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Henry Lowenstern, Editor-in-Chief
Robert W. Fisher, Executive Editor

Labor Month In Review

REPORT ON THE ELDERLY. In its annual report to the President, the Council of Economic Advisers said that the Nation's elderly no longer are a disadvantaged group because elderly and non-elderly families have about equal income per family. Here are excerpts from the report.

Earnings. Earnings, at one time the most important source of income for the elderly, now represent about 15 percent of the money income of the elderly. Earnings have declined as a share of income because of reduced labor force participation and because a higher fraction of elderly workers participate on a part-time basis. In 1960, 35 percent of male workers 65 and over worked on a part-time basis; now almost half work part-time. Part-time employment for female workers 65 and over increased from 48 percent to 61 percent over the same period. Most older workers who reduce their work effort below full time have left the job they held in their prime working years, and they generally work at a lower hourly wage rate. The average duration of partial retirement for those who choose to work part time is 3 years.

The increase in the relative importance of part-time work is clearly influenced by the social security earnings test. Earnings above a limit reduce social security benefits by $1 for every $2 in earnings.

New retirement patterns are largely a matter of choice on the part of the elderly, a choice that reflects both an improved financial status that allows them to enjoy more leisure and the incentives inherent in retirement benefits. The view that most of the elderly have been forced to retire by poor health or by mandatory retirement laws is not supported by the evidence. Changes in health do not explain the decline in labor force participation over time. To some extent, the decline in participation can be explained by the fact that the minority of workers with health problems are now able to retire early. This phenomenon is not a significant factor behind current retirement patterns. Most workers now retire between age 60 and age 65. That pattern is explained by economic incentives, not by health.

Assets. Surveys indicate that money income from assets accounts for about 25 percent of the cash income of the elderly. These findings should be interpreted with care because income from assets is often significantly underreported, more so for the elderly than the non-elderly. Assets become more important as a source of income as income rises, accounting for only slightly more than 5 percent for households with income under $5,000, but more than one-third of income for households with income over $20,000.

The major single asset for most of the elderly is their home. Nearly three-quarters own their home; half have complete ownership (no mortgage). Some elderly homeowners have little in the way of other resources, and they may need ways to convert home equity into money income.

Social security. Social security benefits are the principal source of income for the majority of elderly Americans. Benefits account for about 40 percent of the income of the elderly, and for 59 percent of the elderly households they make up at least 50 percent of their income.

The question of whether the social security system reduces private savings for retirement is controversial. Because the system guarantees a certain level of income during retirement, individuals who plan over their entire life cycle might plan to save less during their working years if they anticipate social security benefits. On the other hand, the social security system provides an incentive for people to retire earlier, tending to increase the number of retirement years for which savings must be done and to reduce the number of years over which it can be done. The social security system may also affect the amount of support that the elderly can expect from their own children, offsetting the reduction in required saving. Thus, the net effect on private saving is uncertain.

Pensions. Pension coverage has grown dramatically over the past three decades. In 1950, about 25 percent of the work force was covered by a pension plan other than social security. Today, more than half of all workers are covered. Increased pension coverage has been linked to the tax treatment of pensions, Federal freezes on wage compensation, and a 1948 ruling by the National Labor Relations Board that employers are required to bargain over the terms of pension plans. About 30 percent of the elderly now receive pension benefits, accounting for about 15 percent of income for all elderly persons and about 45 percent of the income of pension recipients. Pensions will become a much more important source of retirement income in the future; more and more newly retired workers will have acquired pension rights because of past increases in coverage.

The 1985 *Economic Report of the President* is for sale ($8) by the Superintendent of Documents, Government Printing Office, Washington, D.C. 20402. □

The shrinking middle class: myth or reality?

Some changes in our economic structure appear to contribute to a decline in the proportion of middle income earners, but an analysis of the factors that influence the distribution of earnings shows the middle is holding its own

NEAL H. ROSENTHAL

Public interest and concern has been stirred by recent articles that presage a decline of middle income earners. Those who support this view contend that such earners are declining as a proportion of the U.S. work force because more of the new jobs are at the top and bottom of the earnings structure.[1] They warn that this trend could lead to political and social unrest stemming from a two-tiered society, fewer advancement opportunities for those on the lower range of the earnings ladder, and even economic disaster as the great purchasing power engine of the middle class loses steam.

Discussions of the declining proportion of middle income earners can focus on changes in the distribution of earnings of individuals or changes in the distribution of earnings of families. Changes in the distribution of earnings of individuals may be caused by changes in the occupational structure of the economy that reflect changes in industrial structure and technology. In addition, changes in the distribution of earnings within each occupation and changes in relative earnings among occupations can affect the distribution of earnings of individuals. Changes in the distribution of earnings of families are affected not only by these same factors but also by changes in family structure. For example, increasing numbers of dual earning families can lead to an increase in the proportion of families with high earnings and increasing numbers of single person families can lead to an increase in the proportion of families with low income.

This article focuses primarily on how changes in occupational structure affect the distribution of earnings of individuals. It also considers the contribution of changes to the distribution of earnings of individuals caused by changes in the distribution of earnings by occupation over the 1973–82 period.

Essential points in discussion

Proponents of the declining middle thesis suggest that a variety of factors are causing a decline in the proportion of our work force in the middle income levels. These factors can be categorized as affecting either the occupational structure of employment or relative wages among occupations. The more significant of these concern the occupational structure of employment: (1) the decline of employment in the so-called smokestack industries that have a large number of production workers who, according to most proponents, exemplify workers in the middle of the earnings spectrum; (2) the rapid growth of high tech industries that some argue have a bipolar occupational structure; (3) the large number of job openings and large numerical growth in low paying occupations indicated by the BLS industry and occupational projections; and (4) the shifting industrial structure of the United States from goods-producing industries that, according to the arguments, have a large proportion of middle income workers to service-producing industries

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that are considered to have many high and low income earners with relatively few in the middle.

The economic structure of the United States, however, is very complex and many factors, in addition to those cited above, affect the earnings distribution of American workers. Not all of these factors will cause bipolarization of earnings. Some will decrease the number of low income workers and increase middle income workers and work against bipolarization. Actual changes in the earnings distribution of American workers are determined by the combined effect of many factors.

The past

Data from the Current Population Survey (CPS) on usual weekly earnings and on employment of full-time wage and salary workers by detailed occupation for 1973 and 1982 were used to examine the merits of the declining middle income earner thesis.[2] The first analysis identifies the effect of changes in occupational structure on the distribution of employment of full-time workers in three income groups: low, middle, and high. The second analysis illustrates the combined effect of changes in occupational structure and changes in relative earnings among occupations on the earnings distribution of full-time workers over the 1973–82 period. A third analysis is identical to the first, but includes part-time as well as full-time workers.

The 1982 CPS provided data on usual weekly earnings of full-time wage and salary workers for 416 detailed occupations. To test the effect of changes in occupational structure on the distribution of workers into low, middle, and high earnings groups between 1973 and 1982, I (1) arrayed the 416 occupations in 1982 by earnings and arranged them into thirds (bottom, middle, or top), with each third containing the same number of occupations; (2) summed the number of workers in the occupations in each third and calculated a percent distribution of the employment; and (3) arrayed employment in 1973 for each occupation in the same order as in 1982, and calculated the 1973 percent distribution for each third. Consequently, an occupation was in the same third in 1973 as it was in 1982.

If the middle income earners are declining, the proportion of total employment in the middle third would show a decline between 1973 and 1982, and the bottom and top thirds, an increase. The following tabulation shows the distribution of employment in 1973 and 1982 by usual median weekly earnings in 1982:

Occupational earnings group	*Usual weekly earnings*	*Percent distribution of employment*	
		1973	*1982*
Top third	$385 to $785	26.3	29.0
Middle third	273 to 384	34.0	33.4
Bottom third	82 to 273	39.6	37.6

The top third increased, the bottom decreased, and the middle decreased modestly.[3] From this analysis, we can conclude that changes in occupational structure alone from 1973 to 1982, whether caused by technological change, the shift from goods- to service-producing industries, or other factors, do not support the notion of bipolarization.

As indicated, changes in wage levels also effect the earnings distribution of workers. To illustrate the combined effect of changes in relative wages and in occupational structure on the earnings distribution of workers over the 1973–82 period, I (1) ranked occupations in the 1973 CPS into thirds based on 1973 earnings; (2) summed employment in each of the thirds and calculated a percent distribution of employment; and (3) compared the resulting distribution with the 1982 distribution of employment in each of the three earnings groups. The following tabulation shows the distribution of employment by usual median weekly earnings in 1973 and 1982:

Occupational earnings group	*Usual weekly earnings (current dollars)*		*Percent distribution of employment*	
	1973	*1982*	*1973*	*1982*
Top third	$196 to $597	$385 to $785	27.7	29.0
Middle third	148 to 196	273 to 384	28.9	33.4
Bottom third	25 to 147	82 to 273	43.4	37.6

The data show that the proportion of total employment increased in the top and middle thirds and decreased in the bottom third. This calculation does not show a trend toward bipolarization, but instead indicates a shift of workers from the low to the middle and high earnings levels, with the middle having the largest increase. Thus, according to this tabulation, changes in occupational structure, when combined with changes in relative wages and other factors, moved workers up the earnings distribution over the 1973–82 period.

However, bipolarization can occur without significant shifts of employment to the top and bottom thirds of the earnings distribution if the earnings of those at the top were to increase significantly faster than those at the bottom. For example, if the earnings distribution of the bottom third remained at the 1973 level in 1982, but the top third increased, it could be said that bipolarization occurred even though there were no significant shifts in employment. However, the data do not indicate that this occurred. As shown in the following tabulation, the average of the median earnings for the detailed occupations weighted by employment increased in each third by about the same amount from 1973 to 1982, although the increase was slightly larger in the top third and slightly lower in the bottom third than in the middle:

Occupational earnings group	*Average weekly earnings (current dollars)*		*Percent change*
	1973	*1982*	*1973–82*
Top third	$235	$462	96.6
Middle third	173	328	89.6
Bottom third	116	216	86.2

Part-time workers. Including part-time workers in an analysis of how changes in occupational structure have affected the earnings distribution of workers is very complex. Part-time workers may work from 1 to 34 hours per week and, therefore, weekly earnings are probably affected more by the number of hours worked than by wage rates. In addition, most part-time workers (about two-thirds in 1982) are on part-time schedules by choice. Some are students who work only a few hours a week for spending money, some are older workers drawing retirement income who work part-time at least in part to provide diversity, and some are members of a household having a wage earner with a high income. Thus, the earnings of many part-time workers have little significance to issues related to concerns about the declining middle, such as lack of advancement opportunities and social and political unrest.

Some part-time workers, however, are on part-time schedules for economic reasons such as slack work rather than by choice. The earnings of these workers would be higher if they were able to work full time, and their employment and earnings problems are therefore relevant to the declining middle issue. Over the 1973–82 period, the proportion of workers on part-time schedules for economic reasons increased significantly, from 3.1 percent to 6.5 percent of total employment. A large part of this increase resulted from the recessionary conditions prevalent in 1982, but not in 1973. Still, some structural changes in the economy may also have occurred between 1973 and 1982 which affected not only the distribution of occupational employment of part-time workers but also the level of part-time employment. In turn, these changes could have affected the proportion of workers in the middle income group.

Because of the complexities of dealing with part-time workers in an analysis of the decline of middle income earners, only the effect of part-time workers on changes in occupational distribution from 1973 to 1982 is considered in this article. Issues concerning such factors as changes in hours worked and in the proportions of those who worked part-time voluntarily or for economic reasons are not considered.

Therefore, part-time workers were combined with full-time workers in an analysis identical to that for full-time workers. Total employment (combined part- and full-time employment) for 1973 and 1982 was distributed into the top, middle, and bottom thirds of the occupational earnings structure, based on median usual weekly earnings in 1982. Part-time workers were placed in the same third of the occupational distribution by earnings as full-time workers in the same occupation. Also, they were given an employment weight equal to a full-time worker.[4]

Part-time workers are heavily concentrated in occupations in the bottom third of the earnings structure. Therefore, the inclusion of part-time workers resulted in a larger proportion of workers in the bottom third than when only full-time workers were included. The following tabulation shows the distribution of total employment in 1973 and 1982 by usual weekly earnings in 1982 (part-time workers were distributed according to the 1982 usual weekly earnings of full-time wage and salary workers in the same occupation):

Occupational earnings group	*Usual weekly earnings in 1982*	*Percent distribution of total employment*	
		1973	*1982*
Top third	$385 to $785	22.8	24.8
Middle third	273 to 384	31.1	30.5
Bottom third	82 to 273	46.0	44.6

The data show that changes in the distribution of total employment among the top, middle, and bottom thirds of the earnings distribution between 1973 and 1982 were very similar to the changes that were shown when only full-time workers were considered. The top third increased, the bottom third declined, and the middle third declined very slightly (but not as much as the bottom third).

These results also do not support the notion of bipolarization. Most importantly, none of the three analyses shows an increase in the bottom third, which is an important part of the bipolarization hypothesis. In fact, they all show a decline in the share of employment in the lowest group.

Data limitations. The data used in the three analyses have some limitations that should be recognized. These limitations result from sampling and response errors in the CPS as well as from differences in data definitions. The data for 1973 include workers who reported they were self-employed but who had not incorporated their business. These individuals are not included in the 1982 data. However, the number of these workers is relatively small and should not significantly affect the data. Also, the 1973 data reflect only one month, May, whereas the 1982 data are annual averages.[5]

The future

Data on changes in occupational structure and occupational wage levels for the 1973–82 period do not support the declining middle income earners thesis. But what about the future? The basic tenets of the thesis could perhaps be more applicable to the future than to the recent period of back-to-back recessions.

It is very difficult to forecast the future in terms of occupational structure and associated earnings by occupation, but some insights can be gained by looking at the BLS 1982–95 occupational projections.

The projections are based on the occupational classification system used in the Occupational Employment Statistics (OES) survey, rather than on the classification system used in the CPS. Because earnings data are not collected in the OES survey, a similar analysis could not be conducted for detailed occupations as was done for the 1973–82 period. However, CPS and OES data are similar enough to permit analysis of developments for the standard major occupa-

tional groups of workers. The data indicate the following:

- Workers who typically have a high level of earnings—professional and technical workers and managers—are projected to increase as a proportion of total employment.
- Craftworkers, who also have higher than average earnings, but with slightly more workers in the middle third than in the top third, also are projected to increase as a proportion of all workers over the 1982–95 period. (See table 1.)
- Among those occupational groups with low earnings, laborers and farmworkers are projected to decline as a proportion of the total employment, and service workers and clerical workers are expected to increase their shares. However, if the four occupational groups with lower than average earnings (operatives, laborers, service workers, and farmworkers) are combined, they are projected to decline as a proportion of total employment.

The projected data are generally consistent with the findings for the 1973–82 period. Namely, they show an increasing proportion of employment in higher than average earnings occupations and a declining proportion in occupations with lower than average earnings, rather than a trend toward bipolarization.

Specific issues

As noted, the declining middle income earners thesis is based on a number of widely discussed developments, including the decline of smokestack industries, the rapid growth of high tech industries, the large number of openings in low paying occupations, and the shift from goods- to service-producing industries. However, the extent to which each of these factors has contributed or can be expected to contribute to the decline of middle income earners is open to debate. The following discusses these four factors in terms of their significance to this phenomenon.

Table 1. Distribution of full-time workers in major occupational groups by usual weekly earnings in 1982 and as a percent of total employment in 1982 and 1995

(In percent)

Occupational group	Distribution by usual weekly earnings			Percent of total employment	
	Top third	Middle third	Bottom third	1982	1995[1]
Total, all occupations	29	33	38	100.0	100.0
Professional, technical, and related workers	51	48	1	16.3	17.1
Managers, officials, and proprietors	80	20	0	9.4	9.6
Salesworkers	35	36	29	6.9	6.9
Clerical workers	5	20	75	18.8	18.9
Craft and related workers	45	50	5	11.4	11.6
Operatives	4	53	43	12.8	12.1
Laborers, except farm	1	14	85	5.8	5.5
Service workers	10	1	89	16.0	16.3
Farmworkers	0	5	95	2.7	1.9

[1]Based on moderate trend projections presented in "Occupational Employment Projections through 1995," *Employment Projections for 1995*, Bulletin 2197 (Bureau of Labor Statistics, 1984).

Decline of smokestack industries. Proponents of the declining middle income thesis argue that the long-term employment decline of some of the major so-called smokestack industries—automobile manufacturing, blast furnaces and basic steel products, and iron and steel foundries—is a major cause of bipolarization.[6] These industries do demonstrate declining trends in employment. Employment peaked in the mid-1960's in the blast furnaces and basic steel products industry, and in the mid-1970's in iron and steel foundries. Automobile manufacturing employment peaked in 1978 at about 1 million workers, and most industry analysts do not expect employment to rebound to that level in the foreseeable future. (Employment trends in these and other industries are shown in table 2.)

These smokestack industries pay relatively high wages. Average hourly earnings of production workers in each of the three industries are well above the average for production or nonsupervisory workers in all private nonagricultural establishments. (See table 2.) These industries also have a higher than average proportion of production workers. Thus, if it is assumed that production workers in these industries exemplify middle income earners, and that those displaced from these industries end up on low wage jobs or become unemployed, the decline of employment in these three industries would tend to cause income polarization.[7]

However, the effect of the employment decline in smokestack industries on the overall economy is not significant. Since 1973 (the high point of combined employment in automobile manufacturing, blast furnaces and basic steel products, and iron and steel foundries), there has been a notable decline in the number of workers in these industries. But, if the decline had not taken place, total employment in 1983 would have been only .5 percent higher. Even if all of these workers were in the middle third of the earnings structure, the overall distribution of workers by earnings would not be significantly different than it was in 1983 because they would be such a small part of the total.

We can conclude that the decline of smokestack industries is a factor that could cause bipolarization. However, we cannot conclude that international competition and technological change, factors that are largely responsible for the declining employment in the smokestack industries, cause bipolarization without looking at other industries which also face the same problems and which also have experienced employment declines over the past decade—textile, apparel, and leather products manufacturing. (See table 2.) Because these latter industries pay relatively low wages, the decline in the number of workers in the bottom of the earnings scale that resulted from their employment declines (600,000 from 1973 to 1983) more than offset the decline in the higher paying smokestack industries.

Growth of high tech industries. An additional argument advanced by proponents of the declining middle income earners thesis indicates that the rapid growth of high tech

Table 2. Employment and average hourly earnings in selected industries with declining employment trends, 1960–83

Year	Total nonagricultural wage and salary worker employment	Motor vehicle manufacturing	Blast furnace and basic steel products	Iron and steel foundries	Textile mill products	Apparel and other textile products	Leather and leather products
	Employment (in thousands)						
1960	54,189	724	651	205	924	1,233	363
1970	70,880	799	627	228	975	1,364	319
1971	71,214	848	574	218	955	1,343	299
1972	73,675	875	564	219	986	1,383	296
1973	76,790	936	605	237	1,010	1,438	284
1974	78,265	908	609	250	965	1,363	271
1975	76,945	792	548	230	868	1,243	248
1976	79,382	881	549	223	919	1,318	263
1977	82,471	947	554	230	910	1,316	255
1978	86,697	1,005	561	237	899	1,332	257
1979	89,823	990	571	241	885	1,304	246
1980	90,406	789	511	209	848	1,263	233
1981	91,156	789	506	201	823	1,244	238
1982	89,566	699	396	159	749	1,161	219
1983	90,138	758	343	141	744	1,164	208
	Average hourly earnings[1]						
1960	$2.09	$2.81	$3.04	$2.49	$1.61	$1.59	$1.64
1970	3.23	4.21	4.16	3.73	2.45	2.39	2.49
1971	3.45	4.72	4.51	4.03	2.57	2.49	2.59
1972	3.70	5.12	5.07	4.33	2.75	2.59	2.68
1973	3.94	5.46	5.50	4.70	2.95	2.77	2.80
1974	4.24	5.86	6.27	5.03	3.20	2.98	2.99
1975	4.53	6.42	6.96	5.45	3.41	3.17	3.20
1976	4.86	7.08	7.60	6.16	3.69	3.40	3.40
1977	5.25	7.84	8.36	6.67	3.99	3.62	3.61
1978	5.69	8.49	9.39	7.25	4.30	3.94	3.89
1979	6.16	9.06	10.42	7.76	4.66	4.23	4.22
1980	6.66	9.83	11.41	8.21	5.08	4.56	4.58
1981	7.25	11.02	12.61	9.02	5.52	4.97	4.99
1982	7.68	11.61	13.38	9.51	5.83	5.20	5.33
1983	8.02	12.10	12.90	9.90	6.18	5.37	5.54

[1]Includes production workers in manufacturing and mining, construction workers in construction, and nonsupervisory workers in other industries.

SOURCE: *Employment and Earnings*, Bureau of Labor Statistics.

industries contributes to bipolarization because these industries are characterized by large proportions of high and low paid workers and few in the middle.[8] If this argument has merit, these industries would have relatively high proportions of highly paid professional and managerial workers, and of low paid clerical and service workers; production workers would have to be relatively low paid unless there were very few of them in these industries.

In previous studies, the BLS has shown that high tech employment, under each of three groups of high technology industries, is growing faster than total employment.[9] However, the analysis also showed that high tech industries comprise a relatively small proportion of total employment and total employment growth. BLS defines the three groups of high tech industries as: group I—industries with a proportion of technology-oriented workers (engineers, life and physical scientists, mathematical specialists, engineering and science technicians, and computer specialists) at least 1.5 times the average for all industries; group II—industries with a ratio of R&D expenditures to net sales at least twice the average for all industries; and group III—manufacturing industries with a proportion of technology-oriented workers equal to or greater than the average for all manufacturing industries, and a ratio of R&D expenditures to sales close to or above the average for all industries (two non-manufacturing industries which provide technical support also are included). The following tabulation shows the percent of total employment in each of the three groups of high tech industries in 1972, 1982, and 1995, and the percent change for 1972–82 and 1982–95:

	Percent of total employment			*Percent change*	
	1972	*1982*	*1995*	*1972–82*	*1982–95*
All wage and salary workers	100.0	100.0	100.0	20.1	28.1
Group I	13.1	13.4	14.1	22.6	34.5
Group II	2.4	2.8	2.9	39.8	34.1
Group III	5.8	6.2	6.6	27.3	35.6

In 1982, under the broadest definition (group I), high tech industries only accounted for 13.4 percent of total employment, up from 13.1 percent in 1972. Under a more narrow definition (group III), high tech comprised only 6.2 percent of total employment. An even narrower definition (group II), shows high tech employment accounting for only 2.8 percent of the total. Group III is probably the definition that would be used by proponents of the declining middle income earners thesis because the broadest definition includes, among other industries, automobile manufacturing.

In about half of the high tech industries included in the group III definition, professional and managerial workers

combined accounted for a higher proportion of total employment than in the economy as a whole, and very few were significantly below the average. Nearly all of the high tech industries have a higher proportion of highly paid workers than manufacturing as a whole. However, the proportion of employment accounted for by low paid clerical and service workers is below that for all industries, but slightly higher than all manufacturing. Thus, the growth in high tech industries can only contribute significantly to bipolarization if production workers, who make up the largest proportion of workers in these industries, are low paid. But nearly all of the production workers in these industries have average hourly earnings above average for production workers in all manufacturing and production or nonsupervisory workers in all private nonagricultural establishments. (See table 3.) All these factors combined would tend to work against polarization when the entire economy is considered. Therefore, data on earnings and on employment growth provide little evidence that high tech industry growth is contributing to bipolarization.[10]

Job openings in low paying occupations. Another point made by some proponents of the declining middle income earners thesis is that a majority of the occupations having the largest number of job openings and large projected employment growth are on the low end of the earnings spectrum.[11] (See table 4.) This point is often made using the latest BLS projections of occupational growth, 1982–95. In these projections, many of the occupations that are expected to have the largest numerical employment growth over the 1982–95 period do have low earnings.[12] However, these factors do not necessarily imply that low paying jobs will increase their share of employment and cause the proportion of workers earning low wages to rise.

The BLS data on job openings indicate that most openings are caused by the need to replace workers rather than by growth in the number of jobs.[13] This is especially true in low paying occupations that employ large numbers of young people and women, who may periodically leave the labor force to attend school or to care for their families. In low paying jobs there also is significant movement between occupations. However, despite the large number of openings in these occupations, there is no indication that the number of workers having low earnings is increasing because the rate of increase in employment in these jobs is generally not faster than that for the total economy.

Similarly, in analyzing the composition of employment by occupation implied by projected growth, the growth rate must be considered in preference to numerical change. A very large occupation with a growth rate close to that for all occupations will show large numerical growth but will not increase as a proportion of total employment. For example, building custodians are projected to have the largest numerical growth between 1982–95, but with only an av-

Table 3. Average hourly earnings of production workers in high tech industries, 1982

Industry	Average hourly earnings	Proportion of 1982 employment accounted for by —	
		Professional and managerial workers	Clerical and service workers
All private nonagricultural establishments	$ 7.68	25.7	36.1
Manufacturing, total	8.50	17.0	13.0
Industrial inorganic chemicals	11.02	28.9	14.2
Plastic materials and synthetics	9.88	32.1	11.4
Drugs	9.08	35.7	21.9
Soaps, cleaners, and toilet preparations	9.12	22.9	22.8
Paints and allied products	8.80	23.4	21.0
Industrial organic chemicals	11.85	33.4	13.9
Agricultural chemicals	9.71	20.1	13.9
Miscellaneous chemical products	9.22	23.9	18.0
Petroleum refining	13.30	21.5	12.8
Ordnance and accessories	9.00	17.0	14.0
Engines and turbines	11.41	23.7	4.6
Special industry machinery, except metalworking	8.95	21.6	16.4
Office computing and accounting machines	7.92	46.7	19.4
Electric transmission and distribution equipment	8.06	15.8	10.3
Electrical industrial apparatus	8.32	18.7	12.4
Radio and TV receiving equipment	7.71	19.3	16.3
Communication equipment	9.62	40.6	17.5
Electric components and accessories	7.17	25.6	12.4
Miscellaneous electrical machinery	8.89	16.4	10.9
Aircraft and parts	11.23	33.8	15.0
Guided missiles and space vehicles	10.96	57.6	15.5
Engineering laboratories	8.44	36.6	18.8
Measuring and controlling instruments	8.03	28.2	16.4
Optical instruments and lenses	8.53	41.0	15.6
Surgical, medical, and dental instruments	7.00	20.4	15.2
Photographic equipment and supplies	10.57	34.9	18.4
Computer and data processing services	8.58	47.2	45.0

NOTE: This table uses group III definition of high tech industries.

SOURCE: National Industry-Occupation Matrix and *Employment and Earnings*, Bureau of Labor Statistics.

Table 4. Twenty occupations with the most job openings in 1980

Occupation	Job openings	
	Number (in thousands)	Percent of total
Sales clerks, retail trade	758	4.0
Managers and administrators, not elsewhere classified	713	3.8
Cashiers	618	3.3
Secretaries, not elsewhere classified	599	3.2
Waiters and waitresses	466	2.5
Cooks, except private household	437	2.3
Stockhandlers	358	1.9
Janitors and sextons	333	1.8
Bookkeepers	305	1.6
Miscellaneous clerical workers	301	1.6
Nursing aides and orderlies	284	1.5
Child care workers, private household	278	1.5
Building interior cleaners, not elsewhere classified	261	1.4
Typists	250	1.3
Truckdrivers	245	1.3
Machine operatives, miscellaneous specified	239	1.3
Assemblers	238	1.3
Construction laborers, except carpenter helpers	232	1.2
Carpenters	224	1.2
Farm laborers, wage workers	221	1.2

SOURCE: *Occupational Projections and Training Data, 1982 edition*, Bulletin 2202 (Bureau of Labor Statistics, 1982).

erage projected rate of growth, this occupation is not expected to increase as a proportion of total employment.

Among the 20 occupations that are projected to grow fastest over the 1982–95 period, most are in the top third earnings category and most of the remainder are in the middle third. (See table 5.) However, looking only at the fastest growing occupations can be misleading. A comprehensive analysis should include the entire occupational spectrum (which was done in an earlier section of this article). It is necessary to use data for all occupations because, individually, the fastest growing occupations are numerically small and have little effect on changing the overall distribution of workers by earnings level.

Shift from goods- to service-producing industries. Data on the changing distribution of industry employment clearly show a shift from goods-producing to service-producing industries.[14] To support the conclusion that this trend leads to bipolarization of earnings, the data would have to show that the distribution of low and high earnings occupations is concentrated to a greater extent in service-producing industries than in goods-producing industries.

An analysis of this nature was conducted by Thomas Stanback, Jr. and Thierry J. Noyelle for 10 major occupational groups in 18 industry categories.[15] This analysis showed a tendency towards bipolarization that has been used by many of the other proponents of the declining middle income earners thesis as a basis for their conclusion.

Stanback and Noyelle applied 1975 earnings data for major occupational groups to data on employment by major occupational group by industry for 1975 and 1960. Using constant earnings data, they analyzed how changes in the occupational distribution alone would affect the distribution of employment by earnings. Their analysis was, therefore, similar to that presented in this article for the economy as a whole. However, the Stanback and Noyelle analysis was done at a major occupational group level, rather than by detailed occupation. Their analysis showed that employment of middle income earners declined between 1960 and 1975, and that employment at both the top and bottom of the earnings scale increased. Their study also showed that growth of service-producing industries was largely responsible for this trend. Their analysis does lend considerable support to views that the middle is declining.

However, there are some concerns about the validity of the analysis. Data on the occupational employment distribution of industries used by Stanback and Noyelle for 1960 were from the industry-occupation matrix developed by BLS based on the occupational classification used in the 1960 census. Earnings data, however, were taken from the Survey of Income and Education collected as a supplement to the CPS in 1975, which used the 1970 census classification. Although similar to the 1960 census classification, some occupations shifted from one major group to another and could have affected the analysis.

In addition, employment data in the industry-occupation matrices include part-time workers. Given that part-time workers are generally found in low paying occupations and that part-time workers increased significantly as a proportion of the work force between 1960 and 1975, these data would tend to show an increase in low paid workers. Also, 1975 was a recession year and thus had a larger proportion of workers on part-time schedules for economic reasons than 1960. Finally, because the calculations were done by major occupational group, the analysis would not have captured the changing structure among detailed occupations within each major group. Thus, it is possible that some structural changes are masked by the broad data used.

Interestingly, a study by Peter Henle and Paul Ryscavage that measured the trend toward inequality in earnings for a similar period produced results similar to Stanback and Noyelle. This study, based on data from the CPS over the 1958–77 period, used a Gini index to measure the equality of earnings distribution for a number of factors, including occupations.[16] In general, the study showed greater inequality over time, but with considerable slowing of the long-term trend for the 1973–77 period. For some major occupational groups, however, there is a trend toward greater equality over time or an uncertain trend. For those showing greater inequality over time, there was less change later in the period.

The Stanback and Noyelle and Henle and Ryscavage studies both show comparable results for a period beginning about the early 1960's to the mid-1970's which suggest some bipolarization of earnings. However, my analysis of occupational trends for the 1973–82 period shows that the

Table 5. Twenty fastest growing occupations, 1982–95

Occupation	Projected employment growth, 1982–95 (in percent)
Computer service technicians	96.8
Legal assistants	94.3
Computer systems analysts	85.3
Computer programmers	76.9
Computer operators	75.8
Office machine repairers	71.7
Physical therapy assistants	67.8
Electrical engineers	65.3
Civil engineering technicians	63.9
Peripheral electronic data processing equipment operators	63.5
Insurance clerks, medical	62.2
Electrical and electronic technicians	60.7
Occupational therapists	59.8
Surveyor helpers	58.6
Credit clerks, banking and insurance	54.1
Physical therapists	53.6
Employment interviewers	52.5
Mechanical engineers	52.1
Mechanical engineering technicians	51.6
Compression and injection mold machine operators plastics	50.3

NOTE: Includes only detailed occupations with 1982 employment of 25,000 or more. Data for 1995 are based on moderate-trend projections.

SOURCE: "Occupational Employment Projections Through 1995," *Employment Projections for 1995*, Bulletin 2197 (Bureau of Labor Statistics, 1984).

tendency toward bipolarization, if it did exist, seems to have been reversed since the mid-1970's.

IS THE MIDDLE DECLINING? Some trends in the industrial and occupational structure of employment could cause a degree of earnings bipolarization. However, a multitude of factors have an effect on the occupational structure of our economy and on the earnings of workers in specific occupations. Although not all can be quantified, an analyses of available data indicates that the combined effect of all factors apparently has not caused bipolarization over the 1973–82 period. Also, given BLS projections of employment by occupation, bipolarization is not likely to occur between 1982 and 1995. □

FOOTNOTES

[1] See, for example, Bob Kuttner, "The Declining Middle," *The Atlantic Monthly,* July 1983, pp. 60–72; Lucy S. Gordon, *Are Middle Level Jobs Disappearing?* (Industrial Union Department, AFL–CIO, 1983); Lester Thurow, "The Disappearance of the Middle Class," *The New York Times,* Feb. 5, 1984, p. F3; Thomas M. Stanback, Jr. and Thierry J. Noyelle, *Cities in Transition* (Conservation of Human Resources, Landmark Study Series, 1982); Barry Bluestone and Bennett Harrison, *The Deindustrialization of America* (Basic Books, Inc., 1982); Bruce Steinberg, "The Mass Market is Splitting Apart," *Fortune,* Nov. 28, 1983, pp. 76–82; and *Deindustrialization and the Two Tier Society* (Industrial Union Department, AFL–CIO, 1984).

[2] Similar data collected before and after this period were tabulated using different occupational classification systems and therefore are not comparable.

[3] The same analysis was conducted by deciles. This analysis showed that the proportion of total employment increased in the top five earnings deciles between 1973 and 1982 and decreased in each of the bottom five deciles.

[4] Median occupational weekly earnings could have been recalculated by combining part-time and full-time workers in the earnings distribution for each occupation. However, the significant data problems that would be incurred would result in very little difference in the earnings distribution of occupations by thirds. Most part-time workers are in occupations falling in the bottom third of the earnings distribution of full-time workers. Because part-time workers generally earn less than full-time workers, these occupations would remain in the bottom third. Also, part-time workers in occupations found in the middle and top thirds based on the earnings of full-time workers generally comprise a very small percent of each occupation and probably would not change the median earnings level for those occupations to a significant enough extent to move them into a lower group.

[5] The use of usual weekly earnings could also cause some differences in the analyses, compared to a true wage change, given that median earnings can be affected by length of work week, earnings distribution within an occupation, and other factors.

[6] *Are Middle Level Jobs Disappearing?;* "The Disappearance of the Middle Class"; *The Deindustrialization of America;* "The Mass Market Is Splitting Apart"; *Deindustrialization and the Two Tier Society.*

[7] This analysis focuses on the distribution of earnings of individuals rather than on the distribution by occupation. Because production workers in these industries are in many occupations and may not account for a large proportion of an occupation's total employment, a decline of workers in these industries would not be likely to affect an occupation's earnings distribution to the extent that it would move out of its relative earnings positions. It should also be noted that average weekly earnings of production workers in these industries from the BLS Current Employment Statistics (establishment) survey would place these workers in the low end of the top third earnings group, rather than in the middle group.

[8] "The Declining Middle"; "The Disapperance of the Middle Class"; and *Deindustrialization and the Two Tier Society.*

[9] Richard W. Riche and others, "High technology today and tomorrow: a small slice of the employment pie," *Monthly Labor Review,* November 1983, pp. 50–58.

[10] In addition, a study conducted by the Computer and Business Equipment Manufacturers Association, which was conducted primarily in response to the adverse crticism that high tech industries are creating a bipolar economic structure, shows a typical bell curve in the earnings of workers in the industry group. *Industry News* (Computer and Business Equipment Manufacturers Association, Apr. 2, 1984).

[11] "The Declining Middle"; *Are Middle Level Jobs Disappearing?*; "The Mass Market Is Splitting Apart"; and *Deindustrialization and the Two Tier Society.*

[12] "Occupational Employment Projections through 1995" *Employment Projections for 1995,* Bulletin 2197 (Bureau of Labor Statistics, 1984).

[13] *Occupational Projection and Training Data, 1982 Edition,* Bulletin 2202 (Bureau of Labor Statistics, 1982).

[14] Valerie A. Personick, "The job outlook through 1995: industry output and employment projections," *Monthly Labor Review,* November 1983, pp. 24–35.

[15] *Cities in Transition.*

[16] Peter Henle and Paul Ryscavage, "The distribution of earned income among men and women, 1958–77," *Monthly Labor Review,* April 1980, pp. 3–10.

Wage differences among workers in the same job and establishment

Employers commonly pay more than one wage rate to workers in a particular job; spreads between the highest and lowest rates in a job are typically wider among white- than blue-collar occupations

JOHN E. BUCKLEY

Establishments employing two workers or more in an occupation often pay these workers at different rates. How frequent is such pay variation? How wide is the resulting spread in rates? Does the degree of pay dispersion differ by occupation? This article explores these issues using data collected in the Bureau of Labor Statistics' 1983 Area Wage Survey program. Where an establishment had two workers or more in a job, the percent by which the salary of the highest paid incumbent exceeded that of the lowest paid incumbent was calculated. Percentage differences for individual establishments were then averaged over all establishments providing such comparisons.

Rate structures were clearly different for white- and blue-collar workers. More than three-fourths of the workers employed in the 40 white-collar occupations studied were in establishments paying more than one rate for their job. Fewer than half of the workers in the 28 blue-collar occupations studied were employed in multi-rate situations. The remainder were either the only incumbents in the job or were paid at the same rate as the other incumbents of the job.

Among workers employed in establishments paying more than one rate for a job, the pattern was again different for white- and blue-collar occupations. Average wage spreads between highest and lowest paid workers in the white-collar occupations studied ranged from 17 percent for industrial nurses to 42 percent for intermediate electronics technicians. For the 12 skilled maintenance occupations, average wage spreads for all but two were between 7 and 14 percent. Among unskilled plant occupations, ranges were as small as 13 percent for power-truck operators (other than forklift) and as large as 45 percent for lower level guards.

These differing structures reflect differences in pay systems in U.S. industry. Employers commonly adopt formal pay systems, establishing either a single rate for a job classification or a range of rates in which the minimum, maximum, or both of these rates are specified. Pay of individual workers within a specified range depends on performance (merit), length of service, or both. In the absence of a formal pay system, rates in a given job are determined largely by the employer's appraisal of individual workers. Data are not available from the Area Wage Survey program to distinguish between the effects of formal and informal systems.

Pay spreads among workers in the same job and establishment cannot be determined from the pay variations typically published in occupational wage survey reports. Because of differences in pay levels among employers, industries, and localities, these reports show considerably wider ranges of pay rates in a job than would be expected in a single establishment. It is not unusual for BLS area wage surveys covering a variety of industries to find the highest paid worker in an occupation earning twice as much as the lowest

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paid. In nationwide studies, the highest paid worker may earn more than three times as much as the lowest paid. In contrast, the average pay spreads found in this study ranged from 7 to 45 percent.

Information on pay spreads within establishments can be used for a variety of purposes. For example, it is important to those establishing and administering rate-range pay plans. It is also useful in analyzing wage structures in that it helps to explain overall patterns of pay differentials. In addition, it indicates the extent to which pay may be increased without promotion to another job.

Computing wage differences

Information for this review of pay spreads within the same job and establishment comes from data collected in more than 11,200 establishments located in 70 metropolitan areas throughout the country.[1] For each of 68 BLS occupational classifications surveyed in 1983,[2] the percent by which the highest rate paid exceeded the lowest rate was calculated where an establishment employed two workers or more at different rates. These percentage differences were averaged, after weighting the pay spread for each establishment by the number of workers it employed in the occupation.[3] Establishments paying the same rate to all workers, as well as those with single incumbents in a job, were excluded from the calculations.

A standard set of occupational descriptions was used in all establishments. In some cases, a single BLS occupation or level covered more than one company job. For example, the wide average pay spread shown in table 1 for level I accounting clerks in unionized establishments is partly explained by the existence in some transportation and utilities companies of two pay grades which fit the BLS description for this occupational classification. In other cases, the company job was barely broad enough to fit within the BLS description. This narrow span of duties could restrict any related pay range.

This study of wage rate dispersion is limited to spreads between highest and lowest rates *actually paid* to incumbents by individual employers. It does not measure the full spread of formal rate ranges.[4] This topic, however, was covered in a recent study by Martin Personick. In a review of formal pay systems for white-collar workers in medium and large firms, Personick noted that ". . . differences between the highest and lowest rates actually paid are generally much smaller than differences between the maximum and minimum rates specified for a range."[5] Personick also found that workers tended to be clustered in the lower half of the rate range.

Single and multiple pay rates

In establishments with two workers or more in a job, the relative importance of single and multiple pay rates varied by occupational group. (See table 1.) The generally lower incidence of blue-collar employment in multiple-rate establishments partly mirrors the greater extent of collective bargaining among these workers than among white-collar workers. Negotiated pay structures are more likely to contain single rates than are non-negotiated structures. As explained by David Belcher: "Unions often favor the single-rate principle because it eliminates judgment-based differentials in individual pay."[6]

Among plant jobs, guards and janitorial workers were most likely to be in multiple-rate establishments, partly because many of the survey's guards and janitors worked in protective or janitorial service firms. In these firms, almost all workers are employed in the same occupation. While most may be paid at or near the minimum wage, at least some receive higher pay in recognition of length of service or proficiency in the job. Often, higher rates are also required because of a customer's special needs.

About 10 percent of the workers whose wages were surveyed in the 1983 Area Wage Survey program were the only incumbents in their job. This percentage, however, varied considerably by job classification—from 1 percent for millwrights to 83 percent for switchboard operator-receptionists.

Differences in pay

Among establishments paying multiple rates to workers in the same job, average spreads between highest and lowest rates varied by occupation, industry, and establishment size category. These factors and their relationship to union status are considered in turn.[7]

Occupation. White-collar jobs, which commonly include a broad range of duties, provide an opportunity to demonstrate superior performance. Where promotion to a higher grade is inappropriate, a range of pay rates can be used to reward superior performance within a job or pay grade. Conversely, it has been argued that the working environment of employees in certain blue-collar jobs—for example, those in assembly line operations—offers limited opportunity to deviate from established performance standards;[8] under such conditions, a single rate or narrow rate-range system may be more appropriate. Furthermore, single rates or narrow rate ranges are generally favored by labor unions, whose current strength is in the blue-collar area.

These differences between white- and blue-collar jobs are reflected in the results of this study. In establishments with more than one rate for a job, the percent by which the highest rate exceeded the lowest was generally larger in white- than blue-collar jobs. The roughly 30 percent average wage spread in white-collar jobs was more than twice as wide as the average spread in skilled blue-collar jobs, but only moderately wider than the average for material movement and custodial jobs. Among the blue-collar occupations studied, the potential for performance variation is smallest in the skilled maintenance jobs, which are restricted by definition to workers who have achieved journeyman status. Also,

skilled maintenance workers, on average, are more concentrated in unionized establishments than are material movement and custodial workers.

Among the individual white-collar jobs studied, mid-level electronics technicians had the widest average wage spread (42 percent), followed by entry-level electronics technicians (39 percent). These spreads are affected by the fairly broad range of duties and responsibilities in the BLS job descriptions for the various levels of electronics technicians. Nurses and switchboard operator-receptionists—jobs that often have few incumbents within an establishment—had the narrowest average wage spreads in the white-collar group, 17 percent for the former and 19 percent for the latter. Excluding these extremes, spreads ranged from 22 to 35 percent among office clerical job classifications and from 24 to 33 percent among the professional and technical jobs.

Except for guards and janitors, average wage spreads for blue-collar jobs ranged from 7 percent for maintenance pipefitters and millwrights to 30 percent for material handling laborers. Maintenance trades helper—a more broadly defined job—was the only maintenance, toolroom, or powerplant occupation studied with a spread of more than 20

Table 1. Workers in establishments paying one rate or more to incumbents in a job, and intra-occupational pay spreads within establishments with multiple rates, all metropolitan areas, 1983

Occupation and level	Percent of workers in establishments with—			Percent by which highest paid worker exceeded lowest paid worker in same job and establishment[1]									
		Two workers or more in job		All establishments				Mean (average)					
	One worker in job	All at same rate	Paid at two rates or more	Mean (average)	First quartile[2]	Second quartile[2] (median)	Third quartile[2]	Manufacturing establishments	Nonmanufacturing establishments	Union establishments	Nonunion establishments	Establishments with under 500 workers	Establishments with 500 workers or more
Office clerical													
Stenographers I	8	6	86	35	12	31	51	35	35	37	34	15	38
Stenographers II	5	5	90	34	15	28	47	30	37	30	35	28	35
Transcribing-machine typists	17	8	78	27	14	25	36	21	28	—	27	23	32
Typists I	10	5	85	32	18	29	44	23	34	39	31	28	36
Typists II	8	5	87	35	18	34	50	25	39	41	34	32	37
File clerks I	15	6	79	22	11	20	30	19	22	—	22	19	27
File clerks II	17	4	78	28	12	25	40	21	29	—	29	19	34
File clerks III	19	3	79	22	11	19	31	—	24	—	22	—	25
Messengers	16	7	77	29	12	26	39	35	28	36	29	24	31
Switchboard operators	28	15	57	22	9	16	31	19	22	15	22	17	24
Switchboard operator-receptionists	83	1	15	19	10	17	27	18	20	—	19	19	20
Order clerks I	9	9	82	29	13	23	40	21	33	—	29	28	30
Order clerks II	11	6	84	30	15	24	41	25	34	—	30	31	27
Accounting clerks I	15	6	79	30	13	24	38	21	32	60	27	22	37
Accounting clerks II	12	7	81	29	13	24	39	24	31	31	28	21	38
Accounting clerks III	16	6	78	27	11	24	38	24	28	32	26	20	33
Accounting clerks IV	20	7	73	29	12	25	39	26	30	19	31	29	29
Payroll clerks	47	5	47	23	11	19	32	22	24	20	24	22	24
Key entry operators I	9	7	84	31	14	25	42	22	33	35	30	27	35
Key entry operators II	11	6	83	27	13	25	37	21	29	25	27	22	29
Professional and technical													
Computer systems analysts (business) I	7	1	92	32	20	30	41	31	32	—	31	28	33
Computer systems analysts (business) II	6	1	93	32	20	31	43	30	32	33	32	24	34
Computer systems analysts (business) III	7	1	92	30	18	30	40	30	29	27	30	22	31
Computer programmers (business) I	17	4	79	32	15	29	49	21	34	—	31	21	35
Computer programmers (business) II	12	3	86	32	17	29	43	25	34	38	30	24	35
Computer programmers (business) III	29	2	69	31	18	29	41	27	32	—	30	23	33
Computer operators I	21	6	74	28	11	21	39	28	29	—	25	18	34
Computer operators II	18	6	76	25	11	22	35	22	27	29	25	20	28
Computer operators III	16	5	80	25	10	23	35	24	26	29	24	16	28
Peripheral equipment operators	6	5	89	31	16	28	41	—	31	—	31	—	32
Computer data librarians	32	4	64	24	11	21	33	15	26	—	24	—	24
Drafters I	22	11	67	30	10	24	58	—	—	—	32	—	14
Drafters II	19	7	74	27	12	22	34	22	32	—	25	25	29
Drafters III	13	5	81	25	12	21	36	21	32	35	25	22	29
Drafters IV	10	4	86	24	11	22	30	21	30	25	24	21	27
Drafters V	6	4	90	29	15	26	41	27	31	15	30	27	30
Electronics technicians I	4	6	90	39	20	31	60	43	31	—	40	28	42
Electronics technicians II	2	10	87	42	20	35	58	33	48	53	35	27	46
Electronics technicians III	2	18	80	33	16	27	44	32	33	—	35	36	31
Registered industrial nurses	41	6	53	17	7	16	23	16	20	16	17	—	17

Table 1. Continued—Workers in establishments paying one rate or more to incumbents in a job, and intra-occupational pay spreads within establishments with multiple rates, all metropolitan areas, 1983

Occupation and level	Percent of workers in establishments with—			Percent by which highest paid worker exceeded lowest paid worker in same job and establishment[1]									
		Two workers or more in job		All establishments				Mean (average)					
	One worker in job	All at same rate	Paid at two or more rates	Mean (average)	First quartile[2]	Second quartile[2] (median)	Third quartile[2]	Manufacturing establishments	Nonmanufacturing establishments	Union establishments	Nonunion establishments	Establishments with under 500 workers	Establishments with 500 workers or more
Maintenance, toolroom, and powerplant													
Maintenance carpenters	17	43	40	11	3	7	14	10	12	8	16	—	10
Maintenance electricians	6	51	42	10	3	7	13	10	13	9	14	11	10
Maintenance painters	18	47	35	14	3	8	15	13	15	10	19	—	12
Maintenance machinists	5	63	32	10	3	8	13	11	—	9	13	9	11
Maintenance mechanics (machinery)	3	56	41	11	4	7	13	10	17	8	16	13	10
Maintenance pipefitters	2	58	40	7	3	3	10	7	—	7	—	—	7
Millwrights	1	48	51	7	3	4	12	7	—	7	—	—	7
Motor vehicle mechanics	6	51	42	14	4	10	20	11	16	10	21	15	14
Maintenance trades helpers	12	35	53	21	5	14	34	18	26	22	19	—	24
Machine-tool operators (toolroom)	6	24	70	9	3	4	7	8	—	8	13	—	8
Tool and die makers	3	36	61	10	2	4	14	10	—	6	19	17	8
Stationary engineers	6	53	41	17	3	7	18	8	31	10	30	—	18
Material movement and custodial													
Truckdrivers, light truck	19	35	46	26	10	21	35	33	24	—	24	24	33
Truckdrivers, medium truck	6	58	36	25	7	21	36	25	25	23	26	24	27
Truckdrivers, heavy truck	4	60	37	26	6	22	41	19	29	17	30	26	—
Truckdrivers, tractor-trailer	3	68	29	14	3	8	19	14	14	10	19	15	12
Shippers	26	36	39	19	5	14	26	16	24	8	25	17	22
Receivers	28	26	46	29	7	17	50	19	33	22	32	23	34
Shippers and receivers	28	30	42	24	6	19	35	21	28	14	28	20	32
Warehousemen	4	44	52	28	6	21	40	26	28	20	33	28	28
Order fillers	2	44	54	24	5	17	36	22	25	14	31	24	24
Shipping packers	4	44	51	24	7	19	37	21	31	18	29	27	20
Material handling laborers	4	49	47	30	6	22	49	20	38	18	37	28	32
Forklift operators	2	61	37	15	2	7	20	11	24	10	21	19	12
Power-truck operators (other than forklift)	2	44	54	13	1	5	16	8	—	12	—	—	12
Guards I	3	12	85	45	19	40	64	20	46	38	48	42	52
Guards II	2	13	85	38	14	33	58	26	41	34	38	34	40
Janitors, porters, and cleaners	8	19	73	42	15	35	65	19	46	45	42	41	45

[1]Limited to establishments reporting two rates or more paid to incumbents in a job.

