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November cover:

Details (front and back covers) from the oil on canvas study for the
mural, "Autumn in Iowa," by John Sharp, photograph courtesy of
the National Museum of American Art.

Cover design by Melvin B. Moxley.

JOB SAFETY. The Bureau of Labor Statistics reported results of its annual survey of job-related injuries and illnesses. The data, collected during 1984, indicate that occupational injuries and illnesses declined slightly from 1982 to 1983. The survey shows that 7.6 injuries and illnesses occurred per 100 full-time workers in 1983, compared with 7.7 in 1982.

In addition, the latest survey shows that corresponding incidence rates for injuries and illnesses that resulted in lost workdays also were nearly the same in 1983 (3.4) as in 1982 (3.5). Lost workdays averaged 58.5 per 100 full-time workers in 1983, essentially unchanged from the previous year.

Fatalities. In workplaces with 11 employees or more, 3,100 job-related deaths were recorded. Most of these fatalities occurred in construction, manufacturing, and transportation and public utilities. As in 1982, over-the-road motor vehicle accidents accounted for about 30 percent of occupational deaths.

Over the past decade, the Bureau's surveys of injuries and illnesses show that after a decline from 11.0 in 1973 to 9.1 in 1975, the incidence rate rose to 9.5 in 1979. Since then, the rate has declined from 9.5 to 7.6 in 1983.

Occupational injuries. Job-related injuries occurred at a rate of 7.5 per 100 full-time workers in 1983. Incidence rates ranged from 14.7 in construction to 1.9 in finance, insurance, and real estate and varied considerably within these industry divisions.

Goods-producing industries (including agriculture, forestry, and fishing; mining; construction; and manufacturing), as a whole, with about 35 percent of the private sector work force, had a combined 1983 injury incidence rate of 10.4 per 100 full-time

workers, compared with 7.5 for the total private sector. About three-fifths of the industries in this sector had rates which ranged between 5.0 and 9.9. The lowest rate in the goods sector was 3.9 in nonmetallic mineral mining and the highest, 18.1 in lumber and wood products manufacturing.

Service-producing industries (including transportation and public utilities; trade; finance, insurance, and real estate; and services), with about 65 percent of the private sector work force, had a combined incidence rate of 5.8 per 100 full-time workers, with about 40 percent of the industries grouped between 5.0 and 9.9. The industry incidence rates varied from 0.4 for legal services to 13.3 in trucking and transportation.

Injury rates tend to be lowest in the very largest establishments (2,500 workers or more) and in establishments with less than 20 workers. Injury incidence rates were essentially unchanged from 1982 to 1983 in private sector establishments of all sizes except those with 250 to 499 or 2,500 or more, in both of which the rates dropped. There were 5.3 injuries per 100 full-time workers in the very largest establishments. The rate in establishments with fewer than 20 workers was 3.4. The incidence rate remained highest in the 100-to-249 size class (10.6). In this category, mining had the largest decline, while agriculture, forestry, and fishing had the largest increase.

Occupational illnesses. An occupational illness is any abnormal condition or disorder, other than one resulting from an occupational injury, caused by exposure to environmental factors associated with employment. The incidence of occupational illnesses measured by the survey refers to the number of new illness cases occurring during the year and does not measure continuing conditions reported in

previous surveys. Thus, illnesses are recorded only for the year in which they are recognized as work-related.

About 106,000 occupational illnesses were recorded in 1983. The number of skin diseases and disorders associated with repeated trauma (noise-induced hearing loss and other conditions due to repeated motion, pressure, or vibration) together accounted for 3 of 5 illnesses.

From both statistical and procedural points of view, occupational illness estimates produced by the survey provide a valid measure of recognized acute cases. However, the current statistics do not adequately reflect the portion of occupational illnesses, such as cancers, which are chronic and long-latent in nature, because of problems of detection and occupational relationship.

Background of survey. The Annual Survey of Occupational Injuries and Illnesses is a cooperative program in which State agencies participate with the Bureau of Labor Statistics. The data are based on the records which employers maintain under the Occupational Safety and Health Act of 1970. Response to the survey is mandatory.

The sample for the Annual Survey of Occupational Injuries and Illnesses excludes the self-employed; farmers with fewer than 11 employees; private households; railroad, coal, metal and nonmetal mining employers; Federal, State, and local government agencies; and, for 1983, employers with fewer than 11 employees in low-risk industries. Approximately 280,000 private sector employers were surveyed. To augment private sector estimates of occupational injuries and illnesses, the Mine Safety and Health Administration, U.S. Department of Labor, and the Federal Railroad Administration, U.S. Department of Transportation, provide BLS data for those industries covered by separate legislation. □

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Inflation and the business cycle during the postwar period

At this stage of the economic expansion,
the moderate rise in consumer prices
is consistent with the record
for similar cyclical periods
since the end of World War II

JOHN F. EARLY, MARY LYNN SCHMIDT,
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Inflation in both retail and primary markets has remained relatively low despite the rapid growth in economic output since the trough of the last recession in November 1982. In the ensuing 22 months of the current expansion, consumer prices have advanced at a 3.6-percent seasonally adjusted annual rate, with the 3 months ended in September increasing at a seasonally adjusted annual rate of 4.5 percent. In this article, we describe the behavior of prices in the current and previous business expansions and examine some of the major factors associated with those changes. It is our objective to provide historical context and perspective within which the reader may evaluate current price behavior and forecasts.

In the post-World War II period, the U.S. economy has undergone eight recessions in business activity.[1] While these periods have evolved from different initial conditions, extended over varying periods of duration, and been subject to different external shocks and economic policies, they have been characterized by similarities in the qualitative behavior of prices. Table 1 summarizes the behavior of several measures of consumer price change for the recession peaks and troughs, and at selected dates of the subsequent business expansion. Tables 2 and 3 present selected changes in producer prices and labor costs for the same times.[2] The

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first seven columns of the tables provide the data for each of the first seven recessions and expansions in the postwar era. The eighth column of data is the average of all seven recessions and expansions prior to the most recent. The ninth column is the average of the first six periods, because the expansion after the 1980 recession was only 12 months long. Consequently, the "expansion" measures for that period extend into the subsequent recession.

The 1981–82 recession. At the trough of the 1981–82 recession, the Consumer Price Index for All Urban Consumers (CPI-U) was increasing at a seasonally adjusted annual rate of 1.7 percent. (See table 1.) The deceleration in prices had begun, in the fourth quarter of 1981, shortly after the business cycle peak in July. This price slowdown, of course, was not uniform, either among types of items or stages of processing. Analysis of the recovery period since November 1982 is complicated by the fact that the homeowner cost portion of the CPI-U was changed to a rental equivalence basis in January 1983. To facilitate comparisons, we include in table 1 parenthetical data for the 1981–82 recession based on the rental equivalence prototype. That index (CPI–U, X1) essentially shows much less deceleration during the recession but a further drop in inflation since then. After 22 months of economic expansion, price changes are still moderate. This is consistent with postwar experience.

Table 1. The Consumer Price Index (CPI-U) and key categories, by selected phases of the postwar business cycle

[3-month seasonally adjusted annual rates]

Index and cyclical stage	Dates of recession trough							Cyclical average, Nov. 1948 to July 1980	Cyclical average, Nov. 1948 to Mar. 1975	Recession trough, Nov. 1982[1]
	Oct. 1949	May 1954	Apr. 1958	Feb. 1961	Nov. 1970	Mar. 1975	July 1980			
All Items:										
At prerecession business peak	-4.3	1.5	4.1	2.3	6.3	8.2	15.8	4.8	3.0	11.7 (7.8)
At recession trough	-.6	-.8	4.3	.8	5.9	6.6	8.3	3.5	2.7	1.7 (6.2)
22 months after trough	-2.0	.4	.8	-.5	4.2	6.1	4.7	2.0	1.5	4.5 (4.5)
24 months after trough	3.9	2.6	2.3	1.2	4.5	8.5	10.7	4.8	3.8	
30 months after trough	.2	3.0	2.7	3.1	8.7	5.4	.0	3.3	3.9	
Food:										
At prerecession business peak	-12.7	1.0	10.4	6.1	9.7	6.9	9.2	4.4	3.6	4.5
At recession trough	.0	-1.4	11.4	.4	2.5	1.9	9.2	3.4	2.5	1.5
22 months after trough	-6.1	-1.0	-1.4	-2.6	6.7	2.0	2.7	.0	-.4	3.4
24 months after trough	6.5	5.6	6.1	2.2	8.3	11.8	6.1	6.7	6.8	
30 months after trough	-2.3	3.9	5.6	3.6	24.2	4.0	1.8	5.8	6.5	
Shelter:										
At prerecession business peak		1.6	1.5	1.8	7.5	13.4	21.2	7.8	5.2	20.8
At recession trough		3.1	3.4	.9	7.2	8.9	10.4	5.7	4.7	-4.0
22 months after trough		-.5	2.3	-.4	4.5	4.7	9.2	3.3	2.1	7.0
24 months after trough		.0	1.8	.4	2.1	8.6	14.5	4.6	2.6	
30 months after trough		1.0	3.2	.9	4.1	9.8	-5.0	2.3	3.8	
Energy:										
At prerecession business peak			-3.9	1.3	1.5	31.4	33.8	12.8	7.6	-1.2
At recession trough			-4.8	-.4	10.1	10.8	6.3	4.4	3.9	11.2
22 months after trough			.9	.8	9.9	18.5	-8.7	4.3	7.5	1.7
24 months after trough			1.3	.4	8.6	7.6	23.6	8.3	4.5	
30 months after trough			.0	.4	9.1	8.2	-6.6	2.2	4.4	
All items less food, shelter and energy:										
At prerecession business peak					4.8	4.1	10.2	6.4	4.5	11.0
At recession trough					6.7	7.1	7.4	7.1	6.9	4.9
22 months after trough					2.3	6.5	6.3	5.0	4.4	4.8
24 months after trough					3.6	6.2	7.3	5.7	4.9	
30 months after trough					4.2	4.6	4.9	4.6	4.4	
Commodities:										
At prerecession business peak			4.6	1.8	6.4	6.8	14.2	6.8	4.9	6.2
At recession trough			4.1	.4	5.0	5.9	7.0	4.5	3.9	3.0
22 months after trough			-.9	-1.3	4.7	4.9	2.2	1.9	1.9	2.3
24 months after trough		3.3	1.8	.4	5.0	8.3	11.3	5.0	3.8	
30 months after trough		3.3	2.2	3.0	11.7	3.7	1.2	4.2	4.8	
Services:										
At prerecession business peak			4.3	4.0	6.4	11.4	17.9	8.8	6.5	18.1
At recession trough			4.2	1.9	7.4	7.7	10.3	6.3	5.3	.1
22 months after trough			4.0	1.4	3.0	8.3	8.1	5.0	4.2	7.0
24 months after trough		2.8	4.0	2.3	3.3	8.6	9.8	5.1	4.2	
30 months after trough		3.9	2.4	2.3	4.2	8.3	-1.6	3.3	4.2	

[1]Numbers in parentheses are for the then experimental index with a rental equivalence measure for homeownership.

Consumer prices. Examining four major categories of the CPI, we see that food prices moderated before prices of shelter, energy, and a residual factor—all items less food, shelter and energy. After "double digit" increases in the last 2 quarters of 1980, food prices decelerated in the first quarter of 1981 and were increasing at only a 4.5-percent rate at the peak of the business cycle in July 1981. At the cyclical trough (November 1982), they were advancing at a 1.5-percent rate. Despite the impact of the Federal payment-in-kind (PIK) farm program, the 1983 summer drought and the early winter freeze in 1984, food prices have continued to register generally moderate increases.

Energy prices began to slow down after March 1981. Prices for petroleum-based items had risen sharply in the first quarter of 1981 due to announced price increases by the Organization of Petroleum Exporting Countries (OPEC) and domestic price decontrol. These increases, combined with a slowdown in economic activity, led to a reduction in the demand for oil and an oversupply of petroleum and generally lower prices for petroleum products. However, prices for both natural gas and electricity were advancing at "double-digit" rates just prior to the recession. Charges for electricity began to slow in the second quarter of 1982, but natural gas prices continued to increase sharply through the first quarter of 1983. By the trough of the recession, however, the overall energy component had moderated.[3] So far in 1984, energy prices have continued to exert a moderating effect on the overall CPI.

Shelter costs in the period prior to the recession trough were dominated by the behavior of house prices and mortgage interest rates. The increase in house prices had slowed early in 1981 and shelter costs were advancing only slightly at the business cycle peak. Interest rates, however, had continued to advance until 1982. A very sharp drop in mort-

Table 2. Key categories of the Producer Price Index by selected phases of the postwar business cycle[1]

Index and cyclical stage	Dates of recession trough							Cyclical averages, Nov. 1948 to July 1980	Cyclical averages, Nov. 1948 to Mar. 1975	Recession trough, Nov. 1982
	Oct. 1949	May 1954	Apr. 1958	Feb. 1961	Nov. 1970	Mar. 1975	July 1980			
Crude materials:										
At prerecession business peak	−1.1	−6.6	3.3	−3.3	8.5	40.1	13.2	7.7	6.8	10.8
At recession trough	−12.8	0.9	3.3	0.3	−0.6	−9.1	9.4	1.2	−3.0	−0.2
22 months after trough	6.5	−2.8	−3.3	0.4	14.3	1.7	−1.8	2.1	2.8	−0.5
24 months after trough	6.2	2.0	−3.3	−1.9	13.9	8.6	−4.1	3.1	4.3	
30 months after trough	−10.4	5.5	−1.2	−1.5	33.6	0.0	−1.4	3.5	4.3	
Intermediate materials:										
At prerecession business peak	−1.5	7.2	3.0	.0	5.8	3.0	18.3	5.1	2.9	4.3
At recession trough	−4.2	0.9	−1.3	.0	3.7	−2.4	9.8	0.9	−.6	1.2
22 months after trough	−10.3	5.4	.0	−.8	4.5	7.0	−2.5	0.5	1.0	−1.9
24 months after trough	−7.1	7.3	.0	−.4	9.1	7.2	2.0	2.6	2.7	
30 months after trough	−3.7	4.0	−.8	.4	19.8	4.8	−0.6	3.4	4.1	
Finished goods:										
At prerecession business peak	−5.3	2.9	3.6	3.9	6.5	2.1	16.0	4.2	2.3	4.1
At recession trough	−3.6	2.8	1.3	−.4	5.9	1.5	12.1	2.8	1.3	3.7
22 months after trough	−4.1	2.3	1.7	−3.3	5.2	7.4	.0	1.3	1.5	.0
24 months after trough	.9	6.2	3.9	−2.1	3.1	9.0	5.4	3.8	3.5	
30 months after trough	.5	8.0	2.1	.0	15.2	5.9	.3	4.6	5.3	

[1]Crude materials series shows the 12-month change; intermediate materials and finished goods series are 3-months seasonally adjusted annual rates.

gage interest in the fourth quarter of 1982 produced declining shelter costs at the end of the recession. As indicated earlier, a major conceptual change in the treatment of homeowner costs, and consequently, shelter costs, was introduced in January 1983.[4] The new rental equivalence measure of homeowner costs shows less volatility than the former asset approach. Comparing the present official measure in September 1984 with the former official measure overstates the acceleration since the recession trough. A shelter component with a rental equivalence measure was not available, but homeowner costs (the only component within shelter affected by the conceptual change) in the experimental CPI-U, XI were increasing at a 7.6-percent rate in November 1982, compared with 7.3 percent in September 1984.

The residual group—all items excluding food, shelter, and energy, referred to by some analysts as the underlying rate of inflation—exhibits more classical price behavior than the other groups. The maximum rate occurred at the peak of the business cycle and the rate of increase decelerated smoothly until turning slightly upward shortly after the trough of the recession. As of September 1984, however, the rate was still below that of the trough of the recession.

Producer prices. The Producer Price Index (PPI) is structured by stages of processing: crude materials, intermediate materials, and finished goods. In July 1981, at the peak of the business cycle, prices for crude materials were still rising at double-digit levels, while those for intermediate materials and finished goods had just decelerated from these levels. Sixteen months later, at the trough of the cycle, prices for

Table 3. The wage and salary component of the Employment Cost Index and unit labor costs, by selected phases of the postwar business cycle

[Quarterly change at an annual rate]

Index and cyclical stage	Dates of recession trough							Cyclical averages, Nov. 1948 to July 1980	Cyclical averages, Nov. 1948 to Mar. 1975	Recession trough, Nov. 1982
	Oct. 1949	May 1954	Apr. 1958	Feb. 1961	Nov. 1970	Mar. 1975	July 1980			
Employment Cost Index										
Wages and salaries:										
At prerecession business peak							9.7			8.2
At recession trough							8.8			7.3
22 months after trough						7.8	7.5			3.5
24 months after trough						7.8	4.6			
30 months after trough						7.5	4.9			
Unit labor costs										
Private business sector, all persons:										
At prerecession business peak	16.2	.0	3.3	.0	8.5	10.0	9.6	6.8	6.3	7.1
At recession trough	−3.0	5.4	3.2	3.9	2.4	11.1	14.9	5.4	3.8	5.0
22 months after trough	9.9	5.4	3.2	−3.0	.6	7.7	8.1	4.6	4.0	−2.0
24 months after trough	−3.7	10.0	.0	.8	2.8	7.7	9.4	3.9	2.9	
30 months after trough	3.8	3.4	.8	−3.7	4.5	5.0	1.6	2.2	2.3	

NOTE: Data refer to quarter preceding that of the recession period.

crude materials were declining while prices for intermediate materials and for finished goods were advancing at less than the prerecession rate. Twenty-two months into the expansion, crude material and intermediate material prices are now declining slightly (down 0.5 percent and 1.9 percent, respectively) and finished goods prices are stable.

Preceding recessions

1948–49 recession. The first post-World War II recession followed a period of rapid expansion and inflation. In November 1947, the CPI was increasing at a 12.4-percent annual rate, but 12 months later, in November 1948, the prerecession peak, the CPI was declining at a 4.3-percent annual rate. But the abatement of the boom did not bring with it an accelerating decline in prices. At the trough, prices were declining, but at a slower rate than 11 months earlier. The recovery from this mild recession was dominated by military developments. After the outbreak of the Korean conflict in June 1950 and a return to a defense economy, output rose sharply and inflationary pressures were evident. Consumer price increases lagged behind raw material prices, but by late 1950 they too were increasing at double-digit rates. In January 1951, price and wage controls were imposed. The CPI included many items for which controls were lacking, or were only partial, and while prices moderated, all major components continued to advance. The largest increases were in the service sector, reflecting increased charges for rents and medical and transportation services.

1953–54 recession. The contraction after July 1953 was largely in the nature of an inventory adjustment. Producer prices peaked with the sharp increase in crude material prices triggered by the Korean conflict and had either declined or remained unchanged until 1955. Consumer price advances had also been moderate, even after price and wage controls had been lifted. At the prerecession peak in July 1953, the CPI was advancing at an annual rate of only 1.5 percent. Ten months later, at the trough of the recession, consumer prices were declining slightly, largely because of a drop in food prices. Increases in prices for nonfood commodities, reflecting the adjustment to decontrol, advanced more than those for services at both peak and trough periods. Twenty-two months into the recovery, prices were rising slightly. However, by April 1956, after 23 months of recovery and almost a year after the first sharp increase in producer prices, the CPI accelerated. Advances in food prices, resulting from a decline in meat supplies, and in prices for services were primarily responsible.

1957–58 recession. A 4-percent rate of increase in the CPI was recorded for both the prerecession peak and trough periods of the third postwar recession. Double-digit increases in food prices, due to supply shortages resulting from lower marketings of livestock and unfavorable weather

conditions, were the principal reasons for the relatively large advances for these periods and the lack of a slowdown in the overall CPI during the recession. At a point 22 months past the trough, however, consumer prices were increasing only slightly, as food prices finally began to slow substantially. Prices in the service sector were increasing at a significantly faster rate than those for commodities which were, on average, unchanged. Despite an advance in food prices, this was still the situation in April 1960, 24 months after the trough of the 1957–58 recession as well as the 1960–61 prerecession peak. Producer prices remained relatively stable from early 1958 through the business cycle peak of the following recession. Thirty-four months after the 1957–58 recession trough, we were at the trough of the 1960–61 recession.

1960–61 recession. At the cyclical peak before the 1960–61 recession, the all-items CPI was increasing at an annual rate of 2.3 percent. Food prices were rising at an annual rate of 6.1 percent. Prices for commodities other than food were declining, while service prices were rising at a 4-percent rate. By the trough of the recession (February 1961), consumer prices were increasing at an annual rate of less than 1 percent. All major components of the CPI had slowed substantially by the end of the recession. The ensuing recovery from this recession, the longest to date of the postwar period, was marked by generally stable prices through 1965, with only minor aberrations. Sharp increases in beef and gasoline prices in September 1962 were largely responsible for the seemingly high rate 22 months after the trough. These increases were temporary, as both beef and gasoline prices declined in the succeeding 12 months to a level lower than that before the advance. Other than food, prices for commodities rose less than 1 percent annually from 1960 through 1965, while the service index was registering increases in the 2-percent range. Prices at the producer level were uniformly well-behaved until early 1965.

1969–70 recession. Consumer prices rose 6.1 percent in 1969, the largest annual increase since 1947. The recession which began late in 1969 caused the rate of inflation to subside only partially. Nonfood commodities, which in the past typically responded to a weakening of demand, continued to advance without abatement. The services index also rose steadily until credit markets eased and mortgage interest rates declined in early 1971. Sharply reduced rates of increase in food prices were responsible for the modest deceleration between peak and trough. Nine months after the trough, on August 15, a wage and price freeze was announced. The Phase I freeze and subsequent Phase II controls were accompanied by lower inflation during the rest of 1971 and 1972. Twenty-two months after the recession trough, prices had slowed to a 4.2-percent annual rate of increase. Coincident with the subsequent easing of controls and the Arab oil embargo, consumer prices started on

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an upward spiral in late 1973, less than 3 years from the bottom of the recession.

1973–75 recession. The business cycle peak of November 1973 followed on the heels of the relaxation of price controls and the oil embargo. Consumer prices had advanced sharply and were accelerating. From December 1973 through January 1975, double-digit increases were recorded by the CPI. By the recession's end in March 1975, the overall CPI was rising at an annual rate of 6.6 percent. Although high by historical standards, this was still below the prerecession peak of 8.2 percent, not to mention the intervening double-digit rates. During the recession, food, shelter, and energy price increases all slowed. Prices for all other items, on average, however, actually accelerated, reflecting in part the time lag associated with producers passing on their higher energy costs. Twenty-two months into the economic recovery, prices were, on average, still moderating, but a few months later a rapid rise in food prices and higher shelter costs temporarily reversed the gains. The jump in food prices reflected adverse winter weather and its effect on fruit and vegetable supplies, as well as the delayed impact of the July 1975 freeze on the Brazilian coffee crop.

1980 recession. The 1980 recession coincided with unprecedented peacetime inflation. At the prerecession peak (January 1980), consumer prices were surging at a 15.8-percent annual rate. While sharp increases were recorded for energy, shelter, and food costs, the "underlying rate of inflation" was also advancing at double-digit rates. Six months later, at the bottom of the recession, prices were increasing at an 8.3-percent rate. This slowdown was only temporary, as consumer prices continued to move up sharply until October 1981, shortly after the start of the next recession.

The current outlook

The first six expansionary periods since World War II have, on average, shown a slowing of consumer price increases during the first 22 months of recovery. By the 24th month of recovery, prices have *on average* begun to rise

faster, returning to the rate of price change of the previous cyclical peak. While the average experience is for price acceleration to set in after 2 years of recovery, there is no inevitability about the process. Note, for example, the expansions beginning in 1958 and 1961.

One reason for this dispersion in the historical record, of course, is that the behavior of prices is not autonomous. Business conditions play a major role in determining the path prices take. Those factors which affect the costs of production—such as material and labor costs—and demand also shape the future pattern of price change. While crude materials prices are currently down (0.5 percent) and prices for intermediate materials are also down (1.9 percent), prices for finished goods are unchanged.

Current measures of labor costs indicate a lack of immediate pressure on prices. The wage and salary component of the Employment Cost Index, peaking in 1980, decelerated steadily through the second quarter of 1984. Although the history of this series is short, its 3.5-percent rate of increase is well below the experience of the last two recoveries. Another variable, unit labor cost, which relates changes in labor costs to changes in output, declined in the second quarter of 1984. This variable had registered increases of 7 and 5 percent at the 1981–82 recession peak and trough periods. The deceleration between the recession trough and 22 months into the recovery is typical, but the magnitude—an actual decline in unit labor costs—occurred only in the recovery from the 1960–61 recession. Recent major collective bargaining agreements and the pressure of foreign competition, derived in part from the rising value of the dollar on foreign exchange markets, would appear to preclude a sharp reversal in these trends.

However, in several recessions the runup in prices has not been a continuous process, but rather a sharp jump in response to rapid contextual changes. In two instances, military conflicts coincided with the acceleration and in two others, the vulnerability to a reduction in the supply of petroleum triggered an inflationary spiral. Such events are, of course, difficult to foresee. □

----FOOTNOTES----

[1] As designated by the National Bureau of Economic Research, Inc., the turning points for the eight postwar recessions are:

Recession	Peak (beginning of recession)	Trough (end of recession)
1948–49	November 1948	October 1949
1953–54	July 1953	May 1954
1957–58	August 1957	April 1958
1960–61	April 1960	February 1961
1969–70	December 1969	November 1970
1973–75	November 1973	March 1975
1980	January 1980	July 1980
1981-82	July 1981	November 1982

[2] Unless otherwise specified, all annual rates are based on 3-month price

changes. The PPI for crude materials is highly volatile so annual rates for it are based on full 12-month changes. The unit labor cost and Employment Cost Index series are quarterly rates. Comparisons of turning points between series with different spans for calculating rates must be adjusted for the midpoints of the different spans. The analysis in this article, however, focuses on the comparison of each series to itself in different time periods and so, generally, avoids this problem.

[3] The 3-month seasonally adjusted annual rate for November 1982—up 11.2 percent—is misleading. The change for the 12 months ended in November was 2.1 percent and for the 12 months ended in November 1983, −0.6 percent.

[4] "Changing the Homeownership Component of the Consumer Price Index to Rental Equivalence," *The CPI Detailed Report*, January 1983, pp. 7–11.

The female-male unemployment differential: effects of changes in industry employment

*In 1982, the civilian jobless rate of men
exceeded that of women for the first time
since 1947, and industry employment trends
suggest that the female unemployment rate
may be lower in the future*

LARRY DEBOER AND MICHAEL SEEBORG

Over time, a significant change in the relationship between male and female unemployment rates has occurred. Between 1970 and 1981, the female unemployment rate averaged 1.5 percentage points higher than the male rate. However, in 1982, the male unemployment rate (9.9 percent) exceeded the female rate (9.4 percent) for the first time since such data were recorded beginning in 1947. This reversal in unemployment rates is the apparent culmination of a narrowing of the differential that began in 1978.[1] (See chart 1.)

Although male unemployment rates generally increase more than female rates during recessions (see the shaded areas in chart 1), the relative worsening experienced by men during the 1981–82 recession was greater than in previous downturns.[2] (And, as noted, the female-male unemployment rate differential began to narrow prior to the recession, which is inconsistent with historical patterns.) Are we witnessing a long-term improvement in the unemployment situation of women relative to men? To what extent are the observed changes due to trends in interindustry growth rates in employment which may favor one sex over the other? This article addresses these questions using a modified version of shift-share analysis (see appendix A) to estimate the effect that change in employment patterns among industries

has had on the female-male unemployment rate differential since 1964, and to project likely future effects through 1995.[3] Shift-share analysis is commonly used to disaggregate regional employment change in an industry in order to identify the components of that change. The application of shift-share analysis in this article, however, is to disaggregate annual changes in the male-female unemployment differential into three components.

Many researchers have observed the procyclical nature of the female-male unemployment rate differential. Because men tend to be concentrated in those industries which are most sensitive to the business cycle (particularly manufacturing, construction, and mining), it is not surprising that male unemployment rates rise relative to female rates during recessions and fall during recoveries.[4] But industries also change their employment requirements in response to forces other than the business cycle. For example, in recent years, automobile and steel manufacturing employment has experienced a secular decline because of increased foreign competition and laborsaving technological changes. Such longer term trends have an impact on unemployment differentials between men and women.

The effect that the growth (or decline) of a given industry has on the female-male unemployment rate differential depends on several factors, including:

- The rate of growth (or decline) of the industry;
- the percentage of total employment in the industry which is female (or male);

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Chart 1. Unemployment rates for men and women, 1964-82

Percent
Percent

Women

Men

1964 1966 1968 1970 1972 1974 1976 1978 1980 1982
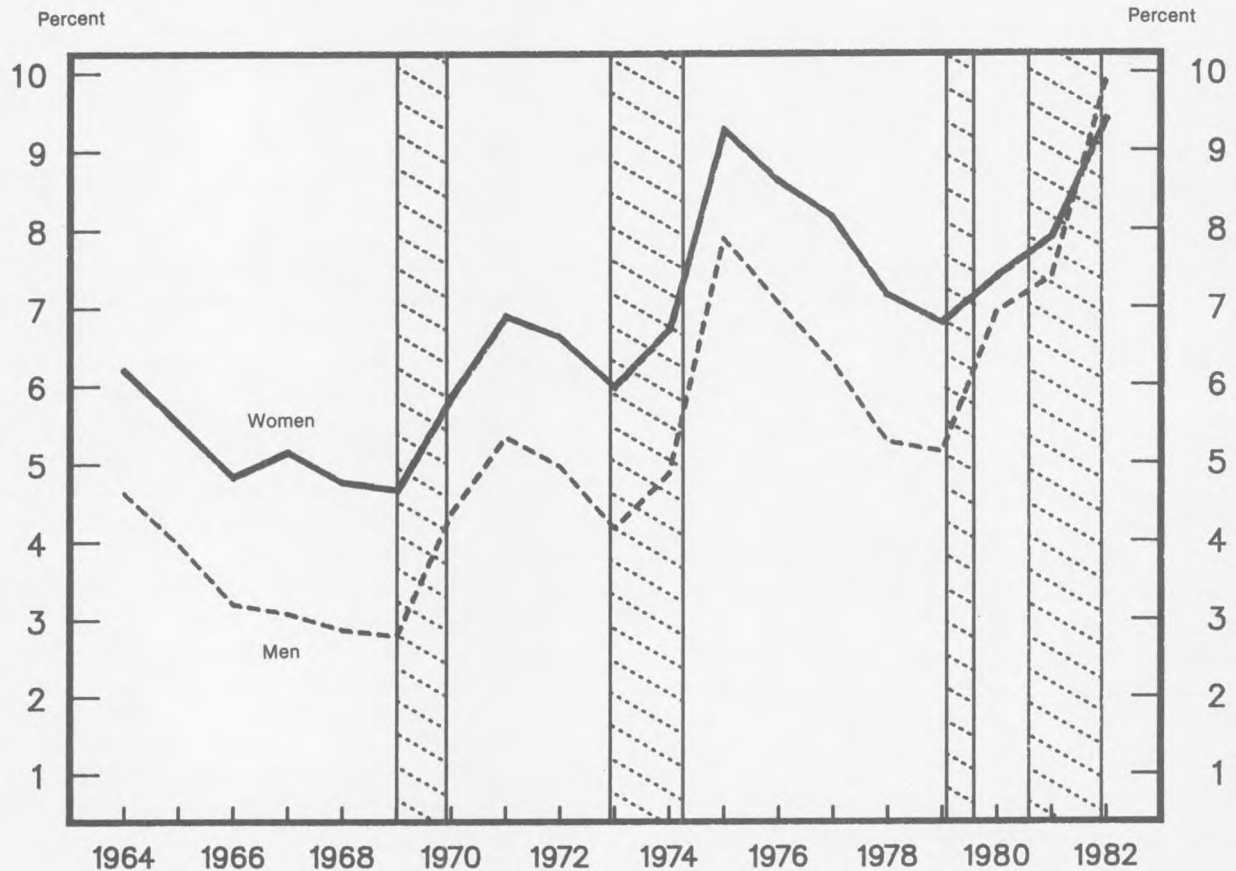
NOTE: Shaded areas denote recessions.

- the interindustry mobility of men and women in response to changes in employment opportunities in the industry; and
- the labor force mobility of men and women in response to changes in employment opportunities in the industry.

Information on the first two factors is presented in table 1. It shows the average annual rate of growth of employment in nine broadly defined industries during 1964–82. Clearly, employment grew most rapidly in those industries which employ the highest proportions of women, particularly services, and finance, insurance, and real estate. This trend in industry growth rates has contributed to the narrowing of the female-male unemployment rate differential. However, it is important to note that the mobility of men and women between industries and into and out of the labor force must be "less than perfect" for changes in the industrial composition of employment to have an effect on the unemployment differential. Otherwise, an increase in unemployment

in an industry would quickly be offset by the movement of unemployed workers to other industries (interindustry mobility) or by an exit of unemployed workers from the labor force (labor force mobility). Industry growth differentials would then have no direct effect on male and female unemployment rates. With perfect mobility, men who lose their manufacturing jobs would quickly join the growing service industries or drop out of the labor force. Research has shown, however, that unemployed men and women do not exhibit perfect interindustry and labor force mobility.[5]

In sum, it appears that the four factors previously cited would tend to decrease the female-male unemployment rate differential. First, female-dominated service-producing employment is growing faster than male-dominated goods-producing employment. Second, because interindustry and labor force mobility is less than perfect, variations in employment demand will influence unemployment rates. The trend towards slower goods-producing growth rates relative to services implies, then, that the recent reversal in the

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Table 1. Employment and average annual growth rates of employment, by selected industries

Industry	1982		Average annual growth rate		
	Total employment (in thousands)	Percent female	1964–82	1964–73	1973–82
Total	89,596	42.1	2.42	3.11	1.73
Mining	1,143	12.0	3.32	.14	6.62
Construction	3,911	8.9	1.30	3.16	– .51
Manufacturing	18,853	31.8	.49	1.73	– .74
Transportation and public utilities	5,081	24.8	1.41	1.84	.97
Wholesale and retail trade.	20,401	44.3	2.92	3.52	2.31
Finance, insurance, and real estate	5,340	57.1	3.43	3.73	3.13
Services	19,064	62.9	4.48	4.49	4.47
Government.	15,803	43.7	2.81	4.06	1.57

female-male unemployment rate differential could be the result of secular growth differentials among industries as well as the severe recession.

The following section presents a shift-share technique which is used to measure the effects of relative changes in industry employment on the female-male unemployment rate differential from 1964 to 1982. In a subsequent section, this technique is applied to BLS employment projections to predict how expected future trends in industry employment growth would affect female-male unemployment rate differentials. The appendices develop the methodology in greater detail.

Components of change in differentials

Shift-share analysis has frequently been used to analyze the sources of regional employment growth, but seldom to disaggregate the components of change in unemployment differentials.[6] (See table 2.) The purpose of the shift-share analysis is to dissect the year-to-year change in the female-male differential into three components: national share effect, industry mix effect, and employment shift effect. The sum of these effects equals the total change in the unemployment differential. The analysis starts with very restrictive assumptions regarding labor force and interindustry employment trends and proceeds to relax these assumptions one at a time.

National share effect. This effect is computed by assuming that male and female employment in each industry changes at the same rate as total national employment. The male and female labor forces are each assumed to grow at the same rate as the total labor force. The national share effect shows how the female-male unemployment rate differential would have changed from year to year if: (1) the proportion of men and women in each industry remained unchanged, (2) the proportion of men and women in the labor force remained unchanged, (3) the share of each industry's employment in total employment was constant, and (4) total employment and the labor force grew at their actual rates.

Under these assumptions, male and female employment and labor forces change at the same rate. Because the unemployment rate is defined as:

$$1 - \frac{\text{number employed}}{\text{number in labor force}},$$

this results in proportionate changes in male and female unemployment rates. The national share effect on the female-male differential is thus procyclical but trivial in magnitude.

Industry mix effect. To calculate the industry mix effect, the assumption that each industry grows at the national rate is dropped. Employment in each industry is postulated to grow at its actual rate, but it is assumed that the proportion of men and women employed in each industry remains the same as in the *previous* period. If employment in female-dominated industries is growing faster than employment in male-dominated industries, as appears indicated in table 1, the industry mix effect will reduce the unemployment rate of women relative to that of men.

When employment increases in an industry, the additional workers will be drawn into employment from the ranks of the unemployed and from outside the labor force. Therefore, an assumption is needed about how this effect changes the labor force. It is assumed that men and women who "enter" employment as a result of the industry mix effect come from the unemployment pool and from outside the labor force in the same proportions as they actually did during the previous year. Similarly, when the industry mix effect causes a decrease in employment, it is assumed that men and women who exit employment leave the labor force or become unemployed in the same proportions as they actually did during the previous year. (This procedure is discussed in detail in

Table 2. Shift-share analysis of female-male unemployment differentials, 1964–82

Year	Female rate	Male rate	Female-male differential	Change in differential	Shift-share effects		
					National share effect	Industry mix effect	Employment shift effect
1964	6.22	4.62	1.60	—	—	—	—
1965	5.54	3.97	1.57	– .03	.017	.046	– .086
1966	4.85	3.20	1.64	.07	.012	.106	– .043
1967	5.17	3.08	2.09	.45	– .009	– .153	.603
1968	4.78	2.87	1.92	– .17	.006	– .061	– .123
1969	4.68	2.79	1.89	– .03	– .004	– .001	– .022
1970	5.88	4.37	1.51	– .38	– .033	– .296	– .049
1971	6.91	5.34	1.56	.05	– .011	– .256	.322
1972	6.64	4.96	1.67	.11	.001	– .039	.142
1973	6.00	4.17	1.84	.17	.015	.075	.074
1974	6.74	4.87	1.88	.04	– .017	– .242	.300
1975	9.30	7.89	1.41	– .47	– .061	– .849	.444
1976	8.64	7.06	1.58	.17	.012	– .092	.246
1977	8.18	6.28	1.90	.32	.007	.023	.297
1978	7.18	5.27	1.91	.01	.018	.035	– .042
1979	6.82	5.14	1.68	– .23	.006	.030	– .265
1980	7.41	6.94	0.47	– 1.21	– .027	– .412	– .780
1981	7.92	7.39	0.53	.06	– .008	– .259	.332
1982	9.42	9.89	– 0.47	– 1.00	– .014	– .558	– .521

appendix A.) It is also assumed, in the computation of the interindustry effect, that there is no net interindustry mobility of labor.

The industry mix effect shows how differing industry growth rates affect the female-male unemployment rate differential when there are different percentages of men and women in each industry. (See table 2.) When the effect is negative, female-dominated industries are growing faster (or declining less) than male-dominated industries, reducing the female-male unemployment rate differential. When the effect is positive, male-dominated industries are growing faster (or declining less) than female-dominated industries, thereby increasing the differential.

The industry mix effect appears to have both a cyclical component and a secular trend.[7] The cyclical component is suggested by the industry mix effect always being negative during recessions (for example, 1970–71, 1974–75, and 1981–82) and positive only during expansions. This is because employment is more cyclically variable in male-dominated industries than in those which are female-dominated. For example, the three industries that are most sensitive to the business cycle (mining, construction, and manufacturing) are very much male-dominated. (See table 1.)

The industry mix effect shows smaller positive changes in each successive expansion and generally larger negative changes in each successive recession, which suggests that there may be a long-term trend which lowers female unemployment rates relative to male rates. (See table 2.) To determine whether there is a significant trend in the industry mix effect which is independent of the business cycle, a regression equation was estimated for the 1964–82 period which predicts the impact of the business cycle (as measured by the help-wanted advertising index) and trend variables on changes in the industry mix effect over time.[8] The regression results presented in appendix B, show that the trend and the business cycle were both highly significant predictors of change. After controlling for cyclical effects, the female-male differential declined on average by about 0.2 percentage points per year. These results indicate that the differential employment growth rates of industries have tended to favor female-dominated industries and that this has caused a narrowing in the female-male unemployment rate differential, even after accounting for the short-term effects of the business cycle.

Employment shift effect. This effect is the change in the male-female unemployment differential that remains after accounting for the national share and industry mix effects. Two factors determine the sign and the magnitude of this effect. The first is the difference in the rates of growth in the male and female labor force. The fact that the female labor force has been expanding more rapidly than the male labor force tends to cause unemployment rates of women to be greater than those of men. The second factor which determines the employment shift effect is the change in the

male-female employment composition within industries. If an industry increases the proportion of women it employs, the unemployment rate of women will decrease relative to that of men. The following tabulation presents the proportion of women employed in each industry during 1964 and 1982 and the average annual percentage change in that proportion. These data show significant differences among industries in the rates at which the proportions of female employment have increased.

Industry	Percent female		Average annual percent change
	1964	1982	
Total	33.7	42.1	1.24
Mining	9.3	12.0	1.43
Construction	4.9	8.9	3.37
Manufacturing	26.3	31.8	1.06
Transportation and public utilities	18.3	24.8	1.70
Wholesale and retail trade	38.0	44.3	.86
Finance, insurance, and real estate	50.3	57.1	.71
Services	51.0	62.9	1.17
Government	38.7	43.7	.68

The employment shift effect can be thought of as representing the ability of industries to respond to changes in labor force participation rates of men and women by altering the distribution of their employment between sexes. Perfect accommodation to changes in labor force participation would result in an employment shift effect which equals zero. However, if the share of female employment within industries does not rise by enough to accommodate the increase in female labor force participation, the employment shift effect would be positive. This would tend to increase female unemployment rates relative to the male rate. And finally, where the share of female employment in the industry advances by more than enough to accommodate the increase in female labor force participation, the employment shift effect would be negative. This would tend to decrease the female unemployment rate relative to the male rate.

We note that the employment shift does not exhibit the same kind of cyclical behavior as the industry mix effect. For example, during the 1970–71 and 1974–75 recessions, the employment shift effect favored men, but during the 1980 and 1981–82 recessionary period it favored women. (See table 2.) This is a potentially important development because it may represent a change in the ability and willingness of individual industries to absorb women into employment. Regression results show, however, that on average, during the 1964–82 period, the employment shift effect shows no significant trend or cyclical response. (See appendix B.)

In recent years (1979–82), all three effects—the national share effect, industry mix effect, and employment shift effect—contributed to reducing the female-male unemployment rate differential. The industry mix effect

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Table 3. Projected average annual rates of change in employment by selected industry, 1982–90 and 1982–95

Industry	1982 Percent female	1982–90 Low	1982–90 Moderate	1982–90 High	1982–95 Low	1982–95 Moderate	1982–95 High
Total	42.1	1.7	1.8	1.9	1.6	1.7	1.9
Farm	19.5	−.8	−.7	−.6	−.9	−.9	−.6
Mining	12.0	.6	.7	.3	1.0	1.2	1.0
Construction	8.9	3.1	3.0	3.2	2.7	2.9	2.9
Manufacturing	31.8	1.5	1.8	2.1	1.4	1.5	1.8
Transportation and public utilities.	24.8	1.3	1.4	1.6	1.2	1.4	1.5
Wholesale and retail trade	44.3	1.7	2.0	2.1	1.6	1.8	1.9
Finance, insurance, and real estate	57.1	2.2	2.4	1.5	2.0	2.1	2.2
Services	62.9	2.5	2.6	2.8	2.4	2.5	2.8
Government	43.7	.8	.7	1.0	.6	.7	.9

indicates that, as in previous recessions, the 1980 and 1981–82 downturns affected male-dominated industries more severely than female-dominated ones. But there is also a trend in the industry mix effect independent of the business cycle. This means that long-term industry-specific employment trends have favored women's employment because of their greater concentration in those industries with the highest long-term growth rates. Finally, an examination of the employment shift effect shows that since 1979 many industries more readily employed women entering the work force, but that there has been no such long-term trend.

Employment projections

Will employment trends continue to improve the unemployment situation of women relative to men? The preceding analysis suggests that this will depend to a large extent on the future growth rates of female- versus male-dominated industries. The Bureau of Labor Statistics projections of employment by industry make it possible to analyze the probable impact of the industry mix effect on the future of the female-male unemployment differential.[9] Table 3 presents the average annual rates of change in projected employment between 1982 and 1990 and between 1990 and 1995. The BLS made three sets of projections for each time frame: the first assumes low rates of economic growth; the second, moderate growth rates; and the third, high growth rates. Valerie A. Personick describes the moderate growth scenario as follows:

> This case is marked by a period of recovery from the 1982 recession, followed by stable economic growth through the mid-1990's. The civilian unemployment rate, which was 9.7 percent in 1982, is projected to fall to 6.3 percent by 1995. Total employment is expected to rise from 102.3 million in 1982 to 127.6 million by 1995, a gain of more than 25 million new jobs. Growth is projected to be faster in the earlier years, as industries rebound from the recent economic downturn. Employment, which expanded by 3.6 percent a year between 1975 and 1979, showed very few gains during the business slump of 1980 or the brief recovery period thereafter. The more severe recession of 1981–82 brought an additional 1.3-percent decline in total jobs. Employment is projected to rebound, averaging growth of 1.8 percent a year from 1982 to 1990, then slow to 1.5 percent annually through 1995.[10]

Table 3 shows significant differences in projected employment growth rates among industries under each of the three growth scenarios. It also indicates that, except for the construction industry, women are currently overrepresented in the high-growth-rate industries (for example, services and finance, insurance, and real estate). Women represent only 25.5 percent of total employment in the five industries which are projected in the moderate scenario to grow by 13.2 percent between 1982 and 1990. However, women constitute 51.6 percent of employment in the four service-oriented industries projected to increase by 18.9 percent. It appears that future trends in employment will continue to favor a reduction of the unemployment rates of women relative to men's.

What are the implications of these trends for the female-male unemployment rate differential? The following tabulation presents the results of a partial shift-share analysis of changes in female-male unemployment rate differentials which would occur between 1982 and 1990 and between 1982 and 1995 under each of the three economic growth scenarios:

Period	Growth scenario	National growth effect	Industry mix effect
1982–90.	Low	−0.017	−2.077
	Moderate	−0.018	−2.103
	High	−0.022	−1.986
1982–95.	Low	−0.015	−2.419
	Moderate	−0.109	−2.369
	High	−0.023	−2.456

Because BLS does not project male and female employment by industry, it is possible to calculate only the industry mix effect. Its computation assumes that employment in each industry grows at its projected rate and that the proportions of men and women in each industry remain at the 1982 levels.[11] Also, male and female labor force entry and exit patterns are assumed identical to those of 1982. Under these assumptions, the female unemployment rate would decrease by about 2 percentage points relative to the male rate between 1982 and 1990 and would decrease by approximately 2.4 percentage points between 1982 and 1995. The industry mix effect would continue its 1964–82 trend, exerting downward pressure on the female-male unemployment rate differential by about 0.2 percentage points per year.

It should be noted that the impact of the changing industry mix on the differential is likely to be modified by several factors which are not measured in the partial shift-share analysis. First, the BLS projections of employment growth between 1982 and 1995 do not allow for cyclical variation, apart from the current recovery. The results for 1964–82 imply that the industry mix effect is strongly affected by the business cycle, and thus the results reported in the tabulation represent only the *trend* component of this effect. There will undoubtedly be substantial year-to-year cyclical variation in the female-male unemployment differential during 1982–95. Second, male interindustry mobility may increase over past rates as the relative secular decline in goods-producing

industries continues. Men may increase their employment share in the rapidly growing industries, decreasing their projected unemployment rate. Third, female labor force participation rates will continue to rise during the next decade, and women's attachment to the labor force has also been increasing.[12] These factors would tend to boost female unemployment rates over their industry mix levels. Both of these trends—the possible rise in the male share of rapidly growing industries, and the continuing increase in the female participation rate—would be reflected in a positive employment shift effect over the 1982–95 period.

Still, the projected relative secular decline in goods pro-

ducing industries will tend to increase the male unemployment rate relative to the female rate at least in the near term. There is no recent evidence that the employment shift effect will offset this negative industry mix effect. On the contrary, in 4 of the 5 years since 1978, the employment shift has been negative. The most plausible scenario for the female-male unemployment rate differential is for the male rate to drop below the female rate during the current cyclical recovery, and for the female rate to again be lower than the male rate in the next recession. Beyond that, it seems likely that the female rate will remain below the male rate well into the 1990's. □

------FOOTNOTES------

[1] The female unemployment rate continued to be less than the male rate in 1983. The rate for men was 9.9 percent; for women, 9.2 percent.

[2] See, for example, Nancy S. Barrett and Richard D. Morgenstern, "Why Do Blacks and Women Have High Unemployment Rates?" *Journal of Human Resources*, Fall 1974, pp. 452–64; Janet L. Johnson, "Sex Differentials in Unemployment Rates: A Case for No Concern," *Journal of Political Economy*, pp. 293–303; Deborah P. Klein, "Trends in employment and unemployment in families," *Monthly Labor Review*, December 1983, pp. 21–25; Joyanna Moy, "Recent labor market developments in the U.S. and nine other countries," *Monthly Labor Review*, January 1984, pp. 44–51; "The Female-Male Differential in Unemployment Rates," *Industrial and Labor Relations Review*, April 1974, pp. 331–50; Beth Niemi, "Geographic Immobility and Labor Force Mobility: A Study of Female Unemployment," in Cynthia B. Lloyd, ed., *Sex, Discrimination and the Division of Labor* (New York, Columbia University Press, 1975), pp. 61–89; Beth Niemi, "Recent Changes in Differential Unemployment," *Growth and Change*, July 1977, pp. 22–30; and Sigurd R. Nilsen, "Recessionary impacts on the unemployment of men and women," *Monthly Labor Review*, May 1984, pp. 21–25.

[3] The year 1964 was chosen as the starting point because it was the first year that male and female unemployment rates were reported for several of the industries included in the analysis.

[4] Nilsen found that the increase in the male unemployment rate relative to the female rate was especially pronounced during the 1980–82 downturn largely because male-dominated industries were particularly hard hit. See Sigurd R. Nilsen, "Recessionary impacts."

[5] See, for example, Niemi, "Geographic Immobility," pp. 72–79.

[6] A technique similar to shift-share analysis was recently employed in this journal by Sigurd R. Nilsen (see footnote 2) to explain changes in male and female unemployment differentials between 1975 and 1982. One difference between his methods and those applied in this article is that we focus on trends in the distribution of employment between industries to explain trends in male and female unemployment rates, while Nilsen focuses on the effects that changes in the labor force and in industry-specific unemployment rates have on male and female unemployment rates.

For a detailed description of shift-share analysis and a discussion of its strengths and weaknesses, see Benjamin H. Stevens and Craig L. Moore,

"A Critical Review of the Literature on Shift-Share as a Forecasting Technique," *Journal of Regional Science*, November 1980, pp. 419–37.

[7] The Bureau of Labor Statistics' establishment survey data is used to measure employment by industry. Total employment and labor force data come from the Current Population Survey (households), so there is a problem of data compatibility. The household employment total is larger than the establishment total, as the former includes self-employed persons and agricultural workers, among others. These additional employees were treated as an "industry" in the shift-share analysis. For a detailed discussion of the household-establishment employment difference, see Alexander Korns, "Cyclical Fluctuations in the Difference Between the Payroll and Household Measures of Employment," *Survey of Current Business*, May 1979, pp. 14–44.

[8] The regression equation estimated is: Δ Effect $= a + b_1 (\Delta \text{Help} - \text{Wanted}) + b_2 (\text{Trend})$, where "$\Delta$ Effect" is the change in the industry mix effect from one year to the next; "Help – Wanted" is the change in the help-wanted advertising index; and "Trend" is the linear trend.

[9] For a discussion of the Bureau of Labor Statistics' industry employment projections for 1990 and 1995, see Valerie A. Personick, "The job outlook through 1995: industry output and employment projections," *Monthly Labor Review*, November 1983, pp. 24–35. For a methodological discussion of the projections, see Howard N Fullerton, Jr. and John Tschetter, "The 1995 labor force: a second look," *Monthly Labor Review*, November 1983, pp. 3–10. Male and female employment for 1982 was determined from the household and establishment surveys.

[10] "The job outlook," p. 25.

[11] Male and female employment was calculated using the Bureau of Labor Statistics' Current Establishment Survey and Current Population Survey data by sex for wage and salary and nonwage and salary employees. The female-male proportions from the Current Population Survey were used for private household employment.

[12] For example, Ronald G. Ehrenberg has shown that increasing adult female unemployment rates over the 1967–77 period were due, in part, to the decreasing likelihood of leaving unemployment by exiting the labor force. See Ronald G. Ehrenberg, "The Demographic Structure of Unemployment Rates and Labor Market Transition Probabilities," in Ronald G. Ehrenberg, ed., *Research in Labor Economics: Volume 3* (Greenwich, Conn., JAI Press, Inc., 1980), p. 258.

APPENDIX A: Shift-share equations

This appendix develops the equations used to compute the national share, industry mix, and employment shift effects.

The total female-male unemployment rate differential in time t is:

$$d_t = u_t^f - u_t^m$$

where $u_t^f =$ the female (f) unemployment rate at time t;
and
$u_t^m =$ the male (m) unemployment rate at time t.

The purpose of the shift-share analysis is to explain the change in this differential from one period to the next (that is, $d_t - d_{t-1}$). The shift-share analysis decomposes this

change into three parts: the national share effect, the industry mix effect, and the employment shift effect.

National share effect. This effect assumes that employment for men and women in each industry changes at the national rate for total employment. Similarly, the male and female labor force is assumed to change at the national rate for the total labor force. Let:

$$(1) \qquad u_{tN}^s = 1 - \frac{E_{t-1}^s \left(\dfrac{E_t}{E_{t-1}} \right)}{L_{t-1}^s \left(\dfrac{L_t}{L_{t-1}} \right)}$$

where u_{tN}^s = the national share (N) unemployment rate for females ($s=f$) or males ($s=m$) for time t;

E_{t-1}^s = employment for females ($s=f$) or males ($s=m$) for time $t-1$;

L_{t-1}^s = female ($s=f$) or male ($s=m$) labor force for time $t-1$.

The terms in parentheses represent the rate of change in total employment and the labor force from the preceding year. The national share female-male unemployment rate differential is:

$$d_{tN} = u_{tN}^f - u_{tN}^m$$

The national share effect is the change in the female-male unemployment rate differential from the previous year that results from national labor force and employment changes:

$$\text{national share effect} = d_t N - d_{t-1}.$$

Industry mix effect. This is the effect on the female-male unemployment rate differential of allowing employment in each industry to grow at its actual rate while assuming that the proportions of men and women in each industry remain constant. This can be stated in equation form as:

$$E_{tI}^s = \sum_{j=1}^n E_{jt-1}^s \frac{E_{jt}}{E_{jt-1}}$$

where E_{tI}^s = industry mix employment for females ($s=f$) or males ($s=m$) at time t; and

E_{jt-1}^s = female or male employment in industry j ($j=1$ to n) at time $t-1$.

When the industry mix assumption is introduced, the measure of employment by sex changes by:

$$\Delta E_t^s = E_{tI}^s - E_{tN}^s$$

where E_{tN}^s is the national share employment by sex, which is the numerator of equation 1.

The next step in developing the industry mix effect is to establish an assumption governing how this employment change will affect the labor force. When ΔE_t^s is positive, it is assumed that some of these "new" employees come from outside of the labor force and that the remainder come from the pool of the unemployed. The proportion of new employees that come from outside the labor force is assumed to be the proportion of the actual gross employment increase for each year, by sex, which came from outside the labor force. These proportions are calculated from the Annual Employment Status Gross Change tables available from the Bureau of Labor Statistics. The industrial mix labor force is:

$$L_{tI}^s = L_{tN}^s + \pi \Delta E_t^s$$

where L_{tN}^s = the national share labor force by sex, which is the denominator of equation 1; and

π = the appropriate labor force proportion.

When ΔE_t^s is negative, the labor force proportion π is the probability of moving from unemployment to out of the labor force.

The industry mix unemployment rate is:

$$u_{tI}^s = 1 - \frac{E_{tI}^s}{L_{tI}^s}$$

where u_{tI}^s is the industrial mix unemployment rate for women or men in time t. The industry mix differential is:

$$d_{tI} = u_{tI}^f - u_{tI}^m$$

and the industry mix effect is $d_{tI} - d_{tN}$.

The industry mix effect is thus the change in the female-male unemployment rate differential caused by the introduction of the actual industry growth rate assumption.

Employment shift effect. The employment shift effect is that part of the year-to-year change in the female-male unemployment rate differential which is not explained by either the national share or industry mix effects. The actual differential in year t is:

$$d_t = u_t^f - u_t^m$$

so the employment shift effect is $d_t - d_{tI}$.

Note that the sum of the three effects equals the total annual change in the actual female-male unemployment rate differential, that is:

$$d_t - d_{t-1} = (d_t - d_{tI}) + (d_{tI} - d_{tN}) + (d_{tN} - d_{t-1}).$$

APPENDIX B: Regression results

Table A–1 presents the results of a regression analysis in which each of the three shift-share effects is regressed on a linear trend variable and a variable representing cyclical change. The variable chosen to represent cyclical change is

the index of the help-wanted advertising in newspapers in first difference form. Because the dependent variables are also first differences, the intercept may be interpreted as the coefficient on a linear trend and the coefficient of the trend variable can be interpreted in the same way as the coefficient of a trend-squared variable in a regular time series regression. If there is a long-term trend in the female-male unemployment rate differential caused by any of the three shift-share effects, its intercept coefficient will be statistically significant. Therefore, in table A–1, the intercept represents the average annual change in the shift-share effect, while the trend coefficient measures the presence of acceleration or deceleration in this annual change.

The national share effect shows both a significant negative annual change (that is, intercept) and a significant positive response to the business cycle, but the magnitude of this effect is trivial. The industry mix effect is of greater interest. The intercept indicates a significant negative trend in the female-male unemployment rate differential. Apart from any cyclical effect, this differential narrows by about 0.2 percentage points per year. Because this trend appears in the industry mix regression and because there are no quantitatively important trends in either of the other effects, the cause of the narrowing unemployment differential is the relatively rapid growth of employment in female-dominated industries. This is the most important result of our study. As expected, the industry mix differential varies procyclically. This is indicated by the positive and significant coefficient on the help-wanted variable. In all of the regressions, the trend coefficient indicates no significant acceleration or deceleration in the year-to-year change of the differential. Finally, the employment shift regression shows that there is no significant trend or cyclical response in the employment shift effect.

A century of wage statistics: the BLS contribution

*Knowledge of the structure of and trends in wages
is vital to appraisal of the economic status
of the working population; over its first century
of life, the Bureau has developed a consistent
body of information on wages, and progressively
more sophisticated techniques to analyze it*

H. M. DOUTY

Wage and salary rates of pay remain at the heart of the labor bargain, although a new dimension has been created in recent decades by the rise of various forms of supplements to employee compensation. Information on the general movement of wage rates, and on the structure of rates by such characteristics as occupation, industry, region, union status, and sex, provides crucial insight on the status and well-being of the working population. In a complex industrial society, the development with limited resources of useful statistics in these areas, and more recently in the area of supplementary compensation, has been a formidable undertaking.

This article traces the work of the Bureau of Labor Statistics over the past century in the field of wage statistics, including the attention that has been given since World War II to the growth of wage supplements. An effort has been made to place this work in broad historical perspective. This account does not cover related Bureau programs, including the extensive work on consumer prices[1] and the important series of average hourly and weekly earnings by industry developed from employment statistics.[2]

19th century beginnings

The years 1875 to 1900 were in many ways a period of extraordinary economic growth and change in the United States. It was marked by the closing of the geographic frontier. An impressive expansion of the transportation network[3] facilitated the settlement of the West, and contributed to a large increase in farm output. At the same time, manufacturing expanded at a rapid pace, accompanied in many industries by larger scale operations, consolidations of firms, and the growth of monopoly practices.

The last quarter of the century also saw substantial changes in the size and industrial composition of the labor force. Between 1880 and 1900, the number of "gainful workers" increased by almost 12 million. In 1880, the gainfully employed work force was about equally divided between agricultural and nonagricultural employments, but by 1900 the agricultural share, while still rising in absolute terms, had declined to approximately 37 percent of the total. The proportion of employment in manufacturing, transportation, and construction had increased significantly over the same period.[4]

These changes were accompanied by economic fluctuations of considerable magnitude, including an unusually severe depression beginning in 1893. As a result, there arose new currents of thought with respect to wage determination,

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trade unionism, and the role of government in relation to labor,[5] and various comprehensive movements for social reform emerged.[6] In particular, the impulse toward collective action to defend or improve labor standards began to acquire momentum among the growing wage-earning population. Of major although short-lived significance was the meteoric rise of the Knights of Labor, the membership of which reached about 700,000 in 1886 but declined precipitously thereafter. Of much greater long-run importance was the formation of the American Federation of Labor (AFL) in 1881 as a permanent trade union center. The Federation survived the long depression of the 1890's, and union membership began to climb sharply toward the end of the decade—rising from 447,000 in 1897 to 868,500 in 1900, mainly in unions affiliated with the AFL.[7] (These figures include Canadian members of labor unions with headquarters in the United States.)

