLA clauses .....	2.8	3.7	2.9	2.5	2.2	1.5	.9	.9
Annual rate over life of contract .....	3.1	2.8	1.5	1.4	1.5	1.6	1.8	1.8
Contracts with COLA clauses .....	2.8	1.8	1.0	.9	1.0	1.4	2.1	2.1
Contracts without COLA clauses .....	3.6	3.8	3.3	3.2	3.0	2.4	1.6	1.5
<b>Nonmanufacturing</b>								
First year of contract .....	3.7	3.3	2.5	2.6	2.7	3.2	3.3	2.8
Contracts with COLA clauses .....	5.2	5.4	5.5	5.1	4.3	4.0	3.6	3.5
Contracts without COLA clauses .....	2.6	2.1	2.0	2.4	2.5	3.0	3.3	2.7
Annual rate over life of contract .....	3.0	2.8	2.9	2.8	2.9	3.3	3.3	3.0
Contracts with COLA clauses .....	3.0	3.1	4.8	4.0	3.8	3.9	3.6	3.6
Contracts without COLA clauses .....	3.0	2.6	2.6	2.7	2.8	3.2	3.3	2.9
<b>Construction</b>								
First year of contract .....	.8	.9	.5	.9	1.1	1.0	1.5	1.7
Contracts with COLA clauses .....	-.4	4.0	4.0	4.6	9.2	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
Contracts without COLA clauses .....	.9	.9	.4	.8	1.0	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
Annual rate over life of contract .....	1.7	1.4	1.0	1.4	1.7	1.7	2.1	2.2
Contracts with COLA clauses .....	.0	1.4	1.4	1.7	4.6	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )
Contracts without COLA clauses .....	1.8	1.4	1.0	1.4	1.7	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )

<sup>1</sup> Data do not meet publication standards.

P = preliminary.

**27. Average effective wage adjustments, private industry collective bargaining situations covering 1,000 workers or more during 4-quarter periods (in percent)**

Effective wage adjustment	Average for four quarters ending--						
	1984		1985				1986
	III	IV	I	II	III	IV	P
<b>For all workers:<sup>1</sup></b>							
Total .....	4.2	3.7	3.6	3.5	3.5	3.3	3.1
From settlements reached in period .....	1.0	.8	.7	.9	.9	.7	-
Deferred from settlements reached in earlier period .....	2.1	2.0	2.2	1.9	1.8	1.8	1.7
From cost-of-living-adjustments clauses .....	1.2	.9	.7	.7	.8	.7	.8
<b>For workers receiving changes:</b>							
Total .....	5.0	4.4	4.5	4.2	4.3	4.1	4.0
From settlements reached in period .....	3.7	3.0	2.9	2.9	2.8	3.4	2.9
Deferred from settlements reached in earlier period .....	4.2	4.0	4.2	3.9	3.7	3.7	3.5
From cost-of-living-adjustments clauses .....	3.2	2.7	2.3	2.3	2.8	2.2	2.5

<sup>1</sup> Because of rounding total may not equal sum of parts.  
- Data not available.

P = preliminary.

**28. Specified compensation and wage adjustments from contract settlements, and effective wage adjustments, State and local government collective bargaining situations covering 1,000 workers or more (in percent)**

Measure	Annual average		Second 6 months 1985 <sup>P</sup>
	1984	1985	
<b>Specified adjustments:</b>			
Total compensation <sup>1</sup> adjustments, <sup>2</sup> settlements covering 5,000 workers or more:			
First year of contract .....			
Annual rate over life of contract .....	5.2	4.2	3.8
	5.4	5.1	5.3
<b>Wage adjustments, settlements covering 1,000 workers or more:</b>			
First year of contract .....	4.8	4.6	4.4
Annual rate over life of contract .....	5.1	5.4	5.6
<b>Effective adjustments:</b>			
Total effective wage adjustment <sup>3</sup> .....	5.0	5.7	4.1
From settlements reached in period .....	1.9	4.1	3.2
Deferred from settlements reached in earlier periods .....	3.1	1.6	.9
From cost-of-living-adjustment clauses .....	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )

<sup>1</sup> Compensation includes wages, salaries, and employers' cost of employee benefits when contract is negotiated.  
<sup>2</sup> Adjustments are the net result of increases, decreases, and no changes in compensation or wages.

<sup>3</sup> Because of rounding total may not equal sum of parts.  
<sup>4</sup> Less than 0.05 percent.  
P = preliminary.

**29. Work stoppages involving 1,000 workers or more**

Measure	Annual totals		1985										1986		
	1984	1985	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan. <sup>P</sup>	Feb. <sup>P</sup>	Mar. <sup>P</sup>	
<b>Number of stoppages:</b>															
Beginning in period .....	62	54	3	2	2	9	6	11	6	3	2	4	3	3	
In effect during period .....	68	61	8	8	8	13	18	20	20	13	9	7	7	9	
<b>Workers involved:</b>															
Beginning in period (in thousands) .....	376.0	323.9	6.2	6.9	15.7	50.1	15.3	69.5	76.6	26.2	8.2	7.6	24.0	12.3	
In effect during period (in thousands) .....	391.0	584.1	14.8	15.1	28.5	56.9	66.8	93.9	119.3	47.0	38.0	12.0	28.4	39.7	
<b>Days idle:</b>															
Number (in thousands) .....	8,499.0	-	229.5	203.3	454.3	500.2	869.7	931.4	1,433.0	651.2	665.4	170.0	309.5	411.3	
Percent of estimated working time <sup>1</sup> .....	.04	.03	.01	.01	.02	.02	.04	.04	.06	.04	.03	.01	.02	.02	

<sup>1</sup> 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

1988, pp. 54-56.  
- Data not available.  
P = preliminary

**30. Consumer Price Index for All Urban Consumers: U.S. city average, by expenditure category and commodity or service group; and CPI for Urban Wage Earners and Clerical Workers, all items**

(1967=100, unless otherwise indicated)

Series	Annual average		1985										1986			
	1984	1985	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	
<b>CONSUMER PRICE INDEX FOR ALL URBAN CONSUMERS:</b>																
All items .....	311.1	322.2	320.1	321.3	322.3	322.8	323.5	324.5	325.5	326.6	327.4	328.4	327.5	326.0	325.3	
All items (1957-59=100) .....	361.9	374.7	372.3	373.7	374.8	375.5	376.2	377.4	378.5	379.9	380.8	381.9	380.8	379.1	378.3	
Food and beverages .....	295.1	302.0	301.6	301.0	301.4	301.6	301.8	302.1	302.5	303.6	305.6	307.9	307.7	307.8	308.5	
Food .....	302.9	309.8	309.6	308.9	309.3	309.5	309.7	309.9	311.0	313.2	315.6	315.3	315.4	315.4	316.1	
Food at home .....	292.6	296.8	297.7	296.2	296.0	296.2	295.9	295.6	295.3	296.6	299.3	302.5	301.5	301.2	301.5	
Cereals and bakery products .....	305.3	317.0	314.8	315.9	317.3	317.3	318.5	319.2	318.9	319.9	321.9	322.0	322.5	322.7	322.5	
Meats, poultry, fish, and eggs .....	266.6	263.4	263.6	259.8	259.8	260.5	259.7	260.6	261.1	266.1	269.9	271.5	268.4	267.7	264.2	
Dairy products .....	253.2	258.0	258.3	258.4	257.8	257.8	257.4	258.0	257.1	257.1	256.9	257.2	257.3	256.8	256.8	
Fruits and vegetables .....	317.4	325.7	333.2	330.3	329.0	328.9	326.3	319.9	317.1	314.3	323.9	334.4	320.7	319.2	329.5	
Other foods at home .....	352.2	361.1	360.8	361.3	360.8	360.6	361.7	362.6	363.0	362.2	361.3	365.7	375.1	375.7	376.1	
Sugar and sweets .....	389.1	398.8	396.1	397.6	398.3	400.2	401.8	401.1	402.6	401.4	402.2	405.1	408.6	408.4	411.4	
Fats and oils .....	288.0	294.4	294.0	294.0	296.0	297.8	297.1	294.8	291.2	292.1	290.3	292.1	291.4	290.2	288.5	
Nonalcoholic beverages .....	443.0	451.7	454.0	454.1	451.5	448.2	449.6	452.8	454.1	451.7	448.8	459.7	485.3	488.0	487.4	
Other prepared foods .....	284.9	294.2	292.8	293.4	293.4	294.5	295.8	296.8	296.8	296.8	297.3	298.0	299.5	299.3	300.2	
Food away from home .....	333.4	346.6	343.9	345.1	346.9	347.3	348.4	349.9	350.3	351.3	352.1	353.1	354.2	355.5	357.0	
Alcoholic beverages .....	222.1	229.5	226.7	227.7	227.8	227.8	228.9	229.3	236.4	236.2	236.2	237.5	238.3	238.8	239.5	
Housing .....	336.5	349.9	345.9	348.5	350.4	351.6	352.9	353.8	354.4	355.0	355.8	356.8	356.5	357.0	358.0	
Shelter .....	361.7	382.0	375.9	379.5	381.0	383.2	385.9	386.9	389.1	391.3	392.3	393.3	393.8	394.8	397.0	
Renters' costs (12/82=100) .....	108.6	115.4	113.5	114.5	115.1	115.8	116.6	117.0	117.9	118.4	118.3	118.8	119.0	119.6	120.9	
Rent, residential .....	249.3	264.6	260.4	262.6	263.6	265.0	266.6	267.7	269.9	271.7	272.4	273.4	273.7	275.0	277.9	
Other renters' costs .....	373.4	398.4	390.9	396.5	401.6	405.1	409.9	410.7	412.5	408.7	398.1	401.1	404.1	405.5	410.8	
Homeowners' costs (12/82=100) .....	107.3	113.1	111.3	112.4	112.8	113.5	114.3	114.6	115.1	115.8	116.3	116.7	117.0	117.9	118.7	
Owners' equivalent rent (12/82=100) .....	107.3	113.2	111.3	112.5	112.8	113.5	114.3	114.6	115.1	115.9	116.3	116.7	117.0	117.9	118.7	
Household insurance (12/82=100) .....	107.5	112.4	111.4	112.0	112.7	113.0	113.7	114.6	114.5	115.0	115.7	117.4	118.0	118.3	118.3	
Maintenance and repairs .....	359.2	368.9	368.0	366.2	367.6	368.7	370.6	368.7	368.5	372.7	373.7	379.1	379.6	367.5	367.6	
Maintenance and repair services .....	409.7	421.1	418.2	416.0	423.2	421.1	425.1	421.9	422.2	426.4	426.2	432.6	432.8	422.4	424.6	
Maintenance and repair commodities .....	262.7	269.6	270.4	269.2	265.7	267.8	269.2	268.6	268.0	271.5	273.3	277.1	277.8	266.1	264.5	
Fuel and other utilities .....	387.3	393.6	388.7	393.0	399.4	399.9	398.9	400.5	395.6	392.1	393.3	394.6	390.0	385.5	381.8	
Fuels .....	485.5	488.1	483.0	490.0	497.7	497.3	494.4	496.8	488.4	481.5	483.6	484.7	476.3	467.6	459.6	
Fuel oil, coal, and bottled gas .....	641.8	619.5	623.5	620.8	612.0	601.9	594.6	601.7	615.3	641.6	657.3	650.3	591.2	549.9	518.3	
Gas (piped) and electricity .....	445.2	452.7	445.9	454.7	465.6	467.1	465.1	466.5	453.9	440.5	439.9	442.6	444.5	442.3	439.2	
Other utilities and public services .....	230.2	240.7	236.4	236.8	241.1	242.8	244.2	244.6	244.7	245.9	245.8	247.3	247.9	249.0	251.3	
Household furnishings and operations .....	242.5	247.2	247.9	247.6	247.1	246.5	247.0	247.1	248.4	248.9	248.8	248.8	249.0	249.8	249.6	
Housefurnishings .....	199.1	200.1	201.7	201.2	200.0	198.8	199.1	199.0	200.3	200.8	200.1	199.8	199.7	201.0	200.4	
Housekeeping supplies .....	303.2	313.6	312.6	312.9	313.6	313.1	313.5	313.9	315.7	316.4	317.7	318.3	318.6	317.9	318.5	
Housekeeping services .....	327.5	338.9	337.9	338.0	338.3	339.8	340.7	341.5	342.2	342.7	343.2	343.9	344.5	345.1	345.4	
Apparel and upkeep .....	200.2	206.0	205.9	205.3	204.6	202.8	205.3	209.6	211.1	211.2	209.0	205.0	204.1	206.3	207.3	
Apparel commodities .....	187.0	191.6	191.8	191.0	190.2	188.0	190.6	195.3	196.7	196.8	194.2	189.5	188.5	190.8	191.7	
Men's and boys' apparel .....	192.4	197.9	197.4	197.8	196.4	194.5	197.2	201.5	203.2	203.6	202.0	198.6	196.8	198.3	199.8	
Women's and girls' apparel .....	163.6	169.5	170.0	168.0	166.5	163.4	167.7	176.1	177.9	176.5	172.6	164.4	163.4	167.6	168.0	
Infants' and toddlers' apparel .....	287.0	299.7	295.3	298.3	300.7	294.5	300.6	302.0	302.1	307.0	304.1	313.9	311.6	313.1	316.6	
Footwear .....	209.5	212.1	213.2	213.2	213.9	211.4	210.3	210.9	212.3	215.5	213.1	209.1	207.9	210.1	211.4	
Other apparel commodities .....	216.4	215.5	215.8	215.1	216.3	216.7	217.5	215.2	214.9	214.9	214.6	215.5	216.1	214.6	215.3	
Apparel services .....	305.0	320.9	318.4	319.4	319.9	321.4	322.9	324.1	325.7	326.3	326.9	328.9	330.7	331.5	332.9	
Transportation .....	311.7	319.9	320.0	321.4	321.8	321.8	320.7	319.7	320.9	323.2	324.0	323.9	319.2	309.6	303.3	
Private transportation .....	306.6	314.2	314.6	316.0	316.3	316.1	314.9	313.6	314.7	317.0	317.8	317.3	312.2	302.1	295.3	
New vehicles .....	208.0	214.9	213.9	214.2	214.3	214.3	214.2	214.2	215.9	218.2	219.2	219.7	220.2	220.1	221.0	
New cars .....	208.5	215.2	214.1	214.5	214.7	214.7	214.6	214.5	216.2	218.4	219.4	219.9	220.4	220.3	221.2	
Used cars .....	375.7	379.7	386.4	384.2	380.3	376.7	374.0	374.3	375.3	376.4	375.6	374.1	370.7	367.2	364.8	
Motor fuel .....	370.7	373.8	374.2	381.6	384.7	385.5	381.9	377.7	374.6	377.5	377.5	373.3	351.5	308.5	279.5	
Gasoline .....	370.2	373.3	373.8	381.4	384.5	385.3	381.8	377.4	374.2	376.1	376.8	372.5	350.8	307.7	278.6	
Maintenance and repair .....	341.5	351.4	348.2	349.6	350.4	351.1	351.9	353.5	355.7	355.8	357.5	357.9	358.9	359.3	360.6	
Other private transportation .....	273.3	287.6	285.8	285.6	286.6	287.6	287.7	285.8	289.6	293.9	295.2	297.7	299.2	301.5	301.6	
Other private transportation commodities .....	201.5	202.6	202.8	201.3	203.9	202.2	202.8	203.4	202.8	201.6	202.1	203.4	202.9	203.6	202.2	
Other private transportation services .....	295.0	312.8	310.5	310.7	311.3	313.0	313.0	310.4	315.4	321.2	322.7	325.5	329.6	330.3	330.9	
Public transportation .....	385.2	402.8	398.0	398.4	399.3	402.4	403.7	408.0	411.5	412.8	412.9	419.6	422.2	421.2	422.2	
Medical care .....	379.5	403.1	398.0	399.5	401.7	404.0	406.6	408.3	410.5	413.0	414.7	418.2	422.3	425.8	428.0	
Medical care commodities .....	239.7	256.7	253.9	255.2	257.0	257.8	259.3	260.2	261.3	262.7	262.9	264.5	267.4	269.4	271.3	
Medical care services .....	410.3	435.1	429.4	430.9	433.0	435.8	438.6	440.5	443.0	445.8	448.0	451.9	456.2	460.1	462.3	
Professional services .....	346.1	367.3	363.0	364.5	366.4	368.1	370.0	371.7	373.2	375.5	377.1	378.9	381.6	385.0	386.9	
Other medical care services .....	488.0	517.0	509.6	511.2	513.6	517.6	521.6	523.9	527.4	530.8	533.6	540.3	546.4	550.8	553.5	
Entertainment .....	255.1	265.0	263.3	263.6	264.8	265.7	265.7	266.8	268.4	269.0	268.3	270.8	272.0	271.9	272.3	
Entertainment commodities .....	253.3	260.6	259.5	259.6	260.1	260.8	260.5	262.5	264.0	264.0	264.0	264.7	265.2	265.0	264.8	
Entertainment services .....	258.3	271.8	269.2	269.9	272.0	273.3	273.6	273.3	275.2	276.6	277.1	279.9	282.1	282.2	283.5	
Other goods and services .....	307.7	326.6	321.8	322.3	323.0	325.0	326.0	333.3	334.9	335.3	336.5	339.1	340.3	341.1	341.8	
Tobacco products .....																