[2]The quartiles, which designate position, are calculated from arrays of workers by size of establishment pay spread. Half the observations are more and half less than the second quartile (median), one-fourth of the observations are below the first quartile, and another fourth are above the third quartile. Thus, the difference between the first and third quartiles indicates the range of establishment pay spreads applying to the middle half of workers in an occupational classification.

NOTE: Dashes indicate that data do not meet publication criteria.

percent. Conversely, 12 of 16 material movement and custodial job classifications had spreads exceeding 20 percent.

The 45 percent average spread for lower level guards was the broadest among all of the jobs studied; janitors followed closely with an average wage spread of 42 percent. Many workers in these two classifications had earnings at or near the Federal minimum wage and, as with other relatively low paid workers, a modest dollar spread in their pay produced a relatively large percentage spread. An establishment, for example, with one janitor at $3.35 an hour and another at $4.35 records a 30-percent spread; the same dollar difference between two electricians who earn $13 and $14 an hour produces an 8-percent spread. More importantly, perhaps, was the employment of many of the survey's guards and janitors in protective or janitorial service firms. As noted, these firms often pay workers different rates based on the specific contract under which the service is performed.

Eleven of the white-collar occupations in the study are divided into two work levels or more, based on duties and responsibilities. In general, the average percentage spreads of wages were similar for all work levels of an occupation. Major exceptions were file clerks (a 28-percent spread in level II compared with 22 percent in levels I and III) and drafters (24 percent in level IV and 30 percent in level I). In the blue-collar area, average spreads were similar for forklift operators and other power-truck operators. Tractor-trailer drivers, however, had considerably narrower spreads

(14 percent) than the three other truckdriver categories (25 to 26 percent). The two levels of guards surveyed had a 7-percentage point spread.

Industry. Wage spreads between the highest and lowest paid worker in a job were generally narrower in manufacturing than in nonmanufacturing industries. This pattern applied to both white- and blue-collar occupations. Among the 59 occupations for which comparisons between the manufacturing and nonmanufacturing sectors could be made,[9] the average spread in manufacturing was narrower in 52 jobs, of equal size in three, and wider in four. For three jobs—stationary engineer, lower level guard, and janitor—the average spread was 23 to 27 percentage points narrower in manufacturing.

Among blue-collar jobs, the generally narrower average pay spreads in manufacturing industries are partly traced to the greater degree of unionization in this industrial sector. For 1982—the most recent year for which unionization data are available from the Area Wage Survey program—63 percent of the manufacturing production workers were in unionized establishments,[10] compared with 43 percent of the blue-collar workers in nonmanufacturing industries. Table 1 shows, for all industries combined, that blue-collar jobs generally had narrower average spreads in unionized establishments. Maintenance trades helpers and janitors—jobs with relatively wide average wage spreads for the maintenance and custodial occupational categories—were the only exceptions to this pattern.

In 33 of the 37 white-collar comparisons that could be made between industry sectors, average pay spreads were narrower in manufacturing, but unionization is not a major explanation. Unionized establishments in the 1982 Area Wage Survey program employed 9 percent of the nonsupervisory office clerical workers in manufacturing and 15 percent in nonmanufacturing. Considering this limited degree of unionization, collective bargaining could not produce significant white-collar pay structure differences between these two industry sectors. Moreover, considering all industries combined, average pay spreads were *wider* in union than in nonunion establishments in 15 of 23 white-collar occupational classifications that were compared. Differences in the nature of the job and prevailing pay systems are reflected in the wider rate ranges that unions have negotiated for white-collar than for blue-collar workers.

Establishment size. The average wage spread was wider in establishments employing 500 workers or more than in smaller units in all but three of the white-collar classifications compared—order clerk II, accounting clerk IV, and electronics technician III. This may result from the relatively greater use of formal rate-range pay systems in large establishments. It may, however, also reflect increased diversity in pay because of greater numbers of job incumbents in the larger establishments; that is, the more workers an employer has in a job, the greater the likelihood of having incumbents at or near the bottom and top of the rate range for the job.[11]

Among blue-collar occupations, the pattern was mixed. Few establishments with fewer than 500 workers paid more than one rate, or had more than one employee, in maintenance, toolroom, and powerplant occupations. Consequently, establishment-size comparisons were possible in only 5 of 12 of these skilled worker jobs. In 4 of the 5 jobs, average pay spreads were wider in the smaller establishments. This result—which is contrary to the general findings for white-collar occupations—may reflect a greater incidence of skilled maintenance worker unionization in the larger establishments. Among the less skilled material movement and custodial jobs, however, average wage spreads generally were wider in the larger establishments, although the reverse occurred in 3 of the 14 jobs studied (tractor-trailer truckdriver, shipping packer, and forklift operator).

Other factors. Data collected in the Area Wage Survey program permit analysis of variations in pay spreads by type of occupation, industry, union status, and size of employer. Several other factors, however, may influence the spread of pay rates within individual occupations in an establishment. Although this study cannot measure the extent of their influence, some of these factors can be noted. For example, a company in a low wage industry, and with a formal rate-range pay system, may be located in a high wage area. As a result, hiring rates may be near the top of the range to attract employees,[12] forcing a narrow spread in rates paid. The rate of worker turnover and the degree of difficulty in recruiting new employees also affect the location of hiring rates within established rate-range pay systems.

Variations among establishments

Averages of establishment pay spreads for individual job classifications conceal significant variations among the establishments. Table 1 sheds some light on establishment variations by presenting the range of pay spreads for the middle half of the employees in multiple rate situations. (The boundaries of this range are defined by the first and third quartiles.) For example, the middle half of the stenographers I were employed in establishments with pay spreads between 12 and 51 percent.

For white-collar occupational classifications, considerable variation is evident among the pay spreads within individual establishments. In all but four classifications, the difference between the first and third quartiles—the interquartile range—was 20 percentage points or more. The narrowest interquartile range applied to registered industrial nurses (16 percentage points) and the widest to drafters I (48 percentage points). Among material movement and custodial jobs, establishment variations in wage spreads were

similar to those in white-collar classifications, but the variations were not as pronounced among skilled maintenance, toolroom, and powerplant jobs.

For white- and blue-collar jobs combined, variations among establishments tended to be greater in occupational classifications with relatively wide average wage spreads. To account for this relationship, the interquartile range for each classification was standardized by dividing it by the median pay spread for that job, producing an index of relative dispersion. The indexes—which are not shown in table 1 but can be calculated from quartile data presented—were generally higher for blue- than for white-collar jobs. □

FOOTNOTES

[1] These are establishments surveyed in the Bureau's Area Wage Survey program. Data are weighted to represent all Standard Metropolitan Statistical Areas of the country, excluding Alaska and Hawaii.

Establishments employing 50 workers or more are surveyed in six broad industry divisions: manufacturing; transportation, communication, and other public utilities; wholesale trade; retail trade; finance, insurance, and real estate; and selected services. In the 13 largest areas, the minimum establishment size is 100 in manufacturing; transportation, communication, and other public utilities; and retail trade. Major exclusions from the survey are construction, extractive industries, and government.

[2] Descriptions for these occupations appear in the Bureau's Area Wage Survey reports. See, for example, the July 1984 report for Hartford, CT (Bulletin 3025–35), pp. 16–28.

[3] The Area Wage Survey program samples both establishments and metropolitan areas. Therefore, pay spreads in each surveyed establishment were also weighted by establishment and area sampling weights to provide estimates for all workers in metropolitan area establishments within the scope of the program.

[4] For a discussion of the prevalence of formal pay plans among office and plant workers, see John Howell Cox, "Time and incentive pay practices in urban areas," *Monthly Labor Review*, December 1971, pp. 53–56.

[5] See Martin E. Personick, "White-collar pay determination under range-of-rate systems," *Monthly Labor Review*, December 1984, pp. 25–30.

[6] David W. Belcher, *Compensation Administration* (Englewood Cliffs, NJ, Prentice-Hall, Inc., 1974), p. 276. See also Richard B. Freeman and James L. Medoff, *What Do Unions Do?* (New York, Basic Books, Inc., 1984), pp. 79–82.

[7] Geographic variations in pay spreads were also examined, but no consistent patterns were observed.

[8] See Belcher, *Compensation Administration*, p. 276.

[9] The analysis excluded instances where comparisons for an occupation were possible in fewer than 50 establishments.

[10] That is, establishments in which a majority of the production workers were covered by labor-management agreements.

[11] For office clerical, professional-technical, and material movement-custodial jobs, there was a positive correlation between the average number of workers per establishment in an occupational classification and the average percentage pay spread for that classification. For maintenance, toolroom, and powerplant jobs—with only 12 observations—the correlation was negative.

[12] See Belcher, *Compensation Administration*, p. 231.

Changes in regional unemployment over the last decade

Between the mid-1970's and 1984, the geographic distribution of unemployment shifted; in 1975, the highest jobless rate was in New England but by 1984, that division had the lowest rate due to the influx of high technology industries

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During the mid–1970's, the Northeast and the West experienced the highest unemployment rates in the Nation, but after a strong expansion in the late 1970's and severe recessions in the early 1980's, high unemployment was concentrated in a band of States stretching from the Great Lakes south to the Gulf of Mexico. Business cycle swings, as well as differences in industrial structure and demography, account for the geographic shift in unemployment. While all regions benefited from the robust 1983–84 recovery, the East South Central division (Kentucky, Tennessee, Mississippi, and Alabama) improved less rapidly than other areas, and its jobless rate in 1984 was the highest of the nine census divisions. In contrast, New England continued its dramatic improvement into the current recovery, and its unemployment rate in 1983 and 1984 was much lower than that in any other census division.

This article analyzes employment and unemployment changes during three distinct cyclical swings.[1] It contrasts the 1976–79 period, when employment rose strongly and unemployment declined, with the 1979–82 period, when employment growth slowed and unemployment increased sharply. Emphasis is placed on how these two periods, as well as the recovery in 1983–84, affected different sections of the country. Employment developments in the four census regions and nine divisions within these regions (and occasionally individual States) are used to demonstrate major subnational variations.[2] (Footnote 2 lists the States included in census regions and divisions.)

The article is based primarily on data from the Current Population Survey, a monthly sample of approximately 60,000 households nationwide, which provides information on the employment and unemployment status of the civilian population 16 years of age and over. Annual averages are used because they are subject to less sampling variability than monthly data and also give better estimates of major aggregates at the State level. The analysis begins with 1976 because it was the first year that a consistent, reasonably reliable State data series was available.[3] Occasional references are made to earlier years, however, when a longer time horizon helps to explain more recent developments. Also, unemployment rates for 1984 indicate how the second year of the current recovery affected different regions and divisions. However, because final 1984 employment level data were not available at this writing, the focus in the following section is on changes over the 1976–83 period.

Employment

The strong U.S. employment increases of the late 1970's came to a virtual halt at the end of the decade, as the 1980 downturn was followed closely by the severe 1981–82 recession. Total employment, which rose 11.3 percent dur-

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ing 1976–79, inched up only 0.7 percent between 1979 and 1982. While the recessions in the early 1980's affected employment growth in all sections of the country, the impact was most visible in the East North Central, the East South Central, Mid-Atlantic, and West North Central divisions. Employment growth in these four divisions trailed the national pace in the 1976–79 period and then turned negative between 1979 and 1982. The sharpest drop occurred in the heavily industrial East North Central States, where employment fell by 5.5 percent from 1979 to 1982. The employment decrease, which started a year later in the East South Central division, amounted to approximately 3 percent between 1980 and 1982. In the Mid-Atlantic and West North Central States, employment essentially held steady in the 1979–81 period and then declined about 1.5 percent in 1982.

Despite the negligible growth in total U.S. employment between 1979 and 1982, employment rose about 3.5 percent in both the South Atlantic and Pacific States, while the Mountain and West South Central divisions posted gains of 7.5 to 8.5 percent. However, these increases were significantly below those of the late 1970's in all four divisions. The slowdown was particularly marked in the Pacific States, as the strong job growth that the Pacific Northwest had recorded in the late 1970's ended. Employment in construction and lumber and wood products fell in both Oregon and Washington from 1979 to 1982.

Employment in New England grew at about the national rate in the late 1970's and slightly above it in the early 1980's. These employment gains contrast markedly with the sluggish growth experienced earlier in the post-World War II period, when New England underwent a dramatic shift in its employment mix by industry. Accounting for almost half of New England's employment, Massachusetts illustrates the movement away from labor-intensive nondurable manufacturing and into the service-producing industries and high technology manufacturing. Between 1947 and 1975, Massachusetts' employment in three industries—textiles, apparel, and leather—plunged from 250,000 to 90,000, or from 14 to 4 percent of its nonfarm payroll jobs.[4] During this period, total manufacturing employment in the State dropped by 21 percent, in sharp contrast to a 19-percent increase nationally. Starting in the mid-1970's, manufacturing employment in Massachusetts began to pick up, with a major part of the increase occurring in three newer "high tech" industries[5]—machinery, electrical equipment, and instruments. This recovery in manufacturing jobs, combined with continued expansion in the service-producing sector, resulted in statewide job growth in the late 1970's that was close to the national pace.

A central challenge to any area's economy is that employment must expand simply to keep pace with population growth. An economy that stands still in job creation actually deteriorates over time if the population expands. Two distinctly different subperiods are evident when regional employment and population growth rates are compared from 1976 to 1983. In the late 1970's, employment growth rates exceeded population increases in all nine census divisions. This relationship is measured by the employment-population ratio (the percent of the population 16 years old and over that is employed), which peaked in 1979. Between 1979 and 1982, no division recorded an employment gain equal to its population increase, so employment-population ratios fell until the onset of the 1983–84 recovery.

In the late 1970's, New England and the Pacific States recorded the largest employment-population ratio gains (4 to 4.5 percentage points), while the East South Central and the South Atlantic divisions had the smallest (1.5 to 2 percentage points). When the employment picture weakened in the early 1980's, employment-population ratios fell most in the East North Central States (down 4.3 percentage points) and the adjacent East South Central States (down 3.4 points). These decreases outweighed the gains of the late 1970's in both divisions, the only divisions to do so. (See table 1.)

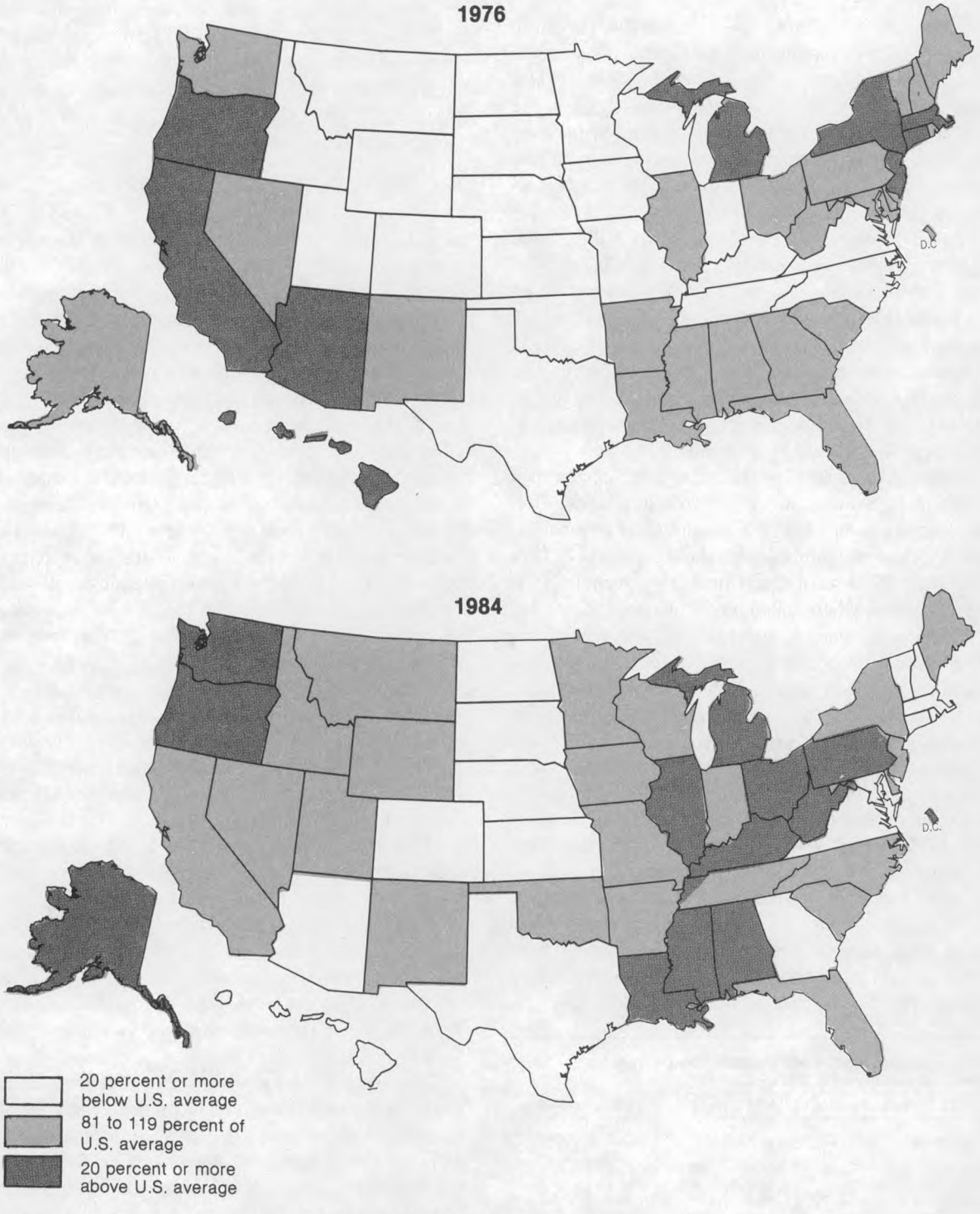
From 1976 to 1983, New England experienced the largest employment-population ratio gain (3.2 percentage points), and substantial increases (2 to 2.5 points) were also posted in the Mountain, Pacific, and West South Central divisions. At the other extreme, the ratios fell about 1.5 percentage points in the East North and East South Central divisions. In the latter division, the ratio was the lowest of the nine divisions in both 1982 and 1983.

Unemployment

The locus of unemployment has shifted markedly in a very short time, attesting to the influence of both cyclical changes and industrial mix on the fortunes of an area. In 1976, the highest jobless rates were recorded in the New England, Mid-Atlantic, and Pacific divisions, while the lowest rate occurred in the West North Central division. In 1984, the U.S. unemployment rate, at 7.5 percent, was close to the 7.7 percent rate of 1976, but the geographic distribution differed dramatically. In both 1983 and 1984, the highest rates in the Nation occurred in the heavily industrialized East South and East North Central divisions and in adjacent States, while New England had the lowest rate. (See chart 1.) Three changes in unemployment rate rankings were especially notable between the mid-1970's and 1983–84. New England shifted from the highest jobless rate division to the lowest; the East South Central division moved from the low unemployment rate category to the highest rate of the nine divisions; and the East North Central States shifted from an average unemployment ranking to next to the highest in both 1983 and 1984.

The pronounced shift in unemployment among regions between the mid-1970's and 1983 and 1984 reflected developments during three distinct cyclical subperiods: 1975–79, when national unemployment fell, 1979–82, when it rose sharply, and 1983–84, when joblessness declined. March 1975 was the trough of the 1973–75 recession and, there-

Chart 1. State unemployment rates, 1976 and 1984



NOTE: The U.S annual average was 7.7 percent in 1976 and 7.5 percent in 1984.

fore, 1975 is an important year in cyclical analysis. Regional and divisional data for 1975 appear in table 2. However, individual State unemployment rates for 1975 are omitted because sampling errors for many were inordinately high.

The 1976–79 period. During 1976–79, the recovery from the deep 1973–75 recession continued, and the national jobless rate dropped from 7.7 to 5.8 percent. Jobless rates fell most in the West and Northeast, while States in the Midwest and East South Central division showed the least improvement. Twelve States recorded unemployment rate declines of 3 percentage points or more. This group comprised four New England States (Connecticut, Massachusetts, New Hampshire, and Vermont), two Mid-Atlantic States (New York and New Jersey), four States in the West (Arizona, California, Hawaii, and Nevada), and two South Atlantic States (Florida and Georgia). New England, which had the highest jobless rate of the nine divisions in 1975 (10.2 percent), recorded the largest decrease in the late 1970's—as its rate fell to 5.4 percent in 1979. The Pacific and Mid-Alantic divisions also recorded large unemployment rate decreases between 1976 and 1979.

In contrast, jobless rates were virtually unchanged over this period in 10 States, and the rate rose in Alaska. After construction was completed on the trans-Alaskan pipeline, the State's jobless rate jumped from about 8 percent in 1976 to 11 percent in 1978 and then declined to 9 percent in 1979. Most of the States where unemployment rates did not improve significantly were in the Midwest and East South Central division. Four States in the heavily agricultural West North Central division (Iowa, Nebraska, and North and South Dakota) were in this group because they had very low unemployment rates (3 to 4 percent) in both 1976 and 1979. Idaho (in the Mountain division) also showed little change in its unemployment rate between 1976 and 1979.

The five other States where jobless rates did not decrease between 1976 and 1979 were Alabama, Tennessee, Kentucky, Indiana, and Louisiana. In Alabama and Indiana, unemployment rates had edged downward between 1976 and 1978 but then increased in 1979, when employment growth in each State slowed markedly. Both States have heavy concentrations of goods-producing industries, which experienced little or no job growth from 1978 to 1979.

Table 1. Employment-population ratios by census division, selected years, 1976–83

Division	1976	1979	1982	1983
United States	56.8	59.9	57.8	57.9
New England	58.5	62.3	61.3	61.7
Mid-Atlantic	53.2	56.6	54.8	54.7
East North Central	58.2	60.9	56.6	56.8
West North Central	60.6	63.8	61.1	61.1
South Atlantic	57.3	59.4	57.5	57.7
East South Central	55.2	56.7	53.3	53.6
West South Central	57.4	60.4	60.0	59.5
Mountain	59.0	62.1	61.0	61.5
Pacific	56.9	61.3	59.2	59.2

Despite the improved employment situation nationally, jobless rates in Kentucky, Louisiana, and Tennessee showed no discernible trend between 1976 and 1979. The fact that three of four East South Central States (Alabama, Kentucky, and Tennessee) had virtually the same unemployment rates in 1976 and 1979 meant that this division was the only one where the unemployment rate did not drop substantially in the late 1970's. As a result, the East South Central jobless rate shifted from well below the U.S. rate in 1976 to slightly above it in 1979.

The 1979–82 period. Between 1979 and 1982, the national unemployment rate jumped from 5.8 and 9.7 percent, as the economy suffered two successive recessions. This increase affected all U.S. regions although with different timing and severity. The brief and relatively mild 1980 recession had the most adverse effect on industries that are highly sensitive to interest rates, particularly automobiles and housing. In the East North Central States, where automobile manufacturing and supplier industries are concentrated, the unemployment rate jumped from 6.1 percent in 1979 to 9.2 percent in 1980. Very sharp unemployment increases occurred in Michigan, Ohio, and Indiana—States where jobless rates had begun to rise as early as 1979. Although starting from a lower level, the jobless rate in the neighboring West North Central States also increased markedly in 1980. In contrast, the unemployment rate in the Northeast only rose from 6.6 to 7.0 percent between 1979 and 1980, and rates in the South and West both increased about 1 percentage point.

Unlike the 1980 experience, the severe 1981–82 recession resulted in substantial unemployment increases in all sections of the country. The most adverse impact occurred in heavily industrialized States, which were still suffering from the 1980 downturn in basic industries. Jobless rates jumped to 12.5 percent in the East North and 12 percent in the East South Central divisions—double the 6 percent rates recorded in 1979. The rate in the West North Central States, while low compared with other divisions, also nearly doubled. Seven States had 1982 unemployment rates in excess of 11.7 percent—one-fifth or more above the national average. Five of the seven were the East Central States of Michigan, Ohio, Indiana, Alabama, and Tennessee. West Virginia and Washington were the two other States with very high 1982 jobless rates.

States with jobless rates lower than the national average rates were more numerous and more geographically dispersed than those with high rates. Sixteen States recorded 1982 rates of 7.8 percent or less—at least one-fifth below the national average. Rates were below 7 percent in the following farm belt and oil and gas drilling States: Kansas, Nebraska, North and South Dakota, Wyoming, Oklahoma, and Texas, as well as in Connecticut, Vermont, and Hawaii. An additional six States had 1982 jobless rates between 7 and 7.8 percent—Colorado, Minnesota, Utah, New Hamp-

Table 2. Unemployment rates by census region and division, 1975–84

Region and division	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
United States	8.5	7.7	7.1	6.1	5.8	7.1	7.6	9.7	9.6	7.5
Northeast	9.5	9.4	8.4	6.9	6.6	7.0	7.4	9.0	8.7	6.8
New England	10.2	9.1	7.7	5.7	5.4	5.9	6.3	7.8	6.8	4.9
Mid-Atlantic	9.3	9.5	8.7	7.3	7.0	7.5	7.8	9.4	9.4	7.6
Midwest	7.8	6.6	6.0	5.3	5.5	8.2	8.6	11.1	10.8	8.4
East North Central	8.9	7.3	6.5	5.9	6.1	9.2	9.7	12.5	12.0	9.4
West North Central	5.2	5.0	4.8	4.0	4.0	5.8	6.0	7.8	7.9	6.2
South	7.7	6.7	6.4	5.6	5.4	6.4	7.0	8.9	9.3	7.2
South Atlantic	8.5	7.4	6.8	5.7	5.5	6.3	7.0	8.7	8.5	6.5
East South Central	7.9	6.2	6.4	6.0	6.1	7.9	9.2	12.1	12.3	9.8
West South Central	6.4	6.0	5.7	5.2	4.7	5.6	5.9	7.5	8.9	7.0
West	9.2	8.7	7.8	6.6	6.0	6.9	7.4	9.9	9.5	7.6
Mountain	7.5	7.2	6.6	5.4	5.0	6.4	6.3	8.7	8.6	6.2
Pacific	9.8	9.1	8.2	7.0	6.4	7.1	7.8	10.2	9.9	8.1

shire, Georgia, and Virginia.

The Northeast, which had the highest unemployment rate of the four regions throughout the 1976–79 period, was less affected than other parts of the country by the recessions of the early 1980's. Within that region, the Mid-Atlantic States moved from being the division with the highest unemployment rate during 1976–79 to registering slightly below the national average in 1982. During the 1970's, employment growth had been sluggish in these States, as a shift occurred away from older manufacturing industries to the more rapidly growing service-producing sector. Jobless rates in New York and New Jersey, which had been substantially above the national average during the mid- and late 1970's, were relatively resistant to the unemployment increases in the early 1980's, and in 1982, both States had rates that were lower than the national average. However, Pennsylvania, which had fared better than New York and New Jersey during most of the 1970's, was hard hit in the 1980's by problems in industries such as steel and coal mining, and its unemployment rate jumped from 6.9 to 10.9 percent between 1979 and 1982. The New England jobless rate increased less in the 1979–82 period than in any division except the Mid-Atlantic and, at 7.8 percent in 1982, was the second lowest of the nine divisions.

Throughout 1983 and 1984. The economy demonstrated a robust recovery in the 2 years following the deep 1981–82 recession. Although annual averages obscure the magnitude of the cyclical swings during 1982 and 1983, significant regional employment and unemployment changes were evident.[6] For example, New England posted a substantial unemployment rate drop between 1982 and 1983, while the rate rose markedly in the West South Central States. As the economy completed a second full year of recovery in 1984, the national unemployment rate fell to 7.5 percent, and all sections of the country experienced lower jobless rates. (See table 2.)

Unemployment rate changes between 1982 and 1984 illustrate how the recovery affected different geographic areas. The largest relative improvement occurred in New England, followed by the Mountain division. Four States—Arizona (from the Mountain division), and Rhode Island, Massachusetts, and New Hampshire (from New England) experienced very large drops in the jobless rates during this period. In contrast, the least improvement occurred in the West South Central division, where the jobless rate rose in 1983 and then fell in 1984. Only six States failed to show significant unemployment rate decreases between 1982 and 1984, and two of them—Louisiana and Oklahoma—were from the West South Central division. Alaska, Mississippi, Wyoming, and West Virginia were the other four States where jobless rates did not decrease between 1982 and 1984. Despite declines during the recovery, jobless rates in both the East South and East North Central divisions were very high in 1983 and 1984.

The New England jobless rate fell from 7.8 percent in 1982 to 4.9 percent in 1984. In both 1983 and 1984, New England had the lowest rate of the nine census divisions—a complete reversal from 1975, when New England had the highest rate. The strong 1983–84 rebound in the New England economy was pervasive. Three of the four States that recorded the sharpest jobless rate drops from 1982 and 1984 were Rhode Island, New Hampshire, and Massachusetts. By 1984, five of the six New England States ranked in the low unemployment group (6 percent or below) and Maine (with a 6.1-percent rate) was almost in that category.

The unemployment rate improvement in the Mountain division reflected sharply different movements among the eight States. Arizona and Colorado, the division's two most populous States, both recorded steady and substantial unemployment drops over 1982–84. At the other extreme, Wyoming was one of only six States that showed no unemployment rate decrease between 1982 and 1984. The Wyoming rate increased sharply from 1982 to 1983, as did the rate in many other States with substantial employment in oil and gas extraction; it then dropped in 1984 to about the 1982 level.

The job situation in the West South Central division worsened substantially in 1983 and rebounded in 1984. The 1983 deterioration contrasted with the national pattern, as well

as with the strong expansion that this division experienced in the previous several years. Total employment in these States rose very strongly during 1976–81, and the unemployment rate was consistently the lowest or next to lowest of the nine census divisions. Much of the economy's strength during this period was linked to oil drilling and petroleum refining, which boomed following the oil embargo by the Organization of Petroleum Exporting Countries. However, when petroleum demand began to slacken in 1982 and production was curtailed, this division was hit first. Total employment growth slowed to 1 to 1.5 percent in 1982 and 1983 from more than 4 percent annually in the 1976–81 period. Wage and salary employment in oil and gas extraction, which had more than doubled between 1976 and 1981, was nearly unchanged from 1981 to 1982 and then dropped sharply in 1983.

As employment growth slowed, the West South Central jobless rate rose from 7.5 percent in 1982 to 8.9 percent in 1983; it then fell to 7.0 percent in 1984. Oklahoma, where the rate jumped from 5.7 to 9.0 percent between 1982 and 1983 and then decreased to 7.0 percent in 1984, was the only State in the Nation where the 1984 rate was significantly above the 1982 rate. The Texas jobless rate moved from 6.9 to 8.0 to 5.9 percent over the 1982–84 period. In 1984, Texas returned to the group of States with rates one-fifth or more below the U.S. average. Louisiana, however, proved much less resilient than Texas. Over the 1982–84 period, the Louisiana jobless rate moved essentially from 10 to 12 and back to 10 percent—making it one of the six States where jobless rates did not decrease between 1982 and 1984. Also, in both 1983 and 1984, Louisiana was in the group of States with rates one-fifth or more above the U.S. average.

The jobless rate in the East North Central States, which had doubled in the early 1980's, fell substantially between 1982 and 1984. Over the latter period, the Michigan rate fell more than 4 percentage points, and drops of 3 to 3.5 points occurred in Wisconsin, Indiana, and Ohio. Despite these sharp decreases, Michigan, Ohio, and Illinois were in the high unemployment group in 1984—those States with rates of 9 percent or higher (or at least one-fifth above the U.S. average). Moreover, the East North Central rate, at approximately 9.5 percent in 1984, was the second highest of the nine census divisions.

The job picture in the East South Central States worsened more than in any other division from the mid-1970's to 1983–84. While the division jobless rate decreased between 1982 and 1984, the improvement started later and was more moderate than in many other sections of the country. In 1984, three of the four East South Central States (Alabama, Mississippi, and Kentucky) were in the high unemployment group. Tennessee, which had been in the high group in 1983, experienced a substantial unemployment rate drop in 1984 and moved into the group of States with jobless rates close to the national average. In contrast, Mississippi, which had a jobless rate of about 11 percent in both 1982 and 1984, was one of the six States that showed no significant decrease in its rate during the recovery. Although the list of States in the high unemployment rate category changed over 1982–84, four States consistently recorded rates of 11 percent or above. Alabama and Mississippi from the East South Central division were in this very high unemployment group, as were West Virginia and Michigan.

The sharp deterioration in the East South Central division's employment situation stemmed partly from its heavy concentration in goods-producing industries, which experienced substantial job losses from 1979 to 1983. Another reason for high unemployment in this division is that a large proportion of the population resides in nonmetropolitan areas—48 percent in 1980, compared with 25 percent nationally[7]—which have experienced less economic growth than metropolitan areas in recent years. (The national jobless rate in nonmetropolitan areas was 10.1 percent in both 1982 and 1983, while the metropolitan area rates were about 9.5 percent.) A large part of the nonmetropolitan population in the South resides in or near small towns whose economies often depend heavily on a single industry or even a single plant. When these major local employers curtail or close down operations, the effect is often devastating on the surrounding communities.

West Virginia recorded the highest State unemployment rate in both 1983 and 1984 and was one of the six States that showed no jobless rate improvement between 1982 and 1984. In some respects, the problems in West Virginia resemble those of the neighboring heavily industrialized States, but West Virginia also has unique long-term structural problems. Mining (primarily coal mining) accounted for about one-fourth of nonagricultural wage and salary employment in West Virginia immediately after World War II.[8] As the demand for coal decreased and the industry became increasingly mechanized, mining employment fell preciptiously—dropping more than 60 percent from the early 1950's to 1963. The falloff in mining jobs bottomed out in the mid-1960's, and thereafter nonfarm employment increased for several years. However, employment peaked in West Virginia in 1979 and dropped in each of the succeeding 4 years. Several States with concentrations of older basic industries also experienced job declines between 1979 and 1982, but West Virginia was the only State where total employment fell significantly from 1982 to 1983. Between 1979 and 1983, the number of jobs in the goods-producing sector in West Virginia plummeted 30 percent, compared with 12 percent nationally. As a result, the State's jobless rate, which was about 1 percentage point above the U.S. rate in 1979, soared to approximately twice the national figure in 1983 and 1984.

Summary

The employment and unemployment picture across the United States changed substantially between the mid-1970's

and the early 1980's, reflecting demographic and industrial composition shifts and, most importantly, business cycle effects. Throughout this period, employment growth was concentrated in the West and South, with especially large increases occuring in the West South Central and Mountain divisions. In contrast, the East North Central States experienced very little employment growth. Employment-population ratios clearly indicate that some parts of the country fared much better than others between 1976 and 1983. New England recorded the largest advance (more than 3 percentage points), followed by the Mountain, Pacific, and West South Central divisions. In contrast, employment-population ratios fell in both the East South Central and East North Central States.

The geographic distribution of unemployment also shifted markedly between the mid-1970's and 1983–84. In 1976, the highest jobless rates (more than 9 percent) were recorded in the New England, Mid-Atlantic, and Pacific divisions, while low rates (5 to 6 percent) occurred in the West North Central and the West South Central divisions. Eight years later, following a strong expansion during the late 1970's, back-to-back recessions in the early 1980's, and then 2 years of recovery, unemployment rates were highest in the East South and East North Central divisions and neighboring States. Most of these States have heavy concentrations of older goods-producing industries, which were battered by the 1980 and 1981–82 recessions. In contrast, New England, which has become heavily infused with high technology industries, recorded a dramatic jobless rate decrease between the mid–1970's and 1984. Furthermore, the New England rate became the lowest of the nine divisions, a complete reversal of its ranking in 1975. Unemployment rates also fell in the Pacific and Mid-Atlantic divisions between the mid-1970's and 1984, and both improved relatively—moving from high to average jobless rate rankings. □

———*FOOTNOTES*———

[1] Business cycle peaks and troughs are designated by the National Bureau of Economic Research.

[2] The States which compose the census regions and divisions are:

Northeast region
- New England division: Connecticut, Maine, Massachusetts, New Hampshire, Rhode Island, Vermont
- Middle Atlantic division: New Jersey, New York, Pennsylvania

Midwest region (formerly North Central)
- East North Central division: Illinois, Indiana, Michigan, Ohio, Wisconsin
- West North Central division: Iowa, Kansas, Minnesota, Missouri, Nebraska, North Dakota, South Dakota

South region
- South Atlantic division: Delaware, District of Columbia, Florida, Georgia, Maryland, North Carolina, South Carolina, Virginia, West Virginia
- East South Central division: Alabama, Kentucky, Mississippi, Tennessee
- West South Central division: Arkansas, Louisiana, Oklahoma, Texas

West region
- Mountain division: Arizona, Colorado, Idaho, Montana, Nevada, New Mexico, Utah, Wyoming
- Pacific division: Alaska, California, Hawaii, Oregon, Washington

[3] Monthly subnational Current Population Survey (CPS) data are subject to very high sampling variability—especially those for lightly populated States or areas. Annual averages reduce the monthly variability considerably, but even on this basis estimates for the less populated States have very large sampling errors. For example, the sampling error for the 1983 annual average unemployment rate in Wyoming of 8.4 percent was plus-or-minus 1.0 percentage point at a 90-percent confidence interval. This means that users can be confident that the estimated 1983 unemployment rate for Wyoming would not be expected to differ from the "true" rate by more than 1.0 percentage point 90 percent of the time. The sampling error on the monthly rates was about 2.2 times as large. CPS data for the 50 States and the District of Columbia from 1976 forward meet a consistent standard of reliability because they incorporate supplemental State samples, as well as an improved estimation methodology.

[4] Industry employment data in this section are derived from the Current Employment Statistics program, a monthly sample survey of more than 200,000 nonagricultural business establishments conducted by the Bureau of Labor Statistics and designed to provide information on wage and salary employment, average weekly hours, average hourly earnings, and average weekly earnings for the Nation, States, and metropolitan areas.

[5] For an analysis of the concepts of high technology industries and their effect on employment, see Richard W. Riche, Daniel E. Hecker, and John U. Burgan, "High technology today and tomorrow: a small slice of the employment pie," *Monthly Labor Review*, November 1983, pp. 53–58.

[6] For an analysis of the substantial changes that occurred between the fourth quarters of 1982 and 1983, see George D. Stamas, "State and regional employment and unemployment in 1983," *Monthly Labor Review*, September 1984, pp. 9–15. Also see Richard J. Rosen, "Regional variations in employment and unemployment during 1970–82," *Monthly Labor Review*, February 1984, pp. 38–45.

[7] 1980 Census of Population, Vol. I, PC80–1–A1.

[8] See footnote 4.

Productivity trends in kitchen cabinet manufacturing

After 7 years of strong gains, output per hour fell between 1979 and 1982; declining output was the major factor in the reversal, as recession and a slump in residential construction took their toll

HORST BRAND AND NORMAN BENNETT

Output per employee hour in the manufacture of wood kitchen cabinets rose at an average annual rate of 2.1 percent between 1972 and 1982,[1] or at virtually the same pace as for all manufacturing (2.0 percent). However, annualized increases in both output and employee hours were greater for the industry (4.7 percent and 2.5 percent) than for total manufacturing (1.4 percent and −0.5 percent).

Factors underlying the 10-year productivity advance in the making of kitchen cabinets include improvements in woodworking machinery and particleboard processing equipment; faster drying glues and coating materials; and more mechanized transfer apparatus. Capital expenditures increased strongly during the latter half of the seventies, although they subsequently tapered through the early eighties.

The productivity trend in the industry was marked by two distinct phases, which paralleled developments in all manufacturing. Between 1972 and 1979 (the industry's output peak for the period examined here), productivity rose strongly, reflecting fast-paced output gains. But over the 1979–82 period, which was marked by recession and a deep slump in residential construction, the trend reversed direction, with output declining at an even faster rate than employee hours:

	1972–79	*1979–82*
	Kitchen cabinet manufacturing	
Productivity	3.3	−2.7
Output	8.0	−10.7
Employee hours	4.6	−7.8
	All manufacturing	
Productivity	2.1	1.7
Output	3.3	−2.9
Employee hours	1.2	−4.5

Manufacturing generally experienced a slowdown in its productivity rate between 1979 and 1982, rather than a reversal; but the trends in output and employee hours were downward, as in kitchen cabinet manufacturing.

Year-to-year changes in the industry's productivity were quite volatile, ranging from an increase of 23 percent in 1977 to a decline of 11 percent in 1982. In 5 of the 10 years after 1972, productivity rose; in the other 5, it fell. However, in 2 of the years of rising productivity, the increase was attributable to a more rapid decline in employee hours than in output. And in 3 of the years of declining productivity, both output and employee hours increased, but the latter grew faster than the former. These patterns contrast with the experience of durable manufacturing industries generally, which evidenced a much narrower range of year-to-year fluctuations in productivity during the review period (−3 percent in 1974 to 4 percent in 1981). The volatility

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of productivity movements in kitchen cabinet manufacturing stems largely from the industry's close link to the highly cyclical demand for residential housing.

Output and demand factors

The kitchen cabinet industry manufactures stock line and custom cabinets, as well as bathroom vanities. Stock line cabinets, which account for about one-half of industry output, are mass produced, and are distributed to residential building contractors. Custom cabinets represent roughly one-third of output and, while the cabinets are built to customer specifications, large-scale production is often feasible with the application of flexible manufacturing technologies.[2] Vanities make up the remaining one-sixth of output. Most kitchen cabinets and vanities are made of wood; those made of plastics accounted for 14 percent of output in 1982 (up from 11 percent in 1977). The manufacture of metal cabinets, which were once a large proportion of total kitchen cabinet production, is no longer a significant industry activity.[3]

Industry output is closely linked with residential construction, replacement, and rehabilitation markets. Among these markets, new residential housing starts provide an estimated one-fourth of the industry's major outlets. Over the study period, such starts tended to decline from the high set in 1972, although there were secondary peaks in the late seventies. Housing starts subsequently plummeted, however, so that by 1982 levels were nearly two-fifths below those recorded in 1979.[4]

Throughout most of the review period, replacement and remodeling activity, spurred in large part by high rates of sales of existing homes, tended to offset the impact of declining housing starts on the output of cabinets and vanities. Existing-home sales rose at an average annual rate of 10 percent between 1972 and 1979, then fell by nearly 20 percent per year to 1982. Constant-dollar outlays for major replacements—30 to 40 percent of which are for newly installed kitchen cabinets[5]—rose 4.9 percent per year over the earlier period, then dropped by 1.7 percent annually. Remodeling outlays, a significant proportion of which likewise are devoted to new kitchens and bathrooms and their furnishings, also rose, then declined, although at more moderate rates than major replacement spending.[6] Most remodeling and replacement work is performed on older structures, which are more likely to need redesigned kitchens and enhanced storage space. (In 1982, four-fifths of replacement and remodeling expenditures were made for residential structures built prior to 1970, and more than half on structures built prior to 1960.[7]) However, the number of cabinets per kitchen—estimated to average 12 in new single-family homes in 1983, and 15 in remodeled homes[8]—is not believed to have changed much over the past 10 to 20 years,[9] although a rising proportion of single-family homes feature two or more bathrooms, hence requiring additional vanities.[10]

The comparative strength of remodeling and replacement demand resulted in a considerably higher rate of production of custom than of stock line cabinets. Between 1972 and 1979, production of the former rose by nearly 8 percent a year, of the latter by only about 4 percent a year. Output of vanities paced that of custom cabinets. After 1979, however, output of both custom and stock line cabinets slumped, while production of vanities declined moderately.

Employment, hours, and occupational mix

Employment in kitchen cabinet manufacturing, currently numbering 58,000 persons, rose strongly—by 42 percent—between 1972 and 1979. By 1982, however, employment had fallen 22 percent. The expansion and subsequent decline in the industry's employment contrasts with the more moderate pattern of employment trends for manufacturing as a whole, as indicated by annualized percent changes for the two subperiods:

	Kitchen cabinets	*Manufacturing*
1972–82	2.8	−0.2
1972–79	4.8	1.4
1979–82	−7.6	−3.6

The number of production workers in the industry rose at only about three-fifths of the rate for nonproduction workers over the review period (2.5 percent per year versus 4.0 percent). In 1979, production worker employment stood 44 percent above 1972 levels, but then plummeted 28 percent by 1982. By contrast, nonproduction worker employment increased steadily, so that by 1982 it was nearly half again as large as 10 years earlier, and the proportion of nonproduction workers in total employment had expanded from 17 percent to 22 percent. Reasons for the rising proportion of nonproduction workers include the hiring of larger sales and distribution staffs, and increases in the number of technicians.

Average weekly hours in the industry exceeded 38.0 hours in only 4 years between 1972 and 1982. They usually ran about 94 percent of the manufacturing average. Industry sources believe that the lower average workweek arises mainly from the workweek practices of the smaller custom cabinet establishments. Industry overtime hours fell to 70 percent of the all-manufacturing average after 1973, and dropped to less than 60 percent in years of declining output. Even in years of strong output growth, neither average weekly hours nor overtime approached the manufacturing average. By comparison with all of manufacturing, then, the industry evidently preferred to hire rather than lengthen work hours during periods of increasing demand for its products, and to reduce its work force rather than work hours when demand declined.[11]

Hourly wages of production workers in the industry averaged 17 percent below the comparable manufacturing figure for the review period. Also, they tended to decline relative to the manufacturing average over time, so that they

lagged by 21 percent in the last few years of the period. The industry's lower average hourly wage is probably a reflection of the large proportion of semiskilled workers it employs.

That this is, in fact, the case is suggested by data on the industry's occupational mix, which is weighted much more toward operative and laborer (that is, unskilled) positions than is employment in manufacturing generally. (These data apply to the group of woodworking industries of which kitchen cabinet manufacturing represents about one-quarter of the employment. But because the woodworking industries group as a whole uses similar production technologies and serves similar markets, differences in occupational composition among industries within the group are likely to be minor.[12]) Of the group's total 1983 work force, 81 percent were blue-collar workers, compared with 69 percent for all manufacturing. Most of the difference was linked to the high proportion of workers classed as laborers in the woodworking group (17 percent versus 9 percent for manufacturing). A relatively large number of laborers in the woodworking industries are engaged in such tasks as loading and unloading production machinery, handling of stock, and as helpers—tasks which tend to be mechanized in other manufacturing industries.

The proportion of operatives employed in the woodworking industries group is slightly higher than in all manufacturing (42 percent versus 40 percent). Here, the difference stems chiefly from the greater relative importance of assemblers, sawyers, edgers, and other workers in occupations typical for woodworking. The group also employs a marginally greater relative number of craft and related workers than manufacturing generally. White-collar workers, however, play a comparatively lesser role in the woodworking group, despite the increase in the share of nonproduction workers in kitchen cabinet manufacturing employment noted earlier. In 1982, white-collar workers represented 19 percent of employment in the group, as against 31 percent for all manufacturing. Much of this difference reflects the much smaller proportion of professional and technical workers in the woodworking group than in general manufacturing (3 percent versus 10 percent). The share of clerical workers in the group (8 percent) also was significantly smaller than in all manufacturing (12 percent).

Technology

The manufacture of wood kitchen cabinets and vanities entails the sawing, shaping, planing, and sanding of hardwood components (less often softwood, hardwood plywood, and hardwood veneer components), most often used for the facing of the final product or drawers, and of particleboard (or fiberboard), which usually constitutes the "box" or interior of the cabinet. After the components are imprinted with ink by means of cylindrical presses and hardware is affixed, cabinets are assembled by stapling and gluing. Larger firms may locate the fabricating plant close to lumber supply areas, and perform assembly and other nonfabricating operations in separate establishments from which markets may be readily served.

Kitchen cabinet manufacturers use the same basic woodworking technologies employed in millwork generally. (Prior to 1972, the industry was defined as a subset of millwork for purposes of Federal statistical studies.[13]) The specialization and large-scale operations that came to characterize the stock line segment of the cabinet industry, and to a lesser extent its custom segments, did not fully develop until the 1950's. Kitchen design then shifted away from metal cabinets, partly because of certain disadvantages associated with use of the latter;[14] and distributor networks enabling nationwide distribution sprang up. As in millwork generally, large-scale production of kitchen cabinets and vanities was to some extent promoted by the introduction of synthetic resin adhesives, which yield a quick-curing bond.[15]

Kitchen cabinet and vanity manufacturing is highly mechanized: all work that transforms the lumber and processes the shaped components and particleboard is done by machines or mechanically driven devices (such as inking cylinders). Especially in the stock line segment of the industry, transfer of stock has been increasingly conveyorized, rather than being performed by material handling equipment or manually. Conveyorization has in turn been made possible by the economies of scale of mass production, and also by advances in technology, such as those that permit the rapid application and curing of inks and glue.[16]

First in the sequence of the industry's manufacturing operations is the treatment of the rough lumber. The lumber is delivered in uniformly sized sheets to predrying facilities. Predrying facilities began to be installed by the industry during the late sixties. They are designed to reduce the drying process from 5 months—if the lumber were to be left to dry in the open air—to 1 month (more or less, depending upon the species of wood). Predrying generally shrinks the lumber's moisture content by about 70 percent; it has the additional advantage of preventing the quality degradation characteristic of lengthier drying processes.[17] The lumber is then transferred to kilns, usually for a 15–day period, so as to further reduce moisture content.

The machinery used in kitchen cabinet manufacturing reflects woodworking technologies that have been applied for many decades. However, a large proportion of such machinery appears to be comparatively new, and thus features the many minor innovations and modifications that cumulatively enhance the productivity of manufacturers' capital stock. According to a 1979 survey conducted by *Woodworking and Furniture Digest*,[18] much of the existing woodworking and other equipment used in kitchen cabinet manufacturing establishments was less than a decade old. For example, one-half of all sawing and profiling machinery

was 10 years old or less, as were two-thirds of all dado, grooving, planing, and mitering machines. Most types of sanding machines were likewise of comparatively recent vintage. Well over four-fifths of edge banding machines employing hot-melt adhesives had been installed within the previous 10 years. Where the proportion of equipment 10 years old or less fell below 50 percent—as in the case of manually operated shapers, certain kinds of lathes, carving machines, tenoners, and sanders—it was preponderantly between 10 and 20 years old.

Of innovations to the production processes of the industry only a few examples can be given here. Defects in the lumber used in manufacturing kitchen cabinets were formerly spotted by a worker's trained eye and had to be laboriously removed with hand tools. Now, an electronic device "finds" the defect, and programs the cut so as to isolate and eliminate the defect. Labor requirements as well as material waste are thus considerably reduced.