It was during this period that the Bureau of Labor Statistics was created, with a broad mandate to ". . . collect information upon the subject of labor, its relation to capital, the hours of labor, and the earnings of laboring men and women. . . ." The creation of the new agency in 1884 reflected a growing demand for information on labor conditions to provide a basis for improved labor standards. With respect to earnings or wages, there were few guides for the work of the new Bureau. Some experience with wage surveys had been accumulated by a few State agencies, notably in Massachusetts.[8] At the Federal level, the only important previous effort to develop statistics of wages by occupation was a special study conducted for the decennial census of 1880. This report, which was not published until 1886, gave annual average wage rates by occupation for "typical" establishments in 53 industries back, where possible, to 1860 or even earlier. The data, which were collected by mailed questionnaires, were published in great detail.[9]

The new Federal Bureau was extraordinarily fortunate in its first commissioner, Carroll D. Wright, who had headed the Massachusetts Bureau of Statistics of Labor since 1873.[10] Wright would prove an authentic pioneer in the development of labor statistics both here and abroad.[11] With respect to the collection and presentation of wage survey data, a number of general principles reflected his experience in Massachusetts and at the Federal Bureau. These related basically to the compilation and presentation of data designed to throw light on the structure of wages, although, as we shall see, the new Bureau's studies also would provide the basis for most of our knowledge of the trend of wages well into the present century.

With regard to the collection of wage data by occupation, Wright felt strongly that the use of trained field agents rather than mailed questionnaires was required to ensure the adequacy and quality of response. In the absence of modern sampling procedures and establishment universe information, he favored the coverage of "typical" or "representative" establishments, which in practice meant those that had been in business for some time. Concerning the presentation of wage statistics, Wright was insistent upon the use of well-defined occupational classifications. In view of the observed dispersion of wage rates within occupations, he tended to favor presenting survey results in the form of wage distributions, where feasible, rather than by occupational averages alone. "Of late years," he wrote in 1892, "the demand has been that employees should be classified not only minutely as to occupations, but as to rates of pay as well."[12]

Appropriately, in view of the times, the first annual report of the Commissioner dealt with industrial depressions. It included the results of the first occupational wage survey conducted by the Bureau. The data related to 1885 and were taken directly by Bureau agents from the payroll records of 582 establishments in about 40 industries overwhelmingly in the manufacturing sector. The results were published in the form of daily average wage rates by occupation, industry, and State; estimates were presented separately for men, women, and children and youths.[13]

The Commissioner's fifth annual report (1889) on railroad labor developed occupational wage statistics in great detail for 60 carriers. The Bureau's field agents found more than a thousand job titles in the payroll records of these railroads. Many of these involved similar duties. The most detailed wage statistics were shown in table 11 of the report, where distributions of daily rates or earnings by occupation were presented, together with distributions of annual earnings.[14] The claim was made that ". . . the chief value of this report, so far as time and wages are concerned, is to be found in a thoroughly scientific classification, not only of the time employed of each individual employee of the roads considered, but of rates by day and by year," as shown by the payrolls.[15]

These studies, together with two other extensive wage surveys conducted during the early 1890's,[16] provided the Bureau with invaluable experience in occupational classification, data collection, and the presentation of survey results. They prepared the way for a highly fruitful survey stemming from a Senate resolution of March 3, 1981, which instructed the Committee on Finance to study the effects of tariff legislation on wages and prices. In accordance with the resolution, Senator Nelson W. Aldrich asked Wright to undertake the task of developing wage and price statistics for the years 1840–91.

The problem of locating establishments with payroll records for all or most of this long period obviously was difficult. The study ultimately provided data for more than 500 occupational series in 22 industries, mainly in manufacturing. Comparatively few of the establishments had usable payroll records prior to 1860. The publication of the data for two payroll periods in each year by industry, establishment, and occupation, took up almost 1,300 pages of the Senate Committee's report.[17] The Committee observed that ". . . no other investigation has been made with so wide a

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scope, such a variety of detail, and covering so extensive a period."[18]

The significance of this study for the Bureau's work in the field of wage statistics was twofold. It gave experience in the collection of data over an extended period in the past, and it provided the basis for measurement of changes in the level of wages through the construction of wage indexes. The latter represented an innovation of signal importance for which credit must go to Professor Roland P. Falkner of the University of Pennsylvania, who was employed by the Senate Committee to analyze the survey data. Using 1860 as the base year, Falkner prepared indexes for each occupation by establishment, for each of the 22 industries included in the survey, and for the 22 industries combined.[19]

Despite its many limitations, the Bureau's work for the Aldrich Committee is the major source of information on the structure and course of wages in this country from 1860 to 1890, and yields some insight for the years back to 1840. The study's wage trend estimates have been analyzed and reworked a number of times, most recently by E. H. Phelps Brown and Sheila V. Hopkins and by Clarence D. Long.[20]

The next major wage study undertaken by the Bureau undoubtedly was influenced by experience gained in surveys for the Aldrich Report, and foreshadowed the nature of work to be done into the 20th century. This study provided average daily wage rates by year for each of 25 selected occupations in 12 major cities for the period 1870–98.[21] The occupations selected were those "susceptible of accurate definition," and the data were taken directly from the payroll records of at least two establishments in each city for the occupations covered. The report's text tables showed average daily wages by year for all occupations combined, and the percentage change since 1870 for each year from 1871 to 1898. The latter estimates were deemed to be "quite indicative" of the movement of wages generally. Similar data were shown for three cities in Great Britain and for one city each in France and Belgium. The foreign data were compiled by the authorities in the countries concerned at the request of the Bureau.

In short, during the last 15 years of the 19th century, the Bureau accumulated considerable experience in the planning and conduct of surveys of wages and standard hours of work. The merits of data collection from payroll records by personal visit were established. Much insight was gained into the difficult problem of job classification at a time when formal job descriptions were uncommon and titles for the same job could vary widely among establishments. Problems in the presentation of occupational wage data related to the observed dispersion of rates of pay were recognized. Finally, the introduction of index numbers in the Aldrich Report provided a convenient means for measuring the movement of wages over time. The development of sophisticated survey sampling techniques was, of course, far in the future.

1900 to the Great Depression

The Bureau's work in wage statistics during the first three decades of the 20th century achieved a coherence that distinguishes it from its 19th century origins. This cohesion was attained despite the great economic and social changes that occurred during the period, including U.S. participation in World War I. Between 1900 and 1930, gross national product in constant dollars rose at an average annual rate of 3.1 percent.[22] The sharpest downturn in economic activity was the comparatively short postwar recession beginning toward the end of 1920. The civilian labor force grew by about 20 million, with nonfarm workers accounting for approximately 77 percent of total employment by 1930. The automobile began to provide greater mobility for both people and industry. The growth in trade union membership that had begun in 1897 continued with only minor pauses to 1920, when membership reached 5 million. A sharp decline occurred during the postwar recession, but membership stabilized at about 3.6 million by 1924.[23] Finally, a substantial body of protective social legislation was enacted at the State level during this 30-year period, largely with reference to work performed by women and children.

During the winter of 1900–01, the Bureau began a major study of occupational wages by industry, with the data carried back to 1890. The study was undertaken with the view that ". . . the constant demand for current data could be met only by a very painstaking and complete investigation which would result in thoroughly representative figures for a period of years and which would serve as the basis for the regular annual collection and presentation of data concerning wages. . . ."[24] Due to staff limitations, the study required several years for completion. Data for 1902 and 1903 were included in the final results of the investigation, which appeared in 1905 as the Commissioner's *Nineteenth Annual Report*, a volume of almost a thousand pages.

The study was confined to "the leading manufacturing and mechanical industries" and to the "distinctive occupations which are considered representative of each industry," and covered payroll periods most nearly representing "normal conditions" of operations for each establishment during each year.[25] In all, 67 industries, 519 occupations, and 3,475 establishments were surveyed. Industry coverage was largely confined to manufacturing and the building trades.

Each year from 1890 to 1903, the Commissioner's *Annual Report* presented average rates of pay by occupation, industry, and region, and for selected occupations, by city and State. Complete wage distributions also were given for the occupations included in the city and State tabulations. An outstanding achievement was the presentation in a text table of an overall index of hourly rates, computed from averages of industry relatives weighted by aggregate wages paid by each industry as shown by the census of 1900.[26] As Paul H. Douglas pointed out in his great study of real wages in the United States from 1890 to 1926, the Bureau's

index computations were for some years the preferred statistical basis for generalizing on the trend of wages.[27] (Actually, the correspondence between the Bureau's wage-weighted index and Douglas' own wage rate index for manufacturing, which was prepared from the same data but differently constructed, is strikingly close. For example, both indexes show wages in 1903 to be 16 percent higher than the average for 1890–99.[28])

The general format of the 1890–1903 study was followed in annual surveys during the next 4 years. The results of these studies were reported in the Bureau's bimonthly bulletin.[29] The surveys again were confined largely to manufacturing, but their scope was limited to industries in which wages paid amounted to $10 million or more as shown by the 1900 census. The 1904 survey, for example, covered 350 selected occupations, 3,732 establishments, and 42 industries. The 1904 wage index for all industries was linked to the general index for 1890–1903 on the basis of changes in those establishments studied in both 1903 and 1904, and this chaining procedure was followed for subsequent years to 1907.

After 1907, there was a 4-year interruption in the Bureau's wage survey program. This was due primarily to the pressure of other work, notably a large investigation into the conditions of women and child wage earners and a study of wages, hours, and working conditions in the iron and steel industry, both of which were published as Senate documents. The program was resumed in 1912 with two series of surveys. The first consisted of studies based on payroll records of rates of pay (or of earned rates for incentive workers) in selected occupations in 12 industries: cotton, wool, and silk textiles; lumber, millwork, and furniture; boots and shoes; hosiery and knit goods; cigars; clothing; iron and steel; and building and repairing of steam railroad cars. Except in the case of cigars and clothing, data were carried back to 1907. Within the next few years, five of these industries (silk, millwork, furniture, cigars, and car building) were dropped while slaughtering and meatpacking was added. The industries that remained in the program were surveyed approximately every 2 years until 1933.

The 1912 survey of cotton-goods manufacturing and finishing illustrates the essential nature of this group of studies.[30] Bureau agents obtained data for the "principal occupations" directly from mill payroll records. An innovation was the publication of job descriptions in the survey report. The coverage of establishments was considerably broader than in earlier studies of cotton-goods manufacturing, and the data, as previously noted, were carried back to 1907. Distributions of workers by hourly rates of pay at 1-cent intervals were shown by occupation for the industry as a whole and by State. The Bureau's continued interest in the trend of wages was manifest by the linkage of annual wage changes during 1907–12 to the existing 1890–1907 index for cotton textiles.

The second group of studies begun in 1912 were concerned with union wage scales and standard hours of work in the building industry, newspaper printing, book and job printing, marble and stone work, metal trades, baking, and millwork. In all, 49 crafts were surveyed in 39 cities. The initial report states that the data were ". . . in every case furnished by officials of the local unions to special agents of the Bureau of Labor Statistics, and wage scales, written agreements, and trade union records were used wherever possible."[31]

As with the payroll studies, the union wage data were extended back to 1907. Wage scales were shown by trade and city for each year from 1907 to 1912, and indexes of the movement of scales back to 1890 were computed for many of the crafts in the industries covered. These studies, with some changes in industry coverage, were to continue on an annual basis for almost 80 years.

These payroll and union wage studies had the great virtue of providing a large measure of consistency in the Bureau's occupational wage survey program over a period of roughly two decades. They also provided a measure of continuity with the major survey that had produced the 1890–1903 report on occupational wages and with the annual surveys of 1904–07. They developed data on the structure of wages by skill and sex for manual jobs in a variety of relatively low-wage and high-wage industries. Data provided by locality and State yielded a measure of insight into interarea wage differences.

As previously mentioned, these surveys were the source for the manufacturing and building components of the seminal Douglas study of money and real wages from 1890 to 1926. Shortly after World War I, the Bureau itself ventured to put together an annual general index of wages in response to inquiries that ". . . have generally related to recent years but . . . frequently ask for an index that shall compare Civil War changes with those during and following the late World War."[32] The index was prepared (with some hesitation) from "all sources available," and was published initially for the period from 1840 to 1920. It was later extended in several stages to 1934.[33]

Two additional observations should be made concerning the Bureau's work in wage statistics during this period. The first is that World War I had minimal impact on the generation of wage data. Although several Government agencies were established to deal with wartime labor problems, there was no effort, as there would be during World War II, to impose comprehensive wage controls. Wage adjustment efforts for particular industries (such as shipbuilding) tended to focus on those made necessary by rising living costs, which led to the establishment of the Bureau's Consumer Price Index. Toward the end of the war, the War Industries Board asked the Bureau to undertake wage surveys in a number of industries for use in the solution of labor problems and to provide a record of industrial con-

ditions at the height of the war effort. These surveys, with occupational wage data for 28 industries, were not completed until after the war, and the results were published in 1920.[34]

The second observation is that, while generally continuing the group of payroll studies begun in 1912, the Bureau extended its wage survey activity to additional industries during the 1920's. A number of these were manufacturing industries essentially new to the 20th century, including motor vehicles, rubber tires, synthetic textiles, and airplane and aircraft engines. Several nonmanufacturing industries also were added to the program, most notably bituminous coal mining and air transport.

This major phase of the Bureau's work in wage statistics came to an end about 1932. Although the surveys of the period were confined to manual jobs and largely to selected industries in the manufacturing sector, they provided a reasonably consistent body of data on both the structure and trend of wages for industrial workers. They undoubtedly also played a role in private wage determination through collective bargaining and employer personnel administration. In their absence, we should know much less than we do about economic conditions during the first three decades of this century.

Depression and war, 1930–45

The Great Depression began toward the end of 1929. Unemployment, which was estimated at 3.3 percent of the civilian labor force during the years 1923–29, rose to an estimated 25 percent in 1933. Recovery was only partial during the remainder of the decade; even in 1940, the unemployment rate was estimated at 14.6 percent. However, the steady expansion of war production and of the Armed Forces after mid-1940 brought the rate to 1.2 percent by 1944.[35]

The singular decade of the 1930's witnessed the beginning of an unprecedented and continuing involvement of the Federal Government with the economy. Aside from social insurance programs, this development expressed itself with respect directly to labor in two major forms. The first was machinery through the Davis–Bacon Act of 1931 and the Walsh–Healey Act of 1936 for the establishment of wage standards for workers employed by contractors or subcontractors on public construction or in the provision of materials and supplies to the Federal government, and, by the Fair Labor Standards Act of 1938, for minimum wages for most workers engaged in or producing goods for interstate commerce. The second, embodied in the National Labor Relations Act, protected the right of workers to join unions and imposed upon employers the duty to bargain collectively over wages and other terms of employment. Partially as a result of this latter act, U.S. union membership, which had declined to 2.7 million by 1933, reached 14.3 million by 1945,[36] and collective bargaining was extended to many strategic sectors of the economy. During the same year that

the act was passed, however, a deep split occurred in the trade union movement, a breach that was not to be closed for 20 years.

By the time the United States became involved in World War II as a combatant on December 7, 1941, the economic impact of the conflict had already begun to be felt and measures to deal with its consequences had emerged. One group of measures designed to contain the inflationary consequences of resource diversion to war production was comprehensive control of changes in wage rates and prices.[37] This had a decisive effect on the Bureau's wartime wage statistics program, and postwar consequences as well.

The early 1930's had seen the end of the relatively small but systematic program of payroll-based industry wage surveys that had been conducted during the previous two decades. The annual survey of "common labor entrance rates" was discontinued in the early 1940's in large part because of the increasing ambiguity of the concept of "unskilled" or "common" labor.[38] Dropped also, in 1934, was the occasional publication of the broad annual wage index that had first been published in 1920, having been pieced together from such data as were available.[39] Its discontinuance appears to have been related to the institution in 1932 of the Bureau's average employment and payroll reporting system.

Between 1932 and the beginning of the defense buildup in 1940, the Bureau's wage survey activity was largely, although not entirely, geared to the informational needs of the new Federal agencies concerned with labor standards. Thus, a number of studies were undertaken for use in the administration of the short-lived National Industrial Recovery Act of 1933 which provided by industry for "codes of fair competition" containing minimum wage and maximum hour provisions. At the direct order of the President, an especially noteworthy study was made in the cotton textile industry covering pay periods in 1933 and 1934, following a general strike in that industry in 1934. Several surveys were undertaken in cooperation with the Works Progress Administration. Work was done also in connection with prevailing minimum wage determinations under the Walsh-Healey (Public Contracts) Act of 1936, which covered work performed by Federal government contractors.[40]

The pace of survey activity accelerated after the passage of the Fair Labor Standards Act (1938), which initially provided for Federal minimum wage determination (above a statutory level) on an industry basis. During 1938 and 1939, about 45 industry wage surveys were conducted for use in minimum wage proceedings. Most of these studies developed data on the distribution of workers by pay rates or straight-time hourly earnings, without occupational detail. They typically related to relatively low-wage consumer-goods industries. In a few cases, they provided the basis for appraisal of the wage and employment effects of minimum wage orders before these effects were masked by the upsurge of economic activity associated with the war.

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Concern with minimum wage determinations faded as the defense program got underway in mid-1940. With expansion of the defense effort, unemployment declined, shortages of skilled workers began to appear, and the incidence of strikes rose sharply during the first half of 1941. In March of that year, a tripartite National Defense Mediation Board was appointed to assist in the settlement of labor disputes; this agency was superseded in January 1942 by the National War Labor Board, which was given the additional function of stabilizing rates of pay as part of a comprehensive economic stabilization effort.

As a consequence of these developments, the Bureau's wage survey activity shifted initially from consumer-goods industries to heavy industries essential to war production. Occupational wage studies were undertaken in such industries as shipbuilding, aircraft, rubber, nonelectrical machinery, and the mining, smelting, and refining of nonferrous metals. Beginning in 1941, special studies were also requested for use in the settlement of specific labor disputes in industries vital to the war effort.

With the beginning of comprehensive wage stabilization under the War Labor Board, the governmental need for wage statistics increased manyfold. This led to a substantial expansion of Bureau staff and the establishment of regional offices to parallel those set up by the Board. For the most part, two types of wage information were provided for Board use. The first involved data on wage rates or straight-time earnings by occupation, industry, and labor market for Board decisions in thousands of claims for increases on interplant wage inequity grounds,[41] together with some studies in connection with specific labor disputes. The second was a general wage rate index to measure the effectiveness of the wage stabilization program.

The surveys for use in Board decisions in inequity cases involved special procedures to expedite data collection and presentation. These included the development of patterns of "key" jobs by industry, the preparation of uniform job descriptions, and the standardized presentation of survey results. Altogether, job patterns, each typically including from 10 to 20 occupations, were prepared for more than 120 manufacturing and nonmanufacturing industries. It was reported in 1945 that, under this crash program, data on pay rates in key occupations had been collected from more than 100,000 establishments, and that some 8,000 reports on an industry-locality basis had been transmitted to the Board.[42] This was an extraordinary achievement over a period of little more than 2 years, and represented a vital contribution to the wartime wage stabilization program.

The second Bureau contribution to the wage stabilization effort was the construction of an occupationally based index of urban wage rates. Because the War Labor Board sought to stabilize basic rates of pay rather than earnings, such an index was needed to provide some measure of its effectiveness. A properly constructed index can eliminate many of the factors that affect earnings rather than rates, including premium pay for overtime and late-shift work, interindustry employment shifts, and changes in occupational skill ratios.

The urban wage index was based on data for key occupations in about 6,000 establishments, and covered selected manufacturing and nonmanufacturing industries in some 69 labor markets, It was issued semiannually beginning in April 1943, but was estimated back to January 1941 for the manufacturing sector.[43] Discontinued largely for budgetary reasons in 1947, this index would have been a valuable tool for the analysis of postwar wage movements. Its final publication gave estimates of wage-rate change for manufacturing between January 1941 and September 1947, and for selected nonmanufacturing industries between April 1943 and April 1947.[44]

Postwar program adjustment, 1945–47

For more than 3 years, almost all of the Bureau's expanded resources for wage survey purposes had been devoted to data needs for wage stabilization and labor dispute settlement. By the beginning of 1945, the pressure of these needs had eased substantially. The war was coming to an end, and problems of industry reconversion to peacetime production were being discussed. It was now necessary to devise an interim program to meet anticipated requirements for wage statistics during the immediate postwar period.

The most significant Bureau decision with regard to the wage program was to conduct a large number of nationwide occupational wage surveys on an industry basis, with regional and locality breakdowns whenever possible. Between 1945 and mid-1947, such studies were made in no fewer than 70 manufacturing and 11 nonmanufacturing industries. Each presented data on rates of pay for selected occupations and rate distributions for all plant workers on a national and regional basis, and virtually all contained occupational data for specific localities. Information typically was shown on occupational earnings by size of establishment, size of community, method of wage payment, and unionization, and for such plant practices as scheduled hours of work, shift differentials, paid vacations and sick leave, and insurance and pension plans. Most of the studies also contained data on salaries for a few office occupations.

This large group of nationwide studies were issued in a special series of wage structure reports in mimeographed form. Unfortunately, few were published in the Bureau's series of numbered bulletins, but many summary articles based on the surveys appeared in the *Monthly Labor Review*.[45]

During this period, the Bureau continued its annual surveys of union wage scales in building, printing, and several other industries. Of great importance in subsequent survey planning were studies of clerical salaries on a cross-industry basis in a few local labor markets. A variety of special studies relating to such issues as guaranteed wage plans in the United States, the economic status of registered nurses, and the experience of workers in various industrial reconversion situations also were conducted.

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Particular notice should be given to the rise of a broad analytical capability within the Bureau during this period. This, no doubt, was a function of staff size stimulated by the exceptional volume of statistical information generated during 1945–47. Several notable studies were produced, including an analysis of changes in wage differentials by skill for manual workers between 1907 and 1947 in manufacturing and the building trades.[46] This pioneer study pointed up striking changes that had occurred in supply-demand conditions in the labor market over the four decades. A companion study, confined to manufacturing, dealt with the course of regional wage differentials during the same period.[47] Other studies relating to the immediate postwar period dealt with such topics as shift differentials in manufacturing, vacation practices in major industry groups, and the prevalence of insurance and pension plans.

Reshaping wage programs, 1947–70

In mid-1947, the Bureau experienced a sharp reduction in its budget—in effect a postwar readjustment—although its resources remained substantially above the prewar level. With respect to wage statistics, this budget reduction, together with other factors, led to a major reexamination of programs.

A basic question was whether continued concentration on nationwide industry surveys represented the best use of the available resources. Experience during the war had indicated the great importance of data at the level of the local labor market, where most wage decisions occur. It was clear, moreover, that the white-collar segment of the labor force had shown impressive growth and would continue to expand. In pay determination for most types of white-collar workers, the importance of the local labor market was, if anything, greater than for manual workers. Most white-collar jobs are found in a great variety of industries, suggesting the need for some type of cross-industry survey for this type of employment.

Other influences also were at work. The rapid spread of trade unionism in the 1930's and during the war, and the "rounds" of wage increases during the years immediately following the war, produced great interest in the dynamics of wage adjustment. Another influence was the spread of supplementary benefits, public and private, representing income to workers and cost to employers. Aside from the existence of a broad demand for data for use in private wage decisions and for public policy purposes, great academic research interest also had developed.[48]

A general factor that contributed importantly to program development during this period was the emergence during the late 1940's of efficient modes of probability sampling in government statistical surveys.[49] With relation to the Bureau's studies of occupational wages, pathbreaking work was done in adapting probability sampling to universes of establishments.[50] The use of probability sampling, rather than purposive sampling, permitted a more efficient use of survey resources, the more reliable calculation of population values, and the estimation of sampling errors.

The essential problem in 1947 was to devise, with limited resources, a program that would throw as much light as possible on the structure of occupational wages and salaries, on supplementary forms of compensation, and on the dynamics of wage development. Considerable thought and experimentation suggested that two occupational wage survey systems were needed, together with several other types of recurring reports.[51] The principal ingredients of the revised program are summarized below.

Cross-industry labor market surveys. In 1948, pilot studies on the collection of salary data for office clerical occupations on a cross-industry basis were undertaken in a few large labor markets.[52] These were successful technically, and the response from users of wage data in the markets covered was encouraging. In 1949, experimental surveys were made in a number of smaller cities. The occupational coverage was broadened in these studies to include selected skilled and relatively unskilled manual jobs that were not unique to particular industries. The skilled manual occupations were drawn primarily from those involved in plant maintenance, and the unskilled from material movement, warehousing, and custodial work. Out of this experimental effort grew the concept of the community wage survey.[53]

As it happened, this exploratory work was coming to a close at the outbreak of the Korean War in June 1950, which called forth another wage stabilization effort. The National Wage Stabilization Board, formed in September 1950 to administer wage controls, concluded that community wage studies were well suited for use in its work. It provided resources for the conduct of such studies in a large number of labor markets, with occupational coverage extended to jobs peculiar to major industries in each area surveyed. The results of these and other Bureau wage studies and reports were extensively used in Board decisions,[54] and provided the basis for a series of analyses of interarea differences in the level of wages, occupational differentials, fringe benefits, extent of unionization, and the formalization of wage structures.[55]

Wage Stabilization Board budgetary support for the labor market survey program ended after the Korean emergency. The Bureau's own resources could provide for only about 20 community surveys annually, with coverage limited to cross-industry occupations. It was decided as a matter of policy to conduct these surveys in the same metropolitan areas each year. This decision was based largely on the fact that the use of survey data in wage determinations by employers and unions depends on its currency. Extensive support developed for the surveys in the communities in which they were made. Numerous requests for community surveys in other areas had to be firmly rejected.

In light of the widespread interest in the cross-industry type of survey, a rational basis was sought for a more elaborate program. The result was a proposal for annual surveys in a sample of metropolitan areas (approximately 80 of the 183 then existing), selected to represent all such areas. The sample was designed to include all metropolitan areas with employment of 250,000 or more. This would permit estimates of the level and distribution of wages for a significant group of white-collar and manual jobs for all metropolitan areas—in effect, for the urban economy. It would provide a basis for national estimates, separately for office and plant workers, of scheduled hours of work, holiday and vacation provisions, the incidence of private insurance and pension plans, and collective bargaining coverage. Wage comparisons among areas and broad regions also could be made.

The budgetary requirements for this program were met toward the end of the 1950's when an urgent Federal need developed for national data on white-collar salaries in private industry to implement a comparability pay policy for the 1.7 million Federal white-collar and postal employees. An interagency technical committee concluded that the annual 80-area survey design was an appropriate survey vehicle, with additional data collected from a subsample of establishments for selected professional, managerial, and technical jobs.[56] The Congress approved funds for this program, and for expansion of other aspects of wage survey activity, for fiscal 1960 (then beginning July 1959). When Congress passed the Federal Salary Reform Act of 1962, this cross-industry survey system had been tested in 2 years of operation.[57]

With some changes in the design and size of the sample, refinements in occupational definitions, the inclusion of a number of additional occupations, and modifications of data collection procedures, this survey system has continued on an annual basis for more than two decades.

Industry wage surveys. Occupational wage studies on an industry basis were not abandoned with the development of the community wage survey program. Such studies remained highly important for insight into the structure of wages and benefits for nonsupervisory workers in establishment groupings differentiated by product, technology, labor force composition, extent of unionization, and other factors. Partly for economy in the use of resources, there was a shift in emphasis during the late 1940's from the industrywide surveys of the 1945–47 period to surveys in major areas of industry concentration. The intent behind this industry-locality program was the annual study of wages and related benefits in some 25 manufacturing and nonmanufacturing industries, together with less frequent industrywide studies in a few industries where wages were determined on a national basis. The long-term program of union scale studies in a few industries was continued.

During the 1950's, the Bureau also undertook under contract many surveys, largely of the wage distribution type, for use in appraisal of the effects of minimum wage actions

under the Fair Labor Standards Act, and as a basis for decisions on minimum wage policy. These studies continued into the 1960's as minimum wage coverage was extended to retail trade, service industries, and other areas of employment.

The industry wage studies program was enlarged and systematized as part of the planning process that produced the 80-area community wage survey proposal. Provision was made for recurring studies in approximately 50 manufacturing and 20 nonmanufacturing industries, either nationally or in areas of major concentration.[58] Most of these industries were scheduled for survey on a 5-year cycle, with others, predominately in textiles and apparel, on a 3-year cycle. The few studies based on union scales rather than employer payroll records would continue on an annual basis. Altogether, about 20 surveys would be planned for each year.

At the time of their selection, the 70 industries included in the program accounted for about three-fifths of manufacturing and a third of nonmanufacturing employment. The 3- or 5-year periodicity for most of these studies was not ideal, but industry wage structures (that is, relative rates of pay) tend to change slowly. These surveys developed data for selected jobs, such as plant maintenance, that cut across industry lines, and also for selected processing jobs peculiar to each industry. Data for the distribution of rates of pay or straight-time hourly earnings for all production or nonsupervisory workers were collected, together with information on establishment practices, such as shift work, and supplementary benefits provisions.

Thus, by the end of the 1950's, two well-articulated occupational wage survey programs had been developed, one on a local labor market and the other on an industry basis. The latter program also provided for a considerable amount of information by labor market or region. Together, they shed much light on the level and structure of wages and salaries in the U.S. economy, and provided data for a variety of governmental uses, private wage and salary decisions, and research.

Supplementary remuneration surveys. Beginning in the second half of the 1930's, a variety of supplements to basic rates of pay began to assume significance in the U.S. wage structure. These supplements, some legally required and others established through collective bargaining or employer personnel policy, provided additional money income, paid leisure, or income security for workers, and represented a cost to employers.

It was clear by 1950 that benefits supplementary to basic wages would continue to account for an increasing share of worker compensation. In 1951, with close industry cooperation, a study was made of supplementary expenditures in basic steel. In 1953, a methodological study of problems in the measurement of employer expenditures on major benefits in manufacturing was undertaken.[59] This was followed in 1956 by a study of benefit expenditures in the electric

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and gas utility industry, conducted as part of an industry wage survey, and by a 1958 survey of the composition of payroll hours for factory workers.

Finally, in 1959, a continuous program was launched. The initial study measured employer expenditures on benefits for production workers in manufacturing. Data were developed by major industry group, region, level of wages, size of establishment, collective bargaining coverage, metropolitan or nonmetropolitan location, and the composition of payroll hours.[60] This broad-based study was repeated in 1962, following benefit expenditure surveys in the mining and finance, insurance, and real estate industries. At the request of the Civil Service Commission, a special survey was made in 1963 of benefit expenditures for white-collar workers in metropolitan areas in a broad segment of U.S. industry. During the following 2 years, numerous studies were conducted in individual manufacturing and nonmanufacturing industries.

In 1966, an initial survey was made of compensation expenditures in the entire private nonfarm economy.[61] Data were shown separately for manufacturing and nonmanufacturing, by establishment size, and, for nonoffice workers, by union status. This study, in essence, rounded out more than a decade of experimental work and studies in limited industrial sectors. Future surveys were to be conducted biennially for the entire private nonfarm economy, with studies in selected industries in the intervening years.[62]

Current wage changes. During the years immediately following World War II, enormous interest developed in changes in wage rates and employee benefits in major collective bargaining situations. This reflected the growth of collective bargaining as a mechanism for wage determination, and the influence that major settlements might have on the wage bargain—union and nonunion—in other firms and industries.

To facilitate response to inquires, the Bureau began publication of a monthly report entitled *Current Wage Developments* in January 1948. This report, available on a subscription basis, sought to list general wage changes and changes in benefit provisions in all collective bargaining settlements covering 1,000 workers or more. Because the report was based largely on secondary sources, the names of the unions and employers concerned in the settlements were identified.

This monthly periodical has become a major source of information on current wage behavior. The year 1954 saw the inclusion for the first time of quarterly and annual statistical summaries of newly negotiated wage rate changes.[63] During the mid-1960's, procedures were devised for estimating the cost of supplementary benefits, and since 1966, data have been presented on the total change in compensation in bargaining settlements affecting 5,000 workers or more. In 1968, statistics were developed on wage adjustments *put into effect* from (1) settlements during the year;

(2) deferred changes under agreements negotiated in earlier years; and (3) provisions for adjustments geared to changes in the cost of living. The coverage of the report was extended in 1979 to State and local government collective bargaining settlements involving 5,000 workers or more.

Somewhat related to the monthly report on current wage developments was the inauguration, also in 1948, of a series of reports on changes in wages and supplementary benefits in a limited number of key collective bargaining situations. Through periodic supplements, these wage chronologies summarized the history of wage and benefit changes resulting from negotiations between unions and such major employers as United States Steel, General Motors, and Lockheed Aircraft. The bargains covered were important in themselves and were thought in many cases to have significant pattern-setting effects in wage determination. By the beginning of the 1970's, about 35 chronologies were being maintained.[64]

Wage rate trends

Several of the survey systems devised after 1947 provided, as a byproduct, data on the trend of wages for important groups in the working population.

From the monthly reports on current wage developments, annual median and mean adjustments and wage indexes were developed for workers in the universe of major collective bargaining agreements, thus providing the basis for index computation. On the basis of the occupational surveys by labor market, annual indexes of wage change were constructed for office workers, skilled maintenance workers, unskilled plant workers, and industrial nurses in all metropolitan areas, nationwide and by region, over the period 1961–74.[65] These indexes were discontinued in 1974 (with the last report published in 1975) when the method of computing wage changes in the separate labor markets was revised and a more comprehensive wage rate index, described in the following section, was introduced. The annual report on salaries for selected professional, administrative, technical, and clerical jobs has provided the basis since 1961 for developing measures of salary trend for these occupational groups.

In the early 1950's, the Bureau also began to issue a series of reports on the trend of salaries for important groups of government employees. The initial report for white-collar Federal workers covered the period 1939–50; for city public school teachers, 1925–49; and for firemen and policemen, 1924–50. These reports were based on Congressional salary actions for classified employees in the Federal service; on reports on teacher salaries published by the National Education Association; and on several data sources for firemen and policemen.

The reappraisal of the Bureau's work in wage statistics that began in 1947 produced over two decades a multidimensional program that sought to meet, within the budget

constraints under which it operated, a wide variety of governmental and private needs for information. It provided significant insight into (1) the structure of wage and salary rates of pay for major groups of workers, manual and white-collar; (2) the rise of and expenditures for supplementary benefits as part of compensation for work; and (3) the dynamics and trend of wage developments.

The turbulent years, 1970-84

The 1970–84 period provided a turbulent backdrop for developments in wage statistics programs. Wide cyclical swings in the economy, coupled with Federal activities— wage and price controls and guidelines, minimum wage adjustments, and reevaluation of pay setting for Federal employees—affected Bureau wage programs. The number and scope of such programs grew substantially through 1978, but then contracted abruptly and leveled off in the face of Federal budget constraints.

Employment Cost Index. During the early 1970's, Federal wage and price controls highlighted a major shortcoming in the Nation's economic intelligence system. Information was lacking on changes in employers' compensation costs (or labor costs), free from influences unrelated to cost change, such as employment shifts among occupations and industries with different labor cost levels. Without such information, it was virtually impossible to gauge the effects of wage controls in the same way that price controls were assessed on the basis of the Bureau's Consumer Price Index. (A similar need had been addressed when the Bureau developed the short-lived, occupationally based "urban wage rate index" to measure the War Labor Board's effectiveness in stabilizing wage rates during World War II.)

During the 1971–74 controls period, policymakers trying to track wage rates or compensation costs were faced with a wide array of Bureau information, all useful for some purposes, including estimates of average hourly compensation and average hourly and weekly earnings, data on collectively bargained wage adjustments, and surveys of occupational pay levels. The various wage measures, unfortunately, gave mixed and incomplete signals about developments in wage and compensation costs.

It was in this climate that the Bureau began a long-range effort to develop the Employment Cost Index (ECI), initially called the "general wage index." The ECI was designed to be a timely and comprehensive measure of labor cost change, covering all types of workers and industries in the economy and all elements of compensation costs (wages, salaries, and employer costs for employee benefits).[66]

A critical feature of the ECI design was the use of fixed employment weights by occupation and industry. This feature specifies measurement of labor cost changes in much the same way that the Bureau's Consumer Price Index measures changes in the prices of a fixed market basket of goods

and services. Like the CPI, the ECI also yields subindexes (by broad occupational group, industry, union or nonunion status, and so forth) to provide insights into forces underlying overall wage and compensation cost trends.

The ECI was developed in stages to meet its design objectives. Quarterly measures of wage and salary change for workers in the Nation's nonfarm economy were first published in 1976. The series was broadened to cover changes in total compensation costs (employee benefit costs in addition to wages and salaries) in 1980. The following year, the ECI was further expanded to cover State and local government workers. Over the 1976–84 period, the number of ECI subindexes increased from 21 to 85.

The ECI—designated as a "Principal Federal Economic Indicator" in October 1980—now provides measures of quarterly compensation cost changes for 78 million private-sector workers and 13 million State and local government employees. It currently excludes farm, household, and Federal workers, although coverage may be extended to these groups in the future.

FLSA surveys. Prior to 1970, the Bureau conducted a wide range of surveys designed to shed light on the impact (or potential impact) of changes in the minimum wage and maximum hours provisions of the Fair Labor Standards Act (FLSA). The surveys, which developed data on employee wages and weekly hours of work, were narrowly focused on industries and areas judged to be most heavily affected by changes in the Federal minimum wage, such as men's and boys' shirt manufacturing, southern sawmills, retail trade, and nonmetropolitan areas of the South and North Central regions.

The focus broadened in 1970 with the first Bureau study of distributions of hourly earnings and weekly hours of work for nonsupervisory employees in the private nonfarm economy. With this study—designed to estimate the number of workers whose wage rates would be raised in response to potential changes in the Federal minimum, and the consequent increases in establishment wage bills— began a period of accelerated Bureau survey activity related to FLSA and funded by the Labor Department's Employment Standards Administration (ESA). Subsequent years saw several increases in the Federal minimum wage—from $1.60 to $2 an hour in May 1974 (the first adjustment since 1968), followed by a series of six adjustments that brought the minimum to $3.35 an hour on January 1, 1981.

During the mid-1970's, the Bureau conducted surveys of industries and occupations exempt from FLSA minimum wage and overtime coverage (including small newspapers; truck-drivers and helpers in local cartage; and executive, administrative, and professional employees). Survey results were used by ESA in judging whether an exemption should be continued, based on the effect it had on wages and hours of work for affected employees. In the case of executive, administrative, and professional employees, the survey was

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used to assist ESA in setting minimum salaries as one test for FLSA exemption.

The 1977 FLSA Amendments created a Minimum Wage Study Commission to help "resolve the many controversial issues that have surrounded the Federal minimum wage and overtime requirements since their origin in the Fair Labor Standards Act of 1938."[67] The responsibility for research on FLSA amendments shifted to the Commission in 1978. The Commission's request for Bureau surveys, which continued to be funded by ESA, resulted in broad-based studies similar to the 1970 survey of nonsupervisory employees in private industry. Also at the request of the Commission, the Bureau developed a panel study of establishments with which to gauge the effects of changes in the minimum wage on employee benefits within individual firms.

The Bureau's work on FLSA surveys and the panel study ended in 1981, as did the life of the Commission.

Federal pay comparability.   As shown earlier, the adoption by the Congress in 1962 of a comparability pay policy for Federal white-collar employees led to the conduct by the Bureau of an annual nationwide occupational survey of salaries in private industry for use in policy implementation. The 1962 Act was amended by the Federal Pay Comparability Act of 1970. Under the amended act, the Bureau's annual study of Professional, Administrative, Technical, and Clerical Pay (the PATC survey) continues to provide a statistical basis for policy considerations. Its results are used by the President's Pay Agent (the Secretary of Labor and the Directors of the Office of Management and Budget and the Office of Personnel Management) in making annual recommendations to the President on pay adjustments needed to make salaries of Federal white-collar employees comparable to those of their private-sector counterparts.

The Federal pay determination process, including the PATC survey, is large, complex, and highly controversial.[68] It now affects the pay of more than 3 million employees (including the military) and has substantial impact on the Federal budget; every 1-percent increase in Federal pay scales costs about $1 billion. The magnitude of the costs involved and the controversy surrounding the determination process have triggered no fewer than six procedural reviews and evaluations.

Review of the process began with a General Accounting Office audit in 1972. Subsequent evaluations were conducted by the President's Panel on Federal Compensation (the Rockefeller Panel) in 1975, the Personnel Management Project (the Carter Administration's task group on Federal Government reorganization) in 1977, the Grace Commission in 1982–83, the General Accounting Office again in 1983, and the Reagan Administration's Cabinet Council on Management and Administration in 1984. The reviews generated a variety of recommendations for improving the pay determination process, including:

- Expansion of the PATC survey to cover smaller establishments and more private-sector industries;
- Amendment of the 1970 Act to include State and local government workers in comparability surveys;
- Determination of Federal white-collar pay comparability on an area, rather than a national, basis for certain types of occupations, such as technical and clerical jobs; and
- Consideration of employee benefits as well as pay in comparability determination.

The recommendations from the 1972–77 reviews have already had direct impact on the Bureau's PATC survey. To date, improvements to the study include the establishment of national training programs for Bureau field representatives, and expansion of coverage to the mining and construction industries and to smaller establishments in a number of manufacturing industries.

Pressure to consider employee benefits as well as pay in the comparability process grew as private-sector benefit costs approached 30 percent of total compensation costs in the late 1970's. In 1978, the Bureau began construction of a comprehensive data base on employee benefits in private industry.[69] Developed from a survey of detailed employee benefit plan characteristics, the data base has been used experimentally by the Office of Personnel Management in estimating the effect of implementing a Total Compensation Comparability concept in the determination of Federal employee renumeration.[70]

The annual survey of employee benefits was first conducted in 1979, and has become one of the richest sources of employee benefit data ever developed. It is nationwide in scope and covers the same industries and establishment size groups as the PATC survey. Data are collected on employee participation rates and detailed plan provisions for such benefits as paid leave, short- and long-term disability benefits, health and life insurance, and retirement plans.

Shifting program priorities.   Expansion and contraction of the Bureau's wage statistics programs during 1970–84 followed patterns of the past: Growth in periods during which the Federal Government had pressing need for more economic intelligence or for data to administer Federal law, and cutbacks when dictated by budget constraints. Difficult priority decisions on cutbacks in wage programs included elimination of the biennial survey of employer expenditures for employee compensation; wage chronologies for about 30 major collective bargaining situations; union wage surveys in construction, printing, local transit, local trucking, and grocery stores; municipal government wage surveys in the Nation's 27 largest cities (initiated during the early 1970's); and FLSA surveys. However, the period also brought development and growth of the quarterly ECI series, construction of a rich data base on employee benefits, and expansion of the PATC survey—all contributing to a better understand-

ing of wages and compensation of the Nation's working men and women.

In retrospect

There are many omissions in this review of 100 years of work by the Bureau in the compilation of wage statistics. But the main lines of development have been made clear, and it may not be inappropriate to recap briefly the significance of this effort.

Without the Bureau's surveys and studies, with all their limitations, we would know far less than we do about the money return for work during the past century in our highly complex and dynamic economy. The Bureau has provided a reasonably consistent body of information available from no other source. This reflects an underlying consistency and continuity of program, despite adaptations necessitated by fluctuating budgetary levels, special governmental requirements for survey data, changes in the industrial composition of the working population, and the increasing complexity of the wage bargain.

In substantial measure, the wage statistics program has been shaped by Federal Government needs for information for administrative and policy purposes. But, in line with general Bureau policy, the results of surveys and studies consistently have been made available to the public. They have found extensive use over the years in wage determination through collective bargaining and employer personnel action, and in university and other private research. ☐

--------FOOTNOTES--------

ACKNOWLEDGMENT: The author thanks George L. Stelluto, currently Associate Commissioner for Wages and Industrial Relations, Bureau of Labor Statistics, for a careful review of the manuscript and for drafting the account of the Bureau's work in wage statistics between 1970 and 1984.

[1] See The *Consumer Price Index: Concepts and Content Over the Years*, Report 517 (Bureau of Labor Statistics, May 1978).

[2] For a description of the early development of the average hourly and weekly earnings by industry series, see *Hours and Earnings in the United States, 1932–40*, Bulletin 697 (Bureau of Labor Statistics, 1942), pp. 34–46.

[3] Railroad mileage more than doubled between 1880 and 1900, reaching 198,694 miles in the latter year. See U.S. Bureau of the Census, *Statistical Abstract*, 1919, p. 797.

[4] U.S. Bureau of the Census, *Historical Statistics of the United States: Colonial Times to 1970*, Series D152–166 (Washington. U.S. Government Printing Office, 1975), p. 138.

[5] See particularly Francis A. Walker, *The Wages Question* (New York, Henry Holt & Co., 1876).

[6] Leo Wolman, *Ebb and Flow in Trade Unionism* (New York, National Bureau of Economic Research, 1936), table 5, p. 16.

[7] Joseph Dorfman, *The Economic Mind in American Civilization* (New York, Viking Press, 1949), vol. 3, chap. vi.

[8] Prior to 1884, about a dozen States had established labor bureaus, but few of these had made any significant effort to compile wage statistics.

[9] Joseph D. Weeks, "Report on the Statistics of Wages in Manufacturing Industries," *Tenth Census, 1880*, vol. XX (Washington, U.S. Government Printing Office, 1886).

[10] For a general account of Wright's work, see James Leiby, *Carroll D. Wright and Labor Reform: The Origin of Labor Statistics* (Cambridge, Mass., Harvard University Press, 1960). See also Wendell D. Macdonald, "Carroll D. Wright and His Influence on the BLS," *Monthly Labor Review*, January 1955, pp. 3–10.

[11] Lombardi goes so far as to say of Wright that "largely as a result of his personal contacts with European statisticians at the sessions of the International Statistical Congress, of which he was a member, and through the influence of his reports, which were widely circulated, every European and Australian state created labor bureaus before the opening of the twentieth century." John Lombardi, *Labor's Voice in the Cabinet* (New York, Columbia University Press, 1942), p. 48. See also E. H. Phelps Brown and M. H. Browne, "Carroll D. Wright and the Development of British Labour Statistics," *Economica*, August 1963, pp. 277–86.

[12] Carroll D. Wright, "The Evolution of Wage Statistics," *Quarterly Journal of Economics*, January 1892, pp. 158–59.

[13] Commissioner of Labor, *First Annual Report, 1886, Industrial Depressions*, text table, pp. 143–74; appendix A, pp. 295–410.

[14] Commissioner of Labor, *Fifth Annual Report, 1889, Railroad Labor*, table 11, pp. 514–791.

[15] *Ibid*, p. 75.

[16] These studies were published as the Sixth and Seventh Annual Reports of the Commissioner of Labor, 1890 and 1891, and dealt with the cost of production in a number of industries, including iron and steel, coal, textiles, and glass.

[17] For the 1840–91 wage series compiled by the Bureau for the Aldrich Committee, see *Wholesale Prices, Wages, and Transportation*, Report by Aldrich, 52d Cong., 2d sess., Report 1394, Mar. 3, 1893, parts 2, 3, and 4, table XII, pp. 293–1560. The Bureau also compiled wage rate data for 15 specified occupations in a large number of cities, and for important occupations in a few industries, for the 28-month period June 1889–September 1891. For these data, see *Retail Prices and Wages*, Report by Aldrich, 52d Cong., 1st sess., Report 986, July 19, 1892, part 3, table IV, pp. 1903–2009, and table V, pp. 2010–39.

[18] Aldrich Report, Mar. 3, 1893, part 1, p. 11.

[19] *Ibid.*, pp. 110–77.

[20] E. H. Phelps Brown and Sheila V. Hopkins, "The Course of Wages in Five Countries, 1860–1939," *Oxford University Papers*, June 1956, pp. 226–95; Clarence D. Long, *Wages and Earnings in the United States, 1860–1890* (Princeton, N.J., Princeton University Press, 1960).

[21] *Wages in the United States and Europe, 1870–1898*, Bulletin 18 (Bureau of Labor Statistics, September 1898).

[22] Bureau of the Census, *Long Term Economic Growth, 1860–1965* (Washington, U.S. Government Printing Office, 1966), appendix table A1, p. 166.

[23] Wolman, *Ebb and Flow*, table 5, p. 16.

[24] Commissioner of Labor, *Nineteenth Annual Report, 1904, Wages and Hours of Labor*.

[25] *Ibid.*, p. 9.

[26] *Ibid.*, p. 20.

[27] Paul H. Douglas, *Real Wages in the United States, 1890–1926* (Boston and New York, Houghton Mifflin Co., 1930), p. 75.

[28] For the Douglas index, see *ibid*, table 24, p. 108. The Douglas series on real, but not money, wages in manufacturing for the period 1890–1914 has been effectively revised by Albert Rees, *Real Wages in Manufacturing, 1890–1914* (Princeton, N.J., Princeton University Press, 1961).

[29] See *Wages and Hours of Labor in Manufacturing Industries, 1890 to 1904*, Bulletin 59 (Bureau of Labor Statistics, July 1905); similar articles for 1905, 1906, and 1907 appeared in Bulletin 65, July 1906; Bulletin 71, July 1907; and Bulletin 77, July 1908.

[30] *Wages and Hours of Labor in the Cotton, Woolen, and Silk Industries, 1890–1912*, Bulletin 128 (Bureau of Labor Statistics, 1913).

[31] *Union Scale of Wages and Hours of Labor, 1907 to 1912*, Bulletin 131 (Bureau of Labor Statistics, 1913).

[32] "Index Numbers of Wages per Hour, 1840 to 1920," *Monthly Labor Review*, February 1921, pp. 73–74.

[33] "Index Numbers of Wages per Hour, 1840–1934," *Monthly Labor Review*, August 1935, pp. 429–30.

[34] *Industrial Survey in Selected Industries in the United States, 1919*, Bulletin 265 (Bureau of Labor Statistics, 1920).

[35] Bureau of the Census, *Historical Statistics of the United States: Colonial Times to 1970*, series D-86 (Washington, U.S. Government Printing Office, 1975), p. 135. The data on the civilian labor force apply to persons 14 years of age and over.

[36] *Handbook of Labor Statistics, 1975–Reference Edition*, Bulletin 1865 (Bureau of Labor Statistics, 1975), table 158, p. 389.

[37] See H. M. Douty, "The Development of Wage-Price Policies," in *Problems and Policies of Dispute Settlement and Wages Stabilization During World War II*, Bulletin 1009 (Bureau of Labor Statistics, 1950), pp. 104–54.

[38] The final publication in this series appears to have been *Hourly Entrance Rates of Common Laborers in Large Cities, Spring and Summer of 1943*, Bulletin 775 (Bureau of Labor Statistics, 1944).

[39] No description of the precise composition of this index has thus far been located.

[40] The 1936 edition of the *Handbook of Labor Statistics*, Bulletin 616 (Bureau of Labor Statistics, 1936), pp. 873–1090, contains brief summaries of Bureau and other wage studies published between 1931 and 1935. Similar summaries will be found in the 1941 edition of the *Handbook*, Bulletin 694, vol. II, pp. 21–369, for the years 1936–40.

[41] For Board policy on interplant inequities, see *The Termination Report of the National War Labor Board*, vol. I (Washington, U.S. Government Printing Office, 1947), pp. 226–39. See also Robert J. Myers and Harry Ober, "Statistics for Wage Stabilization," *Journal of the American Statistical Association*, December 1943, pp. 425–37; and *Activities of the Bureau of Labor Statistics in World War II* (Washington, U.S. Government Printing Office, 1947), pp. 86–94.

[42] *Fact Finding Activities of the Bureau of Labor Statistics*, Bulletin 831 (Bureau of Labor Statistics, 1945), p. 14.

[43] Robert J. Myers, Harry Ober, and Lily Mary David, "Wartime Wage Movements and Urban Wage Rate Changes," *Monthly Labor Review*, October 1944, pp. 684–704. For the use of the index in appraisal of the wage stabilization program, see *The Termination Report of the National War Labor Board*, vol. I, pp. 537–59.

[44] Frances Jones Clerc and Eleanor K. Buschman, "Trends in Urban Wage Rates, September 1947," *Monthly Labor Review*, January 1948, pp. 45–50.

[45] Because of their publication in mimeograph form, the full reports on industry wage studies during the immediate postwar period are almost fugitive materials. They are on file at the Bureau and may perhaps be found in some university and public libraries. They are listed in *A Catalogue of the Wage Studies of the Bureau of Labor Statistics, January 1945–June 1948*, a Bureau publication in mimeographed form prepared by Edward K. Frazier.

[46] Harry Ober, "Occupational Wage Differentials, 1907–1947," *Monthly Labor Review*, August 1948, pp. 127–34.

[47] Joseph W. Bloch, "Regional Wage Differentials, 1907–46," *Monthly Labor Review*, April 1948, pp. 371–77.

[48] The heightened academic interest in wage research is reflected in a conference report by Lloyd G. Reynolds on *Research in Wages* (New York, Social Science Research Council, 1948). The conference was attended by leading academic students of wages and by Bureau officials responsible for the wage statistics program.

[49] See Joseph W. Duncan and William C. Shelton, *Revolution in United States Government Statistics, 1926–1976* (Washington, U.S. Government Printing Office, 1978), pp. 32–70.

[50] Major credit for the adaptation of probability sampling to universes of establishments for occupational wage survey purposes belongs to Samuel E. Cohen, then statistician in the Bureau's Wage Analysis Branch.

[51] Some of the thinking that went into the new program is reflected in

[ ] H. M. Douty, "Conceptual Problems in the Development of an Adequate Program of Occupational Wage Statistics," *Proceedings*, Industrial Relations Research Association, 1950, pp. 220–30.

[52] The results of these studies were summarized in *Salaries of Office Workers in Selected Large Cities*, Bulletin 943 (Bureau of Labor Statistics, 1949).

[53] See H. M. Douty and Toivo P. Kanninen, "Community Approach to Wage Studies," *Monthly Labor Review*, October 1949, pp. 1–6.

[54] For an account of the Bureau's work for the wage stabilization effort during the Korean war, see Wage Stabilization Board, *Wage Stabilization Program, 1950–1953*, vol. II (Washington, Economic Stabilization Agency, 1953), pp. 181–99.

[55] See *Wage Differentials and Rate Structures Among 40 Labor Markets, 1951–52*, Bulletin 1135 (Bureau of Labor Statistics, 1953). Summary statistics for the 40 areas surveyed will be found in *Wages and Related Benefits, 40 Labor Markets, 1951–52*, Bulletin 1113 (Bureau of Labor Statistics, 1952).

[56] The report of the interagency committee may be found in House Committee on Post Office and Civil Service, *Hearings on Revision of Major Federal Salary Systems*, part I, 87th Cong., 2d sess., pp. 79–125.

[57] The summary report on the first round of surveys in the expanded labor market program appeared as *Wages and Related Benefits, 60 Labor Markets, 1959–60*, Bulletin 1265–62 (Bureau of Labor Statistics, 1961). Coverage was expanded to 80 areas in the following year. For the initial report designed for use in Federal salary determination, see *National Survey of Professional, Administrative, Technical, and Clerical Pay, Winter 1959–60*, Bulletin 1286 (Bureau of Labor Statistics, 1960).

[58] See Toivo P. Kanninen, "New Dimensions in BLS Wage Survey Work," *Monthly Labor Review*, October 1959, table 2, p. 1083, for a tentative list of the industries included in the survey proposal.

[59] *Problems in Measurement of Expenditures on Selected Items of Supplementary Employee Remuneration, Manufacturing Establishments, 1953*, Bulletin 1186 (Bureau of Labor Statistics, 1956).

[60] *Employer Expenditures for Selected Supplementary Remuneration Practices for Production Workers in Manufacturing Industries, 1959*, Bulletin 1308 (Bureau of Labor Statistics, 1962).

[61] *Employee Compensation in the Private Nonfarm Economy, 1966*, Bulletin 1627 (Bureau of Labor Statistics, 1969).

[62] See Alvin Bauman, "Measuring employee compensation in U.S. industry," *Monthly Labor Review*, October 1970, pp. 17–23.

[63] The annual statistical summary of wage changes in major agreements has become quite elaborate. See William M. Davis and Joan D. Borum, "Wage Adjustments Under Major Bargaining Agreements At All-Time Low in 1983," *Current Wage Developments*, April 1984, pp. 45–69.

[64] As an example of a wage chronology, see *Wage Chronology: The Firestone Tire and Rubber Co. and the B. F. Goodrich Co. (Akron Plants) and the Rubber Workers, 1939–1979*, Bulletin 2011 (Bureau of Labor Statistics, 1979).

[65] See *Area Wage Surveys: Metropolitan Areas, United States and Regional Summaries, 1973–74*, Bulletin 1795–29 (Bureau of Labor Statistics, 1976), table A-28, pp. 87–88.

[66] The Employment Cost Index is published quarterly in news releases that are typically issued in January, April, July, and October. It also appears in *Current Wage Developments* and the *Monthly Labor Review,* monthly publications of the Bureau.

[67] *Report of the Minimum Wage Study Commission*, vol. 1, May 1981, Preface, pp. XIII–XIV.

[68] See George Stelluto, "Federal pay comparability: facts to temper the debate," *Monthly Labor Review*, June 1979, pp. 18–28.

[69] See Robert Frumkin and William Wiatrowski, "BLS takes a new look at employee benefits," *Monthly Labor Review*, August 1982, pp. 41–45.

[70] Dollar costs were calculated by OPM using mathematical and actuarial models that took account of the demographic characteristics of the Federal work force. See "Total Compensation Comparability: Background, Method, Preliminary Results" (U.S. Office of Personnel Management, July 1981).

BLS and the economy: a centennial timetable

EDGAR WEINBERG

Celebration of the BLS Centennial affords an opportunity to review the growth and development of the Bureau's work in relation to changes in the American economy and society. Shifts in Bureau leadership, changes in objectives, and the evolution of programs following the Bureau's inception are narrated in a study to be published by the Bureau in 1985. In what follows, pertinent facts and dates are presented in a Timetable of History, a format of a long span of years. It is intended to present briefly the historical context in which the Bureau has developed.

The table presents events over the past 100 years under three headings: first, the commissioners and their terms of office, including the presidents who nominated them; second, major activities of the Bureau of Labor Statistics; and third, selected economic and historic milestones.

Among the major themes that emerge from this overview: increasing use of BLS programs in the administration of private and public stabilization programs, such as adjustment of incomes to consumer price changes, allocation of public funds for unemployment assistance, and the regulation of working conditions; the pursuit of economic stability through government intervention; the shift away from government action on the side of employers to a more neutral position in labor-management relations; and the persistence and creativity of collective bargaining in dealing with problems of change.

In addition to the forthcoming historical study, the timetable draws on several other BLS publications for the sections on the Commissioners and Major Activities of the BLS: *BLS Handbook of Methods, Vol. I* (Bulletin 2134–1, 1982); *Information Processing at BLS* (Report 583, 1980); The *Monthly Labor Review*; and selected Bulletins. The *Annual Reports* of the Secretary of Labor, 1915–83, were also consulted. Other useful sources included: Ewan Clague, *The Bureau of Labor Statistics* (New York, Frederick A. Praeger, 1968) and Joseph W. Duncan and William C. Shelton, *Revolution in United States Government Statistics, 1926–1976* (Washington, U.S. Government Printing Office, 1978).

The main sources for economic and historic milestones were: Richard B. Morris, ed., *Encyclopedia of American History, Sixth Edition* (New York, Harper and Row, 1982); Arthur M. Schlesinger, Jr., general editor, *The Almanac of American History* (New York, G. P. Putnam's Sons, 1983); Lawrence Urdang, ed., *The Timetables of American History* (New York, Simon and Schuster, Inc., 1981). The dates of business cycle turning points are from the article by Geoffrey H. Moore, "Business Cycles" in Douglas Greenwald, editor-in-chief, *Encyclopedia of Economics* (New York, McGraw-Hill Book Co., 1982) and the U.S. Department of Commerce's *Business Cycle Digest*.

Also consulted were *Brief History of the American Labor Movement (*BLS Bulletin 1000, 1976) and Harold S. Roberts, *Robert's Dictionary of Industrial Relations* (Washington, The Bureau of National Affairs, 1971).