**30. Continued— Consumer Price Index for All Urban Consumers: U.S. city average, by expenditure category and commodity or service group; and CPI for Urban Wage Earners and Clerical Workers, all items**

(1967 = 100, unless otherwise indicated)

Series	Annual average		1985										1986			
	1984	1985	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	
All items .....	311.1	322.2	320.1	321.3	322.3	322.8	323.5	324.5	325.5	326.6	327.4	328.4	327.5	326.0	325.3	
Commodities .....	280.7	286.7	286.8	287.0	286.9	286.5	287.1	287.9	289.2	289.9	290.1	287.4	283.7	281.2		
Food and beverages .....	295.1	302.0	301.6	301.0	301.4	301.6	301.8	302.1	302.5	303.6	305.6	307.9	307.7	308.5		
Commodities less food and beverages .....	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Nondurables less food and beverages .....	275.7	282.1	281.5	283.1	283.5	282.9	283.1	284.6	285.3	286.8	286.8	284.9	278.6	268.9		
Apparel commodities .....	187.0	191.6	191.8	191.0	190.2	188.0	190.6	195.3	196.7	196.8	194.2	189.5	188.5	190.8		
Nondurables less food, beverages, and apparel .....	325.8	333.3	332.3	335.1	336.2	336.4	335.4	335.3	335.6	337.8	339.1	338.7	329.5	313.6		
Durables .....	266.5	270.7	272.6	271.6	270.4	269.3	268.6	268.7	270.2	271.5	271.4	271.4	270.5	269.7		
Services .....	363.0	381.5	376.2	378.9	381.3	383.3	384.9	386.5	387.7	388.7	389.5	391.7	393.3	394.9		
Rent of shelter .....	107.7	113.9	112.0	113.2	113.6	114.3	115.1	115.4	116.1	116.7	117.0	117.4	117.7	118.5		
Household services less rent of shelter .....	108.1	111.2	109.8	110.9	112.7	113.2	113.2	113.5	112.1	110.8	110.8	111.4	111.8	111.6		
Transportation services .....	321.1	337.0	334.1	334.5	335.3	337.0	337.4	337.1	341.1	344.7	346.1	349.0	351.0	352.4		
Medical care services .....	410.3	435.1	429.4	430.9	433.0	435.8	438.6	440.5	443.0	445.8	448.0	451.9	456.2	460.1		
Other services .....	296.0	314.1	309.9	310.7	312.0	313.0	313.8	319.7	321.4	322.5	322.9	324.8	326.1	326.6		
Special indexes:																
All items less food .....	311.3	323.3	320.8	322.4	323.6	324.2	325.0	326.2	327.4	328.5	328.9	329.5	328.5	326.6		
All items less shelter .....	295.1	303.9	302.8	304.4	304.3	304.4	304.6	305.7	306.3	307.2	307.9	308.8	307.4	305.2		
All items less homeowners' costs .....	106.3	109.7	109.2	109.5	109.8	109.9	110.1	110.4	110.7	111.1	111.3	111.6	111.2	110.5		
All items less medical care .....	307.3	317.7	315.8	317.0	317.9	318.4	318.9	319.9	320.8	321.9	322.6	323.4	322.2	320.5		
Commodities less food .....	267.0	272.5	272.8	273.4	273.1	272.4	272.3	273.1	274.4	275.7	277.0	274.7	270.9	265.2		
Nondurables less food .....	270.8	277.2	276.5	278.0	278.4	277.9	278.1	279.6	280.7	282.0	282.0	280.4	274.5	265.6		
Nondurables less food and apparel .....	311.9	319.2	318.1	320.7	321.7	321.9	321.1	321.0	322.0	324.0	325.1	324.9	316.8	302.7		
Nondurables .....	286.6	293.2	292.7	293.3	293.7	293.5	293.7	294.6	295.1	296.4	297.4	297.7	294.3	289.5		
Services less rent of shelter .....	108.5	113.5	112.2	112.8	113.7	114.2	114.5	115.0	115.1	115.2	115.4	116.2	116.8	117.1		
Services less medical care .....	355.6	373.3	368.1	370.9	373.3	375.2	376.7	378.3	379.3	380.1	380.8	382.7	384.0	385.4		
Energy .....	423.6	426.5	424.4	431.7	436.8	437.1	433.8	432.6	427.1	425.1	426.5	424.7	408.9	381.3		
All items less energy .....	302.9	314.8	312.7	313.3	313.9	314.5	315.6	316.8	318.4	319.8	320.5	321.8	322.3	323.4		
All items less food and energy .....	301.2	314.4	311.8	312.8	313.4	314.1	315.3	316.9	318.9	320.4	320.7	321.6	322.3	323.6		
Commodities less food and energy .....	253.1	259.7	260.0	259.6	259.0	258.2	258.8	260.2	262.0	262.7	262.2	261.8	261.2	262.1		
Energy commodities .....	409.8	409.9	410.8	417.0	418.7	418.1	414.0	411.2	410.1	415.2	417.9	413.2	386.5	343.0		
Services less energy .....	356.4	375.9	370.7	372.9	374.6	376.6	378.6	380.2	382.5	384.8	385.8	387.9	389.4	391.5		
Purchasing power of the consumer dollar:																
1967 = \$1.00 .....	32.1	31.0	31.2	31.1	31.0	31.0	30.9	30.8	30.7	30.6	30.5	30.5	30.5	30.7		
1957-59 = \$1.00 .....	27.6	26.7	26.9	26.8	26.7	26.6	26.6	26.5	26.4	26.3	26.3	26.2	26.3	26.4		
<b>CONSUMER PRICE INDEX FOR URBAN WAGE EARNERS AND CLERICAL WORKERS:</b>																
All items .....	307.6	318.5	316.7	317.8	318.7	319.1	319.6	320.5	321.3	322.6	323.4	324.3	323.2	321.4		
All items (1957-59 = 100) .....	357.7	370.4	368.3	369.6	370.6	371.2	371.8	372.7	373.7	375.1	376.1	377.1	375.8	373.7		
Food and beverages .....	295.2	301.8	301.4	300.8	301.2	301.4	301.6	301.8	302.2	303.4	305.4	307.7	307.5	307.6		
Food .....	302.7	309.3	309.2	308.4	308.8	309.0	309.1	309.3	310.6	312.8	315.1	314.9	315.0	315.6		
Food at home .....	291.2	295.3	296.1	294.6	294.5	294.6	294.3	294.0	293.7	295.2	299.7	300.9	300.1	299.7		
Cereals and bakery products .....	303.7	315.4	313.1	314.1	315.7	315.7	316.8	317.6	317.3	318.2	320.4	320.9	320.9	321.1		
Meats, poultry, fish, and eggs .....	266.0	262.7	262.9	259.2	259.3	259.7	259.0	259.9	260.4	265.4	269.2	270.7	267.7	263.5		
Dairy products .....	252.2	256.9	257.2	257.3	256.7	256.6	256.3	256.8	255.9	255.9	255.7	256.0	256.0	255.5		
Fruits and vegetables .....	312.5	320.3	328.1	324.8	323.5	323.9	320.6	313.6	311.2	309.4	313.9	327.9	316.0	316.0		
Other foods at home .....	352.7	361.5	361.3	361.6	361.3	361.1	362.2	362.9	363.4	362.5	361.6	366.1	375.2	375.6		
Sugar and sweets .....	388.6	398.3	395.5	396.9	399.8	399.8	401.4	400.8	402.2	400.9	401.8	404.7	408.1	407.8		
Fats and oils .....	287.5	293.9	293.7	293.6	295.6	297.3	296.5	294.1	290.6	291.8	289.6	291.6	290.8	289.7		
Nonalcoholic beverages .....	444.4	453.2	455.6	455.4	453.0	449.8	451.2	454.1	455.6	453.1	450.4	461.0	485.5	487.4		
Other prepared foods .....	286.4	295.7	294.2	294.9	295.0	296.1	297.3	298.3	298.3	298.7	299.4	300.9	300.7	301.6		
Food away from home .....	336.7	349.7	347.1	348.4	350.1	350.4	351.5	353.0	353.4	354.4	355.2	356.2	357.3	358.6		
Alcoholic beverages .....	225.3	232.6	229.9	230.8	231.0	231.0	232.2	232.6	239.1	238.8	239.1	240.1	240.9	241.4		
Housing .....	329.2	343.3	339.5	342.1	344.0	345.0	346.2	347.2	347.5	348.3	349.1	350.1	349.7	350.1		
Shelter .....	350.0	370.4	364.7	368.1	369.5	371.5	374.0	375.0	377.1	379.3	380.4	381.8	382.9	385.0		
Renters' costs (12/84 = 100) .....	-	-	-	-	-	-	-	-	-	-	-	-	-	-		
Rent, residential .....	248.6	263.7	259.6	261.8	262.7	264.1	265.7	266.8	268.9	270.7	271.5	272.5	272.8	274.1		
Other renters' costs .....	372.4	397.9	391.0	396.7	401.0	405.2	409.6	409.8	411.6	408.0	397.5	400.8	403.5	405.4		
Homeowners' costs (12/84 = 100) .....	-	103.1	101.4	102.5	102.8	103.4	104.1	104.3	104.8	105.5	105.9	106.3	106.6	107.4		
Owners' equivalent rent (12/84 = 100) .....	-	103.0	101.4	102.4	102.8	103.4	104.1	104.3	104.8	105.5	105.9	106.3	106.6	107.3		
Household insurance (12/84 = 100) .....	-	103.2	102.4	102.8	103.4	103.5	103.7	104.3	105.2	105.2	105.7	106.3	107.8	108.2		
Maintenance and repairs .....	356.3	364.1	363.1	361.8	362.9	363.4	365.6	364.4	364.6	367.7	368.5	373.2	374.0	364.7		
Maintenance and repair services .....	403.5	415.0	411.7	410.1	417.0	415.3	419.6	416.8	417.4	420.9	420.1	426.2	426.5	416.6		
Maintenance and repair commodities .....	257.2	261.1	261.6	260.7	258.4	260.0	260.6	260.5	260.5	262.7	262.2	268.1	261.1	259.4		
Fuel and other utilities .....	388.6	394.7	389.7	393.8	400.9	401.2	400.1	401.9	396.3	393.2	394.3	395.6	390.9	386.3		
Fuels .....	485.0	487.5	482.3	488.9	497.7	497.0	494.0	496.7	487.2	481.0	483.1	484.1	475.7	467.1		
Fuel oil, coal, and bottled gas .....	644.3	622.0	625.9	623.2	614.3	604.2	596.9	604.3	618.1	644.3	659.9	652.7	593.6	552.8		
Gas (piped) and electricity .....	444.1	451.6	444.6	453.0	465.1	466.3	464.2	465.9	452.0	439.5	438.8	441.4	443.2	441.2		
Other utilities and public services .....	231.2	241.6	237.3	237.7	242.0	243.7	245.1	245.6	245.7	246.8	246.7	248.3	248.8	249.9		
Household furnishings and operations .....	239.1	243.4	244.1	244.0	243.3	242.6	243.1	243.2	244.5	245.1	245.2	245.1	245.3	246.0		
Housefurnishings .....	197.0	197.6	199.2	198.9	197.6	196.2	196.6	196.5	197.7	198.3	197.8	197.3	197.2	198.5		
Housekeeping supplies .....	300.2	310.7	309.8	310.0	310.8	310.3	310.4	311.0	312.7	313.3	315.0	315.8	316.4	315.0		
Housekeeping services .....	328.0	340.2	339.0	339.2	339.5	341.0	342.2	342.9	343.9	344.5	345.0	345.6	346.3	346.6		
Apparel and upkeep .....	199.1	205														

**30. Continued— Consumer Price Index for All Urban Consumers: U.S. city average, by expenditure category and commodity or service group; and CPI for Urban Wage Earners and Clerical Workers, all items**

(1967=100, unless otherwise indicated)