Cutting heads of shapers, as well as saw blades, have been toughened by tungsten carbide, reducing time spent in removing and sharpening such devices. Particleboard pieces of similar thickness can now simultaneously be sawed to varying dimensions (as specified by different customers) by programming a computer, which generates a machine-readable tape that informs the sawing machinery of the cuts to be made and their sequence. The computer also generates a tape that can be read by the machine operator, so that he or she may check and follow the cutting operations, and override when necessary. Such lumping of small orders for processing of particleboard without manual resetting of machinery has raised output per unit of labor input in some establishments by three to five times.[19]

Secondary sanding operations, traditionally performed by hand, have been disappearing gradually; the use of multifunctional sander attachments, which reduce or eliminate the relatively high labor requirements associated with hand sanding, is becoming more prevalent. Automatic thickness settings permit a wide range of bites, down to finest surface polish.[20] In addition, air-operated hand-held polishing apparatus has been developed that also dispenses with secondary sanding, and prevents swirl patterns by means of its so-called random orbit action.[21] A shift away from electrically powered tools to air-operated hand tools is widely believed to have improved operator efficiency. Air-powered tools are lighter and less fatiquing to operate, and offer a wider choice of such options as handles and styles adaptable to operator preferences.

Adhesives and the means of applying them have likewise been improved. High-speed production and assembly requires rapid curing, and gluing has become an integral part of the production process in the larger, mass-producing establishments. However, stapling has not yet been eliminated in kitchen cabinet and vanity assembly, where it supplements gluing in the fastening of parts. Gluing, like stapling is performed by hand-held power tools. Such tools have been redesigned so as to minimize operator fatigue, and technically improved for ease and speed of operation: for example, screw-in cartridges now permit quick replacement of the glue-dispensing head.[22]

Processing of particleboard gained considerably in efficiency during the review period with the introduction of synthetic precision coaters, which ensure that the board is free of voids or craters, and of ultraviolet light as a device for rapidly curing such coaters.[23]

Fast curing is, of course, indispensable in the mass production of the cabinet box (which, as noted, consists of particleboard). The board is also run through a wood grain printer consisting of chrome cylinders engraved with the desired grain pattern, and is imprinted with the pattern by means of inks that dry almost immediately when the board has been run through an oven. Prior to the introduction of these processes, the cabinet box was left unfinished, meaning that more expensive particleboard had to be used. Despite the expense of capital investment in the new process, costs of fabricating the box have declined, while the final product has become more attractive.[24]

Table 1. Productivity and related indexes for the wood kitchen cabinet industry, 1972–82

[1977 = 100]

Year	Output per hour			Output	Employee hours		
	All employees	Production workers	Nonproduction workers		All employees	Production workers	Nonproduction workers
1972	82.3	80.9	90.1	73.2	88.9	90.5	81.2
1973	83.6	83.6	83.3	80.5	96.3	96.3	96.6
1974	78.6	81.3	67.6	68.9	87.7	84.8	101.9
1975	86.7	90.9	70.5	61.2	70.6	67.3	86.8
1976	81.4	81.9	79.3	63.0	83.5	83.0	85.7
1977	100.0	100.0	100.0	100.0	100.0	100.0	100.0
1978	100.5	100.2	102.3	116.7	116.1	116.5	114.1
1979	96.4	95.7	100.2	118.5	122.9	123.8	118.3
1980	102.1	104.5	91.4	110.7	108.4	105.9	121.1
1981	99.3	104.4	80.3	105.2	105.9	100.8	131.0
1982	88.7	96.2	63.9	83.7	94.4	87.0	131.0
	Average annual rates of change (in percent)						
1972–82	2.1	2.6	0.0	4.7	2.5	2.0	4.7
1977–82	−1.6	0.0	−8.4	−3.6	−2.0	−3.6	5.2

Capital investment

Expenditures for plant and equipment by kitchen cabinet manufacturers paralleled output trends over the review period. Capital expenditures by the industry, in constant dollars,[25] rose at an average annual rate of nearly 7 percent between 1972 and 1979, then declined at a rate of 17 percent per year to 1982. The industry's capital spending varied from year to year in line with its output, although fluctuations in spending were far greater than those in production. Thus, in 1977, capital spending soared 51 percent compared with 47 percent for output, while in 1980, it plummeted 44 percent (always in terms of price-adjusted dollars) as against a 7-percent output drop. Average annual percentage changes in capital spending for the industry differ markedly from similar estimates for all manufacturing:

	Kitchen cabinets	*Manufacturing*
1972–82	1.9	3.7
1972–79	6.7	8.1
1979–82	−16.8	−6.0

In terms of current dollars, assets per worker in the kitchen cabinet manufacturing industry have risen less than in total manufacturing. According to Bureau of the Census data, assets per worker in the industry increased 42 percent during the review period, compared with 76 percent for all manufacturing. The industry used considerably less capital per worker than manufacturing generally throughout the period, and in recent years, its capital intensity actually declined. Until the mid-1970's, assets per worker in the industry averaged 34 percent of the comparable figure for manufacturing, thereafter dropping to an estimated 26 percent. The decline to some extent reflected a decrease in the value of structures (that is, plant) relative to the industry's gross asset value—from about two-fifths in the earlier part of the period to one-third in the later years. The industry thus tended to place relatively more emphasis on installing new equipment than on constructing new plants.

Structure of the industry

The number of establishments in kitchen cabinet manufacturing rose 65 percent between 1972 and 1982. Most of the growth occurred before 1978, but despite slackening output in subsequent years, the number climbed by an additional 15 percent by 1982. The increase centered on custom cabinet fabricators rather than stock line firms, attesting to the strength of demand for replacement and remodeling of kitchen cabinets and vanities. It is possible that the rapid rise in the number of custom cabinetmaking firms contributed to the productivity slowdown in the industry in the more recent years of the review period. Virtually all the employment increase in the industry during the seventies occurred among custom cabinet and vanity fabricators rather than among stock line establishment.

The great majority of industry establishments are small firms employing fewer than 20 workers. In 1977, four-fifths of all establishments classified in the industry accounted for but one-fifth of total employment. Three percent of all establishments employing 100 workers or more accounted for 40 percent of all workers. Changes over time in the distribution of establishments by employment size were small. Concentration ratios shifted upward for stock line manufacturers, with the eight largest firms accounting for 71 percent of the value of shipments in 1977, as against 49 percent in 1972. The upward shift was less pronounced for custom fabricators (25 percent in 1977 versus 22 percent in 1972.)

Outlook

Swings in residential construction, and high interest rates (if they persist), are likely to retard short- or medium-term productivity improvements in kitchen cabinet manufacturing, because they tend to depress capacity utilization and capital investment. Nevertheless, the experience over the 1972–82 period suggests that, over the long term, productivity should continue to advance. Productivity gains are also foreshadowed by continued diffusion of innovations, at least in the large establishments.

Automated systems are likely to be adopted more widely in the industry as costs of numerical controls decline. The precision of cuts made by such woodworking machinery as saws, shapers, and planers is likely to be controlled much more readily by the use of microcomputers, which would reduce setup time and waste, and improve product quality.[26] The application of coating also appears likely to become increasingly computerized: In a new type of technology, an electronic eye determines the dimensions of the wood component to which the coating is applied, relaying the information to a computer that operates revolving spray heads. These spray heads turn on and off as programmed. Changes in the color of the coating do not require significant downtime. The chemical characteristics of the spray have evolved so as to reduce drying time to little more than 2 minutes, and further reductions are in the offing. Together with appropriate changes in factory layout, such innovations have at least halved labor requirements of establishments in which they have been adopted.[27]

Flexibility in setting up woodworking machinery afforded by microelectronic devices and numerical controls should also advance the efficiency of custom cabinet production. Moreover, families of common parts are more efficiently produced where group technology concepts or flexible manufacturing systems have been adopted by establishments in this segment of the industry.[28]

The Bureau of Labor Statistics has projected an average annual rise in the employment of the industry group to which kitchen cabinet manufacturing belongs of 2.3 to 2.4 percent between 1982 and 1995. These rates are somewhat lower than the 2.8-percent annual increase recorded for the 1972–82 span. The occupational mix of the industry group is not projected to change significantly. The Bureau also projects

great strength in residential construction in the years ahead, with 2.16 million private housing starts in 1988, and 1.9 million annually thereafter to 1995.[29] Expenditures for replacement and remodeling are also likely to increase, considering the large additions to the stock of residential housing in the 1970's.[30] Consequently, if demand for kitchen cabinets and vanities grows with the projected rise in residential construction and replacement and remodeling outlays, capital investment in the industry should be spurred, ensuring continued productivity improvement. □

FOOTNOTES

[1] Establishments primarily manufacturing wood kitchen cabinets and wood bathroom vanities are classified as number 2434 in the *Standard Industrial Classification* (SIC) *Manual* of the Office of Management and Budget. As discussed in the text, the industry also manufactures cabinets made of plastics. Average annual rates shown in the text and the table are based on the linear least squares trend of the logarithms of the index numbers. The indexes for productivity and related variables will be updated annually and published in the annual BLS bulletin, *Productivity Measures for Selected Industries*.

[2] Made-to-measure units (custom cabinets) can often be manufactured with standard production methods and high-speed production machinery, although the range of designs may be limited. According to one report, up to 200 different sizes can be made in the same establishment, with setup changes causing little loss in efficiency. See *Woodworking and Furniture Digest,* April 1981, pp. 17–18. See also footnote 28.

[3] Metal cabinets are classified on SIC 2514. In 1982, they accounted for 1 percent of total kitchen cabinet output, compared with up to 25 percent during the late forties and early fifties. See William B. Lloyd, *Millwork, Principles and Practices* (Chicago, Cahners Publishing Co., 1966), p. 353.

[4] Housing starts surged in 1983, rising by 60 percent from 1982. A continued, if moderate, increase is indicated for 1984. Evidence suggests that output and employment in kitchen cabinet and vanity manufacturing also rose strongly over these 2 years.

[5] Unpublished data, Bureau of the Census.

[6] The rates noted in the text mask year-to-year swings of sometimes great amplitude. For example, in 1975, remodeling outlays (in constant dollars) soared 90 percent; in 1978, they dropped 36 percent. These swings, of course, affected kitchen cabinet and vanity output.

[7] U.S. Department of Commerce, Bureau of the Census, *Residential Alterations and Repairs*, Annual, 1982, table 7, p. 14.

[8] Estimate from National Kitchen and Bath Association.

[9] Information from National Kitchen and Bath Association.

[10] Number of bathrooms in new housing in percent:

	1	*1-½*	*2*	*2-½ or more*
1982	22	11	45	22
1979	16	16	48	26
1975	24	17	40	20
1971	21	21	34	16

See Bureau of the Census, *Characteristics of New Housing*, various years.

[11] Average annual rates of change in employment and employee hours in kitchen cabinet manufacturing compared with manufacturing generally as follows:

	Kitchen cabinets	*Manufacturing*
1972–82:		
Employment	2.8	−0.2
Employee hours	2.5	−1.2
Ratio	1.12	0.17
1972–79:		
Employment	4.8	1.4
Employee hours	4.6	0.5
Ratio	1.04	2.80
1979–82:		
Employment	−7.6	−3.6
Employee hours	−7.8	−4.5
Ratio	0.97	0.80

[12] Data from the Bureau of Labor Statistics. See also Jack Veigle and Horst Brand, "Millwork industry shows slow growth in productivity," *Monthly Labor Review*, September 1982, pp. 21–26.

[13] Until 1972, kitchen cabinet and vanity manufacturing was classified as part of the millwork industry in the Census of Manufactures. See also Veigle and Brand, "Millwork industry," especially the technology section of the article.

[14] *Millwork, Principles and Practices*, p. 353.

[15] Information from William Lloyd, author of *Millwork, Principles and Practices*.

[16] Information from industry sources.

[17] Information from industry sources.

[18] See *An Inventory of Machines and Equipment in the Woodworking and Furniture Market*, issued by *Woodworking and Furniture Digest*, Wheaton, Ill., 1979. *An Inventory* presents the number of woodworking machines, by type, for each woodworking industry (as classified by the *Standard Industrial Classification Manual*). In a separate presentation, *An Inventory* shows the age breakdown of each type of woodworking machinery, but the age breakdown is not grouped by industry. The discussion in the text assumes that the age breakdown applies to machinery in kitchen cabinet manufacturing where this industry accounts for a relatively large proportion of a given type of woodworking machinery. The authors of *An Inventory* believe this assumption to be valid.

[19] *Furniture/Woodworking Product News*, May 1983.

[20] "Larger manufacturers . . . have been quick to pick up many kinds of sanding attachments, narrow belts, abrasive wheels . . . , and anything else that can reduce or eliminate secondary steps in process when these attachments are offered on multifunction machines." See *Woodworking and Furniture Digest*, May 1981, pp. 18–19.

[21] *Ibid.*, under "New developments," pp. 16 ff.

[22] *Woodworking and Furniture Digest*, January 1981, p. 10.

[23] Industry sources. See also *Furniture/Woodworking Product News*, March 1976, p. 16.

[24] Industry sources.

[25] Constant-dollar data based on deflators from the Bureau of Business Economics, U.S. Department of Commerce.

[26] Industry sources.

[27] Industry sources.

[28] Flexible manufacturing systems depend on automatically adjustable machinery, often linked with robots or other automatic transfer devices. See *American Machinist*, December 1981, pp. 55–56.

[29] See Arthur J. Andreassen and others, "Economic outlook for the 1990's: three scenarios for economic growth," *Monthly Labor Review*, November 1983, pp. 11–23.

[30] The number of housing units rose 17 percent between 1960 and 1970, and 28 percent between 1970 and 1980. See *Statistical Abstract of the United States, 1982–83*, p. 751.

APPENDIX: Measurement techniques and limitations

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

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

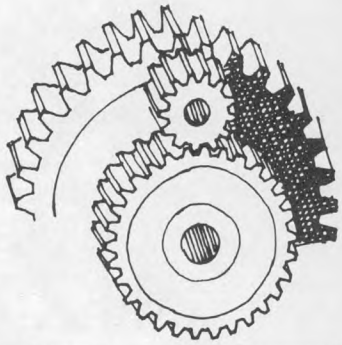
In the absence of adequate physical quantity data, the output index for this industry was constructed using a deflated value technique. The value of shipments of the various product classes was adjusted for price changes by appropriate Producer Price Indexes and Industry Sector Price Indexes to derive real output measures. These, in turn, were combined with employee hour weights to derive the overall output measure. The result is a final output index that is conceptually close to the preferred output measure.

Employment and employee hour indexes were derived from data published by the Bureau of Labor Statistics. Employees and employee hours are each considered homogeneous and additive, and thus do not reflect changes in the qualitative aspects of labor, such as skill and experience.

The indexes of output per employee hour do not measure any specific contributions, such as that of labor or capital. Rather, they reflect the joint effect of factors such as changes in technology, capital investment, capacity utilization, plant design and layout, skill and effort of the work force, managerial ability, and labor-management relations.

Erratum

The provisions related to financing and disqualification under Rhode Island's unemployment insurance program were not enacted, contrary to the report in "Changes in unemployment insurance legislation during 1984," *Monthly Labor Review*, January 1985.



Productivity Reports

Productivity increased in many industries in 1983

ARTHUR S. HERMAN

Productivity, as measured by output per employee hour, increased in 1983 in more than three-quarters of the industries for which the Bureau of Labor Statistics regularly publishes data. Productivity gains were unusually large in many industries and were in contrast to 1982 when productivity declined in almost half of the industries measured. The widespread gains in 1983 are consistent with the increase in the nonfarm business sector of the economy, which grew 3.5 percent.

Table 1 shows productivity trends in industries measured by the Bureau and includes new measures introduced for additional industries: refrigeration and heating equipment, internal combustion engines, machine tool accessories, and wood kitchen cabinets.[1]

Changes by industry

Manufacturing. The steel industry, one of the more important industries included, had a record productivity increase of 27.7 percent, compared with a record productivity decline of 18.8 percent in 1982. Steel output was up 14.7 percent in 1983, as demand increased, especially from the motor vehicle and appliance markets, and employee hours declined 10.2 percent as the industry continued its consolidations and plant closings. The motor vehicles industry, another important industry covered, had a large productivity gain of 14.2 percent which was based on a steep increase in output of 30.6 percent, while employee hours were up 14.3 percent. Demand for motor vehicles increased significantly as compared with 1982 when demand was lower and output declined 8.0 percent.

Another manufacturing industry with a large productivity gain was household appliances. Productivity grew 17.6 percent in this key industry, as output was up a sharp 27.4 percent and hours increased 8.4 percent. Demand for household appliances was aided by increased sales of homes, more favorable consumer credit, and an increase in personal disposable income in 1983.

Other manufacturing industries with unusually large productivity gains included: synthetic fibers (21.5 percent), gray iron foundries (17.4 percent), hydraulic cement (15.9 percent), copper rolling and drawing (14.9 percent), brick and structural clay tile (12.4 percent), primary aluminum (12.1 percent), electric lamps (11.9 percent), aluminum rolling and drawing (11.1 percent), and paints (10.5 percent). All of these industries, except two, had output gains of more than 10 percent in 1983.

Conversely, a small number of manufacturing industries had productivity declines in 1983. Noteworthy was machine tools in which productivity dropped a steep 29.9 percent as output fell 43.5 percent.

Mining. All of the mining industries recorded large gains in productivity in 1983. Iron mining (usable ore) posted the largest gain—41.2 percent—of all the measures. Output was up 7.7 percent in this industry while hours fell off sharply. Coal mining had a productivity increase of 13.9 percent, as output fell 6.4 percent and hours dropped 17.7 percent. Copper mining (recoverable metal) had a productivity gain of 10.8 percent, as output fell 9.5 percent and hours declined even more. In nonmetallic minerals, productivity was up 7.9 percent, as output grew due to the increased construction activity in 1983.

Transportation and utilities. Productivity was up in most transportation and utility industries. In railroads (revenue traffic), productivity advanced sharply by 23.0 percent. Output grew 6.8 percent, as commodity shipments increased in 1983 and hours continued to decline by 13.1 percent. Air transportation had a large productivity gain of 9.9 percent, as output grew 8.5 percent and hours declined slightly. Productivity grew 2.2 percent in petroleum pipelines as hours fell more than output. However, productivity dropped 6.6 percent in bus carriers, with output dropping 11.7 percent and hours falling 5.5 percent.

In telephone communications, productivity was up 12.7 percent, as output grew 1.7 percent and hours declined 9.8 percent. Electric utilities posted a gain in productivity of 1.7 percent—the first increase in this industry since 1977. On the other hand, gas utilities had a large productivity

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Table 1. Indexes of output per employee hour in selected industries, 1978–83, and percent changes 1982–83 and 1978–83

SIC Code[1]	Industry	1978	1979	1980	1981	1982	1983[2]	Percent change 1982–83	Average annual percent change 1978–83
	Mining								
1011	Iron mining, crude ore	116.8	125.5	129.0	139.0	106.9	147.3	37.8	2.2
1011	Iron mining, usable ore	119.2	125.6	127.5	136.8	104.0	146.9	41.2	1.6
1021	Copper mining, crude ore	109.6	108.8	99.1	101.5	105.8	126.9	19.9	1.9
1021	Copper mining, recoverable metal	107.6	97.8	91.3	97.2	115.4	127.9	10.8	4.2
111,121	Coal mining	106.4	99.4	112.5	122.2	119.1	135.6	13.9	5.4
121	Bituminous coal and lignite mining	106.7	99.6	112.6	122.7	120.0	136.5	13.7	5.5
14	Nonmetallic minerals, except fuels	104.6	102.4	96.2	95.0	89.8	96.9	7.9	−2.2
142	Crushed and broken stone	109.0	108.4	103.3	100.7	98.1	108.2	10.3	−1.0
	Manufacturing								
2011, 13	Red meat products	98.7	101.7	107.0	107.9	107.7	113.2	5.1	2.5
2011	Meat packing plants	100.9	104.9	109.1	114.2	115.8	124.8	7.8	4.1
2013	Sausages and other prepared meats	93.6	94.6	101.8	94.3	89.8	89.9	0.1	−1.2
2026	Fluid milk	108.0	116.3	124.8	129.3	137.0	146.2	6.7	6.0
203	Preserved fruits and vegetables	104.4	99.3	101.2	99.6	107.6	[3]	[3]	[4]0.6
2033	Canned fruits and vegetables	103.7	101.4	100.6	99.7	106.3	[3]	[3]	[4]0.3
204	Grain mill products	100.4	102.2	107.1	112.9	[3]	[3]	[3]	[3]
2041	Flour and other grain mill products	101.5	98.5	96.7	99.2	[3]	[3]	[3]	[3]
2043	Cereal breakfast foods	101.7	107.6	106.5	110.0	116.9	[3]	[3]	[4]3.1
2044	Rice milling	92.7	96.3	111.8	117.9	[3]	[3]	[3]	[3]
2045	Blended and prepared flour	92.5	91.0	104.8	104.6	[3]	[3]	[3]	[3]
2046	Wet corn milling	102.0	110.8	129.2	143.8	[3]	[3]	[3]	[3]
2047,48	Prepared feeds for animals and fowls	100.8	102.0	106.2	112.6	[3]	[3]	[3]	[3]
205	Bakery products	97.2	94.1	92.3	94.3	100.4	[3]	[3]	[4]0.7
2061,62,63	Sugar	101.0	109.1	109.1	111.2	105.7	107.6	1.8	0.7
2061,62	Raw and refined cane sugar	100.7	107.3	107.8	111.1	102.5	112.8	10.0	1.3
2063	Beet sugar	101.2	110.9	111.7	111.4	110.6	99.0	−10.5	−0.3
2082	Malt beverages	100.0	107.4	112.1	113.0	115.8	122.1	5.4	3.6
2086	Bottled and canned soft drinks	104.5	105.6	109.8	114.3	118.3	126.4	6.8	3.9
2111,21,31	All tobacco products	102.8	102.2	102.2	100.6	100.8	100.6	−0.2	−0.5
2111,31	Cigarettes, chewing and smoking tobacco	103.8	102.1	101.1	98.9	98.6	97.2	−1.4	−1.3
2121	Cigars	98.2	103.7	110.3	112.5	118.3	129.1	9.1	5.2
2251,52	Hosiery	101.4	106.5	105.3	118.9	110.3	107.1	−2.9	1.4
2281	Nonwool yarn mills	104.2	103.9	99.8	103.2	119.6	[3]	[3]	[4]2.7
2421	Sawmills and planing mills, general	101.4	96.7	101.8	104.5	117.6	118.6	0.9	4.1
2431	Millwork	90.4	92.3	93.9	96.9	87.0	[3]	[3]	[4]−0.3
2434	Wood kitchen cabinets	100.5	96.4	102.1	99.3	88.7	[3]	[3]	[4]−2.2
2435,36	Veneer and plywood	101.7	94.6	102.7	106.7	110.5	[3]	[3]	[4]2.9
2435	Hardwood veneer and plywood	100.7	97.8	104.1	100.3	100.8	[3]	[3]	[4]0.3
2436	Softwood veneer and plywood	102.1	93.4	102.7	111.8	116.6	[3]	[3]	[4]4.6
251	Household furniture	104.6	101.3	99.7	102.6	105.0	113.4	8.0	1.6
2511,17	Wood household furniture	104.9	101.5	97.1	97.0	98.8	[3]	[3]	[4]−1.6
2512	Upholstered household furniture	108.8	104.9	101.9	110.1	116.2	[3]	[3]	[4]1.8
2514	Metal household furniture	97.4	89.9	93.1	97.9	108.6	[3]	[3]	[4]3.1
2515	Mattresses and bedsprings	101.4	102.6	111.9	113.7	104.2	[3]	[3]	[4]1.6
252	Office furniture	100.1	107.3	112.5	109.1	108.6	[3]	[3]	[4]1.8
2521	Wood office furniture	100.7	110.7	109.2	99.4	97.4	[3]	[3]	[4]−1.7
2522	Metal office furniture	99.9	104.8	114.4	114.7	115.4	[3]	[3]	[4]3.9
2611,21,31,61	Paper, paperboard and pulp mills	103.2	105.4	105.2	104.4	106.2	115.8	9.0	1.7
2643	Paper and plastic bags	99.9	97.6	94.0	91.7	94.5	[3]	[3]	[4]−1.7
2651	Folding paperboard boxes	102.8	101.4	97.1	98.6	96.8	97.8	1.0	−1.1
2653	Corrugated and solid fiber board boxes	103.5	107.1	111.3	110.2	113.0	118.8	5.1	2.4
2823,24	Synthetic fibers	105.2	115.0	115.7	120.9	109.0	132.4	21.5	3.0
2834	Pharmaceutical preparations	99.0	106.4	107.3	106.1	109.6	[3]	[3]	[4]2.0
2841	Soaps and detergents	105.2	104.0	108.4	105.9	99.5	[3]	[3]	[4]−0.9
2844	Cosmetics and other toiletries	99.3	93.1	82.5	74.9	81.9	[3]	[3]	[4]−5.9
2851	Paints and allied products	104.7	105.7	102.1	101.5	108.0	119.3	10.5	2.1
2911	Petroleum refining	101.3	94.9	94.2	83.7	82.5	86.9	5.3	−3.7
301	Tires and inner tubes	108.8	109.5	105.6	123.2	134.8	147.7	9.6	6.8
3079	Miscellaneous plastics products	100.8	94.8	95.7	98.5	111.2	[3]	[3]	[4]2.4
314	Footwear	102.5	100.2	99.1	95.6	97.3	102.0	4.8	−0.4
3221	Glass containers	101.4	106.7	112.0	118.7	117.8	120.0	1.9	3.5
3241	Hydraulic cement	101.3	96.0	87.0	91.1	95.3	110.5	15.9	1.3
325	Structural clay products	102.6	96.1	97.8	100.9	105.3	113.9	8.2	2.4
3251,53,59	Clay construction products	102.6	92.1	94.8	98.4	107.6	115.1	7.0	3.1
3251	Brick and structural clay tile	96.5	85.8	85.6	85.2	92.5	104.0	12.4	1.7
3253	Ceramic wall and floor tile	115.3	111.8	120.3	126.5	132.1	[3]	[3]	[4]4.0
3255	Clay refractories	102.9	109.1	108.0	109.0	98.0	107.9	10.1	−0.2
3271,72	Concrete products	98.6	94.6	93.2	92.5	96.8	[3]	[3]	[4]0.6
3273	Ready-mixed concrete	103.1	99.9	93.1	95.4	90.4	[3]	[3]	[4]−3.0
331	Steel	108.3	106.9	102.9	112.0	90.9	116.1	27.7	−0.2
3321	Gray iron foundries	102.1	96.8	90.8	92.5	95.3	111.9	17.4	1.2
3324,25	Steel foundries	98.1	99.4	99.1	90.8	93.0	[3]	[3]	[4]−2.0

Table 1. Continued—Indexes of output per employee hour in selected industries, 1978–83, and percent changes 1982–83 and 1978–83

SIC Code[1]	Industry	1978	1979	1980	1981	1982	1983[2]	Percent change 1982–83	Average annual percent change 1978–83
3331,32,33	Primary copper, lead, and zinc	96.5	106.5	103.7	118.6	121.8	131.6	8.0	6.1
3331	Primary copper	99.4	113.3	105.3	124.4	119.9	124.6	3.9	4.3
3334	Primary aluminum	99.6	99.7	100.0	103.8	103.0	115.5	12.1	2.5
3351	Copper rolling and drawing	100.2	98.8	94.9	99.2	107.6	123.6	14.9	3.9
3353,54,55	Aluminum rolling and drawing	104.6	101.5	101.9	99.4	105.1	116.8	11.1	1.8
3411	Metal cans	102.3	103.6	102.6	108.1	119.0	130.0	9.2	4.9
3423	Hand and edge tools	100.6	104.3	99.0	95.8	95.1	[3]	[3]	[4] −2.0
3441	Fabricated structural metal	100.4	102.0	101.9	98.3	101.4	[3]	[3]	[4] −0.2
3494	Valves and pipe fittings	100.9	104.3	101.4	103.5	100.4	[3]	[3]	[4] −0.2
3498	Fabricated pipe and fittings	100.7	90.1	89.9	93.1	89.8	[3]	[3]	[4] −1.9
3519	Internal combustion engines, n.e.c.	105.4	98.8	94.8	94.4	87.0	[3]	[3]	[4] −4.2
352	Farm and garden machinery	101.0	103.3	96.3	98.6	98.5	[3]	[3]	[4] −1.0
3523	Farm machinery	98.4	100.2	94.0	98.0	95.0	[3]	[3]	[4] −0.9
3524	Lawn and garden equipment	108.6	113.9	107.0	101.3	106.8	[3]	[3]	[4] −1.5
3531	Construction machinery and equipment	105.8	100.3	97.4	96.1	89.0	[3]	[3]	[4] −3.8
3541,42	Machine tools	102.5	101.9	98.7	96.5	93.2	65.3	−29.9	−7.0
3541	Metal cutting machine tools	103.6	103.1	100.9	99.3	95.1	64.5	−32.2	−7.2
3542	Metal forming machine tools	99.9	98.4	92.4	88.0	87.6	67.9	−22.5	−6.4
3545	Machine tool accessories	104.0	101.7	100.3	103.7	91.5	[3]	[3]	[4] −2.3
3561,63	Pumps and compressors	103.3	102.5	101.3	102.7	97.7	[3]	[3]	[4] −1.1
3561	Pumps and pumping equipment	101.1	100.7	99.2	100.6	94.9	[3]	[3]	[4] −1.3
3562	Ball and roller bearings	105.6	105.3	94.7	93.4	82.8	87.6	5.8	−4.7
3563	Air and gas compressors	106.1	106.1	105.5	106.8	107.3	[3]	[3]	[4] 0.3
3585	Refrigeration and heating equipment	100.6	102.2	95.0	101.1	101.7	[3]	[3]	[4] 0.1
3612	Transformers	103.4	108.5	110.8	107.1	102.6	99.3	−3.2	−1.1
3613	Switchgear and switchboard apparatus	102.4	102.7	102.6	98.4	103.5	101.8	−1.6	−0.1
3621	Motors and generators	98.6	97.9	94.9	97.7	100.1	94.4	−5.7	−0.3
3631,32,33,39	Major household appliances	100.5	108.9	105.9	108.1	110.5	129.9	17.6	3.9
3631	Household cooking equipment	100.3	108.5	103.4	104.9	114.8	144.3	25.7	5.9
3632	Household refrigerators and freezers	98.4	112.2	114.3	117.2	115.2	127.5	10.7	4.1
3633	Household laundry equipment	102.3	108.2	102.2	104.0	106.1	118.0	11.2	1.9
3639	Household appliances, n.e.c.	104.0	104.3	101.6	103.9	101.3	121.1	19.5	2.0
3641	Electric lamps	103.0	106.2	104.7	108.8	111.0	124.2	11.9	3.2
3645,46,47,48	Lighting fixtures	100.6	95.0	93.9	89.4	92.6	[3]	[3]	[4] −2.2
3651	Radio and television receiving sets	113.1	118.2	116.4	132.8	157.9	[3]	[3]	[4] 8.2
371	Motor vehicles and equipment	99.7	98.5	92.2	95.0	99.7	113.9	14.2	2.1
3825	Instruments to measure electricity	100.3	99.0	106.3	109.1	114.7	[3]	[3]	[4] 3.7
	Other								
401	Railroad transportation-revenue traffic	104.5	104.7	107.3	111.5	115.8	142.4	23.0	5.5
401	Railroad transportation-car miles	102.8	102.9	107.9	107.6	110.1	128.9	17.1	3.9
4111,31,414 PT	Class I bus carriers	96.7	98.3	100.8	90.9	90.0	84.1	−6.6	−3.0
4213 PT	Intercity trucking[6]	99.8	98.6	94.3	98.7	93.3	[3]	[3]	[4] −1.3
4213 PT	Intercity trucking—general freight[6]	98.6	96.6	87.9	92.5	86.8	[3]	[3]	[4] −2.9
4511,21, PT	Air transportation[6]	109.3	113.1	106.2	104.9	114.7	126.0	9.9	2.1
4612,13	Petroleum pipelines	101.7	101.7	93.0	86.0	89.2	91.2	2.2	−2.9
4811	Telephone communications	105.8	110.8	118.1	124.4	129.1	145.5	12.7	6.2
491,492,493	Gas and electric utilities	98.2	97.6	96.2	94.4	89.5	88.4	−1.2	−2.3
491,493 PT	Electric utilities	96.8	95.4	94.0	93.0	89.3	90.8	1.7	−1.5
492,493 PT	Gas utilities	101.4	103.4	102.1	98.1	89.9	82.6	−8.1	−4.2
54	Retail food stores[7]	95.7	98.0	100.8	98.2	96.9	97.1	0.2	[5]
5511	Franchised new car dealers	98.6	94.6	99.5	96.6	97.4	102.2	4.9	0.7
5541	Gasoline service stations[7]	104.3	109.5	107.9	110.8	118.0	121.5	3.0	2.9
56	Apparel and accessory stores[7]	110.0	112.0	116.4	122.0	123.8	125.2	1.1	2.9
5611	Men's and boys' clothing stores[7]	105.4	110.0	110.0	120.9	121.3	125.2	3.2	3.6
5621	Women's ready-to-wear stores[7]	111.3	115.0	116.2	125.5	139.0	147.8	6.3	6.1
5651	Family clothing stores[7]	96.4	99.6	109.6	113.3	116.2	118.1	1.6	4.4
5661	Shoe stores[7]	108.7	111.2	107.7	110.8	106.0	104.6	−1.3	−0.9
58	Eating and drinking places[7]	99.3	99.2	99.4	96.8	96.1	98.4	2.4	−0.5
5912	Drug and proprietary stores[7]	102.3	102.9	105.6	105.8	105.6	104.8	−0.8	0.6
602	Commercial banking	101.2	99.3	92.7	91.8	96.2	[3]	[3]	[4] −1.8
7011	Hotels, motels, and tourist courts[7]	103.1	102.4	98.6	96.2	93.6	94.3	0.7	−2.1
721	Laundry and cleaning services[7]	100.6	94.1	87.8	85.1	88.6	88.1	−0.6	−2.5

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

[2]Preliminary data.

[3]Not available.

[4]Percent change, 1978–82.

[5]Rate of change is less than 0.05 percent.

[6]Output per employee.

[7]Output per hour of all persons.

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

n.e.c. = not elsewhere classified.

decline of 8.1 percent, as output dropped 10.5 percent in 1983.

Trade and services. Productivity changes were varied among the trade and service industries. Productivity was up 4.9 percent for new car dealers, as output grew 8.5 percent, aided by a sharp increase in new car sales. Productivity grew 3.0 percent in gasoline service stations, as output increased 2.4 percent and hours were down 0.6 percent. Eating and drinking places had a productivity gain of 2.4 percent based on a significant gain in output of 5.9 percent. Although the overall apparel store industry had a productivity gain of 1.1 percent in 1983, one of the component industries, shoe stores, had a decline in productivity of 1.3 percent. Small productivity gains were posted by the hotel and motel industry (0.7 percent) and the retail food store industry (0.2 percent). Conversely, productivity declines occurred in drug stores (−0.8 percent) and laundry and cleaning services (−0.6 percent).

Trends, 1978–83

Except for metal forming machine tools and bus carriers, all the industries measured have recorded average annual gains in productivity over the long term (1947–83 for many of the industries). Over the more recent period (1978–83), however, about 40 percent of the industries recorded declining rates of productivity. In addition, almost three quarters of the industries had lower rates of productivity change during 1978–83 than in the preceding long-term period (1947–78 for many industries). The slowdown in productivity in the more current period matches the trend in the nonfarm business sector of the economy, where productivity grew at the low rate of 0.5 percent per year from 1978 to 1983, compared with a 2.3-percent rate from 1947 to 1978.

Gains. The tires and tubes industry had the highest rate (6.8 percent per year) of productivity gain of all the industries measured during the 1978–83 period. Although output declined 3.6 percent per year in this industry, employee hours fell even more, dropping at a rate of 9.7 percent in the period. The introduction of new, more automatic equipment for tiremaking as well as the closing of a number of old and inefficient plants during the period, allowed the industry to increase productivity significantly despite the drop in output. The telephone communications industry had the second highest rate of gain at 6.2 percent. Output was up 5.7 percent while hours fell off slightly during the period. Continuing adoption of electronic switching equipment, fiber optic cables, automatic testing equipment, and increasing computerization have aided productivity growth in this industry. Other industries with high rates of growth from 1978 to 1983 include: primary copper, lead, and zinc and women's ready-to-wear clothing stores (both 6.1 percent); fluid milk (6.0 percent); household cooking equipment (5.9 percent); railroad transportation (5.5 percent); and coal mining (5.4 percent).

Declines. Among the many industries with declining productivity rates, the machine tool industries have recorded the largest drops over the 1978–83 period. Metal cutting machine tools declined at a rate of 7.2 percent, as output averaged a 13.9-percent decline and hours fell at a rate of 7.2 percent. Productivity in the metal forming machine tool industry fell at a 6.4-percent rate based on an average decline of 15.7 percent in output and a 9.9-percent drop in hours. These industries were significantly affected by the economic slowdowns and by increasing imports during the 1978–83 period. Output fell off sharply, leading to steep declines in productivity, because machine tool manufacturers tend to retain highly skilled workers during cyclical downturns. In addition, because demand for machine tools tends to lag in economic recoveries, these industries did very poorly in 1983.

The next largest productivity falloff from 1978 to 1983 was in the ball and roller bearings industry—4.7 percent. Output fell at a 9.9-percent rate as the economic slowdowns cut sharply into industry demand and hours declined at a rate of 5.5 percent. The gas utilities industry also had a large productivity decline of 4.2 percent per year over this period. Although the number of customers in this industry increased, output actually declined at a 2.7-percent rate, due in part to conservation and introduction of more energy efficient equipment, while employee hours increased at a 1.5-percent rate. Other industries with declining rates from 1978 to 1983 included petroleum refining (−3.7 percent), bus carriers (−3.0 percent), and petroleum pipelines (−2.9 percent). □

———*FOOTNOTE*———

[1] For a detailed report on these industries, see Horst Brand and Clyde Huffstutler, "Productivity in making air conditioners, refrigeration equipment and furnaces," *Monthly Labor Review*, December 1984, pp. 11–17; Horst Brand and Norman Bennett, "Productivity trends in kitchen cabinet manufacturing," this issue, pp. 24–30; and articles on the internal combustion engine and machine tool accessory industries which will appear in forthcoming issues of the *Review*.

Technical Note

Employment in recession and recovery: a demographic flow analysis

DONALD R. WILLIAMS

As in earlier downturns, the impacts of recession during 1981–82 were not evenly distributed among the many demographic groups in the labor force. For example, the rise in the unemployment rate was greatest, in relative terms, for men. The decrease in labor force participation was most pronounced among teenagers, while the labor force participation rate for women actually *increased* during this period of general economic decline.

To what extent were these and other differential impacts of the recession the result of differences in the behavior of the labor force participants? To what extent were they instead the result of differing labor market opportunities? These, of course, are very difficult questions to answer, particularly when dealing with aggregate data. To illustrate, a decrease in labor force participation can be the result of two factors—an *increase* in the rate at which individuals *leave* the labor force, or a *decrease* in the rate at which workers *enter* the labor force. Because these and other types of labor force transitions can have different behavioral interpretations (that is, they may have "different kinds of sources"), it is important to identify which transitions generate demographic differences in labor force participation and unemployment experience. To address these issues, I examine, by age, sex, and race, the monthly flows into and out of the labor force and between employment and unemployment from January 1981 to January 1984, well into the current recovery period.

Distribution of economic impacts

Race, sex, and age differences in the *levels* of unemployment and labor force participation rates can be seen in table 1. The entries are averages over the period December 1980 to December 1983 of data from Current Population Survey "Gross Change Tabulations," which give monthly estimates of the numbers of people employed, unemployed, and out of the labor force during the preceding month. The entries in the table therefore are not based on or equivalent to the unemployment and participation rates published by the Bureau of Labor Statistics.[1]

Inspection of the table indicates, however, that the well-known race, sex, and age differences found in the published estimates are also found here. Blacks and members of other races, on average, have higher unemployment rates than whites, and lower levels of labor force participation, regardless of sex or age. Women have slightly lower unemployment rates than men (a relatively recent phenomenon), and lower labor force participation rates, regardless of age or race. Unemployment rates are seen to decrease with age for all sex/race groups, while labor force participation rates increase and then decrease with age, peaking in the 25- to 59-year-old "prime-age" category. Although the point estimates from the gross change data may differ from the published BLS estimates, the age, race, and sex relationships seem to be the same.

The focus of this study is not on differences in the levels of unemployment and participation, however, but rather on differences in their behavior over the most recent business cycle. The National Bureau of Economic Research has identified the peak of that cycle as July 1981 and the trough as November 1982. The corresponding changes in the unemployment rates during the period for each demographic group are presented in table 2, along with changes since the recovery began, for the November 1982 to December 1983 period. During the downturn, the unemployment rate increased more on average for men than for women, more for whites than for blacks and others, and more for older (over 59) workers than for teenagers (age 16 to 19), youth (20 to 24), or prime-age workers (24 to 59). The greatest increases were felt among older women, who experienced growth in their unemployment rate of more than 158 percent. The sex difference was reversed for nonwhite teens, youth, and older workers, with nonwhite women experiencing greater relative unemployment increases than nonwhite men. The racial difference was reversed for teenagers.

Of course, the lags in the impacts of an economic downturn can vary across demographic groups, so that the "official" definition of the timing of the downturn may not be the appropriate timeframe for this type of analysis. For example, the unemployment rate for black men did not peak until July 1983. To account for this, I computed the per-

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Table 1. Average unemployment and labor force participation rates by sex, race, and age, December 1980–December 1983

[In percent]

Sex and race	Unemployment rate					Labor force participation rate				
	Total	Teens (16–19)	Youth (20–24)	Prime-age (25–59)	Older (60+)	Total	Teens (16–19)	Youth (20–24)	Prime-age (25–59)	Older (60+)
Total	8.6	21.5	14.1	6.7	4.0	64.0	53.8	76.0	78.1	22.4
White	7.5	18.7	11.6	5.9	3.6	64.4	57.2	78.0	78.5	22.2
Nonwhite	16.3	42.2	28.0	12.0	7.2	62.7	38.4	68.1	76.8	22.9
Males	8.6	22.5	15.2	6.6	4.1	76.9	57.2	84.6	92.7	31.7
White	7.6	19.8	13.1	5.9	3.7	77.6	60.1	85.7	93.5	31.9
Nonwhite	16.7	42.7	28.6	12.2	8.8	71.6	41.9	77.6	87.3	29.6
Females	8.5	20.2	12.3	6.8	3.8	52.7	51.0	68.9	64.6	15.3
White	7.4	17.4	9.9	6.0	3.6	52.3	54.2	70.6	64.1	15.0
Nonwhite	15.9	41.6	27.2	11.8	5.1	55.3	35.1	60.1	68.2	17.9

NOTE: Estimates calculated from Current Population Survey "Gross Change Tabulations."

centage change in the unemployment rate for each demographic group between the month the group's rate was at its minimum and the month it reached its maximum. These estimates are presented in the following tabulation, for the "all ages" and "teens" subgroups:

	All ages	*Teens*
All workers	60.3	52.7
White	64.7	43.4
Blacks and others	50.3	62.1
Males	79.3	45.3
Whites	84.3	56.0
Blacks and others	59.8	81.2
Females	45.7	41.5
Whites	46.3	37.2
Blacks and others	46.3	57.1

Most of the qualitative conclusions noted above do not change. The relative increases in the unemployment rate were still worse for men than for women and worse for whites than for members of other races (except among teens). One difference is that, by this measure, teens suffered greater than average unemployment rate increases, while one might conclude the opposite using the measure in table 2.

Referring again to table 2, we see that the pattern in the recovery period differs somewhat from that of the recession. For instance, the effect of the recovery was relatively stronger for women than for men, while the opposite was true of the recession. The racial difference remained the same: the effect of the recovery was felt more, on average, by whites than by nonwhites. The sex difference is primarily due to the fact that the unemployment rate continued to rise for nonwhite men well into the recovery period. Again, these observations are consistent with those based on the published unemployment rates.[2]

Many explanations have been offered for these differences. For example, the effect of the downturn has been said to have been greater for men than for women because the economic decline affected primarily the goods-producing, as opposed to the service-producing, sector.[3] Construc-

Table 2. Percent change in unemployment and labor force participation rates by sex, race, and age, July 1981–November 1982 and November 1982–December 1983

Sex and age	July 1981—November 1982					November 1982—December 1983				
	Total	Teens (16–19)	Youth (20–24)	Prime-age (25–59)	Older (60+)	Total	Teens (16–19)	Youth (20–24)	Prime-age (25–59)	Older (60+)
Unemployment rate										
Total	44.7	22.0	27.3	57.6	47.3	−25.0	−21.0	−6.2	−25.4	.4
White	46.7	22.1	31.9	59.0	45.9	−27.6	−22.7	−8.1	−26.3	5.3
Nonwhite	33.5	21.2	19.1	49.2	65.1	−16.2	−16.4	−7.0	−18.1	−30.9
Males	54.0	26.3	29.1	69.6	49.1	−24.5	−17.1	.4	−25.6	3.4
White	55.7	25.6	31.5	71.9	52.4	−24.9	−17.3	−2.2	−26.2	9.7
Nonwhite	40.1	24.6	15.8	52.8	26.4	−22.2	−19.7	6.6	−21.9	−21.0
Females	33.5	22.2	32.1	44.0	52.5	−25.6	−25.7	−19.5	−23.1	−9.8
White	35.2	19.7	32.4	42.7	36.5	−31.2	−28.3	−17.0	−26.5	−1.9
Nonwhite	26.3	26.7	22.6	45.3	158.3	−9.0	−12.7	−19.9	−13.8	−44.6
Labor force participation rate										
Total	.3	−4.1	3.1	1.3	−1.3	.8	−.3	−1.8	1.2	−1.4
White	.1	−3.3	.5	1.3	−2.4	−.1	−1.9	−.1	.4	−1.7
Nonwhite	1.7	−4.6	5.1	1.6	5.4	6.9	5.6	2.2	6.5	.7
Males	−.8	−6.3	.1	.1	−4.3	.3	−1.5	1.0	.3	−1.5
White	−1.1	−5.7	−.1	(1)	−5.8	.3	−3.1	1.3	−.1	−1.3
Nonwhite	2.4	−7.5	2.7	2.1	12.5	4.3	9.0	6.3	2.9	−5.0
Females	1.7	−1.3	1.8	2.8	3.9	1.2	.3	−.9	2.2	−1.6
White	1.9	−.8	1.1	3.1	4.4	−.1	−.5	−.7	.8	−2.5
Nonwhite	.8	−1.8	7.1	.9	−.5	9.7	1.6	−3.4	10.5	8.1

[1]Less than −0.1.

tion and auto-related industries, including steel manufacturing, were especially hard hit. In contrast, some service industries actually *increased* employment (although at a decreasing rate) throughout most of the recession. Along the same lines, blue-collar workers suffered worse employment losses than white-collar workers. Because men and women are distributed differently among industries and occupations, with men in the more cyclically sensitive ones, men would be expected to suffer relatively greater increases in their unemployment rates. The fact that the industries and occupations that incurred the greatest losses in demand are also those with traditionally higher than average layoff rates[4] could have further aggravated their employment declines.

The contribution this makes to the sex difference in the employment declines is unclear, however. We know that men have higher layoff rates than women, but that is probably primarily because of the sex difference in the occupational distribution.[5] Any sex differences in the cyclic sensitivity of layoff rates are also probably due to the industrial or occupational distributions. To fully understand the role of layoff rates in explaining the sex differences in the cyclic behavior of unemployment rates, we need to know whether the responsiveness of the layoff rate is less for women than for men in the same industry and occupation. Evidence presented by Norman Bowers suggests that in the three previous recessions the responsiveness of the layoff rate was actually greater for women than for men, both on average and by industry and occupation.[6] Findings by Francine Blau and Lawrence Kahn, however, seem to show that there is little, if any, sex difference in the cyclical component of layoffs after controlling for industry, occupation, and other worker characteristics.[7]

Differences in cyclical variations in layoff rates also fail to explain the racial difference in changes in the unemployment rate. Nonwhites suffered relatively smaller unemployment rate increases than whites during the last recession, yet their layoff rates have historically been *more* cyclically responsive, even after controlling for worker and job characteristics.[8] Instead of layoff rate disparities, the racial difference in the unemployment response is probably due, at least in part, to the fact that members of racial minorities never fully recovered from the 1980 recession. Their unemployment rates were already high when the most recent downturn began, so that the increases it brought about were relatively small.

One other factor that could be important in explaining the differential unemployment rate impacts both by race and by sex is the propensity, as unemployment rates increase (or, put differently, as employment opportunities decline), for labor force participation rates to decrease. If women and nonwhites tend to drop out of the labor force at a greater rate than white males in response to a given change in employment opportunities, then their unemployment rates will not rise by as much as those for white males. The "economic impact" for men and women could therefore be the same—women could suffer as much as men—but it would not be reflected in the unemployment rate. It is for this reason that many analysts argue that unemployment rates are not appropriate measures of the welfare of a demographic group, and prefer to study the "employment to population ratio" instead.[9] I prefer to examine the problem directly and look at the behavior of both the unemployment and labor force participation rates. In particular, we need to examine the relationships between the two.

Estimates of the percentage changes in (seasonally adjusted) labor force participation rates for the July 1981–November 1982 period and the November 1982–December 1983 period are presented in table 2. As with the cyclic behavior of the unemployment rate, differences exist according to age, race, and sex. Note that the participation rate decreased for men during the economic decline, while it increased for women. The rate rose for whites, but the increase was small relative to the increase for blacks and others. Referring to the previous discussion, we find these results suggest that the unemployment rate measure actually *overstates* the burden of the recession for women and members of racial minorities relative to white men, rather than understating it as had been hypothesized above.

Certainly, these changes may be due to recent trends more than to the business cycle. To correctly interpret changes in the unemployment rate, we need to look at its relationship with participation rates *net* of trend. I do this by examining the coefficient on the unemployment rate variable in the following equation:

$$(1)\quad \log (\mathrm{LFPR})_t = \beta_0 + \beta_1 \mathrm{TIME}_t + \beta_2 \mathrm{URATE}_{t-1} + \Gamma(\text{seasonal dummies}) + u_t$$

where *LFPR* is a given group's labor force participation rate in period t, and $URATE_{t-1}$ is the unemployment rate (for that group, for the entire population, or for some reference group, such as prime-age men), lagged one period. Lagging the unemployment rate is one way to eliminate the problems created by the fact that sampling errors in *URATE* and *LFPR* may be highly correlated at any point in time. Estimates of β_1 and β_2 are presented in table 3, by age, race, and sex.