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Terms of commissioners	Major BLS activities	Economic and historic milestones
CARROLL D. WRIGHT, 1885–89. Nominated by Chester A. Arthur.	1884. Bureau of Labor is established in the Department of the Interior. Officers appointed in 1885.	1884–85. Recession and wave of wage reductions spark strikes, especially on railroads.
	1886. Bureau publishes its first annual report, *Industrial Depressions*, with data on the United States, Great Britain, France, Belgium, and Germany.	1886. American Federation of Labor is organized by 25 trade unions with Samuel Gompers as president. Violence in Chicago's Haymarket Square hurts 8-hour-day movement and sets back the Knights of Labor.
		1887. Congress establishes Interstate Commerce Commission to regulate railroad freight rates.
	1888. Bureau becomes Department of Labor, independent but without Cabinet status.	
CARROLL D. WRIGHT, 1889–93. Renominated by Grover Cleveland.		1889. Jane Addams and Ellen Gates Starr found Hull House in Chicago to experience, investigate, and improve conditions faced by immigrants. Cabinet-level Department of Agriculture is established.
		1890. United Mine Workers of America is established. Congress passes Sherman Antitrust Act.
	1891. Bureau begins surveys for Senate Finance (Aldrich) Committee study of imports and tariffs. Report published as *Retail Prices and Wages* (1892) and *Wholesale Prices, Wages, and Transportation* (1893).	
		1892. Recession begins, lasting 17 months before a short recovery. Violent confrontation erupts at Carnegie steel mill at Homestead, PA.
CARROLL D. WRIGHT, 1893–97. Renominated by Benjamin Harrison.	1893. Wright is appointed Superintendent of the Census.	
	1894. Bureau annual report, *The Slums of Baltimore, Chicago, New York, and Philadelphia*, includes data on crime, literacy, nativity, health, and crowding, as well as occupations and earnings.	1894. Federal troops break Pullman strike. President appoints investigating commission with Wright as chairman. "Coxey's Army" of unemployed march on Washington to demand a national public works program.
	1895. Bureau publishes first issue of the bimonthly Bulletin of the Department of Labor.	
		1896. Supreme Court declares "separate but equal" doctrine in *Plessy v. Ferguson*.
CARROLL D. WRIGHT, 1897–1901. Renominated by Grover Cleveland.	1897. Annual report, *Work and Wages of Men, Women and Children*, was authorized by Congress to answer the question, "Are women and children replacing men?"	1897. "Klondike Stampede" begins for Alaskan gold.
	1898. Annual report, *Hand and Machine Labor*, was authorized by Congress to determine if the introduction of machinery depressed wages or caused widespread unemployment.	1898. Erdman Act passed, providing mediation and conciliation in railroad disputes by the Commissioner of Labor and the chairman of the Interstate Commerce Commission. U.S. fights war with Spain. In peace treaty, Spain cedes the Philippines, Puerto Rico, and Guam.

Terms of commissioners	Major BLS activities	Economic and historic milestones
	1900. Law annexing Hawaii directs the Bureau to conduct periodic surveys of economic conditions.	1900. Business, labor, and civic leaders organize National Civic Federation to promote conciliation and arbitration between capital and labor.
CARROLL D. WRIGHT, 1901–05. Renominated by Theodore Roosevelt. Retired in 1905.		1901. Elbert H. Gary, financed by J. P. Morgan, buys out Carnegie interests and combines other firms to form the U.S. Steel Corp.
	1902. Bureau begins publication of the Wholesale Price Index with data covering 1890 to 1901.	1902. Strike by Pennsylvania anthracite coal miners sparks Presidential concern and establishment of Anthracite Coal Strike Commission, with Wright as recorder. Permanant Bureau of the Census is established, then transferred to the Department of Commerce and Labor in 1903.
	1903. President signs bill establishing the Department of Commerce and Labor, with the Bureau of Labor as a part. Bureau presents data from massive retail price and budget studies, beginning the series on retail price of food.	
	1904. Annual report, *Wages and Hours of Labor*, presents data on 519 occupations obtained from 3,475 establishments in 67 industries.	1904. Supreme Court declares unconstitutional maximum hours law for bakery workers (*Lochner* v. *New York*).
CHARLES P. NEILL, 1905–09. Nominated by Theodore Roosevelt.		
		1906. Upton Sinclair exposes conditions in Chicago meatpacking plants in *The Jungle*. The President sends Neill to investigate. American Association for Labor Legislation is founded.
	1907. Bureau begins investigation of working conditions experienced by women and children, resulting in a 19-volume study.	
	1908. Secretary assigns Bureau its first administrative duties, arising from the Federal Workmen's Compensation Act, the first such system to operate in this country.	1908. Supreme Court holds boycott by Danbury Hatters Union a restraint of trade prohibited under the Sherman Antitrust Act. Supreme Court also upholds Oregon 10-hour law for women in *Muller* v. *Oregon*, as defended in the "Brandeis brief."
CHARLES P. NEILL, 1909–13. Renominated by Theodore Roosevelt.	1910. Bureau publishes study of phosphorus poisoning, leading to the elimination of white phosphorus in the manufacture of matches.	1910. Strike at Bethlehem Steel is investigated by the Bureau, which then undertakes a study of conditions in the iron and steel industry.
		1911. Triangle Shirtwaist Co. destroyed by fire, causing the death of 146 workers and leading to establishment of the New York State Factory Investigating Commission.
CHARLES P. NEILL, 1913. Nominated by William H. Taft. Nominated by Woodrow Wilson. Resigned in 1913.	1912. Bureau publishes *Accidents and Accident Prevention* (Vol. IV of Report on Conditions of Employment in the Iron and Steel Industry), marking the birth of continuing annual series in the iron and steel industry.	1912. Congress creates Children's Bureau. Industrial Workers of the World leads successful strike at textile mills of Lawrence, MA. Bureau of Labor investigates.

Terms of commissioners	Major BLS activities	Economic and historic milestones
ROYAL MEEKER, 1913–17. Nominated by Woodrow Wilson, following a 3-month interim during which G. W. W. Hanger served as acting commissioner.	1913. Congress establishes the Cabinet-level Department of Labor, with the Bureau of Labor Statistics, Bureau of Immigration, Bureau of Naturalization, and the Children's Bureau.	1913. Ford establishes moving assembly line system to mass produce *Model T's*. Sixteenth Amendment, income tax, is ratified. Federal Reserve System is established.
		1914. Clayton Act, "Magna Carta of Labor," is enacted, exempting unions from Sherman Antitrust Act. Violent strike of coal miners in Ludlow, CO. leads to Federal troops and the appointment of a Presidential Commission. World War I begins in Europe. Start of a 44-month business expansion.
	1915. Bureau publishes revised series on retail and wholesale prices, and a report, "The Making and Using of Index Numbers," by Wesley C. Mitchell (reprinted in 1921 in Bulletin 284). First survey of unemployment is conducted in New York City. First issue of *Monthly Review* is published (renamed *Monthly Labor Review* in 1918).	1915. La Follette Seaman's Act is passed regulating conditions of employment of maritime workers. National Safety Council is founded.
	1916. Agreement is signed with New York State to collect data on factory employment, hours, and payrolls from employers. Bureau publishes national series on monthly basis.	1916. Four-year study of the status of labor-management relations and the causes of industrial unrest is released by the Commission on Industrial Relations. Adamson Act passed establishing 8-hour day on interstate railroads.
ROYAL MEEKER, 1917–20. Renominated by Woodrow Wilson. Resigned in 1920.	1917. Two year study begins on income and expenditures of urban wage earners and clerical workers to construct cost-of-living indexes (first published in 1919).	1917. United States enters war. Railroads are nationalized. Production is subjected to controls imposed by War Industries Board, Food Administration, and Fuel Administration. Supreme Court upholds "yellow-dog" contracts.
		1918. Business and labor leaders at President's Labor-Management Conference agree to maintain industrial peace for duration. The National War Labor Board is created to deal with disputes. U.S. Employment Service opens field offices. Armistice is signed in November.
		1919. President's Industrial Conference ends without agreement on right-to-organize. President establishes coal commission to arbitrate miners' strike.
		1920. 19th Amendment (women's suffrage) is ratified. Congress establishes Women's Bureau in the Department of Labor.
ETHELBERT STEWART, 1920–25. Recess appointment by Woodrow Wilson. Nominated by Warren G. Harding.	1921. Bureau takes over series on building permits in major cities from U.S. Geological Survey. 1922. Bureau expands cooperative program with States in collecting employment statistics.	1921. President's Conference on Unemployment recommends local responsibility for unemployment relief. "Guesses" of unemployment range from 3.5 to 5 million.
		1923. Steel industry agrees to eliminate the 12-hour day, following pressure from the Harding Administration.
		1924. William Green becomes president of the AF of L. Restrictive immigration legislation is adopted.

Terms of commissioners	Major BLS activities	Economic and historic milestones
ETHELBERT STEWART, 1925–29. Renominated by Calvin Coolidge.		
	1926. First annual indexes of labor productivity are issued for autos, steel, and other selected industries. First edition of *Handbook of American Trade Unions* is published. American Statistical Association Committee reports on Employment Statistics for the United States.	1926. Railway Labor Act is enacted requiring employers to bargain collectively. Ford announces 8-hour day, 5-day week.
	1928. Bureau publishes *History of Wages in the United States from Colonial Times*. Congress appropriates $100,000 to support expanded work in employment statistics.	
ETHELBERT STEWART, 1929–32. Renominated by Herbert Hoover. Retired in 1932 because of age. Charles A. Baldwin served as acting commissioner.	1929. Series on labor turnover in manufacturing is taken over from Metropolitan Life Insurance Co.	1929. Prices on New York Stock Exchange collapse. Great Depression begins.
	1930. President Hoover establishes Advisory Committee on Employment Statistics.	1930. Tariffs are raised substantially, by Hawley-Smoot Act. Bureau of Census conducts census of unemployment, April 1930.
	1931. Bureau publishes special reports on unemployment benefit plans in the United States and abroad.	1931. Congress passes Davis-Bacon Act requiring prevailing wages on Federal construction.
		1932. Norris-LaGuardia Act is enacted, restricting Federal antiunion injunctions and outlawing "yellow-dog" contracts. Wisconsin adopts first unemployment insurance law. Reconstruction Finance Corp. is set up for emergency financing of banks, insurance, and other failing companies. Bonus march on Washington is dispersed.
ISADOR LUBIN, 1933–38. After recess appointment by Franklin D. Roosevelt, nominated in 1934.	1933. BLS is designated agent to collect wage and hour data for formulating NRA codes. Average hourly earnings and average weekly hours are published for the first time by industry and for total manufacturing.	1933. Unemployment is estimated at 25 percent. Congress enacts recovery and relief legislation, and establishes Tennessee Valley Authority. U.S. Employment Service is reorganized under Wagner-Peyser Act. National Industrial Recovery Act sparks union organizing drive.
	1934. Congress appropriates money for new survey of income and expenditures towards revision of the cost-of-living index, the first since its introduction.	1934. New Deal legislation is enacted including Home Owners Loan Act, Securities Exchange Act, National Housing Act. Division (later Bureau) of Labor Standards is established in Labor Department to assist States. U.S. membership in ILO is approved.
	1935. Study of company unions is conducted by newly organized Industrial Relations Division. Bureau establishes Machine Tabulation Division to centralize data processing.	1935. Social Security Act and National Labor Relations Act are enacted into law. Committee for (later Congress of) Industrial Organizations is formed, with John L. Lewis as chairman, to organize mass production industries. Work Projects Administration (WPA) is created.
		1936. Public Contract Act (Walsh-Healey) is enacted.

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Terms of commissioners	Major BLS activities	Economic and historic milestones
		1937. Sit-down strikes in auto, rubber, steel, textiles, and other industries. United Auto Workers is recognized by General Motors; Steelworkers by U.S. Steel.
ISADOR LUBIN, 1938–42. Renominated by Franklin D. Roosevelt. After Lubin's assignment to the White House in 1940, the Bureau was supervised by A. Ford Hinrichs who served as acting commissioner.	1938. Commissioner plays leading role in organizing investigation of industrial concentration by the Temporary National Economic Committee of Congress, with the Bureau conducting several special studies.	1938. Fair Labor Standards Act is passed.
		1939. World War II begins in Europe. Regular transatlantic air service is inaugurated. Congress extends Social Security Act to provide survivors benefits.
	1940. BLS introduces revised cost-of-living index, now released monthly. Congressional resolution authorizes continuing studies of labor productivity by new Division of Productivity and Technological Development. Occupational Outlook Service is established.	1940. First peacetime draft is introduced.
		1941. Lend-lease is started. U.S. enters the war in December. AFL and CIO give no-strike pledge for duration. President creates Committee on Fair Employment Practices by executive order.
ISADOR LUBIN, 1942–46. Renominated by Franklin D. Roosevelt. Resigned in 1946.	1942. Regional offices are set up to serve emergency agencies. WPA sample survey of labor force is transferred to the Census Bureau.	1942. Little Steel formula allowing 15-percent cost-of-living raise is adopted.
		1943. Withholding of income taxes started. Government temporarily takes over railroads and coal mines to end strikes.
		1944. Servicemen's Readjustment Act (GI Bill) providing education, homeownership, small business, and other benefits is passed.
	1945. Bureau renames cost-of-living index, "Consumers' Price Index for Moderate Income Families in Large Cities." Foreign Labor Problems Branch is organized for assistance to other countries in improving labor statistics. Expansion of employment statistics to provide State estimates is begun in regional offices.	1945. End of World War II.
EWAN CLAGUE, 1946–50. Nominated by Harry S Truman.		1946. Wave of strikes breaks out as wartime wage and salary controls end. Employment Act is passed committing government to promote "maximum employment and purchasing power" and creating the Council of Economic Advisors.
	1947. First meetings of the Labor Research Advisory Committee and the Business Research Advisory Committee, appointed by the Commissioner, are held. Report, *1950 Full Employment Patterns*, based on input-output, is published.	1947. Congress passes National Labor Relations Act (Taft-Hartley) over President's veto. Independent Federal Mediation and Conciliation Service is set up, with "preventive mediation" role.

Terms of commissioners	Major BLS activities	Economic and historic milestones
	1948. Bureau publishes first City Worker's Family Budget.	1948. First major contract with cost-of-living adjustment based on CPI is signed by General Motors and UAW. European Recovery Plan (Marshall Plan) is launched.
	1949. First edition of the *Occupational Outlook Handbook* is published. All States are now cooperating with Bureau's cooperative employment statistics program.	
EWAN CLAGUE, 1950–54. Renominated by Harry S Truman.		1950. Korean conflict begins.
	1951. Bureau introduces interim adjustments to the Consumer Price Index to prepare for wartime pressures and stabilization uses.	
	1953. Bureau introduces revised Consumer Price Index.	1953. Armistice negotiated in Korea.
	1954. BLS, Census, and Bureau of Employment Security establish procedure to release a unified monthly statement on the employment-unemployment situation. Bureau launches Federal-State cooperative program to collect statistics of labor turnover. First Interstate Conference on Labor Statistics is held.	1954. Supreme Court declares school segregation a violation of equal protection clause of Constitution.
EWAN CLAGUE, 1955–59. Renominated by Dwight D. Eisenhower, after almost a year interim, during which Aryness J. Wickens served as acting commissioner.		1955. AFL and CIO are merged, with George Meany as President. UAW-Ford agreement provides supplementary unemployment benefit plan financed by the employer.
	1958. Bureau installs first generation electronic computer (IBM 650).	1958. Welfare and Pension Plan Disclosure Act, requiring financial reports on health, pension, and supplementary unemployment benefits, is passed.
EWAN CLAGUE, 1959–63. Renominated by Dwight D. Eisenhower.	1959. Full program and financial responsibility for "Monthly Report on the Labor Force" is assigned to Bureau; data collection, to Census. Bureau publishes its first estimates of real output per man-hour in the private economy using the constant dollar gross national product.	1959. Labor-Management Reporting and Disclosure Act is adopted. Joint plans for job security and improvements are negotiated at the Kaiser Steel and Armour Co.
	1960. First Professional, Administrative, Technical and Clerical pay survey is conducted.	
	1961. Report of Price Statistics (Stigler) Review Committee is issued. Bureau sets firm release dates a full year in advance following criticism in 1960 election.	1961. Beginning of record 106-month business expansion. President's Advisory Committee on Labor-Management Policy is appointed to deal with trade, tax, and related issues.
	1962. Committee to Appraise Employment and Unemployment Statistics (Gordon) reports its findings supporting Bureau's integrity and recommending improvements.	1962. Guideposts for noninflationary wage and price decisions based on productivity are proclaimed by Council of Economic Advisers. Manpower Development and Training Act is passed. Federal Salary Reform Act is adopted, linking salaries to those paid in private industry as surveyed by the Bureau.

Terms of commissioners	Major BLS activities	Economic and historic milestones
EWAN CLAGUE, 1963–65. Renominated by John F. Kennedy. Retired in 1965.	1964. New series of studies of collective bargaining agreements including prevalence of different provisions is begun (Bulletins 1425–1–20). Revised CPI is published, based on 1960–61 survey of consumer expenditures.	1964. "War on Poverty" is declared in Economic Opportunity Act, providing work, education, and loan programs for the disadvantaged. Title VII of the Civil Rights Act bars discrimination in hiring, employment, and apprenticeship.
ARTHUR M. ROSS, 1965–68. Nominated by Lyndon B. Johnson. Resigned in 1968.		1965. United States sends troops to South Vietnam.
		1966. Report of the National Commission on Technology, Automation, and Economic Progress is issued after 2-year study. Health Insurance of the Aged and Disabled (Medicare) is enacted.
	1967. Bureau is reorganized (1966–67) following study by management consultants. Data collection and processing are centralized.	
		1968. Age Discrimination in Employment Act covering persons 40 to 65 is approved.
GEOFFREY H. MOORE, 1969–73. Nominated by Richard M. Nixon after 8-month interim during which Ben Burdetsky served as acting commissioner. Resigned in 1973.	1969. Bureau publishes employment projections based on National Industry-Occupational matrix, for use in developing State and local projections. Experimental job openings and labor turnover survey is started (ended in 1974).	1969. Two astronauts walk on the moon. Mine Safety and Health and Blacklung Acts are approved.
		1970. The Occupational Safety and Health Act of 1970 is enacted. Secretary of Labor assigns Bureau broad responsibility for safety and health statistics.
		1970. Recession with sharp price rise ends long expansion.
	1971. Joint Economic Committee starts monthly hearings on employment situation with Commissioner and staff.	1971. Ninety-day wage and price freeze is imposed. Pay Board and Price Commission are set up (ended in 1974).
	1972. Technical responsibility for developing concepts and methods for States to use in estimating unemployment rates is assigned to the Bureau. Consumer Expenditure Survey now conducted by Census for the Bureau, is shifted from annual to quarterly basis.	
JULIUS SHISKIN, 1973–77. Nominated by Richard M. Nixon, following a 4-month interim during which Ben Burdetsky served as acting commissioner.	1973. Federal Government Productivity Measurement Program is authorized on a continuing basis.	1973. Comprehensive Employment and Training Act (CETA) is passed to consolidate training programs, with funds allocated by formula using BLS unemployment figures.
		1974. CPI rises a record 12 percent following the 1973 oil embargo and worldwide food crisis. President Ford calls "summit conference" to plan fight against inflation.
	1975. U1–U7 array of unemployment measures first appears. Bureau adopts third generation computer system.	1975. U.S. withdraws from Indo-China. Unemployment peaks in May (9.2 percent) during the steepest recession since World War II. First automatic adjustments pegged to the CPI are made in social security benefits.

Terms of commissioners	Major BLS activities	Economic and historic milestones
	1976. Bureau publishes initial Employment Cost Index as measure of change in the price of purchased labor services. Bureau also begins the first comprehensive revision of the Wholesale Price Index (renamed the Producer Price Index).	1976. U.S. celebrates its 200th birthday.
JULIUS SHISKIN, 1977–78. Renominated by Jimmy Carter but dies in office.		1977. Department of Energy is established.
	1978. Bureau issues the revised CPI series, the new CPI–U for all urban consumers and the traditional CPI–W for wage-earners and clerical workers.	1978. Full Employment and Balanced Growth Act establishes policy goals. Airline deregulation is approved.
JANET L. NORWOOD, 1979–83. Nominated by Jimmy Carter.	1979. Bureau launches Continuing Consumer Expenditure Survey. National Commission on Employment and Unemployment Statistics (Levitan) issues report, as does the National Academy of Sciences Panel to Review Productivity Statistics (Rees).	1979. Congress establishes Department of Education separate from the Department of Health and Human Services. Administration and AFL–CIO sign "national accord" on economic policies. Congress guarantees loans to Chrysler Corp.
	1980. Bureau publishes five experimental measures of homeownership, including the so-called CPI–X1 or "rental equivalence" measure. Expert Committee on Family Budget Revisions makes its report.	1980. CPI reaches peak (13.5 percent) in series of double-digit annual increases, led by oil price rise.
		1981. Economic Recovery Tax Act reduces income and corporate taxes and provides for automatic adjustment of tax brackets based on the CPI in 1984 tax year. Strike by air traffic controllers ends with dismissals.
	1982. In appropriations reductions, 19 programs are cut or reduced, including labor turnover, family budgets, and analysis of labor-management agreements and the union directory.	1982. Job Training and Partnership Act passed to replace CETA. Recession causes highest unemployment rates since 1941 (10.7 percent). Antitrust suit against AT&T settled, with breakup of "Ma Bell" ordered. U.S. drops 13-year antitrust suit against IBM.
JANET L. NORWOOD, 1983—. Renominated by Ronald Reagan.	1983. Bureau publishes first measures of multifactor productivity (Bulletin 2178), and introduces rental equivalence measure for homeowners' costs in the CPI–U. It also starts new revision program for the CPI and accepts managerial responsibility for Federal/State labor market information programs.	1983. Annual inflation rate, as measured by the CPI, reaches lowest level (3.0 percent) in over 10 years.

Communications

Use of hourly earnings proposed to revive spendable earnings series

THOMAS E. WEISSKOPF

In 1982, the Bureau of Labor Statistics announced the discontinuation of its statistical series on "real spendable weekly earnings of workers with three dependents," which had long been used as an indicator of trends in the purchasing power of U.S. workers. This monthly series covered all production and nonsupervisory workers in the private nonfarm economy, and was based on data from the Bureau's establishment survey and information on Federal income tax and social security contribution rates.

According to the series, workers' real spendable earnings grew rapidly from 1948 through the mid-1960's, oscillated around a very slightly increasing trend for the next decade, and finally dropped sharply in the late 1970's. By 1981, the last year for which data were published, average real spendable earnings had fallen to levels recorded during the late 1950's. The implication that the average worker was no better off in the early 1980's than in the late 1950's was profoundly troubling to many economists. Evidence based on other statistical indicators (such as real per capita disposable personal income, or the gross weekly earnings of male full-time workers age 25 and older) suggested no stagnation, let alone decline, in workers' purchasing power. Economic statisticians were moved to scrutinize more carefully the real spendable earnings series, which had already begun to meet criticism during the early 1970's, and they identified a number of apparently serious shortcomings.

Criticism of the old series

The chief concerns of the critics were summarized by BLS economist Paul Flaim in a January 1982 article in the *Monthly Labor Review*:[1]

- Since the mid-1960's, there has been a significant shift in the composition of the U.S. labor force, with both women and young workers accounting for an increasing share of the total. Both of these groups hold part-time

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jobs with much greater frequency than older male workers, and tend to have lower paying jobs as well. As a result, a series based on average weekly earnings for all workers understates the rate of growth of (a) average hourly earnings, because hours worked per week have tended to decline; and (b) earnings of any given subgroup of workers (in particular male family breadwinners), because these better paid workers constitute a declining fraction of the labor force.

- Many of the assumptions made by the BLS in calculating the Federal income taxes paid by the "typical" worker were no longer appropriate. Most importantly, the typical worker is no longer the head of a household with three nonearning dependents. Moreover, a sizable minority of workers itemize deductions on their tax returns, rather than taking the standard deduction as assumed in the calculation of the BLS spendable earnings series.

- The BLS did not make any allowance for State and local income taxes paid by workers, deducting from gross earnings only an estimate of Federal income taxes and social security contributions.

- The BLS Consumer Price Index for Urban Wage and Clerical Workers (CPI-W), used to deflate current-dollar earnings, was a misleading indicator of the impact of inflation on workers' purchasing power, especially (but not exclusively) because of its treatment of housing costs.

- The whole concept of "spendable" earnings was inadequate. In addition to take-home pay, one should include in a measure of a worker's economic well-being an estimate of the (not immediately spendable) benefits accruing from (a) employer-provided medical insurance coverage and private pension plans; (b) social security benefits; and even (c) public services provided by Federal, State, and local governments.

Some of the criticisms levied at the old spendable earnings series are no doubt justified. But others are far from compelling. Following a discussion of the possible relevance of each of the points noted above, this article presents a new spendable earnings series that avoids the genuine shortcomings of the discontinued BLS series.

It is an indisputable fact that adult male workers constitute a decreasing fraction of the U.S. labor force. But the implication that one should ignore declines in the average

worker's purchasing power that result from such a compositional shift (as opposed to declines in the average purchasing power of particular subgroups of workers) strikes me as mistaken. While for certain purposes one may wish to inquire into the changing economic status of particular subgroups of workers, it is certainly a matter of general interest to know what has been happening to the purchasing power of the average worker, however the characteristics of that worker may be changing in other respects.

Nevertheless, there has been a gradual decline in average weekly hours of work for production and nonsupervisory workers in the U.S. economy, in part because of the changing composition of the labor force, and trends in weekly earnings therefore do not accurately reflect trends in hourly earnings. Because workers presumably derive greater benefits from the same income if it is received for fewer hours of work, having thereby more time available for other pursuits, it would appear to make more sense to base a measure of workers' purchasing power on hourly rather than weekly earnings.

There are also problems in using tax formulas applicable to a household with one earner and three dependents, when the structure of the typical U.S. household has changed so much in recent decades. And it would be desirable to avoid the rather arbitrary assumptions about the Federal income tax return of the typical worker that BLS made in its calculations. Thus, there is a clear need for an alternative approach to measuring the fraction of workers' earnings that is paid in Federal income taxes. One would also want to take into account the State and local income taxes paid by workers, given the increasing importance of these taxes both in absolute terms and relative to Federal income taxes.

There is continuing debate about the relative merits of the CPI-W and alternative deflators, such as the Personal Consumption Expenditure (PCE) deflator from the U.S. National Income and Product Accounts, as a measure of trends in the purchasing power of a dollar of wages.[2] The CPI-W has been criticized for its treatment of housing costs; but it does have an advantage over the PCE series as a deflator for production and nonsupervisory workers' earnings in that its "market basket" of goods and services is designed to represent the purchases of the typical worker of this kind rather than the typical consumer. This issue might best be addressed by presenting and comparing estimates of workers' real purchasing power calculated with alternative deflators.

Finally, criticism of the whole concept of spendable earnings as an inadequate measure of a worker's economic well-being has undeniable merit. It should be noted, however, that once one opens up this welfare economist's Pandora's Box, there are a host of other considerations that begin to suggest themselves. Deferred income or benefits in kind do not exhaust the factors that contribute to the overall economic well-being of a worker; it would be impossible to enumerate all the relevant factors, let alone measure their significance with any accuracy. Under the circumstances,

it would appear most desirable to track certain measurable indicators—such as spendable earnings—while keeping quite clearly in mind their meaning and their limitations. This I propose to do here; estimating the average worker's nonspendable earnings or benefits of any kind is beyond the scope of this article.

A new spendable earnings series

To chart trends in the purchasing power of U.S. workers, I have developed a new annual time series measuring the average real spendable hourly earnings of production and nonsupervisory workers in the nonagricultural private business sector. The new series is not prone to the bias inherent in a weekly earnings series because it focuses on hourly earnings; it avoids the problems encountered by the BLS statisticians in working with Federal income tax formulas for typical families by making use of direct estimates of the actual effective rate of income taxation on earners of the relevant income size class; and it includes a (rough) allowance for State and local income taxes. The basic series is deflated using the CPI-W but, for purposes of comparison, an alternative series obtained using the fixed-weight PCE deflator also is presented.

The basic annual series is calculated by deflating the BLS series on average gross hourly earnings of production and nonsupervisory workers in all private nonagricultural establishments by the CPI-W to obtain the corresponding average gross real hourly earnings series.[3] The real earnings series is then multiplied by $(1 - TRSS - TRFI - TRSI)$, where $TRSS$ is the estimated effective social security tax rate on the average worker's annual earnings; $TRFI$ is the estimated effective Federal income tax rate on the average worker's annual earnings; and $TRSI$ is the estimated effective State and local income tax rate on the average worker's annual earnings.

The above tax rates are estimated as follows. First, the average worker's annual earnings are estimated by multiplying the BLS series on workers' average gross hourly earnings by 52 times the corresponding BLS series on average weekly hours. Then:

- $TRSS$ is first set equal to the social security personal contribution rate for each year (expressed as a fraction of unity). The average worker's annual earnings are then compared with the maximum taxable wage for social security contributions; in years for which the former exceeds the latter, $TRSS$ is set equal to the social security personal contribution rate multiplied by the ratio of the latter to the former.[4]

- $TRFI$ is set equal to the effective Federal income tax rate on a taxpayer with an adjusted gross income equal to the average worker's annual earnings. This tax rate is determined using published Internal Revenue Service (IRS) data on sources of income, deductions, and tax items by size of adjusted gross income (for taxable returns only). "Total income tax" (after credits) is expressed as a fraction of "adjusted gross income" (less deficit) for each income

size class, and the effective tax rate for the average worker's annual earnings level is determined by interpolation between the tax rates for each income size class (attributed to the midpoints of the respective classes).[5]

- *TRSI* is roughly approximated by multiplying *TRFI* by the ratio of total annual State and local government income tax receipts to total annual Federal government income tax receipts.[6]

The resulting annual real spendable hourly earnings series from 1948 to 1981 is presented alongside the original BLS annual real spendable weekly earnings series in table 1. To facilitate comparison, an index (1948 = 100) is also shown for each series, and the two indexes are plotted against time in chart 1. According to the chart, the two series are not all that dissimilar. In both cases, spendable earnings rise rapidly from 1948 to 1965, oscillate around a much more modestly rising trend until 1977 (peaking in 1972), and then drop sharply from 1977 to 1981. By 1981 (the last year for which data are available in both series), the new series has fallen lower than at any time since 1963, and the old series is at its lowest level since 1958. The main difference is that the new series rises slightly more rapidly over the postwar period as a whole. About half of this difference is attributable to the fact that workers' average weekly hours declined fairly

steadily from 40.0 in 1948 to 35.2 in 1981.[7]

The new spendable earnings series thus paints just as troubling a picture of recent trends in purchasing power as the discontinued BLS series. The fact that the average U.S. worker has suffered a significant decline in real spendable earnings cannot be dismissed as a statistical illusion attributable to deficiencies in the BLS methodology; rather, it reflects a genuine deterioration in an important element of the average worker's economic well-being.

Some additional data

Developments over time in the statistical series underlying the new spendable earnings series also are of interest. First, chart 2 plots real gross hourly earnings against real spendable hourly earnings (gross earnings less estimated taxes). Note that the gross earnings series displays a pattern similar to that of the spendable earnings series, except that the slowdown after the mid-1960's and the decline after 1973 are not as marked. This is clearly due to the fact that the ratio of spendable to gross earnings fell significantly from the mid-1960's on.

Chart 3 shows trends in the three effective tax rates *TRSS*, *TRFI*, and *TRSI*, as well as the total of the three, between 1948 and 1981. The steady rise of the effective social security contribution rate is clearly evident. The effective Federal income tax rate oscillates around a more-or-less constant rate after rising during the Korean War, but the corresponding State and local income tax rate shows a distinct long-run upward trend (especially from the mid-1960's on).[8]

Finally, chart 4 compares the time pattern of the basic new spendable earnings series with that of an alternative spendable earnings series deflated by the fixed-weight PCE deflator rather than the CPI-W.[9] The overall shape—and the turning points—of the two series plotted in the chart are very similar. However, the PCE-deflated series does not turn down quite as sharply after 1972 and after 1977. As a result, it peaks in 1977 rather than in 1972, and its 1981 value is the lowest since 1969, rather than since 1963. Because the fixed-weight PCE deflator did not rise nearly so rapidly over the past decade as the CPI-W, its use in calculating a real earnings series yields a smaller decline in purchasing power since 1972. But the alternative series still conveys a very discouraging impression of the trend in workers' purchasing power in recent years.

Conclusion

The new annual time series for the average real spendable hourly earnings of production and nonsupervisory workers in the nonagricultural private business sector of the U.S. economy avoids some of the shortcomings for which the discontinued BLS series has been criticized. And, over the postwar period, it displays a slightly more rapid rate of growth in workers' purchasing power. However, like the old BLS series, the new one indicates that purchasing power declined sharply through the late 1970's to reach a 1981

Table 1. BLS weekly spendable earnings series and new hourly spendable earnings series, 1948–81

Year	BLS weekly spendable earnings series		New hourly spendable earnings series	
	1977 dollars	Index (1948 = 100)	1977 dollars	Index (1948 = 100)
1948 . . .	$122.19	100.00	$2.83	100.00
1949 . . .	126.56	103.58	2.98	105.14
1950 . . .	131.08	107.28	3.07	108.28
1951 . . .	130.05	106.43	3.03	107.05
1952 . . .	132.12	108.13	3.07	108.54
1953 . . .	136.76	111.92	3.23	113.92
1954 . . .	137.05	112.16	3.30	116.45
1955 . . .	143.46	117.41	3.43	121.03
1956 . . .	146.92	120.24	3.55	125.22
1957 . . .	145.93	119.43	3.58	126.42
1958 . . .	144.88	118.57	3.60	127.13
1959 . . .	149.40	122.27	3.67	129.67
1960 . . .	149.20	122.10	3.72	131.34
1961 . . .	150.77	123.39	3.76	132.89
1962 . . .	154.29	126.27	3.85	135.90
1963 . . .	155.56	127.31	3.87	136.76
1964 . . .	161.27	131.98	4.01	141.46
1965 . . .	166.28	136.08	4.14	146.03
1966 . . .	165.41	135.37	4.13	145.90
1967 . . .	164.90	134.95	4.18	147.60
1968 . . .	165.99	135.85	4.22	149.00
1969 . . .	165.27	135.26	4.22	148.84
1970 . . .	163.65	133.93	4.25	149.97
1971 . . .	168.31	137.74	4.37	154.46
1972 . . .	176.35	144.32	4.54	160.23
1973 . . .	173.78	142.22	4.48	158.18
1974 . . .	165.37	135.34	4.31	152.19
1975 . . .	164.02	134.23	4.26	150.53
1976 . . .	166.00	135.85	4.34	153.38
1977 . . .	169.93	139.07	4.43	156.46
1978 . . .	167.95	137.45	4.40	155.48
1979 . . .	162.49	132.98	4.26	150.53
1980 . . .	151.65	124.11	4.03	142.39
1981 . . .	147.05	120.35	3.93	138.65

Chart 1. Indexes of real spendable earnings, BLS series and new series, 1948–81

(1948 = 100)
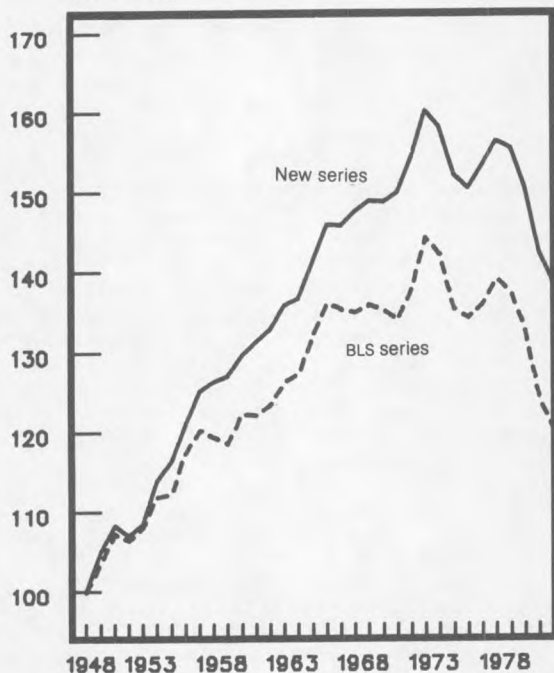
Chart 2. Gross and spendable real hourly earnings, 1948–81

1977 dollars
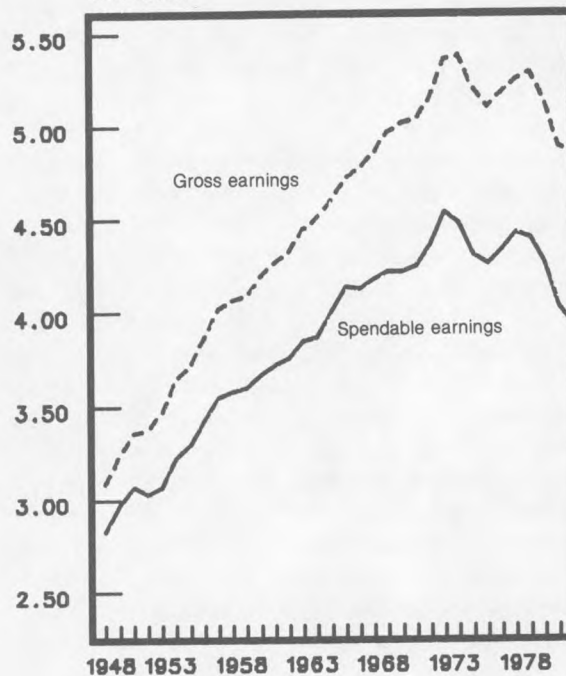
Chart 3. Trends in effective rates of taxation on gross earnings, 1948–81

Percent
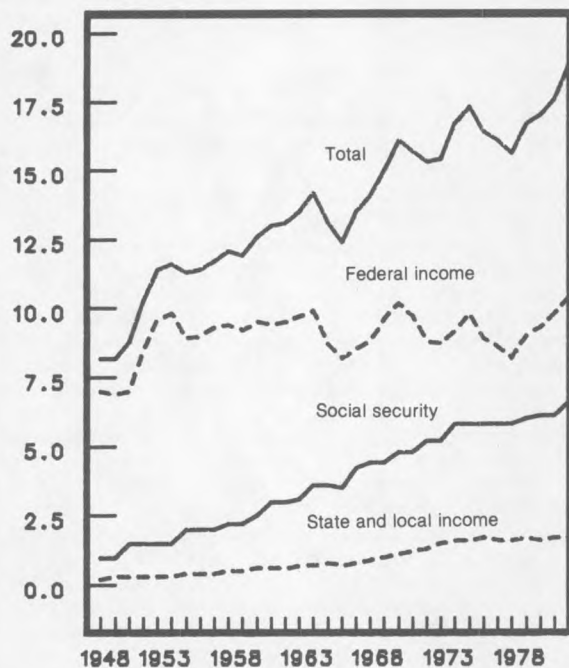
Chart 4. Trends in the new spendable earnings series using alternative deflators, 1948–81

(1948 = 100)
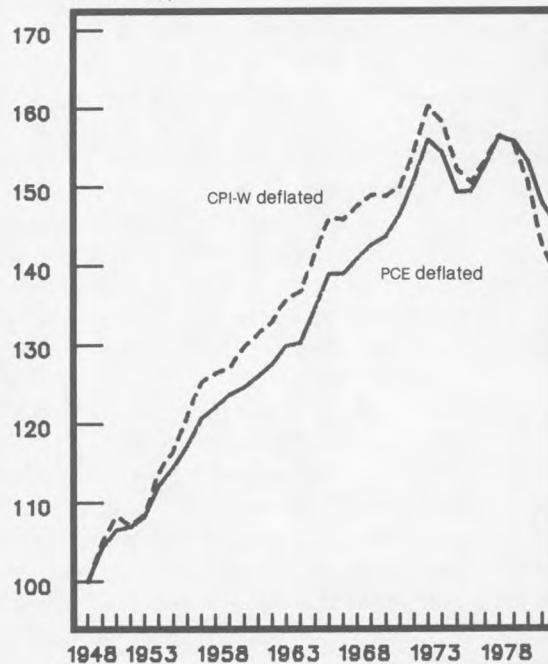
level roughly comparable with that recorded some two decades earlier.

There are a number of respects in which the new series could be improved. First, it would clearly be desirable to have the values available on a monthly as well as an annual basis, as in the case of the old BLS series. To calculate monthly values for the new series, one would only have to deflate BLS monthly estimates of workers' average gross hourly earnings by the CPI-W. The resulting monthly observations could then be multiplied by the ratio of spendable to gross earnings $(1 - TRSS - TRFI - TRSI)$ applicable to the year in question.[10]

Second, the new procedure suffers from its dependence on published IRS Federal income tax data for the estimation of $TRFI$ and $TRSI$. Because these data, even in preliminary form,[11] are usually available only after a lag of 1 to 2 years, it is not possible to provide monthly observations on the same current basis as the old BLS series. To minimize this problem, it would be necessary to develop a more approximative procedure for estimating the current effective Federal income tax rate on the average worker's annual earnings. This could be done by extrapolating from the most recently available annual observation using data on legislated rates of Federal income taxation, thus borrowing from the old BLS methodology for the purpose of providing timely preliminary figures.

Third, there are some problems in using the effective Federal income tax rate on the average worker's annual earnings to calculate $TRFI$. For example, if the typical worker has some nonwage income in addition to his or her wages, the effective tax rate on that worker's total income will be understated because of the progressivity of the tax structure. Also, if there are among the tax returns in the relevant income size bracket some that have been filed jointly by two-earner couples, the effective tax rate on that income class will understate the tax rate that would be applicable to workers who are sole wage-earners in their taxpaying unit. (The latter rate is the relevant one for the purpose at hand.[12]) Thus, the procedure I have used to estimate $TRFI$ is subject to a slight downward bias, and spendable earnings are correspondingly overestimated. However, given the very modest progressivity of the Federal income tax structure and the relatively small fraction of workers for whom the above considerations are likely to apply, the bias is surely very minor.

Fourth, the method I have used to estimate the impact of State and local income taxation is very rough. A detailed examination of State income tax data might yield improvement upon my simplifying assumption of proportionality between Federal and State and local income taxation across all income classes. However, the evidence in chart 3 indicates that $TRSI$ is substantially less significant than either $TRSS$ or $TRFI$; thus, any bias due to the rough methodology is unlikely to have much of an impact on the spendable earnings series.

Finally, as one can tell by comparing the two series shown in chart 4, the choice of an appropriate earnings deflator is an important one for a real purchasing power series—especially for assessing trends during periods of rapid inflation such as the 1970's. Because both the CPI-W and the PCE deflator have their weaknesses, further efforts to develop a better deflator for evaluating workers' real spendable earnings are clearly warranted.[13] □

---FOOTNOTES---

[1] Paul O. Flaim, "The spendable earnings series: has it outlived its usefulness?" *Monthly Labor Review*, January 1982, pp. 3–9.

[2] For recent contributions to this debate, see Daniel J.B. Mitchell, "Does the CPI exaggerate or understate inflation?" *Monthly Labor Review*, May 1980, pp. 31–33; Jack E. Triplett, "Does the CPI exaggerate or understate inflation? Some observations," *Monthly Labor Review*, May 1980, pp. 33–35; and Janet L. Norwood, "Two Consumer Price Index issues: weighting and homeownership," *Monthly Labor Review*, March 1981, pp. 58–59.

[3] Unless otherwise indicated, all subsequent references to "workers" will be understood to apply to production and nonsupervisory workers in private nonagricultural establishments.

The BLS series on workers' average gross hourly earnings is published on a monthly basis in the *Monthly Labor Review* and in *Employment and Earnings*; an annual series starting in 1947 is reported in the 1983 *Economic Report of the President* (Washington, U.S. Government Printing Office), table B–38. The CPI-W is published in both its monthly and annual forms in the *Monthly Labor Review* and in the annual supplement to *Employment and Earnings*.

[4] Both the social security contribution rate and the maximum taxable wage are available on an annual basis from the U.S. Bureau of the Census, *Statistical Abstract of the United States* (Washington, U.S. Government Printing Office), and other sources.

[5] The required data are published annually in Internal Revenue Service, *Statistics of Income: Individual Tax Returns* (Washington, U.S. Government Printing Office). In the 1980 volume, sources of income are given in table 1.3, tax payments in table 3.6, and the effective tax rate in table 1.1.

[6] The required tax receipt data are reported in U.S. Office of Business Economics, *U.S. National Income and Product Accounts* (Washington, U.S. Government Printing Office), tables 3.2 and 3.3.

[7] These data are from the 1983 *Economic Report of the President*, table B–38. The 12-percent drop in average weekly hours compares with a 1948-based index number in 1981 that is 25 percent higher for the new series than for the BLS series.

[8] It is interesting to note that, although production and nonsupervisory workers in the private nonagricultural sector are taxed at a lower average rate than taxpayers as a whole, the rate differential has not been very great. Data from the NIPA on personal income taxes paid to the Federal Government (*U.S. National Income and Product Accounts*, table 3.2) and on total personal income (table 2.1) show that the average overall Federal income tax rate was generally from 1.1 to 1.15 times the estimated effective rate for the relevant workers. The existence of the differential is of course due to the progressivity of the Federal income tax system; its small size is an indicator of the modest nature of this progressivity, for the workers' average annual earnings have remained well below the average per capita personal income of all U.S. taxpayers.

[9] Because NIPA fixed-weight deflators are available only from 1959 on, I spliced the fixed-weight deflator (from *U.S. National Income and Product Accounts*, table 7.2) onto the implicit deflator (from table 7.1) at 1972 to obtain a complete series from 1948 to 1981. This seemed a reasonable choice, because 1972 is the base year for all the NIPA price indexes and there was relatively little inflation prior to 1972.

[10] If and when the social security contribution rate changes during the

course of a year rather than at the end, it would be easy to make the corresponding changes for the relevant months according to the procedure outlined above for estimating TRSS.

[11] Roughly a year before publishing the final annual volume, *Statistics of Income: Individual Tax Returns*, the Internal Revenue Service issues preliminary estimates of adjusted gross income, income tax paid, and so forth, in its quarterly publication, the *SOI Bulletin*. But these preliminary estimates are for all returns, not taxable returns only. The latter are clearly preferable for the purpose at hand; if tax rates are to be estimated from the former, they must therefore be adjusted to control for the slight differential that is observable between estimates based on all returns and on taxable returns only. On the basis of such preliminary tax rate estimates, the 1982 figure for the basic new hourly spendable earnings series is approximately $3.96 (in 1977 dollars).

[12] Workers receiving the average wage who are in two-earner households filing jointly will have returns appearing in a higher income class bracket, but they will pay taxes at roughly the same rate as workers who are sole wage-earners in the lower income size class.

[13] The recent change of the homeownership component of the BLS index to a rental-equivalence measure surely represents a step in the right direction.

Proposed spendable earnings series retains basic faults of earlier one

PAUL O. FLAIM

On the surface, the new spendable earnings series proposed by Professor Weisskopf appears to be a considerable improvement over the series published by the Bureau of Labor Statistics until 1981. Upon close scrutiny, however, the proposed series is found to share some of the basic deficiencies that led to the discontinuation of the old one.

Because the proposed series uses gross *hourly earnings* as its principal ingredient, it is certainly free of much of the downward pressure on earnings levels that the secular decline in the length of the workweek had applied to gross *weekly earnings* averages, the backbone of the old spendable earnings series. The fact that Professor Weisskopf attempts to account for average deductions for State and local income taxes—in addition to those for Federal income taxes and social security contributions—marks another departure from the old series.

Because of these changes—and, I suspect, primarily because of the first one—Professor Weisskopf's series does show a somewhat steeper upward trend in spendable earnings over the 1950's and 1960's than did the discontinued BLS series. To this extent, the new series would appear to yield a more accurate picture of the actual trend in earnings for the average full-time worker than was given by the old series, which was being held down by the expansion of the part-time work force.

Of more interest, however, is what the two series tell us about the changes in spendable earnings after both turned downward from their 1972 peaks. Specifically, while the

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old BLS series showed a decline of 16.6 percent in real spendable earnings during the 1972–81 period, Professor Weisskopf's new series shows a somewhat comparable decline of 13.5 percent over the same period. (See chart 1, p. 41.)The fairly parallel movement of the two series over this period can lead to only one conclusion. If the old series was biased downward in portraying the trend in spendable earnings for the average worker during the 1970's—and there was ample evidence indicating a large bias—then the new one, although constructed differently, must also be seriously biased downward for the period in question.

It must be remembered that the 1970's were a period during which the age-sex composition of the work force was changing significantly, with the proportions accounted for by women and youth growing very rapidly. The fact that many of these newcomers to the job market took only part-time jobs had an obvious dampening effect on the weekly earnings average for all workers. But the hourly earnings average was also affected—in similar direction, if not in similar magnitude—by the changing mix of workers and by the growing proportion receiving lower, entry-level wages.

The extent to which the changing mix of workers affected the overall earnings average is difficult to quantify. However, some notion of its impact can be obtained merely by comparing the earnings trends for all workers with the separate trends for men and women. The tabulation below shows the percent changes—in constant dollar terms—over the 1972–81 period both for the payroll-derived series on gross weekly and hourly earnings[1] (which do not provide any information by sex) and for the household survey-derived series on weekly earnings,[2] which are available with some age-sex detail:

	Percent change, 1972–81
Payroll series:	
Mean gross weekly earnings	−14.3
Mean gross hourly earnings	−9.9
Household series:	
Median usual weekly earnings of full-time workers:	
Total	−8.6
Men, age 25 and over	−2.8
Women, age 25 and over	−1.4
Men, age 16 to 24	−11.6
Women, age 16 to 24	−12.6

While all of these earnings trends point downward for the period in question, the gross weekly earnings series, which was the cornerstone of the BLS spendable earnings series, shows a drop that far exceeded the decline in weekly earnings among most full-time workers as measured in the household survey. And the decline in gross hourly earnings, although somewhat smaller, also appears to overestimate by a considerable amount the true decrease in real earnings among most workers.

While the household series on median weekly earnings for *all full-time workers* did show a decline almost as large

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as that found in the payroll series on gross hourly earnings, such was not the case for the medians for *workers age 25 and over*. For these workers—who still make up the bulk of the U.S. work force, and who are still visualized as the "typical" or "average" workers—real median weekly earnings showed only minimal declines over the 1972–81 period. Only for persons 16 to 24 years of age, who are but a small portion of the full-time work force, was the drop in weekly earnings of the same magnitude as the changes shown by the two payroll series.

The above comparisons raise serious questions as to whether an earnings average for all worker groups combined is a good indicator of the long-term trend in the earnings of most workers, particularly over periods when the composition of the labor force is changing rapidly. The problem is that *the changes in the earnings averages for a given group of workers* are not always representative of *the changes in the earnings of the "average worker" in the group*.

To illustrate, take the following example of a group of workers, consisting initially of five persons and expanding subsequently to six, with their individual earnings behaving as follows:

Individual workers	Earnings in—		Percent change
	Initial period	Subsequent period	
No. 1	$5.00	$5.50	10.0
No. 2	4.00	4.40	10.0
No. 3	4.00	4.40	10.0
No. 4	4.00	4.40	10.0
No. 5	3.00	3.30	10.0
No. 6	—	2.00	—
Average	$4.00	$4.00	—

In this case, the earnings average for this group of workers has not changed at all between the two periods. But could we say the same with regard to the earnings of the average worker in this group? Would we not have to conclude that the average worker enjoyed a 10-percent increase in earnings regardless of what is shown by the average for the group?[3] (Incidentally, an analogous situation could well develop in those industries where, on the basis of recently concluded contracts, newly hired workers are brought on at wages much lower than those received by workers already on board. In other words, the institution of a two-tier wage system may bring down the earnings average for the industry without a decline in the earnings of any of the individual workers.)

SUMMING UP, in examining earnings trends it is important to go beyond the overall averages and to disaggregate the data as far as possible. While we cannot actually track the earnings of individual workers (except in isolated experiments), disaggregation of the data by sex, age, or other characteristics becomes vital when we are dealing with long-term trends spanning decades. (Where such disaggregations are not possible, we should be careful not to automatically equate the changes in earnings averages with the changes

in the earnings of the average worker.)

The use of aggregate numbers is the basic problem with Professor Weisskopf's analysis, but it is not the only issue complicating the analysis of earnings trends and the computation of a "spendable earnings" series. The fact that more and more of a worker's remuneration—or an employer's labor cost[4]—is in the form of fringe benefits which are not captured in most earnings data renders the meaning of any "spendable earnings" series ever more difficult to conceptualize and explain. And the anchoring of such series to the earnings information from the establishment survey—which is the case for the proposed series as it was for the old one—handicaps them with yet other limitations. For example, the computation of the tax burden is seriously hindered by the lack of any information on family composition and total family income. And coverage would be limited to production and nonsupervisory workers in the private sector—a still large but gradually declining proportion of the work force.

A better alternative to such series is now available in the form of the studies of "after-tax money income" initiated recently by the Bureau of the Census. These studies, based on microdata from the Current Population Survey, provide very detailed estimates of the year-to-year changes in the purchasing power of U.S. workers and of the differences in purchasing power among the principal population groups.[5] While these studies do not yet provide us the historical perspective on spendable earnings that Professor Weisskopf's series attempts to give us, they are built on much more solid foundations. □

———FOOTNOTES———

[1] The "payroll" data on earnings are derived from a monthly BLS survey of about 200,000 establishments. They relate to earnings on jobs held by "production and nonsupervisory workers in the private nonfarm sector." These jobs make up about two-thirds of all nonfarm payroll jobs in the United States.

[2] The "household" data on weekly earnings are obtained through questions currently asked monthly in one-fourth of the 60,000 households which make up the sample for the Current Population Survey (CPS). These data—which relate to wage and salary workers in all sectors of the economy—are then accumulated into quarterly averages for publication and analysis. Prior to 1979, these data were obtained only once a year, each May, but from the entire CPS sample. With regard to this series, the numbers in the text tabulation relate to the changes between the medians for May 1972 and those for the second quarter of 1981.

[3] This illustration could be made even more dramatic by assuming, in addition, that one of the original workers—say, number 4—was replaced through normal attrition by a new worker who was also brought on board at $2 an hour. In this case, the group's average hourly earnings would actually decline by 10 percent, to $3.60, although all the survivors of the original group of five would have obtained a 10-percent increase.

[4] The Bureau of Labor Statistics is now publishing a quarterly report on the trends in the total costs per hour worked for employing labor. This report on the "Employment Cost Index" (ECI) traces percent changes not only in wages and salaries but also in total compensation, which includes the employer costs for employee benefits in addition to the wage and salary expenses. And, to the extent that the ECI is a fixed-weight index, it is not affected as much as other earnings series by changes in the industrial or occupational mix of the work force.

[5] See, for example, *After-Tax Money Income Estimates of Households: 1981*, Series P–23, No. 132 (Bureau of the Census, February 1984).

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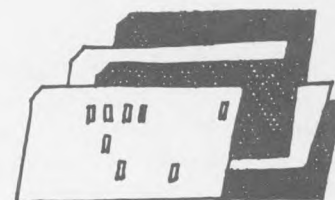
Incomplete experience rating in State unemployment insurance

DENTON MARKS

By now it is well established that the existence of unemployment insurance (UI) affects decisions on both the supply and demand sides of the labor market. Theoretical work on such effects has appeared within the past decade, and empirical tests of the basic theoretical propositions have appeared more recently.[1] On the supply side, the tendency of the availability of UI benefits to extend the duration of nominally involuntary unemployment and perhaps to increase labor force participation and improve the success of job search as evidenced by wage gains of job changers has been examined and supported by recent research.[2]

A link between the existence of UI and labor demand has been demonstrated by examination of the system of experience rating—or incomplete experience rating—used to finance benefits in most States. In the United States, States finance UI benefits through a payroll tax on covered employers. In the context of such a financing system, experience rating is the use of payroll tax rates that change inversely with the stability of an employer's labor demand, where that stability is indicated by a measure such as a "reserve ratio"—the employer's accumulated contributions to the system less his accumulated liability in the form of paid-out benefits, with the difference expressed as percentage of his average taxable payroll over some period. Incomplete experience rating limits the allowable tax rates to a relatively narrow range; for example, no State tax rate currently exceeds 10 percent of taxable payroll, and most States have a nonzero minimum rate.

The intuitive argument about the effect of incomplete experience rating on labor demand, or more particularly layoff rates, begins with the realization that many employers assigned either the minimum or the maximum UI payroll tax rate have a zero marginal tax cost of an extra layoff. Those assigned the minimum rate will be contributing to the system regardless of their benefit liability. To the extent that they accumulate reserves beyond those required to maintain their minimum rate assignment, they may have an incentive to draw down the excess through extra layoffs, or "UI holidays." Employers already at the maximum rate cannot be further penalized for additional layoffs; thus, they may also have an incentive to provide UI holidays as part of their contract (implicit or explicit) with their workers. Any resulting benefit liability that exceeds their own contributions is paid from the net contributions of other employers (cross-subsidization).

While this connection has been well established theoretically, empirical support has been scarce because of a lack of data. However, the three studies that have been published support the existence of such a relationship.[3] Indeed, the most recent of these finds that the increase in temporary layoff unemployment resulting from the implicit cross-subsidization that incomplete experience rating allows is not only larger but also statistically more significant than the "supply side" unemployment effect of the level of the benefits. The author of that study concludes that, "without changing benefit levels available to unemployed workers, a significant reduction in layoff unemployment could be achieved by changing the incentives offered by current UI [financing] laws."[4] Moreover, he finds that "the impact of the unemployment insurance subsidy on layoff unemployment is powerful—the imputed subsidy accounts for more than a quarter of all layoffs in the data. . . ." Unfortunately, none of the recent studies considers the incentive that employers assigned the minimum rate have to increase their layoffs, although there is some unpublished evidence suggesting that this effect is small or nonexistent.[5]

The growing body of evidence that incomplete experience rating does increase the amount of layoff unemployment leads one to ask what proportion of employers are subject to the layoff incentives of such cross-subsidization, and, perhaps more importantly, how long particular employers remain at tax rates that allow them to be implicitly subsidized? These issues are important, for persistent subsidization of some employers indicates that the employment stabilization incentives built into the UI system are not working, and it may lead to distortions in the industrial and occupational structure of a State's economy.

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To address these questions, I analyzed fiscal 1975–78 UI data for a random sample of more than 17,000 New Jersey employers.[6] The results, presented below, show that, at any time, large proportions of employers are assigned the minimum and maximum tax rates. More importantly, most of these employers have a low probability of moving to any other rate category over time. Indeed, most of them can be assumed to be assigned a limiting rate permanently, thus precluding their effective experience rating.[7]

Distribution of employers by rates

Table 1 shows the distribution of employers in the sample by tax rate category for each of the study years. "Graded" employers are firms for which the State had sufficient payroll and turnover information to assign a UI tax rate. The group consists of employers at the minimum rate (1.2 percent of taxable payroll); those at the maximum rate (6.2 percent); and those taxed at one of a range of rates in between the two limits. "Other" employers are those to which a rate could not be assigned in the usual manner, either because of inadequate data or their lack of experience in the system. "Inactive accounts" are employers that were not in business during a given year.

Mid-rate employers, the third category of graded units, are the only ones that might be considered truly experience rated, in that their tax rate assignments can respond in either direction to changes in their turnover behavior; all other employers are at least temporarily immune to changes in their payroll tax rate.[8] Given this characterization of the system, the imposition of employment stabilization incentives through experience rating is remarkably incomplete.

Table 1. Distribution of employees by tax rate category, fiscal 1975–78

Tax rate category	Fiscal 1975	Fiscal 1976	Fiscal 1977	Fiscal 1978
Total employers	17,252	17,252	17,252	17,252
Percent	100.0	100.0	100.0	100.0
Graded employers	10,163	11,317	12,483	12,858
Minimum-rate employers ..	3,863	4,212	4,284	4,168
Percent of total	22.4	24.4	24.8	24.2
Percent of graded employers	38.0	37.2	34.3	32.4
Mid-rate employers[1]	5,432	5,838	6,336	6,564
Percent of total	31.5	33.8	36.7	38.0
Percent of graded employers	53.4	51.6	50.8	51.0
Maximum-rate employers..	868	1,267	1,863	2,126
Percent of total	5.0	7.3	10.8	12.3
Percent of graded employers	8.5	11.2	14.9	16.5
"Other" employers	5,057	5,935	4,490	3,159
Percent of total	29.3	34.4	26.0	18.3
"Inactive accounts"	2,032	[2]0	279	1,235
Percent of total	11.8	0.0	1.6	7.2

[1]These employers were assigned one of the following rates between the maximum (6.2 percent) and the minimum (1.2 percent): 1.6, 1.9, 2.3, 2.7, 3.0, 3.4, 3.7, 4.1, 5.5, and 5.9 percent.

[2]Value is zero because the random sample of employers was drawn from the fiscal 1976 universe of active accounts.

In each study year, fewer than 41 percent of the active accounts fell into the mid-rate category; moreover, table 1 indicates that only about half of the graded employers could be considered effectively experience-rated.

Because the tax rate reflects an employer's recent history of labor turnover, patterns of experience ratings should lag the business cycle by 1 to 2 years. Between 1973 and 1976, business conditions were increasingly recessionary, and thus experience ratings should be rising over the years covered in this study. This is, in fact, the story told by table 1. The proportion of graded employers at the maximum tax rate increased steadily from 8.5 percent in fiscal 1975 to 16.5 percent in fiscal 1978, while the proportion at the minimum rate decreased steadily from 38.0 percent to 32.4 percent. However, there is a surprising regularity in these data for consecutive years, for, while there was a clear shift of proportions from the minimum to the maximum rate as the unemployment rate rose, the proportion of graded employers assigned the middle rates remained at about half throughout the period, regardless of business conditions.

In addition to this consideration of the likelihood of finding an employer on the responsive portion of the tax schedule at a point in time, it is necessary to examine the amount of time employers *remain* in experience rating categories. An effective experience rating system should induce employers to minimize their labor turnover, and employers paying the maximum tax rate should have a special incentive to avoid such a tax. However, the recent theoretical work on the effects of incomplete experience rating suggests that this is a naive prediction. In particular, theory suggests that employers have very little incentive to avoid the maximum tax rate.

An approach to determining the effectiveness of an experience rating system is to observe the movement of employers among the assignable tax rates. One method of determining this involves the use of Markov analysis.