Series	Annual average		1985										1986			
	1984	1985	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	
Apparel commodities .....	186.6	191.3	191.5	190.7	190.0	187.8	190.4	195.1	196.6	196.5	194.1	189.4	188.2	190.4	191.2	
Men's and boys' apparel .....	192.9	198.2	197.8	198.2	196.6	194.8	197.3	201.8	203.5	203.7	202.2	198.8	196.8	198.0	199.3	
Women's and girls' apparel .....	165.0	171.3	172.0	169.7	168.4	165.5	169.9	178.2	180.0	178.3	174.5	166.1	165.2	169.0	169.3	
Infants and toddlers' apparel .....	297.6	311.7	306.4	310.6	313.5	306.4	311.2	314.9	314.8	320.7	317.3	332.7	328.6	329.6	331.3	
Footwear .....	210.0	212.5	213.3	213.3	214.1	211.6	210.5	211.0	212.6	215.9	213.6	209.9	208.4	210.7	212.1	
Other apparel commodities .....	204.5	203.1	203.3	202.7	204.0	204.5	205.2	202.5	202.4	202.5	202.4	203.5	204.2	203.5	204.1	
Apparel services .....	302.9	318.5	316.1	317.0	317.6	319.0	320.5	321.6	323.2	323.6	324.4	327.2	328.1	329.0	330.2	
Transportation .....	313.9	321.6	322.0	323.3	323.6	323.5	322.3	321.1	322.2	324.6	325.3	325.1	320.1	310.3	303.5	
Private transportation .....	310.1	317.4	318.0	319.4	319.6	319.3	318.0	316.6	317.6	320.1	320.8	320.2	314.8	304.5	297.4	
New vehicles .....	207.3	214.2	213.2	213.5	213.6	213.6	213.5	213.5	215.3	217.5	218.6	219.0	219.4	219.4	220.2	
New cars .....	207.9	214.5	213.4	213.8	214.0	214.0	213.9	213.8	215.5	217.8	218.8	219.2	219.7	219.5	220.4	
Used cars .....	375.7	379.7	386.4	384.2	380.3	376.7	374.0	374.3	375.3	376.4	375.6	374.1	370.7	367.2	364.8	
Motor fuel .....	372.2	375.4	375.7	383.0	386.2	387.2	383.8	379.5	376.3	378.7	379.6	375.3	353.0	309.6	280.1	
Gasoline .....	371.8	375.0	375.3	382.7	386.0	387.0	383.7	379.2	375.8	378.1	378.9	374.6	352.3	308.8	279.1	
Maintenance and repair .....	342.2	352.6	349.3	350.6	351.5	352.2	352.9	354.5	356.9	357.2	359.0	359.4	360.4	360.9	362.2	
Other private transportation .....	274.2	287.7	286.3	285.9	286.9	287.7	287.6	285.2	289.2	293.7	294.7	296.9	298.4	300.6	300.4	
Other private transportation commodities .....	203.9	204.7	205.1	203.5	205.9	204.3	204.9	205.6	205.0	203.7	204.3	205.6	205.4	206.0	204.6	
Other private transportation services .....	295.4	312.3	310.4	310.4	310.9	312.4	312.1	308.9	314.1	320.2	321.3	323.7	325.7	328.3	328.5	
Public transportation .....	376.8	391.7	387.4	387.6	388.4	392.1	393.5	396.8	399.3	400.1	400.2	408.6	412.6	412.0	413.0	
Medical care .....	377.7	401.2	396.1	397.7	399.8	402.0	404.5	406.3	408.5	410.9	412.6	416.0	420.0	423.5	425.7	
Medical care commodities .....	239.7	256.3	253.5	254.8	256.7	257.4	259.0	259.8	260.9	262.2	262.3	264.1	267.0	268.8	270.7	
Medical care services .....	407.9	432.7	427.1	428.7	430.7	433.3	436.1	438.1	440.6	443.2	445.4	449.2	453.5	457.3	459.5	
Professional services .....	346.5	367.7	363.6	365.0	366.8	368.5	370.4	372.1	373.7	375.8	377.6	379.3	382.2	385.6	387.4	
Other medical care services .....	484.7	513.9	506.6	508.2	510.5	514.4	518.4	520.7	524.4	527.5	530.4	536.9	543.0	547.3	550.0	
Entertainment .....	251.2	260.1	258.6	258.9	260.1	260.9	260.8	261.6	263.0	263.7	263.0	265.4	266.5	266.5	266.9	
Entertainment commodities .....	247.7	254.2	253.2	253.1	253.9	254.5	254.3	256.0	257.1	257.2	255.7	257.5	258.3	258.3	258.4	
Entertainment services .....	258.5	271.6	269.2	270.0	272.0	273.2	273.3	272.6	274.6	276.3	276.8	280.0	282.0	282.1	283.0	
Other goods and services .....	304.9	322.7	318.3	318.8	319.5	321.8	322.9	328.7	330.1	330.5	331.9	334.9	336.1	337.0	337.6	
Tobacco products .....	309.7	328.1	323.6	323.6	324.4	329.7	331.1	332.4	334.0	333.3	337.1	342.4	344.4	345.2	346.0	
Personal care .....	269.4	279.6	277.5	278.6	279.2	279.9	280.9	281.8	282.7	283.1	284.0	285.9	286.8	288.0	288.2	
Toilet goods and personal care appliances .....	270.3	279.0	277.5	277.8	278.2	279.2	280.0	281.1	282.0	281.9	283.3	285.9	286.7	288.1	288.4	
Personal care services .....	268.8	280.5	278.0	279.7	280.7	280.9	282.2	282.8	283.7	284.8	285.2	286.4	287.4	288.4	288.4	
Personal and educational expenses .....	368.2	399.3	390.7	390.9	391.6	392.5	393.2	414.5	416.5	417.3	417.4	418.9	419.9	420.1	421.2	
School books and supplies .....	327.5	355.7	349.4	349.5	349.9	350.6	351.2	366.9	369.2	369.3	369.4	375.6	378.4	379.0	379.1	
Personal and educational services .....	378.2	410.1	401.0	401.2	401.9	402.9	403.6	426.1	428.1	428.9	429.1	429.7	430.3	430.5	431.8	
All items .....	307.6	318.5	316.7	317.8	318.7	319.1	319.6	320.5	321.3	322.6	323.4	324.3	323.2	321.4	320.4	
Commodities .....	280.4	286.5	286.7	286.8	286.8	286.4	286.3	286.8	287.6	288.9	289.7	289.8	287.0	283.1	280.8	
Food and beverages .....	295.2	301.8	301.4	300.8	301.2	301.4	301.6	301.8	302.2	303.4	305.4	307.7	307.5	307.6	308.3	
Commodities less food and beverages .....	269.3	-	276.3	277.5	277.7	-	-	-	-	-	-	-	-	-	-	
Nondurables less food and beverages .....	277.5	283.8	283.2	284.9	285.4	285.0	285.1	286.5	287.0	288.5	288.7	286.9	280.1	269.6	262.0	
Apparel commodities .....	186.6	191.3	191.5	190.7	190.0	187.8	190.4	195.1	196.6	196.5	194.1	189.4	188.2	190.4	191.2	
Nondurables less food, beverages, and apparel .....	327.0	334.2	333.1	336.0	337.2	337.6	336.6	336.4	336.5	338.8	340.1	339.6	330.1	313.2	301.6	
Durables .....	261.1	265.2	267.3	266.3	265.1	263.8	263.1	263.1	264.5	265.7	265.7	265.6	264.6	263.7	263.3	
Services .....	358.0	377.3	372.2	374.9	377.4	379.2	380.7	382.0	383.0	384.2	385.1	387.2	388.8	390.5	392.2	
Rent of shelter (12/84=100) .....	-	103.2	101.6	102.6	102.9	103.5	104.3	104.5	105.1	105.8	106.1	106.4	106.7	107.4	108.3	
Household services less rent of shelter (12/84=100) .....	-	102.6	101.2	102.2	104.2	104.5	104.6	104.8	103.3	102.1	102.0	102.6	103.0	102.8	102.7	
Transportation services .....	317.2	332.2	329.6	329.9	330.6	332.2	332.4	331.4	335.5	339.3	340.5	343.3	345.4	347.0	347.5	
Medical care services .....	407.9	432.7	427.1	428.7	430.7	433.3	436.1	438.1	440.6	443.2	445.4	449.2	453.5	457.3	459.5	
Other services .....	292.9	310.1	306.2	307.2	308.4	309.3	310.1	315.0	316.7	317.8	318.3	320.4	321.6	322.1	322.9	
Special indexes:																
All items less food .....	307.5	319.4	317.2	318.7	319.8	320.3	320.9	321.9	322.9	324.2	324.6	325.1	323.8	321.5	320.2	
All items less shelter .....	295.1	303.4	302.4	303.0	303.9	304.0	304.0	304.8	305.4	306.4	307.2	307.9	306.4	303.8	302.1	
All items less homeowners' costs (12/84=100) .....	-	101.8	101.4	101.7	102.0	102.0	102.1	102.4	102.6	103.0	103.2	103.5	103.0	102.3	101.8	
All items less medical care .....	304.0	314.3	312.6	313.7	314.6	314.9	315.3	316.1	316.9	318.1	318.9	319.6	318.3	316.2	315.2	
Commodities less food .....	267.1	272.8	273.3	273.8	273.6	272.8	272.7	273.4	274.5	275.9	275.0	275.0	270.9	264.9	260.7	
Nondurables less food .....	272.6	279.0	278.2	279.8	280.4	280.0	280.2	281.5	282.4	283.8	283.9	282.3	276.1	266.4	259.4	
Nondurables less food and apparel .....	313.2	320.3	319.1	321.8	322.9	323.2	322.4	322.3	323.1	325.0	326.3	325.9	317.5	302.6	292.2	
Nondurables .....	287.4	293.9	293.4	294.0	294.4	294.3	294.5	295.2	295.7	297.1	298.2	298.4	295.0	289.8	286.3	
Services less rent of shelter (12/84=100) .....	-	102.6	101.4	101.9	102.8	103.3	103.5	103.8	103.9	103.9	104.2	104.9	105.5	105.7	105.9	
Services less medical care .....	350.5	369.0	364.1	366.8	369.3	371.1	372.5	373.6	374.5	375.5	376.2	378.2	379.5	381.0	382.7	
Energy .....	423.3	426.3	424.2	431.3	436.9	437.2	433.9	432.5	426.6	425.4	426.8	424.7	408.1	379.0	358.4	
All items less energy .....	298.3	309.9	308.1	308.6	309.1	309.5	310.4	311.5	313.0	314.5	315.3	316.5	316.9	317.8	318.8	
All items less food and energy .....	295.8	308.7	306.4	307.3	307.8	308.3	309.4	310.7	312.7	314.2	314.6	315.4	316.1	317.2	318.3	
Commodities less food and energy .....	250.5	256.8	257.2	256.8	256.2	255.3	255.8	257.2	258.8	259.5	259.2	258.8	258.5	258.7	258.8	
Energy commodities .....	410.5	410.9	411.6	418.0	419.9	419.6	415.7	412.6	411.2	416.3	418.9	414.1	387.3	343.3	312.9	
Services less energy .....	350.8	371.1	366.2	368.4	369.9	371.9	373.7	374.9	377.3	379.8	380.8	382.9	384.5	386.5	388.8	
Purchasing power of the consumer dollar:			</													

31. Consumer Price Index: U.S. city average and available local area data: all items

(1967=100, unless otherwise indicated)

Area <sup>1</sup>	Pricing schedule <sup>2</sup>	Other index base	All Urban Consumers								Urban Wage Earners							
			1985			1986					1985			1986				
			Apr.	May	Dec.	Jan.	Feb.	Mar.	Apr.	Apr.	May	Dec.	Jan.	Feb.	Mar.	Apr.		
U.S. city average .....		-	320.1	321.3	327.4	328.4	327.5	326.0	325.3	316.7	317.8	323.4	324.3	323.2	321.4	320.4		
Chicago, Ill.-Northwestern																		
Ind. ....	M	-	319.1	319.8	325.9	326.3	326.4	323.9	323.7	306.2	306.9	312.6	312.9	312.8	309.7	309.1		
Detroit, Mich. ....	M	-	315.8	316.1	323.1	323.1	322.9	320.0	318.8	306.3	306.6	313.1	313.4	312.3	309.3	308.1		
Los Angeles-Long Beach, Anaheim, Calif. ....	M	-	315.9	319.1	326.1	326.8	326.6	328.2	326.8	311.2	314.1	320.1	320.9	320.4	321.6	320.2		
New York, N.Y.-Northeastern N.J. ....	M	-	311.8	312.6	320.8	323.1	322.3	322.4	321.4	305.1	305.8	313.5	315.8	314.7	314.5	313.2		
Philadelphia, Pa.-N.J. ....	M	-	312.4	314.2	319.7	320.3	320.1	319.1	317.8	315.3	317.2	322.5	323.0	322.8	321.4	319.7		
Anchorage, Alaska (10/67 = 100) .....	1	10/67	-	278.8	-	287.1	-	291.2	-	-	271.9	-	280.2	-	284.4	-		
Baltimore, Md. ....	1	-	-	323.1	-	332.0	-	331.1	-	-	322.3	-	331.1	-	329.5	-		
Boston, Mass. ....	1	-	-	315.2	-	327.1	-	324.9	-	-	313.2	-	324.5	-	322.3	-		
Cincinnati, Ohio-Ky.-Ind. ....	1	-	-	330.4	-	333.2	-	329.4	-	-	324.0	-	326.0	-	321.8	-		
Denver-Boulder, Colo. ....	1	-	-	356.3	-	364.4	-	355.7	-	-	351.9	-	359.1	-	350.1	-		
Miami, Fla. (11/77 = 100) .....	1	11/77	-	171.0	-	174.6	-	174.5	-	-	172.2	-	175.7	-	175.1	-		
Milwaukee, Wis. ....	1	-	-	330.9	-	333.9	-	329.1	-	-	350.2	-	353.0	-	347.2	-		
Northeast, Pa. ....	1	-	-	306.0	-	311.6	-	309.3	-	-	305.2	-	310.6	-	308.3	-		
Portland, Oreg.-Wash. ....	1	-	-	310.4	-	321.3	-	315.0	-	-	301.2	-	311.0	-	304.3	-		
St. Louis, Mo.-Ill. ....	1	-	-	315.9	-	322.4	-	319.2	-	-	313.0	-	319.1	-	315.0	-		
San Diego, Calif. ....	1	-	-	372.1	-	381.9	-	379.2	-	-	336.5	-	344.7	-	341.9	-		
Seattle-Everett, Wash. ....	1	-	-	321.0	-	327.0	-	325.0	-	-	308.4	-	313.5	-	311.4	-		
Washington, D.C.-Md.-Va. ....	1	-	-	319.8	-	331.1	-	329.1	-	-	323.0	-	332.6	-	330.5	-		
Atlanta, Ga. ....	2	-	324.6	-	335.3	-	336.9	-	334.9	322.3	-	332.6	-	334.3	-	331.7		
Buffalo, N.Y. ....	2	-	305.4	-	309.8	-	310.1	-	308.0	291.9	-	295.9	-	295.8	-	292.7		
Cleveland, Ohio ....	2	-	342.4	-	348.8	-	350.2	-	346.9	321.8	-	327.5	-	328.3	-	324.4		
Dallas-Ft. Worth, Tex. ....	2	-	335.6	-	344.5	-	347.0	-	341.4	329.6	-	338.3	-	340.4	-	334.1		
Honolulu, Hawaii ....	2	-	292.7	-	298.5	-	301.2	-	299.0	300.1	-	305.8	-	308.5	-	306.0		
Houston, Tex. ....	2	-	335.3	-	336.8	-	337.2	-	330.0	332.8	-	334.1	-	334.3	-	327.7		
Kansas City, Mo.-Kansas	2	-	319.8	-	321.8	-	321.1	-	320.7	309.7	-	311.7	-	310.1	-	308.9		
Minneapolis-St. Paul, Minn.-Wis. ....	2	-	333.6	-	340.4	-	339.9	-	338.4	329.2	-	336.0	-	334.9	-	332.3		
Pittsburgh, Pa. ....	2	-	324.3	-	331.5	-	330.1	-	328.1	306.8	-	312.8	-	311.4	-	307.8		
San Francisco-Oakland, Calif. ....	2	-	330.4	-	336.4	-	341.1	-	339.3	326.1	-	331.3	-	336.0	-	333.2		
Region <sup>3</sup>																		
Northeast .....	2	12/77	169.8	-	174.3	-	174.5	-	173.7	167.9	-	172.1	-	172.3	-	171.1		
North Central .....	2	12/77	172.8	-	176.0	-	175.4	-	173.9	169.7	-	172.6	-	171.8	-	170.0		
South .....	2	12/77	172.6	-	176.3	-	176.6	-	175.1	172.5	-	176.0	-	176.1	-	174.1		
West .....	2	12/77	173.0	-	177.2	-	177.5	-	176.8	171.4	-	175.2	-	175.4	-	174.5		
Population size class <sup>3</sup>																		
A-1 .....	2	12/77	169.6	-	174.2	-	174.7	-	173.9	166.0	-	170.2	-	170.5	-	169.3		
A-2 .....	2	12/77	174.7	-	178.4	-	178.7	-	177.4	172.0	-	175.4	-	175.5	-	173.8		
B .....	2	12/77	173.5	-	177.2	-	176.9	-	175.6	171.2	-	174.6	-	174.2	-	172.7		
C .....	2	12/77	171.4	-	174.9	-	174.7	-	173.4	172.0	-	175.3	-	175.0	-	173.4		
D .....	2	12/77	171.0	-	174.7	-	174.0	-	172.7	172.8	-	176.0	-	175.2	-	173.6		
Region/population size class cross classification <sup>3</sup>																		
Class A:																		
Northeast .....	2	12/77	166.7	-	171.2	-	171.8	-	171.0	163.5	-	167.7	-	168.1	-	166.9		
North Central .....	2	12/77	175.9	-	179.4	-	179.2	-	177.8	171.1	-	174.5	-	174.0	-	172.1		
South .....	2	12/77	172.4	-	176.5	-	177.3	-	175.5	172.6	-	176.5	-	177.0	-	174.9		
West .....	2	11/77	174.6	-	179.3	-	179.8	-	179.6	170.9	-	175.0	-	175.5	-	174.9		
Class B:																		
Northeast .....	2	12/77	173.5	-	176.7	-	176.4	-	174.7	170.5	-	173.5	-	173.4	-	171.7		
North Central .....	2	12/77	171.7	-	174.2	-	173.7	-	172.1	168.4	-	170.5	-	169.7	-	167.7		
South .....	2	12/77	173.7	-	178.0	-	178.2	-	177.0	170.7	-	174.7	-	174.6	-	173.2		
West .....	2	12/77	174.4	-	178.4	-	177.6	-	176.7	175.1	-	178.9	-	178.2	-	177.1		

See footnotes at end of table.