Table 3. Regression coefficients for equation 1, by sex, race, and age

Sex and race	All workers		Teenagers		Prime-age	
	TIME	URATE	TIME	URATE	TIME	URATE
Total	[1].0003	−.0170	−.0005	−.0857	[2].0045	−.0030
White	.0002	−.0160	.0002	[2]−.1512	[2].0004	−.0021
Nonwhite	[2].0039	−.0199	.0049	−.1807	[2].0031	.0356
Males	.0002	[2]−.0252	−.0002	[2]−.1180	[2].0001	[2]−.0070
White	−.0002	[1]−.0203	−.0011	[2]−.0970	[2]−.0001	−.0004
Nonwhite	[2]−.0033	−.0304	.0690	[1]−.3483	[2].0017	−.0172
Females	[2].0012	−.0138	[2].0018	[2]−.1914	[2].0015	−.0090
White	[2].0006	−.0014	[2].0012	[2]−.1772	[2].0010	−.0003
Nonwhite	[2].0044	−.0036	[1].0043	−.1757	[2].0041	.0190

[1]Significant at a 90-percent confidence level.

[2]Significant at a 95-percent confidence level.

(The estimates are derived using the Cochrane–Orcutt technique, assuming first-order serial correlation. The unemployment rate variable is here defined as the average unemployment rate for the population as a whole.)

The results indicate that the relationship between the unemployment rate and the labor force participation rate (as measured by the coefficient on *URATE*) did not differ much by race, except for male teenagers. For nonwhite male teens, a 1-percent increase in the unemployment rate (that is, from 10.0 to 10.01) is associated with a .3483-percent decrease in their labor force participation rate. That response is almost four times the response exhibited by whites. For the population as a whole, however, the magnitudes of the responses vary little by race. Some differences do exist by sex, with males exhibiting a strong tendency to decrease their participation as unemployment rates rise. This is true for all groups except white teens. The coefficients on *TIME* indicate that the increases in the participation rates of women during the period (recall the results in table 2) were indeed largely the effect of a trend component rather than a cyclic one. Relating these results back to our interpretation of the "burdens" of the recession, the fact that declines in aggregate demand seem to generate relatively larger decreases in participation for men and teens, and especially minority male teens, suggests that the unemployment rates for those groups may understate the true relative burden of the recession.

Explanations for the differing participation rate responses include the notion that teens and men exhibit greater than average decreases in participation as unemployment rates rise because they suffer greater than average decreases in demand for their labor. A decrease in demand can have two effects: first, assuming some degree of wage rigidity, there is a direct effect on employment, and hence a direct effect on participation—if the number of people employed declines then, other things equal, the participation rate will decline. Second, there is the "discouraged worker effect," the decline in participation because persons think they will have little success finding a job. An alternative explanation is that demand does not decrease more for teens or men, but rather that, given a change in the demand for their labor, teens and men simply *respond* more. Results from another study have shown that sources of differences in participation responses include differential costs of search, differential wage rates, and differential *levels of* (not *changes in*) labor demand, in addition to differential "preferences" for work.[10]

Possible explanations for the relatively small decreases in participation exhibited by women may therefore include the following: (1) demand for women's labor does not decline much as unemployment rates rise; (2) women have stronger preferences for work and lower costs of search; or (3) women will enter the labor force as unemployment rates rise to compensate for income lost because of the unemployment of other family members (the "added worker effect"). Evidence of the validity of each of these hypotheses is presented later in this study.

In sum, using relative changes in the unemployment rate as a measure of the impact of the recent recession, the evidence indicates that the heaviest burdens were placed on male, white, and prime-aged and older workers. The magnitude of the burdens is open to question, however, if one keeps in mind that changes in labor force participation rates affect measured unemployment rates, and that the participation rate is endogenously determined. Inspection of the relationship between labor force participation rates and aggregate demand suggests that the unemployment rate variable probably *understates* the recession's relative impact on men and on teens.

The nature of differential impacts

According to the gross change data, 3,293,000 workers became unemployed during December 1983. Some 1,837,000 entered unemployment from employment, while 1,456,000 entered unemployment from outside the labor force. During the same month, 3,576,000 workers left unemployment—1,745,000 into employment and 1,831,000 into the nonparticipation state. As this example illustrates, the labor market is in continual motion. The goal of the following discussion is to examine the cyclical variations in unemployment and labor force participation noted earlier in the context of such labor market flows.

Let us denote the number of workers who make a transition from state I to state J (for example, from employment (E) to unemployment (U), or from unemployment to nonparticipation (N)) during month t as IJ. Define the probability of making such a transition, given that one is in state I in month $t\text{-}1$, as $\lambda_{IJ} = IJ_t/I_{t-1}$, where I_{t-1} is the number of people in state I in period $t\text{-}1$. It can then be shown that unemployment rates and labor force participation rates can be expressed as explicit functions of the six transition probabilities λ_{NE}, λ_{NU}, λ_{EN}, λ_{EU}, λ_{UE}, and λ_{UN}.[11] The relationships are such that the unemployment rate increases with increases in λ_{NU} and λ_{EU} and decreases with increases in λ_{UE} and λ_{UN}. The effects of changes in λ_{NE} and λ_{EN} depend on the relative magnitudes of the other transition probabilities. The participation rate will increase with increases in λ_{NE} and λ_{NU}, and decrease with increases in λ_{EN} and λ_{UN}. The effects of λ_{UE} and λ_{EU} depend on the relative magnitudes of λ_{UN} and λ_{EN}. Whatever their size or direction, changes in these transition probabilities are the sources of changes in unemployment and labor force participation rates. We can therefore analyze cyclical changes in unemployment and participation rates in terms of cyclical variations in transition probabilities.

Before proceeding to that analysis, however, it may be useful to examine age, race, and sex differences in levels of transition probabilities. The averages over the December 1981–December 1983 period are presented in table 4 for the population as a whole, and for the teenage and prime-aged groups. Given the race, sex, and age differences in

Table 4. Probabilities of transition among labor force states, by age, sex, and race, December 1981–December 1983 averages

Age, sex, and race	Transition					
	N to E	N to U	E to N	E to U	U to E	U to N
All workers						
Total	.0437	.0301	.0301	.0198	.2236	.1897
White	.0445	.0257	.0295	.0183	.2489	.1739
Nonwhite	.0433	.0623	.0362	.0302	.1556	.2397
Males:						
White	.0563	.0352	.0195	.0206	.2561	.1245
Nonwhite	.0540	.0732	.0291	.0352	.1729	.1841
Females:						
White	.0391	.0216	.0428	.0157	.2306	.2430
Nonwhite	.0365	.0550	.0429	.0241	.1323	.3016
Teenagers						
Total	.1016	.0858	.1041	.0484	.2178	.3054
White	.1183	.0827	.0997	.0445	.2498	.2848
Nonwhite	.0582	.1037	.1516	.0808	.1244	.3732
Males:						
White	.1210	.0902	.0961	.0502	.2487	.2648
Nonwhite	.0668	.1102	.1405	.0861	.1245	.3494
Females:						
White	.1032	.0748	.1024	.0395	.2432	.3102
Nonwhite	.0478	.0935	.1609	.0742	.1213	.4072
Prime-age						
Total	.0526	.0355	.1081	.0159	.2230	.1514
White	.0536	.0317	.0177	.0147	.2445	.1450
Nonwhite	.0508	.0674	.0216	.0231	.1205	.1960
Males:						
White	.0763	.0688	.0065	.0165	.2592	.0828
Nonwhite	.0708	.0908	.0141	.0279	.1867	.1232
Females:						
White	.0477	.0249	.0330	.0123	.2144	.2328
Nonwhite	.0442	.0598	.0294	.0181	.1235	.2756

unemployment and participation rates, the differences in transition probabilities are not surprising. Women have lower probabilities of making the transitions from *N*-to-*E* and *N*-to-*U*, and much higher probabilities of moving from *E*-to-*N* and *U*-to-*N*. All of these differences contribute to the lower labor force participation rates for women. Members of racial minorities have much lower rates of transition from *U*-to-*E* than do whites, and slightly higher transition rates from *E*-to-*U*, which contribute to their higher unemployment rates. Racial differences also exist in the *N*-to-*U* and *U*-to-*N* transition rates, with nonwhites more likely to enter unemployment on the one hand, and more likely to leave it on the other. These differences tend to cancel one another out. A significant racial difference also exists for the *N*-to-*E* transition for teenagers, with nonwhites much less likely to make the transition. On average, teenagers are much more volatile than other labor force groups, with higher than average probabilities for the *N*-to-*E*, *N*-to-*U*, *E*-to-*N*, *E*-to-*U*, and *U*-to-*N* transitions. The *U*-to-*E* transition rate does not differ much by age. Prime-aged workers differ from others primarily in their lower *E*-to-*N* and *U*-to-*N* transition probabilities.

The hypothetical relationships between aggregate demand and each of the transition probabilities are relatively straightforward for some flows and very complex for others, depending on one's model and assumptions. In a fairly general model, all of the effects of a change in demand are indeterminant.[12] A decline in aggregate demand will tend to decrease λ_{UE} and λ_{NE} because the number, frequency, and attractiveness of job offers will decline. A decrease in the frequency of job offers can cause workers' reservation wages to fall, however, which would tend to increase λ_{UE} and λ_{NE}. A decline in aggregate demand can increase the flows from *E*-to-*U* and *E*-to-*N* due to an increase in layoffs and terminations, but it can decrease the same flows if it lowers workers' propensity to quit a job. As aggregate demand falls, we might expect λ_{UN} to increase and λ_{NU} to decrease as a result of declining job offers, but this conclusion depends critically on the relative magnitudes of the levels of changes in job offer rates to people in the *U* and *N* states. In addition, λ_{UN} may decrease and λ_{NU} may increase when aggregate demand falls, as individuals respond to the unemployment of other family members. The actual relationships between aggregate demand and transition probabilities are, at best, empirical issues.

Using the lagged population-average unemployment rate as a measure of aggregate demand, I have explored these relationships by estimating the parameters of the following equation for each transition rate and for the entire population, teens, and the prime-aged group:

$$(2)\quad \log(\lambda_{IJ})_t = \beta_0 + \beta_1 \mathrm{TIME}_t + \beta_2 \mathrm{URATE}_{t-1} + \Gamma(\text{seasonal dummies}) + u_t$$

These estimates of β_1 and β_2 are presented in table 5. The results indicate that some transition probabilities were much more cyclically responsive than others and that the responsiveness varied significantly across demographic groups. First, the *N*-to-*E* transition rate declined with aggregate demand, for the population as a whole and for each of the subgroups except nonwhite teenage females. The decline is especially large for nonwhite males. Nonwhite male teenagers exhibited the strongest response, which would contribute to their stronger participation rate response. (See table 3.) Overall, the *N*-to-*E* transition rate seems more responsive for racial minorities than for whites, and more responsive for men than women. The responsiveness of the *N*-to-*U* transition rate differs primarily by race, not only in magnitude but also in direction. The *N*-to-*U* transition rate tends to increase for whites as aggregate demand falls, but decreases for blacks and others (though the effect is often statistically insignificant). The effect of this difference is to decrease labor force participation among nonwhites and boost it among whites. The *E*-to-*N* transition rate declines as aggregate demand falls, for all age, race, and sex groups. The effect is stronger for nonwhites, with little difference by sex. The *U*-to-*N* transition rate also decreases with aggregate demand for the population on average, although it increases

Table 5. Regression coefficients for equation 2, by age, sex, and race

Age, sex, and race	N to E		N to U		E to N		E to U		U to E		U to N	
	TIME	URATE	TIME	URATE	TIME	URATE	TIME	URATE	TIME	URATE	TIME	URATE
All workers												
Total	.0027	[1]−.4319	−.0005	.3642	.0006	−.2372	[2]−.0061	[1].7083	.0019	[1]−.7211	[1].0024	[1]−.5755
White	.0018	[2]−.3437	−.0028	[1].4889	−.0004	−.1580	[1]−.0073	[1].7898	[2].0034	[1]−.8467	[1].0028	[2]−.5597
Nonwhite	[1].0175	[1]−1.0818	[1].0146	−.1346	[2].0052	−.6477	−.0072	[1].7443	[2]−.0036	−.2003	.0020	[1]−.6469
Males:												
White	.0016	[1]−.4465	−.0031	[2].4295	.0004	−.1801	−.0047	[1].7306	.0028	[1]−.9117	.0014	[1]−.6308
Nonwhite	[1].0190	[1]−1.3081	[1].0141	.0978	.0061	[2]−.6826*	−.0069	[2].6578	.0004	[1]−.5699	−.0030	[1]−.5828
Females:												
White	.0015	−.2825	−.0028	[2].5168	−.0012	−.1516	[1]−.0078	[1].6068	[2].0039	[1]−.7309	[1].0042	[1]−.4224
Nonwhite	[1].0163	[2]−.8360	[1].1518	−.3004	[2].0051	[1]−.6668	−.0056	[1].6620	[1]−.0117	[2].4444	.0044	−.5734
Teenagers												
Total	.0032	[1]−.7232	.0011	−.0005	.0031	−.3511	[1]−.0069	[1].6651	.0025	[2]−.5565	−.0020	.0233
White	.0039	[1]−.7785	.0011	.0557	.0025	−.3020	[2]−.0067	[1].5866	.0038	[2]−.5904	.0001	.1143
Nonwhite	.0106	[2]−.9029	[1].0123	[1]−.6703	.0114	[1]−1.0923	−.0092	[2]1.0227	−.0032	−.5360	[1]−.0065	−.0954
Males:												
White	.0108	[1]−.6733	.0000	.1672	.0027	−.3491	[1]−.0078	[1].5345	−.0002	−.5043	.0020	.0602
Nonwhite	.0150	[1]−1.4732	[1].0163	−.6510	[2].0177	[1]−1.5392	−.0060	.5419	−.0053	−.3205	−.0023	−.5546
Females:												
White	[1].0063	−.9134	.0008	.0884	.0026	−.2763	−.0048	.6528	[2].0078	−.6402	−.0034	.2985
Nonwhite	.0032	.0618	.0086	[2]−.7404	.0062	−.7382	−.0175	1.5361	−.0001	−.7861	[1]−.0119	[2].4737
Prime-age												
Total	[1].0048	[2]−.3302	.0020	[2].4652	.0008	−.0878	−.0022	.4494	.0007	[1]−.7733	.0029	[1]−.7342
White	[2].0044	−.2976	−.0038	[1].7377	−.0008	.0106	−.2177	.5179	.0013	[1]−.8419	−.0034	−.2514
Nonwhite	[1].0025	[1]−1.1878	[1].0203	−.2505	[1].0058	[1]−.4480	[2]−.0085	[2].7098	[1]−.0044	[1]−.3552	−.0006	[1]−.6493
Males:												
White	.4484	−.4801	−.0048	[2].5723	.0031	−.0533	.0023	.2912	.0002	[1]−.9130	−.0058	−.4546
Nonwhite	[1].0257	−.9399	[1].0155	.3240	.0025	−.1046	−.0098	.7779	.0010	[1]−.9174	[1]−.0089	−.2507
Females:												
White	.0033	−.2047	−.0031	[1].7779	−.0027	.0423	[2]−.0067	[1].6001	.0027	[1]−.7456	.0046	−.4099
Nonwhite	[1].0233	[1]−1.1469	[1].0224	−.5208	[1].0081	[1]−.6849	−.0047	[2].5695	[1]−.0126	.4215	−.0025	[1]−.6798

[1]Significant at the 95-percent confidence level.

[2]Significant at the 90-percent confidence level.

for female teens. Both of these transition rate responses (for *E*-to-*N* and *U*-to-*N*) are counter to standard views of the effects of declines in aggregate demand. In particular, they tend to increase rather than decrease labor force participation. The strong negative relationship between the unemployment rate and participation rates exhibited by many of the demographic groups therefore is not the result of an increased tendency to drop out of the labor force. Rather, the relationship is the result of a decrease in the tendency to enter the labor force, particularly directly into employment.

The *E*-to-*U* and *U*-to-*E* transition rates increase and decrease, respectively, as aggregate demand falls. There is little difference in the *E*-to-*U* response by race or by sex, except for teens and perhaps prime-age men. Large race and sex differences do exist for the *U*-to-*E* transition rate, however, which are probably the primary source of the differential unemployment rate responses noted earlier. As aggregate demand fell during the recession, the *U*-to-*E* transition rate declined more for whites than for racial minorities (except prime-age men), and more for males than for females except, again, among teens. These differences may be the result of the disproportionate distribution of the sexes and races across occupations and industries.

All of these differences in the responsiveness of transition probabilities can be related to race, sex, and age differences in the cyclic responsiveness of unemployment and labor force participation rates, and can help identify their sources. The fact that the unemployment rate increased more for men than for women during the recession seems to be the result of the sex differences in the responsiveness of the *U*-to-*E* transition probability. This may be interpreted as support for the hypothesis that the demand for labor declined relatively more for men. The fact that the participation rate declined more for men than for women seems to be the result of a tendency for the *N*-to-*E* transition rate to decline more for men. This fact could suggest that the differential participation rate response is a labor demand, rather than a labor supply, phenomenon. The added worker effect as an explanation for the sex differences in the participation response does not get much support here, because the *N*-to-*U* transition probability does not respond any more for women than it does for men, at least among whites.

The racial difference in the responsiveness of the unemployment rate during the recession is primarily the result of racial differences in the responsiveness of the *N*-to-*U* and *U*-to-*E* transition probabilities. Both tend to boost unemployment rates more for whites than for nonwhites. The *N*-

to-*U* difference indicates that the added and discouraged worker effects may be important explanations here, with whites being the added workers and nonwhites the discouraged ones. This could simply be the result of the racial difference in the distribution of single-parent households. However, it could also be an indication that members of racial minorities feel that they are at a considerable labor market disadvantage because of their race. The relatively large decline in the *N*-to-*E* transition rate for nonwhites may very well mean that nonwhites do suffer larger decreases in demand for their labor as aggregate demand declines.

The major age differences in the responsiveness of unemployment and participation rates can also be related to specific transition rates. The unemployment rate of teenagers rose less than average as aggregate demand fell because the *U*-to-*E* transition rate did not decline by as much for teens as for other groups, and because the *U*-to-*N* transition rate increased for teens (except nonwhite males) while decreasing for other groups. The first phenomenon could indicate that reservation wages fell more for teens than for other workers, or that the demand for teenage labor declined less than the demand for others, while the second phenomenon suggests that teens were more likely to become discouraged and quit looking for work.[13] The response of the *U*-to-*N* transition probability also obviously contributes to age differences in the responsiveness of the labor force participation rate. Other factors are the age differences in the responses of the *N*-to-*E* and *N*-to-*U* transition rates, especially for nonwhite males. The large *N*-to-*E* response could indicate that a substantial portion of the participation rate decline for teens is the result of a decrease in the demand for their labor.

The results presented here lend support to many of the hypotheses put forth earlier regarding the sources of demographic differences in unemployment and participation rate behavior. The male/female difference in unemployment rate behavior is indeed probably due to differential changes in demand, which may be attributable to the occupational distribution of the sexes. There is no support, however, for the hypothesis that the participation rate differences arise because women are more likely than men to be "added workers." Differences between the participation responses of whites and nonwhites and between those of teens and other workers appear to be due both to differences in relative responses of the demand for their labor (with the demand for labor decreasing more for racial minorities and teens), and to differences in "supply."

Suggestions for further research

This analysis of gross change data from the Current Population Survey provides insights into the nature of the differential effects of the recent recession which cannot be obtained from an analysis of unemployment or participation rates alone. Many questions remain unanswered, however. Foremost, of course, is, what exactly causes each of the differential transition rate responses? If men are discouraged more than women, why? That is a difficult question even with microdata. There are also some questions relating to the methodology, including those related to the timing of the effects of the recession and the appropriate lag structures to use for the *URATE* variable in equations 1 and 2. Further, exactly what is the effect on the unemployment rate of a 1-percent decrease in a given transition rate? Does the effect differ by race or sex? One last question we may want to address is, how do the effects of the 1981–82 recession differ from those of earlier downturns? Have there been structural changes in the relationships between aggregate demand and transition rates which may indicate, for example, that there is less sex or race discrimination in the labor market today, or that there has been a profound and lasting change in women's attitudes toward work outside the home? Many researchers address these issues in other contexts,[14] but a comparison of the results presented here with those from studies of earlier periods could lead to better understanding.

Finally, it should be noted that many cyclical changes in employment status are not between employment, unemployment, and nonparticipation, but rather between full-time and part-time employment.[15] The data used in this study do not distinguish between full- and part-time employment. An analysis of gross flow data that make such a distinction could be very fruitful, as could further study of gross change data broken down by industry of employment. □

———*FOOTNOTES*———

[1] The gross flow data are a byproduct of the Current Population Survey, a monthly survey of approximately 60,000 households conducted by the Bureau of the Census for the Bureau of Labor Statistics.

It should be noted that the gross flow data have not been published since 1952 because of concern about various sources of error. See Ralph E. Smith and Jean E. Vanski, "The Volatility of the Teenage Labor Market: Labor Force Entry, Exit, and Unemployment Flows," in *Youth Unemployment: Its Measurement and Meaning* (U.S. Department of Labor, May 1980); *Gross Flow Data from the Current Population Survey, 1970–1980* (U.S. Department of Labor, March 1982); and John M. Abowd and Arnold Zellner, "Estimating Gross Labor Force Flows," paper presented at the annual meeting of the American Statistical Association, August 1983. However, because the errors should not affect the interpretation of the results of this analysis, the raw gross flow data were used.

[2] See Norman Bowers, "Employment on the rise in the first half of 1983," *Monthly Labor Review*, August 1983, pp. 8–14; and Eugene H. Becker and Norman Bowers, "Employment and unemployment improvements widespread in 1983," *Monthly Labor Review*, February 1984, pp. 3–14.

[3] See Deborah P. Klein, "Trends in employment and unemployment in families," *Monthly Labor Review*, December 1983, pp. 21–25; Joyanna Moy, "Labor market developments in the U.S. and nine other countries," *Monthly Labor Review*, January 1984, pp. 44–51; Becker and Bowers, "Employment and unemployment"; and Larry DeBoer and Michael Seeborg, "The female-male unemployment differential: effects of changes in industry employment," *Monthly Labor Review*, November 1984, pp. 8–15.

[4] See David M. Lilien, "The Cyclical Pattern of Temporary Layoffs in United States Manufacturing," *Review of Economics and Statistics*, February 1980, pp. 24–31; and Francine D. Blau and Lawrence M. Kahn, "Causes and Consequences of Layoffs," *Economic Inquiry*, April 1981, pp. 270–96.

[5] Blau and Kahn, "Causes and Consequences."

[6] Norman Bowers, "Have employment patterns in recessions changed?" *Monthly Labor Review*, February 1981, pp. 15–28.

[7] Blau and Kahn, "Causes and Consequences."

[8] *Ibid.*

[9] See Carol Boyd Leon, "The employment population ratio: its value in labor force analysis," *Monthly Labor Review*, February 1981, pp. 36–45.

[10] Donald R. Williams, "Racial Differences in Male Teenage Labor Force Participation Rates," Ph.D. Diss., Northwestern University, August 1984.

[11] See Stephen Marston, "Employment Instability and High Unemployment Rates," *Brookings Papers on Economic Activity*, vol. 1, 1976, pp. 169–203; and Williams, "Racial Differences."

[12] Williams, "Racial Differences."

[13] For further evidence of age differences in discouragement, see T. Aldrich Finegan, "Discouraged Workers and Economic Fluctuations," *Industrial and Labor Relations Review*, October 1981, pp. 88–102.

[14] See Ralph E. Smith, Jean E. Vanski, and Charles C. Holt, "Recession and the Employment of Demographic Groups," *Brookings Papers on Economic Activity*, vol. 3, 1974, pp. 737–58; Marston, "Employment Instability"; Kim B. Clark and Lawrence H. Summers, "Demographic Differences in Cyclical Employment Variations," *Journal of Human Resources*, Winter 1981, pp. 61–79; and Bowers, "Have employment patterns in recessions changed?"

[15] Robert W. Bednarzik, "Short workweeks during economic downturns," *Monthly Labor Review*, June 1983, pp. 3–11.

New data series on involuntary part-time work

HARVEY R. HAMEL

The number of nonagricultural workers "on part-time schedules for economic reasons," shows a strong relationship to business cycle trends, according to seasonally adjusted data from the Current Population Survey.[1] The number and proportion of persons involuntarily working part time—sometimes referred to as the "partially unemployed"—generally rise during a recession and decline during a recovery period. In a comprehensive examination and analysis of these data which appeared in the June 1983 *Monthly Labor Review*,[2] Robert W. Bednarzik demonstrated that during cyclical periods, the incidence of economic part-time work moves in the same direction as, but leads, movements in the civilian unemployment rate. Bednarzik explained that such part-time employment typically rises before unemployment begins to increase during a recession, mainly because employers tend to reduce hours of work when possible before laying off employees. During recovery periods, employers usually restore the hours of those on shortened workweeks before rehiring laid-off workers. The main focus of Bednarzik's analysis, however, was the relationship and variation in cyclical behavior of the two main causes of involuntary part-time work, cutbacks in weekly hours due to slack work and failure to find full-time work,[3] both of which were seasonally adjusted specifically for his study.

Following up on Bednarzik's analysis, BLS tested the cyclical sensitivity and accuracy of the new series and confirmed that these data captured more clearly the distinctions between the concepts of persons working part time involuntarily than did the existing published series, which divided the total number into those who "usually work full time" and those who "usually work part time."[4] Thus, to provide data users with more relevant series that can isolate the main causes of part-time work, BLS has replaced the existing usual full- and part-time series with the new series. Effective with data for January 1985, the new series are published in monthly issues of "The Employment Situation" news release and *Employment and Earnings*,[5] and, beginning with this issue, are also published in table 4 in the Current Labor Statistics section of the *Monthly Labor Review*. Data are published for all persons (in agriculture and nonagricultural industries combined) as well as for persons in nonagricultural industries only. (The former series were limited to workers in nonagricultural industries.) Time series based on the new definitions are available back to 1955 and can be obtained from BLS.

The new series clearly show different cyclical behavior, which, in turn, illustrates different underlying labor market problems. The more cyclical "slack work" series reflects short-run adjustments made by firms to minimize layoffs and subsequent recalls or hirings. Thus, slack work rises sharply during economic downturns, but shows rapid improvement during the early stages of recovery. The "failure to find full-time work" series reflect the experience, skills, and training of workers; the match of available workers to work schedules; and the types and locations of job openings, as well as the general state of the economy. The "failure to find" series is clearly less cyclical. Indeed, in contrast to the "slack work" component, it typically rises during the early stages of a recovery, probably because many unemployed workers find and accept part-time jobs (perhaps after exhausting unemployment insurance benefits) as a better alternative to remaining fully unemployed without compensation.

Recent data illustrate this point. The following tabulation shows the number of persons (seasonally adjusted) and the percent of total civilian employment on part-time schedules for economic reasons during September of 1982 and 1983 and January 1985:

	Slack work		*Could only find part-time work*	
	Number (thousands)	*Percent of civilian employment*	*Number (thousands)*	*Percent of civilian employment*
September 1982	3,718	3.7	2,731	2.7
September 1983	2,696	2.6	3,182	3.1
January 1985	2,431	2.3	2,848	2.7

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The number of persons involuntarily working part time due to slack work dropped by 1 million in the first 12 months of recovery from the series high in September 1982 and by only 265,000 in the subsequent 16 months (through January 1985). During the first 12 months of recovery, the proportion of the total employed comprised by persons on short workweeks due to slack work fell from 3.7 to 2.6 percent. In January 1985, the group accounted for 2.3 percent of the employed. This pattern of decline was similar to that following the recovery from the 1973–75 recession. Thus, it seems clear that this component shows rapid improvement early in the recovery, as employers restore hours of those workers retained but with reduced workweeks before adding new workers, and then improves more slowly as the recovery matures. In contrast, the other major component—persons who can only find part-time jobs—showed no improvement early in the recovery period; indeed, it rose slightly. It did moderate later, but not by the magnitude of the decline in the slack-work component. □

FOOTNOTES

[1] The Current Population Survey, conducted for the Bureau of Labor Statistics by the Bureau of the Census, is a monthly sample survey of some 59,500 households in the United States. Information is obtained on the employment status of all persons 16 years and older in the civilian noninstitutional population. For the employed, questions are asked about how many hours they worked (in the prior week); those working less than 35 hours are asked the reason for their "short" workweeks.

[2] See Robert W. Bednarzik, "Short workweeks during economic downturns," *Monthly Labor Review*, June 1983, pp. 3–11.

[3] Other economic (involuntary) reasons for working less than 35 hours include material shortages or repairs to plant and equipment, new job started during week, and job terminated during week. About 6 percent of the total number of persons working part time for economic reasons in 1984 indicated that these other factors caused their short workweeks.

[4] The "full-time" component was meant to reflect persons on short workweeks due to slack work, while the "part-time" component was intended to mirror those workers who could only find part-time work. However, there has been a substantial amount of ambiguity in these series because, although they were intended to represent the reason for working less than 35 hours, they more likely represented the survey respondent's perception of usual full-time status. For example, of the 2.4 million persons who were involuntarily employed part time due to "slack work" in 1984, only about 55 percent still considered themselves to "usually work full time." The remainder may have been working part time for so long that they no longer looked upon themselves as "usual full-time" workers who were waiting for their hours to be restored (but continued to report themselves in the "slack work" vein nonetheless). Because of these and related ambiguities, we believed these series did not capture what they were intended to represent. BLS has also discontinued publication of two other seasonally adjusted series—persons at work in nonagricultural industries on full-time schedules and the total at work in nonagricultural industries—because of their erratic seasonal movements (especially in the spring months), their inconsistency with related data on full-time and total civilian employment, and the seemingly limited uses of the series. However, BLS continues to maintain all of the former series and will make them available to data users upon request.

[5] See "The Employment Situation: January 1985," *USDL NEWS*, Feb. 1, 1985, and *Employment and Earnings*, February 1985.

Revisions in Hispanic population and labor force data

PHILIP L. RONES

In January 1985, procedures designed to improve the estimates of the Hispanic population were introduced into the Current Population Survey (CPS). As shown in table 1, these procedural changes have had a substantial impact on the estimates of Hispanic labor force, employment, and unemployment levels.

Based on information from the 1980 census, independent population estimates for Hispanics were developed for January 1980 up through the present. This, in turn, permitted a revision of the historical data for major Hispanic labor force series for this period. (Data prior to 1980 are not comparable to the revised series.) Monthly seasonally adjusted data for the two independently adjusted Hispanic series—employment and unemployment levels for all Hispanics age 16 and over—have also been revised back to 1980. From these, adjusted labor force, participation rate, employment-population ratio, and unemployment rate series are derived.

In the past, the CPS did not use independent population estimates for Hispanics—the only major population group for which this was the case. Instead, the population estimates were derived from the CPS itself. This yielded estimates that were too low relative to those from the decennial census (because of problems with CPS coverage) and quite unstable over time. Under the revised procedure, CPS sample estimates are "inflated" to the independent estimate of the Hispanic population rather than being determined by the proportion of Hispanics found in the sample each month.

The independent population estimates were developed using a cohort-component methodology, in which the 1980 census count is updated by adding estimates of Hispanic births and immigrants and subtracting estimates of deaths and emigrants. These procedures integrate data on changes in the Hispanic population from a number of sources. Data on births come from the annual CPS fertility questionnaire and from the National Center for Health Statistics. Death rates are derived from mortality statistics in California and Texas, States with more than half of the Hispanic population in 1980. Data on immigration and emigration are from the Immigration and Naturalization Service, the Puerto Rican Planning Board, and the Office of Refugee Resettlement.

The new methodology results in sharply higher population estimates and, hence, higher labor force counts, although overall national estimates are not affected. For example, table 1 shows that, on an annual average basis for 1984, the revised Hispanic civilian noninstitutional population lev-

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Table 1. Population and labor force status of persons of Hispanic origin by sex and age, as published and revised, 1984 annual averages

[Numbers in thousands]

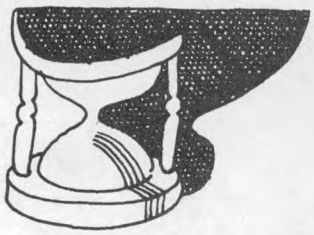
Sex and age	Civilian noninstitutional population			Employed			Unemployed			Unemployment rate		
	Published	Revised	Difference	Published	Revised	Difference	Published	Revised	Difference	Published	Revised	Difference
Total, 16 years and older	9,881	11,164	1,283	5,679	6,469	790	676	778	102	10.6	10.7	0.1
Men, 16 years and older	4,659	5,471	812	3,359	3,950	591	390	464	74	10.4	10.5	.1
16 to 19 years	552	617	65	217	242	25	70	82	12	24.4	25.3	.9
20 years and older	4,107	4,854	747	3,142	3,708	566	320	382	62	9.2	9.3	.1
Women, 16 years and older	5,221	5,692	471	2,320	2,519	199	286	314	28	11.0	11.1	.1
16 to 19 years	565	617	52	185	202	17	54	60	6	22.6	22.9	.3
20 years and older	4,656	5,075	419	2,135	2,317	182	232	254	22	9.8	9.9	.1

els were almost 1.3 million, or 13 percent higher than the old estimates. Adult men were the group most affected by these changes; their 1984 population estimates rose by more than 18 percent. The levels of various labor force measures (that is, employment, unemployment, and persons not in the labor force) expanded, to a large extent, proportionately. Hence, *rates* calculated using these levels are not significantly different from those derived with the old methodology. For example, in 1984, only the unemployment rates for teenagers rose by more than a tenth of a percentage point. Revised data for major Hispanic labor force measures for the years 1980–84 are available upon request. □

A note on communications

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

Major Agreements Expiring Next Month



This list of selected collective bargaining agreements expiring in April 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
Tennessee Chemical Co. (Copperhill, TN)	Mining	Chemical Workers	1,100
Eastern Contractors Association, Inc. (Albany, NY)	Construction	Carpenters	1,200
Eastern Contractors Association, Inc. (Albany, NY)	Construction	Laborers	1,000
Building Trades Employers Association, Inc., Westchester and Putnam counties (White Plains, NY)	Construction	Laborers	1,200
Contractors Association of Eastern Pennsylvania (Philadelphia, PA)	Construction	Laborers	5,000
Construction Contractors Council, Inc. (Washington, DC and vicinity)	Construction	Carpenters	2,000
Construction Contractors Council, Inc. (Washington, DC and vicinity)	Construction	Operating Engineers	1,100
Steel and Machinery Erectors Association, Inc., Tampa area (Florida)	Construction	Laborers	1,000
West Tennessee Bargaining Group, Inc. (Memphis, TN)	Construction	Carpenters	1,100
Construction Employers Association and two others (Cleveland, OH)	Construction	Carpenters	6,000
Construction Employers Association and two others (Cleveland, OH)	Construction	Laborers	2,500
Construction Employers Association (Cleveland, OH)	Construction	Painters	1,500
Associated General Contractors, Ohio Building Chapter, building construction agreement (Ohio)	Construction	Operating Engineers	4,000
Building Trades Employers Association, a division of Builders Exchange of Rochester, NY, Inc. (New York)	Construction	Laborers	1,400
Contractors Association of Eastern Pennsylvania, Philadelphia and vicinity (Pennsylvania)	Construction	Carpenters	1,200
Contractors Association of Eastern Pennsylvania, heavy and highway construction, Philadelphia and vicinity (Pennsylvania)	Construction	Laborers	2,200
Ohio Contractors Association (Ohio)	Construction	Operating Engineers	12,000
Wisconsin Road Builders Association (Wisconsin)	Construction	Operating Engineers	1,800
General Building Contractors Association, building, heavy and highway construction, Philadelphia and vicinity (Pennsylvania)	Construction	Operating Engineers	5,000
Construction Contractors Council, Inc. (District of Columbia, Maryland, and Virginia)	Construction	Laborers	2,300
Construction Contractors Council, Inc. (District of Columbia, Maryland, and Virginia)	Construction	Laborers	1,300
National Electrical Contractors Association, Inc., Nassau-Suffolk Chapter (New York)	Construction	Electrical Workers (IBEW)	1,500
National Electrical Contractors Association, Inc., Philadelphia Division, Penn–Del–Jersey Chapter (Pennsylvania)	Construction	Electrical Workers (IBEW)	1,900
Roofing and Sheet Metal Contractors' Association of Philadelphia and vicinity (Pennsylvania)	Construction	Sheet Metal Workers	1,750
Mechanical Contractors Association of Eastern Pennsylvania, Inc., Philadelphia and vicinity (Pennsylvania)	Construction	Plumbers	1,350
Mechanical Contractors Association of Eastern Pennsylvania, Inc., Philadelphia and vicinity (Pennsylvania)	Construction	Steamfitters	2,800
National Electrical Contractors Association, Inc., Southern Louisiana Chapter (New Orleans, LA)	Construction	Electrical Workers (IBEW)	1,550
Minneapolis Association of Plumbing Contractors (Minnesota)	Construction	Plumbers	1,250
Mason Contractors Association (Cleveland, OH)	Construction	Bricklayers	1,200
Construction Employers Association (Cleveland, OH)	Construction	Iron Workers	1,600
National Electrical Contractors Association, Inc., Greater Cleveland Chapter (Ohio)	Construction	Electrical Workers (IBEW)	1,750
Mechanical Contractors' Association of Cleveland, Inc. (Ohio)	Construction	Pipefitters	1,500
Cleveland Plumbing Contractors' Association (Ohio)	Construction	Plumbers	1,100
National Electrical Contractors Association, Inc. (Minneapolis, MN)	Construction	Electrical Workers (IBEW)	1,700
Twin Cities Piping Industry Association (Minneapolis and St. Paul, MN)	Construction	Plumbers	1,600

See footnotes at end of table.

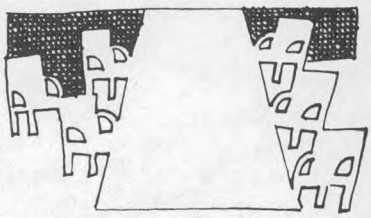
Continued—Major Agreements Expiring Next Month

Employer and location	Private industry	Labor organization[1]	Number of workers
Chicago Midwest Meat Association (Illinois)	Food products	Food and Commercial Workers	3,000
American Schiffli Embroiderers' Association (New Jersey)	Apparel	Clothing and Textile Workers	2,000
James River Corp. (Wisconsin)	Paper	Paperworkers	1,000
Printing Industry of Twin Cities (Minneapolis, MN)	Printing and publishing	Graphic Communications	1,100
E.R. Squibb and Sons, Inc. (New Brunswick, NJ)	Chemicals	Oil, Chemical and Atomic Workers	1,600
Union Carbide Corp., Agricultural Products Co. (Institute, WV)	Chemicals	Machinists	1,000
Exxon Company, USA, Baytown Refinery (Texas)	Petroleum	Gulf Coast Industrial Workers (Ind.)	1,000
Firestone Tire and Rubber Co. (Interstate)	Rubber	Rubber Workers	9,500
B.F. Goodrich Co. (Interstate)	Rubber	Rubber Workers	8,700
Goodyear Tire and Rubber Co. (Interstate)	Rubber	Rubber Workers	18,000
Uniroyal, Inc. (Interstate)	Rubber	Rubber Workers	4,500
Shoe companies in New Hampshire and Maine (New Hampshire and Maine)	Leather	Clothing and Textile Workers	2,000
Owens-Corning Fiberglas Corp. (Anderson, SC)	Stone, clay, and glass products	Glass, Pottery, Plastics and Allied Workers	1,200
Norris Industries, Vernon Facility (California)	Fabricated metal products	Auto Workers	1,300
Reliance Electric Co., Dodge Division (Mishawaka, IN)	Machinery	Steelworkers	1,000
GTE Automatic Electric, Inc. (Illinois)	Electrical products	Electrical Workers (IBEW); Machinists; Office and Professional Employees; and Carpenters	5,600
Cartage Exchange of Chicago, Inc. and others (Illinois)	Trucking	Machinists	2,800
Eastern Airlines, pilots (Interstate)[2]	Air transportation	Air Line Pilots	3,900
The Flying Tiger Line, ramp service and traffic agents (Interstate)[2]	Air transportation	Machinists	1,200
Hawaii Telephone Co. (Hawaii)	Communication	Electrical Workers (IBEW)	3,600
Metropolitan Edison Co. (Pennsylvania)	Utilities	Electrical Workers (IBEW)	1,600
Cincinnati Gas and Electric Co. (Ohio)	Utilities	Electrical Workers (IBEW)	1,900
Peoples Gas Light and Coke Co. (Illinois)	Utilities	Service Employees	1,700
Northern Minnesota and Northern Wisconsin Food Merchants	Retail trade	Food and Commercial Workers	1,300
Hospital Service and Medical-Surgical Plans of New Jersey (New Jersey)	Insurance	Office and Professional Employees	1,550
Maintenance Contractors Association of King County (Seattle, WA)	Services	Service Employees	1,300
Realty Advisory Board, apartment agreement (New York, NY)	Real estate	Service Employees	20,000
Affiliated Hospitals of San Francisco (California)	Hospitals	Service Employees	2,200
Associated Hospitals of East Bay (Oakland, CA)	Hospitals	Service Employees	1,000
	Government activity	**Labor organization[1]**	**Number of workers**
District of Columbia: Board of Education	Education	Teachers	7,250
Oregon: Portland Tri-County Metropolitan Transportation District	Transportation	Amalgamated Transit	1,500
Missouri: Kansas City, city-wide unit	General government	State, County and Municipal Employees	2,300

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

[2]Information is from newspaper reports.

Developments in Industrial Relations



Postal negotiations end in arbitration

For the first time in the 14-year collective bargaining relationship between the U.S. Postal Service and its four major unions, the parties were unable to agree on wage and benefit terms. As a result, their differences were resolved by arbitration panels selected by the parties. (Arbitration was first used in 1981, but only for one of the unions—the Rural Letter Carriers Association.) Bargaining began in April 1984 and continued until the July 20, 1984, expiration of current agreements, when all meaningful negotiations on the major economic issues essentially ended, although the parties were able to agree on some other issues.

The main impediment to settlements was the Postal Service's contention that the employees were overpaid relative to workers holding comparable jobs in the private economy. Accordingly, the Postal Service called for adoption of a two-tier pay system under which new employees would be paid about one-third less than current employees. The Postal Service also pressed for a wage freeze for current employees, adoption of a less liberal automatic cost-of-living pay adjustment formula, adoption of some restrictions on premium pay for Sunday and night work, and additional limits on eligibility for sick pay. The unions demanded a 20-percent wage increase, and vowed not to accept any type of two-tier pay system.

The provision of the Postal Reorganization Act of 1970 for binding arbitration was triggered on October 20 when the stalemate had extended 90 days beyond the expiration date of the prior contracts. The first arbitration award, handed down on December 24, covered 500,000 workers represented by the American Postal Workers' Union and the National Association of Letter Carriers, which had bargained jointly with management.

In its 3-year award, the panel agreed that Postal Service workers' wages had pulled ahead of wages for comparable workers in the private economy, but concluded that the discrepancy should be corrected through a policy of "moderate restraint" of postal workers increases over a number of years. To begin, the panel awarded a 2.7-percent specified pay increase in each contract year.

In arriving at this figure, the panel estimated that consumer prices would rise at a 5.5-percent annual rate during the contract term, and 60 percent (or 3.3 percent) of the rise would be offset by automatic semiannual pay adjustments under the cost-of-living formula, which was continued. This meant that the workers would need a 2.2-percent a year specified increase to stay even with inflation. The panel added to the 2.2 percent a 0.5-percent "improvement factor" equal to one-third of the estimated annual national rate of increase in productivity over the contract term.

The panel also found that substantial compression of the percentage differential between the lowest and highest pay rates had developed over the years as a result of giving all workers uniform pay increases in dollars. This was partly alleviated by awarding the percentage pay increases and by adding some top pay progression steps for employees in the higher grades (who were found to be slightly underpaid relative to workers in the private economy) and adding some new lower starting steps for workers in the lowest grades (who were found to be substantially overpaid relative to workers in the private economy). To further relieve the pay compression, the panel also excluded workers in the new lower starting steps from receiving the first 2.7-percent pay increase, which was retroactive to July 20, 1984.

Other award terms included a tenth paid holiday (Martin Luther King, Jr's birthday) beginning in 1986; provision for a union-management task force to consider the establishment of a Postal Service health plan; and increased annual allowances for uniforms and work clothes.

Similar provisions were announced by another arbitration panel early in January for 40,000 workers represented by the Mail Handlers Division of the Laborers International Union.

The January award for the 60,000 workers represented by the Rural Letter Carriers differed somewhat from the others:

- It runs for 3½ years, expiring January 20, 1988, instead of July 20, 1987.
- The wage increases in July of 1984, 1985, and 1986 are in the same dollar amounts as those for the other letter carriers, but amount to 2.9 percent instead of 2.7 percent.
- The Rural Letter Carriers will receive a July 21, 1987, specified pay increase equal to half the increase they re-

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

ceive in July 1986. They may also receive an automatic cost-of-living pay adjustment in November 1987. If any specified wage change and cost-of-living adjustment resulting from the 1987 settlements for the members of the other unions for July 1987 to January 1988 total more than that the Rural Letter Carriers receive during those 6 months, the Rural Letter Carriers' pay will be raised to make up the difference.

Health plan issues settled in precontract talks

Uniroyal, Inc. and the United Rubber Workers negotiated a plan designed to contain rising health care costs, rather than shift these costs to employees. The plan, which will be incorporated into the labor contract the parties will negotiate in 1985, contains a number of cost-control features:

- The attending physician will be required to complete a "Precertification form" prior to each nonemergency admission to a hospital. The form will be reviewed by the plan's staff. Any questions on admission, care, or proposed length of stay will be referred to a reviewing physician, who will discuss a possible modification of treatment with the attending physician. If they are unable to agree, the attending physician's opinion will prevail.
- Employees and retirees will have to obtain company-paid second opinions prior to specified nonemergency surgical procedures. Employees will be paid for up to 4 hours worktime lost while obtaining the second opinion.
- Before nonemergency surgery, workers and retirees will have to obtain from the surgeon a form indicating the diagnosis, operating procedures, and amount to be charged. If the proposed charge is higher than the allowable amount, the plan administrator will attempt to resolve the difference. If this cannot be accomplished, the worker or retiree will not have to pay the difference.
- Preadmission tests prior to nonemergency surgery will be performed on an outpatient basis, with participants becoming immediately eligible for sickness and accident benefits, rather than after a waiting period. As before, participants receive a $50 bonus for certain surgical procedures if they are performed on an outpatient basis.
- Plan participants must generally obtain all prescription drugs through the plan's mail order firm, either by mailing in or telephoning in the prescription. The drugs, which are free to the participant, will be mailed by the plan in postage free envelopes. The mail order firm also offers toothpaste, shampoo, and similar items at reduced prices.
- Claims administration will be improved to cut costs.
- Health maintenance organizations that provide better benefits at competitive costs will continue to be reviewed.

IBM plan stresses preventive health care

Increasing employer efforts to moderate the cost of providing health care for employees was reflected in International Business Machines Corp.'s (IBM) adoption of a new plan stressing preventive medicine and less costly alternatives to traditional care. A company spokesman said that IBM spends about $500 million a year for health care for its 220,000 domestic employees and that the new approach was expected to reduce the annual rate of cost increase to 10 percent, from 15.

Provisions of the new plan include:

- A $200 a year personal health account to help employees pay for prenatal tests, immunizations, infant care, eye glasses, and other services not covered by the health insurance. Costs are reimbused at 80 percent, meaning that the costs must total $250 in a year before the employee receives the full $200.
- Cost controls requiring employees to now pay 40 percent of the first day's charge for use of a hospital room and 20 percent of the cost of elective surgery performed without a second opinion. Also, the $150 annual deductible, which previously applied to all employees, was raised to 0.3 percent of annual salary for those earning more than $50,000 a year.

In other changes, health insurance was extended to provide full coverage of up to 50 home care visits by licensed professionals and reimbursement for birthing center services. Dental care rates will now vary according to the cost of living in the region where the employee resides, lifetime coverage was raised to $7,500 per person, from $5,000, and the maximum benefits for orthodontics was raised to $1,100, from $900.

Yale contract comes 20 months after election

In January, about 20 months after it won a representation election at Yale University, Local 34 of the Hotel Employees and Restaurant Employees Union negotiated an initial contract, ending a bitter dispute between the parties. Throughout the talks, the union had contended that the 1,500 workers (mostly women) were underpaid relative to men performing work of comparable worth to society simply because the Yale workers held "traditional" women's jobs, such as telephone operators and secretaries. The university disputed this, saying that it paid equal wages for all employees performing the same work, and that settlement of such comparable worth disputes could be resolved only through broad national decisions.

According to the union, the 3½-year contract provides for general wage increases totaling 20.25 percent, and a revamping of the salary structure that will bring the combined overall average annual salary increase to about 35 percent for current employees. Previously, the average salary was about $13,300.

The settlement was preceded by a strike that began on September 26 and ended on December 4, when the employees returned to work.

Company allowed to reduce wages, 'if necessary'

In Clayton, MO, the St. Joe Lead Co. announced that it had negotiated a contract with Steelworkers' Local 6242 that permits the company to reduce wages by $3 an hour "if deemed necessary for business reasons." Prior to the settlement, which ended an 8-month strike, pay averaged $12.29 an hour, according to the company.

Another provision ended a requirement that employees belong to the union. During the strike, St. Joe had continued to mine some lead, using 130 nonunion salaried employees and some miners who had left the union. At the time of settlement, the local union had 550 members.

Others terms of the contract, which runs to March 31, 1986, included a 33-cent-an-hour wage increase, termination of automatic cost-of-living pay adjustments, and cuts in health benefits. In another change, St. Joe gained the right to hire outside contractors for additional construction and maintenance projects.

A company official said the cost reduction moves were necessitated by flat worldwide demand for lead and domestic regulations that reduced the amount of lead used as additives to gasoline.

Workers at employee-owned plant settle

A possible closedown of employee-owned Hyatt Clark Industries, Clark, NJ, was averted when United Auto Workers Local 736 agreed to a contract. The settlement came at the deadline set by General Motors Corp., which had announced that it would shift to other suppliers of roller bearings if there was a work stoppage. (GM provides 85 percent of Hyatt's business.) The plant had been owned by General Motors until October 1981, when the employees purchased it to avert a scheduled shutdown. To help finance the acquisition, the employees had agreed to a number of cuts in compensation and changes in work rules. (See *Monthly Labor Review*, January 1982, p. 22.)

The new 3-year agreement, negotiated in mid-December, provided for 50 cents an hour wage increases in the first and second years and 55 cents in the final year. About 1,250 workers were involved.