We know that the movements of employers among tax rates can be described by a transition matrix—in the current context, a 5-by-5 matrix composed of the three graded categories plus "other" and "inactive accounts." Any cell of the matrix indicates the proportion of employers assigned the particular tax category given along the vertical axis who move into a tax category given along the horizontal axis in a particular year. The proportion in each cell is thus a transition probability. Moreover, the transition probabilities found along the diagonal of the matrix represent the proportion of employers who remain in a particular category from one year to the next.

A "simple" Markov model would assume that the movement of employers among the tax rates can be fully described by a single matrix of transition probabilities which applies to all employers—in this case, that all employers in a rate assignment category have the same probability of making a given transition to another category between periods. A mover-stayer model, on the other hand, is appropriate when

employers in a given category can be either movers, whose rate assignments follow a regular transition matrix, or stayers, who remain in their category permanently, that is, with a probability of 1.[9] In that case, there are two applicable transition matrixes: a conventional one for movers; and another for stayers, having 1 in the cells along its diagonal and zeros elsewhere.

The importance of determining which of these two processes better describes the movement of employers should be clear. That is, is it reasonable to assume that some employers are permanently either immune to or subject to the employment stabilization incentives of the experience rating system by staying in particular categories of ratings, or is it more accurate to assume that all employers are movers? Evidence that there are stayers in the nonresponsive minimum- and maximum-rate categories and that they represent a large proportion of employers would affect an assessment of the system's degree of experience rating: larger proportions of stayers in nonresponsive categories are evidence of less effective experience rating.

To decide which of the two models is more appropriate for the New Jersey data, I tested the statistical significance of the difference between the proportion of employers who actually remained in a category for the 4-year period and the proportion who would remain in that category if only a simple Markov process of average transition probabilities were operating.

Let d_i represent the difference between the fraction of employers in category i in the initial period who remain in that category through the terminal year of the data (f_i) and the expected value of the fraction under the null hypothesis.[10] Thus,

$$d_i = f_i - \overline{p}_{ii}^n$$

where

n = the number of transitions in the data (in this case, $n = 3$); and

$$\overline{p}_{ii} \equiv \frac{\sum_{t=1}^{3} w_{ii}(t)}{\sum_{t=1}^{3} w_i(t)}$$ = the average probability of staying in a category for one period under the assumption of a Markov process; with

$w_{ii}(t)$ = the number of employers in category i in period t who are also in category i in period $t + 1$; and

$w_i(t)$ = the number of employers in category i in period t.

The square of d_i divided by its variance ($s_{d_i}^2$)[11] is distributed χ^2 with one degree of freedom. The sum of the ratios for the five categories is distributed χ^2 with five degrees of freedom. It is used to test the null hypothesis that there is no significant difference between the number of employers remaining in a category over the 4 years and the number that would remain according to the simple Markov process.

If the null hypothesis is rejected, the mover-stayer model is more appropriate.

Following are the ratios of d_i^2 to its variance for each assignment category, as well as the summary test statistic for the null hypothesis:

Category	Ratio value
Minimum-rate	100.478
Mid-rate	40.968
Maximum-rate	75.524
"Other"	613.389
"Inactive accounts"	3.824
Total	834.183

The value for "total" leads one to reject the null hypothesis of a simple Markov process at the .005 level of significance. Moreover, the relative values of the category ratios are interesting. Given that a higher ratio implies a more significant deviation of a category's actual stayers from the expected proportion, one should note that the ratios for minimum- and maximum-rated units are much higher than that for mid-rated employers. This suggests that there is a much stronger tendency for the former employers to stay in their categories relative to the Markov process than is found among mid-rated employers. This tendency in these categories which do not impose employment stabilization incentives on employers weakens the effects of experience rating, as does the stronger tendency for mid-rated employers to move out of the responsive part of the tax schedule, as evidenced by their relatively low ratio.[12]

Because the mover-stayer model is more appropriate, I estimated (1) the proportions of stayers (s_i) in each category and (2) the transition probabilities (m_{ij}) of a Markov matrix for movers only. Leo Goodman suggests using the following approximations to maximum likelihood estimators of these parameters when the sample size is large and there are a number of periods of data:[13]

s_i = the proportion of employers in experience rating class i in the initial period who remain in that class for the next n periods ($n = 3$ here); and

$\overline{m}_{ij}$ = the average number of employers in experience rating category i in one period who are in category j in the following period divided by the average number of employers in category i over all periods but the last, for all i and j (both averages calculated after deleting the estimated number of stayer employers from category i).

Estimates of s_i shown below indicate that large proportions of employers stay in their category over time:

Assignment category	Percent stayers
Graded employers at:	
Minimum rate	55.9
Mid rates	57.1
Maximum rate	66.1
"Other" employers	30.0
"Inactive accounts"	0.0

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Among the graded employers, the proportion of stayers is always more than one-half. The important result here is that the proportions of stayers in the minimum- and maximum-rate categories are so high: in particular, almost two-thirds of the maximum-rated employers remain in their category throughout the period. While the virtually permanent assignment of the maximum rate to such a large proportion of employers could be at least partly attributable to factors such as the naturally higher turnover rates of some industries (for example, construction) relative to others (such as banking), it is also consistent with the conclusion that incomplete experience rating actually induces higher layoff rates.[14]

Estimation of the transition matrix for movers ($\bar{m}_{ij}$) indicates that, with the exception of the "inactive accounts" category, movers are more likely to stay in their current category than to move between periods. (See table 2.) Moreover, among the graded employers, the highest such "retention" rate is for the maximum-rate category, where almost two-thirds of the movers remained in the category from period to period. Thus, even for employers designated as movers, transition between categories seems slow, especially among the nonresponsive maximum-rate group.

Interpreting the results

The significance of these results is probably best understood in light of some related findings regarding the extent of cross-subsidization in the New Jersey UI system. Available data allow one to estimate the average surplus or deficit per employee-year experienced by each covered employer since its UI account was opened.[15] A surplus position indicates that, on average over the life of the business, an employer has contributed more to the system than his laid-off employees have drawn in benefits; a deficit position indicates that the employer, through laid-off employees, has been receiving a net subsidy from the system. The calculations for the sample of employers studied here show that, as of the end of 1975 and 1976, those assigned the maximum tax rate had net deficit positions per employee-year of $844 and $728, respectively, or about 9 percent of the State's 1975 annual gross wage for a production worker in manufacturing.[16] Taken with the finding that about two-thirds of the employers at this tax rate can be assumed to be "stayers," this suggests that the majority of employers at the maximum rate have been receiving an annual payroll

subsidy of about 9 percent of their gross wages. While these calculations are admittedly crude, they do hint at the magnitude of the cross-subsidization that incomplete experience rating can allow.

These results also help one understand the explanatory power of the minimum and maximum tax rates in layoff equations. Studies by Joseph Becker and Frank Brechling indicate that narrower bounds on assignable tax rates result in a larger proportion of employers being assigned the limiting tax rates.[17] The preceding discussion indicates that, for a given rate schedule, most employers assigned to a limiting tax rate tend to stay there even as business conditions change, and those that move away from such categories do so only very slowly. Thus, a State's maximum and minimum rates represent not only the potential range of responsiveness of its experience rating system but also the potential for actual avoidance of the employment stabilization incentives by a large proportion of employers. Evidence such as Robert Topel's suggests that employers at these limiting rates—especially at the maximum rate—do indeed generate extraordinary turnover rates through their layoffs.[18]

However, the New Jersey results must also be considered in light of the number of employees affected. Because employers at the maximum or minimum rates account for about 20 percent of employment in the sample, the proportion of workers affected by incomplete experience rating is smaller than the proportion of employers—a situation that somewhat mitigates the unemployment effects of the lack of experience rating at the limiting rates.[19] Also, one must keep in mind that different macroeconomic conditions (such as falling unemployment rates) could yield different parameter estimates. For example, conditions of full employment could result in a smaller estimate of the proportion of stayers in the maximum-rate category, although the number of minimum-rate stayers would probably rise.

EVEN SO, THE IMPRESSION left by this discussion of tax rate assignments is that the system analyzed here, which is not atypical, seems to lack strong incentives for employment stabilization, particularly for employers at the maximum rate. Employers tend to sort themselves into tax categories and stay there or to move among categories very slowly. Thus, most employers are either always or never facing the employment stabilization incentives of the UI experience rating system. For employers at the maximum rate, this results in large negative reserves that require subsidization by other employers in the given State's system. □

Table 2. Period-to-period transition probabilities among rate assignment categories for "movers"

Initial status	Status next period				
	Minimum-rate	Mid-rate	Maximum-rate	"Other"	"Inactive accounts"
Minimum-rate	.586	.336	.016	.019	.042
Mid-rate	.192	.606	.120	.049	.032
Maximum-rate	.001	.141	.664	.136	.059
"Other"	.098	.154	.048	.642	.058
"Inactive accounts"	.058	.090	.026	.708	.119

————*FOOTNOTES*————

[1] Two sources that together give an adequate introduction to and survey of current research on the effects of UI on labor market decisions are Daniel Hamermesh, *Jobless Pay and the Economy* (Baltimore, MD., The Johns Hopkins University Press, 1977); and Robert Topel and Finis Welch,

"Unemployment Insurance: Survey and Extensions," *Economica*, August 1980, pp. 351–79.

[2] See, for example, Ronald G. Ehrenberg and Ronald Oaxaca, "Unemployment Insurance, the Duration of Unemployment, and Subsequent Wage Gain," *American Economic Review*, December 1976, pp. 754–66.

[3] Frank Brechling, "Layoffs and Unemployment Insurance," in *Low-Income Labor Markets* (New York, National Bureau of Economic Research, 1979); Terrence C. Halpin, "The Effect of Unemployment Insurance on Seasonal Fluctuations in Employment," *Industrial and Labor Relations Review*, April 1979, pp. 353–62; and Robert H. Topel, "On Layoffs and Unemployment Insurance," *American Economic Review*, September 1983, pp. 541–59.

[4] Topel, "On Layoffs," p. 555 (his emphasis).

[5] See Denton Marks, "Evidence on the Effect of Incomplete Experience Rating in Unemployment Insurance on Layoff Rates in the Manufacturing Sector," Working Paper 732 (Vancouver, University of British Columbia, 1981).

[6] While one might question the broad applicability of research based on data from one State, New Jersey is a particularly good State to study for this type of project because: (1) it uses the reserve ratio system of experience rating, which is used by more States (32) than any other system; (2) it is among the top 10 States in number of workers covered and has a large representation of all industries; and (3) it has one of the lowest levels of "no-fault" benefits in the country—a feature which allows a clearer analysis of the degree of completeness of the experience rating tax schedule itself. Also it forgives very few negative balance accounts. Overall, the New Jersey UI financing system has little leakage.

Finally, microdata required for these calculations are sufficiently scarce that it would be virtually impossible to perform any sort of national analysis.

[7] Joseph Becker has provided information on this question for the State of Massachusetts for the period 1960–68. He shows the number and proportion of employers who were assigned the maximum or minimum tax rate for anywhere from 5 to 9 years during this period. While his findings suggest that a large number of employers do spend large proportions of time at a limiting tax rate, his evidence is considerably less complete than that presented in this research. First, Becker does not test the statistical significance of his results. There is no hypothesis formulation or testing. Moreover, his data are from Massachusetts, where maximum and minimum rates span a short range relative to other States. This fact alone increases the likelihood of employers being assigned limiting rates in the particular State. (See footnote 17 and related text.) Finally, Becker does not consider the movement of employers among tax rates or the probabilities of various tax rate assignments. See Joseph M. Becker, *Experience Rating in Unemployment Insurance* (Baltimore, MD., The Johns Hopkins University Press, 1972).

[8] Minimum- and maximum-rated employers can be considered not experience rated because their marginal UI tax cost of a layoff is negligible. Similarly, "inactive accounts" employers are not experience rated. "Other" accounts are (1) those too new to be eligible for a reserve ratio (less than 3 years' experience), which are assigned a flat rate of 3.4 percent; and (2) those for which a reserve ratio cannot be calculated—accounts in "formula breakdown" status—which could receive only one of two possible tax rates (4.1 or 6.2 percent).

[9] For discussions of the Markov model, see T.W. Anderson and Leo A. Goodman, "Statistical Inferences About Markov Chains," *Annals of Mathematical Statistics*, March 1957, pp. 89–110; and Leo A. Goodman, "Statistical Methods for the Mover-Stayer Model," *Journal of the American Statistical Association*, December 1961, pp. 841–68. For an application of this method in a policy context (specifically probabilities of movement into and out of poverty), see John J. McCall, *Income Mobility, Racial Discrimination and Economic Growth* (Lexington, MA, D.C. Heath and Co., 1973).

[10] The discussion follows Goodman, "Statistical Methods," and McCall, *Income Mobility*.

[11] Goodman shows that the variance of d_i can be estimated by:

$$s_{d_i}^2 = \frac{\bar{p}_{ii}^n (1 - \bar{p}_{ii}^n)}{w_i(1)} - \frac{n \bar{p}_{ii}^{2n-1} (1 - \bar{p}_{ii})}{\bar{w}_i}$$

where $\quad \bar{w}_i = \dfrac{\sum_{t=1}^{3} w_i(t)}{n}$.

See Goodman, "Statistical Methods," p. 864.

[12] For technical reasons, the ratio for "other" is more difficult to interpret. Fortunately, the rejection of the null hypothesis does not depend on this component of the sum of ratios. In the case of "inactive accounts," the sample selection process guarantees that the employer stays in this category throughout the 4-year period. Because the file from which the random sample was drawn contains only active accounts, there can be no employers coming into or going out of the inactive category in the period from which the sample is drawn. Because the random sample was taken from the second period, the inactive category column is all zeroes in the 1975–76 transition matrix, and the inactive accounts row is all zeroes in the 1976–77 matrix.

Thus, it is not surprising that the ratio for this category is small, although the estimate is probably biased downward. It is reasonable to expect that there are covered employers who exit from their industry and stay out of the industry permanently. Thus, the ratio for this category should support the mover-stayer model.

Matrices indicating the annual transitions made by employers during the 4-year period fiscal 1975–78 are available from the author.

[13] Goodman, "Statistical Methods," pp. 851–55.

[14] Results for the "other" and "inactive accounts" categories are not discussed at length here because technical problems render their interpretation very complex. It should be noted, however, that the inability to identify certain employers in the "other" category may lend a considerable downward bias to the parameters shown above for mid- and maximum-rate employers. Also, sample selection problems bias the "inactive accounts" estimate toward zero, when it probably should, in fact, be positive. These problems are discussed, and alternative parameter estimates based on adjusted data are presented in my paper, "The Degree of Experience Rating in Unemployment Insurance: Evidence on the Permanence of Payroll Tax Rate Assignments," Working Paper 734 (Vancouver, University of British Columbia, January 1984).

[15] See Denton Marks, "Incomplete Experience Rating and Cross-subsidization of Payrolls," Working Paper 733 (Vancouver, University of British Columbia, October 1981).

[16] The comparable figures for minimum-rate employers are surpluses per employee-year of $112 and $108. Comparable figures for mid-rated employers as a group are unavailable, but there are figures by the various tax rates covered by the category. The deficits are preceded by " – ":

Tax rate	End of 1975	End of 1976
1.6	$86.7	$81.4
1.9	69.4	72.6
2.3	64.2	67.5
2.6	53.1	46.2
3.0	51.2	41.8
3.4	39.9	36.6
3.7	40.2	30.4
4.1	17.9	15.5
5.5	– 46.5	– 44.3
5.9	– 155.4	– 141.2

The employers with the net surplus position represent about 80 percent of the employment in the mid-rate category.

It should be noted that these calculations disregard differences in the timing of contributions and payment of benefits because the data do not allow any matching of the flows. Thus, it is impossible to determine the role that changing price levels and forgone interest play in the cross-subsidization process.

[17] See, for example, Frank Brechling, "The Incentive Effects of the U.S. Unemployment Insurance Tax," in *Research in Labor Economics I* (Greenwich, CT, JAI Press, 1977), p. 83.

[18] See Topel, "On Layoffs."

[19] Denton Marks, "The Mitigating Effect of Employer Size in Incomplete Experience Rating," Working Paper 824 (Vancouver, University of British Columbia, September 1982).

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Wet corn mills yield top pay among grain industries

Wet corn milling had the highest pay levels of four grain mill industries, according to a Bureau of Labor Statistics survey of occupational pay. At $10.72 per hour, average earnings in wet corn mills in September 1982 were 25 percent higher than in flour mills ($8.59), 34 percent higher than in blended flour plants ($8.01), and 72 percent higher than in rice mills ($6.25).[1] Nearly all workers in wet corn mills were located in metropolitan areas—chiefly within the Great Lakes States—in plants with 100 workers or more, and in establishments where collective bargaining agreements covered a majority of the workers. These characteristics, historically associated with higher pay levels, were found to a lesser extent in each of the other milling industries studied. Rice mill workers, for example, were concentrated in the Southwest, one of the lowest paying regions, and just under half of the workers were unionized.

The grain mill products industries covered by the survey employed just over 23,000 production workers in September 1982. Slightly more than one-third of the workers were employed in flour mills, approximately one-fourth each in wet corn mills and blended flour plants, and about one-sixth in rice mills.

Regional employment patterns varied considerably by industry. Flour milling, for example, the largest of the four industries with 8,115 production workers, was found in nearly all regions of the country. In contrast, slightly more than four-fifths of the 3,236 rice milling employees were in the southwest. Except for rice milling, the Great Lakes region was the major center of production; it accounted for nearly three-tenths of the production work force in flour milling, and for three-fifths of the workers in both the blended flour and wet corn milling industries.

Pay. Table 1 presents nationwide average pay rates for representative occupations in the grain milling industries. As with the industry averages, occupational pay levels were consistently highest in wet corn mills. This was true even where comparisons could be made within the same geographic region. In each industry, maintenance journeymen usually were the highest paid and custodial or general labor personnel, the lowest.

Nearly all workers in each industry were paid according to formal time-rated pay plans. Except in rice mills, where rate-range plans prevailed, most workers were paid single rates for specified occupations. Although single rate pay systems generally result in narrow earnings distributions, wide differences in pay scales among establishments produced a contrary effect in flour mills and blended flour plants. Blended flour plants had one of the highest wage dispersion indexes (57) among the industries in which the Bureau studies occupational pay.[2] Wage dispersion indexes

Table 1. Number and average straight-time hourly earnings of production workers in selected occupations in the grain mill industries in the United States, September 1982

Occupation	Flour and other grain mills		Rice mills		Blended and prepared flour mills		Wet corn mills	
	Number of workers	Average hourly earnings[1]	Number of workers	Average hourly earnings[1]	Number of workers	Average hourly earnings[1]	Numbers of workers	Average hourly earnings[1]
Elevator operations	463	$8.60	113	$6.09	—	—	93	$10.17
Bulk cleaners	95	8.98	22	7.67	—	—	15	9.25
Receivers	264	8.56	66	5.50	—	—	47	10.62
Weighers	104	8.36	25	6.28	—	—	31	9.92
Processors:								
Flour	1,273	8.88	—	—	—	—	—	—
Rice	—	—	528	6.03	—	—	—	—
Blended flour	—	—	—	—	1,013	6.64	—	—
Wet corn	—	—	—	—	—	—	1,491	10.69
Packers:								
Flour	1,068	7.72	—	—	—	—	—	—
Rice	—	—	277	5.87	—	—	—	—
Blended flour	—	—	—	—	426	6.73	—	—
Wet corn	—	—	—	—	—	—	271	10.33
Material movement:								
Laborers, material handling	925	7.95	317	4.91	172	6.17	196	10.19
Power-truck operators	312	9.22	113	6.17	260	8.01	162	10.51
Maintenance:								
Electricians	101	10.68	21	11.01	—	—	215	11.75
General mechanics	360	9.42	184	7.73	332	10.27	300	11.00
Millwrights	148	10.88	14	8.64	—	—	159	11.81
Oilers	183	8.52	—	—	—	—	48	10.73
Sheet-metal workers	54	10.80	—	—	—	—	101	11.66
Service and custodial:								
Guards	22	5.55	27	5.78	—	—	51	9.43
Janitors	515	8.52	192	4.78	185	6.75	176	9.78

[1]Excludes premium pay for overtime and for work on weekends, holidays, and late shifts.

NOTE: Dashes indicate that no data were reported or that data did not meet publication criteria.

for the other grain milling industries were 13 for wet corn, 33 for flour, and 37 for rice.

Benefits. Virtually all production workers were in grain mills providing paid holidays and vacations after qualifying periods of service. The most common holiday provision in rice mills was 8 days; in wet corn mills, 10 days; and in flour mills and blended and prepared flour establishments, 12 days. Typical vacation provisions in each industry granted at least 1 week of paid time off after 1 year of service, at least 2 weeks after 3 years, and 3 weeks or more after 10 years. Vacation benefits were less generous in rice mills than in the other industries, particularly after longer periods of service.

All or virtually all production workers were in mills that provided at least part of the cost of hospitalization, surgical, basic medical, and major medical insurance coverage. Life insurance plans were available to at least nine-tenths of the workers in each industry. Accidental death and dismemberment insurance coverage was available to about half of the workers in blended flour plants, and to three-fourths or more of the workers in each of the remaining industries.

Retirement pension plans—other than Federal social security—applied to at least nine-tenths of the production workers in the flour, blended flour, and wet corn mill industries; the proportion was four-fifths in rice mills.

A COMPREHENSIVE REPORT on the survey findings, *Industry Wage Survey: Grain Mill Products, September 1982*, Bulletin 2207 (Bureau of Labor Statistics, 1984) is for sale ($3) by the Government Printing Office, or by any of the Bureau's regional offices. □

————FOOTNOTES————

[1] Earnings data exclude premium pay for overtime and for work on weekends, holidays, and late shifts.

[2] To provide a common reference for comparing wage dispersion, an index is calculated for an industry by dividing the middle range of the earnings distribution by the median. For a discussion of occupational pay relationships by industry, see Carl B. Barsky and Martin E. Personick, "Measuring wage dispersion: pay ranges reflect industry traits," *Monthly Labor Review*, April 1981, pp. 35–41.

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Technical Note

Average retail food prices: a brief history of methods

FLOYD A. RABIL

The Bureau of Labor Statistics publishes average retail food prices on a monthly basis in a news release, *Consumer Prices: Energy and Food*. Data are published for the United States and for four major geographic regions—Northeast, North Central, South, and West.[1] The report presents average prices for 94 food items that are calculated from data used in compiling the Consumer Price Index (CPI). All of the major CPI "food at home" categories—cereals and bakery products; meats, poultry, fish, and eggs; dairy products; fruits and vegetables; and other foods at home—are represented in the list of average food prices. Each report also contains data for the two preceding months.

Average retail food prices are among the oldest data series published by BLS. The first report, issued in 1904, contained average monthly retail prices for about 30 foods for the years 1890–1903.[2] Input data for the report were obtained retroactively from account books and records of about 800 firms in 171 cities.

Prior to 1964, retail food prices were weighted averages of prices collected for use in compiling the CPI. From December 1963 through June 1978, average food prices were estimated from the movement of the CPI.[3] Each year, usually in January, special benchmark prices were calculated for narrowly defined classes of food products. These benchmark prices were adjusted in succeeding months by price changes reflected in the appropriate CPI series. Because the CPI series pertained to more broadly defined product categories than did the benchmark average food prices, a new set of benchmark prices was computed annually to prevent estimated prices from deviating widely from a true average of collected prices.

The Bureau adopted this estimation technique for average prices as a result of changes made in the specification pricing procedures during a revision of the CPI, completed in December 1963. As a part of that revision, the specifications used in collecting CPI prices were broadened to encompass

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a wider sample of goods and services. While this procedure improved the item sample for the CPI, it made calculation of the average food prices difficult because of the greater heterogeneity of foods being priced within a specification. The "benchmark and estimation" technique for calculating average food prices was then developed to meet the continuing needs of users of such information.

Because of the major methodological changes introduced in the 1978 revision of the CPI, a completely different approach had to be developed for calculating average food prices. The demanding schedule for the completion of the 1978 CPI revision made it impossible to revise the average food price program in time to coincide with the release of the revised CPI. Therefore, average retail food prices are not available from July 1978 through December 1979. Data based on the revised CPI sample are available beginning in January 1980, but average prices in the current series are not comparable to estimates published through June 1978.

Development of the new average food price program for 1980 presented the BLS staff with a number of difficulties. Because of the substantial change in price collection methodology employed in the revised CPI, a greater variety of food items (as well as nonfood goods and services) have been selected for pricing. For the pre-1978 CPI, BLS field representatives had priced items that conformed to detailed specifications which were basically the same for every store across the country. Thus, a large number of prices were obtained for each of the almost 100 food items. For an item such as cookies, for example, about 1,100 prices were collected nationally each month. The prices were for almost identical types of cookies varying only by brand and package size. Therefore, an adequate number of observations were available to calculate an average price for a specific type of cookie in individual cities as well as nationally.

In the revised CPI, collection methodology was changed to allow for almost the full range of goods and services to be sampled.[4] Under this procedure, the selection of each item is keyed to the sales experience of the store in which it is priced. The field representative works from a list of general categories in selecting the item to be priced. This procedure gives each variety, brand, size, and so forth, a chance of selection proportional to its importance in total sales for the general category in the particular store. Once selected, the same item continues to be priced over time. This procedure results in a considerably larger range of

goods and services being selected for the food item sample.

For calculating the CPI, the revised procedure produces an index which is much more representative of the goods and services purchased by consumers. Fewer prices are obtained, however, for any specific item because data collection is spread over a much broader range of food products. For example, about 570 prices are presently being collected nationally for cookies. These prices are representative of virtually all kinds of cookies available in the marketplace, including packaged cookies, cookies sold loose in bakeries, dietetic cookies, and all of the various combinations of ingredients. Therefore, there are relatively few observations for any one type of cookie, compared to the 1,100 prices that were obtained for a specific type of cookie prior to 1978. Because of the smaller number of quotations obtained for nearly comparable food items, published average prices currently are available only at the national and regional level.

The number of prices available to calculate average prices for any food category in the CPI is dependent upon two factors: 1) the number of price quotations assigned to the product stratum (which assignment is designed for maximum accuracy of the CPI); and 2) the homogeneity of a specific item with respect to ingredient composition, package size, and packaging. Thus, for an item such as white pan bread, which has a large number of price quotations assigned to its stratum and which is a relatively homogeneous product, about 930 prices are obtained nationally, of which about 60 percent are used to calculate the U.S. average price. Generally, for the purpose of average price calculation, very few items have usable sample sizes which approach that for white pan bread.

In developing post-1980 calculation procedures for average food prices, several procedures were considered, including the use of the benchmark and estimation procedure used in the earlier series. It was decided, however, to adopt a methodology in which actual weighted average prices would be calculated each month. In determining the items for which to develop average prices, BLS identifies the narrowest possible specification for which a usable sample can be obtained and an average price calculated. If the specification is judged narrow enough to be useful, an average

price is published. For example, average prices are calculated for freeze-dried instant coffee in jars ranging in size from 6.1 to 14 ounces. The specification was narrowed to this range because the per-ounce price of freeze-dried instant coffee varies widely from small jars (6 ounces or less) to large jars (more than 14 ounces). Therefore, prices for jars outside the 6.1- to 14-ounce size range are excluded to eliminate price extremes which would not yield realistic average prices.

The first step in calculating an average food price is the computation of an "effective price." This procedure involves converting a reported price to a price per standard unit of measure (weight, volume, or count). The published average prices are weighted averages of the individual effective prices. The weight of each observation reflects the relative share of expenditures which the individual observations were selected to represent in the CPI. (See "Consumer Price Index," BLS *Handbook of Methods, Volume II*, Bulletin 2134–2, for a detailed methodological description.)

Users of average retail food prices should be aware that these data are best suited to measure price levels in a particular month. The estimates are not designed to track price changes over time, nor are they intended for use in making interarea comparisons. Ongoing updates of the item and outlet samples will cause movement of average prices over time to differ from the movement of an index for the same item, because the index reflects only price change for the same product in the same retail outlet. In calculating average prices, individual quotes that meet the item and geographic definitions are included, regardless of whether they are used for index calculation. Differences in prices among geographic areas may not represent true differentials because of variations in brand, quality, and size of the sample. Of course, such differences will vary considerably depending on the item being observed. For an item such as boneless round steak, for which U.S. Department of Agriculture grades are used to define the quality of the cut of meat, comparison of prices among regions is likely to be more informative than for items such as fresh pork sausage, ice cream, canned tomatoes, and smoked ham, for which differences in brand and quality can be quite substantial. □

————FOOTNOTES————

[1] The four census regions are: *Northeast*: Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont; *North Central*: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin; *South*: Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia; and *West*: Alaska, Arizona, California, Colorado, Hawaii, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

[2] *Cost of Living and Retail Prices in the United States (1890–1903)*, Bulletin 54 (U.S. Bureau of Labor, 1904), p. 1129; and *Cost of Living and Retail Prices of Food* (18th Annual Report of the Commissioner of Labor, 1903), pp. 15–17.

[3] See Doris P. Rothwell, "Calculation of Average Retail Food Prices," *Monthly Labor Review*, January 1965, pp. 61–66.

[4] *The Consumer Price Index: Concepts and Content Over the Years*, Report 517 (Bureau of Labor Statistics, 1978), p. 7.

Foreign Labor Developments

Caribbean Basin Initiative: setting labor standards

STEVE CHARNOVITZ

On January 1, 1984, the Caribbean Basin Initiative went into effect, eliminating tariffs for most products exported by that region to the United States. This preferential access to American markets is expected to increase the flow of investment into Caribbean countries with high unemployment, and thus create additional jobs.

The Caribbean Basin Economic Recovery Act lists 27 countries[1] as potentially eligible for the trade benefits, but directs the President of the United States to undertake a rigorous process of designation. This process includes a review of 18 criteria for designation. The criteria are quite varied; they range from whether a country is Communist to whether commercial stations in that country pirate U.S. television broadcasts.

Although only 7 of the 18 criteria are mandatory, the Administration has persuaded each designated country—20 as of mid-1984—to meet all of the criteria.[2] At the end of the bilateral discussions, each country interested in being designated was asked to submit a letter to the United States explaining how each of the 18 criteria were met. These letters contain both declarations and commitments regarding present and future policies.[3] In some cases, governments are required to take specific actions before the designation letters are accepted.

The labor criterion

One of the most controversial criteria is that regarding labor.[4] This provision requires the President to consider the degree to which workers in the country are afforded "reasonable workplace conditions" and enjoy the "right to organize and bargain collectively." In practice, this has meant that in countries with restrictive labor policies, the U.S. negotiating teams have encouraged the governments to agree to changes in their policies.

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The primary reason for the labor criterion is a concern that the labor laws and conditions in some countries would prevent the benefits of the Caribbean Basin Initiative from reaching the workers. By promoting free trade unions, the United States intended not only to contribute to democratic pluralism, but also to provide foreign workers the institutional base needed to earn their rightful share of the income generated by the Initiative. A second reason for the labor criterion is to safeguard American workers from unfair foreign competition. By using the statutory labor criterion, the United States would have leverage against a participating country that exported to the American market products made under "sweatshop style" working conditions.

Aside from the narrow provision in U.S. trade law that prohibits the importation of products made by convict or forced labor, the Caribbean Basin Initiative is the only U.S. law that makes foreign labor conditions a specific consideration in providing trade benefits to other countries.[5] While international fair labor standards have been a longtime goal of organized labor in the United States, the Initiative is the first time this concept has been incorporated into U.S. tariff legislation.

Defining the standard

In implementing the labor criterion, the Administration faced 27 countries with a wide range of labor conditions—from very good to very poor. Realizing that it could not apply the same standards to countries with different cultures and legal systems, the United States adopted a two-step procedure. One, all countries are reviewed with respect to a few very basic labor standards. Two, countries with inadequate labor rights are asked to make some improvements. The approach the United States takes in each country, of course, also depends on the number of negotiation issues involving the other Caribbean Basin Initiative criteria.

The first area of concern is freedom of association, or the right to organize unions, form labor federations, and affiliate with international trade union organizations. In defining this standard, the United States relied heavily on the Freedom of Association Convention (Convention 87) of the International Labor Organization (ILO).

The second area of concern is workplace conditions. At a minimum, this means freedom from forced labor and child

labor abuses—a universal standard applicable to all countries. The United States also looks at laws on minimum wage and occupational health and safety, but each country's laws are judged on an individual basis. This approach was suggested by the legislative history, because the House had considered but failed to enact a bill to make U.S. occupational safety and health laws the standard for the labor criterion.

The third area of concern is government protection of unions from harassment and nonrecognition by employers. In each country, the United States looks for laws to promote collective bargaining, to protect union organizers from being fired, and to permit peaceful strikes. Where these laws do not exist, the countries are urged to consider reforms.

The fourth area of concern is the Export Processing Zones in many of the Caribbean Basin Initiative countries. Such zones, also called "free trade zones," are exempt from many of the commercial laws that apply in the rest of the country. Because these zones serve as platforms for export to the American market, the United States seeks assurances that the labor standards in these zones are not less than the standards in the rest of the country. This issue came up because, in the past, some of these zones had abusive labor conditions, compared with the rest of the country, that gave the zone's production an unfair competitive advantage in international markets. For example, in some of these zones, the governments prohibited trade unions.

Before the U.S. team visits a country, the U.S. Department of Labor consults closely with the AFL–CIO and the American Institute for Free Labor Development to obtain information and insight into the labor problems of that country. These consultations, together with embassy analyses and ILO reports, enable the U.S. team to focus on the most serious labor problems within the time constraints of short visits.

Major labor provisions

Several of the agreements call for significant improvements in labor conditions.

Although Haiti had a handful of weak trade unions, the Haitian government's history of repressing unions under former President Francois Duvalier had made it anathema in the international free trade union community. The Initiative program coincided with plans of the present Haitian government to improve its labor laws, and so the Haitian government agreed with the United States that a well-publicized labor law reform would give a boost to Haiti's labor unions and lead to needed assistance by the ILO.

Specifically, Haiti's designation letter includes the following:

- Several changes in labor code provisions which impeded the free operation of unions,
- an official announcement that the stringent registration provisions of the penal code did not apply to trade unions,
- a clarification of the government law prohibiting strikes and an agreement to ask the ILO for assistance in studying improvements in that law,
- a letter to all Haitian unions notifying them of their right to form federations and affiliate with international trade union organizations,
- a letter to international trade union organizations advising them that affiliation is allowed and welcoming them to visit Haiti,
- an agreement to use a weekly radio show to clarify the labor code to workers,
- a statement that workers who report minimum wage violations will be protected from punishment by employers,
- a statement that Haitian sugar workers going to the Dominican Republic are allowed to keep their travel documents and contracts,
- instructions to the Haitian Embassy in the Dominican Republic regarding improved inspections of sugar plantation conditions, and
- a request to the ILO to provide technical assistance with regard to the problems of the sugar workers.

In the Dominican Republic, the Administration sought commitments to improve the working conditions of the Haitian migrant sugar workers. In 1983, a special ILO Commission of Inquiry had found very poor working conditions including, in some cases, "forced labor." Specifically, the Dominican designation letter includes the following: (1) an agreement to allow workers to choose the plantation they work on, (2) an agreement that the national police will make sure that plantation security forces do not prevent workers from quitting their jobs and leaving the plantation, (3) a statement that further improvements in working conditions will be made in 1984, (4) a statement that sugar workers are given a break during the day and 1 day off per week in accordance with the contract, (5) a statement that workers do receive at least the minimum wage ($3.50 per day), and (6) a commitment to provide government inspectors to oversee the weighing of cane. With regard to the export processing zone, the government stated that the right to form unions and bargain does apply there. The Dominican government also agreed to ask its Congress to speed up consideration of pending labor law reforms, which include protection of employees from dismissal because of union organizing activities.

In El Salvador, the Administration sought commitments regarding the past violent attacks on trade union leaders. The letter from El Salvador specifically states: (1) the government will take special measures to assure that its security forces provide more effective protection against illegal attacks or detention of trade unionists or employer organizations and (2) the government will take suitable measures to assure that the necessary organization exists within the security forces to investigate illegal acts of violence against labor leaders and seek evidence to present to a court of

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justice. With regard to labor laws, El Salvador's letter includes: (3) a statement that workers can join free trade unions, that unions can form federations, and that federations can affiliate internationally, (4) an agreement that in the new Constitution, the right of farm workers to associate in labor unions will be established, (5) an agreement that the government will propose to the tripartite labor code commission sanctions adequate to act as a deterrent to employers who refuse to bargain or who intimidate trade unions, and (6) a statement that the labor code applies to the free trade zone and that union organizers would henceforth be permitted to enter the zone.

In Honduras, the United States sought to investigate allegations that some of the firms in the free zone prohibited unions. In the Honduran letter, the government stated that the labor code applies in the free zone and that the government would investigate charges that workers in one company were obliged to sign an agreement not to establish a trade union. The government also pledged to send additional inspectors to the zone to assure that workers know their rights and protections under the labor code.

In Guatemala, the United States sought the government's legal recognition of the new Guatemalan labor confederation, the Confederation of Labor Unity. The Guatemalan letter stated that the Confederation has been recognized and that unions have a right to form federations and affiliate with international organizations.

The designation letters of the other 15 countries also discuss labor rights and conditions, but the United States did not press for significant reforms in these countries (for example, Barbados) because their labor conditions already met the Administration's standard.

Future of labor standards in trade

In summary, the designation process of the Caribbean Basin Initiative provides an important boost to organized labor in several countries where there were serious labor problems. In the months ahead, the U.S. Government will work closely with American and international unions to monitor these designation letters to assure that the Caribbean Basin governments adhere to them. Such monitoring is particularly important because many of the statements on labor involved prospective changes.

During the next few years, many parties will be analyzing the impact of the labor criterion under the Caribbean Basin Initiative. This analysis will involve a weighing of the benefits and costs of promoting labor rights in these countries. Both economic and political factors will need to be considered. If the labor criterion is judged to be successful, the next step would be to consider extending it to other countries receiving trade preferences from the United States.[6] □

---FOOTNOTES---

[1] The following countries or territories are eligible for designation under the Caribbean Basin Economic Recovery Act (P.L. 98–67):

Anguilla	Grenada	Saint Vincent and the Grenadines
Antigua and Barbuda	Guatemala	Suriname
Bahamas, The	Guyana	Trinidad and Tobago
Barbados	Haiti	Cayman Islands
Belize	Honduras	Montserrat
Costa Rica	Jamaica	Netherlands Antilles
Dominica	Nicaragua	Saint Christopher-Nevis
Dominican Republic	Panama	Turks and Caicos Islands
El Salvador	Saint Lucia	Virgin Islands, British

[2] Seven of the countries have not asked to be designated. They are Anguilla, Guyana, Nicaragua, Suriname, the Cayman Islands, the Turks and Caicos Islands, and the Bahamas.

[3] Eleven of the country designation letters have been published in *Communication From the President of the United States* (U.S. House of Representatives, Committee on Ways and Means, House Document 98–151, Jan. 23, 1984). All of the letters are on file at the Committee.

[4] There are two types of criteria—mandatory and discretionary. For the mandatory criteria, the President cannot designate a country unless it meets these criteria. For the discretionary criteria, the President is directed to take these criteria into account in making designation decisions. The labor criterion is discretionary.

[5] This provision is in the Tariff Act of 1930, Section 307. The prohibition exempts goods, wares, articles, and merchandise not produced domestically in sufficient quantities to meet the "consumptive demands" of the United States.

[6] On Oct. 30, 1984, the President signed the Trade and Tariff Act of 1984 which, in renewing the Generalized System of Preferences, includes a new designation criterion relating to "internationally recognized worker rights."

Major Agreements Expiring Next Month

This list of selected collective bargaining agreements expiring in December is based on information from 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	Private industry	Labor organization[1]	Number of workers
Constructors Labor Council (West Virginia)	Construction	Carpenters; Laborers; Operating Engineers; and Teamsters (Ind.)	7,600
Pennsylvania Heavy and Highway Contractors Bargaining Association (Harrisburg, PA)	Construction	Steelworkers	2,000
West Virginia Contractors Bargaining Association, Inc. (West Virginia)	Construction	Steelworkers	2,000
Association of Steel Erectors and Heavy Equipment Operators, Inc. (Atlanta, GA)	Construction	Iron Workers	1,000
National Electrical Contractors Association, Inc., Western Pennsylvania Chapter (Pennsylvania)	Construction	Electrical Workers (IBEW)	1,900
GTE Lenkurt, Inc. (Albuquerque, NM)	Electrical products	Electrical Workers (IBEW)	1,200
Amana Refrigeration, Inc. (Fayetteville, TN)	Machinery	Machinists	1,000
Tacoma Boatbuilding Co. (Tacoma, WA)	Transportation equipment	Boilermakers; Carpenters; Electrical Workers (IBEW); Laborers; Machinists; Operating Engineers; Painters; Plumbers; Sheet Metal Workers; and Teamsters (Ind.)	1,500
Eastern Airlines, ground service (Interstate)[2]	Air transportation	Machinists	12,600
Northwest Airlines, ground service (Interstate)[2]	Air transportation	Machinists	3,600
Republic Airlines, pilots (Interstate)[2]	Air transportation	Air Line Pilots	1,200
Western Airlines, flight attendants (Interstate)[2]	Air transportation	Flight Attendants	2,300
Northern States Power Co. (Minneapolis, MN)	Utilities	Electrical Workers (IBEW)	3,200
Public Service Co. of Colorado (Denver, CO)	Utilities	Electrical Workers (IBEW)	3,000
New York Oil Heating Association (New York, NY)	Wholesale trade	Teamsters (Ind.)	2,000
Cemeteries (New Jersey and New York)[3]	Real estate	Service Employees	1,800
Metropolitan Detroit Hotel and Motor Hotel Association (Michigan)	Hotels	Hotel Employees and Restaurant Employees	2,300
Chicago Residential Hotel Association (Illinois)	Hotels	Service Employees	1,000
Illinois Association of Health Care Facilities (Chicago, IL)	Hospitals	Service Employees	4,300
Kaiser Permanente (California)	Hospitals	Nurses' Association (Ind.)	4,000

	Government activity	Labor organization[1]	Number of workers
Colorado: Boulder Board of Education, teachers	Education	Education Association (Ind.)	1,250
Jefferson County Board of Education, classified employees	Education	Colorado Classified School Employees (Ind.)	2,750
Florida: Dade County Fire Department	Fire protection	Fire Fighters	1,050
Dade County Nurses	Health services	Nurses' Association (Ind.)	1,000
Dade County Police Department	Police protection	Police (Ind.)	1,600
Dade County Transit Agency	Transportation	Transport Workers	1,150
Michigan: Correctional facility	General services	Service Employees	2,600
Technical employees	General services	Technical Employees Association (Ind.)	1,650
Minnesota: Hennepin County multi-unit	General services	State, County and Municipal Employees	3,000

See footnotes at end of table.

Continued—Major Agreements Expiring Next Month

Employer and location	Government activity	Labor organization[1]	Number of workers
New Jersey: Hudson County	General services	Teamsters (Ind.)	1,700
Trenton municipal employees	General services	State, County and Municipal Employees	1,100
New York: Nassau County	General services	State, County and Municipal Employees	13,000
Onondaga County multidepartments	General services	State, County and Municipal Employees	3,500
Saratoga County	General services	State, County and Municipal Employees	2,600
Schenectady County	General services	State, County and Municipal Employees	1,300
Suffolk County Police Department	Police protection	Patrolmen's Benevolent Association (Ind.)	2,100
Westchester County	General services	State, County and Municipal Employees	5,300
New York City Housing Authority	General services	Teamsters (Ind.)	5,000
Syracuse Board of Education, teachers	Education	Education Association (Ind.)	1,500
Ohio: Medical College, professional and technical unit	Education	State, County and Municipal Employees	1,000
Cincinnati Board of Education, teachers	Education	Teachers	3,100
Cincinnati Police Department	Police protection	Police	1,100
Dayton Board of Education, teachers	Education	Education Association (Ind.)	1,700
Montgomery County	General services	State, County and Municipal Employees	1,200
Toledo Board of Education, teachers	Education	Teachers	2,500
Toledo Board of Education, classified employees	Education	State, County and Municipal Employees	1,700
Pennsylvania: Pittsburgh Fire Department	Fire protection	Fire Fighters	1,050
Wisconsin: Milwaukee County	General services	State, County and Municipal Employees	6,000
Milwaukee Police Department	Police protection	Milwaukee Police Association	1,800

[1]Affiliated with AFL–CIO except where noted as independent (Ind.).

[2]Information from newspaper reports.

[3]Industry area (group of companies signing the same contract).

Developments in Industrial Relations
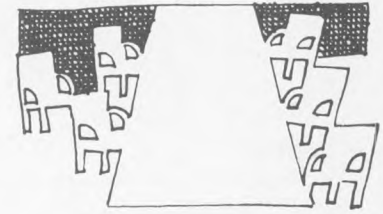
Auto, coal agreements reached

The United Auto Workers has reached an agreement with General Motors, and bargaining has shifted to the Ford Motor Co. A feature of the UAW–GM contract is a job security provision which guarantees that workers with at least 1 year of service will not be laid off because of the introduction of new technology, "outsourcing," negotiated productivity improvements, shifting of work from one GM plant to another, or the consolidation of component production.

The United Mine Workers and the Bituminous Coal Operators Association settled peacefully on a 40-month contract. Union president Rich Trumka said the contract contained "no concessions, absolutely none." An industry official described the contract as "fair and modest."

Detailed provisions of the UAW/Bituminous Coal Operators Association and UAW/GM–Ford agreements will appear in the December *Monthly Labor Review*.

Board limits bargaining units in health facilities

Union efforts to organize hospital and nursing home employees were adversely affected by a National Labor Relations Board ruling that the number of bargaining units in such institutions must be held to a minimum. The Board contended that the ruling conformed with a requirement imposed by the Congress in 1974 when it extended to employees of nonprofit health care facilities the right to bargain on wages and benefits. In granting this right, the Congress specified that bargaining units in such institutions should be as broad as possible to reduce the possibility that a small number of workers could paralyze a hospital. The Board did not specify the precise number of bargaining units that would be appropriate in a hospital, but one Board member said that four units might be appropriate in a large institution and two in a small one.

The case arose when the International Brotherhood of Electrical Workers organized a small number of trades workers at St. Francis Hospital in Memphis, TN. In 1982, the Board ruled that the hospital must bargain with the union.

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At that time, the Board maintained that the basic test for a bargaining unit was whether the workers shared "a community of interests" in their wages, hours, training, and working conditions, the same requirement that applies in other industries.

In overturning the 1982 decision, the reconstituted Board held that unions seeking to designate bargaining units in health care facilities must prove a "disparity of interests," in wages and in the other working conditions that are sharper than in other industries.

The reaction from organized labor was immediate. Jerry Shea, health care coordinator for the Service Employees, complained that the ruling did not include "guidance as to what it means." He said some employers may withdraw from current bargaining on initial contracts and ask the courts to rule on the legality of the bargaining unit.

Management attorney John Irving disagreed, saying that the decision will preclude much litigation over bargaining units because the courts will now have a more definite understanding of the intent of the Congress regarding bargaining units.

Merck, three unions settle, end 15-week strike

The longest strike in the history of Merck & Co. ended when the firm settled with a council of unions including the Oil, Chemical and Atomic Workers, the Chemical Workers, and the Clothing and Textile Workers. The major issue in the 15-week walkout was a company demand for employee pay cuts to enhance Merck's ability to compete with other pharmaceutical companies. Merck claimed its wage rates were 18 to 46 percent above its competitors and that its employees earned an average annual salary of $34,500 in 1983. Union officials disputed this, claiming that the average was about $23,000.

Merck's demand for compensation cuts included a call for adoption of a two-tier wage system under which new employees would be permanently paid less than those already on the payroll. The final provision did not amount to a true two-tier system because the additional pay sacrifices applicable to new workers would be recouped. The 4-year contract does not provide for specified wage increases or automatic cost-of-living adjustments in the first year. Current employees will receive lump-sum payments of $700 on

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April 30, 1985; $800 on April 30, 1986; and $500 on April 30, 1987. In addition, they will receive possible cost-of-living adjustments of up to 15 cents an hour in the fourth year. New employees will not receive the lump-sum payments or the current $3.15 to $3.18 cost-of-living allowance, but will receive a 30-cent-an-hour wage increase after each 12 months of service. They would attain pay rate parity with current employees in about 10 years, assuming the provision for 30-cent increases is retained in subsequent contracts.

The contract, which expires on April 30, 1988, increases lifetime major medical coverage to $750,000, from $250,000; medical deductibles to $150 for single coverage and $300 for family, from $50 and $150, respectively; covered hospital stays to 365 days, from 120 days; and requires a second medical opinion for surgery. Other benefit changes included a $1,000 increase in life insurance coverage, to $5,000, and unspecified improvements in pensions.

The accord covered 4,000 employees at operations in Rahway and North Branch, NJ; West Point, Hawthorne, and Danville, PA; South San Francisco, CA; Albany, GA; and Elkton, VA.

Electrical Workers win first contract at Litton

After a 4-year confrontation, Litton Systems, Inc., and the United Electrical Workers negotiated an initial contract for 2,000 employees of the company's microwave oven plant in Sioux Falls, SD. The Electrical Workers had won a representation election at the plant in November 1980. A year later, the National Labor Relations Board certified the union as the bargaining agent for the workers, but the relationship became increasingly antagonistic as the parties traded charges and engaged in legal actions. The union, which won the assistance of other unions in a national publicity and boycott drive against Litton, claimed that the company was engaged in a corporatewide campaign to thwart employee efforts to organize. Litton denied this, saying its labor relations strategies were set at the local rather than national level and that its number of labor law violations was not excessive considering its large number of plants.

A major factor in attaining the contract settlement was the intervention of a joint committee the parties established in 1983 to discuss and investigate labor disputes.

The new contract, which extends to January 31, 1987,

provides for wage increases of 35 cents an hour effective immediately, 40 cents in August 1985, and 25 cents in August 1986. Prior to the settlement, the employees reportedly averaged $5.20 an hour.

Benefit provisions include coverage under a contributory companywide pension plan; a grievance procedure; seniority rights; job-bidding procedures; health and safety monitoring; 11 holidays; and a health plan calling for a nominal employee contribution for single coverage and $25 a month for family coverage.

New York City's longest health-care strike ends

The largest and longest health care strike in New York City history ended when members of District 1199 of the Retail, Wholesale and Department Store Union approved 2-year agreements with the League of Voluntary Hospitals and Homes and the Association of Voluntary Nursing Homes. The 44-day stoppage involved 52,000 employees, 18,000 patients, and 45 private, nonprofit hospitals and nursing homes. Part of the delay in settling resulted from the League's contention that the projected rise in State payments to the institutions was not enough to cover the cost of a settlement that would include 5-percent annual pay increases. New York Governor Mario Cuomo assured the parties that he would "do the right thing" and "make adjustments" later if the institutions were unable to cover the cost of the settlement. This induced labor and management to settle, but negotiators cautioned that the accord could be abrogated by either party if they did not receive "assurances from the State consistent with Governor Cuomo's statement."

The two 5-percent pay increases will be applied to annual salaries ranging from $15,247 for orderlies to $33,962 for social workers. Other types of workers involved include clerks, technicians, and aides. The accord also provides that the workers will have alternate weekends off. Management had offered 26 weekends off per year, although not necessarily every other weekend, and a $20 premium for every weekend worked beyond the 26. Another provision freezes starting pay for new employees, beginning with the second year. The terms were expected to set a pattern for settlements between the union and about 24 other institutions when current agreements expire on October 1. □

Book Reviews
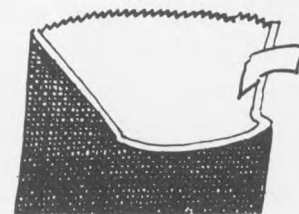
The rise of the United Farm Workers

Farmworkers, Agribusiness, and the State. By Linda C. and Theo J. Majka. Philadelphia, PA, Temple University Press, 1983. 346 pp. $24.95.

Cesar Chavez began to organize California farmworkers in the 1960's, and within a decade, the strikes, boycotts, and marches organized by what became the United Farm Workers union made Americans aware that Mexican-American workers harvested most of the Nation's grapes and lettuce. Unions, churches, and students enthusiastically supported the fledgling farmworker union, first, in its struggle to be represented as the bargaining agent for farmworkers on corporate grape and vegetable farms, and later, to retain its contracts when the Teamsters union began organizing farmworkers in the early 1970's. The tumultuous events of the early 1970's led growers and unions to demand a State law to end the strife. The California Agricultural Labor Relations Act was enacted in 1975 to ''. . . ensure peace in the agricultural fields by guaranteeing justice for all agricultural workers and stability in labor relations.'' It granted farmworkers organizing and collective bargaining rights.

Farmworkers, Agribusiness, and the State is a chronicle of the farmworker events in the 1960's and 1970's by observers who worked for the United Farm Workers union. The authors do more than simply record events; they also theorize as to why the United Farm Workers succeeded in its efforts to achieve lasting bargaining agreements after other farmworker unions had failed. The authors' theory has to do with how government both opposed and aided farmworker organizations that have been present in California agriculture for more than 100 years.

California's labor-intensive fruit and vegetable industry was developed in the late 1880's when refrigerated rail transportation opened up east coast markets and the 12,000 Chinese laborers who had built the transcontinental railroad became migratory farmworkers because they were denied mining and urban jobs. The large California farms that emerged when wheat fields were converted to orchards were preserved with the arrival of immigrant workers without options. Although the availability of farmworkers kept wages low, land prices rose to the extent that most of the midwestern farmers who migrated to California could not remain farmers. By 1900, the conventional wisdom asserted that California agriculture needed large numbers of migrant workers for seasonal jobs, and that such a lifestyle was most acceptable to nonwhite immigrants.

Waves of immigrant farmworkers followed—the Japanese, Hindus, Filipinos, Depression-era ''Okies'' and ''Arkies'' in the late 1920's and early 1930's; and Mexicans since World War II. In most instances, these immigrants without options were not a majority of the farm work force, but their desperate need for work meant that wages fell as additional laborers arrived in search of work. White farmworkers protested bitterly when farmers reduced wages after ''too many'' workers had appeared. The Industrial Workers of the World converted these protests into strikes before World War I, and the Communist-dominated Cannery and Agricultural Workers Industrial Union similarly assumed the leadership of spontaneous strikes in the 1930's.

This book summarizes the rise of the United Farm Workers union. The authors give considerable weight to the persuasive talents of Cesar Chavez, as well as the importance of religious groups and students in promoting boycott activities by the union. The book emphasizes the often tenuous ties between the United Farm Workers and most AFL–CIO unions, although it highlights the United Auto Workers' enthusiastic support of the United Farm Workers. The book's major shortcoming is its failure to explain how the changing structure of California agriculture expedited organizing. Just as the textile workers union asserted that it had to organize the industry before it could organize the work force, the United Farm Worker's success rested heavily on the emergence of large growers who could afford to pay higher wages. The United Farm Workers union has been most successful in organizing workers on corporate vegetable farms but has had the least success in commodities where production is diffused among thousands of family farmers who often struggle to stay in business.

Although other books have chronicled the rise of the United Farm Workers and analyzed the reasons for its success, Linda and Theo Majka theorize on how government has intervened in omnipresent farmworker protests. I find this theory to be the weak part of the book, because it assumes that farmworkers have always wanted to organize and gain control over their employment, that farmers have

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implacably opposed these organizing efforts, and that the State acted as an umpire, shifting from the side of the farmers to the workers' cause in the 1970's. This power theory becomes tautological by arguing that the United Farm Workers union gained enough without a law to cause the State legislators to switch sides, downplaying structural shifts in agriculture and the possibility that unionism can bring mutual benefits to workers and employers.

This book is a useful summary of events derived from personal experience and newspaper accounts.

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Book notes

The Federal Data Base Finder. By Sharon Zarozny and Monica Horner. Potomac, MD, Information USA, Inc., 1984, 368 pp., $95.

Mathew Lesko, founder and president of Information USA, has made a career of telling people how and where to get information from the Federal Government. In this directory, billed as the first of its kind, Information USA lists and describes more than 3,000 Federal data bases and files, from Acid Rain (Oak Ridge National Laboratory) to World Population (Census Bureau) and includes many Bureau of Labor Statistics series. The authors acknowledge that direct access to many of the Federal data bases is limited to Government agencies, but suggest that information from them sometimes is available from the producing agencies at low or no cost. The book also lists machine-readable data tapes offered for sale directly by Government agencies and reports on commercial vendors who re-sell Government information at a profit. *The Federal Data Base Finder* says that the Federal Government spends billions of dollars creating data but very little to inform the public that the data exist. Lesko and his associates have assembled much of that information and offer to share it with the public for $95.

The Handbook of Economic and Financial Measures. Edited by Frank J. Fabozzi and Harry I. Greenfield. Homewood, IL, Dow Jones Irwin, 1984. 517 pp. $47.50.

The editors of this handbook seek to close an information gap they perceive between increasing sophistication of economic and financial reporting on the one hand and the lack of commonly understood definitions of economic and financial concepts on the other. They asked professionals from Government agencies, academia, and the private sector to define and explain 21 measures of economic and financial activity, from gross national product to consumer confidence and from monetary aggregates to interest rates.

Included in the volume are comprehensive discussions of ''Unemployment and Associated Measures,'' by Commissioner of Labor Statistics Janet L. Norwood; ''Measures of Recession and Expansion,'' by Geoffrey H. Moore, a former Commissioner of Labor Statistics, now at Columbia University; and of ''Measures of Inflation,'' by Joel Popkin of Joel Popkin and Co., a former assistant BLS commissioner in charge of price programs.

The book includes both subject and author indexes.

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Current
Labor Statistics

NOTES ON CURRENT LABOR STATISTICS

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

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

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

Seasonally adjusted labor force data in tables 3–8 were revised in the February 1984 issue of the *Review*, to reflect experience through 1983.

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

Annual revision of the seasonally adjusted payroll data shown in tables 11, 13, and 15 were made in July 1984 using the X-11 ARIMA seasonal adjustment methodology. New seasonal factors for productivity data in tables 29 and 30 are usually introduced in the September issue. Seasonally adjusted indexes and percent changes from month to month and from quarter to quarter are published for numerous Consumer and Producer Price Index series. However, seasonally adjusted indexes are not published for the U.S. average All Items CPI. Only seasonally adjusted percent changes are available for this series.

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

Availability of information. Data that supplement the tables in this section are published by the Bureau of Labor Statistics in a variety of sources. Press releases provide the latest statistical information published by the Bureau; the major recurring releases are published according to the schedule given below. More information from household and establishment surveys is provided in *Employment and Earnings*, a monthly publication of the Bureau. Comparable household information is published in a two-volume data book–*Labor Force Statistics Derived From the Current Population Survey*, Bulletin 2096. Comparable establishment information appears in two data books–*Employment and Earnings, United States*, and *Employment and Earnings, States and Areas*, and their annual supplements. More detailed information on wages and other aspects of collective bargaining appears in the monthly periodical, *Current Wage Developments*. More detailed price information is published each month in the periodicals, the *CPI Detailed Report* and *Producer Prices and Price Indexes*.

Symbols

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

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

n.e.c. = not elsewhere classified.

Schedule of release dates for BLS statistical series

Series	Release date	Period covered	Release date	Period covered	Release date	Period covered	MLR table number
Employment situation	November 2	October	December 7	November	January 9	December	1–11
Producer Price Index	November 9	October	December 14	November	January 11	December	23–27
Occupational injuries and illnesses	November 14	1983	....	....	....	....	....
Consumer Price Index	November 21	October	December 20	November	January 23	December	19–22
Real earnings	November 21	October	December 20	November	January (1)	December	12–16
Productivity and costs:							
Nonfinancial Corporations	November 28	3rd quarter	....	....	....	....	29–32
Nonfarm business and manufacturing	....	....	....	....	January (1)	4th quarter	29–32
Employment Cost Index	....	....	....	....	January (1)	4th quarter	33–35
Major collective bargaining settlements	....	....	....	....	January (1)	1984	36–37
U.S. Import and Export Price Indexes	....	....	....	....	January 31	4th quarter	

[1] Date not available.

EMPLOYMENT DATA FROM THE HOUSEHOLD SURVEY

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

Definitions

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

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

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

Notes on the data

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

Data in tables 2–8 are seasonally adjusted, based on the seasonal experience through December 1983.