### 31. Continued— Consumer Price Index: U.S. city average and available local area data: all items

(1967=100, unless otherwise indicated)

Area <sup>1</sup>	Pricing schedule <sup>2</sup>	Other index base	All Urban Consumers								Urban Wage Earners							
			1985			1986					1985				1986			
			Apr.	May	Dec.	Jan.	Feb.	Mar.	Apr.	Apr.	May	Dec.	Jan.	Feb.	Mar.	Apr.		
<b>Class C:</b>																		
Northeast .....	2	12/77	177.8	-	184.1	-	183.1	-	183.0	182.5	-	188.8	-	187.8	-	187.4		
North Central .....	2	12/77	168.6	-	171.5	-	170.4	-	168.5	165.7	-	168.2	-	167.1	-	165.1		
South .....	2	12/77	172.2	-	175.3	-	175.3	-	173.6	173.9	-	176.7	-	176.6	-	174.3		
West .....	2	12/77	166.9	-	169.1	-	171.1	-	170.5	165.9	-	167.8	-	169.6	-	168.9		
<b>Class D:</b>																		
Northeast .....	2	12/77	174.2	-	178.1	-	178.9	-	177.9	174.2	-	177.7	-	178.6	-	177.2		
North Central .....	2	12/77	169.1	-	172.6	-	170.7	-	170.0	171.4	-	174.2	-	172.4	-	171.4		
South .....	2	12/77	171.6	-	174.5	-	174.7	-	173.2	173.7	-	176.1	-	176.0	-	174.0		
West .....	2	12/77	170.8	-	176.2	-	174.8	-	172.6	172.4	-	177.7	-	176.3	-	173.9		

<sup>1</sup> Area is generally the Standard Metropolitan Statistical Area (SMSA), exclusive of farms. L.A.-Long Beach, Anaheim, Calif. is a combination of two SMSA's, and N.Y., N.Y.-Northeastern N.J. and Chicago, Ill.-Northwestern Ind. are the more extensive Standard Consolidated Areas. Area definitions are those established by the Office of Management and Budget in 1973, except for Denver-Boulder, Colo. which does not include Douglas County. Definitions do not include revisions made since 1973.

<sup>2</sup> 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.

<sup>3</sup> Regions are defined as the four Census regions.

The population size classes are aggregations of areas which have urban population as defined:

A-1 - More than 4,000,000.

A-2 - 1,250,000 to 4,000,000.

B - 385,000 to 1,250,000

C - 75,000 to 385,000.

D - Less than 75,000.

Population size class A is the aggregation of population size classes A-1 and A-2.

- Data not available.

NOTE: Local area CPI indexes are byproducts of the national CPI program. Because each local index is a small subset of the national index, it has a smaller sample size and is, therefore, subject to substantially more sampling and other measurement error than the national index. As a result, local area indexes show greater volatility than the national index, although their long-term trends are quite similar. Therefore, the Bureau of Labor Statistics strongly urges users to consider adopting the national average CPI for use in escalator clauses.

### 32. Annual data: Consumer Price Index all items and major groups

Series	1977	1978	1979	1980	1981	1982	1983	1984	1985
<b>Consumer Price Index for All Urban Consumers:</b>									
All items:									
Index .....	181.5	195.4	217.4	246.8	272.4	289.1	298.4	311.1	322.2
Percent change .....	6.5	7.7	11.3	13.5	10.4	6.1	3.2	4.3	3.6
Food and beverages:									
Index .....	188.0	206.3	228.5	248.0	267.3	278.2	284.4	295.1	302.0
Percent change .....	6.0	9.7	10.8	8.5	7.8	4.1	2.2	3.8	2.3
Housing:									
Index .....	186.5	202.8	227.6	263.3	293.5	314.7	323.1	336.5	349.9
Percent change .....	6.8	8.7	12.2	15.7	11.5	7.2	2.7	4.1	4.0
Apparel and upkeep:									
Index .....	154.2	159.6	166.6	178.4	186.9	191.8	196.5	200.2	206.0
Percent change .....	4.5	3.5	4.4	7.1	4.8	2.6	2.5	1.9	2.9
Transportation:									
Index .....	177.2	185.5	212.0	249.7	280.0	291.5	298.4	311.7	319.9
Percent change .....	7.1	4.7	14.3	17.8	12.1	4.1	2.4	4.5	2.6
Medical care:									
Index .....	202.4	219.4	239.7	265.9	294.5	328.7	357.3	379.5	403.1
Percent change .....	9.6	8.4	9.3	10.9	10.8	11.6	8.7	6.2	6.2
Entertainment:									
Index .....	167.7	176.6	188.5	205.3	221.4	235.8	246.0	255.1	265.0
Percent change .....	4.9	5.3	6.7	8.9	7.8	6.5	4.3	3.7	3.9
Other goods and services:									
Index .....	172.2	183.3	196.7	214.5	235.7	259.9	288.3	307.7	326.6
Percent change .....	5.8	6.4	7.3	9.0	9.9	10.3	10.9	6.7	6.1
<b>Consumer Price Index for Urban Wage Earners and Clerical Workers</b>									
All items:									
Index .....	181.5	195.3	217.7	247.0	272.3	288.6	297.4	307.6	318.5
Percent change .....	6.5	7.6	11.5	13.5	10.2	6.0	3.0	3.4	3.5

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

(1967=100)

Grouping	Annual average		1985								1986			
	1984	1985	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.
<b>Finished goods</b> .....	291.1	293.8	294.1	294.0	294.8	293.5	290.0	294.7	296.4	297.2	296.2	292.3	288.1	286.9
Finished consumer goods .....	290.3	291.9	292.4	292.2	293.1	291.4	288.2	292.3	294.4	295.4	294.1	288.9	283.5	281.6
Finished consumer foods .....	273.3	271.2	269.5	268.7	271.2	268.7	265.7	268.2	271.8	275.0	274.9	272.3	272.2	272.4
Finished consumer goods excluding foods .....	294.1	297.4	299.0	299.0	299.2	297.8	294.7	299.4	300.7	300.7	298.8	292.5	284.4	281.4
Nondurable goods less food .....	337.3	339.4	342.4	342.1	342.4	340.0	340.3	340.3	342.6	343.2	340.3	329.3	315.0	308.6
Durable goods .....	236.8	241.5	241.4	241.9	241.9	241.8	234.5	244.9	245.0	244.3	243.6	243.6	243.9	245.4
Capital equipment .....	294.0	300.5	300.3	300.5	300.8	301.0	296.3	303.5	303.8	303.7	304.0	304.2	304.3	305.6
<b>Intermediate materials, supplies, and components</b> .....	320.0	318.7	319.9	319.3	318.6	317.9	317.7	317.6	318.1	318.9	317.2	313.5	309.4	307.0
Materials and components for manufacturing .....	301.8	299.4	300.5	300.3	299.8	299.1	298.4	298.0	297.7	297.9	297.0	296.5	296.4	295.2
Materials for food manufacturing .....	271.1	258.7	261.9	262.0	260.3	253.0	249.9	252.3	254.0	252.4	252.4	248.9	246.3	244.6
Materials for nondurable manufacturing ..	290.5	285.8	286.7	286.4	285.8	285.8	285.1	283.3	282.8	283.1	283.2	283.0	281.9	279.0
Materials for durable manufacturing .....	325.1	320.2	323.0	322.3	320.9	320.3	319.2	318.6	317.5	317.6	313.9	313.0	313.6	313.1
Components for manufacturing .....	287.5	291.5	291.1	291.3	291.6	291.9	292.1	292.3	292.3	292.4	292.9	293.3	294.2	294.1
Materials and components for construction .....	310.3	315.2	315.9	317.3	316.9	316.5	315.6	315.5	315.0	315.7	316.3	316.6	316.8	318.0
Processed fuels and lubricants .....	566.2	549.4	558.0	549.1	544.0	539.8	542.4	542.6	550.5	557.2	539.8	500.7	453.9	430.2
Containers .....	302.3	311.2	311.7	312.0	311.4	310.3	309.9	310.4	309.8	310.6	310.7	310.6	311.2	312.5
Supplies .....	283.4	284.2	283.4	283.3	283.6	284.1	284.5	285.1	285.6	285.7	286.7	286.3	286.7	287.0
<b>Crude materials for further processing</b> ...	330.8	306.2	309.1	305.6	303.9	295.3	291.8	297.8	304.7	304.3	301.3	290.5	280.9	272.8
Foodstuffs and feedstuffs .....	259.5	235.0	236.3	233.7	231.6	221.0	215.4	224.6	236.6	236.8	231.4	226.9	224.0	220.1
Nonfood materials <sup>1</sup> .....	380.5	355.4	357.7	354.0	353.5	351.2	352.2	352.8	352.0	351.6	351.2	321.7	293.2	280.8
<b>Special groupings</b>														
Finished goods, excluding foods .....	294.8	299.1	300.1	300.2	300.5	299.5	295.9	301.3	302.4	302.4	301.1	296.7	291.1	289.4
Finished energy goods .....	750.3	721.4	746.1	741.4	733.8	719.9	718.2	716.5	729.5	733.8	704.8	636.8	551.1	511.3
Finished goods less energy .....	265.1	269.2	268.4	268.4	269.7	269.0	265.5	270.5	271.6	272.2	272.7	272.2	272.3	273.2
Finished consumer goods less energy .....	257.8	261.3	260.3	260.3	261.9	260.9	257.7	262.1	263.4	264.3	264.8	264.1	264.2	265.0
Finished goods less food and energy .....	262.3	268.7	268.2	268.6	269.4	269.4	265.7	271.6	271.8	271.4	272.1	272.4	272.6	273.7
Finished consumer goods less food and energy .....	245.9	252.1	251.5	252.0	252.9	252.9	249.6	254.9	255.0	254.6	255.5	255.9	256.1	257.1
Consumer nondurable goods less food and energy .....	239.0	246.2	245.2	245.6	247.4	247.3	247.9	248.3	248.5	248.3	250.6	251.1	251.3	251.8
Intermediate materials less foods and feeds .....	325.0	325.0	326.4	325.7	325.0	324.5	324.4	324.1	324.5	325.3	323.5	319.7	315.5	312.9
Intermediate foods and feeds .....	253.1	232.7	232.6	232.2	231.7	227.1	225.4	228.6	231.4	232.7	232.4	228.6	227.6	226.8
Intermediate energy goods .....	545.0	528.8	536.7	528.6	523.8	519.8	522.3	522.2	529.3	536.2	519.1	481.9	437.4	414.9
Intermediate goods less energy .....	303.8	303.9	304.5	304.6	304.3	303.9	303.4	303.4	303.2	303.5	303.4	303.0	303.2	302.8
Intermediate materials less foods and energy .....	303.6	305.2	305.9	306.0	305.6	305.5	305.0	304.6	304.2	304.5	304.2	304.2	304.4	304.0
Crude energy materials .....	785.2	749.1	760.7	754.5	752.6	742.9	743.2	743.1	737.1	735.6	739.9	679.0	618.4	570.7
Crude materials less energy .....	255.5	233.2	234.8	231.7	230.1	221.8	217.9	224.7	233.2	233.0	229.1	225.9	224.0	221.8
Crude nonfood materials less energy .....	266.1	249.7	252.3	247.4	247.2	245.8	246.7	246.5	244.6	242.9	243.7	244.6	245.6	249.1

<sup>1</sup> Crude nonfood materials except fuel.

### 34. Producer Price indexes, by durability of product

(1967 = 100)

Grouping	Annual average		1985								1986			
	1984	1985	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.
Total durable goods .....	293.6	297.3	297.6	297.8	297.8	297.8	295.2	298.8	298.5	298.5	298.2	298.3	298.7	299.5
Total nondurable goods .....	323.3	317.3	318.9	317.5	317.3	314.1	313.0	314.3	317.6	318.8	316.9	309.0	300.6	295.7
Total manufactures .....	302.9	304.3	305.2	304.8	304.6	303.8	302.2	304.4	305.4	306.0	304.7	301.0	297.3	296.0
Durable .....	293.9	298.1	298.4	298.7	298.7	298.6	296.0	299.7	299.5	299.5	299.1	299.2	299.5	300.3
Nondurable .....	312.3	310.5	312.1	311.0	310.6	309.0	308.4	309.2	311.4	312.5	310.3	302.7	294.7	291.2
Total raw or slightly processed goods .....	346.6	328.2	329.8	327.3	327.5	320.2	317.6	320.6	326.2	327.6	326.9	319.0	310.4	302.0
Durable .....	266.7	252.2	255.4	247.3	247.6	249.7	249.7	248.1	245.2	244.3	247.6	250.6	251.5	252.7
Nondurable .....	351.4	332.8	334.3	332.1	332.3	324.4	321.6	324.9	331.2	332.7	331.7	323.1	313.8	304.7

### 35. Annual data: Producer Price Indexes, by stage of processing

(1967 = 100)

Index	1977	1978	1979	1980	1981	1982	1983	1984	1985
<b>Finished goods:</b>									
Total .....	181.7	195.9	217.7	247.0	269.8	280.7	285.2	291.1	293.8
Consumer goods .....	180.7	194.9	217.9	248.9	271.3	281.0	284.6	290.3	291.9
Capital equipment .....	184.6	199.2	216.5	239.8	264.3	279.4	287.2	294.0	300.5
<b>Intermediate materials, supplies, and components:</b>									
Total .....	201.5	215.6	243.2	280.3	306.0	310.4	312.3	320.0	318.7
Materials and components for manufacturing .....	195.4	208.7	234.4	265.7	286.1	289.8	293.4	301.8	299.4
Materials and components for construction .....	203.4	224.7	247.4	268.3	287.6	293.7	301.8	310.3	315.2
Processed fuels and lubricants .....	282.5	295.3	364.8	503.0	595.4	591.7	564.8	566.2	549.4
Containers .....	188.3	202.8	226.8	254.5	276.1	285.6	286.6	302.3	311.2
Supplies .....	188.7	198.5	218.2	244.5	263.8	272.1	277.1	283.4	284.2
<b>Crude materials for further processing:</b>									
Total .....	209.2	234.4	274.3	304.6	329.0	319.5	323.6	330.8	306.2
Foodstuffs and feedstuffs .....	192.1	216.2	247.9	259.2	257.4	247.8	252.2	259.5	235.0
Nonfood materials except fuel .....	212.2	233.1	284.5	346.1	413.7	376.8	372.2	380.5	355.4
Fuel .....	372.1	426.8	507.6	615.0	751.2	886.1	931.5	931.3	912.3

## 36. U.S. export price indexes by Standard International Trade Classification

(June 1977=100, unless otherwise indicated)