To some extent, the negotiations were slowed by disputes between Hyatt and the union members over the degree of participation in management that the workers should be given. The workers contended that their input was far short of the level anticipated when the plant was purchased, while management maintained that any increase in the current level would hamper production.

TWA discriminated against older pilots

In a unanimous decision, the Supreme Court held that Trans World Airlines (TWA) had discriminated against its older pilots by making it difficult for them to move into flight engineers jobs when they reached the age 60 ceiling for pilots set by Federal law. The case, *Trans World Airlines v. Thurston*, had broad significance because several similar discrimination suits were processed against several other airlines.

Under TWA policy, pilots reaching age 60 could bid on flight engineers jobs, but were forced to retire if no such jobs were available. In the opinion written by Justice Lewis F. Powell, Jr., the Court said the policy was "discriminatory on its face" because a pilot unable to fly for reasons other than age would have been given another job without having to bid or wait for it.

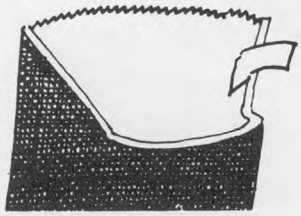
In another important aspect of the ruling that has applications throughout the economy, the Court held that double damages can be awarded in discrimination cases only if the employer acted in "reckless disregard" of antidiscrimination law. Under Federal law, double damages can be assessed if the violation is "willful," which had been interpreted in a number of ways by Federal courts. In their arguments before the Supreme Court in the TWA case, attorneys for the pilots had contended that double damages should apply if TWA was aware of the law and its provisions. This argument was rejected by the Court, which said that such a standard "would result in an award of double damages in almost every case." Instead, the Court backed TWA's argument by defining willful conduct as occurring when an employer "knew or showed reckless disregard for" whether its action was prohibited by Federal law.

Equitable to pay $12.5 million in age bias suit

An age discrimination lawsuit against the Equitable Life Assurance Society ended when a U.S. district judge approved a settlement worked out between the company and 363 former employees. The Equal Employment Opportunity Commission (EEOC) had also joined the plaintiffs in charging that Equitable had violated Federal age discrimination rules in 1978, when it fired the plaintiffs. At the time, Equitable had indicated that the firings were simply part of a plan to cut costs. This was contested by the plaintiffs—many of whom were more than 40 years old—who claimed that they were terminated to open promotions to younger employees. In describing the settlement, the EEOC asserted that Equitable had timed the firings to precede the January 1, 1979, effective date of an amendment to the Age Discrimination in Employment Act that extended protection to persons between age 40 and 70.

An Equitable official said that the EEOC assertions were "absolutely untrue" and that the settlement did not contain any findings of illegal conduct by the company. Continuing, the official said that Equitable "has always denied and continues to deny that it violated the law" and that it had settled only to avoid prolonged and costly court proceedings.

Under the settlement, $12.5 million—reportedly a record amount for a discrimination case—will be distributed to the plaintiffs according to the financial losses they sustained. In exchange, they agreed to drop their claims against the company. □



Book Reviews

Quality of worklife and union interests

Worker Participation and American Unions: Threat or Opportunity? By Thomas A. Kochan, Harry C. Katz, Nancy R. Mower. Kalamazoo, MI, W. E. Upjohn Institute for Employment Research, 1984. 202 pp. $17.95, cloth; $12.95, paper.

In reviewing the burgeoning literature on quality of worklife (QWL) issues and activities, one is hard-pressed to locate many publications that critically examine what some have come to see as "the new industrial relations" and that trace out the broader implications of prevailing practices with regard to worker participation. Much of what has been written to date is disappointingly simplistic and all too reminiscent of the sophistry that marked the human relations era of a few decades ago. Too many books and articles are "sales oriented," with individual authors seeming to vie for recognition as *the* purveyor of wisdom and truth and often doing so with extravagant reports of various gains achieved by using this or that set of "best practices." Others, in their rush to judgment, offer only single-time snapshots of program experiences that portray early "successes" but stop short of capturing subsequent setbacks or "failures." While this may seem too harsh a description of the extant QWL literature, in reviewing it one cannot help but sympathize with managers and union officials who understandably seek (and assuredly deserve) information in which they can have confidence and upon which they might base decisions that may well affect profoundly the institutions they lead.

Particularly conspicuous by their absence from this literature are studies of how various kinds of worker participation schemes affect labor unions, their members, and the relations of both with employers. This void may reflect, in part at least, the fact that the social/behavioral scientists who helped give rise to the QWL movement have historically been, at best, not interested in unions, an attitude that has been easily reciprocated by labor leaders. It is only recently that these QWL advocates have come to recognize unions as more than an "externality" in their industrial relations calculus.

To be sure, we are well acquainted by now with the publicly expressed views of some of the Nation's key labor leaders, especially those who fall at the more extreme points of the pro-con QWL continuum, and we have had confirmed once more that the labor movement in the United States, unlike many of its counterparts abroad, does not speak with a single voice on all matters of common concern. But what is still obscure, even to otherwise astute observers, is how QWL and participation programs have *in fact* affected unions thus far and what these early experiences imply for their future and the future of labor-management relations in this country. These are vital questions and they can be answered not by impressions or by vacuous philosophical debates or by bits and pieces of data incidentally produced during the course of program evaluations focusing largely on productivity improvement. What is required is the kind of systematic empirical research and thoughtful exposition of issues that readers are apt to find in *Worker Participation and American Unions* by Kochan, Katz, and Mower.

The authors of this volume are, in turn, two faculty members and a research associate in the Industrial Relations Section of MIT's Sloan School of Management. The research they report grows out of a project initiated by the AFL–CIO's Industrial Union Department and, according to a foreword by its president, Howard D. Samuel, was intended "to assess the impact on trade unions and collective bargaining of worker participation or quality of worklife programs." While the authors describe as their primary audience "representatives of the labor movement who need to come to grips with the role of worker participation processes," they quite correctly acknowledge settings: Xerox and the Amalgamated Clothing and Textile Workers Union, GM's Packard Electronic division and the International Union of Electronic, Electrical, Technical, Salaried and Machine Workers, the Uniform Piston Co. (a fictitious name) and its unnamed local union, a Canadian grocery chain and the union representing its workers (both unnamed), and the *Minneapolis Star* and *Tribune*, whose employees are represented by the Newspaper Guild. These cases are presented and analyzed in some detail, and each tells an interesting tale in itself. They are tales of joint committees, participation teams, autonomous work groups, and, yes, quality circles. They are also stories of successes and failures, and in some respects mixtures of the two. One would hope that they are read with particular care by those who champion "one best way"

and who see participation processes in mechanistic terms, for experience proves otherwise. This obviously is a field of human endeavor that cannot be negotiated with the aid of anything resembling an American Automobile Association triptik. And, indeed, as the authors conclude, "there is not a magical single line of steady positive results of improvements that automatically flow from a worker participation process." Each case is *sui generis*, its experiences determined to a great extent by the character of and relations among the people involved, as well as the distinctive internal and external conditions that underlie decisions to "go the participation way." In all instances, however, the line separating QWL/participation programs, or "experiments" if you wish, from the ongoing process of collective bargaining is faint if perceptible at all.

The authors shift their focus from happenings in single plants and offices to the broader arena of national labor-management relations. Chosen for examination here are the initiatives of the Steelworkers and the companies that are party to the Basic Steel Agreement, and the Automobile Workers joint efforts with both General Motors and the Ford Motor Co. In chronicling the evolution of the Labor-Management Participation Team program in the steel industry, the authors discuss the several impediments encountered in the diffusion of this process that inevitably threaten its continuity, residing both within each party and in the nature of the relationship between them. In the face of these barriers, as well as the economic travail confronting the industry, it is impressive that four of the six LMPT programs examined were still operative at the time of the study. As to long-term survivability, however, it can only be concluded that the jury is still out.

If any collective bargaining parties have occupied center stage in the QWL drama now being played out in the United States, they are the United Automobile Workers, General Motors, and the Ford Motor Co. Encouraged by the celebrated Lordstown strike and begun with a 1973 letter of understanding between GM and the UAW, an impressive number and variety of QWL programs ("Employee Involvement" at Ford) have been launched in the auto industry. Obviously these multiplant programs are too numerous and too varied for the authors to have attempted more than a brief encapsulation of them. But what they have described serves well to illustrate the kinds of innovations that have been explored and adopted as well as the accomplishments and pitfalls of these joint efforts. Unlike the widely touted Volvo/Kalmar plant, assembly lines, seen by many as the curse of the autoworker, have not been discarded in favor of entirely new production methods. However, through worker participation, changes in "the rules of the game" have led to a greater measure of flexibility that has, in instances at least, produced demonstrable benefits for both management and labor. With the economic crisis faced by this industry, as well as steel, likely to continue, it now remains to be seen how far, how fast, and in what directions worker participation will proceed during the second decade of these joint efforts.

It is in the book's fourth chapter that narrative comes to be joined with empirical data. Here the authors present and analyze the result of surveys they conducted of rank-and-file workers' attitudes toward participation programs and how these affect their jobs and their local unions. Survey data were collected from more than 900 members of five national unions, roughly equal proportions of whom were participants and nonparticipants in various kinds of QWL projects. If one feels some discomfort about the adequacy of sampling and survey procedures, it is understandable. As the authors acknowledge, these respondent groups are truly "samples of convenience" and the data they contribute, by questionnaires completed onsite and via mail, permit few confident conclusions and only limited generalization. Still, at the very least what is offered is a good bit of information as to how these particular workers and union members regard these particular participation schemes. And in a research area where data of this kind and on this scale are rare, this is no small contribution.

And what do union members think? Briefly: (1) they, participants more than nonparticipants, want their say in QWL issues but by no means express a diminished interest in influencing traditional bread-and-butter issues; (2) they report themselves as having less influence than they prefer over both QWL and non-QWL issues regardless of whether they are involved in participation programs; (3) they offer some evidence, although not compelling, that QWL processes tend to improve the character of the jobs they perform; (4) they give their unions higher marks on their handling of bread-and-butter than QWL issues; and (5) they, nonparticipants in this case, differ markedly from organization to organization in their desire to become involved in participation processes. By way of general observation, the authors conclude that "effective performance on QWL issues will not serve as an effective substitute for an inability to deliver economic benefits, job security, and protection from any arbitrary actions on the part of management." Thus, the rank-and-file support essential to initiate and sustain QWL and participation programs requires, in the authors' view, that these be integrated into the overall collective bargaining framework.

Moving onward and upward, the authors then present additional attitudinal data derived from indepth interviews of 30 local union officials and QWL activists (for example, "facilitators") and questionnaire responses from another 110 officials in five auto plants. This sample is even more difficult to characterize, and the discussion of survey results represents an artistic blending of both qualitative (interview) and quantitative (questionnaire) data. We are assured, however, that "the two data sources reveal very similar views."

Consistent with other studies and popular reports, local officials claim that participation processes played a major role in reducing both grievance and absentee rates, and also

helped improve productivity and product quality. Judgments about program impacts on local unions were, however, mixed, with no clear evidence that they enhanced either member identification or satisfaction with their unions. And notwithstanding other reports to the contrary, they dispute that support for participation programs had any bearing on union election outcomes. Finally, these officials differ widely in their views of the future of participation programs, some seeing them as limited, albeit useful, supplements to collective bargaining and others envisioning them as leading to still broader assumptions of management responsibility and possibly as a route to union engagement in nonwork and community interests. But in any event, they voice strong support for participation processes and the role of unions in jointly managing them.

In next presenting "Views from the Top of the Labor Movement," the authors continue the logical progression of the book "to review the contemporary thinking of key national labor movement leaders." Here the data are purely qualitative, consisting of information and presumably impressions extracted from interviews, speeches, and various union documents. Although the AFL-CIO has taken no official stance on QWL programs, the position of its secretary-treasurer, Thomas Donahue, is characterized as one of "cautious skepticism." He is described as accepting QWL activities as supplements to adversarial bargaining but opposed to their being cast as a philosophical movement. And, in his view, the major roadblock to greater labor-management cooperation is the resistance to organized labor manifested by champions of a "union free environment."

The authors identify four quite distinct positions regarding worker participation processes among national unions. Representing "general opposition" on one extreme is the International Association of Machinists and Aerospace Workers (IAM), whose president, William W. Winpisinger, is cast as the "harshest contemporary critic" of QWL programs. (In considering this view from the top, it might have been noted that the IAM is reportedly engaged quite actively in joint QWL efforts at the local level, a situation that speaks clearly of the autonomy exercised by most local unions in the United States.) Located at the opposite end is the Communication Workers of America (CWA), whose president, Glenn E. Watts, is said to be the only one of his rank among major unions to advocate worker participation processes as "an integral part of the union's long-run strategy." Yet, despite the differences between these two leaders, they are in firm agreement that labor-management cooperation requires a much greater acceptance by employers of the legitimacy of unions and the cessation of "antiunion warfare."

Positioned between the "extremes" represented by the IAM and the CWA are the decentralized policies of unions such as the Electrical Workers, the Allied Industrial Workers, and the Food and Commercial Workers on the one hand and the Auto Workers and Steelworkers on the other. The authors describe the first of these, "decentralized neutrality," as the principal national union strategy now prevailing. Here, top officials neither publicly espouse support for worker participation nor lend staff to encouraging and assisting local efforts. Rather, each local makes its own determination in the light of its particular circumstances and aims. By contrast, both the UAW and USA encourage and assist local initiatives, by high level and staff support, but have presidents who themselves offer no public endorsement.

In summarizing these views of top officials, the authors once again stress the importance of gaining employer acceptance of unions as a condition essential for the sustenance and diffusion of QWL and participation programs. But beyond this basic point of agreement, and even in the face of greater employer acceptance, a consensus has yet to emerge as to whether unions should adopt a proactive or reactive position, how far leaders should go in elevating QWL issues on union agendas, and how vigorously they should promote QWL involvement. Perhaps the most basic issue, however, is "whether worker participation can enhance the effectiveness of their representational role at the workplace and eventually be used as a means of enhancing industrial democracy within American society."

In their concluding chapter, the authors derive as "the central implication" of their study the belief "that for worker participation processes to survive . . . each party must see these processes as contributing to their separate economic and organizational interests." During a time when mutuality of interests is being so prominently discussed, it is notable that some recognition is given to the differences in aims still dividing employers and unions, differences whose understanding and acceptance is key to appreciating the full meaning of collective bargaining and labor-management relations. And while it is undeniably true that one does not live by bread alone, can it be any less equivocal that "psychological rewards alone do not appear to be sufficient to maintain the commitment of management, the union and its leaders, or rank-and-file workers" in participation programs? This issue, raised by the authors, might well be pondered by those with QWL program responsibility who seem to be getting by through doling out various kinds of "psychic" and symbolic rewards in lieu of more tangible benefits.

In deriving the implications of their study, the authors argue that union leaders must "link [participation] processes to the union's broader strategies for improving the effectiveness of its bargaining relationship" and cite three prerequisites for labor's support: (1) employer acceptance of union legitimacy; (2) a sustained management commitment to supporting participation processes; and (3) an economically viable enterprise. But even with these requirements met they unhesitatingly conclude that "a total separation of worker participation from collective bargaining is neither possible nor desirable." The task of harmonizing the two obviously poses no small challenge to the leadership of the labor movement. And as yet there is no clear answer to whether QWL will turn out to be "a limited supplement to

collective bargaining or an evolving step toward an American brand of shop floor democracy that is an integral part of the collective bargaining process.''

Going still further in their discussion, the authors suggest that collective bargaining may be shifting away from a ''job control'' concept of unionism and toward one marked by ''a more flexible and varied form of work organization.'' However, the extent to which such a shift actually occurs depends on the parties substantially redefining their roles and their preparedness to make tradeoffs that inevitably involve a measure of risk for both. What could ensue with greater worker participation, in the authors' view, is ''a more proactive form of labor-management relations based around greater joint research and analysis, planning and consultation'' and in time a breeching, or at least a repositioning, of the legally (by the National Labor Relations Act) defined boundary between labor and management. Although ''works councils'' are also envisioned as a possibility, they as well as other forms of ''codetermination,'' including board representation, are given scant attention. Well down the road, as the more or less ultimate extrapolation, lies the creation of ''the microfoundation for a new industrial and human resource development policy,'' a matter clearly deserving of inclusion in the arena of public policy debate.

Appended in a postscript are some comments by the presidents of the CWA and IAM. Watts cautions against ''any blurring of the *distinction* between collective bargaining and QWL'' and also injects a new thought by conceding the importance of implementing QWL values and processes within his own union. Winpisinger agrees that ''in *theory*, QWL is a concept which any responsible union representative would support,'' cites some ways in which ''QWL programs have the potential for being disruptive and unfair,'' and underscores the imperative for ''both management and government to recognize the need for unions in a just society.''

Worker Participation and American Unions is not without its flaws and limitations, methodologically and interpretively. In addition to offering a wider range of systematically gathered empirical data, especially on the specific individual and institutional outcomes of QWL programs and worker participation, one might have hoped for a more extensive discussion of the changing face of industrial relations. Yet, a more inclusive book, to the extent it took the form of an academic tome, would have been likely to escape the attention of much of the readership for which this short volume was intended. But make no mistake, this is a well written and provocative work, one that is a refreshing departure from the often tedious rhetoric that clutters the mainstream of the QWL literature. In its relatively few pages, the authors distill much of the essence of the ongoing QWL debate into a logically developed and easily digestible discussion of some basic issues whose resolution is destined to have an enormous impact on the future course of this country's labor unions and industrial relations system. It would be a mistake for any participant in or serious observer of our rapidly changing industrial relations scene not to read and reflect on its message.

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Looking to the future

Life After Early Retirement: The Experiences of Lower-Level Workers. By Dean W. Morse, Anna B. Dutka, Susan H. Gray. Totowa, NJ, Rowman & Allanheld Publishers, 1983. 192 pp. $25.

Because of the social security and private pension systems, older people are less likely to be without an income than any other group in America. Older workers are also less likely to be unemployed than any other group. The basic statistics on which these statements are based mask the serious concerns of older people in America today.

In their book, *Life After Early Retirement: The Experience of Lower-Level Workers*, the authors focus on the effects of inflation and lack of adequate private pension and social security benefit indexing, of rising health care costs, and the lack of life-long health benefits for the elderly. This information is based on a survey of more than 800 retirees of three corporations—a utility, a chain store, and a manufacturer. The authors' survey presents evidence of all three problems, including supporting commentary by respondents in their sample.

The casual approach of this book keeps the interest of the nontechnical reader more easily than some of the more rigorous empirical work in the area of retirement behavior and policy. Many readers will find that the cross-tabulations of the survey responses and the anecdotes provide insight into the effect of retirement on the lives of workers.

Nevertheless, the work would have been considerably improved if the results the authors obtained from their survey had been reinforced by national statistics on activities of the older worker. For example, the authors write that it appears that a great many of the elderly men in their sample who chose to work moved into the self-employed status after retirement. This phenomenon could have been easily confirmed for all men in this country, age 65 and over, using employment statistics from the Current Population Survey, published regularly by the Bureau of Labor Statistics. There are many other instances where greater attention to other research studies could have improved the book. Moreover, there is little indication that the authors are familiar with the extensive literature in the field, and it is a rare occasion when another author is noted.

An equally disturbing problem arose when the authors attempted to hypothesize at to what the results would have been to a question that they appear to have mistakenly left

out of their survey, by mentally extrapolating the results of a previous, but actually unrelated, question.

Because their work does not define the retirement decision within the framework of a model, the authors are not limited by the assumptions of any model. Thus, many of the aspects of the retirement decision have not been addressed by more scholarly analysts. As a result, the readers benefit from a discussion of the social as well as the economic importance of employment among the elderly. Retirement alternatives that are addressed include flexible schedules for the elderly, advancement, retraining, and job reassignment.

Aside from some repetition, the work is clearly written and provides the reader with a great deal of knowledge concerning retirement behavior, its analysis, policy implications, and areas of future policy concerns.

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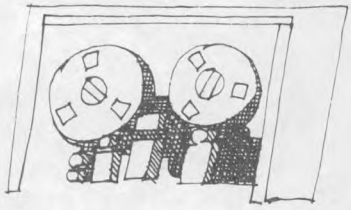
Current Labor Statistics



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 1985 issue of the *Review*, to reflect experience through 1984.

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, January 1983). The second change is that seasonal factors are now being calculated for use during the first 6 months of the year, rather than for the entire year, and then are calculated at mid-year for the July-December period. 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	March 8	February	April 5	March	May 3	April	1–11
Producer Price Index	March 15	February	April 12	March	May 10	April	23–27
Consumer Price Index	March 22	February	April 23	March	May 21	April	19–22
Real earnings	March 22	February	April 23	March	May 21	April	12–16
Productivity and costs:							
Nonfarm business and manufacturing	.....	.....	April 25	1st quarter	.....	.....	29–32
Nonfinancial corporations	.....	.....	.....	.....	May 29	1st quarter	29–32
Major collective bargaining settlements	.....	.....	April 26	1st quarter	.....	.....	36–37
Employment Cost Index	.....	.....	April 30	1st quarter	.....	.....	33–35

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 1984.

1. Employment status of the noninstitutional population, 16 years and over, selected years, 1950–84

[Numbers in thousands]

Year	Noninstitutional 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	Nonagricultural 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	163,541	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
1984	178,080	115,241	64.7	106,702	59.9	1,697	105,005	3,321	101,685	8,539	7.4	62,839

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		1984												1985
	1983	1984	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.
TOTAL															
Noninstitutional population[1,2]	175,891	178,080	177,219	177,363	177,510	177,662	177,813	177,974	178,138	178,295	178,483	178,661	178,834	179,004	179,081
Labor force[2]	113,226	115,241	114,006	114,408	114,592	114,895	115,412	115,309	115,566	115,341	115,484	115,721	115,773	116,162	116,572
Participation rate[3]	64.4	64.7	64.3	64.5	64.6	64.7	64.9	64.8	64.9	64.7	64.7	64.8	64.7	64.9	65.1
Total employed[2]	102,510	106,702	104,980	105,572	105,809	106,095	106,852	107,081	107,075	106,860	107,114	107,354	107,631	107,971	108,088
Employment-population rate[4]	58.3	59.9	59.2	59.5	59.6	59.7	60.1	60.2	60.1	59.9	60.0	60.1	60.2	60.3	60.4
Resident Armed Forces[1]	1,676	1,697	1,686	1,684	1,686	1,693	1,690	1,690	1,698	1,712	1,720	1,705	1,699	1,698	1,697
Civilian employed	100,834	105,005	103,294	103,888	104,123	104,402	105,162	105,391	105,377	105,148	105,394	105,649	105,932	106,273	106,391
Agriculture	3,383	3,321	3,294	3,364	3,305	3,379	3,367	3,368	3,333	3,264	3,319	3,169	3,334	3,385	3,320
Nonagricultural industries	97,450	101,685	100,000	100,524	100,818	101,023	101,795	102,023	102,044	101,884	102,075	102,480	102,598	102,888	103,071
Unemployed	10,717	8,539	9,026	8,836	8,783	8,800	8,560	8,228	8,491	8,481	8,370	8,367	8,142	8,191	8,484
Unemployment rate[5]	9.5	7.4	7.9	7.7	7.7	7.7	7.4	7.1	7.3	7.4	7.2	7.2	7.0	7.1	7.3
Not in labor force	62,665	62,839	63,213	62,955	62,918	62,767	62,401	62,665	62,572	62,954	62,999	62,940	63,061	62,842	62,509
Men, 16 years and over															
Noninstitutional population[1,2]	84,064	85,156	84,745	84,811	84,880	84,953	85,024	85,101	85,179	85,257	85,352	85,439	85,523	85,607	85,629
Labor force[2]	64,580	65,386	64,966	65,081	65,151	65,200	65,304	65,348	65,412	65,357	65,589	65,558	65,657	65,814	65,822
Participation rate[3]	76.8	76.8	76.7	76.7	76.8	76.7	76.8	76.8	76.8	76.7	76.8	76.7	76.8	76.9	76.9
Total employed[2]	58,320	60,642	59,843	60,113	60,262	60,289	60,578	60,758	60,687	60,766	60,959	61,018	61,155	61,252	61,213
Employment-population rate[4]	69.4	71.2	70.6	70.9	71.0	71.0	71.2	71.4	71.2	71.3	71.4	71.4	71.5	71.6	71.5
Resident Armed Forces[1]	1,533	1,551	1,542	1,540	1,542	1,548	1,545	1,545	1,551	1,563	1,571	1,557	1,552	1,550	1,549
Civilian employed	56,787	59,091	58,301	58,573	58,720	58,741	59,033	59,213	59,136	59,203	59,388	59,461	59,603	59,702	59,664
Unemployed	6,260	4,744	5,123	4,968	4,889	4,911	4,726	4,590	4,725	4,591	4,630	4,540	4,502	4,562	4,609
Unemployment rate[5]	9.7	7.3	7.9	7.6	7.5	7.5	7.2	7.0	7.2	7.0	7.1	6.9	6.9	6.9	7.0
Women, 16 years and over															
Noninstitutional population[1,2]	91,827	92,924	92,474	92,552	92,630	92,709	92,789	92,873	92,958	93,039	93,132	93,222	93,311	93,397	93,452
Labor force[2]	48,646	49,855	49,040	49,327	49,441	49,695	50,108	49,961	50,154	49,984	49,895	50,163	50,116	50,348	50,750
Participation rate[3]	53.0	53.7	53.0	53.3	53.4	53.6	54.0	53.8	54.0	53.7	53.6	53.8	53.7	53.9	54.3
Total employed[2]	44,190	46,061	45,137	45,459	45,547	45,806	46,274	46,323	46,388	46,094	46,155	46,336	46,476	46,719	46,875
Employment-population rate[4]	48.1	49.6	48.8	49.1	49.2	49.4	49.9	49.9	49.9	49.5	49.6	49.7	49.8	50.0	50.2
Resident Armed Forces[1]	143	146	144	144	144	145	145	145	147	149	149	148	147	148	148
Civilian employed	44,047	45,915	44,993	45,315	45,403	45,661	46,129	46,178	46,241	45,945	46,006	46,188	46,329	46,571	46,727
Unemployed	4,457	3,794	3,903	3,868	3,894	3,889	3,834	3,638	3,766	3,890	3,740	3,827	3,640	3,629	3,875
Unemployment rate[5]	9.2	7.6	8.0	7.8	7.9	7.8	7.7	7.3	7.5	7.8	7.5	7.6	7.3	7.2	7.6

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

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

[Numbers in thousands]

Employment status	Annual average		1984												1985
	1983	1984	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.
TOTAL															
Civilian noninstitutional population[1]	174,215	176,383	175,533	175,679	175,824	175,969	176,123	176,284	176,440	176,583	176,763	176,956	177,135	177,306	177,384
Civilian labor force	111,550	113,544	112,320	112,724	112,906	113,302	113,722	113,619	113,868	113,629	113,764	114,016	114,074	114,464	114,875
Participation rate	64.0	64.4	64.0	64.2	64.2	64.3	64.6	64.5	64.5	64.3	64.4	64.4	64.4	64.6	64.8
Employed	100,834	105,005	103,294	103,888	104,123	104,402	105,162	105,391	105,377	105,148	105,394	105,649	105,932	106,273	106,391
Employment-population ratio[2]	57.9	59.5	58.8	59.1	59.2	59.3	59.7	59.8	59.7	59.5	59.6	59.7	59.3	59.9	60.0
Unemployed	10,717	8,539	9,026	8,836	8,783	8,800	8,560	8,228	8,491	8,481	8,370	8,367	8,142	8,191	8,484
Unemployment rate	9.6	7.5	8.0	7.8	7.8	7.8	7.5	7.2	7.5	7.5	7.4	7.3	7.1	7.2	7.4
Not in labor force	62,665	62,839	63,213	62,955	62,918	c62,667	62,401	62,665	62,572	62,954	62,999	62,940	63,061	62,842	62,509
Men, 20 years and over															
Civilian noninstitutional population[1]	74,872	76,219	75,692	75,786	75,880	75,973	76,073	76,176	76,269	76,350	76,451	76,565	76,663	76,753	76,760
Civilian labor force	58,744	59,701	59,285	59,372	59,400	59,474	59,572	59,668	59,730	59,771	59,892	59,913	59,994	60,131	60,033
Participation rate	78.5	78.3	78.3	78.3	78.3	78.3	78.3	78.3	78.3	78.3	78.3	78.3	78.3	78.3	78.2
Employed	53,487	55,769	55,012	55,233	55,352	55,387	55,663	55,861	55,846	55,935	c56,075	56,182	56,269	56,372	56,234
Employment-population ratio[2]	71.4	73.2	72.7	72.9	72.9	72.9	73.2	73.3	73.2	73.3	78.3	73.4	73.4	73.4	73.3
Agriculture	2,429	2,418	2,367	2,399	2,382	2,446	2,443	2,448	2,444	2,406	2,414	2,334	2,434	c2,494	2,417
Nonagricultural industries	51,058	53,351	52,645	52,834	52,970	52,941	53,220	53,413	53,402	53,529	53,661	53,848	53,835	53,878	53,817
Unemployed	5,257	3,932	4,273	4,139	4,048	4,087	3,909	3,807	3,884	3,836	3,817	3,731	3,725	3,759	3,798
Unemployment rate	8.9	6.6	7.2	7.0	6.8	6.9	6.6	6.4	6.5	6.4	6.4	6.2	6.2	6.3	6.3
Women, 20 years and over															
Civilian noninstitutional population[1]	84,069	85,429	84,860	84,962	85,064	85,168	85,272	85,380	85,488	85,581	85,688	85,793	85,897	85,995	86,015
Civilian labor force	44,636	45,900	45,031	45,313	45,482	45,685	46,130	45,958	46,131	46,092	45,950	46,264	46,279	46,463	46,771
Participation rate	53.1	53.7	53.1	53.3	53.5	53.6	54.1	53.8	54.0	53.9	53.6	53.9	53.9	54.0	54.4
Employed	41,004	42,793	41,840	42,178	42,334	42,524	43,003	42,986	43,001	42,878	42,906	43,091	43,252	43,511	43,610
Employment-population ratio[2]	48.8	50.1	49.3	49.6	49.8	49.9	50.4	50.3	50.3	50.1	50.1	c50.2	50.4	50.6	50.7
Agriculture	620	595	621	627	587	613	603	611	580	573	590	569	580	595	592
Nonagricultural industries	40,384	42,198	41,219	41,551	41,747	41,911	42,400	42,375	42,421	42,305	42,316	c42,522	42,672	42,916	43,018
Unemployed	3,632	3,107	3,191	3,135	3,148	3,161	3,127	2,972	3,130	3,214	3,044	3,173	3,027	2,952	3,161
Unemployment rate	8.1	6.8	7.1	6.9	6.9	6.9	6.8	6.5	6.8	7.0	6.6	6.9	6.5	6.4	6.8
Both sexes, 16 to 19 years															
Civilian noninstitutional population[1]	15,274	14,735	14,981	14,931	14,880	14,828	14,778	14,728	14,683	14,653	14,624	14,598	14,575	14,557	14,610
Civilian labor force	8,171	7,943	8,004	8,039	8,024	8,043	8,020	7,993	8,007	7,766	7,922	7,839	7,801	7,870	8,072
Participation rate	53.5	53.9	53.4	53.8	53.9	54.2	54.3	54.3	54.5	53.0	54.2	53.7	53.5	54.1	55.2
Employed	6,342	6,444	6,442	6,477	6,437	6,491	6,496	6,544	6,530	6,335	6,413	6,376	6,411	6,390	6,547
Employment-population ratio[2]	41.5	43.7	43.0	43.4	43.3	43.8	44.0	44.4	44.5	43.2	43.9	43.7	44.0	43.9	44.8
Agriculture	334	309	306	338	336	320	321	309	309	285	315	266	320	296	311
Nonagricultural industries	6,008	6,135	6,136	6,139	6,101	6,171	6,175	6,235	6,221	6,050	6,098	6,110	6,091	6,094	6,236
Unemployed	1,829	1,499	1,562	1,562	1,587	1,552	1,524	1,449	1,477	1,431	1,509	1,463	1,390	1,480	1,525
Unemployment rate	22.4	18.9	19.5	19.4	19.8	19.3	19.0	18.1	18.4	18.4	19.0	18.7	17.8	18.8	18.9
White															
Civilian noninstitutional population[1]	150,805	152,347	151,939	152,079	152,285	152,178	152,229	152,295	152,286	152,402	152,471	152,605	152,659	152,734	153,103
Civilian labor force	97,021	98,492	97,824	98,121	98,343	98,419	98,749	98,690	98,627	98,223	98,426	98,631	98,630	99,005	99,496
Participation rate	64.3	64.6	64.4	64.5	64.6	64.7	64.9	64.8	64.8	64.4	64.6	64.6	64.6	64.8	65.0
Employed	88,893	92,120	91,068	91,494	91,750	91,852	92,330	92,516	92,389	91,951	92,177	92,407	92,587	92,884	93,124
Employment-population ratio[2]	58.9	60.5	59.9	60.2	60.2	60.4	60.7	60.7	60.7	60.3	60.5	60.6	60.6	60.8	60.8
Unemployed	8,128	6,372	6,756	6,627	6,593	6,567	6,419	6,174	6,238	6,272	6,249	6,224	6,043	6,121	6,372
Unemployment rate	8.4	6.5	6.9	6.8	6.7	6.7	6.5	6.3	6.3	6.4	6.3	6.3	6.1	6.2	6.4
Black															
Civilian noninstitutional population[1]	18,925	19,348	19,196	19,222	19,248	19,274	19,302	19,330	19,360	19,386	19,416	19,449	19,481	19,513	19,518
Civilian labor force	11,647	12,033	11,712	11,890	11,845	11,898	11,968	11,959	12,083	12,142	12,082	12,208	12,276	12,306	12,315
Participation rate	61.5	62.2	61.0	61.9	61.5	61.7	62.0	61.9	62.4	62.6	62.2	62.8	63.0	63.1	63.1
Employed	9,375	10,119	9,721	9,928	9,878	9,913	10,053	10,138	10,079	10,222	10,260	10,340	10,426	10,462	10,475
Employment-population ratio[2]	49.5	52.3	50.6	51.6	51.3	51.4	52.1	52.4	52.1	52.7	52.8	53.2	53.5	53.6	53.7
Unemployed	2,272	1,914	1,991	1,962	1,967	1,985	1,915	1,821	2,004	1,920	1,822	1,868	1,850	1,844	1,840
Unemployment rate	19.5	15.9	17.0	16.5	16.6	16.7	16.0	15.2	16.6	15.8	15.1	15.3	15.1	15.0	14.9
Hispanic origin[3]															
Civilian noninstitutional population[1]	10,795	11,164	10,995	11,026	11,058	11,088	11,118	11,148	11,180	11,209	11,240	11,270	11,301	11,332	11,363
Civilian labor force	6,884	7,247	7,076	7,018	7,144	7,113	7,170	7,267	7,264	7,299	7,353	7,384	7,394	7,472	7,255
Participation rate	63.8	64.9	64.4	63.6	64.6	64.2	64.5	65.2	65.0	65.1	65.4	65.5	65.4	65.9	63.8
Employed	5,943	6,469	6,271	6,293	6,333	6,294	6,402	6,519	6,503	6,521	6,573	6,574	6,636	6,698	6,487
Employment-population ratio[2]	55.1	57.9	57.0	57.1	57.3	56.8	57.6	58.5	58.2	58.2	58.5	58.3	58.7	59.1	57.1
Unemployed	940	778	805	725	811	819	768	748	761	778	780	810	758	774	768
Unemployment rate	13.7	10.7	11.4	10.3	11.4	11.5	10.7	10.3	10.5	10.7	10.6	11.0	10.3	10.4	10.6

[1] The population figures are not seasonally adjusted.

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

[3] Data for 1984 and earlier years have been revised.

c = corrected.

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		1984												1985
	1983	1984	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.
CHARACTERISTIC															
Civilian employed, 16 years and over	100,834	105,005	103,294	103,888	104,123	104,402	105,162	105,391	105,377	105,148	105,394	105,649	105,932	106,273	106,391
Men	56,787	59,091	58,301	58,573	58,720	58,741	59,033	59,213	59,136	59,203	59,388	59,461	59,603	59,702	59,644
Women	44,047	45,915	44,993	45,315	45,403	45,661	46,129	46,178	46,241	45,945	46,006	46,188	46,329	46,571	46,727
Married men, spouse present	37,967	39,056	38,676	38,859	38,895	39,012	39,060	39,060	39,123	39,073	39,071	39,054	39,337	39,443	39,441
Married women, spouse present	24,603	25,636	24,991	25,244	25,286	25,468	25,658	25,734	25,719	25,772	25,715	25,897	25,995	26,122	25,912
Women who maintain families	5,091	5,465	5,328	5,373	5,449	5,482	5,606	5,622	5,626	5,496	5,429	5,378	5,396	5,396	5,584
MAJOR INDUSTRY AND CLASS OF WORKER															
Agriculture:															
Wage and salary workers	1,579	1,555	1,468	1,547	1,522	1,627	1,580	1,578	1,519	1,453	1,565	1,511	1,593	1,733	1,596
Self-employed workers	1,565	1,553	1,608	1,598	1,579	1,545	1,549	1,566	1,557	1,562	1,555	1,487	1,555	1,485	1,531
Unpaid family workers	240	213	234	230	211	215	239	211	220	209	195	187	204	212	227
Nonagricultural industries:															
Wage and salary workers	89,500	93,565	91,812	92,374	92,747	92,908	93,780	93,845	93,768	93,680	94,140	94,415	94,442	94,725	95,068
Government	15,537	15,770	15,562	15,773	15,765	15,765	15,744	15,713	15,639	15,758	15,881	15,997	15,785	15,858	15,738
Private industries	73,963	77,794	76,250	76,601	76,982	77,143	78,036	78,132	78,129	77,922	78,259	78,418	78,657	78,867	79,330
Private households	1,247	1,238	1,216	1,235	1,164	1,280	1,327	1,297	1,238	1,199	1,198	1,213	1,228	1,257	1,374
Other	72,716	76,556	75,034	75,366	75,818	75,863	76,709	76,835	76,891	76,723	77,061	77,205	77,429	77,610	77,956
Self-employed workers	7,575	7,785	c7,863	7,824	7,769	7,812	7,745	7,815	7,744	7,807	7,752	7,782	7,731	7,786	7,783
Unpaid family workers	376	335	361	331	332	341	323	347	318	321	318	314	357	357	343
PERSONS AT WORK PART TIME[1]															
All industries:															
Part time for economic reasons	6,266	5,744	5,946	5,937	5,619	5,758	5,625	5,831	5,759	5,582	5,690	5,710	5,623	5,814	5,628
Slack work	2,833	2,430	2,508	2,499	2,343	2,390	2,286	2,326	2,373	2,371	2,461	2,514	2,449	2,596	2,431
Could only find part-time work	3,099	2,948	3,112	3,112	3,039	3,085	3,042	2,984	2,832	2,743	2,943	2,879	2,855	2,873	2,848
Voluntary part time	12,911	13,169	13,048	13,091	13,100	13,326	13,250	13,090	13,248	13,210	13,144	13,126	13,142	13,239	13,355
Nonagricultural industries:															
Part time for economic reasons	5,997	5,512	5,719	5,697	5,465	5,520	5,377	5,549	5,482	5,384	5,449	5,483	5,413	5,596	5,389
Slack work	2,684	2,291	2,368	2,354	2,237	2,255	2,153	2,160	2,214	2,254	2,306	2,364	2,319	2,473	2,287
Could only find part-time work	2,993	2,866	3,013	3,012	2,958	2,982	2,949	2,911	2,756	2,675	2,847	2,821	2,782	2,793	2,749
Voluntary part time	12,417	12,704	12,570	12,602	12,592	12,924	12,799	12,621	12,786	12,747	12,669	12,679	12,670	12,778	12,861

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

c = corrected.

NOTE: This issue incorporates a new series on part-time work.

5. Selected unemployment indicators, seasonally adjusted

[Unemployment rates]

Selected categories	Annual average		1984												1985
	1983	1984	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.
CHARACTERISTIC															
Total, all civilian workers	9.6	7.5	8.0	7.8	7.8	7.8	7.5	7.2	7.5	7.5	7.4	7.3	7.1	7.2	7.4
Both sexes, 16 to 19 years	22.4	18.9	19.5	19.4	19.8	19.3	19.0	18.1	18.4	18.4	19.0	18.7	17.8	18.8	18.9
Men, 20 years and over	8.9	6.6	7.2	7.0	6.8	6.9	6.6	6.4	6.5	6.4	6.4	6.2	6.2	6.3	6.3
Women, 20 years and over	8.1	6.8	7.1	6.9	6.9	6.9	6.8	6.5	6.8	7.0	6.6	6.9	6.5	6.4	6.8
White, total	8.4	6.5	6.9	6.8	6.7	6.7	6.5	6.3	6.3	6.4	6.3	6.3	6.1	6.2	6.4
Both sexes, 16 to 19 years	19.3	16.0	16.4	16.5	16.9	16.2	16.2	15.8	15.2	16.0	16.3	15.9	15.1	15.9	15.8
Men, 16 to 19 years	20.2	16.8	17.7	16.8	17.3	16.8	16.9	16.6	17.4	16.7	17.0	16.6	16.2	16.2	15.9
Women, 16 to 19 years	18.3	15.2	14.9	16.1	16.4	15.7	15.5	15.1	12.9	15.4	15.5	15.2	13.9	15.5	15.8
Men, 20 years and over	7.9	5.7	6.3	6.1	5.9	5.9	5.7	5.4	5.5	5.5	5.5	5.4	5.4	5.4	5.5
Women, 20 years and over	6.9	5.8	6.0	5.9	5.9	6.0	5.8	5.6	5.8	5.9	5.7	5.8	5.5	5.5	5.9
Black, total	19.5	15.9	17.0	16.5	16.6	16.7	16.0	15.2	16.6	15.8	15.1	15.3	15.1	15.0	14.9
Both sexes, 16 to 19 years	48.5	42.7	47.4	43.8	46.6	44.3	44.4	37.1	42.3	41.3	41.9	40.2	41.2	42.1	42.1
Men, 16 to 19 years	48.8	42.7	46.6	46.0	44.3	42.9	41.4	38.2	42.3	40.5	41.0	43.8	42.0	43.8	45.3
Women, 16 to 19 years	48.2	42.6	48.2	41.4	49.4	45.9	48.1	35.8	42.2	42.2	43.0	36.2	40.2	40.1	38.5
Men, 20 years and over	18.1	14.3	15.1	14.6	15.1	15.6	14.3	14.6	15.5	14.1	13.5	13.4	12.8	13.3	12.7
Women, 20 years and over	16.5	13.5	14.6	14.4	13.8	13.6	13.7	12.6	13.8	13.8	12.6	13.4	13.5	12.7	12.8
Hispanic origin, total[1]	13.7	10.7	11.4	10.3	11.4	11.5	10.7	10.3	10.5	10.7	10.6	11.0	10.3	10.4	10.6
Married men, spouse present	6.5	4.6	5.0	4.9	4.7	4.7	4.6	4.6	4.5	4.5	4.6	4.5	4.4	4.4	4.6
Married women, spouse present	7.0	5.7	6.0	5.9	5.8	5.8	5.8	5.7	5.8	5.8	5.7	5.7	5.4	5.4	5.7
Women who maintain families	12.2	10.3	10.7	10.8	10.8	10.5	10.0	9.8	9.8	10.3	10.1	10.4	10.8	9.6	10.0
Full-time workers	9.5	7.2	7.8	7.6	7.5	7.5	7.2	6.7	7.2	7.1	7.1	7.1	6.9	6.9	7.1
Part-time workers	10.4	9.3	9.4	9.4	9.3	9.3	9.4	10.0	9.6	9.6	9.3	9.1	8.6	8.8	9.3
Unemployed 15 weeks and over	3.8	2.4	2.8	2.7	2.6	2.5	2.5	2.3	2.3	2.3	2.3	2.2	2.1	2.1	2.0
Labor force time lost[2]	10.9	8.6	9.1	9.0	8.9	8.8	8.6	8.4	8.5	8.5	8.5	8.4	8.2	8.3	8.2
INDUSTRY															
Nonagricultural private wage and salary workers	9.9	7.4	7.9	7.8	7.7	7.7	7.3	7.0	7.4	7.4	7.3	7.2	7.2	7.2	7.3
Mining	17.0	10.0	11.3	11.8	10.8	10.1	8.8	7.5	7.7	10.2	8.6	10.5	11.7	10.7	10.1
Construction	18.4	14.3	15.2	14.9	13.6	14.4	14.7	14.6	14.6	14.1	13.9	13.7	14.2	13.7	13.4
Manufacturing	11.2	7.5	8.2	7.7	7.6	7.7	7.2	7.3	7.5	7.4	7.4	7.3	7.2	7.2	7.6
Durable goods	12.1	7.2	8.0	7.5	7.7	7.5	7.1	7.2	6.9	6.9	6.9	6.9	7.0	7.1	7.2
Nondurable goods	10.0	7.8	8.6	8.0	7.5	8.0	7.3	7.5	8.5	8.1	8.1	7.8	7.4	7.2	8.1
Transportation and public utilities	7.4	5.5	5.2	5.9	5.4	5.5	5.7	5.3	5.9	5.9	5.9	5.3	5.2	5.0	4.9
Wholesale and retail trade	10.0	8.0	8.4	8.3	8.2	8.7	8.0	7.3	7.8	7.7	8.0	7.9	7.6	7.5	7.7
Finance and service industries	7.2	5.9	6.2	6.3	6.3	6.1	5.7	5.5	5.9	6.0	5.6	5.7	5.8	5.9	5.9
Government workers	5.3	4.5	4.9	4.5	4.5	4.4	4.7	4.2	4.5	4.4	4.5	4.4	4.3	4.4	4.1
Agricultural wage and salary workers	16.0	13.5	15.1	14.1	14.6	12.7	13.8	12.3	14.3	13.1	14.7	13.7	11.2	12.2	15.5

[1] Data for 1984 and earlier years have been revised.