1. Employment status of the noninstitutional population, 16 years and over, selected years, 1950–83

[Numbers in thousands]

Year	Noninsti-tutional population	Labor force										Not in labor force
		Number	Percent of population	Employed						Unemployed		
				Total	Percent of population	Resident Armed Forces	Civilian			Number	Percent of labor force	
							Total	Agriculture	Nonagri-cultural industries			
1950	106,164	63,377	59.7	60,087	56.6	1,169	58,918	7,160	51,758	3,288	5.2	42,787
1955	111,747	67,087	60.0	64,234	57.5	2,064	62,170	6,450	55,722	2,852	4.3	44,660
1960	119,106	71,489	60.0	67,639	56.8	1,861	65,778	5,458	60,318	3,852	5.4	46,617
1965	128,459	76,401	59.5	73,034	56.9	1,946	71,088	4,361	66,726	3,366	4.4	52,058
1966	130,180	77,892	59.8	75,017	57.6	2,122	72,895	3,979	68,915	2,875	3.7	52,288
1967	132,092	79,565	60.2	76,590	58.0	2,218	74,372	3,844	70,527	2,975	3.7	52,527
1968	134,281	80,990	60.3	78,173	58.2	2,253	75,920	3,817	72,103	2,817	3.5	53,291
1969	136,573	82,972	60.8	80,140	58.7	2,238	77,902	3,606	74,296	2,832	3.4	53,602
1970	139,203	84,889	61.0	80,796	58.0	2,118	78,678	3,463	75,215	4,093	4.8	54,315
1971	142,189	86,355	60.7	81,340	57.2	1,973	79,367	3,394	75,972	5,016	5.8	55,834
1972	145,939	88,847	60.9	83,966	57.5	1,813	82,153	3,484	78,669	4,882	5.5	57,091
1973	148,870	91,203	61.3	86,838	58.3	1,774	85,064	3,470	81,594	4,355	4.8	57,667
1974	151,841	93,670	61.7	88,515	58.3	1,721	86,794	3,515	83,279	5,156	5.5	58,171
1975	154,831	95,453	61.6	87,524	56.5	1,678	85,845	3,408	82,438	7,929	8.3	59,377
1976	157,818	97,826	62.0	90,420	57.3	1,668	88,752	3,331	85,421	7,406	7.6	59,991
1977	160,689	100,665	62.6	93,673	58.3	1,656	92,017	3,283	88,734	6,991	6.9	60,025
1978	c163,541	103,882	63.5	97,679	59.7	1,631	96,048	3,387	92,661	6,202	6.0	59,659
1979	166,460	106,559	64.0	100,421	60.3	1,597	98,824	3,347	95,477	6,137	5.8	59,900
1980	169,349	108,544	64.1	100,907	59.6	1,604	99,303	3,364	95,938	7,637	7.0	60,806
1981	171,775	110,315	65.2	102,042	59.4	1,645	100,397	3,368	97,030	8,273	7.5	61,460
1982	173,939	111,872	64.3	101,194	58.2	1,668	99,526	3,401	96,125	10,578	9.5	62,067
1983	175,891	113,226	64.4	102,510	58.3	1,676	100,834	3,383	97,450	10,717	9.5	62,665

c = corrected.

2. Employment status of the population, including Armed Forces in the United States, by sex, seasonally adjusted

[Numbers in thousands]

Employment status and sex	Annual average		1983				1984								
	1982	1983	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
TOTAL															
Noninstitutional population[1,2]	173,939	175,465	176,297	176,474	176,636	176,809	177,219	177,363	177,510	177,662	177,813	177,974	178,138	178,295	178,483
Labor force[2]	111,872	112,646	113,924	113,561	113,720	113,824	113,901	114,377	114,598	114,938	115,493	115,567	115,636	115,206	115,419
Participation rate[3]	64.3	64.2	64.6	64.3	64.4	64.4	64.3	64.5	64.6	64.7	65.0	64.9	64.9	64.6	64.7
Total employed[2]	101,194	101,277	103,571	103,665	104,291	104,629	104,876	105,576	105,826	106,095	106,978	107,438	107,093	106,681	106.959
Employment-population rate[4]	58.2	57.7	58.7	58.7	59.0	59.2	59.2	59.5	59.6	59.7	60.2	60.4	60.1	59.8	59.9
Resident Armed Forces[1]	1,668	1,671	1,695	1,695	1,685	1,688	1,686	1,684	1,686	1,693	1,690	1,690	1,698	1,712	1,720
Civilian employed	99,526	99,606	101,876	101,970	102,606	102,941	103,190	103,892	104,140	104,402	105,288	105,748	105,395	104,969	105,239
Agriculture	3,401	3,392	3,308	3,240	3,257	3,356	3,271	3,395	3,281	3,393	3,389	3,403	3,345	3,224	3,315
Nonagricultural industries	96,125	96,214	98,568	98,730	99,349	99,585	99,918	100,496	100,859	101,009	101,899	102,344	102,050	101,744	101,923
Unemployed	10,678	11,369	10,353	9,896	9,429	9,195	9,026	8,801	8,772	8,843	8,514	8,130	8,543	8,526	8,460
Unemployment rate[5]	9.5	10.1	9.1	8.7	8.3	8.1	7.9	7.7	7.7	7.7	7.4	7.0	7.4	7.4	7.3
Not in labor force	62,067	62,819	62,373	62,913	62,916	62,985	63,318	62,986	62,912	62,724	62,320	62,407	62,503	63,089	63,064
Men, 16 years and over															
Noninstitutional population[1,2]	83,052	84,064	84,261	84,344	84,423	84,506	84,745	84,811	84,880	84,953	85,024	85,101	85,179	85,257	85,352
Labor force[2]	63,979	64,580	64,877	64,709	64,846	64,838	64,930	65,093	65,156	65,212	65,307	65,452	65,362	65,244	65,614
Participation rate[3]	77.0	76.8	77.0	76.7	76.8	76.7	76.6	76.8	76.8	76.8	76.8	76.9	76.7	76.5	76.9
Total employed[2]	57,800	58,320	58,828	58,950	59,389	59,580	59,781	60,147	60,290	60,293	60,629	60,923	60,607	60,661	60,912
Employment-population rate[4]	69.6	69.4	69.8	69.9	70.3	70.5	70.5	70.9	71.0	71.0	71.3	71.6	71.2	71.2	71.4
Resident Armed Forces[1]	1,527	1,533	1,549	1,543	1,534	1,537	1,542	1,540	1,542	1,548	1,545	1,545	1,551	1,563	1,571
Civilian employed	56,271	56,787	57,279	57,407	57,855	58,043	58,239	58,607	58,748	58,745	59,084	59,378	59,056	59,098	57,341
Unemployed	6,179	6,260	6,049	5,759	5,457	5,258	5,149	4,946	4,867	4,919	4,678	4,529	4,756	4,583	4,702
Unemployment rate[5]	9.7	9.7	9.3	8.9	8.4	8.1	7.9	7.6	7.5	7.5	7.2	6.9	7.3	7.0	7.2
Women, 16 years and over															
Noninstitutional population[1,2]	90,887	91,827	92,036	92,129	92,214	92,302	92,474	92,552	92,630	92,709	92,789	92,873	92,958	93,039	93,132
Labor force[2]	47,894	48,646	49,047	48,852	48,874	48,986	48,971	49,283	49,442	49,725	50,186	50,115	50,273	49,963	49,804
Participation rate[3]	52.7	53.0	53.3	53.0	53.0	53.1	53.0	53.2	53.4	53.6	54.1	54.0	54.1	53.7	53.5
Total employed[2]	43,395	44,190	44,743	44,715	44,902	45,049	45,094	45,429	45,536	45,802	46,350	46,515	46,486	46,020	46,047
Employment-population rate[4]	47.7	48.1	48.6	48.5	48.7	48.8	48.8	49.1	49.2	49.4	50.0	50.1	50.0	49.5	49.4
Resident Armed Forces[1]	139	143	146	152	151	151	144	144	144	145	145	145	147	149	149
Civilian employed	43,256	44,047	44,597	44,563	44,751	44,898	44,950	45,285	45,392	45,657	46,205	46,370	46,339	45,871	45,898
Unemployed	4,499	4,457	4,304	4,137	3,972	3,937	3,876	3,855	3,905	3,924	3,836	3,600	3,787	3,943	3,758
Unemployment rate[5]	9.4	9.2	8.8	8.5	8.1	8.0	7.9	7.8	7.9	7.9	7.6	7.2	7.5	7.9	7.5

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

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

[Numbers in thousands]

Employment status	Annual average		1983				1984								
	1982	1983	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
TOTAL															
Civilian noninstitutional population[1]	172,271	174,215	174,602	174,779	174,951	175,121	175,533	175,679	175,824	175,969	176,123	176,284	176,440	176,583	176,763
Civilian labor force	110,204	111,550	112,229	111,866	112,035	112,136	112,215	112,693	112,912	113,245	113,803	113,877	113,938	113,494	113,699
Participation rate	64.0	64.0	64.3	64.0	64.0	64.0	63.9	64.1	64.2	64.4	64.6	64.6	64.6	64.3	64.3
Employed	99,526	100,834	101,876	101,970	102,606	102,941	103,190	103,892	104,140	104,402	105,288	105,748	105,395	104,969	105,239
Employment-population ratio[2]	57.8	57.9	58.3	58.3	58.6	58.8	58.8	59.1	59.2	59.3	59.8	60.0	59.7	59.4	59.5
Unemployed	10,678	10,717	10,353	9,896	9,429	9,195	9,026	8,801	8,772	8,843	8,514	8,130	8,543	8,526	8,460
Unemployment rate	9.7	9.6	9.2	8.8	8.4	8.2	8.0	7.8	7.8	7.8	7.5	7.1	7.5	7.5	7.4
Not in labor force	62,067	62,665	62,373	62,913	62,916	62,985	63,318	62,986	62,912	62,724	62,320	62,407	62,502	63,089	63,064
Men, 20 years and over															
Civilian noninstitutional population[1]	73,644	74,872	75,115	75,216	75,327	75,433	75,692	75,786	75,880	75,973	76,073	76,176	76,269	76,350	76,451
Civilian labor force	57,980	58,744	59,012	58,949	59,053	59,050	59,299	59,394	59,388	59,480	59,546	59,726	59,694	59,752	59,898
Participation rate	78.7	78.5	78.6	78.4	78.4	78.3	78.3	78.4	78.3	78.3	78.3	78.4	78.3	78.3	78.3
Employed	52,891	53,4897	53,947	54,140	54,457	54,658	54,999	55,266	55,368	55,385	55,685	55,970	55,789	55,899	56,022
Employment-population ratio[2]	71.8	71.4	71.8	72.0	72.3	72.5	72.7	72.9	73.0	72.9	73.2	73.5	73.1	73.2	73.3
Agriculture	2,422	2,429	2,431	2,376	2,336	2,374	2,356	2,409	2,364	2,453	2,451	2,469	2,455	2,392	2,403
Nonagricultural industries	50,469	51,058	51,516	51,764	52,121	52,284	52,643	52,857	53,004	52,932	53,234	53,501	53,334	53,507	53,620
Unemployed	5,089	5,257	5,065	4,809	4,596	4,392	4,300	4,128	4,020	4,095	3,861	3,755	3,906	3,853	3,875
Unemployment rate	8.8	8.9	8.6	8.2	7.8	7.4	7.3	7.0	6.8	6.9	6.5	6.3	6.5	6.4	6.5
Women, 20 years and over															
Civilian noninstitutional population[1]	82,864	84,069	84,333	84,443	84,553	84,666	84,860	84,962	85,064	85,168	85,272	85,380	85,488	85,581	85,688
Civilian labor force	43,699	44,636	45,062	44,936	44,953	45,024	44,981	45,258	45,459	45,703	46,222	46,101	46,261	46,082	45,859
Participation rate	52.7	53.1	53.4	53.2	53.2	53.2	53.0	53.3	53.4	53.7	54.2	54.0	54.1	53.8	53.5
Employed	40,086	41,004	41,550	41,570	41,738	41,843	41,798	42,138	42,315	42,517	43,098	43,146	43,088	42,819	42,807
Employment-population ratio[2]	48.4	48.8	49.3	49.2	49.4	49.4	49.3	49.6	49.7	49.9	50.5	50.5	50.4	50.0	50.5
Agriculture	601	620	581	597	638	653	625	640	574	619	610	623	573	563	595
Nonagricultural industries	39,485	40,384	40,969	40,973	41,100	41,190	41,174	41,498	41,741	41,898	42,487	42,523	42,515	42,255	42,212
Unemployed	3,613	3,632	3,512	3,366	3,215	3,181	3,182	3,120	3,144	3,186	3,124	2,955	3,173	3,264	3,053
Unemployment rate	8.3	8.1	7.8	7.5	7.2	7.1	7.1	6.9	6.9	7.0	6.8	6.4	6.9	7.1	6.7
Both sexes, 16 to 19 years															
Civilian noninstitutional population[1]	15,763	15,274	15,154	15,120	15,072	15,022	14,981	14,931	14,880	14,828	14,778	14,728	14,683	14,653	14,624
Civilian labor force	8,526	8,171	8,155	7,981	8,029	8,062	7,935	8,041	8,065	8,062	8,034	8,050	7,982	7,660	7,942
Participation rate	54.1	53.5	53.8	52.8	53.3	53.7	53.0	53.9	54.2	54.4	54.4	54.7	54.4	52.3	54.3
Employed	6,549	6,342	6,379	6,260	6,411	6,440	6,392	6,488	6,457	6,500	6,505	6,631	6,518	6,251	6,410
Employment-population ratio[2]	41.5	41.5	42.1	41.4	42.5	42.9	42.7	43.5	43.4	43.8	44.0	45.0	44.4	42.7	43.8
Agriculture	378	334	296	267	283	329	290	346	343	321	327	311	317	269	318
Nonagricultural industries	6,171	6,008	6,083	5,993	6,128	6,111	6,102	6,142	6,114	6,179	6,178	6,320	6,201	5,982	6,092
Unemployed	1,977	1,829	1,776	1,721	1,618	1,622	1,543	1,553	1,608	1,562	1,529	1,419	1,464	1,409	1,532
Unemployment rate	23.2	22.4	21.8	21.6	20.2	20.1	19.4	19.3	19.9	19.4	19.0	17.6	18.3	18.4	19.3
White															
Civilian noninstitutional population[1]	149,441	150,805	151,021	151,175	151,324	151,484	151,939	152,079	152,285	152,178	152,229	152,295	152,286	152,402	152,471
Civilian labor force	96,143	97,021	97,507	97,339	97,559	97,724	97,813	98,167	98,424	98,495	98,853	98,770	98,710	98,156	98,388
Participation rate	64.3	64.3	64.6	64.4	64.5	64.5	64.4	64.6	64.6	64.7	64.9	64.9	64.8	64.4	64.5
Employed	87,903	88,893	89,693	89,851	90,430	90,779	91,044	91,544	91,845	91,933	92,505	92,697	92,430	91,850	92,074
Employment-population ratio[2]	58.8	58.9	59.4	59.4	59.8	59.9	59.9	60.2	60.3	60.4	60.8	60.9	60.7	60.3	60.4
Unemployed	8,241	8,128	7,814	7,488	7,129	6,945	6,768	6,623	6,580	6,562	6,348	6,072	6,280	6,306	6,314
Unemployment rate	8.6	8.4	8.0	7.7	7.3	7.1	6.9	6.7	6.7	6.7	6.4	6.1	6.4	6.4	6.4
Black															
Civilian noninstitutional population[1]	18,584	18,925	18,994	19,026	19,057	19,086	19,196	19,222	19,248	19,274	19,302	19,330	19,360	19,386	19,416
Civilian labor force	11,331	11,647	11,720	11,565	11,623	11,650	11,660	11,881	11,867	11,934	12,008	11,962	12,076	12,176	12,079
Participation rate	61.0	61.5	61.7	60.8	61.0	61.0	60.7	61.8	61.7	61.9	62.5	61.9	62.4	62.8	62.2
Employed	9,189	9,375	9,504	9,449	9,563	9,582	9,707	9,958	9,896	9,923	10,105	10,168	10,041	10,226	10,259
Employment-population ratio[2]	49.4	49.5	50.0	49.7	50.2	50.2	50.6	51.8	51.4	51.5	52.4	52.6	51.9	52.8	52.8
Unemployed	2,142	2,272	2,216	2,116	2,060	2,068	1,953	1,923	1,972	2,011	1,903	1,795	2,035	1,950	1,820
Unemployment rate	18.9	19.5	18.9	18.3	17.7	17.8	16.7	16.2	16.6	16.8	15.8	15.0	16.9	16.0	15.1
Hispanic origin															
Civilian noninstitutional population[1]	9,400	12,771	9,700	9,745	9,677	9,735	9,778	9,906	10,080	10,072	10,026	9,824	9,738	9,785	9,713
Civilian labor force	5,983	8,119	6,202	6,165	6,232	6,267	6,336	6,292	6,484	6,378	6,332	6,298	6,293	6,271	6,328
Participation rate	63.6	63.6	63.9	63.3	64.4	64.4	64.8	63.5	64.3	63.3	63.2	64.1	64.6	64.1	65.2
Employed	5,158	6,995	5,392	5,398	5,463	5,540	5,627	5,652	5,751	5,643	5,666	5,669	5,626	5,600	5,650
Employment-population ratio[2]	54.9	54.8	55.6	55.4	56.5	56.9	57.6	57.1	57.1	56.0	56.5	57.7	57.8	57.2	58.2
Unemployed	825	1,124	810	767	769	727	708	639	733	735	666	629	667	672	678
Unemployment rate	13.8	13.8	13.1	12.4	12.3	11.6	11.2	10.2	11.3	11.5	10.5	10.0	10.6	10.7	10.7

[1] The population figures are not seasonally adjusted.

[2] Civilian employment as a percent of the civilian noninstitutional population.

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

4. Selected employment indicators, seasonally adjusted

[In thousands]

Selected categories	Annual average		1983				1984								
	1982	1983	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
CHARACTERISTIC															
Civilian employed, 16 years and over	99,526	100,834	101,876	101,970	102,606	102,941	103,190	103,892	104,140	104,402	105,288	105,748	105,395	104,969	105,239
Men	56,271	56,787	57,279	57,407	57,855	58,043	58,239	58,607	58,748	58,745	59,084	59,378	59,056	59,098	59,341
Women	43,256	44,047	44,597	44,563	44,751	44,898	44,950	45,285	45,392	45,657	46,205	46,370	46,339	45,871	45,898
Married men, spouse present	38,074	37,967	38,232	38,240	38,388	38,494	38,682	38,911	38,927	39,062	39,159	39,072	39,121	39,029	39,034
Married women, spouse present	24,053	24,603	24,921	24,953	25,057	25,140	24,947	25,212	25,239	25,457	25,722	25,786	25,716	25,764	25,641
Women who maintain families	5,099	5,091	5,124	5,172	5,236	5,254	5,293	5,346	5,444	5,491	5,668	5,688	5,662	5,507	5,412
MAJOR INDUSTRY AND CLASS OF WORKER															
Agriculture:															
Wage and salary workers	1,505	1,579	1,572	1,505	1,481	1,512	1,443	1,560	1,515	1,661	1,610	1,604	1,513	1,425	1,569
Self-employed workers	1,636	1,565	1,515	1,527	1,556	1,572	1,613	1,609	1,580	1,534	1,537	1,570	1,559	1,568	1,569
Unpaid family workers	261	240	236	227	224	265	233	232	198	207	246	212	230	208	187
Nonagricultural industries:															
Wage and salary workers	88,462	89,500	90,743	90,617	91,094	91,422	91,641	92,379	92,819	92,931	93,928	94,040	93,841	93,554	94,122
Government	15,562	15,537	15,560	15,578	15,585	15,481	15,535	15,822	15,813	15,784	15,761	15,685	15,604	15,782	15,959
Private industries	72,945	73,963	75,183	75,039	75,509	75,941	76,106	76,557	77,006	77,147	78,167	78,355	78,236	77,772	78,163
Private households	1,207	1,247	1,279	1,278	1,216	1,241	1,197	1,219	1,155	1,296	1,347	1,329	1,239	1,181	1,185
Other	71,738	72,716	73,904	73,761	74,293	74,700	74,909	75,339	75,851	75,851	76,820	77,026	76,997	76,591	76,979
Self-employed workers	7,262	7,575	7,656	7,695	7,800	7,734	7,936	7,849	7,755	7,834	7,707	7,828	7,717	7,829	7,721
Unpaid family workers	401	376	380	405	474	450	364	330	326	338	311	348	306	324	314
PERSONS AT WORK[1]															
Nonagricultural industries	90,552	92,038	93,322	93,273	93,834	94,173	94,707	95,067	94,982	96,918	96,523	96,500	96,848	96,921	96,448
Full-time schedules	72,245	73,624	74,666	75,047	75,398	75,802	76,237	76,715	77,004	78,276	78,280	78,496	78,659	78,799	78,291
Part time for economic reasons	5,852	5,997	6,027	5,724	5,848	5,712	5,943	5,808	5,463	5,593	5,353	5,491	5,300	5,324	5,496
Usually work full time	2,169	1,826	1,771	1,617	1,719	1,672	1,771	1,611	1,472	1,530	1,549	1,654	1,589	1,749	1,675
Usually work part time	3,683	4,171	4,256	4,107	4,129	4,040	4,172	4,197	3,991	4,063	3,804	3,837	3,711	3,576	3,821
Part time for noneconomic reasons	12,455	12,417	12,629	12,502	12,588	12,659	12,527	12,545	12,515	13,049	12,889	12,514	12,889	12,797	12,662

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

5. Selected unemployment indicators, seasonally adjusted

[Unemployment rates]

Selected categories	Annual average		1983				1984								
	1982	1983	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
CHARACTERISTIC															
Total, all civilian workers	9.7	9.6	9.2	8.8	8.4	8.2	8.0	7.8	7.8	7.8	7.5	7.1	7.5	7.5	7.4
Both sexes, 16 to 19 years	23.2	22.4	21.8	21.6	20.2	20.1	19.4	19.3	19.9	19.4	19.0	17.6	18.3	18.4	19.3
Men, 20 years and over	8.8	8.9	8.6	8.2	7.8	7.4	7.3	7.0	6.8	6.9	6.5	6.3	6.5	6.4	6.5
Women, 20 years and over	8.3	8.1	7.8	7.5	7.2	7.1	7.1	6.9	6.9	7.0	6.8	6.4	6.9	7.1	6.7
White, total	8.6	8.4	8.0	7.7	7.3	7.1	6.9	6.7	6.7	6.7	6.4	6.1	6.4	6.4	6.4
Both sexes, 16 to 19 years	20.4	19.3	18.2	18.5	17.2	17.0	16.2	16.5	17.1	16.2	16.2	15.5	15.3	15.9	16.6
Men, 16 to 19 years	21.7	20.2	18.9	19.8	17.6	17.5	17.8	16.4	17.3	16.6	16.8	16.5	17.8	16.2	17.3
Women, 16 to 19 years	19.0	18.3	17.4	16.9	16.6	16.5	14.5	16.7	16.8	15.7	15.5	14.5	12.6	15.5	15.8
Men, 20 years and over	7.8	7.9	7.7	7.3	6.9	6.7	6.3	6.1	5.8	5.9	5.6	5.3	5.5	5.5	5.6
Women, 20 years and over	7.3	6.9	6.6	6.3	6.0	5.9	6.0	5.8	5.9	6.0	5.8	5.6	5.9	6.0	5.8
Black, total	18.9	19.5	18.9	18.3	17.7	17.8	16.7	16.2	16.6	16.8	15.8	15.0	16.9	16.0	15.1
Both sexes, 16 to 19 years	48.0	48.5	51.1	48.7	47.3	49.0	47.9	43.5	46.7	44.8	44.1	34.3	42.4	41.7	41.7
Men, 16 to 19 years	48.9	48.8	52.7	45.6	44.9	46.4	47.1	46.7	44.4	42.8	40.9	35.3	42.6	40.6	39.9
Women, 16 to 19 years	47.1	48.2	49.2	52.2	50.0	51.9	48.8	39.9	49.6	47.1	48.2	33.1	42.1	42.9	43.7
Men, 20 years and over	17.8	18.1	16.9	16.3	15.6	15.1	14.8	14.1	15.4	16.0	14.1	14.8	15.7	14.2	13.5
Women, 20 years and over	15.4	16.5	16.1	15.9	15.6	15.9	14.4	14.4	13.5	13.4	13.6	12.4	14.0	14.1	12.6
Hispanic origin, total	13.8	13.8	13.1	12.4	12.3	11.6	11.2	10.2	11.3	11.5	10.5	10.0	10.6	10.7	10.7
Married men, spouse present	6.5	6.5	6.1	5.7	5.5	5.2	5.0	4.9	4.7	4.7	4.5	4.5	4.6	4.4	4.6
Married women, spouse present	7.4	7.0	6.8	6.3	6.0	6.1	6.0	5.9	5.8	5.8	5.8	5.6	5.9	6.0	5.8
Women who maintain families	11.7	12.2	12.0	11.4	10.5	10.9	10.7	11.0	11.0	10.5	9.8	9.6	9.6	10.5	10.0
Full-time workers	9.6	9.5	9.1	8.7	8.2	8.0	7.8	7.5	7.5	7.6	7.2	6.7	7.2	7.2	7.1
Part-time workers	10.5	10.4	10.1	10.0	9.8	9.8	9.2	9.3	9.2	9.1	9.3	10.3	9.6	9.6	9.4
Unemployed 15 weeks and over	3.2	3.8	3.5	3.3	3.1	3.0	2.9	2.6	2.5	2.5	2.5	2.3	2.4	2.3	2.3
Labor force time lost[1]	11.0	10.9	10.5	10.0	9.7	9.4	9.2	8.9	8.8	8.9	8.5	8.3	8.7	8.5	8.5
INDUSTRY															
Nonagricultural private wage and salary workers	10.1	9.9	9.4	9.0	8.6	8.3	7.9	7.8	7.6	7.7	7.2	7.0	7.4	7.5	7.4
Mining	13.4	17.0	16.9	12.1	12.8	12.4	10.9	12.2	11.2	10.3	8.9	7.1	7.5	10.3	8.6
Construction	20.0	18.4	18.1	15.8	15.6	16.3	15.0	15.1	13.3	14.3	14.8	14.8	14.7	14.0	13.8
Manufacturing	12.3	11.2	10.2	9.6	8.9	8.3	8.4	7.5	7.5	7.7	7.1	7.2	7.5	7.5	7.6
Durable goods	13.3	12.1	10.9	10.2	9.0	8.3	8.0	7.3	7.8	7.5	7.0	7.2	6.7	6.9	7.0
Nondurable goods	10.8	10.0	9.3	8.7	8.7	8.2	8.9	7.8	7.2	8.0	7.1	7.3	8.6	8.3	8.4
Transportation and public utilities	6.8	7.4	7.4	7.2	6.7	6.5	5.1	5.9	5.0	5.4	5.5	5.2	6.1	6.2	6.1
Wholesale and retail trade	10.0	10.0	9.5	9.8	9.1	8.8	8.4	8.3	8.3	8.7	7.9	7.2	7.8	7.8	8.2
Finance and service industries	6.9	7.2	7.0	6.9	6.7	6.6	6.3	6.3	6.4	6.1	5.5	5.4	5.9	6.1	5.6
Government workers	4.9	5.3	5.0	5.1	4.9	5.0	5.0	4.5	4.4	4.4	4.7	4.1	4.5	4.3	4.5
Agricultural wage and salary workers	14.7	16.0	16.5	16.2	15.7	15.6	15.5	14.0	14.6	12.2	13.9	11.8	14.6	12.8	15.0

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

6. Unemployment rates by sex and age, seasonally adjusted

[Civilian workers]

Sex and age	Annual average		1983				1984								
	1982	1983	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Total, 16 years and over	9.7	9.6	9.2	8.8	8.4	8.2	8.0	7.8	7.8	7.8	7.5	7.1	7.5	7.5	7.4
16 to 24 years	17.8	17.2	16.5	16.3	15.4	14.9	14.8	14.2	14.4	14.6	14.0	13.0	13.6	14.0	14.1
16 to 19 years	23.2	22.4	21.8	21.6	20.2	20.1	19.4	19.3	19.9	19.4	19.0	17.6	18.3	18.4	19.3
16 to 17 years	24.9	24.5	24.0	24.0	21.9	22.9	21.9	22.1	23.1	22.3	20.2	19.7	20.5	21.4	21.3
18 to 19 years	22.1	21.1	20.5	20.3	19.3	18.8	17.6	17.5	18.1	17.5	18.2	16.3	16.7	16.7	17.9
20 to 24 years	14.9	14.5	14.4	13.8	13.6	13.0	12.2	12.5	11.6	11.6	12.2	11.5	10.7	11.8	11.5
25 years and over	7.4	7.5	7.2	6.8	6.5	6.4	6.2	6.1	5.9	6.0	5.7	5.6	5.9	5.8	5.7
25 to 54 years	7.9	8.0	7.7	7.2	6.9	6.8	6.5	6.4	6.3	6.3	6.0	5.7	6.2	6.1	5.9
55 years and over	5.0	5.3	5.2	5.0	4.9	4.9	4.7	4.3	4.3	4.2	4.4	4.6	4.4	4.6	4.5
Men, 16 years and over	9.9	9.9	9.6	9.1	8.6	8.3	8.1	7.8	7.7	7.7	7.3	7.1	7.5	7.2	7.3
16 to 24 years	19.1	18.4	17.6	17.3	15.9	15.6	15.6	14.6	14.6	15.0	14.0	13.7	14.6	14.3	14.8
16 to 19 years	24.4	23.3	22.8	22.5	20.2	20.4	20.8	19.7	20.0	19.7	19.4	18.5	20.6	18.6	19.9
16 to 17 years	26.4	25.2	23.9	24.3	22.0	23.3	21.6	21.6	23.0	23.7	21.3	22.7	23.0	22.1	21.1
18 to 19 years	23.1	22.2	22.2	21.6	19.6	18.9	19.6	18.1	18.2	17.3	18.3	16.1	18.8	16.5	19.1
20 to 24 years	16.4	15.9	15.0	14.7	13.8	13.3	13.1	12.1	11.9	12.7	11.5	11.4	11.7	12.3	12.3
25 years and over	7.5	7.8	7.5	7.0	6.8	6.5	6.2	6.1	5.9	5.9	5.7	5.4	5.7	5.5	5.5
25 to 54 years	8.0	8.2	8.0	7.4	7.1	6.7	6.6	6.4	6.1	6.2	5.9	5.6	5.9	5.7	5.6
55 years and over	5.1	5.6	5.6	5.4	5.4	5.4	4.8	4.5	4.6	4.4	4.5	4.3	4.6	4.6	5.0
Women, 16 years and over	9.4	9.2	8.8	8.5	8.2	8.1	7.9	7.8	7.9	7.9	7.7	7.2	7.6	7.9	7.6
16 to 24 years	16.2	15.8	15.2	15.1	14.7	14.0	13.9	13.7	14.2	14.1	14.0	12.2	12.5	13.7	13.2
16 to 19 years	21.9	21.3	20.6	20.5	20.1	19.8	18.0	18.9	19.8	19.0	18.6	16.7	15.9	18.2	18.6
16 to 17 years	23.2	23.7	24.0	23.6	21.8	22.5	22.2	22.6	23.1	20.8	19.0	16.4	17.9	20.6	21.4
18 to 19 years	21.0	19.9	18.5	18.8	19.0	18.7	15.4	16.9	18.1	17.8	18.1	16.5	14.4	16.9	16.8
20 to 24 years	13.2	12.9	12.5	12.3	12.0	11.0	11.7	11.0	11.3	11.6	11.6	9.9	10.8	11.4	10.4
25 years and over	7.3	7.2	6.9	6.5	6.2	6.3	6.2	6.1	6.0	6.0	5.8	5.8	6.1	6.3	5.9
25 to 54 years	7.7	7.7	7.3	7.0	6.6	6.8	6.5	6.5	6.5	6.4	6.1	5.8	6.5	6.6	6.3
55 years and over	4.8	4.7	4.5	4.4	4.1	4.3	4.5	4.0	3.9	3.9	4.3	5.0	4.2	4.4	3.9

7. Unemployed persons by reason for unemployment, seasonally adjusted

[Numbers in thousands]

Reason for unemployment	Annual average		1983				1984								
	1982	1983	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Job losers	6,258	6,258	5,938	5,601	5,226	5,017	4,825	4,737	4,614	4,527	4,327	4,220	4,511	4,218	4,211
On layoff	2,127	1,780	1,562	1,392	1,321	1,283	1,238	1,272	1,254	1,108	1,192	1,166	1,164	1,152	1,109
Other job losers	4,141	4,478	4,376	4,209	3,905	3,734	3,588	3,465	3,360	3,419	3,134	3,055	3,346	3,066	3,102
Job leavers	840	830	858	866	868	855	809	772	756	781	804	800	865	835	845
Reentrants	2,384	2,412	2,362	2,322	2,250	2,246	2,192	2,153	2,208	2,308	2,178	1,968	2,091	2,322	2,298
New entrants	1,185	1,216	1,234	1,127	1,154	1,150	1,175	1,092	1,213	1,216	1,186	1,136	1,092	1,093	1,052
PERCENT DISTRIBUTION															
Total unemployed	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Job losers	58.7	58.4	57.1	56.5	55.0	54.1	53.6	54.1	52.5	51.3	50.9	51.9	52.7	49.8	50.1
On layoff	19.9	16.6	15.0	14.0	13.9	13.8	13.7	14.5	14.3	12.5	14.0	14.4	13.6	13.6	13.2
Other job losers	38.8	41.8	42.1	42.4	41.1	40.3	39.9	39.6	38.2	38.7	36.9	37.6	39.1	36.2	36.9
Job leavers	7.9	7.7	8.3	8.7	9.1	9.2	9.0	8.8	8.6	8.8	9.5	9.8	10.1	9.9	10.1
Reentrants	22.3	22.5	22.7	23.4	23.7	24.2	24.4	24.6	25.1	26.1	25.6	24.2	24.4	27.4	27.3
New entrants	11.1	11.3	11.9	11.4	12.1	12.4	13.1	12.5	13.8	13.8	14.0	14.0	12.8	12.9	12.5
PERCENT OF CIVILIAN LABOR FORCE															
Job losers	5.7	5.6	5.3	5.0	4.7	4.5	4.3	4.2	4.1	4.0	3.8	3.7	4.0	3.7	3.7
Job leavers	.8	.7	.8	.8	.8	.8	.7	.7	.7	.7	.7	.7	.8	.7	.7
Reentrants	2.2	2.2	2.1	2.1	2.0	2.0	2.0	1.9	2.0	2.0	1.9	1.7	1.8	2.0	2.0
New entrants	1.1	1.1	1.1	1.0	1.0	1.0	1.0	1.0	1.1	1.1	1.0	1.0	1.0	1.0	.9

8. Duration of unemployment, seasonally adjusted

[Numbers in thousands]

Weeks of unemployment	Annual average		1983				1984								
	1982	1983	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Less than 5 weeks	3,883	3,570	3,740	3,504	3,328	3,382	3,233	3,359	3,386	3,438	3,238	3,174	3,462	3,555	3,286
5 to 14 weeks	3,311	2,937	2,784	2,725	2,616	2,504	2,556	2,484	2,539	2,493	2,433	2,294	2,490	2,333	2,539
15 weeks and over	3,485	4,210	3,889	3,655	3,527	3,369	3,201	2,984	2,873	2,855	2,851	2,619	2,689	2,606	2,600
15 to 26 weeks	1,708	1,652	1,383	1,372	1,337	1,284	1,166	1,173	1,114	1,111	1,186	1,008	1,100	1,113	1,085
27 weeks and over	1,776	2,559	2,506	2,283	2,190	2,085	2,035	1,810	1,759	1,744	1,664	1,611	1,589	1,493	1,515
Mean duration in weeks	15.6	20.0	20.2	20.1	20.2	19.6	20.5	18.8	18.8	18.5	18.4	18.6	18.1	17.3	17.1
Median duration in weeks	8.7	10.1	9.4	9.5	9.4	9.0	9.2	8.3	8.3	8.1	8.7	7.2	7.6	7.5	7.6

EMPLOYMENT, HOURS, AND EARNINGS DATA FROM ESTABLISHMENT SURVEYS

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

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

Production workers in manufacturing include blue-collar worker supervisors and all nonsupervisory workers closely associated with production operations. Those workers mentioned in tables 12–16 include production workers in manufacturing and mining; construction workers in construction; and nonsupervisory workers in transportation and public utilities; in wholesale and retail trade; in finance, insurance, and real estate; and in services industries. These groups account for about four-fifths of the total employment on private nonagricultural payrolls.

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

in manufacturing (the only sector for which overtime data are available) and the effects of changes and seasonal factors in the proportion of workers in high-wage and low-wage industries.

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

The Diffusion Index, introduced in table 17 of the May 1983 issue, represents the percent of 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 3-, 6-, and 9-month spans are seasonally adjusted, while that for the 12-month span is unadjusted. The diffusion index is useful for measuring the dispersion of economic gains or losses and is also an economic indicator.

Notes on the data

Establishment data collected by the Bureau of Labor Statistics are periodically adjusted to comprehensive counts of employment (called "benchmarks"). The latest complete adjustment was made with the release of May 1984 data, published in the July 1984 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 1982; seasonally adjusted data have been revised back to January 1979. Unadjusted data from April 1983 forward, and seasonally adjusted data from January 1980 forward are subject to revision in future benchmarks. Earlier comparable unadjusted and seasonally adjusted data are published in a *Supplement to Employment and Earnings* (unadjusted data from April 1977 through February 1984 and seasonally adjusted data from January 1974 through February 1984) and in *Employment and Earnings, United States, 1909–78*, BLS Bulletin 1312–11 (for prior periods).

A comprehensive discussion of the differences between household and establishment data on employment appears in Gloria P. Green, "Comparing employment estimates from household and payroll surveys," *Monthly Labor Review*, December 1969, pp. 9–20. See also *BLS Handbook of Methods*, Bulletin 2134-1 (Bureau of Labor Statistics, 1982).

9. Employment, by industry, selected years, 1950–83

[Nonagricultural payroll data, in thousands]

Year	Total	Private sector	Goods-producing				Service-producing						Government			
			Total	Mining	Construction	Manufacturing	Total	Transportation and public utilities	Wholesale trade	Retail trade	Finance, insurance, and real estate	Services	Total	Federal	State	Local
1950	45,197	39,170	18,506	901	2,364	15,241	26,691	4,034	2,635	6,751	1,888	5,357	6,026	1,928	(1)	(1)
1955	50,641	43,727	20,513	792	2,839	16,882	30,128	4,141	2,926	7,610	2,298	6,240	6,914	2,187	1,168	3,558
1960[2]	54,189	45,836	20,434	712	2,926	16,796	33,755	4,004	3,143	8,248	2,629	7,378	8,353	2,270	1,536	4,547
1964	58,283	48,686	21,005	634	3,097	17,274	37,278	3,951	3,337	8,823	2,911	8,660	9,596	2,348	1,856	5,392
1965	60,765	50,689	21,926	632	3,232	18,062	38,839	4,036	3,466	9,250	2,977	9,036	10,074	2,378	1,996	5,700
1966	63,901	53,116	23,158	627	3,317	19,214	40,743	4,158	3,597	9,648	3,058	9,498	10,784	2,564	2,141	6,080
1967	65,803	54,413	23,308	613	3,248	19,447	42,495	4,268	3,689	9,917	3,185	10,045	11,391	2,719	2,302	6,371
1968	67,897	56,058	23,737	606	3,350	19,781	44,160	4,318	3,779	10,320	3,337	10,567	11,839	2,737	2,442	6,660
1969	70,384	58,189	24,361	619	3,575	20,167	46,023	4,442	3,907	10,798	3,512	11,169	12,195	2,758	2,533	6,904
1970	70,880	58,325	23,578	623	3,588	19,367	47,302	4,515	3,993	11,047	3,645	11,548	12,554	2,731	2,664	7,158
1971	71,214	58,331	22,935	609	3,704	18,623	48,278	4,476	4,001	11,351	3,772	11,797	12,881	2,696	2,747	7,437
1972	73,675	60,341	23,668	628	3,889	19,151	50,007	4,541	4,113	11,836	3,908	12,276	13,334	2,684	2,859	7,790
1973	76,790	63,058	24,893	642	4,097	20,154	51,897	4,656	4,277	12,329	4,046	12,857	13,732	2,663	2,923	8,146
1974	78,265	64,095	24,794	697	4,020	20,077	53,471	4,725	4,433	12,554	4,148	13,441	14,170	2,724	3,039	8,407
1975	76,945	62,259	22,600	752	3,525	18,323	54,345	4,542	4,415	12,645	4,165	13,892	14,686	2,748	3,179	8,758
1976	79,382	64,511	23,352	779	3,576	18,997	56,030	4,582	4,546	13,209	4,271	14,551	14,871	2,733	3,273	8,865
1977	82,471	67,344	24,346	813	3,851	19,682	58,125	4,713	4,708	13,808	4,467	15,303	15,127	2,727	3,377	9,023
1978	86,697	71,026	25,585	851	4,229	20,505	61,113	4,923	4,969	14,573	4,724	16,252	15,672	2,753	3,474	9,446
1979	89,823	73,876	26,461	958	4,463	21,040	63,363	5,136	5,204	14,989	4,975	17,112	15,947	2,773	3,541	9,633
1980	90,406	74,166	25,658	1,027	4,346	20,285	64,748	5,146	5,275	15,035	5,160	17,890	16,241	2,866	3,610	9,765
1981	91,156	75,126	25,497	1,139	4,188	20,170	65,659	5,165	5,358	15,189	5,298	18,619	16,031	2,772	3,640	9,619
1982	89,566	73,729	23,813	1,128	3,905	18,781	65,753	5,082	5,278	15,179	5,341	19,036	15,837	2,739	3,640	9,458
1983	90,138	74,288	23,394	957	3,940	18,497	66,744	4,958	5,259	15,545	5,467	19,665	15,851	2,752	3,660	9,439

[1] Not available.
[2] Data include Alaska and Hawaii beginning in 1959.

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

10. Employment, by State

[Nonagricultural payroll data, in thousands]

State	August 1983	July 1984	August 1984[p]	State	August 1983	July 1984	August 1984[p]
Alabama	1,323.7	1,348.4	1,353.1	Montana	267.4	271.9	273.5
Alaska	233.7	234.3	236.8	Nebraska	607.4	624.9	626.0
Arizona	1,037.7	1,111.9	1,114.8	Nevada	411.0	420.1	420.6
Arkansas	740.3	766.7	773.6	New Hampshire	420.4	433.7	439.0
California	9,878.3	10,328.5	10,351.2	New Jersey	3,191.5	3,316.9	3,314.7
Colorado	1,320.8	1,359.3	1,365.3	New Mexico	481.9	495.9	498.3
Connecticut	1,429.1	1,485.7	1,478.2	New York	7,266.8	7,500.2	7,467.2
Delaware	270.8	274.3	276.2	North Carolina	2,384.9	2,442.1	2,463.4
District of Columbia	601.9	617.2	611.8	North Dakota	250.1	252.0	251.5
Florida	3,829.1	4,079.4	4,084.1	Ohio	4,074.0	4,174.9	4,173.9
Georgia	2,275.4	2,407.5	2,427.2	Oklahoma	1,163.3	1,181.0	1,181.5
Hawaii	404.8	408.1	406.2	Oregon	965.4	986.7	995.7
Idaho	315.9	324.6	325.2	Pennsylvania	4,525.4	4,625.5	4,629.3
Illinois	4,509.2	4,591.6	4,592.7	Rhode Island	394.1	400.0	404.4
Indiana	2,008.0	2,064.7	2,069.2	South Carolina	1,176.4	1,238.7	1,234.4
Iowa	1,005.8	1,022.9	1,023.9	South Dakota	235.7	240.7	239.5
Kansas	906.5	930.6	929.6	Tennessee	1,727.8	1,817.5	1,814.3
Kentucky	1,141.7	1,180.5	1,184.5	Texas	6,126.6	6,337.6	6,345.4
Louisiana	1,555.3	1,573.1	1,568.9	Utah	567.4	595.8	598.5
Maine	440.1	445.0	452.2	Vermont	205.5	209.5	210.3
Maryland	1,698.6	1,758.5	1,746.7	Virginia	2,199.6	2,285.8	2,291.7
Massachusetts	2,650.9	2,726.1	2,737.9	Washington	1,578.4	1,636.9	1,643.7
Michigan	3,162.4	3,282.9	3,266.6	West Virginia	589.3	593.2	595.9
Minnesota	1,722.7	1,820.9	1,837.9	Wisconsin	1,849.7	1,916.7	1,928.1
Mississippi	782.0	794.8	792.8	Wyoming	204.1	210.8	211.1
Missouri	1,915.6	1,942.7	1,955.0				
				Virgin Islands	35.8	35.5	35.1

p = preliminary.

11. Employment, by industry, seasonally adjusted

[Nonagricultural payroll data, in thousands]

Industry division and group	Annual average 1982	1983	1983 Sept.	Oct.	Nov.	Dec.	1984 Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.p	Sept.p
TOTAL	89,566	90,138	91,018	91,345	91,688	92,026	92,391	92,846	93,058	93,449	93,768	94,135	94,350	94,532	94,671
PRIVATE SECTOR	73,729	74,288	75,083	75,481	75,814	76,157	76,533	76,971	77,185	77,546	77,864	78,241	78,422	78,566	78,638
GOODS-PRODUCING	23,813	23,394	23,669	23,895	24,058	24,198	24,383	24,577	24,595	24,760	24,851	24,974	25,059	25,086	24,996
Mining	1,128	957	952	965	967	969	975	978	978	984	995	1,002	1,007	1,017	1,024
Oil and gas extraction	708	600	594	600	603	607	608	607	607	612	619	623	629	637	646
Construction	3,905	3,940	4,019	4,044	4,073	4,086	4,154	4,226	4,151	4,246	4,286	4,343	4,356	4,344	4,371
General building contractors	991	1,015	1,043	1,053	1,064	1,077	1,100	1,111	1,099	1,110	1,126	1,135	1,133	1,130	1,143
Manufacturing	18,781	18,497	18,698	18,886	19,018	19,143	19,254	19,373	19,466	19,530	19,570	19,629	19,696	19,725	19,601
Production workers	12,742	12,581	12,759	12,928	13,048	13,145	13,234	13,326	13,388	13,443	13,465	13,492	13,541	13,561	13,455
Durable goods	11,039	10,774	10,923	11,071	11,170	11,266	11,343	11,440	11,513	11,551	11,598	11,652	11,702	11,754	11,680
Production workers	7,311	7,151	7,289	7,421	7,511	7,585	7,643	7,718	7,769	7,799	7,826	7,860	7,899	7,943	7,872
Lumber and wood products	598	658	680	690	695	698	702	706	712	714	711	712	708	706	702
Furniture and fixtures	432	447	456	462	467	470	475	480	483	482	482	485	485	484	481
Stone, clay, and glass products	577	573	581	587	589	592	595	604	606	604	605	605	606	604	604
Primary metal industries	922	838	849	863	869	877	871	877	877	879	887	884	880	880	870
Blast furnaces and basic steel products	396	343	346	351	351	352	347	348	347	345	347	345	342	335	334
Fabricated metal products	1,427	1,374	1,389	1,408	1,420	1,431	1,440	1,447	1,456	1,459	1,469	1,479	1,490	1,489	1,483
Machinery, except electrical	2,244	2,038	2,058	2,077	2,106	2,122	2,137	2,151	2,166	2,189	2,203	2,226	2,242	2,254	2,240
Electrical and electronic equipment	2,008	2,024	2,062	2,086	2,109	2,132	2,152	2,175	2,202	2,212	2,228	2,237	2,252	2,268	2,260
Transportation equipment	1,735	1,756	1,780	1,820	1,832	1,855	1,876	1,898	1,905	1,905	1,906	1,917	1,926	1,953	1,929
Motor vehicles and equipment	699	758	783	810	823	843	858	865	863	857	848	855	858	891	855
Instruments and related products	716	695	698	702	705	707	711	715	718	719	722	723	727	727	724
Miscellaneous manufacturing	382	371	370	376	378	382	384	387	388	388	385	384	386	389	387
Nondurable goods	7,741	7,724	7,775	7,815	7,848	7,877	7,911	7,933	7,953	7,979	7,972	7,977	7,994	7,971	7,921
Production workers	5,431	5,430	5,470	5,507	5,537	5,560	5,591	5,608	5,619	5,644	5,639	5,632	5,642	5,618	5,583
Food and kindred products	1,636	1,622	1,624	1,624	1,629	1,631	1,638	1,637	1,638	1,648	1,643	1,644	1,655	1,643	1,628
Tobacco manufactures	69	69	68	68	66	67	66	65	66	67	67	67	66	65	68
Textile mill products	749	744	753	758	760	762	758	767	769	766	762	759	755	751	744
Apparel and other textile products	1,161	1,164	1,174	1,186	1,195	1,202	1,207	1,213	1,218	1,226	1,217	1,209	1,206	1,200	1,183
Paper and allied products	662	662	666	669	671	675	676	680	680	680	681	685	687	685	681
Printing and publishing	1,272	1,296	1,305	1,311	1,317	1,321	1,328	1,333	1,339	1,348	1,356	1,362	1,368	1,371	1,373
Chemicals and allied products	1,075	1,047	1,047	1,049	1,050	1,052	1,053	1,054	1,054	1,057	1,057	1,062	1,064	1,068	1,062
Petroleum and coal products	201	195	194	192	192	191	191	190	190	189	188	188	187	187	185
Rubber and miscellaneous plastics products	697	718	735	748	758	766	774	784	790	790	795	797	801	800	799
Leather and leather products	219	208	209	210	210	210	210	210	209	208	206	204	205	201	198
SERVICE-PRODUCING	65,753	66,744	67,349	67,450	67,630	67,828	68,008	68,269	68,463	68,689	68,917	69,161	69,291	69,446	69,675
Transportation and public utilities	5,082	4,958	5,046	5,053	5,043	5,055	5,095	5,105	5,112	5,129	5,144	5,163	5,175	5,196	5,175
Transportation	2,789	2,739	2,768	2,776	2,763	2,776	2,816	2,828	2,839	2,862	2,871	2,883	2,896	2,918	2,912
Communication and public utilities	2,293	2,219	2,278	2,277	2,280	2,279	2,279	2,276	2,273	2,267	2,273	2,280	2,279	2,278	2,263
Wholesale trade	5,278	5,259	5,301	5,322	5,344	5,371	5,406	5,438	5,457	5,473	5,492	5,502	5,528	5,554	5,590
Durable goods	11,039	10,774	10,923	11,071	11,170	11,266	11,343	11,440	11,513	11,551	11,598	11,652	11,702	11,754	11,680
Nondurable goods	7,741	7,724	7,775	7,815	7,848	7,877	7,911	7,933	7,953	7,979	7,972	7,977	7,994	7,971	7,921
Retail trade	15,179	15,545	15,671	15,737	15,805	15,857	15,914	15,980	16,030	16,095	16,166	16,245	16,283	16,302	16,366
General merchandise stores	2,184	2,161	2,171	2,179	2,195	2,189	2,210	2,211	2,230	2,251	2,273	2,295	2,301	2,291	2,326
Food stores	2,478	2,560	2,568	2,587	2,594	2,600	2,618	2,626	2,626	2,635	2,630	2,641	2,648	2,650	2,657
Automotive dealers and service stations	1,632	1,667	1,685	1,695	1,703	1,710	1,725	1,740	1,748	1,743	1,751	1,751	1,762	1,758	1,761
Eating and drinking places	4,831	5,007	5,058	5,071	5,082	5,095	5,111	5,121	5,136	5,154	5,183	5,199	5,211	5,236	5,249
Finance, insurance, and real estate	5,341	5,467	5,503	5,512	5,530	5,546	5,573	5,593	5,613	5,640	5,662	5,676	5,676	5,682	5,682
Finance	2,646	2,740	2,763	2,769	2,777	2,789	2,797	2,812	2,831	2,851	2,863	2,863	2,854	2,851	2,857
Insurance	1,714	1,721	1,725	1,725	1,728	1,730	1,737	1,741	1,742	1,742	1,746	1,752	1,759	1,764	1,767
Real estate	981	1,005	1,015	1,018	1,025	1,027	1,039	1,040	1,041	1,047	1,053	1,066	1,063	1,067	1,058
Services	19,036	19,665	19,893	19,962	20,034	20,130	20,162	20,278	20,378	20,449	20,549	20,681	20,701	20,746	20,829
Business services	3,286	3,539	3,636	3,672	3,703	3,758	3,798	3,845	3,875	3,912	3,979	4,014	4,035	4,067	4,093
Health services	5,812	5,973	6,003	6,007	6,016	6,026	6,030	6,040	6,052	6,062	6,073	6,064	6,079	6,032	6,092
Government	15,837	15,851	15,935	15,864	15,874	15,869	15,858	15,875	15,873	15,903	15,904	15,894	15,928	15,966	16,033
Federal	2,739	2,752	2,774	2,760	2,759	2,762	2,760	2,763	2,770	2,771	2,767	2,777	2,779	2,780	2,785
State	3,640	3,660	3,672	3,667	3,669	3,668	3,670	3,682	3,686	3,693	3,699	3,699	3,697	3,718	3,708
Local	9,458	9,439	9,489	9,437	9,446	9,439	9,428	9,430	9,417	9,439	9,438	9,418	9,452	9,468	9,540

p = preliminary.

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

12. Average hours and earnings, by industry 1968–83

[Production or nonsupervisory workers on nonagricultural payrolls]

Year	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings
	Private sector			Mining			Construction		
1968	37.8	$2.85	$107.73	42.6	$3.35	$142.71	37.3	$4.41	$164.49
1969	37.7	3.04	114.61	43.0	3.60	154.80	37.9	4.79	181.54
1970	37.1	3.23	119.83	42.7	3.85	164.40	37.3	5.24	195.45
1971	36.9	3.45	127.31	42.4	4.06	172.14	37.2	5.69	211.67
1972	37.0	3.70	136.90	42.6	4.44	189.14	36.5	6.06	221.19
1973	36.9	3.94	145.39	42.4	4.75	201.40	36.8	6.41	235.89
1974	36.5	4.24	154.76	41.9	5.23	219.14	36.6	6.81	249.25
1975	36.1	4.53	163.53	41.9	5.95	249.31	36.4	7.31	266.08
1976	36.1	4.86	175.45	42.4	6.46	273.90	36.8	7.71	283.73
1977	36.0	5.25	189.00	43.4	6.94	301.20	36.5	8.10	295.65
1978	35.8	5.69	203.70	43.4	7.67	332.88	36.8	8.66	318.69
1979	35.7	6.16	219.91	43.0	8.49	365.07	37.0	9.27	342.99
1980	35.3	6.66	235.10	43.3	9.17	397.06	37.0	9.94	367.78
1981	35.2	7.25	255.20	43.7	10.04	438.75	36.9	10.82	399.26
1982	34.8	7.68	267.26	42.7	10.77	459.88	36.7	11.63	426.82
1983	35.0	8.02	280.70	42.5	11.27	478.98	37.2	11.92	443.42
	Manufacturing			Transportation and public utilities			Wholesale trade		
1968	40.7	$3.01	$122.51	40.6	$3.42	$138.85	40.1	$3.05	$122.31
1969	40.6	3.19	129.51	40.7	3.63	147.74	40.2	3.23	129.85
1970	39.8	3.35	133.33	40.5	3.85	155.93	39.9	3.44	137.26
1971	39.9	3.57	142.44	40.1	4.21	168.82	39.5	3.65	129.85
1972	40.5	3.82	154.71	40.4	4.65	187.86	39.4	3.85	144.18
1973	40.7	4.09	166.46	40.5	5.02	203.31	39.3	4.08	151.69
1974	40.0	4.42	176.80	40.2	5.41	217.48	38.8	4.39	160.34
1975	39.5	4.83	190.79	39.7	5.88	233.44	38.7	4.73	183.05
1976	40.1	5.22	209.32	39.8	6.45	256.71	38.7	5.03	194.66
1977	40.3	5.68	228.90	39.9	6.99	278.90	38.8	5.39	209.13
1978	40.4	6.17	249.27	40.0	7.57	302.80	38.8	5.88	228.14
1979	40.2	6.70	269.34	39.9	8.16	325.58	38.8	6.39	247.93
1980	39.7	7.27	288.62	39.6	8.87	351.25	38.5	6.96	267.96
1981	39.8	7.99	318.00	39.4	9.70	382.18	38.5	7.56	291.06
1982	38.9	8.49	330.26	39.0	10.32	402.48	38.3	8.09	309.85
1983	40.1	8.83	354.08	39.0	10.80	421.20	38.5	8.54	328.79
	Retail trade			Finance, insurance, and real estate			Services		
1968	34.7	$2.16	$74.95	37.0	$2.75	$101.75	34.7	$2.42	$83.97
1969	34.2	2.30	78.66	37.1	2.93	108.70	34.7	2.61	90.57
1970	33.8	2.44	82.47	36.7	3.07	112.67	34.4	2.81	96.66
1971	33.7	2.60	87.62	36.6	3.22	117.85	33.9	3.04	103.06
1972	33.4	2.75	91.85	36.6	3.36	122.98	33.9	3.27	110.85
1973	33.1	2.91	96.32	36.6	3.53	129.20	33.8	3.47	117.29
1974	32.7	3.14	102.68	36.5	3.77	137.61	33.6	3.75	126.00
1975	32.4	3.36	108.86	36.5	4.06	148.19	33.5	4.02	134.67
1976	32.1	3.57	114.60	36.4	4.27	155.43	33.3	4.31	143.52
1977	31.6	3.85	121.66	36.4	4.54	165.26	33.0	4.65	153.45
1978	31.0	4.20	130.20	36.4	4.89	178.00	32.8	4.99	163.67
1979	30.6	4.53	138.62	36.2	5.27	190.77	32.7	5.36	175.27
1980	30.2	4.88	147.38	36.2	5.79	209.60	32.6	5.85	190.71
1981	30.1	5.25	158.03	36.3	6.31	229.05	32.6	6.41	208.97
1982	29.9	5.48	163.85	36.2	6.78	245.44	32.6	6.92	225.59
1983	29.8	5.74	171.05	36.2	7.29	263.90	32.7	7.30	238.71

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

13. Average weekly hours, by industry, seasonally adjusted

[Production or nonsupervisory workers on private nonagricultural payrolls]

Industry	Annual average		1983				1984								
	1982	1983	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.p	Sept.p
PRIVATE SECTOR	34.8	35.0	35.2	35.2	35.2	35.2	35.4	35.3	35.3	35.4	35.3	35.3	35.2	35.2	35.3
MANUFACTURING	38.9	40.1	40.7	40.6	40.6	40.6	40.9	40.9	40.7	41.1	40.6	40.6	40.5	40.4	40.5
Overtime hours	2.3	3.0	3.2	3.3	3.3	3.4	3.5	3.5	3.5	3.7	3.3	3.3	3.3	3.2	3.3
Durable goods	39.3	40.7	41.4	41.2	41.3	41.3	41.6	41.7	41.4	41.8	41.3	41.2	41.2	41.1	41.4
Overtime hours	2.2	3.0	3.3	3.4	3.5	3.5	3.7	3.8	3.7	4.0	3.5	3.5	3.5	3.4	3.5
Lumber and wood products	38.0	40.1	40.4	40.5	40.0	40.0	40.6	40.4	40.1	40.4	39.6	39.4	39.3	39.4	40.0
Furniture and fixtures	37.2	39.4	40.0	39.8	39.8	40.1	40.0	39.9	39.6	39.7	39.7	39.1	39.8	39.2	40.2
Stone, clay, and glass products	40.1	41.5	42.0	41.8	41.8	41.9	42.1	42.5	41.9	42.3	42.1	41.8	41.9	41.6	41.8
Primary metal industries	38.6	40.5	41.2	41.6	41.7	41.8	41.9	42.0	41.8	42.2	42.1	41.7	41.5	41.0	41.5
Blast furnaces and basic steel products	37.9	39.5	40.5	40.8	40.8	41.2	41.0	41.3	41.2	41.0	41.6	41.1	39.9	39.6	40.0
Fabricated metal products	39.2	40.6	41.4	41.2	41.4	41.4	41.6	41.8	41.3	41.8	41.4	41.3	41.3	41.2	41.5
Machinery, except electrical	39.7	40.5	41.1	41.2	41.3	41.5	41.8	41.9	41.9	42.3	41.9	42.0	41.8	41.8	41.7
Electrical and electronic equipment	39.3	40.5	41.2	41.1	41.1	41.0	41.2	41.2	41.0	41.3	41.0	40.8	40.8	40.9	41.2
Transportation equipment	40.5	42.1	43.3	42.5	42.6	42.4	43.2	43.1	42.9	43.5	42.4	42.3	42.2	42.5	42.6
Motor vehicles and equipment	40.5	43.3	45.1	44.1	44.1	43.9	44.8	44.3	44.4	44.8	42.9	42.4	43.3	43.3	43.7
Instruments and related products	39.8	40.4	40.8	40.7	40.7	40.8	41.3	41.2	41.1	41.4	40.7	41.3	41.3	41.1	41.3
Nondurable goods	38.4	39.4	39.9	39.7	39.8	39.7	39.9	39.9	39.8	40.2	39.6	39.6	39.4	39.4	39.3
Overtime hours	2.5	3.0	3.1	3.1	3.1	3.2	3.3	3.3	3.3	3.4	3.1	3.2	3.1	3.0	3.0
Food and kindred products	39.4	39.5	39.8	39.6	39.6	39.5	39.7	39.7	39.8	40.1	39.7	39.8	39.5	39.6	39.6
Textile mill products	37.5	40.5	41.3	40.8	40.6	40.7	40.6	40.8	40.6	41.2	40.0	40.0	39.8	39.4	39.2
Apparel and other textile products	34.7	36.2	36.7	36.6	36.7	36.6	36.6	36.9	36.7	37.4	36.5	36.4	35.8	36.0	35.9
Paper and allied products	41.8	42.6	43.2	43.2	43.1	43.1	43.2	43.2	43.0	43.2	43.1	42.9	43.3	43.0	42.9
Printing and publishing	37.1	37.6	37.8	37.9	37.9	37.7	37.9	37.9	37.9	38.2	38.0	37.7	37.7	37.9	37.9
Chemicals and allied products	40.9	41.6	41.7	41.7	41.9	41.9	42.1	42.1	42.0	42.0	41.8	41.9	41.9	42.0	41.6
Petroleum and coal products	43.9	43.9	43.2	43.6	43.7	44.6	44.8	44.5	44.7	43.7	43.5	43.1	43.2	43.8	42.2
Leather and leather products	35.6	36.8	37.8	37.3	37.2	37.1	37.3	37.2	36.7	37.5	36.5	36.7	37.0	36.5	37.1
TRANSPORTATION AND PUBLIC UTILITIES	39.0	39.0	39.3	39.4	39.2	39.4	39.5	39.3	39.2	39.5	39.4	39.6	39.8	39.3	39.6
WHOLESALE TRADE	38.3	38.5	38.6	38.6	38.6	38.6	38.6	38.5	38.5	38.7	38.6	38.6	38.6	38.7	38.8
RETAIL TRADE	29.9	29.8	29.8	30.0	30.0	30.3	30.1	30.0	30.1	30.0	30.1	30.2	29.9	29.9	30.0
SERVICES	32.6	32.7	32.7	32.8	32.7	32.6	32.8	32.7	32.8	32.8	32.7	32.7	32.7	32.6	32.8

p = preliminary.