Category	1974 SITC	1983		1984				1985				1986
		Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.
<b>ALL COMMODITIES (9/83=100)</b> .....		100.0	99.5	100.2	101.5	99.3	98.1	97.5	97.5	96.5	96.7	97.0
<b>Food (3/83=100)</b> .....	0	113.1	108.8	106.2	109.6	103.5	96.5	95.8	94.0	90.2	93.6	90.5
Meat (3/83=100) .....	01	100.8	101.2	108.9	108.7	105.6	104.4	103.9	104.7	106.1	112.2	111.5
Fish (3/83=100) .....	03	97.7	100.4	99.8	98.7	98.0	98.7	101.0	103.6	102.6	101.8	102.2
Grain and grain preparations (3/80=100) .....	04	111.5	105.6	102.7	107.4	101.2	92.9	92.4	90.3	82.6	87.1	82.1
Vegetables and fruit (3/83=100) .....	05	114.8	116.1	116.2	126.8	125.5	114.6	119.4	120.1	126.8	118.8	115.2
Feedstuffs for animals (3/83=100) .....	08	121.4	117.4	106.9	98.8	83.5	82.4	72.8	68.6	75.7	83.4	88.5
Misc. food products (3/83=100) .....	09	102.8	101.7	104.9	110.6	109.5	108.4	110.6	109.2	108.1	107.7	106.0
<b>Beverages and tobacco (6/83=100)</b> .....	1	100.0	101.5	101.6	101.9	102.8	101.3	99.9	100.1	99.7	98.6	95.6
Beverages (9/83=100) .....	11	100.0	103.3	102.3	102.9	103.3	103.7	104.0	105.3	101.8	100.9	101.9
Tobacco and tobacco products (6/83=100) .....	12	100.0	101.4	101.6	101.8	102.7	101.1	99.5	99.6	99.5	98.4	95.1
<b>Crude materials (6/83=100)</b> .....	2	114.6	112.2	112.5	118.3	105.2	101.4	97.5	96.8	93.3	92.5	95.8
Raw hides and skins (6/80=100) .....	21	129.2	135.2	145.6	154.7	153.7	133.6	121.0	126.2	129.0	139.9	138.9
Oilseeds and oleaginous fruit (9/77=100) .....	22	105.6	96.8	93.9	104.3	79.9	74.8	71.0	71.2	64.2	63.9	66.9
Crude rubber (including synthetic and reclaimed) (9/83=100) .....	23	100.0	102.2	103.3	106.0	104.1	104.0	106.4	106.3	107.1	106.0	106.0
Wood .....	24	128.7	129.8	131.1	129.4	123.8	125.4	128.7	125.7	124.5	128.1	128.7
Pulp and waste paper (6/83=100) .....	25	103.5	106.0	112.5	122.1	120.8	114.2	100.5	96.1	93.8	92.7	99.3
Textile fibers .....	26	117.3	123.1	120.5	125.6	109.4	106.7	102.4	105.8	103.6	97.7	101.6
Crude fertilizers and minerals .....	27	144.8	144.8	146.6	147.7	163.0	163.2	165.6	167.9	169.4	165.5	168.0
Metalliferous ores and metal scrap .....	28	100.0	96.7	100.2	98.5	93.2	92.4	89.2	82.0	80.1	78.7	83.4
<b>Mineral fuels</b> .....	3	100.0	99.2	99.1	99.7	99.7	99.7	100.1	99.2	97.6	96.6	91.9
<b>Animal and vegetable oils, fats, and waxes</b> .....	4	125.6	122.0	129.8	164.5	145.7	147.9	142.0	144.5	114.5	101.4	90.8
Fixed vegetable oils and fats (6/83=100) .....	42	138.2	129.3	133.2	176.4	159.0	156.7	152.9	164.8	128.8	108.7	95.4
<b>Chemicals (3/83=100)</b> .....	5	97.0	98.6	101.4	99.7	98.3	97.7	97.0	96.8	97.1	96.6	96.5
Organic chemicals (12/83=100) .....	51	-	100.0	100.2	101.0	97.4	94.7	93.8	96.5	97.1	95.4	93.5
Fertilizers, manufactured (3/83=100) .....	56	89.8	96.8	108.3	96.9	97.4	94.8	92.5	87.9	89.8	90.0	88.6
<b>Intermediate manufactured products (9/81=100)</b> .....	-	100.8	100.0	101.0	101.3	102.0	100.4	99.4	99.2	99.2	99.1	100.3
Leather and furskins (9/79=100) .....	6	70.1	75.8	83.5	81.2	80.8	79.0	82.5	79.2	75.9	78.5	77.8
Rubber manufactures .....	61	145.0	145.0	146.7	147.5	148.9	148.5	150.2	149.0	148.3	148.7	151.0
Paper and paperboard products (6/78=100) .....	62	139.7	145.5	150.2	154.7	160.0	159.5	155.0	151.6	149.6	148.2	152.2
Iron and steel (3/82=100) .....	64	96.6	96.3	95.9	96.1	96.8	96.5	95.5	95.3	95.9	98.2	98.4
Nonferrous metals (9/81=100) .....	-	102.3	93.8	94.2	92.9	90.4	82.5	79.7	79.6	79.8	78.2	80.2
Metal manufactures, n.e.s. (3/82=100) .....	-	101.9	102.1	103.1	104.5	105.1	105.0	105.4	105.2	105.4	104.4	105.3
<b>Machinery and transport equipment, excluding military and commercial aircraft (12/78=100)</b> .....	67	135.9	137.0	138.5	139.4	140.1	141.5	142.3	142.9	143.1	143.3	144.0
Power generating machinery and equipment (12/78=100) .....	68	152.3	154.4	158.4	156.9	160.6	167.5	165.3	167.4	167.1	167.5	169.1
Machinery specialized for particular industries (9/78=100) .....	69	149.1	151.1	152.3	152.8	153.7	153.4	155.0	155.7	156.0	156.1	155.4
Metalworking machinery (6/78=100) .....	7	148.3	148.7	150.8	151.2	151.7	151.9	153.4	155.1	156.3	158.4	159.0
General industrial machines and parts n.e.s. 9/78=100) .....	71	145.4	145.9	148.6	149.0	149.3	150.2	152.4	152.0	152.4	152.2	152.3
Office machines and automatic data processing equipment .....	72	103.2	102.5	101.4	101.5	99.8	101.4	100.9	100.0	99.9	99.4	99.9
Telecommunications, sound recording and reproducing equipment .....	73	132.2	132.1	133.0	132.3	134.4	134.3	133.3	133.3	134.1	134.5	136.5
Electrical machinery and equipment .....	74	109.4	109.8	110.2	112.6	113.8	114.6	114.9	116.1	115.3	113.8	115.1
Road vehicles and parts (3/80=100) .....	75	127.5	128.8	130.2	131.2	131.0	131.8	133.1	133.9	133.8	135.0	135.5
Other transport equipment, excl. military and commercial aviation .....	76	176.4	179.3	183.1	187.7	189.6	191.7	195.5	196.6	199.3	200.7	203.3
<b>Other manufactured articles</b> .....	77	100.0	100.2	100.6	100.4	100.7	99.3	99.5	100.4	100.3	100.3	102.6
Apparel (9/83=100) .....	78	100.0	100.8	101.9	102.1	103.9	103.4	104.7	104.7	105.0	105.3	-
Professional, scientific, and controlling instruments and apparatus .....	79	169.0	171.5	171.8	172.0	175.8	171.7	175.5	178.3	178.7	178.8	182.2
Photographic apparatus and supplies, optical goods, watches and clocks (12/77=100) .....	8	130.0	132.0	132.0	131.3	132.7	130.3	128.0	129.1	127.5	128.5	131.6
Miscellaneous manufactured articles, n.e.s. ....	84	100.0	98.2	98.5	97.9	95.2	94.1	92.4	93.1	93.1	92.4	95.6
<b>Gold, non-monetary (6/83=100)</b> .....	971	-	-	-	-	-	-	-	-	-	-	-

- Data not available.

### 37. U.S. import price indexes by Standard International Trade Classification

(June 1977 = 100, unless otherwise indicated)

Category	1974 SITC	1984				1985				1986
		Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.
<b>ALL COMMODITIES (9/82=100)</b> .....		98.0	98.3	96.7	95.7	93.5	93.0	92.9	94.2	88.5
<b>Food (9/77=100)</b> .....	0	102.5	103.5	102.0	98.1	98.5	96.8	94.9	102.8	113.5
Meat .....	01	133.4	133.8	135.4	132.3	130.4	118.2	120.6	131.2	122.7
Dairy products and eggs (6/81=100) .....	02	100.8	99.8	98.9	98.4	98.3	97.9	99.1	100.5	106.8
Fish .....	03	132.7	134.2	134.2	133.9	132.9	129.4	129.7	132.7	139.3
Bakery goods, pasta products, grain and grain preparations (9/77=100) .....	04	136.5	134.8	132.9	132.8	131.8	132.3	136.3	141.9	146.9
Fruits and vegetables .....	05	136.1	135.8	135.4	117.2	127.1	129.4	120.2	131.3	119.4
Sugar, sugar preparations, and honey (3/82=100) .....	06	117.1	120.3	119.0	118.5	118.4	122.6	123.1	111.9	124.6
Coffee, tea, cocoa .....	07	61.4	62.4	60.3	58.4	57.0	56.0	54.4	64.6	85.9
<b>Beverages and tobacco</b> .....	1	155.3	156.3	157.1	156.5	156.2	157.1	158.0	162.1	163.2
Beverages .....	11	152.6	153.6	153.5	152.8	154.2	154.3	156.0	159.1	161.8
<b>Crude materials</b> .....	2	103.2	102.6	100.6	98.9	94.0	93.6	91.5	91.2	94.7
Crude rubber (inc. synthetic & reclaimed) (3/84=100) .....	23	100.0	93.7	90.7	83.8	77.6	76.4	68.9	73.2	78.8
Wood (9/81=100) .....	24	114.8	103.2	99.6	104.0	100.7	106.9	101.6	99.4	104.3
Pulp and waste paper (12/81=100) .....	25	87.6	96.1	96.3	93.2	84.0	80.4	76.8	75.8	74.9
Crude fertilizers and crude minerals (12/83=100) .....	27	100.0	96.2	98.0	98.6	100.3	101.7	102.7	102.1	101.5
Metalliferous ores and metal scrap (3/84=100) .....	28	100.0	102.8	100.1	95.6	90.4	87.6	89.5	90.1	96.2
Crude vegetable and animal materials, n.e.s. ....	29	100.0	100.8	101.1	106.4	104.3	104.9	102.5	102.5	103.6
<b>Fuels and related products (6/82=100)</b> .....	3	88.3	88.0	86.9	85.2	82.9	80.9	79.8	79.1	55.3
Petroleum and petroleum products (6/82=100) .....	33	88.2	88.1	87.0	85.2	83.8	81.6	80.3	80.1	54.7
<b>Fats and oils (9/83=100)</b> .....	4	117.4	141.8	124.4	114.9	89.9	76.7	57.6	50.6	41.4
Vegetable oils (9/83=100) .....	42	118.1	143.1	125.3	115.3	89.5	75.9	56.2	48.9	39.3
<b>Chemicals (9/82=100)</b> .....	5	101.1	100.6	98.8	97.1	95.7	94.9	94.5	94.2	94.6
Medicinal and pharmaceutical products (3/84=100) .....	54	100.0	98.5	96.4	94.6	91.6	95.1	95.3	96.7	102.9
Manufactured fertilizers (3/84=100) .....	56	100.0	101.7	98.5	92.9	94.2	82.0	80.8	78.5	79.2
Chemical materials and products, n.e.s. (9/84=100) .....	59	-	-	100.0	97.5	96.1	95.6	96.9	97.8	99.9
<b>Intermediate manufactured products (12/77=100)</b> .....	6	137.6	139.6	137.2	136.8	133.1	132.4	133.6	133.4	134.0
Leather and furskins .....	61	141.6	145.3	144.0	140.4	135.3	133.3	137.0	141.3	141.6
Rubber manufactures, n.e.s. ....	62	141.8	140.8	139.6	140.5	139.5	138.6	137.3	138.1	136.5
Cork and wood manufactures .....	63	130.1	131.0	126.4	126.1	121.3	121.2	123.4	124.0	130.8
Paper and paperboard products .....	64	148.0	150.4	156.1	157.5	157.6	157.2	157.8	156.5	157.1
Textiles .....	65	130.8	130.1	131.6	132.9	130.4	127.5	126.5	128.1	131.2
Nonmetallic mineral manufactures, n.e.s. ....	66	168.4	166.6	156.6	159.4	154.3	151.8	157.6	162.3	164.2
Iron and steel (9/78=100) .....	67	118.5	123.8	124.7	123.7	121.0	120.1	119.1	118.3	117.3
Nonferrous metals (12/81=100) .....	68	95.0	96.3	90.2	87.3	81.9	82.3	83.7	80.4	79.4
Metal manufactures, n.e.s. ....	69	119.7	120.5	119.3	119.3	117.4	117.8	119.5	121.6	124.4
<b>Machinery and transport equipment (6/81=100)</b> .....	7	104.0	104.1	102.6	102.9	101.6	102.6	103.5	107.2	111.5
Machinery specialized for particular industries (9/78=100) .....	72	100.4	100.0	98.8	98.0	96.2	97.0	101.4	104.9	112.1
Metalworking machinery (3/80=100) .....	73	94.3	93.8	92.1	89.9	86.3	90.5	94.2	98.1	105.0
General industrial machinery and parts, n.e.s. (6/81=100) .....	74	93.7	94.4	92.4	91.3	89.2	91.1	94.3	98.0	103.8
Office machines and automatic data processing equipment (3/80=100) .....	75	97.8	96.7	94.1	92.2	89.6	89.4	90.3	93.7	96.9
Telecommunications, sound recording and reproducing apparatus (3/80=100) .....	76	94.2	94.8	93.6	91.3	90.0	88.8	88.3	88.6	89.4
Electrical machinery and equipment (12/81=100) .....	77	94.2	91.2	87.0	86.4	82.1	83.9	81.4	83.1	84.3
Road vehicles and parts (6/81=100) .....	78	109.0	110.4	109.8	111.3	111.5	112.1	112.7	117.8	123.4
<b>Misc. manufactured articles (3/80=100)</b> .....	8	100.6	101.5	99.7	100.0	97.0	98.0	99.6	100.8	103.3
Plumbing, heating, and lighting fixtures (6/80=100) .....	81	109.5	112.0	110.7	111.6	113.9	114.1	117.8	115.0	120.1
Furniture and parts (6/80=100) .....	82	136.8	140.8	138.4	142.5	137.4	136.7	142.1	142.7	147.0
Clothing (9/77=100) .....	84	130.2	132.5	135.4	138.5	136.7	133.9	134.5	134.5	133.4
Footwear .....	85	136.8	140.8	138.4	142.5	137.4	136.7	142.1	142.7	147.0
Professional, scientific, and controlling instruments and apparatus (12/79=100) .....	87	98.7	97.8	95.6	92.9	89.2	92.3	98.8	102.4	106.4
Photographic apparatus and supplies, optical goods, watches, and clocks (3/80=100) .....	88	89.6	92.8	91.2	91.3	88.9	89.5	91.1	94.5	99.3
Misc. manufactured articles, n.e.s. (6/82=100) .....	89	105.2	104.0	98.3	96.3	91.2	95.2	96.4	97.9	102.1
<b>Gold, non-monetary (6/82=100)</b> .....	971	-	-	-	-	-	-	-	-	-

- Data not available.

**38. U.S. export price indexes by end-use category**

(September 1983 = 100 unless otherwise indicated)

Category	Per-centage of 1980 Trade Value	1984				1985				1986
		Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.
Foods, feeds, and beverages .....	16.294	92.8	98.5	88.8	83.0	81.5	80.9	76.2	77.5	75.5
Raw materials .....	30.696	102.2	102.5	100.5	99.1	97.6	97.2	96.5	95.9	96.0
Raw materials, nondurable .....	21.327	103.6	104.4	102.8	101.4	99.6	99.5	98.7	97.9	97.5
Raw materials, durable .....	9.368	98.8	97.7	95.0	93.3	92.6	91.6	91.1	91.0	92.5
Capital goods (12/82=100) .....	30.186	103.2	103.9	104.6	105.6	106.2	106.6	106.6	106.6	107.4
Automotive vehicles, parts and engines (12/82=100) .....	7.483	104.5	105.3	105.3	105.7	106.7	108.0	108.1	109.2	109.5
Consumer goods .....	7.467	100.9	100.9	101.3	100.8	100.9	101.1	101.9	101.4	103.7
Durables .....	3.965	100.1	99.6	99.4	99.3	99.1	99.2	100.4	99.5	101.8
Nondurables .....	3.501	101.8	102.1	103.0	102.3	102.7	103.0	103.3	103.3	105.5

**39. U.S. import price indexes by end-use category**

(December 1982=100)

Category	Per-centage of 1980 Trade Value	1984				1985				1986
		Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.
Foods, feeds, and beverages .....	7.477	106.0	107.2	105.6	101.8	102.1	100.4	99.0	106.0	115.8
Petroleum and petroleum products, excl. natural gas .....	31.108	88.8	88.5	87.5	85.7	84.4	82.1	80.9	80.5	55.4
Raw materials, excluding petroleum .....	19.205	103.5	104.3	102.5	101.1	96.3	95.8	95.4	93.9	94.5
Raw materials, nondurable .....	9.391	100.7	102.1	101.7	100.7	95.0	93.9	93.5	91.8	91.1
Raw materials, durable .....	9.814	106.5	106.7	103.3	101.6	97.7	97.8	97.4	96.2	98.0
Capital goods .....	13.164	100.8	99.8	98.0	97.8	94.8	96.3	97.6	100.0	102.8
Automotive vehicles, parts and engines .....	11.750	103.6	104.9	104.0	105.2	105.4	105.9	106.4	111.4	115.6
Consumer goods .....	14.250	101.0	101.9	100.6	101.1	99.5	99.4	101.0	102.4	104.5
Durable .....	5.507	101.1	101.4	98.8	98.5	97.0	97.0	98.9	100.7	103.4
Nondurable .....	8.743	100.9	102.5	103.0	104.6	103.0	102.5	103.9	104.7	106.0

**40. U.S. export price indexes by Standard Industrial Classification <sup>1</sup>**

Industry group	1984				1985				1986
	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.
Manufacturing:									
Food and kindred products (6/83=100) .....	109.0	112.7	105.6	103.3	99.5	99.5	96.7	98.1	97.0
Tobacco manufactures .....	-	-	-	-	-	-	-	-	-
Textile mill products .....	-	-	-	-	-	-	-	-	-
Apparel and related products .....	-	-	-	-	-	-	-	-	-
Lumber and wood products, except furniture (6/83=100) .....	101.5	100.1	97.0	97.9	99.9	99.5	98.3	101.2	101.5
Furniture and fixtures (9/83=100) .....	101.8	103.1	103.5	104.9	105.2	106.5	107.1	108.4	109.2
Paper and allied products (3/81=100) .....	98.6	104.3	106.2	103.6	97.1	94.7	93.2	92.1	95.7
Printing, publishing, and allied products .....	-	-	-	-	-	-	-	-	-
Chemicals and allied products (12/84=100) .....	103.3	102.3	101.3	100.7	100.3	99.6	99.7	99.2	98.9
Petroleum and coal products (12/83=100) .....	101.6	102.1	100.7	100.4	101.3	102.7	102.0	99.1	93.5
Rubber and miscellaneous plastic products .....	-	-	-	-	-	-	-	-	-
Leather and leather products .....	-	-	-	-	-	-	-	-	-
Stone, clay, glass, and concrete products .....	-	-	-	-	-	-	-	-	-
Primary metal products (3/82=100) .....	105.1	104.0	100.0	95.8	91.2	92.7	93.6	93.6	96.4
Fabricated metal products .....	-	-	-	-	-	-	-	-	-
Machinery, except electrical (9/78=100) .....	137.4	137.9	138.0	139.9	140.4	140.5	140.6	140.5	140.6
Electrical machinery (12/80=100) .....	108.0	109.5	110.7	111.1	111.3	112.4	111.9	111.2	112.6
Transportation equipment (12/78=100) .....	155.7	157.2	157.8	158.9	160.5	161.9	162.8	164.3	165.2
Scientific instruments; optical goods; clocks (6/77=100) .....	153.1	153.2	156.0	153.0	154.9	156.6	156.2	156.7	159.7
Miscellaneous manufactured commodities .....	-	-	-	-	-	-	-	-	-

<sup>1</sup> SIC - based classification.