[2] 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		1984												1985
	1983	1984	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.
Total, 16 years and over	9.6	7.5	8.0	7.8	7.8	7.8	7.5	7.2	7.5	7.5	7.4	7.3	7.1	7.2	7.4
16 to 24 years	17.2	13.9	14.7	14.3	14.4	14.5	14.1	13.2	13.6	13.9	13.9	13.5	13.2	13.5	13.6
16 to 19 years	22.4	18.9	19.5	19.4	19.8	19.3	19.0	18.1	18.4	18.4	19.0	18.7	17.8	18.8	18.9
16 to 17 years	24.5	21.2	22.2	22.1	22.7	22.1	20.6	20.1	20.7	21.2	20.9	20.2	20.0	21.0	21.2
18 to 19 years	21.1	17.4	17.8	17.8	18.1	17.6	17.9	16.8	16.7	16.7	17.7	17.8	16.8	17.7	17.4
20 to 24 years	14.5	11.5	12.3	11.7	11.7	12.1	11.6	10.8	11.2	11.7	11.4	11.0	10.9	10.9	10.9
25 years and over	7.5	5.8	6.2	6.1	6.0	6.0	5.8	5.7	5.8	5.7	5.6	5.7	5.5	5.5	5.8
25 to 54 years	8.0	6.1	6.5	6.4	6.3	6.3	6.0	5.8	6.1	6.0	5.9	5.9	5.8	5.8	6.1
55 years and over	5.3	4.5	4.7	4.4	4.4	4.3	4.5	4.5	4.5	4.5	4.5	4.7	4.4	4.1	4.2
Men, 16 years and over	9.9	7.4	8.1	7.8	7.7	7.7	7.4	7.2	7.4	7.2	7.2	7.1	7.0	7.1	7.2
16 to 24 years	18.4	14.4	15.4	14.7	14.7	14.9	14.3	13.9	14.5	14.3	14.6	13.8	13.7	14.1	13.8
16 to 19 years	23.3	19.6	20.5	19.9	20.0	19.7	19.5	18.9	20.4	18.8	19.7	19.8	18.9	19.4	19.1
16 to 17 years	25.2	21.9	22.5	22.2	23.0	23.3	21.7	22.4	22.6	22.2	21.0	21.3	20.3	19.8	21.2
18 to 19 years	22.2	18.3	19.4	18.3	18.2	17.7	18.1	17.0	18.5	16.6	18.7	18.9	18.3	19.3	18.0
20 to 24 years	15.9	11.9	12.9	12.2	12.0	12.6	11.7	11.5	11.6	12.1	12.2	10.9	11.2	11.5	11.2
25 years and over	7.8	5.7	6.2	6.1	5.9	5.9	5.7	5.5	5.6	5.5	5.5	5.4	5.4	5.4	5.5
25 to 54 years	8.2	5.9	6.5	6.4	6.1	6.2	5.9	5.7	5.8	5.7	5.6	5.6	5.6	5.6	5.8
55 years and over	5.6	4.6	4.9	4.6	4.7	4.5	4.6	4.5	4.6	4.6	4.8	4.7	4.7	4.4	4.3
Women, 16 years and over	9.2	7.6	8.0	7.9	7.9	7.8	7.7	7.3	7.5	7.8	7.5	7.7	7.3	7.2	7.7
16 to 24 years	15.8	13.3	14.0	13.8	14.1	14.0	13.9	12.5	12.7	13.5	13.2	13.2	12.6	12.8	13.3
16 to 19 years	21.3	18.0	18.4	18.9	19.6	18.8	18.4	17.3	16.4	18.1	18.3	17.4	16.6	18.1	18.6
16 to 17 years	23.7	20.4	22.0	22.1	22.3	20.8	19.4	17.6	18.7	20.3	20.9	19.0	19.7	22.3	21.2
18 to 19 years	19.9	16.6	16.0	17.2	17.9	17.6	17.7	16.5	14.7	16.7	16.6	16.5	15.1	16.0	16.7
20 to 24 years	12.9	10.9	11.6	11.1	11.2	11.4	11.5	10.0	10.8	11.1	10.5	11.1	10.7	10.2	10.5
25 years and over	7.2	6.0	6.2	6.1	6.1	6.0	5.9	5.9	6.0	6.1	5.9	6.0	5.7	5.6	6.1
25 to 54 years	7.7	6.3	6.5	6.5	6.5	6.4	6.2	6.0	6.4	6.5	6.2	6.2	6.1	6.0	6.4
55 years and over	4.7	4.2	4.5	4.1	4.0	4.0	4.3	4.5	4.2	4.3	4.0	4.8	3.9	3.7	4.2

7. Unemployed persons by reason for unemployment, seasonally adjusted

[Numbers in thousands]

Reason for unemployment	Annual average		1984												1985
	1983	1984	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.
Job losers	6,258	4,421	4,829	4,739	4,622	4,531	4,373	4,271	4,475	4,227	4,188	4,261	4,141	4,176	4,313
On layoff	1,780	1,171	1,257	1,271	1,248	1,117	1,187	1,162	1,165	1,146	1,110	1,151	1,068	1,070	1,229
Other job losers	4,478	3,250	3,572	3,468	3,374	3,414	3,186	3,109	3,310	3,081	3,078	3,110	3,073	3,106	3,084
Job leavers	830	823	810	786	777	792	812	809	850	833	841	829	869	858	884
Reentrants	2,412	2,184	2,199	2,171	2,208	2,301	2,184	1,989	2,111	2,294	2,254	2,150	2,161	2,218	2,244
New entrants	1,216	1,110	1,185	1,102	1,200	1,197	1,170	1,134	1,092	1,088	1,057	1,060	1,024	1,011	1,049
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	58.4	51.8	53.5	53.9	52.5	51.4	51.2	52.1	52.5	50.1	50.2	51.3	50.5	50.5	50.8
On layoff	16.6	13.7	13.9	14.4	14.2	12.7	13.9	14.2	13.7	13.6	13.3	13.9	13.0	12.9	14.5
Other job losers	41.8	38.1	39.6	39.4	38.3	38.7	37.3	37.9	38.8	36.5	36.9	37.5	37.5	37.6	36.3
Job leavers	7.7	9.6	9.0	8.9	8.8	9.0	9.5	9.9	10.0	9.9	10.1	10.0	10.6	10.4	10.4
Reentrants	22.5	25.6	24.4	24.7	25.1	26.1	25.6	24.2	24.8	27.2	27.0	25.9	26.4	26.8	26.4
New entrants	11.3	13.0	13.1	12.5	13.6	13.6	13.7	13.8	12.8	12.9	12.7	12.8	12.5	12.2	12.4
PERCENT OF CIVILIAN LABOR FORCE															
Job losers	5.6	3.9	4.3	4.2	4.1	4.0	3.8	3.8	3.9	3.7	3.7	3.7	3.6	3.6	3.8
Job leavers	.7	.7	.7	.7	.7	.7	.7	.7	.7	.7	.7	.7	.8	.7	.8
Reentrants	2.2	1.9	2.0	1.9	2.0	2.0	1.9	1.8	1.9	2.0	2.0	1.9	1.9	1.9	2.0
New entrants	1.1	1.0	1.1	1.0	1.1	1.1	1.0	1.0	1.0	1.0	.9	.9	.9	.9	.9

8. Duration of unemployment, seasonally adjusted

[Numbers in thousands]

Weeks of unemployment	Annual average		1984												1985
	1983	1984	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.
Less than 5 weeks	3,570	3,350	3,298	3,359	3,378	3,407	3,275	3,229	3,409	3,513	3,313	3,395	3,352	3,282	3,662
5 to 14 weeks	2,937	2,451	2,529	2,482	2,514	2,485	2,440	2,303	2,449	2,406	2,533	2,406	2,324	2,516	2,552
15 weeks and over	4,210	2,737	3,201	3,002	2,894	2,842	2,833	2,630	2,672	2,621	2,605	2,527	2,428	2,374	2,243
15 to 26 weeks	1,652	1,104	1,194	1,172	1,122	1,102	1,173	1,012	1,088	1,116	1,106	1,092	990	972	941
27 weeks and over	2,559	1,634	2,007	1,830	1,772	1,740	1,660	1,618	1,584	1,505	1,499	1,435	1,438	1,402	1,302
Mean duration in weeks	20.0	18.2	19.9	19.0	18.9	18.7	18.5	18.1	18.0	17.6	17.3	16.7	17.4	17.3	15.3
Median duration in weeks	10.1	7.9	8.9	8.4	8.4	8.1	8.3	7.5	7.6	7.6	7.6	7.3	7.3	7.4	6.7

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	December 1983	November 1984	December 1984[p]	State	December 1983	November 1984	December 1984[p]
Alabama	1,338.8	1,356.6	1,351.3	Montana	273.3	275.8	274.8
Alaska	206.2	218.0	213.3	Nebraska	617.4	642.0	639.5
Arizona	1,115.5	1,189.4	1,198.7	Nevada	416.6	426.3	424.3
Arkansas	760.4	783.2	782.4	New Hampshire	419.4	440.9	441.2
California	10,183.4	10,530.2	10,599.4	New Jersey	3,216.4	3,315.4	3,324.2
Colorado	1,351.8	1,387.6	1,394.6	New Mexico	485.3	504.0	506.5
Connecticut	1,484.6	1,515.5	1,528.2	New York	7,440.7	7,571.4	7,582.1
Delaware	270.8	278.7	278.5	North Carolina	2,475.8	2,526.5	2,524.5
District of Columbia	598.5	602.6	606.1	North Dakota	252.3	254.7	252.2
Florida	4,056.4	4,239.8	4,266.8	Ohio	4,176.1	4,244.3	4,244.9
Georgia	2,341.3	2,484.8	2,502.2	Oklahoma	1,181.0	1,187.8	1,191.0
Hawaii	406.1	406.9	409.3	Oregon	976.4	1,008.8	1,004.1
Idaho	323.8	330.2	329.4	Pennsylvania	4,602.5	4,679.5	4,657.9
Illinois	4,541.6	4,631.2	4,579.1	Rhode Island	400.5	409.6	(1)
Indiana	2.037.7	2,093.1	2,088.2	South Carolina	1,214.2	1,239.2	1,242.9
Iowa	1,036.9	1,046.6	1,040.0	South Dakota	234.6	241.8	238.3
Kansas	928.6	955.6	952.7	Tennessee	1,766.6	1,825.6	1,833.7
Kentucky	1,186.4	1,215.3	1,217.1	Texas	6,281.9	6,412.4	6,444.7
Louisiana	1,580.7	1,581.1	1,582.7	Utah	586.7	616.7	618.7
Maine	424.6	437.0	435.4	Vermont	209.1	212.3	213.8
Maryland	1,733.4	1,775.1	1,785.7	Virginia	2,251.5	2,326.4	2,337.0
Massachusetts	2,741.6	2,778.1	2,779.1	Washington	1,601.4	1,667.4	1,661.6
Michigan	3,273.9	3,350.3	3,355.9	West Virginia	591.9	594.0	590.2
Minnesota	1,757.1	1,876.3	1,866.1	Wisconsin	1,889.9	1,955.2	1,944.6
Mississippi	805.1	816.0	818.8	Wyoming	202.4	200.8	197.4
Missouri	1,940.9	1,977.8	1,978.4				
				Virgin Islands	35.4	34.3	34.6

[1] Data not available.

p = preliminary.

11. Employment, by industry, seasonally adjusted

[Nonagricultural payroll data, in thousands]

Industry division and group	Annual average		1984												1985
	1982	1983	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.p	Jan.p
TOTAL	89,566	90,138	92,391	92,846	93,058	93,449	93,768	94,135	94,350	94,523	94,807	95,154	95,494	95,661	96,009
PRIVATE SECTOR	73,729	74,288	76,533	76,971	77,185	77,546	77,864	78,241	78,422	78,566	78,698	79,054	79,371	79,616	79,949
GOODS-PRODUCING	23,813	23,394	24,383	24,577	24,595	24,760	24,851	24,974	25,059	25,098	25,010	25,080	25,123	25,265	25,347
Mining	1,128	957	975	978	978	984	995	1,002	1,007	1,017	1,020	1,012	1,009	1,003	992
Oil and gas extraction	708	600	608	607	607	612	619	623	629	636	642	643	648	646	637
Construction	3,905	3,940	4,154	4,226	4,151	4,246	4,286	4,343	4,356	4,356	4,374	4,382	4,396	4,452	4,522
General building contractors	991	1,015	1,100	1,111	1,099	1,110	1,126	1,135	1,133	1,132	1,140	1,140	1,146	1,157	1,192
Manufacturing	18,781	18,497	19,254	19,373	19,466	19,530	19,570	19,629	19,696	19,725	19,616	19,686	19,718	19,810	19,833
Production workers	12,742	12,581	13,234	13,326	13,388	13,443	13,465	13,492	13,541	13,558	13,448	13,497	13,505	13,577	13,586
Durable goods	11,039	10,774	11,343	11,440	11,513	11,551	11,598	11,652	11,702	11,758	11,696	11,752	11,776	11,843	11,861
Production workers	7,311	7,151	7,643	7,718	7,769	7,799	7,826	7,860	7,899	7,945	7,876	7,915	7,925	7,974	7,977
Lumber and wood products	598	658	702	706	712	714	711	712	708	706	703	710	713	717	720
Furniture and fixtures	432	447	475	480	483	482	482	485	485	484	481	487	492	495	498
Stone, clay, and glass products	577	573	595	604	606	604	605	605	606	603	603	606	606	613	613
Primary metal industries	922	838	871	877	877	879	887	884	880	879	865	866	865	860	853
Blast furnaces and basic steel products	396	343	347	348	347	345	347	345	342	334	324	320	320	319	316
Fabricated metal products	1,427	1,374	1,440	1,447	1,456	1,459	1,469	1,479	1,490	1,491	1,485	1,495	1,498	1,503	1,502
Machinery, except electrical	2,244	2,038	2,137	2,151	2,166	2,189	2,203	2,226	2,242	2,252	2,243	2,255	2,251	2,254	2,252
Electrical and electronic equipment	2,008	2,024	2,152	2,175	2,202	2,212	2,228	2,237	2,252	2,267	2,263	2,269	2,274	2,282	2,293
Transportation equipment	1,735	1,756	1,876	1,898	1,905	1,905	1,906	1,917	1,926	1,961	1,939	1,945	1,957	1,994	2,011
Motor vehicles and equipment	699	758	858	865	863	857	848	855	858	894	864	865	877	906	921
Instruments and related products	716	695	711	715	718	719	722	723	727	726	726	729	731	733	729
Miscellaneous manufacturing	382	371	384	387	388	388	385	384	386	389	388	390	389	392	390
Nondurable goods	7,741	7,724	7,911	7,933	7,953	7,979	7,972	7,977	7,994	7,967	7,920	7,934	7,942	7,967	7,972
Production workers	5,431	5,430	5,591	5,608	5,619	5,644	5,639	5,632	5,642	5,613	5,572	5,582	5,580	5,603	5,609
Food and kindred products	1,636	1,622	1,638	1,637	1,638	1,648	1,643	1,644	1,655	1,642	1,630	1,640	1,644	1,658	1,662
Tobacco manufactures	69	69	66	65	66	67	67	67	66	65	69	69	67	69	71
Textile mill products	749	744	758	767	769	766	762	759	755	751	744	735	731	728	727
Apparel and other textile products	1,161	1,164	1,207	1,213	1,218	1,226	1,217	1,209	1,206	1,200	1,181	1,178	1,178	1,186	1,181
Paper and allied products	662	662	676	680	680	680	681	685	687	686	680	684	683	684	683
Printing and publishing	1,272	1,296	1,328	1,333	1,339	1,348	1,356	1,362	1,368	1,371	1,375	1,380	1,386	1,385	1,393
Chemicals and allied products	1,075	1,047	1,053	1,054	1,054	1,057	1,057	1,062	1,064	1,067	1,063	1,065	1,066	1,069	1,070
Petroleum and coal products	201	195	191	190	190	189	188	188	187	187	186	185	185	184	185
Rubber and miscellaneous plastics products	697	718	774	784	790	790	795	797	801	800	798	805	810	813	814
Leather and leather products	219	208	210	210	209	208	206	204	205	198	194	193	192	191	186
SERVICE-PRODUCING	65,753	66,744	68,008	68,269	68,463	68,689	68,917	69,161	69,291	69,425	69,797	70,074	70,371	70,396	70,662
Transportation and public utilities	5,082	4,958	5,095	5,105	5,112	5,129	5,144	5,163	5,175	5,202	5,213	5,225	5,226	5,238	5,248
Transportation	2,789	2,739	2,816	2,828	2,839	2,862	2,871	2,883	2,896	2,924	2,937	2,951	2,953	2,964	2,962
Communication and public utilities	2,293	2,219	2,279	2,276	2,273	2,267	2,273	2,280	2,279	2,278	2,276	2,274	2,273	2,274	2,286
Wholesale trade	5,278	5,259	5,406	5,438	5,457	5,473	5,492	5,502	5,528	5,544	5,588	5,612	5,623	5,645	5,677
Durable goods	11,039	10,774	11,343	11,440	11,513	11,551	11,598	11,652	11,702	11,758	11,696	11,752	11,776	11,843	11,861
Nondurable goods	7,741	7,724	7,911	7,933	7,953	7,979	7,972	7,977	7,994	7,967	7,920	7,934	7,942	7,967	7,972
Retail trade	15,179	15,545	15,914	15,980	16,030	16,095	16,166	16,245	16,283	16,295	16,342	16,468	16,644	16,635	16,765
General merchandise stores	2,184	2,161	2,210	2,211	2,230	2,251	2,273	2,295	2,301	2,303	2,318	2,334	2,391	2,351	2,373
Food stores	2,478	2,560	2,618	2,626	2,626	2,635	2,630	2,641	2,648	2,640	2,648	2,677	2,696	2,707	2,720
Automotive dealers and service stations	1,632	1,667	1,725	1,740	1,748	1,743	1,751	1,751	1,762	1,758	1,755	1,763	1,772	1,779	1,787
Eating and drinking places	4,831	5,007	5,111	5,121	5,136	5,154	5,183	5,199	5,211	5,238	5,255	5,280	5,303	5,325	5,359
Finance, insurance, and real estate	5,341	5,467	5,573	5,593	5,613	5,640	5,662	5,676	5,676	5,679	5,684	5,705	5,725	5,748	5,761
Finance	2,646	2,740	2,797	2,812	2,831	2,851	2,863	2,854	2,854	2,850	2,856	2,865	2,874	2,886	2,897
Insurance	1,714	1,721	1,737	1,741	1,742	1,742	1,746	1,752	1,759	1,763	1,766	1,774	1,778	1,784	1,786
Real estate	981	1,005	1,039	1,040	1,041	1,047	1,053	1,066	1,063	1,066	1,062	1,066	1,073	1,078	1,078
Services	19,036	19,665	20,162	20,278	20,378	20,449	20,549	20,681	20,701	20,748	20,861	20,964	21,030	21,085	21,151
Business services	3,286	3,539	3,798	3,845	3,875	3,912	3,979	4,014	4,035	4,069	4,085	4,110	4,142	4,152	4,190
Health services	5,812	5,973	6,030	6,040	6,052	6,062	6,073	6,064	6,079	6,034	6,085	6,087	6,104	6,112	6,148
Government	15,837	15,851	15,858	15,875	15,873	15,903	15,904	15,894	15,928	15,957	16,109	16,100	16,123	16,045	16,060
Federal	2,739	2,752	2,760	2,763	2,770	2,771	2,767	2,777	2,779	2,785	2,804	2,790	2,801	2,794	2,799
State	3,640	3,660	3,670	3,682	3,686	3,693	3,699	3,699	3,697	3,714	3,725	3,719	3,724	3,706	3,715
Local	9,458	9,439	9,428	9,430	9,417	9,439	9,438	9,418	9,452	9,458	9,580	9,591	9,598	9,545	9,546

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		1984												1985
	1982	1983	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.p	Jan.p
PRIVATE SECTOR	34.8	35.0	35.4	35.3	35.3	35.4	35.3	35.3	35.2	35.2	35.4	35.1	35.2	35.3	35.2
MANUFACTURING	38.9	40.1	40.9	40.9	40.7	41.1	40.6	40.6	40.5	40.5	40.6	40.4	40.5	40.7	40.6
Overtime hours	2.3	3.0	3.5	3.5	3.5	3.7	3.3	3.3	3.3	3.3	3.3	3.3	3.4	3.4	3.3
Durable goods	39.3	40.7	41.6	41.7	41.4	41.8	41.3	41.2	41.2	41.2	41.5	41.3	41.2	41.4	41.4
Overtime hours	2.2	3.0	3.7	3.8	3.7	4.0	3.5	3.5	3.5	3.4	3.5	3.5	3.6	3.6	3.6
Lumber and wood products	38.0	40.1	40.6	40.4	40.1	40.4	39.6	39.4	39.3	39.4	40.2	39.7	39.5	40.2	40.1
Furniture and fixtures	37.2	39.4	40.0	39.9	39.6	39.7	39.7	39.1	39.8	39.1	39.9	39.6	39.8	39.6	40.3
Stone, clay, and glass products	40.1	41.5	42.1	42.5	41.9	42.3	42.1	41.8	41.9	41.7	42.0	41.8	41.8	41.8	41.7
Primary metal industries	38.6	40.5	41.9	42.0	41.8	42.2	42.1	41.7	41.5	41.0	41.3	41.3	41.5	41.2	41.0
Blast furnaces and basic steel products	37.9	39.5	41.0	41.3	41.2	41.0	41.6	41.1	39.9	39.6	40.0	40.1	40.8	39.8	39.4
Fabricated metal products	39.2	40.6	41.6	41.8	41.3	41.8	41.4	41.3	41.3	41.1	41.5	40.3	41.1	41.5	41.2
Machinery, except electrical	39.7	40.5	41.8	41.9	41.9	42.3	41.9	42.0	41.8	42.0	42.0	41.9	41.7	41.9	41.8
Electrical and electronic equipment	39.3	40.5	41.2	41.2	41.0	41.3	41.0	40.8	40.8	40.9	41.2	40.9	41.0	40.9	40.9
Transportation equipment	40.5	42.1	43.2	43.1	42.9	43.5	42.4	42.3	42.2	42.4	42.8	42.4	42.4	43.0	43.2
Motor vehicles and equipment	40.5	43.3	44.8	44.3	44.4	44.8	42.9	43.1	42.4	43.3	43.9	43.3	43.4	44.4	44.6
Instruments and related products	39.8	40.4	41.3	41.2	41.1	41.4	40.7	41.3	41.3	41.1	41.5	41.2	41.5	41.9	40.8
Nondurable goods	38.4	39.4	39.9	39.9	39.8	40.2	39.6	39.6	39.4	39.5	39.4	39.3	39.4	39.6	39.4
Overtime hours	2.5	3.0	3.3	3.3	3.3	3.4	3.1	3.2	3.1	3.1	3.0	2.9	3.2	3.1	2.9
Food and kindred products	39.4	39.5	39.7	39.7	39.8	40.1	39.7	39.8	39.5	39.7	39.6	39.6	39.7	40.0	39.8
Textile mill products	37.5	40.5	40.6	40.8	40.6	41.2	40.0	40.0	39.8	39.4	39.2	38.7	39.0	39.3	39.2
Apparel and other textile products	34.7	36.2	36.6	36.9	36.7	37.4	36.5	36.4	35.8	36.0	35.9	35.9	36.0	36.3	36.2
Paper and allied products	41.8	42.6	43.2	43.2	43.0	43.2	43.1	42.9	43.3	43.1	43.1	43.0	43.2	43.1	43.0
Printing and publishing	37.1	37.6	37.9	37.9	37.9	38.2	38.0	37.7	37.7	37.8	37.9	37.8	37.9	37.6	37.4
Chemicals and allied products	40.9	41.6	42.1	42.1	42.0	42.0	41.8	41.9	41.9	42.0	41.8	41.6	41.7	42.0	41.6
Petroleum and coal products	43.9	43.9	44.8	44.5	44.7	43.7	43.5	43.1	43.2	43.9	43.1	43.5	43.5	43.0	43.0
Leather and leather products	35.6	36.8	37.3	37.2	36.7	37.5	36.5	36.7	37.0	36.0	36.5	36.4	36.4	36.9	36.7
TRANSPORTATION AND PUBLIC UTILITIES	39.0	39.0	39.5	39.3	39.2	39.5	39.4	39.6	39.8	39.4	39.8	39.1	39.4	39.2	39.4
WHOLESALE TRADE	38.3	38.5	38.6	38.5	38.5	38.7	38.6	38.6	38.6	38.7	38.8	38.6	38.6	38.6	38.4
RETAIL TRADE	29.9	29.8	30.1	30.0	30.1	30.0	30.1	30.2	29.9	29.9	30.0	29.8	29.9	30.0	29.9
SERVICES	32.6	32.7	32.8	32.7	32.8	32.8	32.7	32.7	32.7	32.6	32.8	32.7	32.7	32.8	32.7

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		1984												1985
	1982	1983	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.p	Jan.p
PRIVATE SECTOR	$7.68	$8.02	$8.26	$8.24	$8.24	$8.29	$8.28	$8.29	$8.32	$8.30	$8.43	$8.40	$8.43	$8.46	$8.49
Seasonally adjusted	(1)	(1)	8.21	8.23	8.25	8.31	8.29	8.33	8.35	8.34	8.40	8.38	8.42	8.47	8.44
MINING	10.77	11.27	11.54	11.49	11.60	11.62	11.56	11.57	11.57	11.57	11.66	11.52	11.57	11.64	11.69
CONSTRUCTION	11.63	11.92	12.08	11.99	11.97	11.95	11.99	11.94	11.97	12.01	12.15	12.14	12.01	12.18	12.25
MANUFACTURING	8.49	8.83	9.08	9.06	9.09	9.11	9.11	9.14	9.18	9.14	9.23	9.22	9.30	9.38	9.40
Durable goods	9.04	9.38	9.64	9.63	9.66	9.67	9.66	9.69	9.70	9.68	9.77	9.76	9.82	9.94	9.95
Lumber and wood products	7.43	7.79	7.88	7.88	7.87	7.89	7.92	8.04	8.01	8.05	8.15	8.06	8.01	8.03	8.02
Furniture and fixtures	6.31	6.62	6.76	6.75	6.76	6.76	6.80	6.84	6.88	6.90	6.95	6.95	6.96	7.03	7.05
Stone, clay, and glass products	8.87	9.27	9.42	9.38	9.40	9.51	9.54	9.58	9.64	9.62	9.64	9.63	9.66	9.68	9.74
Primary metal industries	11.33	11.34	11.38	11.49	11.44	11.51	11.49	11.46	11.45	11.34	11.39	11.31	11.44	11.46	11.43
Blast furnaces and basic steel products	13.35	12.89	12.76	13.10	12.97	13.12	13.09	13.02	13.02	12.90	13.01	12.86	12.99	12.97	12.94
Fabricated metal products	8.77	9.11	9.31	9.31	9.31	9.34	9.33	9.33	9.33	9.30	9.41	9.38	9.42	9.56	9.55
Machinery, except electrical	9.26	9.55	9.85	9.87	9.90	9.91	9.90	9.93	9.96	9.92	10.01	10.01	10.06	10.15	10.09
Electrical and electronic equipment	8.21	8.65	8.88	8.86	8.88	8.89	8.89	8.91	8.95	9.00	9.08	9.09	9.15	9.26	9.33
Transportation equipment	11.11	11.66	12.06	12.00	12.12	12.06	12.04	12.14	12.13	12.13	12.23	12.29	12.42	12.61	12.60
Motor vehicles and equipment	11.62	12.12	12.53	12.41	12.62	12.56	12.51	12.67	12.61	12.59	12.69	12.81	12.96	13.22	13.22
Instruments and related products	8.06	8.46	8.68	8.66	8.71	8.73	8.71	8.78	8.83	8.85	8.92	8.89	8.91	8.99	9.01
Miscellaneous manufacturing	6.42	6.80	7.00	6.97	6.97	6.97	6.99	6.98	7.02	6.97	7.01	7.02	7.03	7.12	7.15
Nondurable goods	7.74	8.08	8.27	8.24	8.27	8.29	8.30	8.33	8.41	8.37	8.44	8.44	8.52	8.54	8.56
Food and kindred products	7.92	8.20	8.41	8.37	8.39	8.43	8.43	8.44	8.41	8.36	8.37	8.33	8.46	8.48	8.48
Tobacco manufactures	9.79	10.35	10.77	11.13	11.29	11.43	11.55	11.92	11.67	10.75	10.31	10.35	11.76	10.88	11.00
Textile mill products	5.83	6.18	6.39	6.40	6.41	6.43	6.42	6.43	6.43	6.46	6.49	6.49	6.55	6.57	6.58
Apparel and other textile products	5.20	5.37	5.50	5.46	5.48	5.49	5.48	5.50	5.51	5.53	5.61	5.59	5.59	5.65	5.69
Paper and allied products	9.32	9.94	10.23	10.22	10.25	10.29	10.34	10.42	10.56	10.50	10.55	10.56	10.67	10.68	10.67
Printing and publishing	8.74	9.11	9.26	9.30	9.29	9.29	9.31	9.30	9.36	9.42	9.51	9.48	9.54	9.55	9.54
Chemicals and allied products	9.96	10.59	10.91	10.90	10.95	10.97	11.02	11.03	11.12	11.13	11.23	11.32	11.35	11.35	11.37
Petroleum and coal products	12.46	13.29	13.47	13.43	13.44	13.44	13.32	13.33	13.27	13.32	13.54	13.52	13.67	13.59	13.72
Rubber and miscellaneous plastics products	7.64	7.99	8.17	8.16	8.20	8.25	8.20	8.23	8.30	8.28	8.31	8.31	8.39	8.41	8.45
Leather and leather products	5.33	5.54	5.68	5.67	5.68	5.68	5.68	5.67	5.70	5.67	5.72	5.71	5.76	5.79	5.81
TRANSPORTATION AND PUBLIC UTILITIES	10.32	10.80	11.08	11.01	11.02	11.07	11.03	11.07	11.18	11.17	11.27	11.22	11.29	11.33	11.33
WHOLESALE TRADE	8.09	8.54	8.82	8.79	8.79	8.89	8.86	8.90	8.97	8.95	9.05	8.99	9.06	9.16	9.14
RETAIL TRADE	5.48	5.74	5.89	5.89	5.89	5.90	5.88	5.88	5.87	5.84	5.89	5.88	5.94	5.89	5.94
FINANCE, INSURANCE, AND REAL ESTATE	6.78	7.29	7.55	7.54	7.54	7.62	7.55	7.58	7.60	7.57	7.76	7.67	7.71	7.80	7.81
SERVICES	6.92	7.30	7.57	7.55	7.54	7.60	7.55	7.53	7.56	7.53	7.69	7.69	7.74	7.82	7.84

[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					Seasonally adjusted						
	Jan. 1984	Nov. 1984	Dec. 1984p	Jan. 1985p	Percent change from: Jan. 1984 to Jan. 1985	Jan. 1984	Sept. 1984	Oct. 1984	Nov. 1984	Dec. 1984p	Jan. 1985p	Percent change from: Dec. 1984 to Jan. 1985
PRIVATE SECTOR (in current dollars)	159.2	162.2	163.2	163.5	2.7	158.4	161.6	161.3	162.0	163.0	162.7	−0.2
Mining	171.0	176.0	176.7	176.7	3.3	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Construction	146.6	146.5	148.0	148.5	1.3	146.3	146.8	146.3	146.5	147.5	148.2	.5
Manufacturing	160.8	164.5	165.5	166.2	3.3	160.3	163.4	163.8	164.5	165.1	165.6	.3
Transportation and public utilities	161.0	164.3	165.0	165.1	2.6	159.9	163.0	163.0	163.1	164.3	164.0	−.2
Wholesale trade	163.3	167.6	169.4	168.8	3.4	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Retail trade	153.2	154.7	154.1	154.2	.7	152.7	154.0	153.9	155.1	155.2	153.8	−.9
Finance, insurance, and real estate	164.2	167.2	169.1	168.9	2.8	(1)	(1)	(1)	(1)	(1)	(1)	(1)
Services	161.4	165.1	166.6	166.8	3.4	159.8	164.7	164.0	164.8	166.4	165.2	−.7
PRIVATE SECTOR (in constant dollars)	95.4	94.4	94.9	(2)	(2)	94.8	94.2	93.9	94.3	94.7	(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		1984												1985
	1982	1983	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.p	Jan.p
PRIVATE SECTOR															
Current dollars	$267.26	$280.70	$289.10	$288.40	$288.40	$292.64	$291.46	$294.30	$296.19	$294.65	$299.27	$295.68	$295.89	$300.33	$295.45
Seasonally adjusted	(1)	(1)	290.63	290.52	291.23	294.17	292.64	294.05	293.92	293.57	297.36	294.14	296.38	298.99	297.09
Constant (1977) dollars	168.09	171.37	173.32	172.59	172.59	174.71	173.18	174.45	174.85	172.31	173.99	171.91	172.23	174.61	(1)
MINING	459.88	478.98	499.68	492.92	496.48	499.66	499.39	505.61	497.51	503.30	513.04	497.66	503.30	514.49	496.83
CONSTRUCTION	426.82	443.42	438.50	443.63	439.30	448.13	458.02	460.88	462.04	462.39	467.78	461.32	449.17	457.97	444.68
MANUFACTURING															
Current dollars	330.26	354.08	368.65	368.74	369.96	372.60	369.87	372.91	369.95	369.26	375.66	373.41	378.51	386.46	377.88
Constant (1977) dollars	207.71	216.17	221.01	220.67	221.40	222.45	219.77	221.05	218.39	215.94	218.41	217.10	220.32	224.69	(1)
Durable goods	355.27	381.77	398.13	398.68	399.92	402.27	399.92	402.14	396.73	396.88	405.46	403.09	406.55	418.47	408.95
Lumber and wood products	282.34	312.38	311.26	313.62	314.01	317.18	317.59	324.01	316.40	322.00	329.26	320.79	313.99	321.20	312.78
Furniture and fixtures	234.73	260.83	263.64	263.93	267.02	267.02	268.60	270.86	269.70	273.24	278.70	279.39	279.10	284.72	276.36
Stone, clay, and glass products	355.69	384.71	386.22	389.27	389.16	401.32	404.50	407.15	406.81	405.96	408.74	405.42	405.72	404.62	395.44
Primary metal industries	437.34	459.27	476.82	482.58	480.48	488.02	481.43	480.17	472.89	462.67	472.69	462.58	473.62	476.74	468.63
Blast furnaces and basic steel products	505.97	509.16	521.88	539.72	534.36	549.73	540.62	536.42	524.71	506.97	524.30	506.68	524.80	518.80	508.54
Fabricated metal products	343.78	369.87	385.43	386.37	384.50	387.61	386.26	388.13	380.66	381.30	389.57	387.39	389.05	404.39	391.55
Machinery except electrical	367.62	386.78	411.73	413.55	415.80	417.21	413.82	417.06	411.35	411.68	420.42	417.42	422.52	435.44	421.76
Electrical and electronic equipment	322.65	350.33	364.97	364.15	364.08	364.49	363.60	365.31	361.58	366.30	374.10	371.78	376.98	386.14	380.66
Transportation equipment	449.96	490.89	517.37	514.80	521.16	523.40	514.11	519.59	508.25	504.61	517.33	521.10	530.33	553.58	540.54
Motor vehicles and equipment	470.61	524.80	555.08	544.80	560.33	563.94	546.69	557.48	537.19	532.56	548.21	554.67	562.46	593.58	584.32
Instruments and related products	320.79	341.78	356.75	356.79	358.85	358.80	354.50	362.61	361.15	362.85	371.07	365.38	371.55	381.18	365.81
Miscellaneous manufacturing	246.53	265.88	272.30	276.01	276.01	275.32	274.71	273.62	273.08	272.53	277.60	278.69	279.09	283.38	278.14
Nondurable goods	297.22	318.35	326.67	326.30	327.49	329.94	328.68	331.53	331.35	331.45	335.07	332.54	337.39	341.60	334.70
Food and kindred products	312.05	323.90	331.35	327.27	329.73	332.99	333.83	337.60	333.04	335.24	336.47	331.53	338.40	342.59	334.96
Tobacco manufactures	370.06	387.09	410.34	405.13	416.60	451.49	457.38	482.76	437.63	421.40	408.28	412.97	471.58	424.32	390.50
Textile mill products	218.63	250.29	257.52	259.84	258.96	260.42	257.44	259.77	252.70	256.46	255.71	253.11	257.42	259.52	255.96
Apparel and other textile products	180.44	194.39	198.55	200.38	201.12	202.03	200.02	202.40	198.36	200.74	201.96	201.80	201.80	205.10	203.13
Paper and allied products	389.58	423.44	440.91	438.44	437.68	442.47	443.59	449.10	456.19	451.50	457.87	455.14	462.01	467.78	456.68
Printing and publishing	324.25	342.54	347.25	349.68	353.02	353.02	351.92	349.68	351.94	357.02	362.33	358.34	363.47	365.77	352.98
Chemicals and allied products	407.36	440.54	458.22	457.80	458.81	460.74	460.64	463.26	463.70	464.12	471.66	470.91	475.57	482.38	471.86
Petroleum and coal products	546.99	583.43	594.03	584.21	585.98	590.02	580.75	579.86	579.90	584.75	598.47	590.82	597.38	584.37	581.73
Rubber and miscellaneous plastics products	302.54	329.19	343.14	342.72	341.94	347.33	341.94	344.84	341.96	342.79	344.87	344.03	349.02	353.22	349.83
Leather and leather products	189.75	203.87	208.46	208.66	205.05	210.16	209.59	213.76	212.61	206.39	208.21	207.27	210.82	214.81	209.74
TRANSPORTATION AND PUBLIC UTILITIES	402.48	421.20	434.34	429.39	429.78	435.05	432.38	440.59	447.20	443.45	449.67	439.82	445.96	447.54	443.00
WHOLESALE TRADE	309.85	328.79	338.69	335.78	336.66	342.27	342.00	344.43	348.04	347.26	351.14	347.91	350.62	356.32	349.15
RETAIL TRADE	163.85	171.05	173.17	173.17	174.34	175.82	176.40	178.75	180.21	178.70	177.29	174.64	176.42	179.65	173.45
FINANCE, INSURANCE, AND REAL ESTATE	245.44	263.90	275.58	274.46	273.70	278.13	274.07	275.15	278.92	275.55	284.02	279.96	280.64	286.26	283.50
SERVICES	225.59	238.71	246.78	246.13	245.80	248.52	246.13	247.74	250.24	248.49	252.23	250.69	252.32	256.50	254.80

[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	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	57.6	40.8	65.7	51.9	p63.5
	1985	p58.1	....	....	....	....	....	....	....	....	....	....	....
Over 3-month span	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	63.5	58.1	58.6	53.5	p65.4	p61.6
Over 6-month span	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	69.2	63.2	62.4	62.7	p64.3	p61.6	....	....
Over 12-month span	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	81.9	78.9	76.8	74.3	p74.9	p72.7	....	....	....	....	....

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											
	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.p	Dec.p
All programs:													
Insured unemployment	2,915	3,374	3,174	2,958	2,613	2,290	2,166	2,327	2,184	2,083	2,149	2,441	....
State unemployment insurance program:[1]													
Initial claims[2]	2,105	2,355	1,528	1,424	1,429	1,368	1,387	1,767	1,459	1,260	1,674	1,824	....
Insured unemployment (average weekly volume)	2,805	3,249	3,056	2,843	2,515	2,215	2,111	2,270	2,129	2,023	2,072	2,355	....
Rate of insured unemployment	3.3	3.8	3.6	3.3	2.9	2.6	2.5	2.6	2.5	2.3	2.4	2.7	....
Weeks of unemployment compensated	10,168	12,232	11,622	11,339	9,695	9,304	8,053	8,380	8,716	r7,209	7,862	8,446	....
Average weekly benefit amount for total unemployment	$122.61	$123.60	$124.30	$124.67	$125.26	$123.69	$121.96	$119.83	$120.24	$122.49	$123.85	$124.26	....
Total benefits paid	$1,203,605	$1,457,983	$1,400,458	$1,369,536	$1,173,601	$1,109,268	$948,381	$974,135	$1,017,804	r$853,424	$939,653	$1,011,118	....
State unemployment insurance program:[1] (Seasonally adjusted data)													
Initial claims[2]	1,604	1,617	1,572	1,570	1,569	1,614	1,559	1,661	1,618	1,707	1,662	1,764	....
Insured unemployment (average weekly volume)	2,687	2,510	2,428	2,470	2,507	2,300	2,356	2,457	2,355	2,567	2,461	2,551	....
Rate of insured unemployment	3.1	2.9	2.8	2.9	2.9	2.7	2.7	2.8	2.7	3.0	2.8	2.9	....
Unemployment compensation for ex-servicemen:[3]													
Initial claims[1]	14	15	13	13	12	12	12	13	14	13	15	13	....
Insured unemployment (average weekly volume)	27	27	24	22	20	18	18	18	19	20	21	22	....
Weeks of unemployment compensated	113	112	96	89	78	79	c71	71	79	72	86	85	....
Total benefits paid	$14,815	$14,532	$12,540	$11,813	$10,349	$10,577	$9,467	$9,573	$10,715	r$9,820	$11,712	$11,592	....
Unemployment compensation for Federal civilian employees:[4]													
Initial claims	13	16	10	9	13	9	11	12	10	9	14	12	....
Insured unemployment (average weekly volume)	29	32	31	28	23	20	19	20	19	19	21	23	....
Weeks of unemployment compensated	119	133	129	122	98	88	76	80	83	69	82	91	....
Total benefits paid	$13,888	$15,588	$15,003	$14,778	$11,844	$10,529	$8,994	$9,489	$9,776	$8,198	$9,832	$11,286	....
Railroad unemployment insurance:													
Applications	8	10	4	3	2	2	11	25	7	6	9	10	11
Insured unemployment (average weekly volume)	43	51	49	41	27	19	16	16	17	18	21	26	29
Number of payments	95	121	104	99	70	54	38	35	37	34	46	52	61
Average amount of benefit payment	$213.71	$210.73	$209.56	$208.96	$196.32	$188.45	$187.37	$189.06	$197.85	$196.15	$195.20	$198.85	$205.26
Total benefits paid	$19,870	$23,866	$23,228	$20,112	$13,356	$10,233	$7,039	$6,691	$6,695	$6,349	$8,596	....	....
Employment service:[5]													
New applications and renewals	4,297	....	....	8,231	....	....	9,517	....	....	4,132	....	....	....
Nonfarm placements	782	....	....	1,469	....	....	1,810	....	....	1,000	....	....	....

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

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

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

p = preliminary.

r = revised.

c = corrected.

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

PRICE DATA

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

Definitions

The Consumer Price Index is a monthly statistical measure of the average change in prices in a fixed market basket of goods and services. Effective with the January 1978 index, the Bureau of Labor Statistics began publishing CPI's for two groups of the population. 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		Food and beverages		Housing		Apparel and upkeep		Transportation		Medical care		Entertainment		Other goods and services	
	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change
1967	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...
1968	104.2	4.2	103.6	3.6	104.0	4.0	105.4	5.4	103.2	3.2	106.1	6.1	105.7	5.7	105.2	5.2
1969	109.8	5.4	108.8	5.0	110.4	6.2	111.5	5.8	107.2	3.9	113.4	6.9	111.0	5.0	110.4	4.9
1970	116.3	5.9	114.7	5.4	118.2	7.1	116.1	4.1	112.7	5.1	120.6	6.3	116.7	5.1	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							Urban Wage Earners and Clerical Workers						
	1983	1984						1983	1984					
	Dec.	July	Aug.	Sept.	Oct.	Nov.	Dec.	Dec.	July	Aug.	Sept.	Oct.	Nov.	Dec.
All items	303.5	311.7	313.0	314.5	315.3	315.3	315.5	301.5	307.5	310.3	312.1	312.2	311.9	312.2
Food and beverages	286.5	295.3	296.9	296.4	296.6	296.3	297.2	286.8	295.3	296.9	296.3	296.5	296.2	297.1
Housing	327.4	338.1	339.5	341.4	341.2	340.9	341.2	324.2	328.7	334.2	336.8	335.5	334.4	335.0
Apparel and upkeep	199.3	196.6	200.1	204.2	205.7	205.2	203.2	198.1	195.3	199.0	203.3	204.8	204.2	202.1
Transportation	306.3	312.9	312.9	313.7	315.5	316.1	315.8	308.2	315.2	315.2	316.0	317.8	318.3	317.9
Medical care	366.2	380.3	381.9	383.1	385.5	387.5	388.5	364.3	378.5	380.1	381.2	383.7	385.6	386.7
Entertainment	249.5	255.3	256.4	257.3	258.3	259.0	260.1	245.8	251.4	252.5	253.4	254.2	254.8	255.8
Other goods and services	298.6	306.5	307.2	314.6	315.8	316.5	316.7	295.9	304.5	305.3	310.9	311.9	312.6	312.8
Commodities	275.5	280.6	281.4	282.3	283.1	283.0	282.8	276.3	280.1	281.4	282.5	283.1	282.8	282.7
Commodities less food and beverages	266.0	269.0	269.3	271.0	272.1	272.2	271.4	267.1	268.8	270.0	271.8	272.5	272.3	271.8
Nondurables less food and beverages	273.5	274.3	274.8	277.2	278.6	278.2	277.0	275.4	276.2	276.6	279.0	280.3	279.9	278.7
Durables	261.8	267.8	267.8	268.7	269.3	270.0	269.8	258.9	261.3	263.0	264.4	264.6	264.5	264.6
Services	351.6	364.5	366.5	368.9	369.7	369.9	370.6	348.4	358.2	363.9	366.8	366.3	365.9	366.8
Rent, residential	242.0	249.7	251.1	252.4	253.8	254.8	256.1	241.3	249.0	250.3	251.7	253.1	254.0	255.3
Household services less rent of shelter (12/82 = 100)	104.1	109.7	110.5	111.0	109.9	108.8	108.5	....	....	....	....	....	....	....
Transportation services	310.8	321.4	323.8	324.6	327.5	328.9	330.1	306.9	317.4	319.6	320.7	323.7	325.1	326.1
Medical care services	396.3	410.9	412.7	413.9	416.5	418.5	419.3	393.8	408.6	410.4	411.5	414.1	416.1	417.0
Other services	287.2	294.2	295.5	302.5	304.2	305.2	306.1	284.3	291.5	292.8	299.0	300.6	301.5	302.3
Special indexes:														
All items less food	304.0	312.0	313.2	315.2	316.1	316.2	316.2	302.1	307.3	310.4	312.7	312.9	312.6	312.7
All items less homeowners' costs	103.7	106.5	106.9	107.4	107.6	107.6	107.6	....	....	....	....	....	....	....
All items less mortgage interest costs	....	....	....	....	....	....	....	288.5	294.9	296.4	297.9	298.4	298.2	298.3
Commodities less food	263.8	266.8	267.1	268.8	269.8	269.9	269.2	264.9	266.7	267.8	269.6	270.3	270.1	269.6
Nondurables less food	268.5	269.5	270.0	272.3	273.6	273.3	272.2	270.4	271.4	271.8	274.1	275.4	275.0	273.9
Nondurables less food and apparel	308.6	311.9	311.0	312.3	313.5	313.4	312.8	310.1	313.3	312.2	313.5	314.8	314.5	313.8
Nondurables	281.2	286.0	287.1	288.0	288.8	288.5	288.3	282.2	286.8	287.8	288.8	289.5	289.2	289.0
Services less rent of shelter (12/82 = 100)	104.8	109.0	109.7	110.5	110.6	110.5	110.6	....	....	....	....	....	....	....
Services less medical care	344.5	357.1	359.2	361.7	362.3	362.3	363.0	341.3	350.5	356.6	359.6	358.9	358.2	359.2
Domestically produced farm foods	269.7	279.0	281.4	280.0	279.7	278.8	279.9	268.7	277.4	279.8	278.3	278.0	277.2	278.2
Selected beef cuts	265.5	271.9	274.2	271.5	271.0	271.6	276.0	266.6	272.8	275.5	273.2	272.2	273.0	277.4
Energy	418.0	428.3	427.3	429.0	426.7	421.8	418.9	418.7	427.8	426.5	428.3	426.1	421.5	418.5
Energy commodities	411.8	408.9	404.2	405.4	408.2	407.2	404.1	412.9	409.5	404.9	406.3	408.9	407.8	404.7
All items less energy	295.0	303.1	304.6	306.1	307.1	307.7	308.2	292.1	297.8	301.0	302.7	303.1	303.2	303.8
All items less food and energy	293.6	301.3	302.8	304.9	306.1	306.9	307.3	290.3	295.1	298.7	301.0	301.5	301.6	302.1
Commodities less food and energy	249.0	253.0	254.2	256.0	256.8	257.0	256.7	247.7	250.1	252.0	253.8	254.3	254.2	254.0
Services less energy	345.5	356.8	358.6	361.0	362.7	364.0	365.0	341.8	349.7	355.5	358.4	358.9	359.4	360.7
Purchasing power of the consumer dollar, 1967 = $1	$0.329	$0.321	$0.319	$0.318	$0.317	$0.317	$0.317	$0.332	$0.325	$0.322	$0.320	$0.320	$0.321	$0.320

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					
	Dec.	July	Aug.	Sept.	Oct.	Nov.	Dec.	Dec.	July	Aug.	Sept.	Oct.	Nov.	Dec.
FOOD AND BEVERAGES	286.5	295.3	296.9	296.4	296.6	296.3	297.2	286.8	295.3	296.9	296.3	296.5	296.2	297.1
Food	293.9	303.2	304.8	304.2	304.4	304.1	305.1	294.0	302.8	304.5	303.8	304.0	303.7	304.7
Food at home	283.0	292.5	294.4	293.4	293.4	292.4	293.2	282.1	291.0	292.9	291.9	291.8	290.9	291.7
Cereals and bakery products	297.1	306.6	307.8	307.9	308.7	309.0	310.7	295.7	304.9	306.3	306.3	307.1	307.4	309.0
Cereals and cereal products (12/77 = 100)	158.2	164.5	165.0	164.5	163.6	163.8	164.2	158.9	165.2	165.7	165.1	164.3	164.4	164.7
Flour and prepared flour mixes (12/77 = 100)	140.1	147.2	148.3	146.3	145.2	143.9	143.4	140.4	147.5	148.6	146.6	145.6	144.4	143.6
Cereal (12/77 = 100)	178.0	185.7	185.9	186.1	186.2	186.7	187.6	180.1	188.0	188.2	188.3	188.4	189.0	189.8
Rice, pasta, and cornmeal (12/77 = 100)	146.8	150.3	150.5	150.4	148.5	149.3	149.9	148.0	151.4	151.7	151.5	149.7	150.5	151.0
Bakery products (12/77 = 100)	156.9	161.5	162.2	162.4	163.3	163.4	164.5	155.7	160.1	160.9	161.1	161.9	162.1	163.1
White bread	257.4	260.9	262.6	263.2	264.3	265.8	265.4	253.2	256.6	258.5	258.8	260.1	261.3	261.0
Other breads (12/77 = 100)	152.0	155.7	154.9	155.8	155.7	155.4	156.2	154.1	157.8	157.3	158.0	158.0	157.6	158.4
Fresh biscuits, rolls, and muffins (12/77 = 100)	157.8	158.7	159.3	159.7	160.7	161.1	161.9	153.7	154.6	155.1	155.6	156.4	157.0	157.5
Fresh cakes and cupcakes (12/77 = 100)	159.7	163.9	164.9	165.9	167.4	166.4	169.6	157.9	161.8	162.7	163.6	165.0	164.1	167.3
Cookies (12/77 = 100)	159.2	166.1	167.9	167.3	168.3	168.5	170.9	159.9	167.1	168.9	168.3	169.5	169.6	171.9
Crackers, bread, and cracker products (12/77 = 100)	148.1	160.7	162.0	161.7	162.7	160.9	164.3	149.6	162.0	163.4	163.0	164.2	162.4	166.0
Fresh sweetrolls, coffeecake, and donuts (12/77 = 100)	157.7	163.0	163.4	162.9	163.8	163.9	164.1	160.4	165.6	166.3	165.9	166.6	166.7	166.9
Frozen and refrigerated bakery products and fresh pies, tarts, and turnovers (12/77 = 100)	161.5	169.0	168.9	169.3	170.0	171.1	171.7	154.9	162.1	161.8	162.0	162.7	163.8	164.3
Meats, poultry, fish, and eggs	259.3	264.6	265.7	264.5	263.5	262.4	265.9	258.6	263.9	265.2	264.1	262.9	261.8	265.3
Meats, poultry, and fish	261.8	271.4	272.7	271.6	270.4	269.4	272.5	261.0	270.4	272.1	271.0	269.7	268.7	271.7
Meats	258.3	267.3	269.9	268.0	267.1	266.1	269.6	257.7	266.6	269.4	267.7	266.6	265.5	268.9
Beef and veal	266.0	272.1	274.3	271.9	271.3	271.9	276.2	266.4	272.4	274.9	272.8	271.9	272.5	276.9
Ground beef other than canned	251.3	253.0	254.8	252.9	252.4	254.3	257.2	251.7	253.7	256.0	254.4	253.5	255.7	258.2
Chuck roast	266.9	269.1	272.7	271.8	276.6	280.9	286.1	275.2	277.3	280.4	280.6	285.1	289.9	294.7
Round roast	231.3	231.4	235.7	234.3	236.5	234.1	239.0	233.9	235.1	239.9	237.8	240.3	237.9	242.3
Round steak	249.9	250.6	254.7	252.4	251.3	248.4	255.7	248.0	247.7	254.4	251.4	248.3	246.4	253.6
Sirloin steak	262.7	286.5	287.7	286.1	273.9	271.6	276.2	264.1	288.4	288.9	288.7	275.3	273.6	279.1
Other beef and veal (12/77 = 100)	164.7	170.5	171.2	169.0	168.5	168.8	171.2	163.5	169.1	169.8	167.8	167.2	167.3	170.0
Pork	240.3	255.5	259.9	257.5	255.0	251.2	254.6	239.8	254.8	259.2	257.0	254.3	250.3	253.7
Bacon	253.0	272.4	272.3	270.3	271.1	266.5	270.5	256.4	276.3	276.3	274.2	275.0	270.4	274.1
Chops	219.0	242.4	250.7	242.3	235.9	232.7	234.1	217.5	240.1	248.3	240.6	234.0	230.4	232.1
Ham other than canned (12/77 = 100)	111.8	111.4	113.5	116.8	117.2	115.6	120.9	108.8	108.3	110.4	113.6	113.8	112.5	117.7
Sausage	303.4	322.0	322.9	321.2	319.0	315.3	316.6	304.2	322.9	323.6	322.7	319.6	315.5	316.7
Canned ham	246.5	246.5	248.1	251.4	252.6	246.8	248.8	252.0	252.0	253.4	256.0	258.4	250.4	253.9
Other pork (12/77 = 100)	129.9	142.0	146.1	142.5	139.0	137.0	137.3	129.3	141.1	145.3	141.7	138.5	136.4	136.7
Other meats	261.3	268.0	268.4	268.7	270.0	269.4	270.2	260.7	267.5	268.0	268.2	269.5	268.6	269.4
Frankfurters	259.0	265.3	267.8	267.6	269.6	265.0	266.6	257.5	263.8	266.3	266.1	268.0	263.3	265.1
Bologna, liverwurst, and salami (12/77 = 100)	150.4	154.8	154.8	155.6	156.2	155.8	156.2	150.2	154.8	154.7	155.4	156.0	155.7	156.1
Other lunchmeats (12/77 = 100)	134.7	138.2	138.2	138.8	139.4	138.6	139.2	132.8	136.4	136.4	137.0	137.5	136.7	137.3
Lamb and organ meats (12/77 = 100)	136.1	139.0	138.6	137.3	138.2	141.1	140.8	139.3	142.0	141.7	140.1	141.0	143.9	143.4
Poultry	209.8	221.3	216.5	217.2	214.0	213.1	213.8	207.8	218.8	214.0	214.7	211.6	210.9	211.3
Fresh whole chicken	219.4	228.1	218.6	220.2	213.8	215.4	210.4	216.7	225.4	216.1	217.5	211.4	213.0	208.0
Fresh and frozen chicken parts (12/77 = 100)	139.4	146.6	144.1	144.7	141.4	140.4	140.4	137.2	144.4	141.8	142.4	139.2	138.4	138.2
Other poultry (12/77 = 100)	122.3	132.7	133.3	132.7	135.1	132.6	138.9	122.1	131.5	132.3	131.8	134.3	131.9	138.0
Fish and seafood	376.4	387.0	387.0	390.6	390.6	389.2	392.2	374.9	385.5	385.7	389.1	389.1	388.2	391.4
Canned fish and seafood	132.5	134.4	134.4	133.7	132.9	133.0	133.4	132.0	133.9	133.9	133.2	132.5	132.5	132.9
Fresh and frozen fish and seafood (12/77 = 100)	149.9	155.1	155.1	157.7	158.2	157.3	158.9	149.5	154.8	155.0	157.5	157.9	157.3	159.1
Eggs	234.0	182.7	179.3	178.6	177.8	175.6	185.7	235.3	183.7	180.4	179.7	178.7	176.4	186.5
Dairy products	249.9	252.2	252.7	254.9	256.1	257.2	258.4	249.0	251.1	251.7	253.8	255.1	256.2	257.3
Fresh milk and cream (12/77 = 100)	135.9	136.7	136.7	137.7	138.7	139.8	140.4	135.3	136.0	136.0	136.9	137.9	139.1	139.6
Fresh whole milk	222.3	223.3	223.2	224.7	226.8	228.7	229.6	221.4	222.2	222.0	223.5	225.6	227.5	228.4
Other fresh milk and cream (12/77 = 100)	136.2	137.5	137.7	138.7	139.0	140.0	140.7	135.6	136.8	137.0	138.0	138.3	139.3	139.9
Processed dairy products	148.8	150.8	151.5	153.1	153.3	153.3	154.1	149.0	151.0	151.8	153.4	153.7	153.6	154.4
Butter	254.1	261.2	264.4	266.0	268.8	268.7	269.4	256.6	263.8	266.7	268.6	271.4	271.5	272.3
Cheese (12/77 = 100)	146.4	147.9	148.2	149.1	149.5	150.1	150.1	146.7	148.2	148.6	149.4	149.9	150.5	150.5
Ice cream and related products (12/77 = 100)	154.0	155.8	157.4	160.9	160.0	158.1	160.1	153.0	154.8	156.5	159.9	159.0	157.1	159.0
Other dairy products (12/77 = 100)	146.0	148.3	148.1	149.9	150.0	150.9	152.5	146.5	148.6	148.6	150.4	150.4	151.3	152.8
Fruits and vegetables	292.6	320.0	327.7	319.7	318.4	314.8	309.7	289.3	315.1	322.4	313.6	312.3	308.9	303.9
Fresh fruits and vegetables	294.2	332.4	345.7	332.5	329.3	323.4	312.6	289.8	325.2	337.6	323.0	319.9	314.6	303.9
Fresh fruits	270.4	346.9	353.3	364.8	354.3	343.9	331.6	261.1	333.5	338.8	349.6	337.4	329.3	317.6
Apples	270.0	329.9	341.8	337.9	298.0	302.8	297.5	270.8	330.6	342.8	339.6	299.9	304.5	299.3
Bananas	230.0	271.8	257.0	249.9	242.1	234.9	225.2	227.8	269.5	254.7	248.4	240.6	232.7	224.0
Oranges	283.4	486.5	530.8	553.6	538.4	473.6	428.0	257.5	448.5	487.7	507.1	489.1	434.1	390.2
Other fresh fruits (12/77 = 100)	143.0	163.6	160.4	170.4	172.7	175.3	174.3	137.8	157.0	153.6	163.6	165.2	168.1	167.0
Fresh vegetables	316.6	318.8	338.7	302.3	306.0	304.4	294.8	315.7	317.8	336.7	299.2	304.2	301.5	291.6
Potatoes	317.6	455.6	478.1	354.1	324.3	313.1	327.3	314.3	451.1	470.0	344.5	318.4	305.1	320.4
Lettuce	371.8	246.0	316.6	337.8	363.6	350.5	276.0	375.0	246.2	319.1	338.0	365.1	349.2	274.4
Tomatoes	222.2	237.3	310.4	252.9	255.1	245.3	232.4	224.7	242.1	314.3	256.2	259.9	249.7	236.0
Other fresh vegetables (12/77 = 100)	177.2	167.1	157.1	152.1	158.7	164.3	167.4	176.1	166.1	155.3	150.2	157.0	162.6	165.2
Processed fruits and vegetables	293.3	309.2	310.7	308.4	309.2	308.0	309.3	291.2	306.5	308.0	305.6	306.5	305.2	306.5
Processed fruits (12/77 = 100)	152.0	163.6	164.3	163.1	164.5	163.5	164.5	151.6	163.1	163.7	162.6	164.0	162.9	164.0
Frozen fruit and fruit juices (12/77 = 100)	143.6	163.9	166.2	165.2	166.3	165.0	166.6	142.9	163.1	165.5	164.5	165.6	164.2	166.0
Fruit juices other than frozen (12/77 = 100)	155.7	165.7	165.3	165.1	168.0	166.8	168.3	154.8	164.8	164.1	163.9	167.1	165.7	167.3
Canned and dried fruits (12/77 = 100)	155.0	161.2	161.5	159.3	159.2	158.7	158.7	155.1	161.4	161.8	159.5	159.3	158.8	158.7