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

14. Average hourly earnings, by industry

[Production or nonsupervisory workers on private nonagricultural payrolls]

Industry	Annual average 1982	1983	1983 Sept.	Oct.	Nov.	Dec.	1984 Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.p	Sept.p
PRIVATE SECTOR	$7.68	$8.02	$8.12	$8.16	$8.16	$8.16	$8.26	$8.24	$8.24	$8.29	$8.28	$8.29	$8.32	$8.30	$8.43
Seasonally adjusted	(1)	(1)	8.09	8.13	8.14	8.17	8.21	8.23	8.25	8.31	8.29	8.33	8.35	8.34	8.40
MINING	10.77	11.27	11.33	11.33	11.40	11.41	11.54	11.49	11.60	11.62	11.56	11.57	11.57	11.57	11.65
CONSTRUCTION	11.63	11.92	12.04	12.06	11.91	12.02	12.08	11.99	11.97	11.95	11.99	11.94	11.97	12.00	12.12
MANUFACTURING	8.49	8.83	8.89	8.90	8.97	9.04	9.08	9.06	9.09	9.11	9.11	9.14	9.18	9.14	9.22
Durable goods	9.04	9.38	9.46	9.47	9.53	9.60	9.64	9.63	9.66	9.67	9.66	9.69	9.70	9.68	9.77
Lumber and wood products	7.43	7.79	7.87	7.86	7.79	7.80	7.88	7.88	7.87	7.89	7.92	8.04	8.01	8.04	8.11
Furniture and fixtures	6.31	6.62	6.74	6.71	6.73	6.78	6.76	6.75	6.76	6.76	6.80	6.84	6.88	6.90	6.98
Stone, clay, and glass products	8.87	9.27	9.42	9.38	9.41	9.41	9.42	9.38	9.40	9.51	9.54	9.58	9.64	9.61	9.64
Primary metal industries	11.33	11.34	11.34	11.28	11.32	11.35	11.38	11.49	11.44	11.51	11.49	11.46	11.45	11.43	11.49
Blast furnaces and basic steel products	13.35	12.89	12.79	12.68	12.71	12.71	12.76	13.10	12.97	13.12	13.09	13.02	13.02	13.13	13.21
Fabricated metal products	8.77	9.11	9.18	9.18	9.24	9.35	9.31	9.31	9.31	9.34	9.33	9.33	9.33	9.30	9.37
Machinery, except electrical	9.26	9.55	9.63	9.66	9.74	9.85	9.85	9.87	9.90	9.91	9.90	9.93	9.96	9.93	10.02
Electrical and electronic equipment	8.21	8.65	8.71	8.71	8.77	8.84	8.88	8.86	8.88	8.89	8.89	8.91	8.95	9.00	9.08
Transportation equipment	11.11	11.66	11.80	11.87	12.01	12.04	12.06	12.00	12.12	12.06	12.04	12.14	12.13	12.11	12.22
Motor vehicles and equipment	11.62	12.12	12.31	12.38	12.49	12.47	12.53	12.41	12.62	12.56	12.51	12.67	12.61	12.58	12.71
Instruments and related products	8.06	8.46	8.54	8.54	8.56	8.65	8.68	8.66	8.71	8.73	8.71	8.78	8.83	8.85	8.89
Miscellaneous manufacturing	6.42	6.80	6.83	6.84	6.84	6.95	7.00	6.97	6.97	6.97	6.99	6.98	7.02	6.97	7.00
Nondurable goods	7.74	8.08	8.11	8.12	8.18	8.24	8.27	8.24	8.27	8.29	8.30	8.33	8.41	8.37	8.43
Food and kindred products	7.92	8.20	8.17	8.16	8.26	8.36	8.41	8.37	8.39	8.43	8.44	8.41	8.41	8.35	8.39
Tobacco manufactures	9.79	10.35	9.90	9.65	10.77	10.19	10.77	11.13	11.29	11.43	11.55	11.92	11.67	10.69	10.18
Textile mill products	5.83	6.18	6.23	6.24	6.26	6.31	6.39	6.40	6.41	6.43	6.42	6.43	6.43	6.46	6.48
Apparel and other textile products	5.20	5.37	5.39	5.40	5.43	5.44	5.50	5.46	5.48	5.49	5.48	5.50	5.51	5.53	5.60
Paper and allied products	9.32	9.94	10.11	10.11	10.20	10.24	10.23	10.22	10.25	10.29	10.34	10.42	10.56	10.52	10.56
Printing and publishing	8.74	9.11	9.23	9.23	9.26	9.29	9.26	9.30	9.29	9.29	9.31	9.30	9.36	9.43	9.52
Chemicals and allied products	9.96	10.59	10.70	10.79	10.86	10.90	10.91	10.90	10.95	10.97	11.02	11.03	11.12	11.12	11.19
Petroleum and coal products	12.46	13.29	13.38	13.38	13.45	13.54	13.47	13.43	13.44	13.44	13.32	13.33	13.27	13.30	13.49
Rubber and miscellaneous plastics products	7.64	7.99	8.05	8.08	8.07	8.16	8.17	8.16	8.20	8.25	8.20	8.23	8.30	8.28	8.32
Leather and leather products	5.33	5.54	5.57	5.56	5.57	5.61	5.68	5.67	5.68	5.68	5.68	5.67	5.70	5.65	5.70
TRANSPORTATION AND PUBLIC UTILITIES	10.32	10.80	10.88	10.94	11.01	11.00	11.08	11.01	11.02	11.07	11.03	11.07	11.18	11.17	11.28
WHOLESALE TRADE	8.09	8.54	8.62	8.69	8.68	8.74	8.82	8.79	8.79	8.89	8.86	8.90	8.97	8.93	9.02
RETAIL TRADE	5.48	5.74	5.78	5.79	5.82	5.78	5.89	5.89	5.89	5.90	5.88	5.88	5.87	5.83	5.90
FINANCE, INSURANCE, AND REAL ESTATE	6.78	7.29	7.33	7.45	7.39	7.43	7.55	7.54	7.54	7.62	7.55	7.58	7.60	7.60	7.80
SERVICES	6.92	7.30	7.37	7.43	7.44	7.47	7.57	7.55	7.54	7.60	7.55	7.53	7.56	7.53	7.70

1 Not available.

p = preliminary.

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

15. The Hourly Earnings Index, by industry

[Production or nonsupervisory workers on private nonagricultural payrolls; 1977 = 100]

Industry	Not seasonally adjusted Sept. 1983	July 1984	Aug. 1984	Sept. 1984p	Percent change from: Sept. 1983 to Sept. 1984	Seasonally adjusted Sept. 1983	May 1984	June 1984	July 1984	Aug. 1984p	Sept. 1984p	Percent change from: Aug. 1984 to Sept. 1984
PRIVATE SECTOR (in current dollars)	156.5	160.4	160.1	162.0	3.5	156.2	159.6	160.3	160.8	160.6	161.7	0.7
Mining	168.0	174.3	173.9	175.3	4.3	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Construction	147.3	146.5	146.8	148.3	.7	145.5	147.0	147.1	146.6	146.5	146.5	.0
Manufacturing	158.2	162.8	162.7	163.6	3.4	158.1	162.0	162.3	162.9	163.4	163.5	.0
Transportation and public utilities	157.9	161.6	161.7	163.5	3.6	157.4	160.9	162.1	162.6	161.8	163.1	.8
Wholesale trade	159.8	165.9	165.2	166.9	4.5	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Retail trade	151.5	153.9	153.0	154.4	2.0	151.3	153.4	153.8	154.0	153.4	154.3	.6
Finance, insurance, and real estate	159.6	165.5	165.1	168.8	5.8	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Services	157.7	162.3	161.6	165.0	4.6	157.7	161.4	162.5	163.4	162.7	165.0	1.4
PRIVATE SECTOR (in constant dollars)	94.4	94.7	93.6	(2)	(2)	94.5	94.9	95.2	95.2	94.1	(2)	(2)

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

2 Not available.

p = preliminary.

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

16. Average weekly earnings, by industry

[Production or nonsupervisory workers on private nonagricultural payrolls]

Industry	Annual average		1983				1984								
	1982	1983	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.p	Sept.p
PRIVATE SECTOR															
Current dollars	$267.26	$280.70	$286.64	$288.05	$286.42	$289.68	$289.10	$288.40	$288.40	$292.64	$291.46	$294.30	$296.19	$294.65	$299.27
Seasonally adjusted	(1)	(1)	284.77	286.18	286.53	287.58	290.63	290.52	291.23	294.17	292.64	294.05	293.92	293.57	296.52
Constant (1977) dollars	168.09	171.37	172.99	173.42	172.44	174.40	173.32	172.59	172.59	174.71	173.18	174.45	174.85	172.31	(1)
MINING	459.88	478.98	488.32	489.46	489.06	495.19	499.68	492.92	496.48	499.66	499.39	505.61	497.51	504.45	511.44
CONSTRUCTION	426.82	443.42	456.32	449.84	432.33	442.34	438.50	443.63	439.30	448.13	458.02	460.88	462.04	462.00	469.04
MANUFACTURING															
Current dollars	330.26	354.08	362.71	362.23	365.98	372.45	368.65	368.74	369.96	372.60	369.87	372.91	369.95	369.26	375.25
Constant (1977) dollars	207.71	216.17	218.90	218.08	220.34	224.23	221.01	220.67	221.40	222.45	219.77	221.05	218.39	215.94	(1)
Durable goods	355.27	381.77	390.70	391.11	395.50	403.20	398.13	398.68	399.92	402.27	399.92	402.14	396.73	395.91	404.48
Lumber and wood products	282.34	312.38	320.31	319.12	309.26	311.22	311.26	313.62	314.01	317.18	317.59	324.01	316.40	321.60	326.02
Furniture and fixtures	234.73	260.83	270.95	271.08	269.87	277.98	263.64	263.93	267.02	267.02	268.60	270.86	269.70	273.93	281.99
Stone, clay, and glass products	355.69	384.71	399.41	394.90	395.22	394.28	386.22	389.27	389.16	401.32	404.50	407.15	406.81	404.58	406.81
Primary metal industries	437.34	459.27	469.48	464.74	470.91	478.97	476.82	482.58	480.48	488.02	481.43	480.17	472.89	466.34	479.13
Blast furnaces and basic steel products	505.97	509.16	521.83	508.47	513.48	526.19	521.88	539.72	534.36	549.73	540.62	536.42	524.71	516.01	532.36
Fabricated metal products	343.78	369.87	379.13	379.13	384.38	395.51	385.43	386.37	384.50	387.61	386.26	388.13	380.66	382.23	387.92
Machinery except electrical	367.62	386.78	395.79	396.06	405.18	418.63	411.73	413.55	415.80	417.21	413.82	417.06	411.35	410.11	417.83
Electrical and electronic equipment	322.65	350.33	358.80	357.98	363.08	369.51	364.97	364.15	364.08	364.49	363.60	365.31	361.58	366.30	374.10
Transportation equipment	449.96	490.89	505.04	505.66	515.23	521.33	517.37	514.80	521.16	523.40	514.11	519.59	508.25	504.99	514.46
Motor vehicles and equipment	470.61	524.80	546.56	545.96	550.81	556.16	555.08	544.80	560.33	563.94	546.69	557.48	537.19	532.13	546.53
Instruments and related products	320.79	341.78	349.29	346.72	350.96	357.25	356.75	356.79	358.85	358.80	354.50	362.61	361.15	362.85	368.05
Miscellaneous manufacturing	246.53	265.88	269.10	272.23	272.23	278.00	272.30	276.01	276.01	275.32	274.71	273.62	273.08	271.13	274.40
Nondurable goods	297.22	318.35	325.21	323.99	327.20	330.42	326.67	326.30	327.49	329.94	328.68	331.53	331.35	331.45	333.83
Food and kindred products	312.05	323.90	330.07	324.77	329.57	333.56	331.35	327.27	329.73	332.99	333.83	337.60	333.04	334.00	337.28
Tobacco manufactures	370.06	387.09	380.16	370.56	431.88	385.18	410.34	405.13	416.60	451.49	457.38	482.76	437.63	414.77	410.25
Textile mill products	218.63	250.29	258.55	256.46	256.66	258.71	257.52	259.84	258.96	260.42	257.44	259.77	252.70	256.46	255.31
Apparel and other textile products	180.44	194.39	198.35	198.72	199.82	199.65	198.55	200.38	201.12	202.03	200.02	202.40	198.36	200.74	201.60
Paper and allied products	389.58	423.44	439.79	437.76	440.64	448.51	440.91	438.44	437.68	442.47	443.59	449.10	456.19	451.31	456.19
Printing and publishing	324.25	342.54	350.74	350.74	352.81	356.74	347.25	349.68	353.02	353.02	351.92	349.68	351.94	358.34	362.71
Chemicals and allied products	407.36	440.54	448.33	449.94	457.21	462.16	458.22	457.80	458.81	460.74	460.64	463.20	463.70	463.70	467.74
Petroleum and coat products	546.99	583.43	592.73	586.04	590.46	603.88	594.03	584.21	585.98	590.02	580.75	579.86	579.90	582.54	584.12
Rubber and miscellaneous plastics products	302.54	329.19	337.30	338.55	338.94	345.98	343.14	342.72	341.94	347.33	341.94	344.84	341.96	341.14	344.45
Leather and leather products	189.75	203.87	209.43	206.83	207.76	209.25	208.46	208.66	205.05	210.16	209.59	213.76	212.61	208.49	210.90
TRANSPORTATION AND PUBLIC UTILITIES	402.48	421.20	428.67	432.13	432.69	436.70	434.34	429.39	429.78	435.05	432.38	440.59	447.20	442.33	447.82
WHOLESALE TRADE	309.85	328.79	333.59	336.30	335.92	339.99	338.69	335.78	336.66	342.27	342.00	344.43	348.04	346.48	349.98
RETAIL TRADE	163.85	171.05	172.82	173.12	173.44	178.02	173.17	173.17	174.34	175.82	176.40	178.75	180.21	178.40	177.59
FINANCE, INSURANCE, AND REAL ESTATE	245.44	263.90	264.61	271.18	266.78	268.97	275.58	274.46	273.70	278.13	274.07	275.15	278.92	276.64	285.48
SERVICES	225.59	238.71	241.00	242.96	242.54	243.52	246.78	246.13	245.80	248.52	246.13	247.74	250.24	248.49	252.56

1 Not available.

p = preliminary.

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

17. Indexes of diffusion: industries in which employment increased, seasonally adjusted

[In percent]

Time span	Year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Over 1-month span	1982	27.6	47.6	35.7	31.1	41.1	33.5	34.6	32.4	37.3	28.9	32.4	45.7
	1983	54.3	46.5	60.8	68.9	69.5	64.6	74.3	68.6	69.5	75.4	69.7	73.8
	1984	71.1	73.2	67.0	63.8	64.1	63.0	62.4	p57.3	p38.9	—	—	—
Over 3-month span	1982	25.1	27.8	27.8	27.3	27.6	28.6	23.5	24.1	26.5	25.9	27.8	41.6
	1983	46.8	57.3	64.1	75.1	75.7	77.8	74.1	81.6	80.8	78.9	79.5	77.6
	1984	82.2	80.5	76.5	71.1	68.4	68.9	p64.9	p54.1	—	—	—	—
Over 6-month span	1982	19.2	22.2	21.9	24.6	20.3	21.4	21.4	18.6	23.2	27.3	29.5	35.4
	1983	50.8	63.0	69.2	75.1	80.0	82.4	84.1	82.4	84.6	85.9	86.8	83.8
	1984	81.9	82.7	79.7	75.4	p70.5	p62.2	—	—	—	—	—	—
Over 12-month span	1982	21.6	21.4	17.6	18.1	16.2	18.1	21.1	21.1	25.1	31.6	34.1	40.3
	1983	49.5	54.3	61.9	71.1	77.3	79.5	83.8	88.1	86.8	87.3	85.4	87.3
	1984	86.5	p82.4	p78.6	—	—	—	—	—	—	—	—	—

p = preliminary.

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.

UNEMPLOYMENT INSURANCE DATA

NATIONAL UNEMPLOYMENT INSURANCE DATA are compiled monthly by the Employment and Training Administration of the U.S. Department of Labor from monthly reports of unemployment insurance activity prepared by State agencies. Railroad unemployment insurance data are prepared by the U.S. Railroad Retirement Board.

Definitions

Data for **all programs** represent an unduplicated count of insured unemployment under State programs, Unemployment Compensation for Ex-Servicemen, and Unemployment Compensation for Federal Employees, and the Railroad Insurance Act.

Under both State and Federal unemployment insurance programs for civilian employees, insured workers must report the completion of at least 1 week of unemployment before they are defined as unemployed. Persons not covered by unemployment insurance (about 10 percent of the labor force) and those who have exhausted or not yet earned benefit rights are excluded from the scope of the survey. **Initial claims** are notices filed by

persons in unemployment insurance programs to indicate they are out of work and wish to begin receiving compensation. A claimant who continued to be unemployed a full week is then counted in the insured unemployment figure. The **rate of insured unemployment** expresses the number of insured unemployed as a percent of the average insured employment in a 12-month period.

Average weekly seasonally adjusted insured unemployment data are computed by BLS' Weekly Seasonal Adjustment program. This procedure incorporated the X-11 Variant of the Census Method II Seasonal Adjustment program.

An **application** for benefits is filed by a railroad worker at the beginning of his first period of unemployment in a benefit year; no application is required for subsequent periods in the same year. **Number of payments** are payments made in 14-day registration periods. The **average amount of benefit payment** is an average for all compensable periods, not adjusted for recovery of overpayments or settlement of underpayments. However, **total benefits** paid have been adjusted.

18. Unemployment insurance and employment service operations

[All items except average benefits amounts are in thousands]

Item	1983					1984							
	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug. p
All programs:													
Insured unemployment	2,917	2,580	2,478	2,620	2,915	3,374	3,174	2,958	2,613	2,290	2,166	2,327	2,184
State unemployment insurance program:[1]													
Initial claims[2]	r1,667	r1,380	1,522	1,757	r2,104	r2,355	r1,528	r1,424	1,429	r1,368	r1,387	1,727	1,467
Insured unemployment (average weekly volume)	2,766	2,449	2,358	2,508	2,805	3,249	3,056	2,843	2,515	2,215	2,111	2,270	2,183
Rate of insured unemployment	3.2	2.8	2.7	2.9	3.3	3.8	3.6	3.3	2.9	2.6	2.5	2.6	2.5
Weeks of unemployment compensated	r11,578	9,383	8,417	9,301	10,168	12,232	11,622	11,339	9,695	9,304	r8,053	8,367	8,792
Average weekly benefit amount for total unemployment	r$121.17	$121.32	$123.00	$122.19	$122.61	$123.60	$124.30	$124.67	$125.26	$123.69	r$121.96	$119.85	$120.84
Total benefits paid	$1,367,186	$1,104,404	$1,002,141	$1,099,862	$1,203,605	$1,457,983	$1,400,458	$1,369,536	$1,173,601	$1,109,268	r$948,381	$972,687	$1,031,949
State unemployment insurance program:[1] (Seasonally adjusted data)[3]													
Initial claims[2]	1,803	1,729	1,667	1,677	1,604	1,617	1,572	1,570	1,569	1,614	1,559	1,623	1,626
Insured unemployment (average weekly volume)	3,036	3,102	2,801	2,711	2,687	2,510	2,428	2,470	2,507	2,300	2,356	2,457	2,415
Rate of insured unemployment	3.5	3.6	3.3	3.2	3.1	2.9	2.8	2.9	2.9	2.7	2.7	2.8	2.8
Unemployment compensation for ex-servicemen:[4]													
Initial claims[1]	19	17	16	15	14	15	13	13	12	12	12	13	14
Insured unemployment (average weekly volume)	26	27	28	28	27	27	24	22	20	18	18	18	19
Weeks of unemployment compensated	110	106	107	116	113	112	96	89	78	79	r71	71	80
Total benefits paid	$14,082	$13,531	$14,074	$15,121	$14,815	$14,532	$12,540	$11,813	$10,349	$10,577	r$9,467	$9,578	$10,839
Unemployment compensation for Federal civilian employees:[5]													
Initial claims	11	11	15	13	13	16	10	9	13	9	11	12	10
Insured unemployment (average weekly volume)	22	22	25	27	29	32	31	28	23	20	19	20	19
Weeks of unemployment compensated	96	83	88	110	119	133	129	122	98	88	76	80	83
Total benefits paid	$10,982	$9,535	$10,144	$12,415	$13,888	$15,588	$15,003	$14,778	$11,844	$10,529	r$8,994	$9,490	$9,826
Railroad unemployment insurance:													
Applications	14	9	7	8	8	10	4	3	2	2	11	25	7
Insured unemployment (average weekly volume)	46	41	48	40	43	51	49	41	27	19	16	16	17
Number of payments	107	103	92	92	95	121	104	99	70	54	38	35	37
Average amount of benefit payment	$214.21	$214.77	$211.41	$212.36	$213.71	$210.73	$209.56	$208.96	$196.32	$188.45	$187.37	$189.06	$197.85
Total benefits paid	$21,789	$20,239	$19,531	$19,536	$19,870	$23,866	$23,228	$20,112	$13,356	$10,233	$7,039	$6,691	$6,695
Employment service:[6]													
New applications and renewals	....	15,595	....	....	4,297	....	....	8,231	....	....	9,517	....	....
Nonfarm placements	....	3,012	....	....	782	....	....	1,469	....	....	1,810	....	....

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

[2] Excludes transition claims under State programs.

[3] Insured unemployment data were revised for the development and application of updated seasonal factors. The factors were developed from data through June 1984.

[4] Excludes data on claims and payments made jointly with other programs.

[5] Excludes data or claims and payments made jointly with State programs.

[6] Cumulative total for fiscal year (October 1–September 30). Data computed quarterly.

NOTE: Data for Puerto Rico and the Virgin Islands included. Dashes indicate data not available.

p = preliminary.

r = revised.

PRICE DATA

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

Definitions

The Consumer Price Index is a monthly statistical measure of the average change in prices in a fixed market basket of goods and services. Effective with the January 1978 index, the Bureau of Labor Statistics began publishing CPI's for two groups of the population. It introduced a CPI for All Urban Consumers, covering 80 percent of the total noninstitutional population, and revised the CPI for Urban Wage Earners and Clerical Workers, covering about half the new index population. The All Urban Consumers index covers in addition to wage earners and clerical workers, professional, managerial, and technical workers, the self-employed, short-term workers, the unemployed, retirees, and others not in the labor force.

The CPI is based on prices of food, clothing, shelter, fuel, drugs, transportation fares, doctors' and dentists' fees, and other goods and services that people buy for day-to-day living. The quantity and quality of these items is kept essentially unchanged between major revisions so that only price changes will be measured. Data are collected from more than 24,000 retail establishments and 24,000 tenants in 85 urban areas across the country. All taxes directly associated with the purchase and use of items are included in the index. Because the CPI's are based on the expenditures of two population groups in 1972–73, they may not accurately reflect the experience of individual families and single persons with different buying habits.

Though the CPI is often called the "Cost-of-Living Index," it measures only price change, which is just one of several important factors affecting living costs. Area indexes do not measure differences in the level of prices among cities. They only measure the average change in prices for each area since the base period.

Producer Price Indexes measure average changes in prices received in primary markets of the United States by producers of commodities in all stages of processing. The sample used for calculating these indexes contains about 2,800 commodities and about 10,000 quotations per month selected to represent the movement of prices of all commodities produced in the manufacturing, agriculture, forestry, fishing, mining, gas and electricity, and public utilities sectors. The universe includes all commodities produced or imported for sale in commercial transactions in primary markets in the United States.

Producer Price Indexes can be organized by stage of processing or by commodity. The stage of processing structure organizes products by degree of fabrication (that is, finished goods, intermediate or semifinished goods, and crude materials). The commodity structure organizes products by similarity of end-use or material composition.

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

In calculating Producer Price Indexes, price changes for the various commodities are averaged together with implicit quantity weights representing their importance in the total net selling value of all commodities as of 1972. The detailed data are aggregated to obtain indexes for stage of processing groupings, commodity groupings, durability of product groupings, and a number of special composite groupings.

Price indexes for the output of selected SIC industries measure average price changes in commodities produced by particular industries, as defined in the *Standard Industrial Classification Manual 1972* (Washington, U.S. Office of Management and Budget, 1972). These indexes are derived from several price series, combined to match the economic activity of the specified industry and weighted by the value of shipments in the industry. They use data from comprehensive industrial censuses conducted by the U.S. Bureau of the Census and the U.S. Department of Agriculture.

Notes on the data

Regional CPI's cross classified by population size were introduced in the May 1978 *Review*. These indexes enable users in local areas for which an index is not published to get a better approximation of the CPI for their area by using the appropriate population size class measure for their region. The cross-classified indexes are published bimonthly. (See table 20.)

For details concerning the 1978 revision of the CPI, see *The Consumer Price Index: Concepts and Content Over the Years*, Report 517, revised edition (Bureau of Labor Statistics, May 1978).

As of January 1976, the Producer Price Index incorporated a revised weighting structure reflecting 1972 values of shipments.

Additional data and analyses of price changes are provided in the *CPI Detailed Report* and *Producer Prices and Price Indexes*, both monthly publications of the Bureau.

For a discussion of the general method of computing producer, and industry price indexes, see *BLS Handbook of Methods*, Bulletin 2134-1 (Bureau of Labor Statistics, 1982), chapter 7. For consumer prices, see *BLS Handbook of Methods for Surveys and Studies* (1976), chapter 13. See also John F. Early, "Improving the measurement of producer price change," *Monthly Labor Review*, April 1978. For industry prices, see also Bennett R. Moss, "Industry and Sector Price Indexes," *Monthly Labor Review*, August 1965.

19. Consumer Price Index for Urban Wage Earners and Clerical Workers, annual averages and changes, 1967–83

[1967 = 100]

Year	All items Index	Percent change	Food and beverages Index	Percent change	Housing Index	Percent change	Apparel and upkeep Index	Percent change	Transportation Index	Percent change	Medical care Index	Percent change	Entertainment Index	Percent change	Other goods and services Index	Percent change
1967	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...
1968	104.2	4.2	103.6	3.6	104.0	4.0	105.4	5.4	103.2	3.2	106.1	6.1	105.7	5.7	105.2	5.2
1969	109.8	5.4	108.8	5.0	110.4	6.2	111.5	5.8	107.2	3.9	113.4	6.9	111.0	5.0	110.4	4.9
1970	116.3	5.9	114.7	5.4	118.2	7.1	116.1	4.1	112.7	5.1	120.6	6.3	116.7	5.1	115.8	5.8
1971	121.3	4.3	118.3	3.1	123.4	4.4	119.8	3.3	118.6	5.2	128.4	6.5	122.9	5.3	122.4	4.8
1972	125.3	3.3	123.2	4.1	128.1	3.8	122.3	2.1	119.9	1.1	132.5	3.2	126.5	2.9	127.5	4.2
1973	133.1	6.2	139.5	13.2	133.7	4.4	126.8	3.7	123.8	3.3	137.7	3.9	130.0	2.8	132.5	3.9
1974	147.7	11.0	158.7	13.8	148.8	11.3	136.2	7.4	137.7	11.2	150.5	9.3	139.8	7.5	142.0	7.2
1975	161.2	9.1	172.1	8.4	164.5	10.6	142.3	4.5	150.6	9.4	168.6	12.0	152.2	8.9	153.9	8.4
1976	170.5	5.8	177.4	3.1	174.6	6.1	147.6	3.7	165.5	9.9	184.7	9.5	159.8	5.0	162.7	5.7
1977	181.5	6.5	188.0	8.0	186.5	6.8	154.2	4.5	177.2	7.1	202.4	9.6	167.7	4.9	172.2	5.8
1978	195.3	7.6	206.2	9.7	202.6	8.6	159.5	3.4	185.8	4.9	219.4	8.4	176.2	5.1	183.2	6.4
1979	217.7	11.5	228.7	10.9	227.5	12.3	166.4	4.3	212.8	14.5	240.1	9.4	187.6	6.5	196.3	7.2
1980	247.0	13.5	248.7	8.7	263.2	15.7	177.4	6.6	250.5	17.7	287.2	11.3	203.7	8.5	213.6	8.8
1981	272.3	10.2	267.8	7.7	293.2	11.4	186.6	5.2	281.3	12.3	295.1	10.4	219.0	7.5	233.3	9.2
1982	288.6	6.0	278.5	4.0	314.7	7.3	190.9	2.3	293.1	4.2	326.9	10.8	232.4	6.1	257.0	10.2
1983	297.4	3.0	284.7	2.2	322.0	2.3	195.6	2.5	300.0	2.4	355.1	8.6	242.4	4.3	286.3	11.4

20. Consumer Price Index for All Urban Consumers and revised CPI for Urban Wage Earners and Clerical Workers, U.S. city average—general summary and groups, subgroups, and selected items

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers 1983 Aug.	1984 Mar.	Apr.	May	June	July	Aug.	Urban Wage Earners and Clerical Workers 1983 Aug.	1984 Mar.	Apr.	May	June	July	Aug.
All items	300.3	307.3	308.8	309.7	310.7	311.7	313.0	299.5	303.3	304.1	305.4	306.2	307.5	310.3
Food and beverages	284.9	294.3	294.5	293.6	294.3	295.3	296.9	285.1	294.5	294.7	293.7	294.3	295.3	296.9
Housing	324.8	331.5	333.2	334.6	336.2	338.1	339.5	324.3	322.9	322.7	325.2	326.2	328.7	334.2
Apparel and upkeep	197.3	198.8	199.2	198.9	197.4	196.6	200.1	196.3	198.0	198.2	197.7	196.1	195.3	199.0
Transportation	302.4	306.9	309.6	312.2	313.1	312.9	312.9	304.1	308.9	311.9	314.6	315.5	315.2	315.2
Medical care	360.0	374.5	375.7	376.8	378.0	380.3	381.9	357.9	372.6	373.9	375.0	376.3	378.5	380.1
Entertainment	246.6	251.7	253.8	253.5	254.5	255.3	256.4	243.1	248.0	249.8	249.6	250.7	251.4	252.5
Other goods and services	289.0	302.1	302.8	303.2	304.4	306.5	307.2	288.0	299.7	300.4	300.8	302.1	304.5	305.3
Commodities	273.4	278.7	280.1	280.4	280.6	280.6	281.4	275.1	278.1	279.2	279.5	279.7	280.1	281.4
Commodities less food and beverages	263.6	266.6	268.7	269.7	269.6	269.0	269.3	266.1	266.4	267.8	268.7	268.7	268.8	270.0
Nondurables less food and beverages	274.7	274.2	275.7	276.1	275.4	274.3	274.8	276.9	276.1	277.5	277.9	277.2	276.2	276.6
Durables	254.3	262.2	265.2	267.0	267.8	267.8	267.8	256.0	257.1	258.5	259.8	260.3	261.3	263.0
Services	346.8	356.5	358.1	359.9	361.9	364.5	366.5	344.8	349.9	350.1	353.4	355.2	358.2	363.9
Rent, residential	238.2	244.8	246.4	247.2	248.4	249.7	251.1	237.6	244.1	245.7	246.5	247.7	249.0	250.3
Household services less rent of shelter (12/82 = 100)	104.8	105.8	106.2	107.4	108.5	109.7	110.5	....	....	....	....	....	....	....
Transportation services	304.0	315.4	315.8	317.7	319.6	321.4	323.8	300.2	311.6	312.1	313.9	315.7	317.4	319.6
Medical care services	389.8	405.3	406.3	407.1	408.4	410.9	412.7	387.0	402.7	403.9	404.7	406.1	408.6	410.4
Other services	276.9	290.4	291.3	292.3	293.6	294.2	295.5	274.8	287.6	288.3	289.4	290.9	291.5	292.8
Special indexes:														
All items less food	300.5	306.8	308.6	310.0	311.0	312.0	313.2	300.0	302.4	303.3	305.2	306.0	307.3	310.4
All items less homeowners' costs	102.7	105.1	105.5	105.9	106.2	106.5	106.9	....	....	....	....	....	....	....
All items less mortgage interest costs	....	....	....	....	....	....	....	286.3	291.3	292.4	293.2	294.0	294.9	296.4
Commodities less food	261.4	264.4	266.5	267.4	267.4	266.8	267.1	263.9	264.3	265.7	266.6	266.6	266.7	267.8
Nondurables less food	269.6	269.3	270.7	271.1	270.5	269.5	270.0	271.7	271.3	272.6	273.0	272.4	271.4	271.8
Nondurables less food and apparel	310.9	310.3	312.1	313.0	312.9	311.9	311.0	312.7	311.6	313.5	314.3	314.3	313.3	312.2
Nondurables	281.0	285.5	286.3	286.1	286.0	286.0	287.1	282.1	286.4	287.2	286.9	286.9	286.8	287.8
Services less rent of shelter (12/82 = 100)	103.5	106.5	106.8	107.5	108.3	109.0	109.7	....	....	....	....	....	....	....
Services less medical care	339.9	349.0	350.6	352.5	354.5	357.1	359.2	338.1	342.2	342.6	345.8	347.6	350.5	356.6
Domestically produced farm foods	269.2	279.9	279.4	277.4	278.0	279.0	281.4	268.0	278.6	278.1	276.0	276.4	277.4	279.8
Selected beef cuts	270.5	279.7	280.6	278.1	273.7	271.9	274.2	271.6	281.3	282.3	279.3	274.9	272.8	275.5
Energy	429.8	418.1	421.3	426.1	428.5	428.3	427.3	430.7	418.2	421.5	426.0	428.2	427.8	426.5
Energy commodities	423.7	410.7	414.2	416.3	414.4	408.9	404.2	424.9	411.3	414.8	416.9	415.0	409.5	404.9
All items less energy	290.3	299.2	300.5	301.1	301.9	303.1	304.6	288.8	294.0	294.6	295.7	296.3	297.8	301.0
All items less food and energy	288.2	296.7	298.3	299.3	300.2	301.3	302.8	286.6	290.7	291.3	293.0	293.6	295.1	298.7
Commodities less food and energy	244.2	249.9	251.8	252.5	252.8	253.0	254.2	245.1	247.2	248.4	249.1	249.3	250.1	252.0
Services less energy	339.3	350.7	352.2	353.3	354.7	356.8	358.6	336.8	343.3	343.3	346.1	347.2	349.7	355.5
Purchasing power of the consumer dollar, 1967 = $1	$0.333	$0.325	$0.324	$0.323	$0.322	$0.321	$0.319	$0.334	$0.330	$0.329	$0.327	$0.327	$0.325	$0.322

20. Continued—Consumer Price Index—U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers						
	1983	1984						1983	1984					
	Aug.	Mar.	Apr.	May	June	July	Aug.	Aug.	Mar.	Apr.	May	June	July	Aug.
FOOD AND BEVERAGES	284.9	294.3	294.5	293.6	294.3	295.3	296.9	285.1	294.5	294.7	293.7	294.3	295.3	296.9
Food	292.2	302.2	302.3	301.4	302.0	303.2	304.8	292.2	302.1	302.3	301.2	301.8	302.8	304.5
Food at home	282.5	293.1	292.8	290.7	291.4	292.5	294.4	281.5	291.9	291.6	289.4	290.0	291.0	292.9
Cereals and bakery products	294.0	301.5	302.8	303.5	304.9	306.6	307.8	292.5	300.0	301.3	301.9	303.4	304.9	306.3
Cereals and cereal products (12/77 = 100)	158.6	161.9	162.5	163.4	164.2	164.5	165.0	159.5	162.6	163.1	164.1	164.8	165.2	165.7
Flour and prepared flour mixes (12/77 = 100)	143.9	144.6	143.8	144.6	146.2	147.2	148.3	144.6	145.1	144.1	144.8	146.5	147.5	148.6
Cereal (12/77 = 100)	177.2	182.3	183.9	185.1	185.7	185.7	185.9	179.5	184.4	186.1	187.3	188.0	188.0	188.2
Rice, pasta, and cornmeal (12/77 = 100)	145.6	148.8	149.2	150.0	150.1	150.3	150.5	146.8	150.0	150.4	151.1	151.2	151.4	151.7
Bakery products (12/77 = 100)	154.5	158.8	159.4	159.6	160.4	161.5	162.2	153.3	157.5	158.2	158.4	159.1	160.1	160.9
White bread	253.1	258.9	258.2	260.4	260.2	260.9	262.6	248.7	254.6	254.0	256.1	256.0	256.6	258.5
Other breads (12/77 = 100)	150.1	153.0	154.7	154.3	154.8	155.7	154.9	152.2	155.2	156.8	156.6	157.0	157.8	157.3
Fresh biscuits, rolls, and muffins (12/77 = 100)	153.4	158.8	159.2	158.5	158.7	158.7	159.3	149.6	154.9	155.1	154.3	154.5	154.6	155.1
Fresh cakes and cupcakes (12/77 = 100)	154.9	160.0	161.2	160.6	161.3	163.9	164.9	153.3	158.1	159.2	158.7	159.3	161.8	162.7
Cookies (12/77 = 100)	157.6	162.9	163.8	163.9	165.8	166.1	167.9	158.5	163.7	164.8	164.7	166.7	167.1	168.9
Crackers, bread, and cracker products (12/77 = 100)	151.4	153.9	156.6	155.4	157.9	160.7	162.0	152.8	155.2	158.1	156.6	159.2	162.0	163.4
Fresh sweetrolls, coffeecake, and donuts 912/77 = 100)	155.3	160.5	160.1	161.5	162.1	163.0	163.4	158.0	163.3	163.1	164.2	164.9	165.6	166.3
Frozen and refrigerated bakery products and fresh pies, tarts, and turnovers (12/77 = 100)	159.4	163.8	166.0	164.9	166.6	169.0	168.9	152.5	157.0	159.1	158.1	159.8	162.1	161.8
Meats, poultry, fish, and eggs	258.8	269.6	270.5	266.7	263.9	264.6	265.7	258.4	269.0	270.0	266.1	263.3	263.9	265.2
Meats, poultry, and fish	265.0	272.6	272.7	270.9	270.3	271.4	272.7	264.4	272.0	272.1	270.1	269.6	270.4	272.1
Meats	264.2	268.8	268.9	267.9	266.8	267.3	269.9	263.7	268.3	268.4	267.2	266.1	266.6	269.4
Beef and veal 1	270.7	279.9	280.8	278.3	274.2	272.1	274.3	271.1	280.8	281.7	278.8	274.6	272.4	274.9
Ground beef other than canned	256.5	260.9	262.7	259.7	255.1	253.0	254.8	258.0	262.1	264.0	260.6	256.3	253.7	256.0
Chuck roast	272.4	286.6	286.8	281.0	272.1	269.1	272.7	280.6	295.8	295.8	289.5	280.9	277.3	280.4
Round roast	232.4	251.2	250.9	246.5	238.3	231.4	235.7	235.0	254.5	254.7	250.2	242.6	235.1	239.9
Round steak	250.3	261.6	262.4	261.3	254.2	250.6	254.7	248.5	261.3	261.4	258.7	251.3	247.7	254.4
Sirloin steak	280.9	278.7	284.3	280.0	284.6	286.5	287.7	281.8	280.9	286.4	281.7	285.9	288.4	288.9
Other beef and veal (12/77 = 100)	166.6	172.2	172.1	172.0	170.9	170.5	171.2	165.1	171.0	171.0	170.7	169.3	169.1	169.8
Pork	249.6	248.6	247.7	248.0	250.5	255.5	259.9	249.3	248.0	247.2	247.4	249.9	254.8	259.2
Bacon	264.7	258.9	258.8	262.5	262.8	272.4	272.3	268.8	262.7	262.6	266.3	266.7	276.3	276.3
Chops	232.4	229.6	232.9	227.3	234.4	242.4	250.7	230.5	227.8	231.1	225.2	232.4	240.1	248.3
Ham other than canned (12/77 = 100)	109.6	112.2	109.2	110.2	110.7	111.4	113.5	106.8	109.1	106.3	107.4	107.6	108.3	110.4
Sausage	313.9	315.2	314.8	318.7	319.3	322.0	322.9	315.3	315.6	315.3	319.2	319.8	322.9	323.6
Canned ham	254.0	251.5	246.9	249.7	248.3	246.5	248.1	259.8	256.3	252.1	254.8	253.3	252.0	253.4
Other pork (12/77 = 100)	138.4	137.8	137.3	137.1	139.1	142.0	146.1	137.8	137.1	136.8	136.4	138.3	141.1	145.3
Other meats	264.6	265.1	264.6	265.7	267.5	268.0	268.4	264.4	264.6	263.9	265.1	267.1	267.5	268.0
Frankfurters	266.7	264.2	262.5	264.8	265.8	265.3	267.8	265.9	263.0	261.1	263.4	264.4	263.8	266.3
Bologna, liverwurst, and salami (12/77 = 100)	153.2	153.1	152.9	153.6	155.0	154.8	154.8	153.3	152.9	152.6	153.4	154.7	154.8	154.7
Other lunchmeats (12/77 = 100)	136.4	136.3	135.3	135.9	138.2	138.2	138.2	134.5	134.3	133.4	134.0	136.4	136.4	136.4
Lamb and organ meats (12/77 = 100)	133.8	137.2	138.9	138.5	137.1	139.0	138.6	136.6	140.5	142.1	141.7	140.3	142.0	141.7
Poultry	200.5	223.2	222.3	218.0	219.6	221.3	216.5	198.5	221.2	220.4	216.0	217.7	218.8	214.0
Fresh whole chicken	202.1	232.6	231.2	223.2	223.7	228.1	218.6	200.0	229.8	228.7	221.0	221.5	225.4	216.1
Fresh and frozen chicken parts (12/77 = 100)	131.7	150.7	150.1	145.9	147.6	146.6	144.1	129.9	148.7	148.3	143.9	145.7	144.4	141.8
Other poultry (12/77 = 100)	125.7	127.9	128.0	130.3	131.6	132.7	133.3	125.1	127.6	127.3	129.6	131.0	131.5	132.3
Fish and seafood	372.7	385.3	387.3	380.8	382.3	387.0	387.0	370.8	383.9	385.9	380.0	380.9	385.5	385.7
Canned fish and seafood	135.9	132.1	132.7	132.3	133.0	134.4	134.4	135.4	131.7	132.2	131.9	132.5	133.9	133.9
Fresh and frozen fish and seafood (12/77 = 100)	145.5	155.4	156.3	152.6	153.1	155.1	155.1	144.8	155.2	156.1	152.7	152.9	154.8	155.0
Eggs	183.7	237.2	249.6	218.9	185.8	182.7	179.3	184.6	238.7	251.0	220.0	186.7	183.7	180.4
Dairy products	250.2	250.8	251.5	251.0	251.7	252.2	252.7	249.4	249.8	250.5	250.1	250.6	251.1	251.7
Fresh milk and cream (12/77 = 100)	136.5	136.3	136.8	136.5	136.6	136.7	136.7	135.9	135.8	136.2	135.9	135.9	136.0	136.0
Fresh whole milk	223.2	222.9	223.7	223.0	223.2	223.3	223.2	222.3	221.9	222.6	222.0	222.1	222.2	222.0
Other fresh milk and cream (12/77 = 100)	136.8	137.3	137.3	137.3	137.3	137.5	137.7	136.2	136.7	136.6	136.6	136.6	136.8	137.0
Processed dairy products	148.4	149.2	149.6	149.4	150.2	150.8	151.5	148.6	149.4	149.8	149.7	150.5	151.0	151.8
Butter	254.2	254.4	252.4	254.2	254.1	261.2	264.4	256.8	256.9	254.9	256.8	256.7	263.8	266.7
Cheese (12/77 = 100)	146.4	146.3	146.6	146.2	147.4	147.9	148.2	146.7	146.6	146.9	146.5	147.8	148.2	148.6
Ice cream and related products (12/77 = 100)	152.5	155.3	156.4	156.6	156.6	155.8	157.4	151.5	154.3	155.3	155.5	155.5	154.8	156.5
Other dairy products (12/77 = 100)	145.9	146.9	148.2	146.8	148.5	148.3	148.1	146.5	147.4	148.7	147.3	148.8	148.6	148.6
Fruits and vegetables	299.4	323.2	315.3	310.2	318.1	320.0	327.7	295.1	319.4	311.2	306.6	313.1	315.1	322.4
Fresh fruits and vegetables	310.7	344.3	326.5	316.0	329.7	332.4	345.7	304.3	339.0	321.0	309.5	322.5	325.2	337.6
Fresh fruits	328.9	300.5	304.2	315.2	343.3	346.9	353.3	317.5	290.8	294.0	303.2	328.8	333.5	338.8
Apples	310.0	298.6	299.3	298.8	315.5	329.9	341.8	311.9	298.7	300.4	299.5	315.2	330.6	342.8
Bananas	291.0	264.1	275.2	251.1	277.9	271.8	257.0	290.7	262.2	273.1	248.8	275.5	269.5	254.7
Oranges	359.8	309.6	309.5	344.8	452.5	486.5	530.8	329.9	284.2	283.4	313.9	413.0	448.5	487.7
Other fresh fruits (12/77 = 100)	173.2	159.1	161.5	169.9	169.6	163.6	160.4	166.3	153.4	155.1	163.2	162.6	157.0	153.6
Fresh vegetables	293.8	385.4	347.4	316.8	317.1	318.8	338.7	292.5	382.7	345.4	315.4	316.8	317.8	336.7
Potatoes	342.2	363.5	367.3	372.1	391.4	455.6	478.1	338.2	357.7	360.1	366.0	387.6	451.1	470.0
Lettuce	293.9	290.5	244.4	234.1	262.6	246.0	316.6	294.2	292.6	247.1	236.4	264.6	246.2	319.1
Tomatoes	200.5	318.5	280.4	252.8	262.3	237.3	310.4	204.0	322.7	286.6	257.6	267.4	242.1	314.3
Other fresh vegetables (12/77 = 100)	163.6	249.4	218.9	187.4	174.6	167.1	157.1	162.5	247.0	217.2	186.3	174.1	166.1	155.3
Processed fruits and vegetables	289.5	302.8	305.7	306.5	308.0	309.2	310.7	287.4	300.2	302.9	303.8	305.3	306.5	308.0
Processed fruits (12/77 = 100)	150.7	159.5	161.7	162.1	163.2	163.6	164.3	150.4	159.0	161.2	161.6	162.7	163.1	163.7
Frozen fruit and fruit juices (12/77 = 100)	141.1	159.4	163.2	163.8	164.8	163.9	166.2	140.3	158.6	162.4	163.1	164.1	163.1	165.5
Fruit juices other than frozen (12/77 = 100)	155.6	160.8	163.2	164.1	165.2	165.7	165.3	154.7	159.7	162.2	163.1	164.3	164.8	164.1
Canned and dried fruits (12/77 = 100)	153.5	158.3	158.8	158.6	159.6	161.2	161.5	153.8	158.5	159.0	158.7	159.9	161.4	161.8

20. Continued—Consumer Price Index—U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers						
	1983	1984						1983	1984					
	Aug.	Mar.	Apr.	May	June	July	Aug.	Aug.	Mar.	Apr.	May	June	July	Aug.
Fruits and vegetables—Continued														
Processed vegetables (12/77 = 100)	140.2	144.9	145.6	146.0	146.5	147.2	148.1	139.1	143.6	144.3	144.8	145.3	146.0	146.9
Frozen vegetables (12/77 = 100)	152.8	153.5	156.0	155.4	155.6	155.1	157.0	154.5	155.2	157.7	157.1	157.2	156.7	158.6
Cut corn and canned beans except lima (12/77 = 100)	142.0	148.2	148.5	149.3	150.7	152.3	153.1	139.5	145.5	145.8	146.6	148.0	149.7	150.5
Other canned and dried vegetables (12/77 = 100)	132.9	138.8	138.9	139.6	139.8	140.6	147.2	131.5	137.1	137.2	138.0	138.1	138.9	139.5
Other foods at home	339.1	349.7	351.0	350.8	352.1	353.1	354.0	339.9	350.2	351.6	351.3	352.5	353.5	354.3
Sugar and sweets	375.8	384.8	387.7	390.0	391.2	391.8	392.6	375.7	384.5	387.3	389.4	390.5	391.1	391.9
Candy and chewing gum (12/77 = 100)	151.6	156.0	158.6	159.4	160.5	161.3	161.6	151.6	155.9	158.4	159.2	160.3	161.0	161.3
Sugar and artificial sweeteners (12/77 = 100)	169.7	172.5	171.8	172.4	172.4	171.0	171.0	171.0	173.7	173.0	173.6	173.6	172.2	172.3
Other sweets (12/77 = 100)	152.8	156.5	156.9	158.5	158.3	159.4	160.1	150.6	154.2	154.7	156.2	155.8	157.0	157.6
Fats and oils (12/77 = 100)	258.1	280.7	282.4	282.9	285.4	291.4	295.4	257.8	280.2	281.9	282.4	284.9	291.0	295.0
Margarine	257.2	280.1	280.5	282.7	285.6	293.2	296.0	255.1	278.1	278.5	280.3	283.2	291.1	293.6
Nondairy substitutes and peanut butter (12/77 = 100)	149.8	153.7	154.3	153.3	152.3	153.2	154.9	148.1	151.8	152.2	151.5	150.5	151.3	153.1
Other fats, oils, and salad dressings (12/77 = 100)	130.3	145.2	146.7	146.9	149.1	152.7	155.2	130.9	145.6	147.1	147.3	149.4	153.2	155.7
Nonalcoholic beverages	430.7	443.5	443.6	441.7	442.3	442.7	441.5	432.5	444.9	445.2	443.1	443.7	444.0	442.8
Cola drinks, excluding diet cola	312.4	319.1	320.8	316.2	317.1	315.1	313.3	309.9	316.1	318.0	313.5	314.5	312.4	310.7
Carbonated drinks, including diet cola (12/77 = 100)	146.3	153.2	151.3	150.9	150.1	150.5	149.2	144.1	150.7	149.0	148.5	147.6	148.1	147.0
Roasted coffee	356.0	367.6	368.6	368.9	372.8	374.8	375.9	350.8	362.0	363.0	363.4	367.1	369.0	369.9
Freeze dried and instant coffee	352.3	359.8	362.2	362.8	363.5	366.9	369.6	351.5	359.1	361.6	362.1	362.9	366.3	368.9
Other noncarbonated drinks (12/77 = 100)	140.5	144.9	144.7	146.0	146.2	147.4	147.6	140.8	145.2	144.9	146.4	146.4	147.7	147.9
Other prepared foods	276.9	282.1	283.8	283.9	285.3	285.4	286.9	278.5	283.7	285.4	285.4	286.9	287.0	288.5
Canned and packaged soup (12/77 = 100)	141.8	143.6	144.6	144.6	144.6	145.6	146.4	143.7	145.5	246.5	146.5	146.4	147.6	148.4
Frozen prepared foods (12/77 = 100)	155.1	156.0	159.3	158.3	160.4	159.1	162.0	154.2	155.1	258.4	157.3	159.6	158.3	161.2
Snacks (12/77 = 100)	159.3	163.3	163.0	164.7	165.1	166.0	166.5	161.4	165.4	165.2	166.9	167.4	168.3	168.8
Seasonings, olives, pickles, and relish (12/77 = 100)	158.3	162.9	163.5	162.7	163.8	163.8	164.4	157.4	161.9	162.4	161.7	163.0	162.9	163.5
Other condiments (12/77 = 100)	156.0	156.6	157.5	157.8	158.4	160.0	159.9	157.9	158.4	159.4	159.6	160.2	161.9	161.7
Miscellaneous prepared foods (12/77 = 100)	151.5	155.0	155.8	156.0	156.0	154.9	155.5	151.8	155.1	156.0	156.0	156.2	154.9	155.6
Other canned and packaged prepared foods (12/77 = 100)	146.5	151.6	151.7	151.3	152.1	151.6	152.1	147.7	152.8	153.0	152.4	153.2	152.8	153.2
Food away from home	321.0	329.8	330.9	332.6	333.1	334.4	335.5	324.3	333.0	334.1	335.9	336.3	337.7	338.8
Lunch (12/77 = 100)	155.4	159.0	159.6	160.5	160.7	161.5	161.9	157.1	160.6	161.2	162.0	162.3	163.0	163.5
Dinner (12/77 = 100)	153.9	158.9	159.6	160.2	160.3	161.0	161.7	155.6	160.8	161.3	162.0	162.0	162.8	163.5
Other meals and snacks (12/77 = 100)	159.5	163.4	163.7	164.8	165.3	165.5	166.0	160.0	163.9	164.2	165.3	165.8	166.0	166.5
Alcoholic beverages	217.1	220.7	221.3	221.5	222.4	222.5	222.9	219.7	223.8	224.6	224.8	225.6	225.8	226.2
Alcoholic beverages at home (12/77 = 100)	140.3	142.0	142.3	142.3	142.8	142.8	142.9	142.1	144.1	144.5	144.6	145.0	145.0	145.1
Beer and ale	224.4	228.7	229.9	230.6	231.2	231.5	231.1	223.2	227.8	228.9	229.7	230.2	230.6	230.3
Whiskey	151.6	153.6	153.1	153.3	153.8	153.5	154.0	152.1	153.8	153.7	153.7	154.1	153.9	154.3
Wine	234.8	233.6	233.4	231.4	234.0	232.5	234.2	242.4	241.5	241.7	239.3	241.8	240.1	241.6
Other alcoholic beverages (12/77 = 100)	122.4	122.8	122.8	122.3	122.5	122.7	122.6	122.4	122.8	122.7	122.3	122.4	122.4	122.4
Alcoholic beverages away from home (12/77 = 100)	147.3	152.6	153.6	154.2	154.8	155.5	156.4	148.5	153.9	154.8	155.3	155.9	156.6	157.8
HOUSING	324.8	331.5	333.2	334.6	336.2	338.1	339.5	324.3	322.9	322.7	325.2	326.2	328.7	334.2
Shelter (CPI–U)	346.6	355.5	357.8	358.9	360.2	362.7	364.6	....	....	....	....	....	....	....
Renters' costs	103.7	106.5	107.4	107.8	108.2	108.9	109.6	....	....	....	....	....	....	....
Rent, residential	238.2	244.8	246.4	247.2	248.4	249.7	251.1	....	....	....	....	....	....	....
Other renters' costs	355.8	364.5	371.2	371.3	371.5	375.7	380.7	....	....	....	....	....	....	....
Homeowners' costs	103.0	105.6	106.2	106.5	106.8	107.6	108.1	....	....	....	....	....	....	....
Owners' equivalent rent	103.0	105.5	106.2	106.3	106.8	107.7	108.1	....	....	....	....	....	....	....
Household insurance	103.5	107.1	106.1	160.6	106.6	106.7	108.0	....	....	....	....	....	....	....
Maintenance and repairs	347.9	355.3	356.3	357.3	358.9	360.3	360.1	....	....	....	....	....	....	....
Maintenance and repair services	388.6	405.9	408.1	409.6	409.8	411.6	412.3	....	....	....	....	....	....	....
Maintenance and repair commodities	261.2	259.3	259.2	259.7	262.2	263.1	262.2	....	....	....	....	....	....	....
Shelter (CPI–W)	....	....	....	....	....	....	....	346.4	342.0	341.3	344.2	344.6	347.9	356.1
Rent, residential	....	....	....	....	....	....	....	237.6	244.1	245.7	246.5	247.7	249.0	250.3
Other renters' costs	....	....	....	....	....	....	....	354.0	363.0	370.7	370.5	370.8	375.1	380.2
Lodging while out of town	....	....	....	....	....	....	....	375.7	381.3	393.5	393.5	393.9	400.6	407.6
Tenants' insurance (12/77 = 100)	....	....	....	....	....	....	....	155.4	161.1	159.8	159.8	160.1	160.4	162.6
Homeownership	....	....	....	....	....	....	....	385.2	376.6	374.9	378.5	378.8	382.7	393.4
Home purchase	....	....	....	....	....	....	....	304.1	292.5	291.7	291.9	291.7	294.9	299.8
Financing, taxes, and insurance	....	....	....	....	....	....	....	496.6	484.8	480.8	490.1	490.6	496.5	519.0
Property insurance	....	....	....	....	....	....	....	430.8	439.9	440.3	441.0	441.5	441.6	441.8
Property taxes	....	....	....	....	....	....	....	237.1	244.1	244.8	245.6	245.9	246.4	248.9
Contracted mortgage interest costs	....	....	....	....	....	....	....	629.8	607.9	601.6	615.5	616.0	624.9	658.4
Mortgage interest rates	....	....	....	....	....	....	....	205.5	205.4	203.9	208.4	209.3	210.1	217.4
Maintenance and repairs	....	....	....	....	....	....	....	344.3	353.8	354.2	355.0	356.0	357.3	357.4
Maintenance and repair services	....	....	....	....	....	....	....	385.1	400.3	401.0	402.6	403.1	405.2	405.4
Maintenance and repair commodities	....	....	....	....	....	....	....	257.5	256.3	255.9	255.6	257.2	257.1	256.9
Paint and wallpaper, supplies, tools, and equipment (12/77 = 100)	....	....	....	....	....	....	....	147.6	147.3	147.3	146.2	148.0	147.2	147.4
Lumber, awnings, glass, and masonry (12/77 = 100)	....	....	....	....	....	....	....	126.8	124.3	124.5	124.2	124.1	123.1	123.3
Plumbing, electrical, heating, and cooling supplies (12/77 = 100)	....	....	....	....	....	....	....	139.5	138.6	140.2	141.9	142.5	142.1	142.8
Miscellaneous supplies and equipment (12/77 = 100)	....	....	....	....	....	....	....	143.3	144.0	141.7	142.4	143.0	146.3	144.2