- Data not available.

#### 41. U.S. import price indexes by Standard Industrial Classification <sup>1</sup>

Industry group	1984				1985				1986
	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.
<b>Manufacturing:</b>									
Food and kindred products (6/77=100) .....	122.3	126.6	124.1	122.6	118.8	115.0	114.2	115.1	117.7
Tobacco manufactures .....	-	-	-	-	-	-	-	-	-
Textile mill products (9/82=100) .....	104.4	103.8	104.3	104.7	102.8	101.0	100.4	101.8	104.7
Apparel and related products (6/77=100) .....	128.1	129.6	133.9	138.2	135.6	133.0	133.9	134.4	133.4
Lumber and wood products, except furniture (6/77=100) .....	129.4	121.1	117.3	120.0	116.3	120.6	117.5	115.8	122.1
Furniture and fixtures (6/80=100) .....	95.7	96.9	96.2	95.6	93.9	96.1	97.7	98.2	101.2
Paper and allied products (6/77=100) .....	136.5	141.9	146.0	145.5	141.5	139.8	138.7	137.4	137.6
Printing, publishing, and allied products .....	-	-	-	-	-	-	-	-	-
Chemicals and allied products (9/82=100) .....	101.8	101.8	99.8	98.2	95.3	93.9	93.3	95.8	98.6
Petroleum and coal products .....	-	-	-	-	-	-	-	-	-
Rubber and miscellaneous plastic products (12/80=100) .....	98.1	98.5	97.8	98.0	96.9	96.7	96.6	97.5	100.9
Leather and leather products .....	140.3	143.7	141.6	144.2	139.1	138.9	142.3	144.0	145.8
Stone, clay, glass, concrete products .....	-	-	-	-	-	-	-	-	-
Primary metal products (6/81=100) .....	90.1	91.9	88.3	86.6	82.2	83.0	83.4	81.9	82.0
Fabricated metal products (12/84=100) .....	-	-	-	100.0	99.0	99.1	101.0	102.6	104.9
Machinery, except electrical (3/80=100) .....	97.8	97.1	95.5	94.1	91.8	93.4	96.6	100.0	105.5
Electrical machinery (9/84=100) .....	-	-	100.0	98.6	95.1	95.8	94.5	95.8	96.8
Transportation equipment (6/81=100) .....	110.6	111.6	110.7	112.9	113.1	114.2	114.8	119.6	123.9
Scientific instruments; optical goods; clocks (12/79=100) .....	94.0	95.5	94.4	93.2	90.7	91.7	94.6	98.8	103.9
Miscellaneous manufactured commodities (9/82=100) .....	99.8	99.1	95.8	96.4	95.1	95.1	96.6	98.7	100.0

<sup>1</sup> SIC - based classification.

- Data not available.

#### 42. Indexes of productivity, hourly compensation, and unit costs, quarterly data seasonally adjusted

(1977=100)

Item	Annual average	Quarterly Indexes											
		1984	1983		1984				1985				1986
			III	IV	I	II	III	IV	I	II	III	IV	I
<b>Business:</b>													
Output per hour of all persons .....	105.2	103.5	103.6	104.9	105.5	105.3	105.0	105.3	105.5	105.9	104.9	105.5	
Compensation per hour .....	168.2	162.1	164.1	166.1	167.5	169.1	170.4	172.4	174.3	176.1	177.6	178.3	
Real compensation per hour .....	98.2	98.1	98.3	98.3	98.2	98.2	98.1	98.5	98.5	98.9	98.7	98.8	
Unit labor costs .....	159.9	156.6	158.4	158.4	158.7	160.6	162.3	163.8	165.2	166.3	169.3	169.1	
Unit nonlabor payments .....	156.5	146.8	148.6	153.4	156.8	157.3	158.0	157.6	158.2	158.6	156.2	159.0	
Implicit price deflator .....	158.7	153.1	154.9	156.6	158.0	159.4	160.8	161.6	162.7	163.5	164.6	165.4	
<b>Nonfarm business:</b>													
Output per hour of all persons .....	104.1	103.3	103.0	104.0	104.5	104.2	103.8	104.1	104.2	104.3	103.2	104.1	
Compensation per hour .....	168.0	162.3	164.0	165.9	167.4	168.8	170.1	172.1	173.7	175.0	176.4	177.4	
Real compensation per hour .....	98.0	98.2	98.2	98.1	98.1	98.0	97.9	98.3	98.2	98.3	98.0	98.3	
Unit labor costs .....	161.4	157.1	159.1	159.6	160.1	162.0	163.9	165.3	166.8	167.8	170.9	170.5	
Unit nonlabor payments .....	156.3	148.9	150.7	152.5	156.3	157.6	158.4	158.8	160.2	161.4	157.7	161.8	
Implicit price deflator .....	159.6	154.2	156.1	157.1	158.8	160.5	161.9	163.0	164.5	165.5	166.3	167.4	
<b>Nonfinancial corporations:</b>													
Output per hour of all employees .....	106.2	104.6	105.0	106.2	106.7	106.1	105.8	105.8	105.8	106.5	105.9	-	
Compensation per hour .....	166.1	160.8	162.4	164.2	165.6	166.8	167.9	169.4	170.8	172.0	173.3	-	
Real compensation per hour .....	96.9	97.3	97.3	97.1	97.1	96.9	96.7	96.7	96.6	96.6	96.3	-	
Total unit costs .....	161.2	159.6	159.5	159.1	159.9	162.2	163.6	164.4	165.8	165.5	167.2	-	
Unit labor costs .....	156.4	153.8	154.8	154.7	155.1	157.2	158.7	160.0	161.5	161.5	163.7	-	
Unit nonlabor costs .....	175.3	176.7	173.7	172.3	174.0	177.0	177.9	177.6	178.6	177.2	177.8	-	
Unit profits .....	135.6	114.4	124.0	132.9	139.1	134.3	135.9	138.3	139.1	150.2	143.1	-	
Unit nonlabor payments .....	161.4	154.9	156.3	158.5	161.8	162.1	163.2	163.8	164.8	167.7	165.7	-	
Implicit price deflator .....	158.1	154.2	155.3	156.0	157.4	158.9	160.3	161.3	162.6	163.6	164.4	-	
<b>Manufacturing:</b>													
Output per hour of all persons .....	118.5	114.5	114.7	116.7	117.8	119.8	119.5	119.9	121.7	122.7	122.3	123.0	
Compensation per hour .....	169.1	163.3	164.4	166.7	168.1	169.9	171.8	174.3	176.1	177.3	178.8	179.2	
Real compensation per hour .....	98.7	98.8	98.5	98.6	98.6	98.7	98.9	99.5	99.5	99.6	99.4	99.3	
Unit labor costs .....	142.8	142.6	143.4	142.8	142.7	141.9	143.7	145.4	144.7	144.5	146.2	145.6	

- Data not available.

**43. Annual indexes of multifactor productivity and related measures, selected years**

(1977=100)

Item	1960	1970	1973	1974	1976	1978	1979	1980	1981	1982	1983	1984
<b>Private business</b>												
Productivity:												
Output per hour of all persons .....	64.8	86.1	94.8	92.5	97.6	100.5	99.3	98.7	100.6	100.8	103.7	107.1
Output per unit of capital services .....	98.4	98.5	103.0	96.5	96.1	101.8	100.3	95.6	94.1	89.5	92.3	97.4
Multifactor productivity .....	75.4	90.2	97.5	93.8	97.1	101.0	99.7	97.6	98.3	96.8	99.6	103.7
Output .....	53.3	78.3	91.8	89.9	93.7	105.5	107.9	106.4	109.2	106.3	111.1	121.0
Inputs:												
Hours of all persons .....	82.2	90.8	96.8	97.2	95.9	105.0	108.6	107.8	108.5	105.4	107.2	113.0
Capital services .....	54.1	79.4	89.1	93.1	97.5	103.6	107.5	111.4	116.0	118.8	120.4	124.3
Combined units of labor and capital input .....	70.7	86.7	94.1	95.8	96.5	104.5	108.2	109.0	111.0	109.9	111.6	116.8
Capital per hour of all persons .....	65.9	87.4	92.0	95.9	101.6	98.7	98.9	103.3	106.9	112.7	112.3	109.9
<b>Private nonfarm business</b>												
Productivity:												
Output per hour of all persons .....	68.0	86.8	95.3	92.9	97.8	100.6	99.0	98.2	99.6	99.9	103.5	106.3
Output per unit of capital services .....	98.4	98.6	103.2	96.5	96.1	101.9	100.1	95.2	93.2	88.7	91.9	96.6
Multifactor productivity .....	77.6	90.7	97.9	94.1	97.2	101.0	99.4	97.2	97.4	95.9	99.4	102.9
Output .....	52.3	77.8	91.7	89.7	93.6	105.7	108.0	106.4	108.7	105.9	111.3	121.0
Inputs:												
Hours of all persons .....	77.0	89.7	96.2	96.5	95.7	105.1	109.1	108.4	109.1	106.0	107.6	113.8
Capital services .....	53.2	78.9	88.8	93.0	97.4	103.7	107.9	111.7	116.6	119.4	121.1	125.2
Combined units of labor and capital input .....	67.4	85.9	93.6	95.3	96.3	104.6	108.7	109.5	111.6	110.4	112.0	117.5
Capital per hour of all persons .....	69.1	88.0	92.4	96.3	101.8	98.7	98.9	103.1	106.8	112.6	112.6	110.1
<b>Manufacturing</b>												
Productivity:												
Output per hour of all persons .....	60.0	79.2	93.0	90.8	97.6	100.9	101.6	101.7	104.9	107.1	111.6	115.6
Output per unit of capital services .....	87.9	91.8	108.2	99.6	96.1	101.5	99.5	90.7	89.9	82.9	87.6	96.0
Multifactor productivity .....	67.0	82.3	96.8	93.1	97.1	101.1	101.0	98.8	100.8	100.3	104.9	110.4
Output .....	50.7	77.0	95.9	91.9	93.6	105.3	108.2	103.5	106.1	99.3	104.4	115.3
Inputs:												
Hours of all persons .....	84.4	97.3	103.1	101.2	95.9	104.4	106.5	101.7	101.1	92.7	93.5	99.8
Capital services .....	57.6	83.9	88.6	92.2	97.4	103.8	108.8	114.1	118.0	119.8	119.2	120.2
Combined units of labor and capital inputs .....	75.6	93.5	99.0	98.7	96.3	104.2	107.1	104.8	105.2	99.0	99.5	104.5
Capital per hour of all persons .....	68.3	86.2	85.9	91.1	101.6	99.4	102.1	112.2	116.7	129.2	127.5	120.4

**44. Annual indexes of productivity, hourly compensation, unit costs, and prices, selected years**

(1977=100)

Item	1960	1970	1973	1974	1976	1978	1979	1980	1981	1982	1983	1984	1985
<b>Business:</b>													
Output per hour of all persons .....	67.5	88.3	95.9	93.9	98.3	100.8	99.6	99.2	100.7	100.3	103.2	105.2	105.3
Compensation per hour .....	33.6	57.7	70.9	77.6	92.8	108.5	119.1	131.5	143.7	154.9	161.9	168.2	175.0
Real compensation per hour .....	68.8	90.1	96.7	95.4	98.7	100.8	99.4	96.7	95.7	97.3	98.5	98.2	98.6
Unit labor costs .....	49.8	65.4	73.9	82.7	94.3	107.7	119.6	132.6	142.7	154.5	157.0	159.9	166.2
Unit nonlabor payments .....	46.3	59.4	72.5	76.4	93.4	106.7	112.5	118.8	134.7	136.8	145.4	156.5	157.7
Implicit price deflator .....	48.5	63.2	73.4	80.5	94.0	107.3	117.0	127.6	139.8	148.1	152.8	158.7	163.1
<b>Nonfarm business:</b>													
Output per hour of all persons .....	70.9	89.1	96.4	94.3	98.5	100.8	99.2	98.8	99.8	99.2	102.6	104.1	103.9
Compensation per hour .....	35.3	58.1	71.2	78.0	92.8	108.6	118.9	131.3	143.6	154.8	162.1	168.0	174.2
Real compensation per hour .....	72.2	90.7	97.1	95.9	98.8	100.9	99.2	96.6	95.7	97.2	98.6	98.0	98.1
Unit labor costs .....	49.8	65.2	73.9	82.7	94.2	107.7	119.8	132.9	144.0	156.0	158.0	161.4	167.7
Unit nonlabor payments .....	46.2	60.0	69.4	74.0	93.1	105.6	110.5	118.5	133.5	136.6	147.0	156.3	159.5
Implicit price deflator .....	48.5	63.4	72.3	79.7	93.8	107.0	116.5	127.8	140.3	149.2	154.1	159.6	164.8
<b>Nonfinancial corporations:</b>													
Output per hour of all employees .....	73.4	91.1	97.5	94.6	98.4	100.6	99.8	99.1	99.6	100.4	104.0	106.2	105.9
Compensation per hour .....	36.9	59.2	71.6	78.2	92.9	108.4	118.7	131.1	143.3	154.3	160.6	166.1	171.3
Real compensation per hour .....	75.5	92.4	97.6	96.1	98.9	100.7	99.1	96.4	95.5	96.9	97.7	96.9	96.5
Unit labor costs .....	50.2	65.0	73.4	82.6	94.3	107.8	119.0	132.3	143.8	153.8	154.5	156.4	161.7
Unit nonlabor payments .....	51.5	60.1	68.9	73.1	93.8	104.4	108.4	118.6	137.8	142.1	152.2	161.4	165.5
Implicit price deflator .....	50.7	63.3	71.9	79.4	94.2	106.6	115.4	127.6	141.7	149.8	153.7	158.1	163.0
<b>Manufacturing:</b>													
Output per hour of all persons .....	62.2	80.8	93.4	90.6	97.1	101.5	101.4	101.4	103.6	105.9	112.9	118.5	121.6
Compensation per hour .....	36.5	57.3	68.8	76.2	92.1	108.2	118.6	132.4	145.2	157.5	163.2	169.1	176.6
Real compensation per hour .....	74.7	89.4	93.8	93.6	98.1	100.5	99.1	97.4	96.7	98.9	99.3	98.7	99.5
Unit labor costs .....	58.7	70.9	73.7	84.1	94.9	106.6	117.0	130.6	140.1	148.7	144.5	142.8	145.2
Unit nonlabor payments .....	60.2	64.3	70.7	67.7	93.5	101.9	98.9	97.8	111.8	114.0	132.4	140.5	-
Implicit price deflator .....	59.1	69.0	72.8	79.3	94.5	105.2	111.7	121.0	131.8	138.6	141.0	142.1	-

- Data not available.