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					
	Dec.	July	Aug.	Sept.	Oct.	Nov.	Dec.	Dec.	July	Aug.	Sept.	Oct.	Nov.	Dec.
Fruits and vegetables—Continued														
Processed vegetables (12/77 = 100)	142.8	147.2	148.1	146.9	146.5	146.1	146.5	141.6	146.0	146.9	145.7	145.3	145.0	145.3
Frozen vegetables (12/77 = 100)	151.5	155.1	157.0	156.2	157.1	156.9	156.9	153.2	156.7	158.6	157.7	158.9	158.7	158.7
Cut corn and canned beans except lima (12/77 = 100)	145.8	152.3	153.1	150.9	149.8	149.7	150.8	143.2	149.7	150.5	148.3	147.2	147.1	148.0
Other canned and dried vegetables (12/77 = 100)	136.8	140.6	141.2	140.2	139.4	138.9	139.0	135.3	138.9	139.5	138.6	137.8	137.3	137.4
Other foods at home	343.6	353.1	354.0	355.1	356.1	355.0	354.6	344.4	353.5	354.3	355.4	356.5	355.3	354.9
Sugar and sweets	377.7	391.8	392.6	393.7	393.3	390.9	391.7	377.6	391.1	391.9	393.1	392.8	390.5	391.4
Candy and chewing gum (12/77 = 100)	152.8	161.3	161.6	162.1	161.3	161.6	162.3	152.7	161.0	161.3	161.8	161.2	161.5	162.2
Sugar and artificial sweeteners (12/77 = 100)	171.1	171.0	171.0	172.3	172.5	170.3	169.4	172.4	172.2	172.3	173.5	173.7	[c]171.7	170.7
Other sweets (12/77 = 100)	152.3	159.4	160.1	159.7	160.2	158.0	159.1	150.0	157.0	157.6	157.2	157.7	155.5	156.7
Fats and oils (12/77 = 100)	278.2	291.4	295.4	295.1	294.9	293.0	293.7	278.2	291.0	295.0	294.6	294.4	292.5	293.1
Margarine	273.7	293.2	296.0	296.6	297.5	292.9	295.6	271.7	291.1	293.6	294.3	295.0	290.6	292.6
Nondairy substitutes and peanut butter (12/77 = 100)	151.4	153.2	154.9	156.3	157.5	157.3	158.7	149.6	151.3	153.1	154.2	155.3	155.3	156.6
Other fats, oils, and salad dressings (12/77 = 100)	145.4	152.7	155.2	154.2	153.3	152.7	152.1	146.1	153.2	155.7	154.7	153.8	153.2	152.8
Nonalcoholic beverages	433.7	442.7	441.5	444.0	446.8	445.5	443.4	435.7	444.0	442.8	445.2	448.2	446.7	444.7
Cola drinks, excluding diet cola	314.3	315.1	313.3	316.8	319.8	317.3	316.4	311.6	312.4	310.7	314.1	317.0	314.4	313.9
Carbonated drinks, including diet cola (12/77 = 100)	148.8	150.5	149.2	149.4	149.9	148.8	146.8	146.9	148.1	147.0	147.1	147.7	146.6	144.3
Roasted coffee	354.2	374.8	375.9	376.3	377.7	376.0	376.7	349.0	369.0	369.9	370.2	371.5	369.8	370.3
Freeze dried and instant coffee	351.2	366.9	369.6	369.2	371.9	372.7	373.8	350.5	366.3	368.9	368.2	371.2	371.9	372.9
Other noncarbonated drinks (12/77 = 100)	141.8	147.4	147.6	148.3	148.9	150.5	149.7	142.2	147.7	147.9	148.7	149.3	150.8	150.1
Other prepared foods	278.2	285.4	286.9	287.3	287.8	287.5	287.7	279.7	287.0	288.5	288.7	289.3	288.8	289.1
Canned and packaged soup (12/77 = 100)	142.8	145.6	146.4	146.4	146.5	148.1	148.7	144.6	147.6	148.4	148.2	148.3	149.8	150.4
Frozen prepared foods (12/77 = 100)	155.5	159.1	162.0	161.6	162.9	162.6	162.2	154.5	158.3	161.2	160.4	162.0	161.5	160.9
Snacks (12/77 = 100)	158.9	166.0	166.5	166.9	167.8	167.4	166.4	161.0	168.3	168.8	169.2	170.0	169.7	168.7
Seasonings, olives, pickles, and relish (12/77 = 100)	160.6	163.8	164.4	165.6	166.2	164.9	165.9	159.5	162.9	163.5	164.7	165.2	164.0	164.8
Other condiments (12/77 = 100)	155.5	160.0	159.9	159.5	159.3	158.8	159.9	157.4	161.9	161.7	161.4	161.2	160.7	161.8
Miscellaneous prepared foods (12/77 = 100)	153.3	154.9	155.5	155.9	155.9	155.6	155.4	153.5	154.9	155.6	155.9	156.0	155.6	155.4
Other canned and packaged prepared foods (12/77 = 100)	148.0	151.6	152.1	152.8	151.9	152.1	152.7	149.2	152.8	153.2	153.9	153.0	153.1	153.8
Food away from home	325.5	334.4	335.5	335.8	336.6	337.7	339.2	328.7	337.7	338.8	339.0	339.8	340.9	342.3
Lunch (12/77 = 100)	157.5	161.5	161.9	162.4	162.8	163.2	163.8	159.0	163.0	163.5	163.9	164.3	164.7	165.3
Dinner (12/77 = 100)	156.5	161.0	161.7	161.8	162.2	162.8	163.6	158.3	162.8	163.5	163.6	163.9	164.6	165.4
Other meals and snacks (12/77 = 100)	161.0	165.5	166.0	165.7	166.0	166.5	167.3	161.4	166.0	166.5	166.3	166.6	167.1	167.8
Alcoholic beverages	218.1	222.5	222.9	223.1	224.2	223.8	223.9	221.2	225.8	226.2	226.4	227.5	227.1	227.2
Alcoholic beverages at home (12/77 = 100)	140.4	142.8	142.9	142.8	143.7	143.2	143.2	142.6	145.0	145.1	145.1	145.8	145.4	145.4
Beer and ale	225.5	231.5	231.1	231.5	232.7	231.9	232.5	224.8	230.6	230.3	230.5	231.7	230.7	231.6
Whiskey	152.4	153.5	154.0	153.8	154.6	154.3	154.0	152.9	153.9	154.3	154.1	154.9	154.6	154.1
Wine	232.1	232.5	234.2	231.8	234.8	233.0	232.2	239.9	240.1	241.6	239.5	242.5	241.3	239.7
Other alcoholic beverages (12/77 = 100)	121.4	122.7	122.6	123.4	123.2	123.5	122.8	121.3	122.4	122.4	123.2	122.9	123.3	122.5
Alcoholic beverages away from home (12/77 = 100)	150.4	155.5	156.4	157.2	157.7	158.2	158.5	151.5	156.6	157.8	158.6	159.1	159.5	159.8
HOUSING	327.4	338.1	339.5	341.4	341.2	340.9	341.2	324.2	328.7	334.2	336.8	335.5	334.4	335.0
Shelter (CPI–U)	351.8	362.7	364.6	366.5	367.8	368.9	370.1	....	....	....	....	....	....	....
Renters' costs	105.1	108.9	109.6	110.2	110.7	110.9	111.3	....	....	....	....	....	....	....
Rent, residential	242.0	249.7	251.1	252.4	253.8	254.8	256.1	....	....	....	....	....	....	....
Other renters' costs	356.1	375.7	380.7	384.3	382.6	379.1	375.1	....	....	....	....	....	....	....
Homeowners' costs	367.0	107.6	108.1	108.7	109.1	109.4	109.8	....	....	....	....	....	....	....
Owners' equivalent rent	106.1	107.7	108.1	108.7	109.1	109.4	109.8	....	....	....	....	....	....	....
Household insurance	160.4	106.7	108.0	108.6	108.7	108.8	108.9	....	....	....	....	....	....	....
Maintenance and repairs	354.7	360.3	360.1	362.7	361.6	362.9	364.4	....	....	....	....	....	....	....
Maintenance and repair services	400.8	411.6	412.3	414.3	414.4	412.6	414.2	....	....	....	....	....	....	....
Maintenance and repair commodities	262.6	263.1	262.2	264.8	262.9	266.5	267.7	....	....	....	....	....	....	....
Shelter (CPI–W)	....	....	....	....	....	....	....	346.6	347.9	356.1	359.3	358.3	357.7	359.0
Rent, residential	....	....	....	....	....	....	....	241.3	249.0	250.3	251.7	253.1	254.0	255.3
Other renters' costs	....	....	....	....	....	....	....	352.9	375.1	380.2	383.6	381.9	378.7	374.6
Lodging while out of town	....	....	....	....	....	....	....	363.9	400.6	407.6	404.8	399.8	394.8	388.3
Tenants' insurance (12/77 = 100)	....	....	....	....	....	....	....	159.4	160.4	162.6	163.4	163.4	163.3	163.5
Homeownership	....	....	....	....	....	....	....	384.1	382.7	393.4	397.2	395.5	394.4	395.9
Home purchase	....	....	....	....	....	....	....	298.9	294.9	299.8	302.5	302.4	301.0	301.4
Financing, taxes, and insurance	....	....	....	....	....	....	....	497.6	496.5	519.0	524.9	520.5	519.5	522.4
Property insurance	....	....	....	....	....	....	....	437.2	441.6	441.8	442.4	443.2	446.6	447.6
Property taxes	....	....	....	....	....	....	....	240.7	246.4	248.9	251.4	252.2	252.9	254.4
Contracted mortgage interest costs	....	....	....	....	....	....	....	629.4	624.9	658.4	666.4	659.3	657.1	661.0
Mortgage interest rates	....	....	....	....	....	....	....	208.7	210.1	217.4	218.6	216.8	216.9	217.6
Maintenance and repairs	....	....	....	....	....	....	....	351.0	357.3	357.4	359.4	358.9	358.5	359.8
Maintenance and repair services	....	....	....	....	....	....	....	395.6	405.2	405.4	407.9	408.1	406.6	407.7
Maintenance and repair commodities	....	....	....	....	....	....	....	257.0	257.1	256.9	258.1	256.2	257.8	259.3
Paint and wallpaper, supplies, tools, and equipment (12/77 = 100)	....	....	....	....	....	....	....	149.1	147.2	147.4	147.8	147.0	149.1	151.0
Lumber, awnings, glass, and masonry (12/77 = 100)	....	....	....	....	....	....	....	123.7	123.1	123.3	123.5	123.1	122.4	122.5
Plumbing, electrical, heating, and cooling supplies (12/77 = 100)	....	....	....	....	....	....	....	138.4	142.1	142.8	142.7	141.5	142.0	142.0
Miscellaneous supplies and equipment (12/77 = 100)	....	....	....	....	....	....	....	143.7	146.3	144.2	146.7	144.0	145.5	145.2

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					
	Dec.	July	Aug.	Sept.	Oct.	Nov.	Dec.	Dec.	July	Aug.	Sept.	Oct.	Nov.	Dec.
Fuel and other utilities	370.6	393.9	395.5	397.0	392.4	387.5	386.0	372.0	395.4	396.9	398.4	393.6	388.7	387.1
Fuels	467.4	496.5	498.6	500.1	492.1	482.6	480.2	467.2	496.1	498.2	499.8	491.4	482.1	479.7
Fuel oil, coal, and bottled gas	623.9	637.4	625.5	622.1	626.8	626.9	625.9	626.4	640.0	628.1	624.5	629.4	629.3	628.4
Fuel oil	631.5	646.2	632.4	628.4	633.6	633.0	631.5	633.9	648.8	635.1	630.8	636.3	635.6	634.0
Other fuels (6/78 = 100)	191.4	193.7	193.3	193.1	193.7	194.9	195.6	192.3	194.4	193.9	193.6	194.3	195.4	196.2
Gas (piped) and electricity	427.5	459.1	463.9	466.4	456.0	444.7	442.2	426.7	458.2	463.0	465.5	454.7	443.7	441.0
Electricity	329.8	368.7	374.3	374.9	361.0	350.9	348.2	329.0	369.0	374.8	375.5	360.8	350.5	347.3
Utility (piped) gas	578.2	589.7	592.2	598.4	597.1	584.9	583.0	575.7	585.1	587.1	593.2	592.1	580.9	579.7
Other utilities and public services	216.5	230.6	231.3	232.7	232.9	234.4	234.1	217.4	231.7	232.4	233.7	233.9	235.3	235.0
Telephone services	174.3	188.1	188.4	189.8	190.0	191.1	190.4	174.7	188.7	189.1	190.4	190.5	191.6	190.9
Local charges (12/77 = 100)	142.2	162.3	163.3	165.3	165.5	166.9	166.5	142.6	163.1	164.0	166.0	166.1	167.4	167.0
Interstate toll calls (12/77 = 100)	121.4	116.2	116.1	116.1	116.3	116.2	116.2	121.9	116.6	116.5	116.5	116.6	116.6	116.5
Intrastate toll calls (12/77 = 100)	119.7	125.9	124.9	124.8	124.8	125.4	124.1	119.8	125.7	124.8	124.6	124.6	125.2	124.0
Water and sewerage maintenance	364.3	376.6	378.9	380.2	380.5	382.8	384.4	368.5	381.0	383.2	384.5	384.8	386.8	388.3
Household furnishings and operations	240.5	241.9	242.2	244.1	244.3	244.2	244.2	237.3	238.3	238.6	240.6	240.7	240.6	240.5
Housefurnishings	198.8	197.9	198.1	200.6	200.5	200.2	199.7	196.9	195.6	195.9	198.3	198.2	197.6	197.3
Textile housefurnishings	230.3	232.9	238.6	245.6	242.7	240.5	239.9	233.1	236.4	242.0	249.9	247.1	244.6	244.1
Household linens (12/77 = 100)	135.6	136.6	143.1	146.8	147.1	145.2	141.6	136.2	137.7	144.1	148.1	148.8	146.6	143.0
Curtains, drapes, slipcovers, and sewing materials (12/77 = 100)	152.0	154.2	154.7	159.8	155.8	154.9	158.0	156.1	158.6	158.8	164.8	160.2	159.4	162.9
Furniture and bedding	221.3	222.1	220.8	225.5	228.2	227.4	225.6	218.3	218.7	217.9	222.2	224.5	223.4	222.5
Bedroom furniture (12/77 = 100)	154.9	151.5	151.7	156.6	160.2	160.7	160.1	151.3	148.1	148.4	153.5	155.9	156.3	156.4
Sofas (12/77 = 100)	120.2	121.9	120.6	121.7	121.6	122.2	122.3	120.3	122.1	120.7	121.6	121.8	122.0	121.9
Living room chairs and tables (12/77 = 100)	124.4	126.3	127.1	126.8	128.1	127.5	125.8	125.7	127.2	128.1	127.8	129.0	127.9	126.4
Other furniture (12/77 = 100)	142.3	144.7	142.2	146.9	148.1	145.9	143.9	138.2	140.2	138.4	142.1	143.5	141.4	140.4
Appliances including TV and sound equipment	150.9	147.2	147.2	147.7	147.1	146.0	145.2	151.7	148.4	148.5	149.4	148.8	148.0	147.3
Television and sound equipment	104.8	101.3	101.0	100.8	100.4	99.9	99.2	103.9	100.2	100.0	99.8	99.5	98.9	98.2
Television	99.0	94.5	94.1	93.5	92.5	92.1	92.5	97.6	93.0	92.7	92.2	91.1	90.7	91.3
Sound equipment (12/77 = 100)	111.0	108.2	108.1	108.3	108.4	107.7	106.1	110.1	107.2	107.1	107.2	107.4	106.6	105.0
Household appliances	189.4	187.1	187.5	189.4	188.4	186.7	185.9	190.5	188.4	188.9	190.9	190.2	189.2	188.6
Refrigerators and home freezers	195.8	194.2	194.6	196.8	197.6	197.3	197.5	201.7	199.8	200.6	202.6	203.5	203.2	203.8
Laundry equipment	144.4	145.5	145.4	146.9	147.7	148.1	147.6	145.1	146.0	146.3	147.6	148.0	149.1	148.9
Other household appliances (12/77 = 100)	125.5	123.2	123.6	124.8	123.5	121.8	121.0	124.2	121.4	121.7	123.2	121.7	119.9	118.9
Stoves, dishwashers, vacuums, and sewing machines (12/77 = 100)	124.5	121.7	123.6	127.5	124.4	122.4	121.8	123.5	120.0	121.6	125.5	122.6	120.6	120.2
Office machines, small electric appliances, and air conditioners (12/77 = 100)	126.6	124.9	123.9	122.8	122.9	121.5	120.5	124.9	122.9	121.8	120.6	120.6	119.0	117.4
Other household equipment (12/77 = 100)	142.3	142.1	141.7	141.9	141.2	142.8	143.9	140.1	139.5	138.9	139.1	138.5	139.8	140.7
Floor and window coverings, infants', laundry, cleaning, and outdoor equipment (12/77 = 100)	146.6	147.0	147.7	146.7	147.9	148.4	152.0	138.4	137.8	137.3	136.2	138.2	137.8	141.9
Clocks, lamps, and decor items (12/77 = 100)	134.1	135.5	134.3	137.1	135.6	137.4	137.2	129.6	130.7	129.8	132.8	130.8	132.6	132.5
Tableware, serving pieces, and nonelectric kitchenware (12/77 = 100)	147.4	147.2	147.0	145.5	143.5	147.6	145.5	143.6	143.3	143.1	141.5	139.8	143.4	140.9
Lawn equipment, power tools, and other hardware (12/77 = 100)	137.2	135.2	134.4	135.5	135.5	134.8	139.1	142.4	140.7	139.8	141.4	141.1	140.2	144.3
Housekeeping supplies	298.6	303.8	304.2	304.9	305.4	306.2	307.5	295.3	301.0	301.1	302.0	302.5	303.5	304.6
Soaps and detergents	295.9	299.8	298.8	299.1	299.9	302.3	305.7	291.8	295.3	294.2	294.8	295.4	297.6	301.1
Other laundry and cleaning products (12/77 = 100)	152.7	154.9	154.9	155.8	156.6	157.1	157.1	151.5	153.6	153.4	154.3	155.1	155.7	155.7
Cleansing and toilet tissue, paper towels and napkins (12/77 = 100)	148.6	153.7	153.6	155.2	156.5	156.1	155.8	148.6	153.7	153.4	155.2	156.4	155.8	155.6
Stationery, stationery supplies, and gift wrap (12/77 = 100)	141.7	143.7	144.2	144.2	144.8	145.5	145.2	144.7	147.1	147.7	147.9	148.4	149.1	148.8
Miscellaneous household products (12/77 = 100)	156.6	161.2	162.0	162.2	161.7	162.1	161.5	151.1	155.9	156.6	156.7	156.2	156.7	156.0
Lawn and garden supplies (12/77 = 100)	145.4	144.9	145.7	144.8	143.5	143.4	146.3	138.3	138.7	139.1	138.3	137.1	137.5	140.3
Housekeeping services	322.8	327.6	328.2	329.4	330.2	330.3	330.6	322.9	328.2	328.8	330.0	330.8	330.9	331.1
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)	168.4	174.5	174.6	175.9	176.3	176.0	176.6	168.5	174.9	175.1	176.4	176.8	176.4	176.9
Appliance and furniture repair (12/77 = 100)	147.1	150.9	152.2	153.4	154.7	155.4	155.3	145.2	148.9	150.0	151.0	152.2	152.9	152.8
APPAREL AND UPKEEP	199.3	196.6	200.1	204.2	205.7	205.2	203.2	198.1	195.3	199.0	203.3	204.8	204.2	202.1
Apparel commodities	186.9	183.0	186.6	191.2	192.6	191.9	189.6	186.3	182.4	186.1	190.9	192.3	191.6	189.2
Apparel commodities less footwear	183.4	178.9	183.1	187.8	189.2	188.3	185.9	182.5	177.9	182.2	187.3	188.7	187.8	185.3
Men's and boys'	191.8	189.8	192.6	195.6	197.6	197.8	196.0	192.1	189.9	193.0	196.2	198.1	198.6	196.8
Men's (12/77 = 100)	120.9	119.3	121.2	123.2	124.3	124.5	123.2	121.5	119.6	121.7	123.9	125.0	125.4	124.1
Suits, sport coats, and jackets (12/77 = 100)	112.9	113.2	113.5	115.6	116.4	115.7	113.3	105.8	106.2	106.8	108.9	109.7	109.2	106.8
Coats and jackets	104.4	96.1	100.9	105.7	107.9	106.6	105.6	107.6	99.6	104.0	109.0	111.1	109.9	108.8
Furnishings and special clothing (12/77 = 100)	147.8	145.6	147.6	150.9	151.8	152.0	151.7	144.1	141.8	143.3	146.6	147.7	147.8	147.6
Shirts (12/77 = 100)	125.7	125.6	127.3	128.2	129.5	129.4	128.3	128.5	127.7	130.0	131.0	132.1	132.2	130.7
Dungarees, jeans, and trousers (12/77 = 100)	112.9	111.3	113.7	114.5	115.5	117.6	116.6	118.8	117.2	120.0	120.9	122.0	124.3	123.1
Boys' (12/77 = 100)	123.9	124.1	125.5	126.9	128.6	128.5	128.1	122.4	122.7	124.3	125.7	127.2	127.1	126.5
Coats, jackets, sweaters, and shirts (12/77 = 100)	118.8	120.8	125.5	127.0	126.8	125.9	123.9	120.6	123.1	128.0	129.8	129.2	128.3	125.6
Furnishings (12/77 = 100)	137.0	136.5	134.7	135.8	136.8	138.9	139.2	132.9	132.2	130.5	131.8	132.7	134.4	134.7
Suits, trousers, sport coats, and jackets (12/77 = 100)	122.7	121.8	121.8	123.3	126.7	126.4	126.9	120.0	119.0	119.1	120.4	123.8	123.7	124.2

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					
	Dec.	July	Aug.	Sept.	Oct.	Nov.	Dec.	Dec.	July	Aug.	Sept.	Oct.	Nov.	Dec.
Women's and girls'	164.9	156.2	163.1	170.5	172.2	170.4	167.2	166.0	157.4	164.1	172.1	173.8	171.9	168.6
Women's (12/77 = 100)	109.5	103.7	108.6	114.4	115.0	113.4	111.3	110.8	104.8	109.5	115.8	116.4	114.9	112.6
Coats and jackets	170.3	156.8	167.7	181.1	181.7	181.9	175.0	174.8	162.4	176.1	185.2	186.3	186.0	178.2
Dresses	172.0	163.7	172.0	178.3	179.9	175.8	174.3	157.1	153.1	159.9	165.5	165.8	162.4	160.7
Separates and sportswear (12/77 = 100)	98.9	88.2	92.9	102.5	104.3	103.6	100.8	99.4	88.6	93.1	102.9	104.7	104.1	101.5
Underwear, nightwear, and hosiery (12/77 = 100)	136.5	136.7	138.0	139.4	138.5	138.5	138.8	136.2	136.2	137.5	138.9	138.0	138.1	138.3
Suits (12/77 = 100)	81.7	74.4	85.1	93.5	94.1	87.6	81.6	100.2	97.1	96.5	112.1	114.0	106.6	99.9
Girls' (12/77 = 100)	110.2	104.6	107.7	108.6	112.3	112.7	110.9	108.8	104.0	107.5	108.6	112.0	111.8	109.9
Coats, jackets, dresses, and suits (12/77 = 100)	101.8	99.7	101.0	98.6	106.2	106.8	104.0	98.8	98.4	100.4	98.3	105.0	105.8	101.8
Separates and sportswear (12/77 = 100)	106.7	96.9	103.1	106.7	108.2	107.7	106.2	106.3	96.7	103.5	107.5	108.9	106.9	106.3
Underwear, nightwear, hosiery, and accessories (12/77 = 100)	130.5	127.1	127.4	128.3	130.0	131.6	130.9	129.1	125.7	126.0	127.0	128.7	130.2	129.6
Infants' and toddlers'	282.7	281.2	288.7	291.3	291.6	290.2	291.9	292.1	292.0	298.9	303.2	302.5	302.1	302.9
Other apparel commodities	215.6	218.0	216.3	216.5	216.0	215.4	213.3	204.2	206.0	204.9	205.0	204.0	203.1	201.0
Sewing materials and notions (12/77 = 100)	121.4	122.5	123.8	122.8	120.6	120.1	121.9	119.3	120.7	122.3	121.5	119.0	118.4	120.5
Jewelry and luggage (12/77 = 100)	147.0	148.8	146.7	147.3	147.7	147.4	144.7	137.8	138.9	137.1	137.6	137.8	137.2	134.3
Footwear	207.9	208.0	207.7	211.1	212.9	212.9	211.4	208.3	208.7	208.5	211.6	213.2	213.1	211.7
Men's (12/77 = 100)	134.7	137.5	137.4	138.0	138.3	138.4	137.1	136.6	139.6	139.4	139.8	140.1	140.2	138.9
Boys' and girls' (12/77 = 100)	132.9	131.0	131.9	133.5	136.0	136.3	135.3	135.2	133.7	134.8	136.3	138.7	139.0	138.3
Women's (12/77 = 100)	125.2	124.2	123.4	127.0	128.0	127.6	127.0	121.7	120.8	119.9	123.3	124.1	123.6	122.9
Apparel services	297.0	305.1	307.5	307.6	309.5	310.8	311.5	295.0	303.0	305.5	305.6	307.4	308.8	309.3
Laundry and drycleaning other than coin operated (12/77 = 100)	177.7	183.4	184.1	184.3	185.5	186.3	186.9	176.0	181.7	182.3	182.6	183.8	184.4	184.9
Other apparel services (12/77 = 100)	154.5	157.2	159.9	159.7	160.4	161.1	161.2	155.6	158.5	161.3	161.0	161.7	162.5	162.6
TRANSPORTATION	306.3	312.9	312.9	313.7	315.5	316.1	315.8	308.2	315.2	315.2	316.0	317.8	318.3	317.9
Private	301.8	307.5	307.5	308.4	310.2	310.8	310.4	305.6	311.2	311.1	312.1	313.9	314.4	313.9
New cars	207.0	208.1	208.1	208.2	209.6	211.4	212.0	206.5	207.6	207.6	207.6	209.0	210.8	211.3
Used cars	357.6	383.2	383.8	384.2	384.6	383.6	382.7	357.6	383.2	383.8	384.2	384.6	383.6	382.6
Gasoline	375.2	369.8	365.9	368.8	370.3	369.2	365.7	377.0	376.4	367.4	369.4	371.7	370.5	367.1
Automobile maintenance and repair	335.4	341.6	342.7	344.2	345.3	345.8	346.2	335.9	342.3	343.4	344.9	346.2	346.7	347.1
Body work (12/77 = 100)	169.6	172.6	173.5	174.7	175.6	175.8	176.1	168.3	171.6	172.1	173.1	174.1	174.3	174.7
Automobile drive train, brake, and miscellaneous mechanical repair (12/77 = 100)	163.6	166.5	167.2	168.1	169.2	169.6	169.7	167.4	170.6	171.3	172.2	173.4	173.8	174.0
Maintenance and servicing (12/77 = 100)	152.8	155.3	155.9	156.3	156.5	156.8	157.0	152.0	154.5	155.0	155.5	155.8	156.1	156.3
Power plant repair (12/77 = 100)	160.1	163.5	163.9	164.7	164.9	164.9	165.1	159.5	163.2	163.5	164.3	164.6	164.6	164.8
Other private transportation	266.8	272.4	274.9	275.9	278.7	280.7	282.3	267.9	273.4	275.8	277.0	279.8	281.9	283.3
Other private transportation commodities	208.9	200.6	200.8	201.2	199.0	201.0	202.2	211.4	202.9	203.2	203.4	201.0	203.5	204.7
Motor oil, coolant, and other products (12/77 = 100)	153.3	154.3	153.6	155.1	153.2	155.3	156.2	152.3	153.8	153.2	154.5	152.6	154.4	155.2
Automobile parts and equipment (12/77 = 100)	132.4	126.2	126.4	126.5	125.1	126.4	127.1	134.3	127.8	128.1	128.0	126.5	128.1	128.9
Tires	182.7	169.6	170.4	170.9	168.3	170.2	171.4	186.5	173.0	174.0	174.2	171.5	174.0	175.1
Other parts and equipment (12/77 = 100)	132.9	134.7	133.9	133.3	133.2	134.1	134.5	132.7	134.1	133.3	132.7	132.5	133.5	134.0
Other private transportation services	284.8	294.1	297.2	298.4	302.5	304.6	306.2	285.4	294.6	297.5	299.1	303.3	305.3	306.7
Automobile insurance	315.0	324.8	325.2	326.9	332.3	335.9	340.0	314.3	323.9	324.2	325.9	331.3	334.9	338.9
Automobile finance charges (12/77 = 100)	160.0	166.2	168.7	169.9	172.0	172.2	170.9	159.7	165.7	168.2	169.5	171.7	171.9	170.5
Automobile rental, registration, and other fees (12/77 = 100)	147.5	152.0	156.8	156.4	157.6	158.0	158.4	148.6	153.1	157.4	157.7	158.9	159.2	159.6
State registration	195.6	199.8	209.7	212.2	213.5	213.5	213.5	195.4	200.0	208.8	211.7	212.9	212.9	212.9
Drivers' licenses (12/77 = 100)	154.5	161.0	161.3	163.7	163.7	163.7	163.7	154.8	161.2	161.5	164.1	164.1	164.1	164.1
Vehicle inspection (12/77 = 100)	139.8	139.9	139.9	139.9	140.0	142.2	142.2	140.5	140.4	140.5	140.5	140.5	142.3	142.3
Other vehicle-related fees (12/77 = 100)	160.7	166.5	170.0	166.4	168.3	169.1	170.1	167.9	173.8	176.4	173.8	176.0	176.7	177.8
Public	369.0	389.3	390.8	389.5	391.1	391.8	392.8	359.0	380.7	381.6	380.4	381.6	382.4	382.8
Airline fare	428.5	450.1	454.1	450.1	453.5	455.4	456.2	424.4	446.6	450.5	445.4	448.8	450.6	451.1
Intercity bus fare	405.5	438.9	441.1	442.2	445.3	447.0	455.4	402.6	438.7	441.3	442.6	445.4	447.8	455.4
Intracity mass transit	324.5	346.6	345.7	346.5	346.6	345.9	346.7	322.7	346.6	345.8	346.5	346.6	345.9	346.5
Taxi fare	307.6	310.4	310.4	310.8	311.1	311.3	311.3	316.7	319.7	319.7	319.8	320.0	320.1	320.3
Intercity train fare	370.7	381.9	381.9	381.9	382.0	383.5	388.2	371.3	382.1	382.2	382.2	382.2	383.8	388.7
MEDICAL CARE	366.2	380.3	381.9	383.1	385.5	387.5	388.5	364.3	378.5	380.1	381.2	383.7	385.6	386.7
Medical care commodities	229.9	240.7	241.6	242.4	244.1	245.6	247.3	230.1	240.7	241.5	242.3	244.1	245.6	247.2
Prescription drugs	222.3	234.9	236.6	238.0	240.2	242.2	244.4	223.7	236.3	237.9	239.4	241.7	243.8	245.9
Anti-infective drugs (12/77 = 100)	161.2	166.1	167.7	168.4	170.5	171.0	171.8	163.5	168.3	170.0	171.0	173.3	173.8	174.6
Tranquilizers and sedatives (12/77 = 100)	188.4	205.1	207.6	208.7	212.7	216.2	218.8	188.3	205.1	207.5	208.6	212.7	216.3	218.9
Circulatories and diuretics (12/77 = 100)	160.6	170.4	171.3	171.7	172.8	174.4	174.9	160.3	169.5	170.4	170.9	172.1	173.7	174.2
Hormones, diabetic drugs, biologicals, and prescription medical supplies (12/77 = 100)	205.0	216.2	218.1	220.7	222.3	223.8	228.3	207.1	218.4	220.4	223.2	224.7	226.1	230.7
Pain and symptom control drugs (12/77 = 100)	181.1	189.7	191.0	192.0	192.7	194.4	198.2	183.0	191.7	192.8	193.8	194.7	196.3	197.2
Supplements, cough and cold preparations, and respiratory agents (12/77 = 100)	165.7	175.9	175.5	176.1	176.9	178.3	179.1	166.2	176.5	176.2	176.9	177.7	179.0	179.7
Nonprescription drugs and medical supplies (12/77 = 100)	158.3	164.3	164.4	164.5	165.4	166.0	166.8	159.1	165.1	165.2	165.3	166.3	166.9	167.8
Eyeglasses (12/77 = 100)	137.7	140.6	140.5	141.4	141.9	142.2	141.9	136.5	139.5	139.3	140.4	140.8	141.2	140.9
Internal and respiratory over-the-counter drugs	257.5	269.5	269.4	269.5	271.3	271.5	273.7	258.8	270.6	270.4	270.5	272.4	272.7	275.0
Nonprescription medical equipment and supplies (12/77 = 100)	152.6	157.0	157.9	157.1	157.7	159.8	160.3	154.0	158.4	159.4	158.6	159.1	161.5	161.9

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					
	Dec.	July	Aug.	Sept.	Oct.	Nov.	Dec.	Dec.	July	Aug.	Sept.	Oct.	Nov.	Dec.
Medical care services	396.3	410.9	412.7	413.9	416.5	418.5	419.3	393.8	408.6	410.4	411.5	414.1	416.1	417.0
Professional services	332.9	347.0	348.2	349.8	351.8	353.1	354.0	333.3	347.4	348.6	350.1	352.1	353.4	354.4
Physicians' services	362.0	378.1	379.5	380.8	382.2	383.0	383.8	365.9	382.1	383.6	384.8	386.2	387.0	387.9
Dental services	314.0	327.9	329.1	331.9	334.8	336.6	337.7	311.8	325.7	326.8	329.5	332.4	334.3	335.3
Other professional services (12/77 = 100)	156.2	160.1	160.3	160.0	160.8	161.5	166.1	152.7	156.4	156.6	156.2	157.1	157.8	158.4
Other medical care services	473.0	488.3	490.7	491.5	494.7	497.7	498.2	469.5	485.2	487.7	488.4	491.7	494.6	495.3
Hospital and other medical services (12/77 = 100)	202.2	210.9	212.5	213.0	215.0	217.2	217.6	200.1	208.9	210.4	210.9	212.9	214.7	215.1
Hospital room	643.5	672.9	678.1	679.5	687.1	691.3	690.8	635.9	664.6	669.5	670.8	677.3	680.8	680.9
Other hospital and medical care services (12/77 = 100)	198.8	207.0	208.5	209.1	210.7	213.6	214.4	197.0	205.4	206.8	207.4	209.3	211.7	212.5
ENTERTAINMENT	249.5	255.3	256.4	257.3	258.3	259.0	260.1	245.8	251.4	252.5	253.4	254.2	254.8	255.8
Entertainment commodities	248.7	253.3	254.5	254.8	255.9	256.0	256.8	243.1	247.8	248.8	249.2	249.6	250.2	250.9
Reading materials (12/77 = 100)	162.3	164.5	166.0	166.3	167.7	167.8	168.8	161.8	164.0	165.4	165.6	167.0	167.2	168.2
Newspapers	308.2	315.0	315.2	315.4	317.5	319.2	320.1	308.3	315.1	315.3	315.6	317.7	319.4	320.4
Magazines, periodicals, and books (12/77 = 100)	168.6	169.4	172.5	173.0	174.7	174.1	175.6	168.7	169.3	172.4	172.8	174.6	173.7	175.4
Sporting goods and equipment (12/77 = 100)	135.0	137.8	138.3	138.7	138.8	140.0	139.6	129.1	131.4	131.9	132.3	132.2	133.6	133.0
Sport vehicles (12/77 = 100)	138.5	142.9	143.9	144.4	144.5	146.0	145.9	129.2	132.6	133.7	134.0	133.9	135.8	135.4
Indoor and warm weather sport equipment (12/77 = 100)	117.4	117.7	117.9	117.3	117.2	118.2	118.0	115.3	115.9	115.9	115.5	115.3	116.4	116.1
Bicycles	198.2	200.2	198.3	198.9	198.8	198.1	198.4	199.0	201.2	199.4	200.3	200.0	199.1	199.5
Other sporting goods and equipment (12/77 = 100)	134.8	134.3	134.8	135.5	135.6	137.3	134.4	134.7	134.2	134.0	135.0	135.1	136.5	134.0
Toys, hobbies, and other entertainment (12/77 = 100)	138.8	141.7	141.9	142.0	141.9	141.8	142.5	137.6	140.7	141.0	141.1	263.4	140.9	141.5
Toys, hobbies, and music equipment (12/77 = 100)	136.6	139.3	138.6	138.3	138.2	138.1	139.1	132.9	135.9	135.2	135.1	165.0	134.8	135.6
Photographic supplies and equipment (12/77 = 100)	130.2	134.2	135.0	135.2	135.1	134.9	135.1	131.2	135.6	136.3	136.4	156.1	136.2	136.4
Pet supplies and expenses (12/77 = 100)	148.9	151.4	153.1	153.7	153.5	153.4	154.0	150.2	152.7	154.2	153.6	154.7	154.5	155.3
Entertainment services	251.1	258.5	259.7	261.3	262.8	263.8	265.5	251.7	258.8	260.1	262.0	263.4	264.0	265.6
Fees for participant sports (12/77 = 100)	156.9	159.7	160.1	162.3	163.6	165.1	165.9	158.1	160.4	161.0	163.2	165.0	166.2	166.8
Admissions (12/77 = 100)	147.2	156.0	157.3	156.9	157.2	156.8	158.2	146.3	155.0	156.1	155.7	156.1	155.6	156.9
Other entertainment services (12/77 = 100)	133.0	135.3	136.1	136.2	137.0	136.7	138.0	134.0	136.0	136.8	137.1	137.6	137.0	138.5
OTHER GOODS AND SERVICES	298.6	306.5	307.2	314.6	315.8	316.5	316.7	295.9	304.5	305.3	310.9	311.9	312.6	312.8
Tobacco products	299.9	313.2	313.9	314.1	314.6	314.7	314.6	299.6	312.9	313.5	313.7	314.2	314.3	314.2
Cigarettes	308.0	322.0	322.6	322.8	323.3	323.4	323.2	307.0	320.9	321.5	321.7	322.2	322.2	322.1
Other tobacco products and smoking accessories (12/77 = 100)	153.9	159.3	159.7	159.9	160.0	160.6	161.0	153.9	159.4	159.8	159.9	160.1	160.6	161.0
Personal care	266.3	271.8	272.6	273.6	274.7	276.3	276.6	264.4	269.7	270.5	271.6	272.4	274.0	274.4
Toilet goods and personal care appliances	266.3	270.2	270.6	271.6	272.0	273.4	273.5	267.1	270.9	271.4	272.5	272.6	274.0	274.2
Products for the hair, hairpieces, and wigs (12/77 = 100)	154.0	156.1	156.2	156.1	155.9	156.9	156.5	153.1	155.1	155.3	155.3	155.0	156.2	155.8
Dental and shaving products (12/77 = 100)	167.3	167.2	167.6	167.9	168.2	170.9	172.1	165.6	165.2	165.6	165.8	166.0	168.9	170.0
Cosmetics, bath and nail preparations, manicure and eye makeup implements (12/77 = 100)	149.8	154.0	153.2	154.5	154.9	154.9	155.3	151.1	155.1	154.5	155.9	155.9	155.8	156.3
Other toilet goods and small personal care appliances (12/77 = 100)	150.7	152.7	154.2	155.0	155.4	155.5	154.7	154.4	156.4	158.0	158.7	159.0	159.1	158.3
Personal care services	267.4	274.3	275.4	276.4	278.0	279.9	280.4	262.1	269.0	270.0	271.1	272.6	274.4	275.0
Beauty parlor services for women	270.7	277.3	278.4	279.2	281.2	283.1	283.8	263.7	270.2	271.2	272.0	274.0	275.8	276.6
Haircuts and other barber shop services for men (12/77 = 100)	147.8	152.1	152.8	153.6	154.0	155.0	155.1	146.7	150.9	151.6	152.4	152.8	153.8	153.8
Personal and educational expenses	352.1	358.6	359.3	381.9	384.0	384.1	384.3	353.7	361.3	362.1	384.1	386.0	386.2	386.4
Schoolbooks and supplies	308.9	318.8	319.2	331.5	333.7	333.8	334.0	313.0	323.4	323.8	336.4	338.6	338.7	338.9
Personal and educational services	361.9	367.9	368.7	393.1	295.2	395.4	395.5	363.6	370.8	371.6	395.6	397.4	397.6	397.8
Tuition and other school fees	182.9	184.8	185.0	200.7	201.3	201.3	201.3	183.3	185.6	185.8	201.4	202.3	202.3	202.3
College tuition (12/77 = 100)	182.8	185.2	185.3	200.1	201.4	201.4	201.3	182.7	186.0	186.1	201.1	202.3	202.3	202.2
Elementary and high school tuition (12/77 = 100)	183.9	183.9	184.3	201.1	201.3	201.3	201.4	184.9	185.0	185.4	202.6	202.8	202.8	202.9
Personal expenses (12/77 = 100)	196.8	205.0	206.4	207.3	208.5	208.9	209.5	197.3	205.6	207.0	207.9	208.8	209.2	209.7
Special indexes:														
Gasoline, motor oil, coolant, and other products	370.9	365.9	362.4	364.3	366.6	365.6	362.3	372.5	367.3	363.8	365.7	367.9	366.8	363.6
Insurance and finance	....	....	....	....	....	....	....	419.4	422.0	437.3	441.6	440.3	440.4	442.8
Utilities and public transportation	339.8	362.9	365.6	367.0	362.8	358.5	357.5	338.5	362.0	364.6	366.1	361.5	357.1	355.9
Housekeeping and home maintenance services	364.9	370.9	371.6	373.0	373.7	373.7	374.1	372.0	379.9	380.3	382.3	382.7	381.9	382.7