20. Continued—Consumer Price Index—U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers						
	1983	1984						1983	1984					
	Aug.	Mar.	Apr.	May	June	July	Aug.	Aug.	Mar.	Apr.	May	June	July	Aug.
Fuel and other utilities	375.1	380.1	380.9	385.5	390.0	393.9	395.5	376.8	381.3	382.0	386.6	391.4	395.4	396.9
Fuels	476.5	475.2	476.0	483.5	490.7	496.5	498.6	476.6	474.7	475.4	482.6	490.4	496.1	498.2
Fuel oil, coal, and bottled gas	619.0	660.0	650.7	649.2	646.0	637.4	625.5	621.5	662.4	652.9	651.5	648.4	640.0	628.1
Fuel oil	626.5	671.6	660.9	659.9	656.2	646.2	632.4	628.9	673.9	663.1	662.1	658.6	648.8	635.1
Other fuels (6/78 = 100)	190.0	196.4	195.6	194.4	194.1	193.7	193.3	190.8	197.1	196.3	195.1	194.8	194.4	193.9
Gas (piped) and electricity	439.1	429.5	432.3	441.4	450.6	459.1	463.9	438.7	428.4	431.1	439.9	449.7	458.2	463.0
Electricity	340.7	335.8	338.9	343.0	358.6	c368.7	374.3	341.2	335.1	338.0	342.2	358.7	369.0	374.8
Utility (piped) gas	589.8	571.4	573.2	591.7	585.9	589.7	592.2	585.8	567.9	569.8	587.2	581.6	585.1	587.1
Other utilities and public services	214.8	227.4	228.2	228.8	229.4	230.6	231.3	215.9	228.5	229.2	229.9	230.4	231.7	232.4
Telephone services	173.9	185.9	186.4	186.7	187.1	188.1	188.4	174.5	186.6	187.0	187.4	187.6	188.7	189.1
Local charges (12/77 = 100)	142.1	157.7	157.8	158.3	160.1	162.3	163.3	142.6	158.4	158.4	159.0	160.8	163.1	164.0
Interstate toll calls (12/77 = 100)	121.9	122.4	122.3	122.6	118.5	116.2	116.1	122.4	122.8	122.7	123.0	118.9	116.6	116.5
Intrastate toll calls (12/77 = 100)	118.3	122.0	123.7	123.1	124.8	125.9	124.9	118.3	122.0	123.6	122.9	124.6	125.7	124.8
Water and sewerage maintenance	355.9	369.5	371.4	373.9	374.6	376.6	378.9	360.2	373.9	375.7	378.2	378.9	381.0	383.2
Household furnishings and operations	238.0	241.2	242.3	242.4	242.3	241.9	242.2	234.8	238.0	238.9	239.1	238.9	c238.3	238.6
Housefurnishings	196.7	198.3	199.9	199.8	199.1	197.9	198.1	194.7	196.7	197.7	197.7	196.9	195.6	195.9
Textile housefurnishings	226.1	236.1	235.2	236.6	234.7	232.9	238.6	229.6	240.0	238.6	239.9	238.4	236.4	242.0
Household linens (12/77 = 100)	133.4	140.1	139.0	140.8	138.2	136.6	143.1	134.5	141.2	139.9	141.6	139.4	137.7	144.1
Curtains, drapes, slipcovers, and sewing														
materials (12/77 = 100)	149.0	154.6	154.7	154.6	154.9	154.2	154.7	153.3	159.5	159.2	158.9	159.5	158.6	158.8
Furniture and bedding	217.2	218.4	222.8	223.8	223.3	222.1	220.8	214.3	215.3	218.9	220.1	219.5	218.7	217.9
Bedroom furniture (12/77 = 100)	151.3	149.1	154.2	154.3	154.1	151.5	151.7	148.2	145.9	149.6	150.2	149.6	148.1	148.4
Sofas (12/77 = 100)	117.3	119.8	121.2	121.1	121.3	121.9	120.6	117.6	119.7	121.3	121.1	121.6	122.1	120.7
Living room chairs and tables (12/77 = 100)	123.5	124.5	125.5	128.2	126.8	126.3	127.1	124.5	125.7	126.3	129.0	127.6	127.2	128.1
Other furniture (12/77 = 100)	139.8	142.1	144.6	144.7	144.8	144.7	142.2	135.6	137.9	140.2	140.4	140.4	140.2	138.4
Appliances including TV and sound equipment	150.6	150.5	150.1	149.8	148.8	147.2	147.2	150.8	151.9	151.4	151.3	150.1	148.4	148.5
Television and sound equipment	105.1	103.6	103.4	102.9	102.0	101.3	101.0	104.3	102.5	102.4	101.9	101.0	100.2	100.0
Television	100.1	97.9	96.7	96.5	95.9	94.5	94.1	99.0	96.5	95.3	95.1	94.5	93.0	92.7
Sound equipment (12/77 = 100)	110.6	109.7	110.3	109.5	108.4	108.2	108.1	109.7	108.6	109.3	108.5	107.4	107.2	107.1
Household appliances	188.0	191.0	190.4	190.6	189.7	187.1	187.5	188.0	192.8	192.0	192.3	191.0	188.4	188.9
Refrigerators and home freezers	191.4	197.2	195.8	196.2	196.8	194.2	194.6	197.2	203.1	202.2	202.5	202.5	199.8	200.6
Laundry equipment	142.0	147.4	146.7	146.7	145.0	145.5	145.4	142.8	148.6	147.6	147.6	145.8	146.0	146.3
Other household appliances (12/77 = 100)	125.4	126.2	126.1	126.2	125.4	123.2	123.6	123.4	125.2	124.9	125.2	124.2	121.4	121.7
Stoves, dishwashers, vacuums, and sewing														
machines (12/77 = 100)	123.7	127.1	126.3	126.9	127.0	121.7	123.6	122.1	126.4	125.4	126.2	125.8	120.0	121.6
Office machines, small electric appliances, and														
air conditioners (12/77 = 100)	127.2	125.8	126.2	125.7	124.4	124.9	123.9	124.8	123.8	124.2	124.1	122.4	122.9	121.8
Other household equipment (12/77 = 100)	141.2	141.6	143.2	142.1	142.2	142.1	141.7	138.9	139.2	140.7	139.4	139.6	139.5	138.9
Floor and window coverings, infants', laundry,														
cleaning, and outdoor equipment (12/77 = 100)	144.4	145.4	147.6	147.5	147.8	147.0	147.7	136.4	137.0	139.0	138.8	138.8	137.8	137.3
Clocks, lamps, and decor items (12/77 = 100)	132.3	132.8	137.4	136.1	134.3	135.5	134.3	128.3	128.5	132.9	131.5	129.7	130.7	129.8
Tableware, serving pieces, and nonelectric														
kitchenware (12/77 = 100)	148.7	148.2	149.2	147.2	147.9	147.2	147.0	144.4	144.2	145.1	143.0	143.9	143.3	143.1
Lawn equipment, power tools, and other														
hardware (12/77 = 100)	134.2	135.3	134.9	134.1	134.6	135.2	134.4	139.3	140.1	140.5	139.5	140.0	140.7	139.8
Housekeeping supplies	295.8	300.6	301.8	301.5	303.0	303.8	304.2	292.7	297.1	298.5	298.5	300.1	301.0	301.1
Soaps and detergents	294.4	296.1	297.1	298.2	299.3	299.8	298.8	290.2	291.7	292.8	293.7	294.8	295.3	294.2
Other laundry and cleaning products (12/77 = 100)	151.0	153.7	153.8	153.4	155.1	154.9	154.9	149.8	152.4	152.5	152.0	153.8	153.6	153.4
Cleansing and toilet tissue, paper towels and napkins (12/77 = 100)	148.1	149.3	151.6	151.7	152.9	153.7	153.6	148.1	149.4	151.6	151.7	152.9	153.7	153.4
Stationery, stationery supplies, and gift wrap (12/77 = 100)	139.5	141.7	142.0	142.5	143.5	143.7	144.2	142.5	144.7	145.1	145.7	146.7	147.1	147.7
Miscellaneous household products (12/77 = 100)	154.1	159.5	159.2	159.8	160.1	161.2	162.0	148.8	154.0	153.7	154.4	154.7	155.9	156.6
Lawn and garden supplies (12/77 = 100)	144.6	146.6	147.5	144.8	144.7	144.9	145.7	137.8	138.9	140.5	138.7	138.7	138.7	139.1
Housekeeping services	319.3	326.1	325.7	326.5	327.0	327.6	328.2	319.1	326.0	326.0	326.9	327.5	328.2	328.8
Postage	337.5	337.5	337.5	337.5	337.5	337.5	337.5	337.5	337.5	337.5	337.5	337.5	337.5	337.5
Moving, storage, freight, household laundry, and														
drycleaning services (12/77 = 100)	162.8	171.7	171.8	172.9	173.7	174.5	174.6	163.1	172.0	172.1	173.2	174.1	174.9	175.1
Appliance and furniture repair (12/77 = 100)	144.9	148.8	149.4	150.1	150.2	150.9	152.2	143.1	146.9	147.5	148.1	148.2	148.9	150.0
APPAREL AND UPKEEP	197.3	198.8	199.2	198.9	197.4	196.6	200.1	196.3	198.0	198.2	197.7	196.1	195.3	199.0
Apparel commodities	185.3	185.9	186.3	185.8	184.0	183.0	186.6	184.7	185.8	185.9	185.1	183.3	182.4	186.1
Apparel commodities less footwear	181.9	182.3	182.6	181.7	179.8	178.9	183.1	181.2	181.9	181.9	180.7	178.7	177.9	182.2
Men's and boys'	188.3	189.9	190.6	190.7	190.3	189.8	192.6	188.3	190.5	191.2	191.1	190.3	189.9	193.0
Men's (12/77 = 100)	118.5	119.4	120.2	120.4	120.0	119.3	121.2	118.9	120.1	121.0	121.1	120.3	119.6	121.7
Suits, sport coats, and jackets (12/77 = 100)	111.4	110.6	112.0	111.9	113.0	113.2	113.5	104.4	104.1	105.4	105.2	105.8	106.2	106.8
Coats and jackets	99.5	98.1	99.0	98.2	96.2	96.1	100.9	101.7	101.4	102.4	101.2	99.4	99.6	104.0
Furnishings and special clothing (12/77 = 100)	144.8	146.1	146.0	147.6	148.0	145.6	147.6	140.8	142.1	142.1	143.5	143.8	141.8	143.3
Shirts (12/77 = 100)	121.6	127.0	127.3	127.6	126.9	125.6	127.3	124.7	130.0	130.1	130.1	129.2	127.7	130.0
Dungarees, jeans, and trousers (12/77 = 100)	112.3	112.4	113.6	113.5	111.4	111.3	113.7	118.1	118.3	119.9	119.9	117.5	117.2	120.0
Boys' (12/77 = 100)	122.6	124.1	123.2	122.5	123.0	124.1	125.5	120.7	122.8	121.8	121.1	121.6	122.7	124.3
Coats, jackets, sweaters, and shirts (12/77 = 100)	115.4	119.7	119.7	119.4	118.2	120.8	120.5	116.2	122.0	122.0	121.8	120.8	122.7	128.0
Furnishings (12/77 = 100)	134.2	137.9	137.2	136.6	137.1	136.5	134.7	129.9	133.4	132.7	132.2	132.7	132.2	130.5
Suits, trousers, sport coats, and jackets (12/77 = 100)	123.5	122.1	120.3	119.3	121.2	121.8	121.8	120.7	119.6	117.6	116.6	118.4	119.0	119.1

20. Continued—Consumer Price Index—U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers 1983 Aug.	1984 Mar.	Apr.	May	June	July	Aug.	Urban Wage Earners and Clerical Workers 1983 Aug.	1984 Mar.	Apr.	May	June	July	Aug.
Women's and girls'	164.2	163.3	163.2	161.8	157.9	156.2	163.1	165.8	165.3	164.5	162.7	159.2	157.4	164.1
Women's (12/77 100)	109.5	108.7	108.6	107.7	105.2	103.7	108.6	111.1	110.5	109.9	108.6	106.2	104.8	109.5
Coats and jackets	171.6	167.2	164.9	159.7	154.6	156.8	167.7	175.3	172.8	170.1	164.7	159.1	162.4	176.1
Dresses	171.4	175.9	175.0	176.1	172.1	163.7	172.0	158.7	162.9	160.6	162.9	160.5	153.1	159.9
Separates and sportswear (12/77 100)	99.4	92.5	92.8	93.4	91.1	88.2	92.9	99.7	93.0	93.5	93.9	91.4	88.6	93.1
Underwear, nightwear, and hosiery (12/77 100)	133.2	136.8	136.9	137.5	137.0	136.7	138.0	132.9	136.5	136.6	137.1	136.6	136.2	137.5
Suits (12/77 100)	87.3	85.0	85.1	77.3	71.3	74.4	85.1	108.1	106.4	104.2	92.7	85.8	97.1	96.5
Girls' (12/77 100)	107.7	108.0	108.2	107.2	104.3	104.6	107.7	106.8	107.4	107.6	106.4	104.3	104.0	107.5
Coats, jackets, dresses, and suits (12/77 100)	101.9	100.6	100.6	98.3	95.0	99.7	101.0	98.7	98.3	98.1	96.0	93.7	98.4	100.4
Separates and sportswear (12/77 100)	102.0	103.9	104.3	102.7	99.0	96.9	103.1	102.9	104.6	105.2	103.7	100.7	96.7	103.5
Underwear, nightwear, hosiery, and accessories (12/77 100)	127.8	128.0	128.1	129.7	129.3	127.1	127.4	126.7	126.9	126.9	128.2	127.8	125.7	126.0
Infants' and toddlers'	281.9	288.0	289.2	283.9	278.3	281.2	288.7	292.3	298.6	299.7	293.0	289.2	292.0	298.9
Other apparel commodities	216.2	217.2	217.6	216.8	217.7	218.0	216.3	204.6	205.3	205.5	205.0	205.1	206.0	204.9
Sewing materials and notions (12/77 100)	121.6	120.8	122.6	123.1	122.4	122.5	123.8	119.8	119.7	120.8	121.5	120.9	120.7	122.3
Jewelry and luggage (12/77 100)	147.5	148.8	148.3	147.4	148.5	148.8	146.7	138.0	138.7	138.4	137.6	138.5	138.9	137.1
Footwear	205.7	207.7	208.9	210.2	209.6	208.0	207.7	205.5	208.3	209.4	210.7	210.0	208.7	208.5
Men's (12/77 100)	132.3	135.2	135.8	137.1	136.7	137.5	137.4	134.2	137.1	137.9	139.2	138.7	139.6	139.4
Boys' and girls' (12/77 100)	130.3	131.2	131.4	132.4	132.1	131.0	131.9	132.6	133.8	133.9	134.7	134.5	133.7	134.8
Women's (12/77 100)	125.3	125.5	126.7	127.1	126.7	124.2	123.4	121.1	122.3	123.4	123.7	123.2	120.8	119.9
Apparel services	292.3	300.8	301.5	303.7	304.4	305.1	307.5	290.4	298.8	299.4	301.6	302.4	303.0	305.5
Laundry and drycleaning other than coin operated (12/77 100)	174.3	180.7	181.0	182.6	182.9	183.4	184.1	172.9	179.1	179.4	180.9	181.2	181.7	182.3
Other apparel services (12/77 100)	152.7	155.3	155.7	156.5	157.0	157.2	159.9	153.9	156.5	156.9	157.7	158.3	158.5	161.3
TRANSPORTATION	302.4	306.9	309.6	312.2	313.1	312.9	312.9	304.1	308.9	311.9	314.6	315.5	315.2	315.2
Private	298.0	301.9	304.8	307.4	308.1	307.5	307.5	300.8	305.2	308.3	311.0	311.7	311.2	311.1
New cars	202.1	207.2	207.4	207.6	207.7	208.1	208.1	201.7	206.7	206.9	207.1	207.1	207.6	207.6
Used cars	336.8	362.2	370.0	378.0	382.0	383.2	383.8	336.8	362.2	370.0	378.0	382.0	383.2	383.8
Gasoline	389.5	368.6	374.0	376.7	374.9	369.8	365.9	391.0	370.5	375.7	378.2	376.4	376.4	367.4
Automobile maintenance and repair	331.0	338.3	338.9	340.2	340.7	341.6	342.7	331.7	339.0	339.6	340.8	341.5	342.3	343.4
Body work (12/77 100)	167.1	170.7	171.4	172.3	172.6	172.6	173.5	166.0	169.3	170.1	170.9	171.3	171.6	172.1
Automobile drive train, brake, and miscellaneous mechanical repair (12/77 100)	158.9	165.1	165.1	165.8	166.2	166.5	167.2	162.8	169.1	169.2	169.8	170.2	170.6	171.3
Maintenance and servicing (12/77 100)	152.8	153.9	154.2	154.8	154.6	155.3	155.9	152.2	153.1	153.4	154.0	153.8	154.5	155.0
Power plant repair (12/77 100)	157.5	162.1	162.4	162.6	163.4	163.5	163.9	156.9	161.6	161.9	162.2	163.1	163.2	163.5
Other private transportation	260.0	268.3	269.0	270.4	271.5	272.4	274.9	261.1	269.1	269.9	271.3	272.4	273.4	275.8
Other private transportation commodities	208.9	201.3	202.4	201.7	202.0	200.6	200.8	211.2	203.5	204.8	204.2	204.5	202.9	203.2
Motor oil, coolant, and other products (12/77 100)	153.5	152.5	152.7	152.7	154.1	154.3	153.6	152.6	152.3	151.9	152.5	153.5	153.8	153.2
Automobile parts and equipment (12/77 100)	132.4	126.9	127.7	127.2	127.3	126.2	126.4	134.1	128.5	129.4	128.9	129.0	127.8	128.1
Tires	183.4	171.8	172.9	172.2	172.0	169.6	170.4	186.9	175.1	176.5	175.7	175.5	173.0	174.0
Other parts and equipment (12/77 100)	131.6	133.2	134.0	133.5	134.1	134.7	133.9	131.3	132.7	133.6	133.3	133.9	134.1	133.3
Other private transportation services	276.0	288.7	289.3	291.2	292.5	294.1	297.2	276.8	289.0	289.7	291.6	293.0	294.6	297.5
Automobile insurance	302.9	322.3	321.8	323.7	324.2	324.8	325.2	302.5	321.5	321.0	322.7	323.1	323.9	324.2
Automobile finance charges (12/77 100)	155.4	159.2	160.9	162.4	164.1	166.2	168.7	155.0	158.7	160.4	161.9	163.5	165.7	168.2
Automobile rental, registration, and other fees (12/77 100)	146.0	149.1	149.5	150.3	151.1	152.0	156.8	147.2	150.1	150.4	151.3	152.4	153.1	157.4
State registration	194.6	195.5	195.7	197.1	199.4	199.8	209.7	194.5	195.4	195.6	197.1	199.6	200.0	208.8
Drivers' licenses (12/77 100)	153.0	158.0	158.0	158.0	157.8	161.0	161.3	153.4	158.3	158.3	158.3	158.1	161.2	161.5
Vehicle inspection (12/77 100)	139.0	139.2	139.8	139.9	139.9	139.9	139.9	139.8	139.9	140.3	140.4	140.4	140.4	140.5
Other vehicle-related fees (12/77 100)	158.8	163.5	164.3	165.2	165.1	166.5	170.0	166.3	170.7	171.5	172.7	172.6	173.8	176.4
Public	365.0	377.4	377.1	379.8	385.2	389.3	390.8	355.7	370.2	370.0	372.2	377.4	380.7	381.6
Airline fare	420.7	429.0	427.7	433.8	442.0	450.1	454.1	417.1	424.9	423.5	430.0	438.2	446.6	450.5
Intercity bus fare	412.8	427.6	428.7	429.9	426.2	438.9	441.1	412.7	426.8	427.6	429.3	425.8	438.7	441.3
Intracity mass transit	323.7	342.0	342.3	342.3	346.5	346.6	345.7	321.6	341.8	342.1	347.1	346.5	346.6	345.8
Taxi fare	302.4	308.5	308.8	309.2	309.7	310.4	310.4	311.8	317.7	317.9	318.3	319.0	319.7	319.7
Intercity train fare	364.5	373.4	373.4	373.5	381.5	381.9	381.9	365.2	373.7	373.7	373.8	381.9	382.1	382.2
MEDICAL CARE	360.0	374.5	375.7	376.8	378.0	380.3	381.9	357.9	372.6	373.9	375.0	376.3	378.5	380.1
Medical care commodities	225.4	235.0	236.9	238.7	239.4	240.7	241.6	225.8	235.3	237.1	238.7	239.5	240.7	241.5
Prescription drugs	215.7	228.2	230.7	233.1	233.5	234.9	236.6	216.9	229.7	232.2	234.5	234.9	236.3	237.9
Anti-infective drugs (12/77 100)	157.9	163.9	164.8	165.8	164.9	166.1	167.7	160.1	166.3	167.3	168.3	167.3	168.3	170.0
Tranquilizers and sedatives (12/77 100)	179.1	195.5	198.4	202.8	204.0	205.1	207.6	178.7	195.4	198.3	202.7	204.0	205.1	207.5
Circulatories and diuretics (12/77 100)	155.4	164.7	166.1	167.4	169.0	170.4	171.3	154.4	164.3	165.5	167.3	168.3	169.5	170.4
Hormones, diabetic drugs, biologicals, and prescription medical supplies (12/77 100)	199.2	209.7	212.5	214.1	214.7	216.2	218.1	201.1	211.9	214.7	216.3	217.0	218.4	220.4
Pain and symptom control drugs (12/77 100)	175.7	185.5	187.7	188.7	188.3	189.7	191.0	177.5	187.7	190.0	191.0	190.3	191.7	192.8
Supplements, cough and cold preparations, and respiratory agents (12/77 100)	162.6	171.4	173.2	174.6	174.5	175.9	175.5	162.9	172.0	173.9	175.3	176.1	176.5	176.2
Nonprescription drugs and medical supplies (12/77 100)	156.7	161.2	162.1	162.8	163.5	164.3	164.4	157.5	162.1	163.0	163.7	164.4	165.1	165.2
Eyeglasses (12/77 100)	136.2	138.4	138.9	139.3	140.0	140.6	140.5	135.1	137.3	137.8	138.2	138.8	139.5	139.3
Internal and respiratory over-the-counter drugs	255.0	263.1	264.9	266.6	268.2	269.5	269.4	256.3	264.4	266.1	267.7	269.3	270.6	270.4
Nonprescription medical equipment and supplies (12/77 100)	151.0	155.8	156.5	156.5	156.4	157.0	157.9	152.4	157.5	158.0	158.0	157.9	158.4	159.4

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20. Continued—Consumer Price Index—U.S. city average

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers						
	1983	1984						1983	1984					
	Aug.	Mar.	Apr.	May	June	July	Aug.	Aug.	Mar.	Apr.	May	June	July	Aug.
Medical care services	389.8	405.3	406.3	407.1	408.4	410.9	412.7	387.0	402.7	403.9	404.7	406.1	408.6	410.4
Professional services	326.0	341.1	342.5	343.8	345.8	347.0	348.2	326.5	341.6	343.0	344.2	346.2	347.4	348.6
Physicians' services	354.9	372.2	373.5	375.2	377.1	378.1	379.5	358.8	376.1	377.5	379.0	381.1	382.1	383.6
Dental services	306.5	321.1	322.5	323.6	326.2	327.9	329.1	304.3	319.0	320.5	321.6	324.0	325.7	326.8
Other professional services (12/77 100)	154.0	158.8	159.5	159.7	159.9	160.1	160.3	150.5	155.0	155.8	156.0	156.1	156.4	156.6
Other medical care services	466.9	482.8	483.4	483.6	484.1	488.3	490.7	462.9	479.3	480.0	480.3	480.9	485.2	487.7
Hospital and other medical services (12/77 100)	196.7	207.0	207.5	207.9	208.4	210.9	212.5	194.6	204.9	205.6	205.9	206.3	208.9	210.4
Hospital room	627.6	659.4	660.3	660.7	662.0	672.9	678.1	619.5	651.7	652.9	653.3	654.4	664.6	669.5
Other hospital and medical care services (12/77 100)	193.0	203.3	204.2	204.8	205.2	207.0	208.5	191.2	201.5	202.4	203.0	203.4	205.4	206.8
ENTERTAINMENT	246.6	251.7	253.8	253.5	254.5	255.3	256.4	243.1	248.0	249.8	249.6	250.7	251.4	252.5
Entertainment commodities	248.0	250.6	253.4	252.2	252.4	253.3	254.5	242.5	245.3	247.7	246.8	246.9	247.8	248.8
Reading materials (12/77 100)	160.9	162.4	164.5	163.1	163.7	164.5	166.0	160.2	161.9	164.0	162.6	163.3	164.0	165.4
Newspapers	303.5	311.8	312.6	313.0	313.3	315.0	315.2	303.4	312.0	312.9	313.1	313.4	315.1	315.3
Magazines, periodicals, and books (12/77 100)	168.4	166.6	170.7	167.5	168.7	169.4	172.5	168.5	166.5	170.8	167.3	168.7	169.3	172.4
Sporting goods and equipment (12/77 100)	134.1	136.1	139.1	138.0	137.5	137.8	138.3	128.3	130.0	132.6	131.7	131.2	131.4	131.9
Sport vehicles (12/77 100)	136.9	139.9	144.6	143.0	142.2	142.9	143.9	127.8	130.4	134.1	133.0	132.2	132.6	133.7
Indoor and warm weather sport equipment (12/77 100)	118.8	117.1	117.5	117.3	117.7	117.7	117.9	116.6	115.1	115.6	115.5	116.0	115.9	115.9
Bicycles	199.9	201.5	201.1	200.8	201.1	200.2	198.3	200.7	202.5	202.2	201.7	202.0	201.2	199.4
Other sporting goods and equipment (12/77 100)	133.1	134.0	135.6	134.6	134.2	134.3	134.8	132.9	133.8	135.3	134.3	134.0	134.2	134.0
Toys, hobbies, and other entertainment (12/77 100)	139.3	140.5	141.0	141.0	141.1	141.7	141.9	138.0	139.5	140.0	140.0	140.1	140.7	141.0
Toys, hobbies, and music equipment (12/77 100)	137.7	138.9	139.3	139.2	138.8	139.3	138.6	133.9	135.2	135.8	135.8	135.5	135.9	135.2
Photographic supplies and equipment (12/77 100)	131.6	132.6	132.9	133.2	133.7	134.2	135.0	132.8	133.8	134.2	134.4	135.0	135.6	136.3
Pet supplies and expenses (12/77 100)	147.5	149.7	149.9	149.8	150.5	151.4	153.1	148.6	150.8	151.0	150.9	151.6	152.7	154.2
Entertainment services	245.0	253.8	254.9	255.4	258.1	258.5	259.7	245.4	253.9	254.7	255.8	258.5	258.8	260.1
Fees for participant sports (12/77 100)	152.2	158.5	159.5	159.6	159.7	159.7	160.1	153.2	159.2	160.1	160.3	160.7	160.4	161.0
Admissions (12/77 100)	145.4	148.9	149.4	151.3	155.3	156.0	157.3	144.5	147.8	148.3	150.2	154.3	155.0	156.1
Other entertainment services (12/77 100)	129.8	134.5	134.8	134.9	135.1	135.3	136.1	130.7	135.7	135.7	132.5	135.7	136.0	136.8
OTHER GOODS AND SERVICES	289.0	302.1	302.8	303.2	304.4	306.5	307.2	288.0	299.7	300.4	300.8	302.1	304.5	305.3
Tobacco products	297.7	305.6	305.9	305.9	308.1	313.2	313.9	297.5	305.2	305.6	305.6	307.8	312.9	313.5
Cigarettes	306.1	313.8	314.1	314.0	316.3	322.0	322.6	305.2	312.8	313.1	313.1	315.3	320.9	321.5
Other tobacco products and smoking accessories (12/77 100)	150.9	157.0	157.6	157.9	158.9	159.3	159.7	150.9	157.0	157.6	157.9	159.0	159.4	159.8
Personal care	262.1	267.8	268.9	269.5	270.6	271.8	272.6	260.1	265.7	266.9	267.5	268.5	269.7	270.5
Toilet goods and personal care appliances	261.9	265.9	267.3	267.4	268.5	270.2	270.6	262.6	266.6	268.1	268.3	269.3	270.9	271.4
Products for the hair, hairpieces, and wigs (12/77 100)	152.8	154.1	154.9	154.1	154.8	156.1	156.2	151.9	153.3	154.1	153.4	154.1	155.1	155.3
Dental and shaving products (12/77 100)	160.0	164.6	165.1	166.8	166.5	167.2	167.6	158.5	162.9	163.3	164.9	164.7	165.2	165.6
Cosmetics, bath and nail preparations, manicure and eye makeup implements (12/77 100)	148.6	150.0	151.8	151.5	153.0	154.0	153.2	149.2	150.8	152.7	152.7	154.0	155.1	154.5
Other toilet goods and small personal care appliances (12/77 100)	148.9	151.8	151.6	151.7	151.7	152.7	154.2	152.4	155.4	155.2	155.3	155.5	156.4	158.0
Personal care services	263.3	270.4	271.4	272.3	273.4	274.3	275.4	258.1	265.3	266.1	267.1	268.2	269.0	270.0
Beauty parlor services for women	266.5	273.4	274.4	275.0	276.4	277.3	278.4	259.7	266.6	267.5	268.0	269.3	270.2	271.2
Haircuts and other barber shop services for men (12/77 100)	145.6	149.9	150.4	151.4	151.7	152.1	152.8	144.4	148.6	149.2	150.2	150.5	150.9	151.6
Personal and educational expenses	328.1	356.4	356.9	357.4	357.9	358.6	359.3	330.5	359.2	359.7	360.3	360.7	361.3	362.1
Schoolbooks and supplies	294.6	317.1	317.6	317.8	318.5	318.8	319.2	298.8	321.6	322.2	322.4	323.1	323.4	323.8
Personal and educational services	336.2	365.7	366.1	366.7	367.1	367.9	368.7	338.6	368.6	369.0	369.7	370.1	370.8	371.6
Tuition and other school fees	168.2	184.3	184.4	184.4	184.5	184.8	185.0	168.8	185.2	185.3	185.3	185.4	185.6	185.8
College tuition (12/77 100)	168.0	184.5	184.7	184.7	184.8	185.2	185.3	168.0	185.4	185.5	185.5	185.7	186.0	186.1
Elementary and high school tuition (12/77 100)	169.2	183.9	183.9	183.9	183.9	183.9	184.3	170.3	184.9	184.9	185.6	185.0	185.0	185.4
Personal expenses (12/77 100)	189.8	201.2	202.0	188.0	204.2	205.0	206.4	190.4	202.1	202.8	204.3	204.8	205.6	207.0
Special indexes:														
Gasoline, motor oil, coolant, and other products	384.5	364.7	369.8	372.4	370.7	365.9	362.4	385.9	366.5	371.4	373.8	372.2	367.3	363.8
Insurance and finance	....	....	....	....	....	....	....	415.6	412.6	410.3	416.9	417.7	422.0	437.3
Utilities and public transportation	343.6	346.5	348.0	352.8	358.0	362.9	365.6	342.9	345.5	347.0	351.6	357.1	362.0	364.6
Housekeeping and home maintenance services	360.1	368.7	368.6	369.5	370.0	370.9	371.6	364.2	376.1	376.6	377.8	378.4	379.9	380.3

c   corrected.

21. Consumer Price Index for All Urban Consumers: Cross classification of region and population size class by expenditure category and commodity and service group

[December 1977 = 100]

Category and group	Size class A (1.25 million or more) 1984 Apr.	June	Aug.	Size class B (385,000–1,250 million) 1984 Apr.	June	Aug.	Size class C (75,000–385,000) 1984 Apr.	June	Aug.	Size class D (75,000 or less) 1984 Apr.	June	Aug.
Northeast												
EXPENDITURE CATEGORY												
All items	160.7	161.2	162.6	166.3	167.2	168.9	170.9	171.7	173.7	166.3	167.2	167.2
Food and beverages	152.7	153.0	154.2	151.5	151.0	152.0	155.2	156.0	157.5	152.4	152.6	152.7
Housing	165.3	165.9	167.4	175.7	177.3	180.6	183.0	184.0	187.7	172.9	173.4	172.3
Apparel and upkeep	123.8	122.2	125.7	128.5	125.5	125.6	131.8	131.1	131.1	133.6	136.4	138.5
Transportation	170.1	171.4	172.0	174.1	176.2	175.6	174.3	175.5	176.2	173.4	175.1	175.7
Medical care	173.2	174.0	176.8	177.6	179.2	181.0	176.9	177.7	178.9	182.5	183.0	184.9
Entertainment	148.1	146.6	149.7	143.8	143.8	148.2	152.8	152.3	153.9	152.3	153.6	153.6
Other goods and services	170.6	171.1	172.3	169.1	170.0	172.0	174.5	172.5	176.6	173.9	174.6	175.6
COMMODITY AND SERVICE GROUP												
Commodities	154.1	154.2	154.9	159.9	159.8	159.8	159.2	159.8	160.2	158.2	159.1	158.7
Commodities less food and beverages	154.7	154.6	154.6	163.5	163.7	163.1	160.8	161.5	161.0	160.4	160.8	161.0
Services	168.8	169.8	172.0	176.1	178.2	182.3	189.6	190.4	195.0	178.4	179.1	179.1
North Central Region												
EXPENDITURE CATEGORY												
All items	169.9	171.3	172.3	166.8	167.7	168.1	163.4	164.7	166.6	164.5	164.8	166.6
Food and beverages	149.4	149.0	150.2	148.6	148.5	149.4	148.8	149.1	150.7	156.9	156.9	158.4
Housing	187.7	190.7	192.0	175.2	176.7	177.3	169.1	171.6	175.3	167.3	166.4	170.0
Apparel and upkeep	118.2	117.8	120.2	132.8	130.8	131.7	132.6	128.3	130.2	126.1	124.6	124.9
Transportation	170.5	172.3	171.9	172.9	174.1	173.4	173.8	176.2	175.1	172.2	174.7	174.9
Medical care	177.4	178.5	180.0	177.2	179.4	182.0	172.7	172.7	175.2	182.9	184.0	185.1
Entertainment	145.1	145.7	146.4	140.6	140.7	139.6	151.0	152.9	153.9	141.3	140.5	142.5
Other goods and services	165.9	166.8	168.7	178.6	180.5	180.6	163.6	164.3	167.1	176.1	177.4	178.4
COMMODITY AND SERVICE GROUP												
Commodities	158.1	158.0	158.6	157.3	157.5	157.2	155.1	155.4	155.8	154.8	155.6	156.3
Commodities less food and beverages	162.1	162.2	162.4	160.9	161.1	160.2	157.9	158.3	157.9	153.8	155.0	155.3
Services	187.2	190.7	192.3	182.1	184.1	185.3	176.8	179.6	183.6	179.8	179.2	182.8
South												
EXPENDITURE CATEGORY												
All items	166.3	167.6	168.7	168.2	169.1	170.6	166.9	167.1	168.6	168.1	168.4	168.7
Food and beverages	156.3	152.6	157.3	155.6	155.3	157.2	153.0	152.5	154.0	156.6	156.1	157.8
Housing	172.3	174.5	175.4	173.7	174.7	176.5	173.2	172.6	174.1	176.4	176.4	177.0
Apparel and upkeep	131.3	132.2	131.5	128.1	128.3	127.8	127.5	126.4	127.4	114.7	113.6	110.8
Transportation	172.6	173.9	175.6	176.2	178.0	179.0	174.0	176.0	177.5	172.3	174.3	173.8
Medical care	177.1	179.1	180.6	178.5	180.4	183.5	187.5	188.0	188.6	193.7	193.4	193.4
Entertainment	145.2	144.7	147.7	159.6	160.0	161.9	153.2	152.8	153.4	150.5	150.7	151.7
Other goods and services	170.0	170.8	172.5	172.4	173.0	174.8	170.2	171.1	174.5	169.2	169.9	171.3
COMMODITY AND SERVICE GROUP												
Commodities	158.6	159.1	159.4	160.2	160.6	161.3	157.7	158.0	159.2	152.9	158.2	158.5
Commodities less food and beverages	159.4	160.2	160.0	161.8	162.7	162.7	159.7	160.5	161.6	158.1	159.0	158.4
Services	176.8	179.1	181.3	180.1	181.6	184.2	181.2	181.2	182.9	183.4	183.5	184.1
West												
EXPENDITURE CATEGORY												
All items	167.2	168.6	170.3	166.8	169.1	169.5	159.1	160.9	161.4	166.5	167.2	167.8
Food and beverages	155.3	154.6	156.5	158.6	158.8	159.8	155.0	154.5	155.4	160.3	161.6	163.0
Housing	173.7	176.3	179.3	170.4	174.3	174.7	155.8	158.7	159.9	168.0	167.3	167.8
Apparel and upkeep	124.3	121.4	126.5	126.9	127.2	130.5	123.9	122.7	122.5	142.9	142.9	145.1
Transportation	176.4	179.5	177.6	177.5	180.5	178.6	173.5	176.3	174.5	171.1	173.5	172.6
Medical care	182.6	183.3	185.7	179.8	181.5	182.7	185.9	187.5	189.5	184.6	186.6	188.2
Entertainment	144.1	194.9	144.8	148.9	148.9	148.8	154.4	154.8	157.9	160.6	162.0	163.2
Other goods and services	171.5	171.5	173.7	171.3	173.0	174.7	166.5	169.4	170.1	175.1	175.3	176.0
COMMODITY AND SERVICE GROUP												
Commodities	155.9	155.7	155.8	158.7	159.7	159.5	157.1	157.6	157.1	155.6	157.0	157.6
Commodities less food and beverages	156.1	156.3	155.3	158.4	159.9	159.0	157.4	158.8	157.2	153.2	154.6	154.7
Services	181.9	185.0	188.4	178.0	181.8	182.7	161.7	164.6	166.5	182.3	182.2	182.8

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

[1967 = 100 unless otherwise specified]

Area[1]	All Urban Consumers							Urban Wage Earners and Clerical Workers						
	1983	1984						1983	1984					
	Aug.	Mar.	Apr.	May	June	July	Aug.	Aug.	Mar.	Apr.	May	June	July	Aug.
U.S. city average[2]	300.3	307.3	308.8	309.7	310.7	311.7	313.0	299.5	303.3	304.1	305.4	306.2	307.5	310.3
Anchorage, Alaska (10/67 100)	...	274.4	...	275.3	...	275.5	...	...	265.9	...	265.7	...	266.8	...
Atlanta, Ga.	303.9	309.3	...	...	314.0	...	315.9	304.3	309.6	...	...	310.9	...	315.0
Baltimore, Md.	...	...	310.4	311.3	...	313.0	...	...	...	307.2	309.4	...	311.6	...
Boston, Mass.	...	...	302.0	303.1	...	304.9	...	...	...	298.2	300.6	...	300.8	...
Buffalo, N.Y.	285.9	...	293.0	...	292.5	...	294.5	285.1	...	286.6	...	287.3	...	288.6
Chicago, Ill.–Northwestern Ind.	301.6	305.4	306.7	306.9	310.0	310.8	313.4	297.4	296.0	296.3	296.3	298.3	299.0	301.2
Cincinnati, Ohio–Ky.–Ind.	...	320.0	...	321.9	...	323.3	...	...	313.8	...	312.3	...	314.4	...
Cleveland, Ohio	326.2	...	332.8	...	336.7	...	337.3	317.5	...	320.7	...	321.9	...	328.1
Dallas-Ft. Worth, Tex.	315.9	...	323.9	...	325.7	...	329.8	309.0	...	316.5	...	318.7	...	324.8
Denver-Boulder, Colo.	...	344.7	...	346.1	...	349.9	...	...	341.7	...	340.8	...	347.1	...
Detroit, Mich.	298.8	304.1	305.6	305.7	306.3	307.7	308.0	303.7	302.9	298.6	298.3	297.0	298.3	298.9
Honolulu, Hawaii	273.5	...	283.2	...	284.7	...	286.0	278.2	...	289.0	...	290.9	...	293.6
Houston, Tex.	324.0	...	325.7	...	330.5	...	332.0	321.6	...	324.9	...	329.5	...	333.6
Kansas City, Mo.–Kansas	301.3	...	309.1	...	310.8	...	311.2	299.3	...	299.7	...	299.9	...	304.5
Los Angeles-Long Beach, Anaheim, Calif.	295.2	300.7	302.8	305.4	305.6	305.9	308.6	293.7	297.9	298.9	301.1	303.4	300.3	305.1
Miami, Fla. (11/77 100)	...	165.6	...	166.4	...	167.0	...	...	166.3	...	167.2	...	168.0	...
Milwaukee, Wis.	...	316.8	...	320.5	...	321.3	...	...	335.3	...	338.2	...	341.6	...
Minneapolis-St. Paul, Minn.–Wis.	316.2	...	322.0	...	324.1	...	324.8	308.5	...	321.1	...	328.9	...	332.5
New York, N.Y.–Northeastern N.J.	289.5	299.9	300.9	300.8	301.6	302.9	305.0	288.4	289.9	291.2	291.6	293.0	294.7	297.1
Northeast, Pa. (Scranton)	...	293.0	...	294.7	...	297.3	...	...	294.0	...	295.5	...	295.9	...
Philadelphia, Pa.–N.J.	289.9	296.7	298.2	298.7	300.0	301.4	302.9	293.3	298.8	299.0	300.5	302.7	304.3	306.1
Pittsburgh, Pa.	310.2	...	318.6	...	319.7	...	319.1	304.2	...	301.5	...	301.4	...	303.3
Portland, Oreg.–Wash.	...	298.0	...	301.9	...	300.9	...	...	292.2	...	297.5	...	294.6	...
St. Louis, Mo.–Ill.	...	302.7	...	305.4	...	308.7	...	...	297.3	...	297.3	...	301.4	...
San Diego, Calif.	...	349.8	...	353.5	...	351.3	...	...	326.6	...	328.2	...	324.6	...
San Francisco-Oakland, Calif.	306.0	...	315.9	...	318.7	...	323.4	301.6	...	310.8	...	315.1	...	322.7
Seattle-Everett, Wash.	...	310.2	...	313.0	...	314.3	...	...	299.9	...	302.7	...	303.2	...
Washington, D.C.–Md.–Va.	...	305.1	...	305.7	...	308.3	...	...	308.2	...	308.9	...	310.8	...

[1]The areas listed include not only the central city but the entire portion of the Standard Metropolitan Statistical Area, as defined for the 1970 Census of Population, except that the Standard Consolidated Area is used for New York and Chicago.
[2]Average of 85 cities.

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23. Producer Price Indexes, by stage of processing

[1967 = 100]

Commodity grouping	Annual average 1983	1983 Sept.	Oct.	Nov.	Dec.	1984 Jan.	Feb.	Mar.	Apr.	May[1]	June	July	Aug.	Sept.
FINISHED GOODS														
Finished goods	285.2	285.1	287.6	286.8	287.2	289.5	290.6	291.4	291.2	r291.1	291.2	292.6	291.8	289.8
Finished consumer goods	284.6	285.1	287.0	285.9	286.3	288.9	290.1	291.1	290.3	r290.3	290.3	292.0	290.8	288.9
Finished consumer foods	261.8	263.0	263.7	261.9	264.3	272.2	274.7	276.6	274.3	r271.7	270.8	275.6	274.2	273.4
Crude	258.7	267.4	287.3	270.4	266.0	306.9	313.6	323.7	299.0	r270.7	282.6	275.1	278.9	274.7
Processed	260.0	260.5	259.5	259.0	262.0	266.9	269.0	270.2	269.9	r269.6	269.3	273.4	271.6	271.0
Nondurable goods less foods	335.3	338.6	338.1	336.8	335.2	335.0	336.1	336.7	336.4	r338.9	339.6	339.8	337.6	336.9
Durable goods	233.1	229.2	235.3	235.4	235.9	235.9	236.1	236.6	236.7	r236.6	236.5	236.6	237.1	232.5
Consumer nondurable goods less food and energy	231.5	233.0	233.6	234.1	234.0	236.0	236.5	237.1	237.9	r238.7	238.5	240.2	240.2	240.9
Capital equipment	287.2	285.1	289.9	r290.0	290.4	291.6	292.3	292.3	294.5	r293.9	294.2	294.8	295.1	292.9
INTERMEDIATE MATERIALS														
Intermediate materials, supplies, and components	312.3	315.5	315.6	315.5	315.7	316.3	317.6	319.7	320.3	r320.9	321.6	321.7	321.1	320.3
Materials and components for manufacturing	293.4	296.7	296.4	296.5	297.6	298.9	299.8	301.8	302.9	r303.3	303.1	303.0	302.3	301.7
Materials for food manufacturing	258.4	269.4	263.5	260.0	262.9	268.6	268.3	269.6	271.4	r276.0	274.7	276.6	272.7	269.9
Materials for nondurable manufacturing	280.0	282.7	283.3	284.6	285.7	286.6	287.0	290.3	291.8	r292.8	292.6	293.0	291.7	291.1
Materials for durable manufacturing	319.4	323.1	322.3	321.6	322.8	323.4	325.6	328.2	329.1	r327.2	327.1	325.3	324.7	323.2
Components for manufacturing	280.4	281.8	282.6	283.0	283.5	284.5	285.2	285.6	286.2	r287.0	286.9	287.2	287.8	288.5
Materials and components for construction	301.8	303.1	303.6	303.9	304.9	305.5	307.8	309.6	310.5	r309.8	310.2	310.7	311.8	311.3
Processed fuels and lubricants	564.8	573.4	574.2	568.1	561.7	556.4	561.3	567.8	562.9	r567.2	577.2	578.9	572.5	567.6
Manufacturing industries	479.0	487.2	490.5	484.9	478.8	474.2	477.9	483.4	480.6	r485.5	493.5	494.5	489.3	485.0
Nonmanufacturing industries	640.0	648.8	647.2	640.6	634.0	628.0	634.1	641.4	634.5	r638.2	650.1	652.3	645.0	639.6
Containers	286.6	287.1	288.1	289.3	289.9	292.3	294.8	297.3	299.4	r300.9	302.2	303.0	304.1	304.7
Supplies	277.1	280.2	280.6	281.6	281.6	282.6	282.2	283.0	284.2	r284.3	283.8	283.0	283.3	283.3
Manufacturing industries	269.9	270.8	271.8	272.2	273.3	274.5	276.0	276.4	277.8	r278.4	278.9	279.1	279.7	280.3
Nonmanufacturing industries	281.1	285.3	285.3	286.3	286.1	287.0	285.7	286.7	287.8	r287.6	286.7	285.4	285.4	285.1
Feeds	225.9	249.6	246.7	251.0	243.9	243.7	227.7	232.2	233.5	r229.2	221.5	211.3	208.3	202.9
Other supplies	292.8	293.4	294.0	294.8	295.5	296.6	298.0	298.4	299.5	300.0	300.4	300.8	301.4	302.1
CRUDE MATERIALS														
Crude materials for further processing	323.6	328.5	324.8	324.0	327.5	333.5	332.6	338.8	339.4	r338.0	333.2	334.5	329.3	326.7
Foodstuffs and feedstuffs	252.2	257.2	253.7	251.8	256.0	264.0	260.5	269.9	269.7	r266.4	260.7	264.0	256.9	253.1
Nonfood materials	477.4	482.5	478.2	479.4	481.6	483.4	488.1	487.5	490.1	r492.3	489.5	486.6	485.5	485.1
Nonfood materials except fuel	372.2	378.1	377.1	377.7	379.1	380.1	385.5	387.8	388.8	r389.9	385.9	381.1	377.2	379.8
Manufacturing industries	381.9	388.3	387.4	387.9	389.4	390.4	395.5	398.8	399.5	400.2	395.7	390.3	386.6	389.1
Construction	270.6	272.5	270.5	272.1	272.7	273.7	280.3	276.5	279.2	r282.7	281.7	281.9	277.5	280.2
Crude fuel	931.5	931.0	910.9	915.3	921.1	926.1	926.6	910.6	920.8	r928.4	933.2	940.6	954.4	938.8
Manufacturing industries	1,094.5	1,093.9	1,067.1	1,071.8	1,079.0	1,086.5	1,086.3	1,064.8	1,079.6	r1,088.1	1,095.5	1,104.4	1,121.7	1,101.4
Nonmanufacturing industries	816.3	816.1	801.1	805.3	810.1	813.2	814.2	802.6	809.1	r816.1	818.6	825.0	836.3	824.3
SPECIAL GROUPINGS														
Finished goods excluding foods	290.8	290.3	293.4	293.0	292.6	292.9	293.6	294.0	294.6	r295.3	295.7	296.0	295.3	292.9
Finished consumer goods excluding foods	291.4	291.4	293.9	293.2	292.5	292.5	293.1	293.6	293.5	r294.9	295.3	295.4	294.4	291.9
Finished consumer goods less energy	249.9	249.7	252.1	251.7	252.6	256.1	257.2	258.2	257.8	r257.1	256.7	259.0	258.7	257.2
Intermediate materials less foods and feeds	317.1	319.5	320.0	319.9	320.2	320.6	322.3	324.4	325.0	325.4	326.5	326.7	326.3	325.7
Intermediate materials less energy	295.2	298.1	298.2	298.5	299.4	300.5	301.5	303.3	304.4	r304.6	304.6	304.5	304.3	304.0
Intermediate foods and feeds	247.9	263.2	258.2	257.4	256.9	260.7	255.1	257.5	259.1	r260.8	257.4	255.3	251.7	248.0
Crude materials less agricultural products	538.6	542.9	538.8	540.3	543.2	546.3	552.0	550.0	553.0	554.0	552.3	550.0	549.4	547.3
Crude materials less energy	246.5	252.5	249.6	248.3	252.0	258.3	257.3	265.1	265.4	r263.3	257.7	258.7	252.2	250.1

[1] Data for May 1984 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.   r = revised.

24. Producer Price Indexes, by commodity groupings

[1967 = 100 unless otherwise specified]

Code	Commodity group and subgroup	Annual average 1983	1983 Sept.	Oct.	Nov.	Dec.	1984 Jan.	Feb.	Mar.	Apr.	May¹	June	July	Aug.	Sept.
	All commodities	303.1	305.3	306.0	305.5	306.1	308.0	308.9	311.0	311.3	ʳ311.5	311.4	312.0	310.9	309.5
	All commodities (1957–59 = 100)	321.5	323.9	324.7	324.1	324.8	326.8	327.7	330.0	330.3	ʳ330.5	330.4	331.0	329.9	328.4
	Farm products and processed foods and feeds	253.9	259.1	257.5	256.0	257.9	264.4	263.4	267.9	267.3	ʳ265.8	262.7	265.2	261.6	259.6
	Industrial commodities	315.7	317.1	318.5	318.3	318.4	319.1	320.6	321.9	322.6	ʳ323.2	323.9	324.0	323.5	322.3
	FARM PRODUCTS AND PROCESSED FOODS AND FEEDS														
01	Farm products	248.2	256.4	255.2	251.0	254.0	263.4	261.6	267.4	265.4	260.8	257.1	258.6	253.2	249.7
01–1	Fresh and dried fruits and vegetables	262.1	276.0	308.1	275.2	276.1	291.2	312.2	308.0	263.8	ʳ251.9	272.9	281.2	293.3	289.7
01–2	Grains	240.4	258.0	253.7	257.5	243.6	245.5	235.3	250.9	262.1	256.2	257.8	248.9	236.9	231.4
01–3	Livestock	243.1	231.5	229.4	220.5	238.2	250.7	251.9	260.8	260.8	254.8	250.0	260.1	253.7	244.9
01–4	Live poultry	206.5	242.2	208.5	238.5	241.2	252.6	251.3	258.4	240.8	240.6	227.7	259.2	218.6	239.7
01–5	Plant and animal fibers	227.0	238.7	234.5	243.6	244.1	229.3	232.7	250.3	252.3	259.1	252.7	235.8	211.3	210.3
01–6	Fluid milk	282.0	284.4	284.1	283.2	281.4	279.1	275.7	274.2	272.7	271.7	271.8	273.9	276.8	282.1
01–7	Eggs	(²)	200.1	(²)	(²)	(²)	282.4	280.7	(²)	264.4	201.0	177.9	184.9	181.2	177.6
01–8	Hay, hayseeds, and oilseeds	246.8	297.8	288.8	287.6	282.2	287.3	265.4	281.4	282.1	297.0	272.4	245.8	242.6	228.4
01–9	Other farm products	282.1	287.3	283.7	283.5	276.9	280.2	278.9	277.7	279.7	288.2	279.0	277.4	284.1	296.1
02	Processed foods and feeds	255.9	259.6	257.8	257.6	259.0	263.8	263.4	267.1	267.2	ʳ267.5	264.8	267.7	265.2	264.0
02–1	Cereal and bakery products	261.0	263.6	264.6	265.2	265.1	266.6	267.1	267.4	268.3	ʳ268.7	271.5	272.2	271.8	272.0
02–2	Meats, poultry, and fish	249.0	242.9	237.0	234.7	242.3	255.8	254.6	264.4	261.7	ʳ257.1	248.5	260.6	253.8	251.0
02–3	Dairy products	250.6	250.6	251.3	251.4	248.9	248.4	248.4	248.8	248.8	248.9	249.4	251.4	251.0	255.2
02–4	Processed fruits and vegetables	277.4	278.6	281.1	280.9	282.9	287.7	292.8	295.4	295.1	ʳ297.7	298.2	296.5	296.4	292.0
02–5	Sugar and confectionery	292.8	300.2	298.0	297.7	297.5	299.9	300.5	301.1	301.9	ʳ303.8	304.0	305.3	304.1	302.7
02–6	Beverages and beverage materials	263.6	264.3	265.2	266.3	266.5	268.7	270.2	269.9	271.4	ʳ273.5	271.7	273.8	274.2	274.7
02–7	Fats and oils	238.8	303.5	281.7	274.5	271.7	278.3	273.3	286.2	293.4	ʳ328.5	326.5	312.7	306.8	297.2
02–8	Miscellaneous processed foods	254.8	258.4	262.1	264.8	266.2	266.8	275.4	275.2	276.3	ʳ276.2	278.4	280.4	279.6	280.8
02–9	Prepared animal feeds	228.8	249.3	248.6	252.1	245.6	245.2	231.1	235.3	236.3	ʳ232.3	225.5	216.3	214.0	209.0
	INDUSTRIAL COMMODITIES														
03	Textile products and apparel	205.1	206.2	207.0	207.7	207.8	208.2	209.6	209.9	209.9	210.5	210.3	210.8	210.5	210.6
03–1	Synthetic fibers (12/75 = 100)	156.7	158.0	160.5	159.3	158.1	159.2	161.4	160.7	160.7	ʳ160.6	160.5	160.1	159.9	159.2
03–2	Processed yarns and threads (12/75 = 100)	138.5	140.3	141.3	141.7	142.9	142.3	144.0	144.0	143.6	144.3	143.8	143.7	142.1	142.2
03–3	Gray fabrics (12/75 = 100)	147.0	147.3	149.4	151.4	152.0	151.1	152.8	153.2	153.0	ʳ153.7	154.3	154.1	154.4	154.5
03–4	Finished fabrics (12/75 = 100)	123.1	123.4	123.8	124.4	124.8	124.8	126.3	127.0	126.9	ʳ127.3	127.2	127.7	127.3	127.0
03–81	Apparel	197.4	198.7	198.8	199.4	199.0	200.1	200.5	200.7	200.7	ʳ201.3	200.7	201.9	201.8	202.3
03–82	Textile housefurnishings	235.1	235.3	234.5	234.4	235.3	236.0	236.6	237.6	238.1	ʳ238.8	239.3	239.2	239.7	240.5
04	Hides, skins, leather, and related products	271.1	274.4	273.7	277.0	277.3	279.1	283.3	286.7	286.8	ʳ288.5	290.3	290.2	290.2	290.3
04–2	Leather	330.7	339.4	336.6	340.5	344.1	346.2	362.0	378.0	386.7	ʳ390.7	383.5	384.7	379.7	372.6
04–3	Footwear	250.1	251.6	251.3	257.3	250.3	250.9	252.5	253.5	251.6	ʳ251.5	250.3	250.1	250.9	252.1
04–4	Other leather and related products	252.7	253.5	253.5	255.8	255.6	257.2	257.3	257.3	258.1	ʳ259.8	271.2	271.2	271.5	271.7
05	Fuels and related products and power	664.7	672.3	669.5	663.7	658.0	652.1	656.0	658.7	654.7	ʳ660.6	667.9	667.2	660.7	654.8
05–1	Coal	537.4	537.9	538.2	542.3	543.9	541.4	544.7	546.2	542.0	ʳ547.4	543.3	546.8	550.7	549.6
05–2	Coke	444.6	453.9	453.1	453.8	415.4	418.3	437.9	438.9	442.8	ʳ441.6	441.9	441.9	437.3	435.4
05–3	Gas fuels³	1,146.9	1,147.0	1,128.4	1,122.0	1,120.4	1,123.0	1,107.8	1,091.0	1,102.1	ʳ1,104.1	1,122.1	1,123.5	1,128.9	1,119.1
05–4	Electric power	417.9	427.9	423.6	418.7	417.3	420.5	424.4	426.7	431.5	ʳ433.1	446.5	453.9	457.1	456.8
05–61	Crude petroleum⁴	681.4	675.7	675.7	675.8	674.4	675.6	675.6	675.6	673.9	ʳ673.9	673.7	673.1	672.3	672.0
05–7	Petroleum products, refined⁵	684.3	695.3	695.3	688.2	678.3	663.2	669.8	680.2	667.0	ʳ677.6	681.1	674.6	657.3	647.5
06	Chemicals and allied products	293.0	295.9	295.5	296.4	297.7	298.1	296.5	300.1	302.0	ʳ302.7	302.5	302.6	301.4	301.4
06–1	Industrial chemicals⁶	342.9	345.6	344.9	346.2	349.2	347.4	337.6	344.7	345.4	ʳ345.3	345.5	345.7	341.7	338.1
06–21	Prepared paint	264.7	264.5	264.2	264.5	264.9	265.6	267.3	267.3	268.7	ʳ270.0	270.8	274.1	276.4	277.4
06–22	Paint materials	305.8	316.2	316.9	316.5	315.5	316.6	314.2	317.9	328.7	ʳ337.6	337.1	335.4	335.1	333.5
06–3	Drugs and pharmaceuticals	226.1	227.4	229.3	231.0	230.9	232.9	234.4	237.6	239.8	ʳ240.1	238.7	240.0	241.7	242.8
06–4	Fats and oils, inedible	285.6	329.0	318.6	321.6	318.8	334.2	349.0	366.7	383.2	ʳ399.2	414.2	378.4	350.5	359.4
06–5	Agricultural chemicals and chemical products	280.5	276.0	276.4	280.4	281.9	278.5	285.9	288.1	288.4	ʳ286.8	286.4	285.5	282.9	285.1
06–6	Plastic resins and materials	291.5	302.6	299.1	297.9	301.5	305.2	305.0	306.2	307.8	ʳ310.6	310.8	309.9	309.4	311.3
06–7	Other chemicals and allied products	273.6	274.3	274.4	273.8	273.6	274.9	273.3	275.2	277.0	277.2	276.3	277.5	278.4	278.7
07	Rubber plastic products	243.2	243.2	244.4	243.6	243.8	244.8	246.2	246.4	247.3	ʳ247.5	247.3	247.5	247.6	247.9
07–1	Rubber and rubber products	266.0	263.9	264.8	264.3	264.6	266.6	266.8	265.5	267.2	ʳ266.3	266.3	266.9	267.7	268.1
07–11	Crude rubber	280.8	284.4	284.3	282.7	282.2	282.9	282.8	283.0	282.3	ʳ277.7	277.1	275.9	273.2	273.5
07–12	Tires and tubes	245.3	242.5	242.6	242.4	242.3	244.1	243.7	241.7	243.5	ʳ243.2	243.5	244.1	244.1	244.7
07–13	Miscellaneous rubber products	284.8	281.6	283.8	283.5	284.6	287.1	288.4	287.4	289.8	ʳ289.3	289.1	290.3	293.4	293.5
07–2	Plastic products (6/78 = 100)	135.3	136.6	137.4	136.7	136.8	136.9	138.4	139.4	139.4	ʳ140.2	140.1	139.9	139.5	139.7
08	Lumber and wood products	307.1	305.6	305.6	304.9	308.7	309.1	315.7	316.8	315.1	ʳ308.5	307.1	304.3	304.5	303.4
08–1	Lumber	352.6	346.6	344.7	342.8	351.3	352.6	364.9	370.5	369.4	ʳ355.6	351.5	343.3	342.3	338.4
08–2	Millwork	302.3	305.9	307.4	307.9	308.5	308.6	308.8	309.9	307.2	ʳ304.2	305.2	305.7	306.1	307.0
08–3	Plywood	244.1	242.2	246.6	244.6	247.2	248.2	249.5	248.6	243.6	ʳ235.4	236.3	237.1	246.9	243.4
08–4	Other wood products	230.6	229.4	229.6	229.8	230.6	230.0	230.8	231.8	233.3	ʳ234.7	234.9	235.2	236.5	235.9

See footnotes at end of table.