45. Unemployment rates in nine countries, quarterly data seasonally adjusted

Country	Annual average		1984		1985				1986
	1984	1985	III	IV	I	II	III	IV	I
<b>Total labor force basis</b>									
United States .....	7.4	7.1	7.3	7.1	7.2	7.2	7.1	6.9	7.0
Canada .....	11.2	10.4	11.2	11.1	11.0	10.5	10.2	10.1	9.7
Australia .....	8.9	8.2	8.8	8.5	8.5	8.4	8.1	7.7	7.9
Japan .....	2.7	2.6	2.8	2.7	2.6	2.6	2.6	2.8	2.6
France .....	9.7	10.1	9.9	10.0	10.2	10.1	10.1	9.9	10.0
Germany .....	7.7	7.7	7.8	7.7	7.8	7.8	7.7	7.7	7.7
Great Britain .....	12.8	13.1	13.0	12.8	13.0	13.1	13.3	12.9	-
Italy <sup>1, 2</sup> .....	5.8	6.0	5.7	5.7	5.8	5.8	6.0	6.2	6.2
Sweden .....	3.1	2.8	3.0	3.0	3.0	2.9	2.7	2.7	2.8
<b>Civilian labor force basis</b>									
United States .....	7.5	7.2	7.4	7.2	7.3	7.3	7.2	7.0	7.1
Canada .....	11.3	10.5	11.3	11.1	11.1	10.6	10.2	10.1	9.7
Australia .....	9.0	8.3	8.8	8.6	8.5	8.5	8.2	7.8	8.0
Japan .....	2.8	2.6	2.8	2.7	2.6	2.6	2.7	2.9	2.7
France .....	10.0	10.3	10.1	10.3	10.4	10.3	10.4	10.1	10.2
Germany .....	7.8	7.9	7.9	7.8	7.9	8.0	7.9	7.8	7.8
Great Britain .....	13.0	13.3	13.2	13.0	13.1	13.3	13.4	13.1	-
Italy .....	5.9	6.1	5.8	5.8	5.9	5.9	6.2	6.3	6.3
Sweden .....	3.1	2.8	3.1	3.0	3.0	2.9	2.8	2.7	2.8

<sup>1</sup> Quarterly rates are for the first month of the quarter.

<sup>2</sup> Major changes in the Italian labor force survey, introduced in 1977, resulted in a large increase in persons enumerated as unemployed. However, many persons reported that they had not actively sought work in the past 30 days, and they have been provisionally excluded for comparability with U.S. concepts. Inclusion of such persons would more than double the Italian unemployment rate

shown.

- Data not available.

NOTE: Quarterly and monthly figures for France, Germany, and Great Britain are calculated by applying annual adjustment factors to current published data and therefore should be viewed as less precise indicators of unemployment under U.S. concepts than the annual figures.

**46. Annual data: Employment status of the civilian working-age population, ten countries**

(Numbers in thousands)

Employment status and country	1976	1977	1978	1979	1980	1981	1982	1983	1984
<b>Labor force</b>									
United States .....	96,158	99,009	102,251	104,962	106,940	108,670	110,204	111,550	113,544
Canada .....	10,203	10,500	10,895	11,231	11,573	11,904	11,958	12,183	12,399
Australia .....	6,244	6,358	6,443	6,519	6,693	6,810	6,910	6,997	7,133
Japan .....	53,100	53,820	54,610	55,210	55,740	56,320	56,980	58,110	58,480
France .....	22,010	22,320	22,490	22,680	22,810	22,950	23,170	23,110	23,260
Germany .....	25,900	25,870	26,000	26,240	26,500	26,610	26,640	26,640	26,700
Great Britain .....	25,290	25,430	25,620	25,710	25,870	25,870	25,880	25,980	26,390
Italy .....	20,300	20,530	20,630	20,910	21,210	21,410	21,450	21,610	21,600
Netherlands .....	4,890	4,950	5,010	5,100	5,290	5,500	5,560	5,720	5,740
Sweden .....	4,149	4,168	4,203	4,262	4,312	4,326	4,350	4,369	4,385
<b>Participation rate</b>									
United States .....	61.6	62.3	63.2	63.7	63.8	63.9	64.0	64.0	64.4
Canada .....	61.1	61.6	62.7	63.4	64.1	64.8	64.1	64.4	64.8
Australia .....	62.7	62.7	62.0	61.7	62.2	62.0	61.8	61.5	61.5
Japan .....	62.4	62.5	62.8	62.7	62.6	62.6	62.7	63.1	62.7
France .....	57.4	57.6	57.6	57.5	57.2	57.1	57.1	56.5	56.6
Germany .....	53.8	53.4	53.3	53.3	53.2	52.9	52.5	52.8	53.1
Great Britain .....	63.2	63.2	63.3	63.2	63.2	62.2	61.9	62.2	62.7
Italy .....	47.8	48.0	47.7	47.8	48.0	48.0	47.4	47.2	47.5
Netherlands .....	49.1	49.0	48.8	49.0	50.0	51.3	51.2	52.4	52.3
Sweden .....	66.0	65.9	66.1	66.6	67.0	66.8	66.8	66.9	67.0
<b>Employed</b>									
United States .....	88,752	92,017	96,048	98,824	99,303	100,397	99,526	100,834	105,005
Canada .....	9,477	9,651	9,987	10,395	10,708	11,006	10,644	10,734	11,000
Australia .....	5,946	6,000	6,038	6,111	6,284	6,416	6,415	6,300	6,490
Japan .....	52,020	52,720	53,370	54,040	54,600	55,060	55,620	56,550	56,870
France .....	21,020	21,200	21,280	21,310	21,340	21,220	21,250	21,150	20,940
Germany .....	25,010	24,970	25,130	25,460	25,730	25,520	25,060	24,650	24,610
Great Britain .....	23,810	23,840	24,040	24,360	24,100	23,190	22,820	22,650	22,960
Italy .....	19,600	19,800	19,870	20,100	20,380	20,480	20,430	20,470	20,400
Netherlands .....	4,630	4,700	4,750	4,830	4,960	4,990	4,930	4,890	4,880
Sweden .....	4,083	4,093	4,109	4,174	4,226	4,218	4,213	4,218	4,249
<b>Employment-population ratio</b>									
United States .....	56.8	57.9	59.3	59.9	59.2	59.0	57.8	57.9	59.5
Canada .....	56.7	56.6	57.5	58.7	59.3	59.9	57.0	56.7	57.4
Australia .....	59.7	59.2	58.1	57.9	58.4	58.4	57.3	55.4	56.0
Japan .....	61.1	61.2	61.3	61.4	61.3	61.2	61.2	61.4	61.0
France .....	54.8	54.7	54.5	54.0	53.5	52.8	52.4	51.7	50.9
Germany .....	52.0	51.6	51.5	51.7	51.6	50.7	49.4	48.8	48.9
Great Britain .....	59.5	59.3	59.4	59.8	58.9	55.8	54.6	54.2	54.6
Italy .....	46.1	46.3	45.9	45.9	46.1	45.9	45.2	44.7	44.8
Netherlands .....	46.5	46.5	46.3	46.4	46.9	46.5	45.4	44.8	44.5
Sweden .....	64.9	64.8	64.6	65.3	65.6	65.1	64.7	64.4	64.7
<b>Unemployed</b>									
United States .....	7,406	6,991	6,202	6,137	7,637	8,273	10,678	10,717	8,539
Canada .....	726	849	908	836	865	898	1,314	1,448	1,399
Australia .....	298	358	405	408	409	394	495	697	642
Japan .....	1,080	1,100	1,240	1,170	1,140	1,260	1,360	1,560	1,610
France .....	990	1,120	1,210	1,370	1,470	1,730	1,920	1,960	2,320
Germany .....	890	900	870	780	770	1,090	1,580	1,990	2,090
Great Britain .....	1,480	1,590	1,580	1,350	1,770	2,680	3,060	3,330	3,430
Italy .....	700	740	760	810	830	920	1,020	1,140	1,200
Netherlands .....	260	250	260	270	330	510	630	830	860
Sweden .....	66	75	94	88	86	108	137	151	136
<b>Unemployment rate</b>									
United States .....	7.7	7.1	6.1	5.8	7.1	7.6	9.7	9.6	7.5
Canada .....	7.1	8.1	8.3	7.4	7.5	7.5	11.0	11.9	11.3
Australia .....	4.8	5.6	6.3	6.3	6.1	5.8	7.2	10.0	9.0
Japan .....	2.0	2.0	2.3	2.1	2.0	2.2	2.4	2.7	2.8
France .....	4.5	5.0	5.4	6.0	6.4	7.5	8.3	8.5	10.0
Germany .....	3.4	3.5	3.4	3.0	2.9	4.1	5.9	7.5	7.8
Great Britain .....	5.9	6.3	6.2	5.3	6.8	10.4	11.8	12.8	13.0
Italy .....	3.4	3.6	3.7	3.9	3.9	4.3	4.8	5.3	5.9
Netherlands .....	5.3	5.0	5.2	5.3	6.2	9.3	11.3	14.5	15.0
Sweden .....	1.6	1.8	2.2	2.1	2.0	2.5	3.1	3.5	3.1

## 47. Annual indexes of productivity and related measures, twelve countries

(1977 = 100)

Item and country	1960	1970	1973	1974	1976	1977	1979	1980	1981	1982	1983	1984
<b>Output per hour</b>												
United States .....	62.2	80.8	93.4	90.6	97.1	100.0	101.4	101.4	103.6	105.9	112.9	118.5
Canada .....	50.3	76.8	91.3	93.4	96.2	100.0	104.2	101.9	104.0	101.0	107.6	111.5
Japan .....	23.2	64.8	83.1	86.5	94.3	100.0	114.8	122.7	127.2	135.0	142.3	152.2
Belgium .....	32.8	60.0	78.3	82.7	95.1	100.0	112.1	119.7	128.0	134.0	143.0	149.6
Denmark .....	36.4	65.3	82.8	85.5	98.0	100.0	108.3	114.3	116.2	115.3	119.4	120.4
France .....	36.4	69.6	82.2	85.2	95.0	100.0	110.3	112.0	116.4	123.5	128.6	135.9
Germany .....	40.5	71.5	84.2	87.6	96.6	100.0	107.8	108.3	110.6	112.4	119.3	124.8
Italy .....	36.5	72.7	90.9	95.3	98.9	100.0	110.5	116.9	121.0	123.4	126.4	134.7
Netherlands .....	32.4	64.3	81.5	88.1	95.8	100.0	112.3	113.9	116.9	119.8	126.1	139.3
Norway .....	54.6	81.7	94.6	97.7	99.7	100.0	107.1	109.3	109.7	112.7	119.0	121.4
Sweden .....	42.3	80.7	94.8	98.8	101.7	100.0	110.9	112.7	113.2	116.5	125.5	132.6
United Kingdom .....	53.9	77.7	93.1	95.5	99.5	100.0	101.9	99.7	105.9	110.6	118.7	124.3
<b>Output</b>												
United States .....	52.5	78.6	96.3	91.7	93.1	100.0	108.1	103.2	104.8	98.4	105.6	117.9
Canada .....	41.5	75.1	94.6	98.0	98.1	100.0	110.9	107.7	108.8	96.4	101.7	110.1
Japan .....	19.2	69.9	91.9	91.7	94.8	100.0	113.9	124.1	129.8	137.3	148.2	165.2
Belgium .....	41.7	78.1	95.8	99.6	99.5	100.0	104.2	107.2	105.9	109.1	110.7	112.8
Denmark .....	48.2	81.7	95.4	96.8	99.4	100.0	107.2	112.1	108.5	110.2	114.2	120.6
France .....	35.4	73.3	88.6	91.8	96.1	100.0	106.1	106.6	105.9	106.0	107.4	109.6
Germany .....	50.0	86.6	96.1	95.4	98.0	100.0	106.6	106.6	104.9	102.4	103.5	107.5
Italy .....	37.4	78.0	90.5	96.3	97.9	100.0	108.6	115.4	114.3	111.6	109.0	113.1
Netherlands .....	44.8	84.4	95.8	100.0	99.0	100.0	106.1	106.6	106.7	105.0	105.3	110.8
Norway .....	55.1	87.0	99.5	104.0	101.4	100.0	100.3	101.3	100.1	99.9	98.7	101.2
Sweden .....	52.6	92.5	100.3	105.7	106.1	100.0	103.6	104.0	100.6	100.1	105.2	112.4
United Kingdom .....	71.0	94.7	104.7	103.5	98.2	100.0	100.5	91.7	86.2	86.4	88.9	92.4
<b>Total hours</b>												
United States .....	84.4	97.3	103.1	101.2	95.9	100.0	106.5	101.7	101.1	92.9	93.5	99.5
Canada .....	82.6	97.7	103.6	105.0	102.0	100.0	106.4	105.7	104.6	95.4	94.6	98.7
Japan .....	82.7	107.9	110.7	106.1	100.6	100.0	99.3	101.2	102.0	101.7	104.2	108.5
Belgium .....	127.1	130.2	122.3	120.4	104.6	100.0	93.0	89.6	82.8	81.4	77.4	75.4
Denmark .....	132.4	125.1	115.2	113.2	101.4	100.0	99.0	98.0	93.4	95.6	95.6	100.2
France .....	97.2	105.3	107.8	107.8	101.2	100.0	96.2	95.2	91.0	85.9	83.5	80.7
Germany .....	123.4	121.2	114.2	108.9	101.5	100.0	98.9	98.4	94.9	91.1	86.8	86.2
Italy .....	102.3	107.4	99.6	101.0	99.0	100.0	98.2	98.7	94.5	90.5	86.2	83.9
Netherlands .....	138.4	131.2	117.6	113.5	103.3	100.0	94.4	93.6	91.2	87.7	83.5	79.5
Norway .....	101.0	106.4	105.1	106.5	101.7	100.0	93.6	92.6	91.3	88.6	82.9	83.4
Sweden .....	124.4	114.6	105.7	107.0	104.3	100.0	93.4	92.3	88.9	85.9	83.9	84.8
United Kingdom .....	131.8	121.9	112.4	108.4	98.7	100.0	98.6	92.0	81.5	78.1	74.9	74.3
<b>Compensation per hour</b>												
United States .....	36.5	57.3	68.8	76.2	92.1	100.0	118.6	132.4	145.2	157.5	163.2	169.1
Canada .....	27.1	46.5	59.2	68.5	89.9	100.0	118.3	130.6	151.5	167.1	179.3	181.8
Japan .....	8.9	33.9	55.1	72.3	90.7	100.0	113.4	120.7	129.8	136.6	140.7	144.8
Belgium .....	13.9	34.7	53.6	65.4	89.4	100.0	117.5	130.4	144.9	152.1	164.4	174.9
Denmark .....	12.6	36.3	56.1	67.9	90.4	100.0	123.2	135.9	149.7	161.1	174.3	184.0
France .....	15.1	36.6	52.3	62.0	88.9	100.0	129.3	147.5	170.3	200.8	225.0	244.0
Germany .....	18.9	48.4	67.9	77.4	91.7	100.0	116.0	125.7	134.6	141.3	149.4	155.0
Italy .....	8.3	26.1	43.7	54.5	84.1	100.0	134.7	160.2	197.1	237.3	277.0	306.9
Netherlands .....	12.5	39.0	60.5	71.9	91.9	100.0	117.0	123.6	129.1	138.0	144.7	152.8
Norway .....	15.8	37.9	54.5	63.6	88.8	100.0	116.0	128.0	142.8	156.0	173.4	185.6
Sweden .....	14.7	38.5	54.2	63.8	91.5	100.0	120.1	133.6	148.1	158.9	173.3	190.7
United Kingdom .....	14.8	30.8	44.9	57.1	88.8	100.0	137.3	163.3	185.4	202.6	217.8	233.6
<b>Unit labor costs: National currency basis:</b>												
United States .....	58.7	70.9	73.7	84.1	94.9	100.0	117.0	130.6	140.1	148.7	144.5	142.8
Canada .....	53.9	60.6	64.8	73.3	93.5	100.0	113.5	128.1	145.7	165.4	166.7	163.0
Japan .....	38.4	52.3	66.4	83.6	96.2	100.0	98.8	98.4	102.0	101.2	98.9	95.1
Belgium .....	42.3	57.9	68.5	79.0	94.1	100.0	104.8	108.9	113.2	113.5	114.9	116.9
Denmark .....	34.5	55.6	67.8	79.4	92.3	100.0	113.7	118.9	128.8	139.7	146.0	152.8
France .....	41.6	52.6	63.6	72.8	93.6	100.0	117.3	131.7	146.3	162.6	175.0	179.5
Germany .....	46.8	67.6	80.6	88.3	95.0	100.0	107.7	116.1	121.7	125.7	125.3	124.2
Italy .....	22.8	36.0	48.1	57.2	85.1	100.0	121.9	137.0	162.9	192.4	219.2	227.7
Netherlands .....	38.5	60.7	74.3	81.6	96.0	100.0	104.1	108.5	110.4	115.2	114.7	109.7
Norway .....	29.0	46.4	57.6	65.2	89.1	100.0	108.2	117.0	130.2	138.5	145.6	152.9
Sweden .....	34.8	47.7	57.2	64.6	90.0	100.0	108.3	118.6	130.9	136.3	138.1	143.8
United Kingdom .....	27.6	39.7	48.2	59.7	89.2	100.0	134.7	163.8	175.1	183.1	183.5	187.9
<b>Unit labor costs: U.S. dollar basis:</b>												
United States .....	58.7	70.9	73.7	84.1	94.9	100.0	117.0	130.6	140.1	148.7	144.5	142.8
Canada .....	59.0	61.7	68.8	79.7	100.7	100.0	103.0	116.4	129.1	142.3	143.7	133.7
Japan .....	28.5	39.1	65.6	76.8	86.9	100.0	121.3	116.8	123.8	108.8	111.5	107.2
Belgium .....	30.4	41.8	63.2	72.8	87.4	100.0	128.1	133.7	109.5	88.9	80.6	72.5
Denmark .....	30.1	44.5	67.6	78.4	91.7	100.0	129.7	126.8	108.4	100.5	95.8	88.6
France .....	41.7	46.8	70.4	74.5	96.3	100.0	135.5	153.4	132.2	121.5	112.9	101.0
Germany .....	26.0	43.1	70.7	79.4	87.6	100.0	136.4	148.5	125.3	120.2	113.9	101.3
Italy .....	32.5	50.6	73.1	77.6	90.5	100.0	129.5	141.4	126.3	125.4	127.4	114.5
Netherlands .....	25.1	41.2	65.6	74.6	89.1	100.0	127.4	134.2	108.9	105.8	98.6	83.9
Norway .....	21.7	34.5	53.4	62.8	86.9	100.0	113.8	126.2	120.6	114.1	106.2	99.7
Sweden .....	30.1	41.1	58.7	65.1	92.3	100.0	112.9	125.3	115.4	96.9	80.4	77.7
United Kingdom .....	44.4	54.4	67.7	80.1	92.3	100.0	163.9	218.3	203.1	183.5	159.4	143.9