24. Continued—Producer Price Indexes, by commodity groupings

[1967 = 100 unless otherwise specified]

Code	Commodity group and subgroup	Annual average 1983	1983				1984								
			Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May[1]	June	July	Aug.	Sept.
	INDUSTRIAL COMMODITIES—Continued														
09	Pulp, paper, and allied products	298.1	299.9	302.2	303.6	304.0	309.1	312.0	314.0	316.3	r317.7	317.6	319.2	320.0	321.2
09-1	Pulp, paper, and products, excluding building paper and board	271.4	273.1	275.2	277.4	277.4	280.8	285.0	288.3	291.5	292.7	293.3	295.6	296.3	297.2
09-11	Woodpulp	346.9	34.4	347.4	356.7	355.5	366.2	374.2	378.6	401.1	r407.9	407.6	410.6	410.0	409.5
09-12	Wastepaper	(2)	194.4	216.2	215.0	211.5	211.5	229.3	242.9	258.8	259.3	257.3	254.7	254.5	249.6
09-13	Paper	282.0	286.0	287.2	288.5	289.3	294.2	296.6	299.8	300.4	301.3	301.4	307.9	306.9	306.7
09-14	Paperboard	250.9	254.0	257.3	259.4	260.9	262.2	271.8	275.6	277.1	r277.8	279.1	279.1	285.4	288.2
09-15	Converted paper and paperboard products	265.3	265.0	266.5	267.9	268.0	270.6	273.7	276.5	279.1	r280.1	280.8	281.9	282.4	283.8
09-2	Building paper and board	250.0	252.8	254.7	254.7	250.4	251.9	255.1	258.6	263.8	265.2	265.1	262.9	258.4	258.1
10	Metals and metal products	307.2	310.7	310.9	310.9	311.9	312.9	314.8	316.8	317.9	r317.4	317.2	315.9	315.8	315.3
10-1	Iron and steel	343.4	348.1	348.5	349.5	350.9	353.8	356.2	356.5	356.5	r357.3	356.8	357.2	357.1	357.6
10-17	Steel mill products	352.8	358.1	358.7	359.5	360.0	362.5	363.6	363.6	364.2	r364.7	365.4	367.8	368.0	367.9
10-2	Nonferrous metals	276.1	282.0	279.3	276.6	278.2	276.8	280.2	286.1	289.1	r284.1	282.9	276.8	274.6	271.3
10-3	Metal containers	335.4	338.5	338.3	338.2	340.3	344.1	344.8	345.4	345.3	r348.0	348.2	348.4	352.4	352.6
10-4	Hardware	290.7	292.5	292.7	293.1	293.5	293.3	294.0	294.4	294.6	r295.3	295.0	295.8	296.7	297.3
10-5	Plumbing fixtures and brass fittings	289.3	292.4	292.7	294.1	294.0	293.9	296.4	299.9	301.5	r301.6	302.0	302.5	303.3	299.0
10-6	Heating equipment	243.6	246.6	245.3	245.5	245.7	247.3	248.1	248.5	250.3	r252.4	251.3	254.7	255.5	257.5
10-7	Fabricated structural metal products	303.5	304.3	304.2	305.3	306.0	306.5	307.0	308.3	309.3	310.6	311.1	311.6	312.3	312.1
10-8	Miscellaneous metal products	283.6	284.3	289.0	289.5	289.6	290.3	291.1	292.1	293.1	r293.4	294.5	294.1	295.0	295.6
11	Machinery and equipment	286.4	287.9	287.6	288.0	288.8	289.7	290.2	291.0	292.2	r292.6	293.1	293.7	294.2	294.5
11-1	Agricultural machinery and equipment	326.3	328.5	328.0	328.6	330.1	331.0	331.4	332.9	335.5	r338.2	336.8	337.2	337.6	337.9
11-2	Construction machinery and equipment	351.9	353.5	353.6	353.9	353.6	354.2	355.9	355.3	357.5	357.8	358.1	358.2	358.6	359.0
11-3	Metalworking machinery and equipment	326.5	326.6	327.0	327.3	328.7	329.2	330.2	330.6	332.6	r333.5	333.3	334.1	334.6	335.5
11-4	General purpose machinery and equipment	308.2	308.1	307.8	308.6	309.8	310.7	310.9	311.7	313.1	r313.2	313.6	314.9	315.4	315.8
11-6	Special industry machinery and equipment	337.1	339.8	340.6	341.0	342.0	342.0	343.2	344.6	346.8	348.2	348.8	351.0	352.3	350.3
11-7	Electrical machinery and equipment	240.1	242.9	242.6	242.8	243.8	244.7	245.7	246.7	247.7	r248.1	248.4	248.5	248.7	249.3
11-9	Miscellaneous machinery	274.1	274.5	273.3	273.7	273.9	275.5	274.3	274.5	274.6	r273.7	275.7	275.6	276.1	276.6
12	Furniture and household durables	214.0	215.4	215.3	215.7	215.7	216.8	217.2	217.4	218.2	r219.1	219.2	218.7	218.9	218.9
12-1	Household furniture	234.7	236.6	236.9	237.4	237.2	237.9	239.1	240.0	240.8	241.5	242.3	241.8	242.2	243.0
12-2	Commercial furniture	286.3	287.3	287.4	289.9	289.5	293.4	294.7	294.7	296.1	r297.4	297.0	297.9	298.4	298.5
12-3	Floor coverings	185.4	189.5	189.5	189.3	189.4	188.2	188.4	188.3	188.2	r191.7	191.6	191.4	191.3	191.4
12-4	Household appliances	206.9	208.0	207.6	208.0	208.5	209.8	210.7	210.9	210.9	r210.8	211.1	211.4	211.7	211.8
12-5	Home electronic equipment	86.1	85.8	85.8	85.1	84.5	84.4	84.1	84.0	84.9	r84.5	83.7	82.4	84.2	83.5
12-6	Other household durable goods	313.1	314.5	314.0	315.1	315.2	318.0	316.8	316.7	319.1	r321.6	322.1	320.4	316.3	315.9
13	Nonmetallic mineral products	325.2	327.2	328.0	328.9	328.9	330.1	332.2	333.4	335.8	r337.6	338.4	339.3	340.0	340.4
13-11	Flat glass	229.7	229.5	229.6	230.1	229.9	229.5	229.9	229.1	230.2	r226.1	227.3	227.4	217.8	217.9
13-2	Concrete ingredients	313.3	317.2	316.7	314.8	314.6	315.6	319.9	324.2	324.3	r328.0	326.3	327.2	329.0	328.8
13-3	Concrete products	302.0	303.5	303.3	304.1	304.2	304.9	305.9	306.3	308.8	r309.4	310.0	310.6	311.3	311.4
13-4	Structural clay products, excluding refractories	277.8	282.4	283.5	284.1	284.2	284.3	283.7	284.3	285.0	r285.6	285.6	285.7	287.5	288.7
13-5	Refractories	341.3	340.2	344.7	353.3	353.3	353.9	356.0	361.1	361.8	r361.8	362.9	362.9	362.7	362.7
13-6	Asphalt roofing	384.0	387.2	387.9	387.8	384.2	385.0	392.3	385.6	396.2	r398.7	392.3	392.6	405.6	406.7
13-7	Gypsum products	286.0	297.8	312.8	315.1	322.6	328.6	339.4	339.6	353.0	360.9	360.3	360.6	352.9	356.1
13-8	Glass containers	352.4	351.1	350.2	350.4	350.4	350.6	350.6	350.6	358.0	r361.9	366.0	367.1	366.0	364.6
13-9	Other nonmetallic minerals	480.2	482.5	483.2	487.4	486.8	486.4	488.1	490.8	491.3	r494.9	499.7	507.1	512.0	510.1
14	Transportation equipment (12/68 = 100)	256.7	250.4	260.6	260.5	260.7	261.5	262.2	262.4	263.4	r262.5	262.6	262.8	263.1	257.4
14-1	Motor vehicles and equipment	256.8	249.1	260.6	260.5	260.6	261.1	261.2	261.5	261.9	261.5	261.4	261.5	261.8	254.6
14-4	Railroad equipment	350.2	350.7	348.6	348.6	350.5	351.5	351.5	352.0	380.8	r354.4	361.2	363.4	364.6	364.6
15	Miscellaneous products	289.6	291.4	291.7	291.7	292.8	294.5	294.9	294.9	294.6	294.3	295.6	297.1	297.9	296.4
15-1	Toys, sporting goods, small arms, ammunition	225.2	224.8	225.9	225.2	225.3	227.4	227.8	227.6	226.5	r226.8	226.4	226.4	226.9	226.9
15-2	Tobacco products	365.4	376.9	376.8	377.0	377.1	389.4	390.3	390.4	390.4	390.6	400.2	407.9	407.6	406.7
15-3	Notions	280.1	279.7	279.7	279.6	280.1	281.4	282.2	282.2	283.0	r283.9	283.9	283.9	283.9	283.9
15-4	Photographic equipment and supplies	215.7	216.6	216.8	216.8	216.8	(2)	217.9	212.7	213.6	r213.6	213.5	213.7	214.1	215.5
15-5	Mobile homes (12/74 = 100)	163.4	164.3	164.8	165.0	165.1	162.2	162.4	162.5	163.8	r163.7	163.9	164.1	163.1	163.3
15-9	Other miscellaneous products	351.8	349.6	349.2	349.3	353.2	350.8	350.5	354.2	351.9	r350.4	349.6	349.8	352.8	346.6

[1] Data for May 1984 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.
[2] Not available.
[3] Prices for natural gas are lagged 1 month.
[4] Includes only domestic production.
[5] Most prices for refined petroleum products are lagged 1 month.
[6] Some prices for industrial chemicals are lagged 1 month.
r = revised.

25. Producer Price Indexes, for special commodity groupings

[1967 = 100 unless otherwise specified]

Commodity grouping	Annual average 1983	1983				1984								
		Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May[1]	June	July	Aug.	Sept.
All commodities—less farm products	306.6	308.3	309.2	309.1	309.4	310.7	311.9	313.6	314.2	ʳ314.7	314.9	315.4	314.7	313.4
All foods	257.5	260.7	260.5	258.0	260.2	268.3	270.2	272.9	270.6	ʳ268.9	267.6	272.1	270.1	268.9
Processed foods	258.7	260.9	258.6	258.0	260.4	266.2	267.0	271.2	270.9	ʳ271.4	269.2	273.4	270.5	269.5
Industrial commodities less fuels	279.3	280.0	281.8	282.2	282.9	284.3	285.5	286.7	287.8	287.8	287.9	288.1	288.2	287.5
Selected textile mill products (Dec. 1975 = 100)	138.2	139.1	139.4	139.8	140.1	140.0	141.3	141.7	141.7	142.7	142.6	142.9	142.7	142.7
Hosiery	144.7	145.6	145.6	145.6	145.6	145.8	147.3	147.4	147.4	147.4	147.4	147.8	147.8	147.9
Underwear and nightwear	223.8	224.5	224.7	224.6	225.4	228.6	229.8	ʳ230.9	229.8	ʳ230.9	229.0	229.5	230.2	230.2
Chemicals and allied products, including synthetic rubber and fibers and yarns	283.5	285.6	285.6	286.3	287.4	287.6	286.2	289.1	290.6	ʳ291.1	290.7	291.2	290.4	290.2
Pharmaceutical preparations	224.8	227.1	229.4	231.3	231.8	233.9	235.9	238.8	241.5	ʳ241.9	242.3	244.0	244.2	245.7
Lumber and wood products, excluding millwork	321.2	316.5	316.7	314.7	321.4	322.6	331.4	334.9	332.5	ʳ320.4	317.9	312.6	315.3	311.4
Steel mill products, including fabricated wire products	351.2	355.9	356.4	357.4	357.8	360.1	361.1	361.2	361.8	ʳ362.4	363.1	365.3	365.7	365.6
Finished steel mill products, excluding fabricated wire products	351.5	357.1	357.8	358.6	359.2	361.7	363.2	363.1	363.6	ʳ364.1	364.8	367.0	367.4	367.2
Finished steel mill products, including fabricated wire products	349.9	354.8	355.4	356.4	356.9	359.2	360.5	360.5	361.0	361.6	362.3	364.4	364.9	364.8
Special metals and metal products	292.6	291.5	296.4	296.3	297.0	297.8	299.0	300.3	301.2	ʳ300.8	300.6	300.0	300.0	296.7
Fabricated metal products	294.3	295.5	297.2	297.9	298.4	299.3	300.0	301.1	301.9	ʳ302.9	303.5	303.8	304.9	305.0
Copper and copper products	196.6	198.2	190.7	182.6	185.0	182.1	185.1	192.9	199.4	ʳ191.8	189.3	183.5	181.8	182.1
Machinery and motive products	279.8	277.7	282.2	282.4	283.0	283.9	284.5	285.0	286.2	ʳ285.9	286.3	286.7	287.1	284.7
Machinery and equipment, except electrical	313.6	314.3	314.1	314.6	315.3	316.3	316.5	317.1	318.5	ʳ318.8	319.4	320.3	321.0	321.1
Agricultural machinery, including tractors	341.5	344.0	343.6	344.0	346.4	347.1	347.5	349.3	352.9	ʳ357.0	354.6	355.4	355.9	356.0
Metalworking machinery	357.1	357.5	357.1	357.6	358.2	359.3	362.1	361.6	363.0	ʳ363.2	363.2	364.7	365.2	366.5
Total tractors	ʳ369.7	372.5	372.6	373.1	373.8	374.0	374.5	376.1	384.1	ʳ386.8	384.8	384.9	386.5	386.4
Agricultural machinery and equipment less parts	330.0	332.6	331.8	332.2	334.2	335.2	335.7	337.4	340.4	ʳ343.6	341.7	342.3	342.7	343.0
Farm and garden tractors less parts	347.2	350.6	350.7	350.9	352.0	352.2	352.9	355.1	362.1	ʳ365.8	362.8	362.9	364.9	364.8
Agricultural machinery, excluding tractors less parts	337.1	338.9	338.2	338.7	342.2	343.3	343.4	344.9	345.7	ʳ350.1	348.2	349.6	348.8	349.2
Construction materials	297.7	299.9	300.4	300.4	301.3	302.3	305.0	306.6	307.1	ʳ306.2	306.3	306.6	307.3	306.7

[1] Data for May 1984 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.
r = revised.

26. Producer Price Indexes, by durability of product

[1967 = 100]

Commodity grouping	Annual average 1983	1983				1984								
		Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May[1]	June	July	Aug.	Sept.
Total durable goods	286.7	286.8	289.2	289.3	290.1	291.0	292.2	293.2	294.2	ʳ293.8	293.8	293.7	293.9	292.5
Total nondurable goods	315.7	319.7	319.1	318.1	318.4	321.2	321.9	324.8	324.7	ʳ325.3	325.1	326.3	324.0	322.6
Total manufactures	295.7	297.2	298.5	298.4	298.8	300.0	301.2	302.8	303.2	ʳ303.8	303.8	304.2	303.4	302.1
Durable	287.3	287.2	289.6	289.8	290.5	291.3	292.4	293.3	294.3	293.9	294.1	294.1	294.5	293.0
Nondurable	304.4	307.8	307.7	307.4	307.5	309.1	310.4	312.7	312.5	ʳ314.1	314.1	314.9	312.7	311.7
Total raw or slightly processed goods	339.8	345.9	343.6	340.6	341.8	348.4	347.6	352.4	352.4	ʳ350.1	349.0	350.8	348.1	345.8
Durable	249.3	260.7	259.8	258.5	263.3	267.4	275.2	278.7	280.6	ʳ277.9	273.0	264.8	259.6	260.6
Nondurable	345.4	351.0	348.6	345.6	346.5	353.3	351.8	356.7	356.5	ʳ354.3	353.5	356.0	353.5	351.0

[1] Data for May 1984 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.
r = revised.

27. Producer Price Indexes for the output of selected SIC industries

[1967 = 100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1983	1983 Sept.	Oct.	Nov.	Dec.	1984 Jan.	Feb.	Mar.	Apr.	May¹	June	July	Aug.	Sept.
	MINING														
1011	Iron ores (12/75 = 100)	177.1	177.1	177.1	177.1	177.1	177.1	177.1	177.1	177.1	177.1	177.1	177.1	177.1	177.1
1092	Mercury ores (12/75 = 100)	269.7	243.3	283.3	287.5	277.0	275.8	245.4	250.0	267.9	273.7	271.6	264.6	249.1	257.1
1311	Crude petroleum and natural gas	921.4	920.0	907.2	909.4	909.4	914.3	913.0	902.7	909.2	ʳ914.1	919.2	922.2	929.4	919.4
	MANUFACTURING														
2067	Chewing gum	326.8	327.3	327.3	327.5	327.5	328.0	328.1	328.7	328.8	ʳ328.9	329.0	329.1	329.2	329.2
2074	Cottonseed oil mills	204.1	262.9	253.5	233.1	223.3	229.2	201.7	212.7	222.6	ʳ245.3	242.9	223.2	210.3	205.0
2083	Malt	234.1	232.6	232.6	241.6	241.6	241.6	241.6	241.6	241.6	241.6	241.6	241.6	241.6	241.6
2091	Canned and cured seafoods (12/73 = 100)	174.1	169.8	170.2	169.2	169.7	169.0	168.8	168.6	167.0	ʳ169.3	168.9	167.8	167.9	167.1
2098	Macaroni and spaghetti	256.8	255.5	258.6	261.9	261.9	261.9	261.9	261.9	261.9	261.9	261.9	261.9	261.9	261.9
2298	Cordage and twine (12/77 = 100)	139.3	139.0	139.0	138.9	139.0	139.0	139.2	139.2	139.3	139.4	139.4	137.4	137.4	137.4
2361	Children's dresses and blouses (12/77 = 100)	116.6	117.0	117.0	117.0	117.0	118.2	117.8	117.8	118.6	ʳ118.6	118.5	118.6	118.6	117.8
2381	Fabric dress and work gloves	293.3	296.3	296.3	296.3	297.6	295.2	299.1	302.3	304.8	315.6	315.6	315.6	315.6	315.6
2394	Canvas and related products (12/77 = 100)	147.0	146.2	147.8	147.8	147.8	150.6	150.6	150.6	150.6	ʳ150.6	151.3	151.3	151.3	152.9
2448	Wood pallets and skids (12/75 = 100)	149.2	151.0	151.5	151.9	153.6	154.0	156.0	157.9	161.6	ʳ165.1	165.4	166.3	166.3	166.4
2521	Wood office furniture	281.3	283.6	283.6	283.6	283.6	285.1	289.1	289.1	289.2	ʳ289.2	290.3	290.3	290.3	292.2
2654	Sanitary food containers	266.1	267.8	269.0	269.0	269.0	269.1	273.4	278.4	280.6	ʳ280.6	282.3	282.3	282.3	282.9
2655	Fiber cans, drums, and similar products (12/75 = 100)	186.5	187.7	187.8	189.5	189.6	189.6	189.7	191.4	193.1	193.1	193.1	194.7	194.7	194.7
2911	Petroleum refining (6/76 = 100)	253.8	256.8	257.1	253.5	249.7	244.4	246.7	249.8	244.9	ʳ248.1	249.6	247.2	241.0	238.3
3251	Brick and structural clay tile	332.3	336.4	338.4	339.7	339.9	340.2	339.9	341.1	342.6	ʳ343.8	346.1	346.5	346.5	348.7
3253	Ceramic wall and floor tile (12/75 = 100)	146.0	149.6	149.6	149.6	149.6	149.6	149.6	149.6	149.6	ʳ149.6	146.8	146.8	150.5	150.5
3255	Clay refractories	355.6	355.9	364.3	366.6	366.5	367.2	367.7	369.3	371.5	ʳ371.5	373.7	373.7	373.4	373.4
3259	Structural clay products, n.e.c.	230.2	234.9	235.1	235.0	235.0	235.0	232.1	232.4	232.4	ʳ232.4	232.9	233.0	232.9	232.9
3261	Vitreous plumbing fixtures	278.1	281.3	283.7	284.5	285.4	285.6	287.0	290.1	290.4	290.8	292.5	293.1	293.9	295.5
3263	Fine earthenware food utensils	366.5	366.5	366.5	368.5	368.5	383.6	384.0	375.9	382.6	ʳ376.5	375.5	372.1	373.0	372.8
3269	Pottery products, n.e.c. (12/75 = 100)	187.1	186.6	186.6	189.9	189.9	191.9	192.2	191.9	192.2	ʳ192.2	192.2	192.1	192.1	189.0
3274	Lime (12/75 = 100)	185.7	186.3	185.9	182.4	182.5	182.8	184.4	183.9	184.1	184.2	183.4	180.4	179.8	187.3
3297	Nonclay refractories (12/74 = 100)	205.2	203.8	203.9	212.8	212.8	213.1	215.4	220.6	220.1	ʳ220.1	220.1	220.0	219.9	220.3
3482	Small arms ammunition (12/75 = 100)	180.5	181.6	181.6	181.6	181.6	190.3	190.3	190.3	190.3	ʳ190.3	196.6	196.6	196.6	196.6
3623	Welding apparatus, electric (12/72 = 100)	243.6	243.6	243.9	243.9	244.7	246.0	246.7	247.2	248.7	ʳ248.8	245.2	245.3	245.4	245.9
3648	Lighting equipment, n.e.c. (12/75 = 100)	172.8	173.5	173.7	173.9	172.6	173.5	173.5	184.9	185.0	185.6	185.7	186.4	188.2	188.3
3671	Electron tubes, receiving type	435.4	432.8	432.9	432.9	469.8	490.6	490.8	490.8	490.9	ʳ490.9	490.9	491.1	491.3	491.6
3942	Dolls (12/75 = 100)	137.5	137.7	137.7	137.7	137.7	137.6	137.8	137.7	131.6	ʳ133.4	133.3	133.3	133.3	133.3
3944	Games, toys, and children's vehicles	238.7	236.3	236.4	236.2	236.2	239.3	240.6	240.1	239.7	ʳ239.1	234.7	234.7	234.7	234.8
3955	Carbon paper and inked ribbons (12/75 = 100) . . .	139.2	139.2	139.3	139.3	139.3	144.1	149.0	149.0	149.1	149.1	149.1	146.7	146.7	146.7
3995	Burial caskets (6/76 = 100)	153.5	155.4	156.0	156.0	156.0	156.0	157.2	157.3	158.8	158.8	158.8	158.8	158.8	158.5
3996	Hard surface floor coverings (12/75 = 100)	161.5	163.5	165.5	163.5	163.5	165.2	165.2	165.2	166.3	166.4	166.4	168.7	168.7	168.8

¹Data for May 1984 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

r = revised.

NOTE: Indexes which were deleted in the September issue may now be found in Table 4 of the BLS monthly report, *Producer Prices and Price Indexes*.

PRODUCTIVITY DATA

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

Definitions

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

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

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

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

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

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

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

Notes on the data

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

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

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

28. Annual indexes of multifactor productivity and related measures, selected years, 1950–83

[1977 = 100]

Item	1950	1960	1970	1973	1974	1975	1976	1978	1979r	1980r	1981r	1982r	1983p
PRIVATE BUSINESS SECTOR													
Productivity:													
Output per hour of all persons	49.7	64.8	86.1	r94.8	r92.5	94.5	97.6	r100.5	99.3	98.7	100.6	100.8	103.7
Output per unit of capital services	98.6	98.5	98.5	103.0	96.5	92.0	96.1	101.8	100.3	95.6	94.1	89.6	92.3
Multifactor productivity	63.6	75.4	90.2	97.5	93.8	93.6	97.1	101.0	99.7	97.6	98.3	96.8	99.6
Output	39.5	53.3	78.3	91.8	89.9	88.0	93.7	105.5	107.9	106.4	109.2	106.3	111.1
Inputs:													
Hours of all persons	r79.4	82.2	r90.8	r96.8	97.2	93.1	95.9	r105.0	108.6	107.8	108.5	105.4	107.2
Capital services	40.1	54.1	79.4	89.1	93.1	95.7	97.5	103.6	107.5	111.4	116.0	118.7	120.3
Combined units of labor and capital input	62.1	70.7	r86.7	94.1	95.8	94.0	96.5	r104.5	108.2	109.0	111.0	109.8	111.5
Capital per hour of all persons	50.4	65.8	87.4	92.0	r95.9	102.8	101.6	r98.7	98.9	103.3	106.9	112.6	112.3
PRIVATE NONFARM BUSINESS SECTOR													
Productivity:													
Output per hour of all persons	55.6	r68.0	86.8	95.3	92.9	r94.8	97.8	100.6	99.0	98.2	99.6	99.9	103.5
Output per unit of capital services	98.2	98.4	98.6	103.2	96.5	91.7	96.1	101.9	100.1	95.2	93.2	88.7	91.9
Multifactor productivity	68.1	77.6	r90.7	97.9	94.1	93.6	97.2	r101.0	99.4	97.2	97.4	95.9	99.3
Output	38.3	52.3	77.8	91.7	89.7	87.6	93.6	105.7	108.0	106.4	108.7	105.9	111.3
Inputs:													
Hours of all persons	69.0	77.0	89.7	96.2	r96.5	r92.4	95.7	105.1	109.1	108.4	109.1	106.0	107.6
Capital services	39.0	53.2	78.9	88.8	93.0	95.6	97.4	103.7	107.9	111.7	116.6	119.4	121.2
Combined units of labor and capital input	r56.2	67.4	85.9	93.6	r95.3	r93.5	96.3	104.6	108.7	109.5	111.6	110.4	112.0
Capital per hour of all persons	56.6	r69.1	88.0	r92.4	96.3	103.4	101.8	98.7	98.9	103.1	106.8	112.6	112.6
MANUFACTURING													
Productivity:													
Output per hour of all persons	49.4	60.0	r79.2	93.0	90.8	93.4	r97.6	r100.9	101.6	101.7	104.9	107.1	111.6
Output per unit of capital services	94.5	88.0	91.8	108.2	99.6	89.4	96.1	101.5	99.5	90.7	89.9	82.9	87.6
Multifactor productivity	59.9	67.0	82.3	96.8	r93.1	92.2	97.1	r101.1	101.0	98.8	100.8	100.3	104.9
Output	38.6	50.7	77.0	95.9	91.9	85.4	93.6	105.3	108.2	103.5	106.1	99.3	104.4
Inputs:													
Hours of all persons	78.2	84.4	97.3	r103.1	101.2	91.4	95.9	r104.4	106.5	101.7	101.1	92.7	93.5
Capital services	40.9	57.5	83.9	88.6	92.2	95.5	97.4	103.8	108.8	114.1	118.0	119.8	119.2
Combined units of labor and capital input	r64.5	75.6	r93.5	r99.0	r98.7	92.6	r96.3	r104.2	107.1	104.8	105.2	99.0	99.5
Capital per hour of all persons	52.3	68.2	86.2	85.9	91.1	r104.5	r101.6	r99.4	102.1	112.2	116.7	129.2	127.5

r = revised. p = preliminary.

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29. Annual indexes of productivity, hourly compensation, unit costs, and prices, selected years, 1950–83

[1977 = 100]

Item	1950	1955	1960	1965	1970	1975	1976	1978	1979	1980	1981	1982	1983
Business sector:													
Output per hour of all persons	50.4	58.3	65.2	78.3	86.2	94.6	97.6	100.5	99.3	98.8	100.7	100.9	103.7
Compensation per hour	20.0	26.4	33.9	41.7	58.2	85.6	92.9	108.5	118.7	131.1	143.4	155.0	161.7
Real compensation per hour	50.5	59.7	69.5	80.1	90.8	96.4	98.9	100.8	99.1	96.4	95.5	97.3	98.4
Unit labor costs	39.8	45.2	52.1	53.3	67.5	90.5	95.1	108.0	119.5	132.6	142.4	153.6	156.0
Unit nonlabor payments	43.4	47.6	50.6	57.6	63.2	90.4	94.0	106.7	112.8	119.3	136.7	136.8	145.5
Implicit price deflator	41.0	46.0	51.6	54.7	66.0	90.4	94.7	107.5	117.2	128.1	140.4	147.9	152.4
Nonfarm business sector:													
Output per hour of all persons	56.3	62.8	68.3	80.5	86.8	94.8	97.8	100.6	99.0	98.3	99.8	100.0	103.4
Compensation per hour	21.9	28.3	35.7	42.8	58.7	86.1	93.0	108.6	118.4	130.6	143.1	154.5	162.0
Real compensation per hour	55.1	64.0	73.1	82.3	91.5	96.9	99.0	100.8	98.8	96.0	95.3	97.0	98.6
Unit labor costs	38.8	45.1	52.3	53.2	67.6	90.8	95.1	108.0	119.5	132.8	143.5	154.5	156.6
Unit nonlabor payments	42.7	47.8	50.4	58.0	63.8	88.5	93.5	105.3	110.4	118.6	135.0	136.9	147.0
Implicit price deflator	40.1	46.0	51.6	54.8	66.3	90.0	94.6	107.1	116.5	128.1	140.6	148.6	153.4
Nonfinancial corporations:													
Output per hour of all persons	(1)	(1)	68.0	82.0	87.4	95.5	98.2	100.8	100.6	99.7	101.6	102.6	106.1
Compensation per hour	(1)	(1)	37.0	43.9	59.4	86.1	92.9	108.4	118.6	130.8	143.1	154.6	161.0
Real compensation per hour	(1)	(1)	75.8	84.3	92.7	97.0	98.9	100.7	99.0	96.2	95.3	97.0	97.9
Unit labor costs	(1)	(1)	54.4	53.5	68.0	90.2	94.6	107.5	117.8	131.2	140.9	150.6	151.8
Unit nonlabor payments	(1)	(1)	54.6	60.8	63.1	90.8	95.0	104.2	106.9	117.4	135.1	138.1	149.1
Implicit price deflator	(1)	(1)	54.5	56.1	66.3	90.4	94.7	106.4	114.1	126.4	138.9	146.3	150.9
Manufacturing:													
Output per hour of all persons	49.4	56.4	60.0	74.6	79.2	93.4	97.6	100.9	101.6	101.7	104.9	107.1	111.6
Compensation per hour	21.5	28.8	36.7	42.8	57.6	85.5	92.3	108.3	118.8	132.7	145.2	158.0	163.4
Real compensation per hour	54.0	65.1	75.1	82.3	89.8	96.2	98.3	100.6	99.2	97.6	96.8	99.2	99.4
Unit labor costs	43.4	51.0	61.1	57.5	72.7	91.5	94.6	107.3	117.0	130.5	138.4	147.6	146.4
Unit nonlabor payments	54.3	58.6	61.1	69.4	65.1	87.3	93.9	102.7	99.9	97.9	111.6	110.5	128.8
Implicit price deflator	46.6	53.2	61.1	61.0	70.5	90.3	94.4	106.0	112.0	120.9	130.6	136.7	141.2

1 Not available.

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30. Annual changes in productivity, hourly compensation, unit costs, and prices, 1973–83

Item	Year											Annual rate of change	
	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1950–83	1973–83
Business sector:													
Output per hour of all persons	2.6	−2.4	2.2	3.3	2.4	0.5	−1.2	−0.5	1.9	0.2	2.7	2.2	0.9
Compensation per hour	8.0	9.4	9.6	8.5	7.7	8.5	9.4	10.4	9.4	8.1	4.3	6.5	8.5
Real compensation per hour	1.6	−1.4	0.5	2.6	1.2	0.8	−1.7	−2.7	−0.9	1.9	1.1	2.0	0.1
Unit labor costs	5.3	12.1	7.3	5.1	5.1	8.0	10.7	11.0	7.3	7.9	1.6	4.2	7.6
Unit nonlabor payments	5.9	4.4	15.1	4.0	6.4	6.7	5.8	5.7	14.6	0.1	6.3	3.7	7.1
Implicit price deflator	5.5	9.5	9.8	4.7	5.6	7.5	9.0	9.3	9.6	5.3	3.0	4.1	7.1
Nonfarm business sector:													
Output per hour of all persons	2.4	−2.5	2.0	3.2	2.2	0.6	−1.5	−0.7	1.5	0.2	3.5	1.9	1.2
Compensation per hour	7.6	9.4	9.6	8.1	7.5	8.6	9.0	10.3	9.6	8.0	4.9	6.3	8.5
Real compensation per hour	1.3	−1.4	0.4	2.2	1.0	0.8	−2.0	−2.8	−0.7	1.7	1.6	1.8	0.1
Unit labor costs	5.0	12.2	7.5	4.7	5.2	8.0	10.7	11.1	8.0	7.7	1.4	4.3	7.6
Unit nonlabor payments	1.3	5.9	16.7	5.7	6.9	5.3	4.8	7.4	13.8	1.4	7.4	3.8	7.5
Implicit price deflator	3.8	10.2	10.3	5.1	5.7	7.1	8.8	10.0	9.8	5.7	3.2	4.1	7.6
Nonfinancial corporations:													
Output per hour of all employees	2.4	−3.7	2.9	2.9	1.8	0.8	−0.2	−0.9	1.9	1.0	3.3	(1)	1.1
Compensation per hour	7.5	9.4	9.6	7.9	7.6	8.4	9.4	10.3	9.4	8.0	4.2	(1)	8.5
Real compensation per hour	1.2	−1.5	0.4	2.0	1.1	0.7	−1.7	−2.8	−0.9	1.8	0.9	(1)	0.1
Unit labor costs	4.9	13.6	6.5	4.9	5.7	7.5	9.6	11.3	7.4	6.9	0.8	(1)	7.4
Unit nonlabor payments	1.5	7.1	20.1	4.6	5.3	4.2	2.6	9.8	15.1	2.3	7.9	(1)	7.1
Implicit price deflator	3.8	11.4	10.9	4.8	5.6	6.4	7.2	10.8	9.8	5.3	3.1	(1)	7.3
Manufacturing:													
Output per hour of all persons	5.4	−2.4	2.9	4.5	2.5	0.9	0.7	0.2	3.1	2.1	4.3	2.5	1.8
Compensation per hour	7.2	10.6	11.9	8.0	8.3	8.3	9.7	11.7	9.4	8.8	3.4	6.3	9.0
Real compensation per hour	0.9	−0.3	2.5	2.1	1.8	0.6	−1.4	−1.6	−0.9	2.5	0.2	1.9	0.5
Unit labor costs	1.7	13.3	8.8	3.4	5.7	7.3	9.0	11.5	6.1	6.6	−0.8	3.8	7.0
Unit nonlabor payments	−3.3	−1.8	25.9	7.5	6.5	2.7	−2.6	−2.1	14.1	−1.0	16.5	2.6	6.2
Implicit price deflator	0.3	9.0	13.1	4.6	6.0	6.0	5.7	7.9	8.0	4.7	3.3	3.4	6.8

[1] Not available.

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

[1977 = 100]

Item	Annual average		Quarterly indexes										
			1981	1982				1983				1984	
	1982	1983	IV	I	II	III	IV	I	II	III	IV	I	II
Business sector:													
Output per hour of all persons	100.9	103.7	100.3	100.9	100.3	100.9	101.6	102.2	103.6	104.3	104.7	105.7	106.8
Compensation per hour	155.0	161.7	147.6	151.4	153.9	156.7	158.4	160.2	161.0	161.8	164.2	166.7	167.5
Real compensation per hour	97.3	98.4	95.4	96.9	97.2	97.3	98.0	99.0	98.5	98.0	98.6	98.6	98.2
Unit labor costs	153.6	156.0	147.1	150.0	153.4	155.3	155.9	156.8	155.4	155.1	156.8	157.7	156.9
Unit nonlabor payments	136.8	145.5	139.6	138.0	137.0	135.8	136.5	139.8	144.6	147.9	149.1	151.6	156.3
Implicit price deflator	147.9	152.4	144.6	145.9	147.9	148.7	149.3	151.0	151.7	152.7	154.2	155.6	156.7
Nonfarm business sector:													
Output per hour of all persons	100.0	103.4	99.2	99.8	99.4	100.3	100.5	101.6	103.6	104.1	104.4	105.2	106.4
Compensation per hour	154.5	162.0	147.3	151.0	153.2	156.0	157.9	160.1	161.5	162.4	164.0	166.5	168.0
Real compensation per hour	97.0	98.6	95.2	96.7	96.8	96.9	97.7	99.0	98.8	98.3	98.2	98.5	98.5
Unit labor costs	154.5	156.6	148.5	151.4	154.2	155.6	157.1	157.6	155.9	155.9	157.1	158.3	158.0
Unit nonlabor payments	136.9	147.0	138.5	136.9	137.5	136.8	136.4	140.6	146.4	149.4	151.4	152.2	155.8
Implicit price deflator	148.6	153.4	145.1	146.5	148.6	149.3	150.2	151.9	152.7	153.8	155.2	156.3	157.2
Nonfinancial corporations:													
Output per hour of all employees	102.6	106.1	101.3	102.2	102.1	103.3	103.2	104.0	105.8	107.2	107.2	108.1	108.6
Compensation per hour	154.6	161.0	147.1	151.1	153.5	156.2	157.7	159.2	160.6	161.8	162.6	164.8	165.8
Real compensation per hour	97.0	97.9	95.1	96.7	97.0	97.0	97.5	98.4	98.2	98.0	97.4	97.5	97.2
Total unit costs	154.3	155.2	148.7	151.5	154.0	154.7	157.0	156.7	155.2	154.4	154.7	155.0	155.3
Unit labor costs	150.6	151.8	145.2	147.9	150.3	151.3	152.9	153.1	151.7	150.9	151.7	152.5	152.7
Unit nonlabor costs	164.8	164.9	158.5	161.6	164.3	164.4	168.8	167.0	165.1	164.4	163.3	162.0	162.8
Unit profits	84.6	117.2	100.2	89.4	86.8	86.6	75.6	92.5	111.8	126.6	135.9	143.2	147.9
Implicit price deflator	146.3	150.9	143.1	144.3	146.3	146.9	147.7	149.4	150.2	151.2	152.6	153.6	154.5
Manufacturing:													
Output per hour of all persons	107.1	111.6	104.0	105.5	106.3	108.8	107.8	109.1	110.8	113.4	113.1	114.2	115.2
Compensation per hour	158.0	163.4	149.8	154.3	157.2	159.8	161.0	162.7	163.0	163.5	164.6	167.1	168.3
Real compensation per hour	99.2	99.4	96.8	98.8	99.4	99.2	99.6	100.6	99.7	99.0	98.6	98.9	98.7
Unit labor costs	147.6	146.4	144.0	146.2	148.0	146.9	149.3	149.1	147.0	144.1	145.5	146.4	146.1

32. Percent change from preceding quarter and year in productivity, hourly compensation, unit costs, and prices, seasonally adjusted at annual rate

Item	Quarterly percent change at annual rate						Percent change from same quarter a year ago					
	IV 1982 to I 1983	I 1983 to II 1983	II 1983 to III 1983	III 1982 to IV 1983	IV 1983 to I 1984	I 1984 to II 1984	I 1982 to I 1983	II 1982 to II 1983	III 1982 to III 1983	IV 1982 to IV 1983	I 1983 to I 1984	II 1983 to II 1984
Business sector:												
Output per hour of all persons	2.1	5.9	2.8	1.4	4.0	4.0	1.2	3.3	3.4	3.1	3.5	3.1
Compensation per hour	4.4	2.2	2.0	6.1	6.2	1.9	5.8	4.6	3.3	3.7	4.1	4.0
Real compensation per hour	4.1	−2.1	−2.1	1.6	1.2	−1.7	2.1	1.3	0.7	0.3	−0.4	−0.3
Unit labor costs	2.2	−3.5	−0.8	4.6	2.1	−2.0	4.5	1.3	−0.1	0.6	0.6	1.0
Unit nonlabor payments	10.2	14.5	9.5	3.1	7.0	12.9	1.3	5.5	8.9	9.2	8.4	8.1
Implicit price deflator	4.6	1.9	2.5	4.1	3.7	2.7	3.5	2.6	2.7	3.3	3.0	3.3
Nonfarm business sector:												
Output per hour of all persons	4.4	8.1	2.1	1.0	2.9	4.7	1.8	4.3	3.9	3.9	3.5	2.7
Compensation per hour	5.7	3.5	2.2	4.1	6.1	3.7	6.0	5.4	4.1	3.9	4.0	4.0
Real compensation per hour	5.4	−0.8	−1.9	−0.3	1.0	0.0	2.4	2.0	1.5	0.6	−0.5	−0.3
Unit labor costs	1.3	−4.2	0.1	3.0	3.1	−0.9	4.1	1.1	0.2	0.0	0.4	1.3
Unit nonlabor payments	12.7	17.8	8.4	5.3	2.3	9.7	2.7	6.5	9.2	10.9	8.3	6.4
Implicit price deflator	4.6	2.2	2.7	3.7	2.8	2.5	3.7	2.8	3.0	3.3	2.9	2.9
Nonfinancial corporations:												
Output per hour of all employees . . .	3.2	7.5	5.3	−0.2	3.6	1.7	1.8	3.7	3.8	3.9	4.0	2.6
Compensation per hour	3.9	3.5	3.1	2.0	5.7	2.3	5.4	4.6	3.6	3.1	3.6	3.2
Real compensation per hour	3.5	−0.8	−1.0	−2.4	0.7	−1.3	1.7	1.3	1.0	−0.2	−0.9	−1.0
Total units costs	−0.7	−3.9	−2.0	0.8	0.6	1.0	3.5	0.8	−0.2	−1.5	−1.1	0.1
Unit labor costs	0.7	−3.7	−2.1	2.1	2.0	0.6	3.5	0.9	−0.2	−0.8	−0.4	0.7
Unit nonlabor costs	−4.1	−4.5	−1.7	−2.6	−3.2	2.1	3.3	0.5	0.0	−3.2	−3.0	−1.4
Unit profits	124.6	112.8	64.8	32.6	23.4	13.6	3.5	28.7	46.3	79.8	54.8	32.3
Implicit price deflator	4.7	2.3	2.8	3.6	2.7	2.3	3.5	2.7	3.0	3.3	2.8	2.8
Manufacturing:												
Output per hour of all persons	4.8	6.4	9.7	−1.0	3.7	3.6	3.4	4.3	4.3	4.9	4.7	4.0
Compensation per hour	4.2	0.6	1.3	2.9	6.2	2.9	5.5	3.6	2.3	2.2	2.7	3.3
Real compensation per hour	3.9	−3.5	−2.8	−1.5	1.1	−0.8	1.8	0.3	−0.3	−1.0	−1.7	−1.0
Unit labor costs	−0.5	−5.5	−7.7	3.9	2.3	−0.7	2.0	−0.6	−1.9	−2.6	r −1.9	r −0.6

¹Not available.   r   revised.

WAGE AND COMPENSATION DATA

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

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

Definitions

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

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

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

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

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

Notes on the data

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

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

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

For a more detailed discussion of the ECI, see chapter 11, "The Employment Cost Index," of the BLS *Handbook of Methods* (Bulletin 2134–1), and the *Monthly Labor Review* articles: "Employment Cost Index: a measure of change in the 'price of labor,'" July 1975; "How benefits will be incorporated into the Employment Cost Index," January 1978; and "The Employment Cost Index: recent trends and expansion," May 1982.

Additional data for the ECI and other measures of wage and compensation changes appear in *Current Wage Developments*, a monthly publication of the Bureau.

33. Employment Cost Index, by occupation and industry group

[June 1981 = 100]

Series	1982 June	1982 Sept.	1982 Dec.	1983 March	1983 June	1983 Sept.	1983 Dec.	1984 March	1984 June	Percent change 3 months ended June 1984	Percent change 12 months ended June 1984
Civilian workers[1]	107.5	110.1	111.4	113.2	114.5	116.5	117.8	119.8	120.8	0.8	5.5
Workers, by occupational group											
White-collar workers	107.7	110.7	111.9	113.7	114.9	117.6	118.9	120.9	122.1	1.0	6.3
Blue-collar workers	107.1	109.2	110.5	112.3	113.6	114.8	115.8	117.7	118.6	.8	4.4
Service workers	108.3	110.8	112.4	114.3	115.1	116.7	119.1	122.0	122.1	.1	6.1
Workers, by industry division											
Manufacturing	107.2	109.3	110.4	112.5	113.5	115.0	116.0	117.9	119.1	1.0	4.9
Nonmanufacturing	107.7	110.5	111.8	113.5	114.9	117.2	118.6	120.7	121.6	.7	5.8
Services	109.2	113.5	115.0	116.6	117.1	121.1	122.6	125.0	125.5	.4	7.2
Public administration[2]	109.1	112.8	113.6	116.2	117.0	119.8	121.4	122.9	123.7	.7	5.7
Private industry workers	107.2	109.3	110.7	112.6	113.9	115.6	117.0	119.0	120.1	.9	5.4
Workers, by occupational group											
White-collar workers	107.2	109.5	110.8	112.8	114.2	116.5	117.9	119.9	121.4	1.3	6.3
Blue-collar workers	107.0	109.0	110.3	112.1	113.5	114.6	115.7	117.5	118.4	.8	4.3
Service workers	107.9	109.6	111.8	113.8	114.6	115.1	117.9	121.5	121.2	-.2	5.8
Workers, by industry division											
Manufacturing	107.2	109.3	110.4	112.5	113.5	115.0	116.0	117.9	119.1	1.0	4.9
Nonmanufacturing	107.1	109.3	110.8	112.6	114.2	116.0	117.5	119.6	120.7	.9	5.7
State and local government workers	109.3	114.3	115.1	116.5	117.1	120.8	122.0	123.9	124.4	.4	6.2
Workers, by occupational group											
White-collar workers	109.5	114.9	115.8	117.0	117.5	121.5	122.6	124.5	125.0	.4	6.4
Blue-collar workers	108.9	112.7	113.0	114.9	115.8	118.0	119.2	121.9	122.3	.3	5.6
Workers, by industry division											
Services	109.4	114.9	115.9	116.8	117.4	121.7	122.6	124.5	125.0	.4	6.5
Schools	109.1	114.8	115.8	116.6	116.9	121.9	122.6	124.5	124.7	.2	6.7
Elementary and secondary	109.5	115.6	116.6	117.2	117.4	123.3	123.9	125.4	125.7	.2	7.1
Hospitals and other services[3]	110.3	115.3	116.0	117.5	118.8	121.1	122.6	124.4	125.7	1.0	5.8
Public administration[2]	109.1	112.8	113.6	116.2	117.0	119.8	121.4	122.9	123.7	.7	5.7

[1] Excludes farm, household, and Federal workers.

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

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

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

[June 1981 = 100]

Series	1982			1983				1984		Percent change	
										3 months ended	12 months ended
	June	Sept.	Dec.	March	June	Sept.	Dec.	March	June	June 1984	
Civilian workers[1]	107.3	109.7	110.9	112.2	113.4	115.3	116.5	117.9	118.8	0.8	4.8
Workers, by occupational group											
White-collar workers	107.6	110.4	111.4	113.0	114.2	116.7	117.9	119.3	120.4	.9	5.4
Blue-collar workers	106.7	108.6	109.8	110.8	112.0	113.1	114.0	115.3	116.1	.7	3.7
Service workers	107.9	110.1	111.8	113.2	113.9	115.1	117.4	120.0	119.8	-.2	5.2
Workers, by industry division											
Manufacturing	107.0	108.8	109.8	111.0	112.0	113.3	114.5	115.7	116.8	1.0	4.3
Nonmanufacturing	107.5	110.1	111.3	112.7	114.0	116.1	117.4	118.9	119.7	.7	5.0
Services	109.5	113.2	114.4	115.8	116.3	120.1	121.3	123.3	123.8	.4	6.4
Public administration[2]	108.4	111.9	112.6	114.6	115.4	118.2	119.4	120.4	121.3	.7	5.1
Private industry workers	107.1	109.0	110.3	111.6	112.9	114.5	115.8	117.2	118.2	.9	4.7
Workers, by occupational group											
White-collar workers	107.3	109.4	110.6	112.2	113.6	115.9	117.2	118.5	119.9	1.2	5.5
Professional and technical workers	109.4	111.8	112.9	114.8	115.9	119.9	120.4	122.2	123.8	1.3	6.8
Managers and administrators	107.2	108.5	109.3	112.0	114.0	114.8	115.7	118.0	119.2	1.0	4.6
Salesworkers	101.8	104.5	106.2	105.7	107.1	108.4	111.2	110.2	111.9	1.5	4.5
Clerical workers	108.3	110.3	111.6	113.4	114.6	116.7	118.3	119.8	120.7	.8	5.3
Blue-collar workers	106.6	108.5	109.7	110.7	111.9	112.9	113.9	115.1	115.9	.7	3.6
Craft and kindred workers	107.6	109.6	111.2	112.2	113.4	114.3	115.4	116.5	117.3	.7	3.4
Operatives, except transport	106.6	108.3	109.3	110.0	111.1	112.3	113.6	114.9	115.8	.8	4.2
Transport equipment operatives	104.1	106.0	106.9	108.0	110.3	110.7	110.2	111.7	112.7	.9	2.2
Nonfarm laborers	105.1	106.5	107.8	109.0	109.8	110.8	112.1	112.9	114.1	1.1	3.9
Service workers	107.9	109.3	111.4	112.9	113.5	113.7	116.5	119.8	119.3	-.4	5.1
Workers, by industry division											
Manufacturing	107.0	108.8	109.8	111.0	112.0	113.3	114.5	115.7	116.8	1.0	4.3
Durables	107.4	109.0	110.3	111.1	111.8	112.9	114.4	115.7	116.6	.8	4.3
Nondurables	106.3	108.5	109.1	110.9	112.3	113.9	114.6	115.8	117.1	1.1	4.3
Nonmanufacturing	107.1	109.1	110.5	112.0	113.4	115.2	116.5	118.0	119.0	.8	4.9
Construction	107.3	109.1	109.7	110.4	112.1	112.2	112.9	113.3	114.0	.6	1.7
Transportation and public utilities	106.9	109.5	111.1	112.9	114.7	115.7	116.8	118.5	119.3	.7	4.0
Wholesale and retail trade	105.8	106.5	107.2	108.5	110.8	111.5	112.3	114.3	116.0	1.5	4.7
Wholesale trade	108.9	109.0	109.8	111.8	114.1	115.7	116.5	118.2	120.0	1.5	5.2
Retail trade	104.5	105.5	106.1	107.2	109.4	109.9	110.6	112.8	114.4	1.4	4.6
Finance, insurance, and real estate	102.4	106.1	109.0	110.6	111.1	113.5	116.9	116.1	116.9	.7	5.2
Services	110.0	112.5	114.3	116.0	116.6	120.4	121.9	124.2	124.7	.4	6.9
State and local government workers	108.7	113.5	114.0	115.1	115.7	119.2	120.0	121.6	122.0	.3	5.4
Workers, by occupational group											
White-collar workers	108.9	114.2	114.6	115.6	116.1	119.8	120.6	122.2	122.5	.2	5.5
Blue-collar workers	107.9	111.5	112.0	113.3	114.3	116.4	116.9	119.1	119.6	.4	4.6
Workers, by industry division											
Services	108.8	114.2	114.6	115.5	115.9	119.8	120.6	122.2	122.5	.2	5.7
Schools	108.5	114.2	114.5	115.2	115.4	119.9	120.6	122.2	122.3	.1	6.0
Elementary and secondary	108.8	114.9	115.1	115.6	115.8	121.1	121.7	122.9	123.0	.1	6.2
Hospitals and other services[3]	109.5	114.3	114.9	116.5	117.7	119.7	120.6	121.9	123.1	1.0	4.6
Public administration[2]	108.4	111.9	112.6	114.6	115.4	118.2	119.4	120.4	121.3	.7	5.1

[1]Excludes farm, household, and Federal workers.

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

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

35. Employment Cost Index, private industry workers, by bargaining status, region, and area size
[June 1981 = 100]

Series	1982			1983				1984		Percent change	
										3 months ended	12 months ended
	June	Sept.	Dec.	March	June	Sept.	Dec.	March	June	June 1984	
COMPENSATION											
Workers, by bargaining status[1]											
Union	108.4	110.6	112.3	114.5	116.0	117.8	118.8	120.6	121.7	0.9	4.9
Manufacturing	108.0	110.3	111.8	114.0	114.8	116.3	117.2	119.3	120.5	1.0	5.0
Nonmanufacturing	108.7	111.0	112.8	114.9	117.1	119.2	120.4	121.9	122.8	.7	4.9
Nonunion	106.5	108.5	109.7	111.5	112.8	114.4	115.9	118.0	119.2	1.0	5.7
Manufacturing	106.6	108.4	109.2	111.2	112.3	113.8	114.9	116.6	117.9	1.1	5.0
Nonmanufacturing	106.4	108.6	109.9	111.6	113.0	114.7	116.4	118.6	119.8	1.0	6.0
Workers, by region[1]											
Northeast	. . . . .	. . . . .	111.7	112.6	114.3	116.0	117.5	118.9	120.7	1.5	5.6
South	. . . . .	. . . . .	110.6	112.5	113.5	115.6	117.1	119.7	120.7	.8	6.3
North Central	. . . . .	. . . . .	108.6	110.9	112.5	113.9	114.7	117.2	117.9	.6	4.8
West	. . . . .	. . . . .	112.9	115.4	116.6	118.0	120.0	121.0	122.2	1.0	4.8
Workers, by area size[1]											
Metropolitan areas	107.2	109.4	110.9	112.9	114.2	116.0	117.4	119.4	120.6	1.0	5.6
Other areas	107.0	108.6	109.1	110.8	112.3	113.4	114.5	116.7	117.4	.6	4.5
WAGES AND SALARIES											
Workers, by bargaining status[1]											
Union	108.1	110.3	111.8	112.9	114.2	116.0	116.9	118.1	119.0	.8	4.2
Manufacturing	107.3	109.5	110.8	111.4	112.3	113.7	114.8	116.1	117.1	.9	4.3
Nonmanufacturing	108.8	111.1	112.7	114.3	116.0	118.3	118.9	120.1	120.7	.5	4.1
Nonunion	106.5	108.3	109.5	110.9	112.2	113.7	115.2	116.7	117.8	.9	5.0
Manufacturing	106.7	108.2	109.1	110.7	111.8	113.0	114.2	115.4	116.5	1.0	4.2
Nonmanufacturing	106.4	108.3	109.6	111.0	112.4	114.0	115.6	117.2	118.3	.9	5.2
Workers, by region[1]											
Northeast	106.7	109.7	111.5	112.0	113.6	115.3	116.6	117.4	118.9	1.3	4.7
South	107.4	108.8	109.8	111.4	112.5	114.3	115.7	117.9	119.0	.9	5.8
North Central	106.1	107.6	108.6	110.1	111.5	112.8	113.6	115.5	116.0	.4	4.0
West	108.6	110.7	112.0	114.1	114.9	116.5	118.5	118.8	119.6	.7	4.1
Workers by area size[1]											
Metropolitan areas	107.1	109.1	110.5	111.9	113.2	114.9	116.2	117.6	118.6	.9	4.8
Other areas	106.8	108.3	108.8	110.1	111.4	112.3	113.4	115.1	116.0	.8	4.1

[1] The indexes are calculated differently from those for the occupation and industry groups. For a detailed description of the index calculation, see BLS *Handbook of Methods*, Bulletin 1910.

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36. Wage and compensation change, major collective bargaining settlements, 1979 to date

[In percent]

Measure	Annual average					Quarterly average								
						1982			1983				1984p	
	1979	1980	1981	1982	1983	II	III	IV	I	II	III	IV	I	II
Total compensation changes, covering 5,000 workers or more, all industries:														
First year of contract	9.0	10.4	10.2	3.2	3.4	2.6	6.2	3.3	−1.6	4.4	5.0	4.9	5.1	3.5
Annual rate over life of contract	6.6	7.1	8.3	2.8	3.0	2.1	4.7	4.8	1.4	3.6	4.3	3.1	4.7	3.2
Wage rate changes covering at least 1,000 workers, all industries:														
First year of contract	7.4	9.5	9.8	3.8	2.6	3.4	5.4	3.8	−1.2	2.7	3.7	4.2	2.9	2.6
Annual rate over life of contract	6.0	7.1	7.9	3.6	2.8	3.2	4.5	4.8	2.2	2.8	3.6	2.8	3.2	2.7
Manufacturing:														
First year of contract	6.9	7.4	7.2	2.8	0.4	1.8	5.1	4.1	−3.4	1.3	3.4	2.9	2.5	2.2
Annual rate over life of contract	5.4	5.4	6.1	2.6	2.1	1.7	3.9	4.5	.9	1.7	3.5	3.1	2.5	2.2
Nonmanufacturing (excluding construction):														
First year of contract	7.6	9.5	9.8	4.3	5.0	6.6	5.5	3.6	3.3	5.9	5.8	4.8	4.4	4.3
Annual rate over life of contract	6.2	6.6	7.3	4.1	3.7	6.1	4.8	5.2	5.3	5.2	4.3	2.7	4.8	4.2
Construction:														
First year of contract	8.8	13.6	13.5	6.5	1.5	6.2	6.3	3.4	.7	1.7	1.5	1.1	−3.5	1.0
Annual rate over life of contract	8.3	11.5	11.3	6.3	2.4	6.3	5.9	2.9	2.4	2.1	2.9	2.6	−2.8	1.4

p = preliminary.

37. Effective wage adjustments in collective bargaining units covering 1,000 workers or more, 1979 to date

Measure	Year					Year and quarter								
						1982			1983				1984p	
	1979	1980	1981	1982	1983	II	III	IV	I	II	III	IV	I	II
Average percent adjustment (including no change):														
All industries	9.1	9.9	9.5	6.8	4.0	2.0	2.4	1.3	0.3	1.3	1.2	1.1	0.9	1.0
Manufacturing	9.6	10.2	9.4	5.2	2.7	1.0	1.7	1.5	−.5	1.1	1.2	.9	1.2	1.0
Nonmanufacturing	8.8	9.7	9.5	7.9	4.8	2.7	2.9	1.2	.9	1.5	1.2	1.2	.7	.9
From settlements reached in period	3.0	3.6	2.5	1.7	.8	.4	.5	.6	−.2	.3	.2	.6	.1	.1
Deferred from settlements reached in earlier period	3.0	3.5	3.8	3.6	2.5	1.4	1.3	.4	.4	1.0	.8	.3	.4	.7
From cost-of-living clauses	3.1	2.8	3.2	1.4	.6	.2	.6	.3	.1	.1	.2	.2	.4	.2
Total number of workers receiving wage change (in thousands)[1]	—	—	8,648	7,852	6,530	3,423	3,760	3,441	2,875	3,061	3,025	2,887	2,855	2,656
From settlements reached in period	—	—	2,270	1,907	2,327	511	620	825	448	561	599	996	293	343
Deferred from settlements reached in earlier period	—	—	6,267	4,846	3,260	1,594	2,400	860	812	1,405	1,317	669	990	1,175
From cost-of-living clauses	—	—	4,593	3,830	2,327	1,568	2,251	1,970	1,938	1,299	1,218	1,290	1,616	1,301
Number of workers receiving no adjustments (in thousands)	—	—	145	483	1,187	4,912	4,575	4,895	4,842	4,656	4,693	4,830	4,668	4,867

[1] The total number of workers who received adjustments does not equal the sum of workers that received each type of adjustment, because some workers received more than one type of adjustment during the period.

p = preliminary.

WORK STOPPAGE DATA

WORK STOPPAGES include all known strikes or lockouts involving 1,000 workers or more and lasting a full shift or longer. Data are based largely on newspaper accounts and cover all workers idle one shift or more in establishments directly involved in a stoppage. They do not measure the indirect or secondary effect on other establishments whose employees are idle owing to material or service shortages.

Estimates of days idle as a percent of estimated working time measure only the impact of larger strikes (1,000 workers or more). Formerly, these estimates measured the impact of strikes involving 6 workers or more; that is, the impact of virtually *all* strikes. Due to budget stringencies, collection of data on strikes involving fewer than 1,000 workers was discontinued with the December 1981 data.

38. Work stoppages involving 1,000 workers or more, 1947 to date

Month and year		Number of stoppages		Workers involved		Days idle	
		Beginning in month or year	In effect during month	Beginning in month or year (in thousands)	In effect during month (in thousands)	Number (in thousands)	Percent of estimated working time
1947		270	. . . .	1,629	. . . .	25,720	—
1948		245	. . . .	1,435	. . . .	26,127	.22
1949		262	. . . .	2,537	. . . .	43,420	.38
1950		424	. . . .	1,698	. . . .	30,390	.26
1951		415	. . . .	1,462	. . . .	15,070	.12
1952		470	. . . .	2,746	. . . .	48,820	.38
1953		437	. . . .	1,623	. . . .	18,130	.14
1954		265	. . . .	1,075	. . . .	16,630	.13
1955		363	. . . .	2,055	. . . .	21,180	.16
1956		287	. . . .	1,370	. . . .	26,840	.20
1957		279	. . . .	887	. . . .	10,340	.07
1958		332	. . . .	1,587	. . . .	17,900	.13
1959		245	. . . .	1,381	. . . .	60,850	.43
1960		222	. . . .	896	. . . .	13,260	.09
1961		195	. . . .	1,031	. . . .	10,140	.07
1962		211	. . . .	793	. . . .	11,760	.08
1963		181	. . . .	512	. . . .	10,020	.07
1964		246	. . . .	1,183	. . . .	16,220	.11
1965		268	. . . .	999	. . . .	15,140	.10
1966		321	. . . .	1,300	. . . .	16,000	.10
1967		381	. . . .	2,192	. . . .	31,320	.18
1968		392	. . . .	1,855	. . . .	35,567	.20
1969		412	. . . .	1,576	. . . .	29,397	.16
1970		381	. . . .	2,468	. . . .	52,761	.29
1971		298	. . . .	2,516	. . . .	35,538	.19
1972		250	. . . .	975	. . . .	16,764	.09
1973		317	. . . .	1,400	. . . .	16,260	.08
1974		424	. . . .	1,796	. . . .	31,809	.16
1975		235	. . . .	965	. . . .	17,563	.09
1976		231	. . . .	1,519	. . . .	23,962	.12
1977		298	. . . .	1,212	. . . .	21,258	.10
1978		219	. . . .	1,006	. . . .	23,774	.11
1979		235	. . . .	1,021	. . . .	20,409	.09
1980		187	. . . .	795	. . . .	20,844	.09
1981		145	. . . .	729	. . . .	16,908	.07
1982		96	. . . .	656	. . . .	9,061	.04
1983		81	. . . .	909	. . . .	17,461	.08
1983	January	1	3	1.6	38.0	794.8	.04
	February	5	7	14.0	50.4	844.4	.05
	March	5	10	10.5	54.9	1,131.5	.05
	April	2	9	2.8	52.4	789.5	.04
	May	12	17	24.9	34.2	488.5	.03
	June	16	25	63.3	81.2	689.1	.03
	July	10	23	64.5	99.8	1,270.1	.07
	August	7	19	615.8	669.7	8,673.2	.41
	September	7	19	20.8	49.5	567.1	.03
1984p	January	6	12	28.9	43.0	507.3	.03
	February	2	12	8.7	37.2	365.5	.02
	March	2	9	3.0	14.6	284.2	.01
	April	7	13	28.5	38.1	651.0	.03
	May	5	15	8.1	39.2	581.2	.03
	June	5	14	23.7	45.7	754.8	.04
	July	r 8	r 20	r 68.4	r 104.1	r 1,221.7	.06
	August	5	19	24.0	103.4	1,633.3	.07
	September	8	17	102.9	119.7	736.4	.04

p = preliminary.   r = revised.

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