- Data not available.

## 48. Occupational injury and illness incidence rates by industry, United States

Industry and type of case <sup>1</sup>	Incidence rates per 100 full-time workers <sup>2</sup>						
	1978	1979	1980	1981	1982	1983	1984
<b>PRIVATE SECTOR<sup>3</sup></b>							
Total cases .....	9.4	9.5	8.7	8.3	7.7	7.6	8.0
Lost workday cases .....	4.1	4.3	4.0	3.8	3.5	3.4	3.7
Lost workdays .....	63.5	67.7	65.2	61.7	58.7	58.5	63.4
<b>Agriculture, forestry, and fishing<sup>3</sup></b>							
Total cases .....	11.6	11.7	11.9	12.3	11.8	11.9	12.0
Lost workday cases .....	5.4	5.7	5.8	5.9	5.9	6.1	6.1
Lost workdays .....	80.7	83.7	82.7	82.8	86.0	90.8	90.7
<b>Mining</b>							
Total cases .....	11.5	11.4	11.2	11.6	10.5	8.4	9.7
Lost workday cases .....	6.4	6.8	6.5	6.2	5.4	4.5	5.3
Lost workdays .....	143.2	150.5	163.6	146.4	137.3	125.1	160.2
<b>Construction</b>							
Total cases .....	16.0	16.2	15.7	15.1	14.6	14.8	15.5
Lost workday cases .....	6.4	6.8	6.5	6.3	6.0	6.3	6.9
Lost workdays .....	109.4	120.4	117.0	113.1	115.7	118.2	128.1
General building contractors:							
Total cases .....	15.9	16.3	15.5	15.1	14.1	14.4	15.4
Lost workday cases .....	6.3	6.8	6.5	6.1	5.9	6.2	6.9
Lost workdays .....	105.3	111.2	113.0	107.1	112.0	113.0	121.3
Heavy construction contractors:							
Total cases .....	16.6	16.6	16.3	14.9	15.1	15.4	14.9
Lost workday cases .....	6.2	6.7	6.3	6.0	5.8	6.2	6.4
Lost workdays .....	110.9	123.1	117.6	106.0	113.1	122.4	131.7
Special trade contractors:							
Total cases .....	15.8	16.0	15.5	15.2	14.7	14.8	15.8
Lost workday cases .....	6.6	6.9	6.7	6.6	6.2	6.4	7.1
Lost workdays .....	111.0	124.3	118.9	119.3	118.6	119.0	130.1
<b>Manufacturing</b>							
Total cases .....	13.2	13.3	12.2	11.5	10.2	10.0	10.6
Lost workday cases .....	5.6	5.9	5.4	5.1	4.4	4.3	4.7
Lost workdays .....	84.9	90.2	86.7	82.0	75.0	73.5	77.9
<b>Durable goods</b>							
Lumber and wood products:							
Total cases .....	22.6	20.7	18.6	17.6	16.9	18.3	19.6
Lost workday cases .....	11.1	10.8	9.5	9.0	8.3	9.2	9.9
Lost workdays .....	178.8	175.9	171.8	158.4	153.3	163.5	172.0
Furniture and fixtures:							
Total cases .....	17.5	17.6	16.0	15.1	13.9	14.1	15.3
Lost workday cases .....	6.9	7.1	6.6	6.2	5.5	5.7	6.4
Lost workdays .....	95.9	99.6	97.6	91.9	85.6	83.0	101.5
Stone, clay, and glass products:							
Total cases .....	16.8	16.8	15.0	14.1	13.0	13.1	13.6
Lost workday cases .....	7.8	8.0	7.1	6.9	6.1	6.0	6.6
Lost workdays .....	126.3	133.7	128.1	122.2	112.2	112.0	120.8
Primary metal industries:							
Total cases .....	17.0	17.3	15.2	14.4	12.4	12.4	13.3
Lost workday cases .....	7.5	8.1	7.1	6.7	5.4	5.4	6.1
Lost workdays .....	123.6	134.7	128.3	121.3	101.6	103.4	115.3
Fabricated metal products:							
Total cases .....	19.3	19.9	18.5	17.5	15.3	15.1	16.1
Lost workday cases .....	8.0	8.7	8.0	7.5	6.4	6.1	6.7
Lost workdays .....	112.4	124.2	118.4	109.9	102.5	96.5	104.9
Machinery, except electrical:							
Total cases .....	14.4	14.7	13.7	12.9	10.7	9.8	10.7
Lost workday cases .....	5.4	5.9	5.5	5.1	4.2	3.6	4.1
Lost workdays .....	75.1	83.6	81.3	74.9	66.0	58.1	65.8
Electric and electronic equipment:							
Total cases .....	8.7	8.6	8.0	7.4	6.5	6.3	6.8
Lost workday cases .....	3.3	3.4	3.3	3.1	2.7	2.6	2.8
Lost workdays .....	50.3	51.9	51.8	48.4	42.2	41.4	45.0
Transportation equipment:							
Total cases .....	11.5	11.6	10.6	9.8	9.2	8.4	9.3
Lost workday cases .....	5.1	5.5	4.9	4.6	4.0	3.6	4.2
Lost workdays .....	78.0	85.9	82.4	78.1	72.2	64.5	68.8
Instruments and related products:							
Total cases .....	6.9	7.2	6.8	6.5	5.6	5.2	5.4
Lost workday cases .....	2.6	2.8	2.7	2.7	2.3	2.1	2.2
Lost workdays .....	37.0	40.0	41.8	39.2	37.0	35.6	37.5
Miscellaneous manufacturing industries:							
Total cases .....	11.8	11.7	10.9	10.7	9.9	9.9	10.5
Lost workday cases .....	4.5	4.7	4.4	4.4	4.1	4.0	4.3
Lost workdays .....	66.4	67.7	67.9	68.3	69.9	66.3	70.2

See footnotes at end of table.

48. Continued— Occupational injury and illness incidence rates by industry, United States

Industry and type of case <sup>1</sup>	Incidence rates per 100 full-time workers <sup>2</sup>						
	1978	1979	1980	1981	1982	1983	1984
<b>Nondurable goods</b>							
<b>Food and kindred products:</b>							
Total cases .....	19.4	19.9	18.7	17.8	16.7	16.5	16.7
Lost workday cases .....	8.9	9.5	9.0	8.6	8.0	7.9	8.1
Lost workdays .....	132.2	141.8	136.8	130.7	129.3	131.2	131.6
<b>Tobacco manufacturing:</b>							
Total cases .....	8.7	9.3	8.1	8.2	7.2	6.5	7.7
Lost workday cases .....	4.0	4.2	3.8	3.9	3.2	3.0	3.2
Lost workdays .....	58.6	64.8	45.8	56.8	44.6	42.8	51.7
<b>Textile mill products:</b>							
Total cases .....	10.2	9.7	9.1	8.8	7.6	7.4	8.0
Lost workday cases .....	3.4	3.4	3.3	3.2	2.8	2.8	3.0
Lost workdays .....	61.5	61.3	62.8	59.2	53.8	51.4	54.0
<b>Apparel and other textile products:</b>							
Total cases .....	6.5	6.5	6.4	6.3	6.0	6.4	6.7
Lost workday cases .....	2.2	2.2	2.2	2.2	2.1	2.4	2.5
Lost workdays .....	32.4	34.1	34.9	35.0	36.4	40.6	40.9
<b>Paper and allied products:</b>							
Total cases .....	13.5	13.5	12.7	11.6	10.6	10.0	10.4
Lost workday cases .....	5.7	6.0	5.8	5.4	4.9	4.5	4.7
Lost workdays .....	103.3	108.4	112.3	103.6	99.1	90.3	93.8
<b>Printing and publishing:</b>							
Total cases .....	7.0	7.1	6.9	6.7	6.6	6.6	6.5
Lost workday cases .....	2.9	3.1	3.1	3.0	2.8	2.9	2.9
Lost workdays .....	43.8	45.1	46.5	47.4	45.7	44.6	46.0
<b>Chemicals and allied products:</b>							
Total cases .....	7.8	7.7	6.8	6.6	5.7	5.5	5.3
Lost workday cases .....	3.3	3.5	3.1	3.0	2.5	2.5	2.4
Lost workdays .....	50.9	54.9	50.3	48.1	39.4	42.3	40.8
<b>Petroleum and coal products:</b>							
Total cases .....	7.9	7.7	7.2	6.7	5.3	5.5	5.1
Lost workday cases .....	3.4	3.6	3.5	2.9	2.5	2.4	2.4
Lost workdays .....	58.3	62.0	59.1	51.2	46.4	46.8	53.5
<b>Rubber and miscellaneous plastics products:</b>							
Total cases .....	17.1	17.1	15.5	14.6	12.7	13.0	13.6
Lost workday cases .....	8.1	8.2	7.4	7.2	6.0	6.2	6.4
Lost workdays .....	125.5	127.1	118.6	117.4	100.9	101.4	104.3
<b>Leather and leather products:</b>							
Total cases .....	11.7	11.5	11.7	11.5	9.9	10.0	10.5
Lost workday cases .....	4.7	4.9	5.0	5.1	4.5	4.4	4.7
Lost workdays .....	72.5	76.2	82.7	82.6	86.5	87.3	94.4
<b>Transportation and public utilities</b>							
Total cases .....	10.1	10.0	9.4	9.0	8.5	8.2	8.8
Lost workday cases .....	5.7	5.9	5.5	5.3	4.9	4.7	5.2
Lost workdays .....	102.3	107.0	104.5	100.6	96.7	94.9	105.1
<b>Wholesale and retail trade</b>							
Total cases .....	7.9	8.0	7.4	7.3	7.2	7.2	7.4
Lost workday cases .....	3.2	3.4	3.2	3.1	3.1	3.1	3.3
Lost workdays .....	44.9	49.0	48.7	45.3	45.5	47.8	50.5
<b>Wholesale trade:</b>							
Total cases .....	8.9	8.8	8.2	7.7	7.1	7.0	7.2
Lost workday cases .....	3.9	4.1	3.9	3.6	3.4	3.2	3.5
Lost workdays .....	57.5	59.1	58.2	54.7	52.1	50.6	55.5
<b>Retail trade:</b>							
Total cases .....	7.5	7.7	7.1	7.1	7.2	7.3	7.5
Lost workday cases .....	2.8	3.1	2.9	2.9	2.9	3.0	3.2
Lost workdays .....	39.7	44.7	44.5	41.1	42.6	46.7	48.4
<b>Finance, insurance, and real estate</b>							
Total cases .....	2.1	2.1	2.0	1.9	2.0	2.0	1.9
Lost workday cases .....	.8	.9	.8	.8	.9	.9	.9
Lost workdays .....	12.5	13.3	12.2	11.6	13.2	12.8	13.6
<b>Services</b>							
Total cases .....	5.5	5.5	5.2	5.0	4.9	5.1	5.2
Lost workday cases .....	2.4	2.5	2.3	2.3	2.3	2.4	2.5
Lost workdays .....	36.2	38.1	35.8	35.9	35.8	37.0	41.1

<sup>1</sup> Total cases include fatalities.

<sup>2</sup> 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.)

<sup>3</sup> Excludes farms with fewer than 11 employees since 1976.

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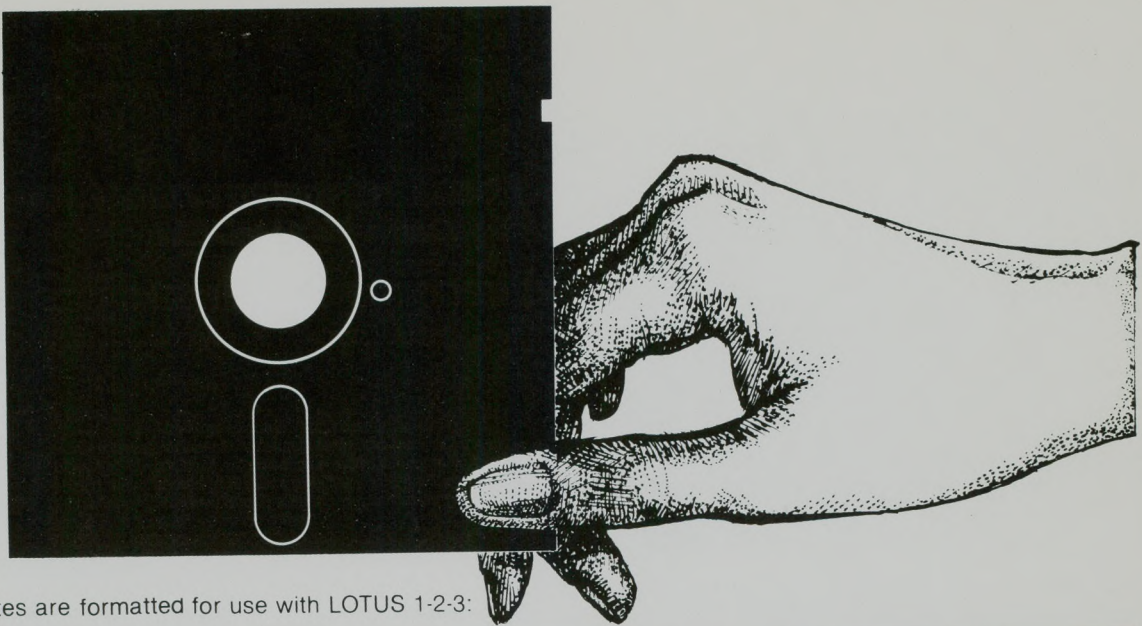
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