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)			Size class B (385,000–1,250 million)			Size class C (75,000–385,000)			Size class D (75,000 or less)		
	1984			1984			1984			1984		
	Aug.	Oct.	Dec.	Aug.	Oct.	Dec.	Aug.	Oct.	Dec.	Aug.	Oct.	Dec.
	Northeast											
EXPENDITURE CATEGORY												
All items	162.6	163.5	164.3	168.9	170.0	169.9	173.7	175.3	174.4	167.2	169.8	169.7
Food and beverages	154.2	153.7	154.1	152.0	152.6	152.3	157.5	156.1	155.8	152.7	152.0	151.4
Housing	167.4	168.2	169.7	180.6	180.9	181.2	187.7	190.1	187.5	172.3	177.4	176.9
Apparel and upkeep	125.7	128.2	125.5	125.6	129.0	126.7	131.1	139.0	138.2	138.5	141.4	138.7
Transportation	172.0	172.0	173.0	175.6	176.9	176.8	176.2	176.3	176.3	175.7	176.2	176.9
Medical care	176.8	178.3	181.4	181.0	182.7	183.5	178.9	182.7	184.1	184.9	188.7	192.8
Entertainment	149.7	150.9	151.3	148.2	149.9	149.8	153.9	155.3	155.4	153.6	154.8	156.5
Other goods and services	172.3	178.1	178.9	172.0	177.4	177.4	176.6	180.7	181.5	175.6	181.1	180.9
COMMODITY AND SERVICE GROUP												
Commodities	154.9	155.3	155.1	159.8	161.0	161.0	160.2	160.9	160.6	158.7	159.1	159.0
Commodities less food and beverages	154.6	156.1	155.4	163.1	164.7	164.9	161.0	162.8	162.7	161.0	162.2	162.3
Services	172.0	173.4	175.3	182.3	183.3	183.1	195.0	198.0	196.1	179.1	185.2	185.3
	North Central Region											
EXPENDITURE CATEGORY												
All items	172.3	173.4	173.2	168.1	168.9	169.2	166.6	167.2	166.4	166.6	167.5	167.6
Food and beverages	150.2	150.0	150.4	149.4	149.2	149.6	150.7	150.2	149.9	158.4	157.8	158.5
Housing	192.0	192.2	191.8	177.3	178.1	178.3	175.3	175.8	174.0	170.0	171.3	171.0
Apparel and upkeep	120.2	122.9	120.8	131.7	134.4	132.5	130.2	132.0	129.3	124.9	128.7	128.0
Transportation	171.9	174.0	173.7	173.4	173.9	174.3	175.1	176.7	176.7	174.9	175.1	174.9
Medical care	180.0	181.5	182.1	182.0	183.0	184.6	175.2	175.6	176.3	185.1	185.6	186.2
Entertainment	146.4	148.3	148.4	139.6	140.3	139.9	153.9	153.4	154.2	142.5	143.3	146.4
Other goods and services	168.7	172.9	173.0	180.6	184.7	186.1	167.1	169.4	169.6	178.4	181.4	181.8
COMMODITY AND SERVICE GROUP												
Commodities	158.6	159.4	159.0	157.2	157.7	157.8	155.8	156.4	155.9	156.3	156.4	156.7
Commodities less food and beverages	162.4	164.0	163.1	160.2	161.1	161.0	157.9	159.1	158.5	155.3	155.7	155.8
Services	192.3	193.7	193.7	185.3	186.7	187.2	183.6	184.3	183.1	182.8	184.7	184.8
	South											
EXPENDITURE CATEGORY												
All items	168.7	170.2	170.3	170.6	171.9	172.0	168.6	169.5	170.2	168.7	170.1	170.4
Food and beverages	157.3	157.2	157.8	157.2	157.5	157.4	154.0	153.9	153.8	157.8	158.3	158.1
Housing	175.4	176.9	176.1	176.5	177.0	177.2	174.1	174.2	175.6	177.0	177.1	178.2
Apparel and upkeep	131.5	137.6	137.0	127.8	132.8	132.0	127.4	131.5	130.7	110.8	117.4	117.8
Transportation	175.6	176.7	176.8	179.0	180.2	180.7	177.5	179.0	179.0	173.8	174.8	174.1
Medical care	180.6	182.2	184.2	183.5	184.9	185.3	188.6	191.0	193.1	193.4	197.7	199.0
Entertainment	147.7	148.7	151.8	161.9	162.7	162.6	153.4	154.1	156.2	151.7	152.8	152.7
Other goods and services	172.5	176.7	177.2	174.8	179.9	180.6	174.5	177.6	178.7	171.3	174.5	173.9
COMMODITY AND SERVICE GROUP												
Commodities	159.4	160.7	160.8	161.3	162.6	162.3	159.2	160.0	160.0	158.5	159.8	159.3
Commodities less food and beverages	160.0	162.2	162.0	162.7	164.5	164.1	161.6	162.9	162.8	158.4	160.2	159.5
Services	181.3	183.1	183.1	184.2	185.5	186.2	182.9	184.2	185.9	184.1	185.6	186.9
	West											
EXPENDITURE CATEGORY												
All items	170.3	172.2	172.1	169.5	170.6	170.9	161.4	162.7	162.9	167.8	170.1	170.1
Food and beverages	156.5	156.8	157.6	159.8	159.7	161.5	155.4	155.8	155.2	163.0	164.2	164.3
Housing	179.3	180.5	179.8	174.7	175.0	174.1	159.9	161.1	160.9	167.8	172.2	171.2
Apparel and upkeep	126.5	129.3	126.7	130.5	131.2	131.8	122.5	127.7	125.6	145.1	147.1	146.1
Transportation	177.6	181.0	181.2	178.6	181.2	181.8	174.5	176.3	177.0	172.6	172.7	173.4
Medical care	185.7	188.0	187.9	182.7	183.6	184.5	189.5	190.5	193.5	188.2	188.7	189.9
Entertainment	144.8	145.7	146.9	148.8	152.6	154.6	157.9	154.0	158.0	163.2	165.9	169.3
Other goods and services	173.7	182.7	183.0	174.7	179.3	179.8	170.1	174.4	175.0	176.0	179.3	180.3
COMMODITY AND SERVICE GROUP												
Commodities	155.8	158.0	157.8	159.5	160.3	161.4	157.1	158.2	157.9	157.6	158.7	159.0
Commodities less food and beverages	155.3	158.7	157.9	159.0	160.4	161.0	157.2	158.6	158.6	154.7	155.8	156.3
Services	188.4	190.1	190.0	182.7	184.2	183.7	166.5	168.0	168.7	182.8	186.7	186.3

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					
	Dec.	July	Aug.	Sept.	Oct.	Nov.	Dec.	Dec.	July	Aug.	Sept.	Oct.	Nov.	Dec.
U.S. city average[2]	303.5	311.7	313.0	314.5	315.3	315.3	315.5	301.5	307.5	310.3	312.1	312.2	311.9	312.2
Anchorage, Alaska (10/67 = 100)	. . .	275.5	. . .	277.9	. . .	303.2	. . .	. . .	266.8	. . .	270.9	. . .	270.9	. . .
Atlanta, Ga.	307.3	. . .	315.9	. . .	317.8	. . .	318.2	306.3	. . .	315.0	. . .	318.2	. . .	316.0
Baltimore, Md.	. . .	313.0	. . .	316.4	. . .	315.3	. . .	. . .	311.6	. . .	316.4	. . .	315.1	. . .
Boston, Mass.	. . .	304.9	. . .	307.4	. . .	307.8	. . .	. . .	300.8	. . .	305.3	. . .	306.5	. . .
Buffalo, N.Y.	288.2	. . .	294.5	. . .	296.1	. . .	303.4	285.6	. . .	288.6	. . .	292.0	. . .	289.8
Chicago, Ill.–Northwestern Ind.	303.9	310.8	313.4	315.1	314.1	313.9	314.0	294.2	299.0	301.2	304.3	301.8	302.6	301.7
Cincinnati, Ohio–Ky.–Ind.	. . .	323.3	. . .	325.2	. . .	325.4	. . .	. . .	314.4	. . .	320.9	. . .	319.3	. . .
Cleveland, Ohio	328.9	. . .	337.3	. . .	340.1	. . .	339.7	314.6	. . .	328.1	. . .	324.4	. . .	318.6
Dallas-Ft. Worth, Tex.	317.6	. . .	329.8	. . .	333.7	. . .	330.7	313.5	. . .	324.8	. . .	328.2	. . .	325.0
Denver-Boulder, Colo.	. . .	349.9	. . .	351.3	. . .	349.4	. . .	. . .	347.1	. . .	346.1	. . .	345.1	. . .
Detroit, Mich.	300.1	307.7	308.0	311.6	311.9	308.7	309.1	301.3	298.3	298.9	301.3	302.9	299.8	300.0
Honolulu, Hawaii	278.4	. . .	286.0	. . .	287.4	. . .	289.8	288.2	. . .	293.6	. . .	294.5	. . .	297.6
Houston, Tex.	320.7	. . .	332.0	. . .	334.4	. . .	333.4	317.9	. . .	333.6	. . .	334.4	. . .	330.9
Kansas City, Mo.–Kansas	303.0	. . .	311.2	. . .	314.1	. . .	313.7	300.0	. . .	304.5	. . .	307.7	. . .	304.0
Los Angeles-Long Beach, Anaheim, Calif.	297.7	305.9	308.6	310.2	311.9	311.8	311.1	299.9	300.3	305.1	304.2	302.6	304.3	306.5
Miami, Fla. (11/77 = 100)	. . .	167.0	. . .	167.9	. . .	168.3	. . .	. . .	168.0	. . .	169.7	. . .	169.6	. . .
Milwaukee, Wis.	. . .	321.3	. . .	324.0	. . .	324.3	. . .	. . .	341.6	. . .	347.9	. . .	342.7	. . .
Minneapolis-St. Paul, Minn.–Wis.	317.5	. . .	324.8	. . .	328.0	. . .	327.9	312.5	. . .	332.5	. . .	327.0	. . .	323.8
New York, N.Y.–Northeastern N.J.	294.3	302.9	305.0	306.9	306.6	308.0	308.0	288.2	294.7	297.1	299.9	300.4	301.2	301.6
Northeast, Pa. (Scranton)	. . .	297.3	. . .	298.2	. . .	301.1	. . .	. . .	295.9	. . .	297.7	. . .	300.6	. . .
Philadelphia, Pa.–N.J.	291.8	301.4	302.9	303.9	303.7	306.0	305.1	294.3	304.3	306.1	308.5	308.7	309.2	307.9
Pittsburgh, Pa.	314.3	. . .	319.1	. . .	321.1	. . .	322.1	302.6	. . .	303.3	. . .	304.2	. . .	304.6
Portland, Oreg.–Wash.	. . .	300.9	. . .	302.5	. . .	304.8	. . .	. . .	294.6	. . .	293.7	. . .	295.7	. . .
St. Louis, Mo.–Ill.	. . .	308.7	. . .	311.4	. . .	309.1	. . .	. . .	301.4	. . .	308.0	. . .	307.1	. . .
San Diego, Calif.	. . .	351.3	. . .	357.1	. . .	363.7	. . .	. . .	324.6	. . .	330.7	. . .	328.8	. . .
San Francisco-Oakland, Calif.	307.3	. . .	323.4	. . .	327.5	. . .	325.8	306.1	. . .	322.7	. . .	319.3	. . .	321.5
Seattle-Everett, Wash.	. . .	314.3	. . .	316.5	. . .	318.1	. . .	. . .	303.2	. . .	305.3	. . .	305.5	. . .
Washington, D.C.–Md.–Va.	. . .	308.3	. . .	313.0	. . .	315.8	. . .	. . .	310.8	. . .	317.9	. . .	319.8	. . .

[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.

23. Producer Price Indexes, by stage of processing

[1967 = 100]

Commodity grouping	Annual average 1984	1984												1985
		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.[1]	Oct.	Nov.	Dec.	Jan.
FINISHED GOODS														
Finished goods	291.2	289.5	290.6	291.4	291.2	291.1	290.9	292.3	291.3	r289.5	291.6	292.3	292.4	292.7
Finished consumer goods	290.4	288.9	290.1	291.1	290.3	290.3	290.1	291.6	290.4	r288.7	290.3	291.1	291.3	291.1
Finished consumer foods	273.5	272.2	274.7	276.6	274.3	271.7	270.8	275.3	274.0	r273.0	271.8	272.3	274.4	279.2
Crude	283.9	306.9	313.6	323.7	299.0	270.7	258.9	270.8	274.6	r270.3	277.2	265.5	270.8	263.1
Processed	270.3	266.9	269.0	270.2	269.9	269.6	269.7	273.4	271.7	r271.1	269.1	270.7	272.5	273.0
Nondurable goods less foods	337.4	335.0	336.1	336.7	336.4	338.9	339.2	339.2	336.9	r336.2	337.7	339.1	337.2	335.6
Durable goods	236.6	235.9	236.1	236.6	236.7	236.6	236.4	236.6	236.7	r233.0	237.9	238.4	238.8	240.5
Consumer nondurable goods less food and energy	239.1	236.0	236.5	237.1	237.9	238.7	238.7	240.1	240.1	r240.8	240.4	241.3	241.1	243.3
Capital equipment	294.1	291.6	292.3	292.3	294.5	293.9	293.9	294.6	294.6	r292.5	296.0	296.3	296.4	298.1
INTERMEDIATE MATERIALS														
Intermediate materials, supplies, and components	320.0	316.3	317.6	319.7	320.3	320.9	321.6	321.7	321.1	320.3	319.9	320.5	319.8	319.6
Materials and components for manufacturing	301.8	298.9	299.8	301.8	302.9	303.3	303.4	303.2	302.5	r301.9	301.2	301.8	301.1	300.7
Materials for food manufacturing	271.7	268.6	268.3	269.6	271.4	276.0	275.2	276.4	272.4	r270.0	267.2	269.2	268.4	264.9
Materials for nondurable manufacturing	290.5	286.6	287.0	290.3	291.8	292.8	292.8	292.7	291.3	r290.9	290.3	290.1	289.3	289.2
Materials for durable manufacturing	325.1	323.4	325.6	328.2	329.1	327.2	326.9	325.4	325.1	r323.5	321.9	323.2	321.8	320.5
Components for manufacturing	287.5	284.5	285.2	285.6	286.2	287.0	287.5	287.9	288.4	288.9	289.2	289.8	289.7	290.5
Materials and components for construction	310.3	305.5	307.8	309.6	310.5	309.8	310.3	310.9	312.0	r311.7	311.6	311.6	312.3	313.2
Processed fuels and lubricants	566.3	556.4	561.3	567.8	562.9	567.2	575.2	576.6	569.2	r565.3	564.2	566.2	561.1	556.9
Manufacturing industries	483.8	474.2	477.9	483.4	480.6	485.5	490.4	491.4	484.7	r481.8	483.6	485.8	482.9	479.7
Nonmanufacturing industries	638.2	628.0	634.1	641.4	634.5	638.2	649.1	650.9	643.0	r638.1	634.1	636.0	628.9	623.8
Containers	302.1	292.3	294.8	297.3	299.4	300.9	301.8	303.0	304.1	r305.2	307.9	309.4	309.3	309.9
Supplies	283.3	282.6	282.2	283.0	284.2	284.3	283.9	283.2	284.1	r283.6	283.1	283.1	283.1	284.0
Manufacturing industries	279.0	274.5	276.0	276.4	277.8	278.4	279.0	279.2	280.9	r280.7	281.0	281.9	282.2	283.3
Nonmanufacturing industries	285.9	287.0	285.7	286.7	287.8	287.6	286.7	285.6	286.0	r285.3	284.5	284.0	283.8	284.6
Feeds	215.8	243.7	227.7	232.2	233.5	229.2	221.6	211.7	208.3	203.0	195.4	192.4	191.1	189.9
Other supplies	300.6	296.6	298.0	298.4	299.5	300.0	300.5	301.0	302.2	302.3	302.8	302.8	302.8	304.0
CRUDE MATERIALS														
Crude materials for further processing	331.0	333.5	332.6	338.8	339.4	338.0	333.0	334.1	328.9	r326.2	320.0	323.7	323.1	319.4
Foodstuffs and feedstuffs	259.7	264.0	260.5	269.9	269.7	266.4	260.3	263.6	256.5	r252.7	245.5	253.4	253.7	251.3
Nonfood materials	484.7	483.4	488.1	487.5	490.1	492.3	489.6	486.4	485.0	r484.6	480.2	475.4	473.0	466.1
Nonfood materials except fuel	380.6	380.1	385.5	387.8	388.8	389.9	386.1	380.9	376.8	r379.3	374.8	369.4	367.2	361.7
Manufacturing industries	390.2	390.4	395.5	398.8	399.5	400.2	395.7	390.1	386.1	r388.5	384.0	377.9	375.4	368.8
Construction	278.7	273.7	280.3	276.5	279.2	282.7	283.5	282.0	277.6	r279.9	276.4	276.2	276.2	278.6
Crude fuel	931.4	926.1	926.6	910.6	920.8	928.4	932.6	940.2	953.1	r937.6	935.0	934.1	930.9	918.6
Manufacturing industries	1,092.4	1,086.5	1,086.3	1,064.8	1,079.6	1,088.1	1,094.5	1,103.5	1,120.1	r1,100.0	1,097.6	1,095.8	1,091.1	1,074.2
Nonmanufacturing industries	818.1	813.2	814.2	802.6	809.1	816.1	818.4	825.1	835.1	r823.3	820.4	820.3	818.3	809.6
SPECIAL GROUPINGS														
Finished goods excluding foods	294.8	292.9	293.6	294.0	294.6	295.3	295.4	295.7	294.8	r292.7	295.9	296.7	296.1	296.6
Finished consumer goods excluding foods	294.1	292.5	293.1	293.6	293.5	294.9	294.9	295.0	293.8	r291.7	294.8	295.7	294.9	294.8
Finished consumer goods less energy	257.9	256.1	257.2	258.2	257.8	257.1	256.7	258.9	258.5	257.2	258.2	258.9	259.6	261.0
Intermediate materials less foods and feeds	325.0	320.6	322.3	324.4	325.0	325.4	326.4	326.7	326.3	325.7	325.6	326.1	325.5	325.4
Intermediate materials less energy	303.7	300.5	301.5	303.3	304.4	304.6	304.7	304.7	304.7	304.2	303.8	304.3	304.0	304.2
Intermediate foods and feeds	253.1	260.7	255.1	257.5	259.1	260.8	257.8	255.3	251.4	r248.1	243.8	244.1	243.1	240.4
Crude materials less agricultural products	547.2	546.3	552.0	550.0	553.0	554.0	552.5	549.8	548.8	r546.6	542.3	536.6	533.4	525.6
Crude materials less energy	255.6	258.3	257.3	265.1	265.4	263.3	257.6	258.5	251.9	r249.9	243.0	248.3	248.3	246.6

[1]Data for September 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 1984	1984											1985
			Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.[1]	Oct.	Nov.	Dec.	Jan.
	All commodities	310.3	308.0	308.9	311.0	311.3	311.5	311.3	311.9	310.7	r309.3	309.4	310.4	309.9	309.8
	All commodities (1957–59 = 100)	329.3	326.8	327.7	330.0	330.3	330.5	330.3	330.9	329.7	r328.2	328.3	329.3	328.8	328.7
	Farm products and processed foods and feeds	262.6	264.4	263.4	267.9	267.3	265.8	262.8	264.9	261.4	r259.4	255.8	258.4	259.2	258.0
	Industrial commodities	322.6	319.1	320.6	321.9	322.6	323.2	323.8	323.9	323.3	322.3	323.2	323.8	323.0	323.2
	FARM PRODUCTS AND PROCESSED FOODS AND FEEDS														
01	Farm products	255.7	263.4	261.6	267.4	265.4	260.8	257.1	258.7	253.3	r249.8	240.1	245.5	245.7	243.2
01–1	Fresh and dried fruits and vegetables	278.0	291.2	312.2	308.0	263.8	251.9	273.7	281.9	293.7	r290.1	266.8	251.0	251.7	258.6
01–2	Grains	239.7	245.5	235.3	250.9	262.1	256.2	257.8	248.9	236.9	231.4	219.0	219.7	212.5	217.5
01–3	Livestock	251.8	250.7	251.9	260.8	260.8	254.8	250.0	260.1	253.7	244.9	233.9	247.7	252.3	247.4
01–4	Live poultry	240.6	252.6	251.3	258.4	240.8	240.6	227.7	259.2	218.6	239.7	219.2	247.1	231.7	232.7
01–5	Plant and animal fibers	228.4	229.3	232.7	250.3	252.3	259.1	252.7	235.8	211.3	210.3	202.8	201.4	203.0	204.5
01–6	Fluid milk	278.3	279.1	275.7	274.2	272.7	271.7	271.8	273.9	276.8	282.1	286.7	287.6	287.5	284.6
01–7	Eggs	210.8	282.4	280.7	([2])	264.4	201.0	177.9	184.9	181.2	177.6	179.9	176.0	187.5	141.9
01–8	Hay, hayseeds, and oilseeds	256.3	287.3	265.4	281.4	282.1	297.0	272.4	245.8	242.6	228.4	219.1	227.3	227.4	226.2
01–9	Other farm products	285.4	280.2	278.9	277.7	279.7	288.2	279.1	277.4	284.3	r296.5	293.8	295.2	293.8	289.4
02	Processed foods and feeds	265.3	263.8	263.4	267.1	267.2	267.5	264.8	267.3	264.8	r263.6	263.3	264.4	265.5	265.1
02–1	Cereal and bakery products	270.4	266.6	267.1	267.4	268.3	268.7	271.4	272.3	271.7	r271.9	272.7	272.6	273.7	276.1
02–2	Meats, poultry, and fish	255.1	255.8	254.6	264.4	261.7	257.1	247.4	258.7	252.2	r249.5	247.2	252.5	258.8	259.1
02–3	Dairy products	251.7	248.4	248.4	248.8	248.9	248.9	249.6	251.4	251.2	r255.0	256.7	257.4	255.9	255.4
02–4	Processed fruits and vegetables	294.2	287.7	292.8	295.4	295.1	297.7	298.2	296.2	295.7	r291.8	295.5	291.7	292.6	296.7
02–5	Sugar and confectionery	301.4	299.9	300.5	301.1	301.9	303.8	304.1	305.0	303.7	r302.4	300.2	297.1	296.3	293.1
02–6	Beverages and beverage materials	273.2	268.7	270.2	269.9	271.4	273.5	272.8	273.9	274.6	r274.6	276.8	276.2	275.9	276.2
02–7	Fats and oils	301.2	278.3	273.3	286.2	293.4	328.5	328.1	312.7	305.9	r298.5	302.2	310.9	297.6	280.4
02–8	Miscellaneous processed foods	278.2	266.8	275.4	275.2	276.3	276.2	279.9	281.3	280.4	r281.1	282.2	282.0	282.2	281.9
02–9	Prepared animal feeds	220.5	245.2	231.1	235.3	236.3	232.3	225.5	216.7	213.9	r209.2	202.4	199.7	198.8	197.8
	INDUSTRIAL COMMODITIES														
03	Textile products and apparel	209.9	208.2	209.6	209.9	209.9	210.5	210.2	210.5	210.1	r210.7	209.6	210.0	209.8	210.4
03–1	Synthetic fibers (12/75 = 100)	159.6	159.2	161.4	160.7	160.7	160.6	160.5	160.1	159.9	159.2	158.2	157.5	157.4	157.6
03–2	Processed yarns and threads (12/75 = 100)	142.7	142.3	144.0	144.0	143.6	144.3	143.8	143.7	142.1	142.2	141.3	140.9	140.7	141.2
03–3	Gray fabrics (12/75 = 100)	153.7	151.1	152.8	153.2	153.0	153.7	154.3	154.5	154.4	r154.6	154.7	154.7	153.7	153.2
03–4	Finished fabrics (12/75 = 100)	126.5	124.8	126.3	127.0	126.9	127.3	127.1	126.9	127.1	r127.3	126.2	126.1	125.8	126.5
03–81	Apparel	201.1	200.1	200.5	200.7	200.7	201.3	200.8	201.6	201.0	r202.2	200.5	201.6	201.8	202.6
03–82	Textile housefurnishings	239.2	236.0	236.6	237.6	238.1	238.8	239.0	239.1	240.0	240.5	242.4	241.4	241.3	242.2
04	Hides, skins, leather, and related products	286.5	279.1	283.3	286.7	286.8	288.5	290.1	288.9	298.7	r288.7	288.9	283.2	282.9	284.3
04–2	Leather	372.3	346.2	362.0	378.0	386.7	390.7	387.8	383.2	378.1	r371.4	368.9	360.1	353.1	357.7
04–3	Footwear	251.2	250.9	252.5	253.5	251.6	251.5	250.5	250.1	250.9	r252.0	252.2	249.1	249.6	252.4
04–4	Other leather and related products	265.0	257.2	257.3	257.3	258.1	259.8	267.9	267.2	267.7	r267.6	272.4	272.1	271.0	273.3
05	Fuels and related products and power	657.0	652.1	656.0	658.7	654.7	660.6	665.9	665.0	657.9	r652.3	654.5	655.3	648.9	637.6
05–1	Coal	546.0	541.4	544.7	546.2	542.0	547.4	544.3	548.1	550.0	r549.1	543.7	546.4	548.2	550.5
05–2	Coke	436.4	418.3	437.9	438.9	442.8	441.6	442.9	441.9	437.3	r435.7	432.4	432.8	435.0	439.7
05–3	Gas fuels[3]	1,109.9	1,123.0	1,107.8	1,091.0	1,102.1	1,104.1	1,109.1	1,110.8	1,116.9	r1,104.6	1,113.1	1,110.1	1,101.8	1,075.5
05–4	Electric power	440.0	420.5	424.4	426.7	431.5	433.1	446.7	453.5	456.7	r456.4	445.8	443.4	441.2	446.4
05–61	Crude petroleum[4]	670.5	675.6	675.6	675.6	673.9	673.9	673.3	672.6	671.1	r670.6	670.8	658.5	652.6	631.1
05–7	Petroleum products, refined[5]	665.3	663.2	669.8	680.2	667.0	677.6	679.7	673.3	654.8	r646.5	655.7	661.8	652.5	636.2
06	Chemicals and allied products	300.9	298.1	296.5	300.1	302.0	302.7	302.2	302.6	301.1	r300.9	301.0	301.6	301.0	301.7
06–1	Industrial chemicals[6]	341.4	347.4	337.6	344.7	345.4	345.3	345.4	345.6	340.9	r337.7	336.4	334.7	335.2	337.7
06–21	Prepared paint	272.5	265.6	267.3	267.3	268.7	270.0	270.9	274.0	276.4	r277.0	278.1	277.0	277.3	278.2
06–22	Paint materials	329.7	316.6	314.2	317.9	328.7	337.6	337.4	334.8	334.3	r333.0	332.3	334.1	334.6	332.0
06–3	Drugs and pharmaceuticals	240.4	232.9	234.4	237.6	239.8	240.1	237.3	240.5	240.7	r239.7	245.2	247.7	245.4	248.0
06–4	Fats and oils, inedible	371.3	334.2	349.0	366.7	383.2	399.2	414.3	378.8	350.1	359.4	365.4	378.7	376.2	356.6
06–5	Agricultural chemicals and chemical products	284.7	278.5	285.9	288.1	288.4	286.8	286.5	285.0	283.0	r285.0	284.7	281.8	282.6	282.3
06–6	Plastic resins and materials	308.6	305.2	305.0	306.2	307.8	310.6	311.1	310.6	310.3	r311.8	308.9	308.8	307.2	302.9
06–7	Other chemicals and allied products	277.3	274.9	273.3	275.2	277.0	277.2	275.9	277.3	278.3	r279.6	278.4	281.2	280.4	281.7
07	Rubber plastic products	247.2	244.8	246.2	246.4	247.3	247.5	247.6	247.5	247.7	r248.3	248.1	247.7	247.5	248.4
07–1	Rubber and rubber products	266.9	266.6	266.8	265.5	267.2	266.3	266.5	266.5	267.6	268.1	267.6	266.7	267.1	268.0
07–11	Crude rubber	276.8	282.9	282.8	283.0	282.3	277.7	277.2	275.6	273.0	r273.9	271.5	270.3	272.2	275.5
07–12	Tires and tubes	243.7	244.1	243.7	241.7	243.5	243.2	243.0	243.5	243.7	r244.2	245.8	243.9	243.7	245.1
07–13	Miscellaneous rubber products	290.5	287.1	288.4	287.4	289.8	289.3	290.5	290.0	293.7	r294.0	291.3	292.0	292.7	292.1
07–2	Plastic products (6/78 = 100)	139.5	136.9	138.4	139.4	139.4	140.2	140.2	140.2	139.7	140.1	140.2	140.2	139.8	140.4
08	Lumber and wood products	307.5	309.1	315.7	316.8	315.1	308.5	307.1	304.4	304.7	r303.3	300.2	301.1	303.3	304.3
08–1	Lumber	349.8	352.6	364.9	370.5	369.4	355.6	350.5	342.6	342.3	r338.2	334.4	336.8	339.6	343.2
08–2	Millwork	307.8	308.6	308.8	309.9	307.2	304.2	305.3	306.8	307.2	r307.4	306.6	309.8	312.5	312.4
08–3	Plywood	241.6	248.2	249.5	248.6	243.6	235.4	236.3	237.2	245.9	243.4	240.1	235.0	235.8	234.0
08–4	Other wood products	234.6	230.0	230.8	231.8	233.3	234.7	235.0	235.2	236.5	235.9	236.5	236.6	238.8	238.2

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 1984	1984												1985
			Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.[1]	Oct.	Nov.	Dec.	Jan.
	INDUSTRIAL COMMODITIES—Continued														
09	Pulp, paper, and allied products	318.3	309.1	312.0	314.0	316.3	317.7	318.4	319.8	321.3	r322.0	322.6	323.8	323.2	326.6
09–1	Pulp, paper,and products,excluding building paper and board	293.1	280.8	285.0	288.3	291.5	292.7	293.3	295.7	296.3	r297.5	298.3	299.4	298.4	297.8
09–11	Woodpulp	396.6	366.2	374.2	378.6	401.1	407.9	410.3	410.6	410.2	r409.1	399.5	398.4	392.7	383.5
09–12	Wastepaper	240.1	211.5	229.3	242.9	258.8	259.3	257.3	254.7	254.5	249.6	235.6	221.4	206.0	190.8
09–13	Paper	303.2	294.2	296.6	299.8	300.4	301.3	301.6	307.7	307.0	306.7	308.0	308.2	307.1	307.0
09–14	Paperboard	281.1	262.2	271.8	275.6	277.1	277.8	279.1	279.1	285.1	r288.6	291.8	293.4	292.4	288.9
09–15	Converted paper and paperboard products	280.9	270.6	273.7	276.5	279.1	280.1	280.6	282.1	282.4	r284.4	285.8	288.1	288.0	289.0
09–2	Building paper and board	258.9	251.9	255.1	258.6	263.8	265.2	265.1	262.9	259.8	r259.4	257.3	253.5	253.6	255.2
10	Metals and metal products	316.0	312.9	314.8	316.8	317.9	317.4	317.3	316.1	316.2	r315.6	315.4	316.2	315.3	314.8
10–1	Iron and steel	357.0	353.8	356.2	356.5	356.5	357.3	357.0	357.4	357.4	r357.9	358.9	357.7	357.4	357.4
10–17	Steel mill products	366.0	362.5	363.6	363.6	364.2	364.7	365.4	367.6	368.1	r368.1	368.9	368.1	368.0	367.4
10–2	Nonferrous metals	277.0	276.8	280.2	286.1	289.1	284.1	282.8	277.0	275.3	r271.8	266.1	269.5	265.6	262.8
10–3	Metal containers	350.1	344.1	344.8	345.4	345.3	348.0	348.0	348.0	352.0	r352.3	358.0	357.5	357.5	357.6
10–4	Hardware	296.5	293.3	294.0	294.4	294.6	295.3	296.2	297.1	298.0	r299.0	299.0	299.1	300.2	301.9
10–5	Plumbing fixtures and brass fittings	300.6	293.9	296.4	299.9	301.5	301.6	302.4	302.8	304.6	r304.4	300.6	301.4	302.7	306.4
10–6	Heating equipment	253.2	247.3	248.1	248.5	250.3	252.4	252.7	255.2	255.5	r255.7	258.2	256.3	256.4	256.6
10–7	Fabricated structural metal products	310.8	306.5	307.0	308.3	309.3	310.6	311.2	311.7	312.3	312.1	314.0	313.0	313.2	312.8
10–8	Miscellaneous metal products	295.0	290.3	291.1	292.1	293.1	293.4	294.3	294.1	295.0	r295.8	297.7	301.3	301.6	301.8
11	Machinery and equipment	293.1	289.7	290.2	291.0	292.2	292.6	293.1	294.0	294.1	r294.3	295.0	295.7	295.6	296.7
11–1	Agricultural machinery and equipment	336.2	331.0	331.4	332.9	335.5	338.2	337.8	338.6	338.8	r337.2	338.0	337.2	337.6	338.5
11–2	Construction machinery and equipment	357.5	354.2	355.9	355.3	357.5	357.8	358.1	358.3	356.9	r357.2	359.1	360.1	358.2	360.4
11–3	Metalworking machinery and equipment	333.8	329.2	330.2	330.6	332.6	333.5	333.4	334.2	334.7	r335.6	336.2	337.8	338.2	338.0
11 4	General purpose machinery and equipment	314.1	310.7	310.9	311.7	313.1	313.2	314.0	315.2	315.5	r315.9	316.1	316.5	316.5	318.0
11–6	Special industry machinery and equipment	348.5	342.0	343.2	344.6	346.8	348.2	348.6	351.9	352.8	r351.1	350.5	351.0	351.8	355.6
11–7	Electrical machinery and equipment	248.6	244.7	245.7	246.7	247.7	248.1	249.1	249.4	249.4	r249.8	250.4	251.2	251.5	252.2
11–9	Miscellaneous machinery	275.0	275.5	274.3	274.5	274.6	273.7	273.9	274.2	274.1	r274.5	276.3	276.9	275.7	276.2
12	Furniture and household durables	218.6	216.8	217.2	217.4	218.2	219.1	219.1	219.2	219.2	r219.0	219.0	219.6	219.7	220.3
12–1	Household furniture	242.0	237.9	239.1	240.0	240.8	241.5	242.3	242.2	242.7	r243.4	243.9	244.9	245.4	247.1
12–2	Commercial furniture	297.3	293.4	294.7	294.7	296.1	297.4	297.0	298.1	298.4	r297.5	298.0	301.0	299.8	300.1
12–3	Floor coverings	190.5	188.2	188.4	188.3	188.2	191.7	192.7	192.7	192.6	r192.5	192.7	189.2	189.3	192.7
12–4	Household appliances	211.3	209.8	210.7	210.9	210.9	210.8	211.1	211.5	211.9	r211.6	211.9	211.8	212.0	211.3
12–5	Home electronic equipment	83.7	84.4	84.1	84.0	84.9	84.5	83.9	84.2	83.8	r83.1	81.8	83.1	82.7	80.9
12–6	Other household durable goods	318.3	318.0	316.8	316.7	319.1	321.6	319.9	318.6	316.8	r316.8	317.0	319.2	320.1	323.1
13	Nonmetallic mineral products	337.3	330.1	332.2	333.4	335.8	337.6	338.3	339.8	340.8	r340.5	339.6	339.5	339.9	342.3
13–11	Flat glass	224.0	229.5	229.9	229.1	230.2	226.1	226.3	226.3	219.6	r219.7	218.0	217.4	218.1	221.0
13–2	Concrete ingredients	325.8	315.6	319.9	324.2	324.3	328.0	326.7	327.1	328.4	r328.2	328.0	329.5	329.3	331.4
13–3	Concrete products	309.5	304.9	305.9	306.3	308.8	309.4	310.0	310.6	311.3	r311.7	311.5	311.4	312.1	314.8
13–4	Structural clay products, excluding refractories	286.6	284.3	283.7	284.3	285.0	285.6	286.2	286.4	288.2	r289.4	288.8	288.4	289.0	290.7
13–5	Refractories	361.5	353.9	356.0	361.1	361.8	361.8	361.8	361.8	361.6	r361.6	362.7	366.6	366.6	367.0
13–6	Asphalt roofing	399.5	385.0	392.3	385.6	396.2	398.7	394.2	394.5	408.4	r408.0	410.3	410.6	412.0	409.9
13–7	Gypsum products	346.5	328.6	339.4	339.6	353.0	360.9	360.3	359.7	359.5	r355.4	339.4	332.3	329.3	328.5
13–8	Glass containers	360.7	350.6	350.6	351.6	358.0	361.9	365.0	366.3	366.1	364.6	364.8	364.9	364.1	363.7
13–9	Other nonmetallic minerals	500.0	486.4	488.1	490.8	491.3	494.9	499.2	507.1	511.4	r509.8	507.4	505.5	507.2	513.3
14	Transportation equipment (12/68 = 100)	262.6	261.5	262.2	262.4	263.4	262.5	262.2	262.5	262.3	r257.8	264.8	265.2	265.4	267.9
14–1	Motor vehicles and equipment	261.3	261.1	261.2	261.5	261.9	261.5	261.1	261.4	261.1	r255.2	263.3	263.6	263.9	266.6
14–4	Railroad equipment	356.6	351.5	351.5	352.0	380.8	354.4	354.4	356.5	357.7	r357.6	364.6	358.8	358.8	358.9
15	Miscellaneous products	296.0	294.5	294.9	294.9	294.6	294.3	295.7	297.3	298.2	r296.7	297.0	297.0	297.1	299.9
15–1	Toys, sporting goods, small arms, ammunition	227.1	227.4	227.8	227.6	226.5	226.8	226.5	226.5	226.5	r227.0	227.2	227.4	227.5	228.8
15–2	Tobacco products	399.5	389.4	390.3	390.4	390.4	390.6	400.2	408.7	406.7	406.7	406.8	407.1	406.9	423.8
15–3	Notions	283.2	281.4	282.2	282.2	283.0	283.9	283.9	283.9	283.9	r283.9	283.5	283.5	283.6	283.6
15–4	Photographic equipment and supplies	214.5	([2])	217.9	212.7	213.6	213.6	213.6	213.8	215.5	215.5	215.5	212.8	212.9	213.8
15–5	Mobile homes (12/74 = 100)	163.3	162.2	162.4	162.5	163.8	163.7	162.7	162.9	163.2	r163.6	163.2	164.8	164.7	164.7
15–9	Other miscellaneous products	350.4	350.8	350.5	354.2	351.9	350.4	350.0	350.1	353.2	r346.9	348.2	349.3	349.3	346.5

[1] Data for September 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 1984	1984												1985
		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.[1]	Oct.	Nov.	Dec.	Jan.
All commodities—less farm products	313.8	310.7	311.9	313.6	314.2	314.7	314.8	315.3	314.4	r313.3	314.1	314.7	314.3	314.4
All foods	269.4	268.3	270.2	272.9	270.6	268.9	267.5	271.7	269.6	r268.6	267.2	267.9	269.5	268.5
Processed foods	270.0	266.2	267.0	271.2	270.9	271.4	269.0	272.8	270.0	r269.1	269.1	270.9	272.4	272.0
Industrial commodities less fuels	287.6	284.3	285.5	286.7	287.8	287.8	288.0	288.2	288.3	r287.6	288.5	289.1	288.9	290.2
Selected textile mill products (Dec. 1975 = 100)	142.0	140.0	141.3	141.7	141.7	142.7	142.7	142.7	142.9	r143.0	142.6	141.9	141.7	142.7
Hosiery	147.6	145.8	147.3	147.4	147.4	147.4	147.4	147.9	148.0	r148.0	148.1	148.1	147.9	148.4
Underwear and nightwear	229.9	228.6	229.8	r230.9	229.8	230.9	228.8	230.2	230.3	r230.6	230.3	229.9	230.5	232.6
Chemicals and allied products, including synthetic rubber and fibers and yarns	289.7	287.6	286.2	289.1	290.6	291.1	290.5	291.3	290.2	r289.9	289.7	290.0	289.6	290.6
Pharmaceutical preparations	243.3	233.9	235.9	238.8	241.5	241.9	240.6	244.6	245.1	243.9	249.0	252.2	250.8	254.0
Lumber and wood products, excluding millwork	318.5	322.6	331.4	334.9	332.5	320.4	317.2	312.2	315.0	311.4	307.6	307.5	309.7	311.5
Steel mill products, including fabricated wire products	363.7	360.1	361.1	361.2	361.8	362.4	363.1	365.2	365.8	r365.9	366.7	366.0	365.8	365.3
Finished steel mill products, excluding fabricated wire products	365.5	361.7	363.2	363.1	363.6	364.1	364.8	367.0	367.5	r367.5	368.4	367.6	367.4	366.9
Finished steel mill products, including fabricated wire products	363.0	359.2	360.5	360.5	361.0	361.6	362.4	364.4	365.0	r365.1	366.7	365.3	365.1	364.6
Special metals and metal products	299.9	297.8	299.0	300.3	301.2	300.8	300.6	300.0	299.9	r297.2	300.4	301.0	300.6	301.4
Fabricated metal products	303.9	299.3	300.0	301.1	301.9	302.9	303.6	303.9	305.0	r305.4	307.3	308.1	308.5	308.8
Copper and copper products	185.8	182.1	185.1	192.9	199.4	191.8	189.5	184.4	183.3	r182.5	176.6	183.4	179.3	178.4
Machinery and motive products	286.3	283.9	284.5	285.0	286.2	285.9	286.1	286.8	286.8	r284.8	288.3	288.9	289.0	290.8
Machinery and equipment, except electrical	319.4	316.3	316.5	317.1	318.5	318.8	319.2	320.3	320.6	r320.6	321.3	322.0	321.7	323.0
Agricultural machinery, including tractors	353.8	347.1	347.5	349.3	352.9	357.0	356.5	357.2	357.5	r355.2	355.5	354.3	354.7	356.1
Metalworking machinery	364.9	359.3	362.1	361.6	363.0	363.2	363.3	364.6	365.1	r366.6	368.6	370.6	371.4	370.1
Total tractors	382.4	374.0	374.5	376.1	384.1	386.8	386.7	386.9	385.7	r382.6	386.2	381.6	379.7	384.7
Agricultural machinery and equipment less parts	341.1	335.2	335.7	337.4	340.4	343.6	343.0	344.0	344.3	r342.3	342.7	341.7	342.1	343.4
Farm and garden tractors less parts	361.0	352.2	352.9	355.1	362.1	365.8	365.7	366.0	367.0	r362.3	364.6	357.6	358.0	360.5
Agricultural machinery, excluding tractors less parts	348.2	343.3	343.4	344.9	345.7	350.1	349.2	350.4	350.1	r349.8	348.5	351.7	352.2	352.8
Construction materials	306.3	302.3	305.0	306.6	307.1	306.2	306.3	306.7	307.6	r307.2	307.1	306.6	307.3	308.5

[1]Data for September 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 1984	1984												1985
		Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.[1]	Oct.	Nov.	Dec.	Jan.
Total durable goods	293.5	291.0	292.2	293.2	294.2	293.8	293.8	293.8	293.9	r292.7	294.2	294.8	294.8	295.7
Total nondurable goods	323.3	321.2	321.9	324.8	324.7	325.3	324.9	326.0	323.7	322.3	321.0	322.3	321.5	320.5
Total manufactures	302.9	300.0	301.2	302.8	303.2	303.8	303.9	304.3	303.3	r302.2	303.0	303.9	303.5	303.9
Durable	293.9	291.3	292.4	293.3	294.3	293.9	294.0	294.2	294.5	r293.2	294.8	295.5	295.5	296.4
Nondurable	312.3	309.1	310.4	312.7	312.5	314.1	314.2	314.8	312.6	311.7	311.5	312.5	311.8	311.6
Total raw or slightly processed goods	347.0	348.4	347.6	352.4	352.4	350.1	348.0	349.6	346.9	r344.4	339.9	341.6	340.7	337.7
Durable	266.7	267.4	275.2	278.7	280.6	277.9	273.3	264.5	259.6	260.6	255.9	254.1	252.1	255.8
Nondurable	351.7	353.3	351.8	356.7	356.5	354.3	352.3	354.7	352.2	r349.4	345.0	347.0	346.1	342.6

[1]Data for September 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 1984	1984											1985
			Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.[1]	Oct.	Nov.	Dec.	Jan.
	MINING														
1092	Mercury ores (12/75 = 100)	264.3	275.8	245.4	250.0	267.9	273.7	271.6	264.6	249.1	257.1	271.6	276.6	267.9	264.1
1311	Crude petroleum and natural gas	914.3	914.3	913.0	902.7	909.2	914.1	918.4	921.6	928.3	r918.2	917.1	908.6	904.4	880.8
	MANUFACTURING														
2074	Cottonseed oil mills	209.2	229.2	201.7	212.7	222.6	245.3	243.1	223.2	210.2	205.0	172.9	166.9	177.7	166.4
2083	Malt	240.4	241.6	241.6	241.6	241.6	241.6	241.6	241.6	241.6	241.6	241.6	234.5	234.5	226.5
2098	Macaroni and spaghetti	261.6	261.9	261.9	261.9	261.9	261.9	261.9	261.9	261.9	261.9	261.9	261.9	258.6	258.6
2298	Cordage and twine (12/77 = 100)	138.7	139.0	139.2	139.2	139.3	139.4	139.4	138.6	138.5	r138.5	137.4	138.6	138.6	138.5
2381	Fabric dress and work gloves	310.5	295.2	299.1	302.3	304.8	315.6	315.6	315.6	315.6	315.6	315.6	315.6	315.6	313.5
2394	Canvas and related products (12/77 = 100)	151.4	150.6	150.6	150.6	150.6	150.6	150.6	150.6	150.6	r152.1	152.9	152.9	152.9	152.9
2448	Wood pallets and skids (12/75 = 100)	163.9	154.0	156.0	157.9	161.6	165.1	165.4	168.6	168.6	r168.7	166.0	168.2	168.5	169.0
2521	Wood office furniture	290.8	285.1	289.1	289.1	289.2	289.2	289.2	289.1	289.2	r291.1	292.3	296.3	299.8	301.0
2654	Sanitary food containers	279.7	269.1	273.4	278.4	280.6	280.6	280.7	280.6	280.7	r281.3	283.0	283.2	283.1	285.6
2655	Fiber cans, drums, and similar products (12/75 = 100)	193.7	189.6	189.7	191.4	193.1	193.1	193.1	194.7	194.7	194.7	194.7	197.8	197.7	199.1
2911	Petroleum refining (6/76 = 100)	244.2	244.4	246.7	249.8	244.9	248.1	248.8	246.5	240.1	r237.5	241.0	242.8	239.4	233.4
3253	Ceramic wall and floor tile (12/75 = 100)	150.2	149.6	149.6	149.6	149.6	149.6	149.6	149.6	153.4	r153.4	150.5	150.5	150.5	150.5
3255	Clay refractories	372.5	367.2	367.7	369.3	371.5	371.5	371.7	371.6	371.4	r371.4	373.4	380.9	380.8	381.4
3259	Structural clay products, n.e.c.	232.8	235.0	232.1	232.4	232.4	232.4	232.4	232.4	232.3	r232.4	233.0	233.0	233.0	237.7
3261	Vitreous plumbing fixtures	292.7	285.6	287.0	290.1	290.4	290.8	292.5	293.1	293.9	r295.6	297.6	297.5	298.0	297.9
3263	Fine earthenware food utensils	377.1	383.6	384.0	375.9	382.6	376.5	372.1	373.3	374.0	r374.8	373.1	376.3	380.9	391.7
3269	Pottery products, n.e.c. (12/75 = 100)	191.4	191.9	192.2	191.9	192.2	192.2	186.3	187.6	187.6	r197.7	195.1	195.3	195.4	199.2
3274	Lime (12/75 = 100)	183.0	182.8	184.4	183.9	184.1	184.2	183.3	180.3	179.6	r187.2	180.7	182.2	183.1	187.5
3297	Nonclay refractories (12/74 = 100)	219.2	213.1	215.4	220.6	220.1	220.1	220.1	219.9	219.9	220.3	220.0	220.2	220.3	220.5
3482	Small arms ammunition (12/75 = 100)	192.4	190.3	190.3	190.3	190.3	190.3	190.3	190.3	190.3	r190.3	196.6	196.6	196.6	202.5
3648	Lighting equipment, n.e.c. (12/75 = 100)	186.6	173.5	173.5	184.9	185.0	185.6	185.7	186.3	188.1	r188.2	194.3	196.9	196.9	196.9
3671	Electron tubes, receiving type	497.2	490.6	490.8	490.8	490.9	490.9	491.3	491.6	491.6	r491.8	492.0	527.2	527.2	546.7
3942	Dolls (12/75 = 100)	134.3	137.6	137.8	137.7	131.6	133.4	133.6	133.6	133.6	r133.6	133.3	133.3	133.3	134.3
3944	Games, toys, and children's vehicles	238.0	239.3	240.6	240.1	239.7	239.1	239.2	239.2	239.1	r239.3	235.0	234.9	234.9	236.7
3955	Carbon paper and inked ribbons (12/75 = 100)	145.7	144.3	149.0	149.0	149.1	149.1	149.1	146.7	146.7	146.7	139.7	139.7	139.7	139.7
3996	Hard surface floor coverings (12/75 = 100)	167.5	165.2	165.2	165.2	166.3	166.4	166.4	168.7	168.8	168.8	169.7	169.7	169.7	171.4

r = revised.

[1]Data for September 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.

NOTE: Indexes which were deleted in the March 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.

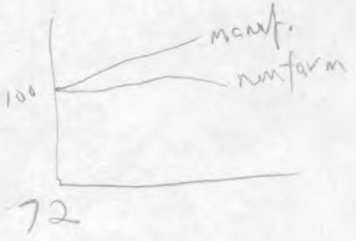
Hours of all persons measures the labor input of payroll workers, self-employed persons, and unpaid family workers. **Output per all employee hour** describes labor productivity in nonfinancial corporations where there are no self-employed. The **capital services** input index used in the multifactor 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	1979	1980	1981	1982	1983
PRIVATE BUSINESS SECTOR													
Productivity:													
Output per hour of all persons	49.7	64.8	86.1	94.8	92.5	94.5	97.6	100.5	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	79.4	82.2	90.8	96.8	97.2	93.1	95.9	105.0	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	86.7	94.1	95.8	94.0	96.5	104.5	108.2	109.0	111.0	109.8	111.5
Capital per hour of all persons	50.4	65.8	87.4	92.0	95.9	102.8	101.6	98.7	98.9	103.3	106.9	112.6	112.3
PRIVATE NONFARM BUSINESS SECTOR													
Productivity:													
Output per hour of all persons	55.6	68.0	86.8	95.3	92.9	94.8	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	90.7	97.9	94.1	93.6	97.2	101.0	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	96.5	92.4	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	56.2	67.4	85.9	93.6	95.3	93.5	96.3	104.6	108.7	109.5	111.6	110.4	112.0
Capital per hour of all persons	56.6	69.1	88.0	92.4	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	79.2	93.0	90.8	93.4	97.6	100.9	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	93.1	92.2	97.1	101.1	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	103.1	101.2	91.4	95.9	104.4	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	64.5	75.6	93.5	99.0	98.7	92.6	96.3	104.2	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	104.5	101.6	99.4	102.1	112.2	116.7	129.2	127.5

29. Annual indexes of productivity, hourly compensation, unit costs, and prices, selected years, 1950–84

[1977 = 100]

Item	1950	1955	1960	1965	1970	1975	1978	1979	1980	1981	1982	1983	1984[p]
Business sector:													
Output per hour of all persons	50.4	58.3	65.2	78.3	86.2	94.6	100.5	99.3	98.8	100.7	100.9	103.7	107.4
Compensation per hour	20.0	26.4	33.9	41.7	58.2	85.6	108.5	118.7	131.1	143.4	155.0	161.7	169.3
Real compensation per hour	50.5	59.7	69.5	80.1	90.8	96.4	100.8	99.1	96.4	95.5	97.3	98.4	98.8
Unit labor costs	39.8	45.2	52.1	53.3	67.5	90.5	108.0	119.5	132.6	142.4	153.6	156.0	157.7
Unit nonlabor payments	43.4	47.6	50.6	57.6	63.2	90.4	106.7	112.8	119.3	136.7	136.8	145.5	156.6
Implicit price deflator	41.0	46.0	51.6	54.7	66.0	90.4	107.5	117.2	128.1	140.4	147.9	152.4	157.3
Nonfarm business sector:													
Output per hour of all persons	56.3	62.8	68.3	80.5	86.8	94.8	100.6	99.0	98.3	99.8	100.0	103.4	106.6
Compensation per hour	21.9	28.3	35.7	42.8	58.7	86.1	108.6	118.4	130.6	143.1	154.5	162.0	169.5
Real compensation per hour	55.1	64.0	73.1	82.3	91.5	96.9	100.8	98.8	96.0	95.3	97.0	98.6	98.9
Unit labor costs	38.8	45.1	52.3	53.2	67.6	90.8	108.0	119.5	132.8	143.5	154.5	156.6	158.9
Unit nonlabor payments	42.7	47.8	50.4	58.0	63.8	88.5	105.3	110.4	118.6	135.0	136.9	147.0	156.6
Implicit price deflator	40.1	46.0	51.6	54.8	66.3	90.0	107.1	116.5	128.1	140.6	148.6	153.4	158.1
Nonfinancial corporations:													
Output per hour of all persons	(1)	(1)	68.0	82.0	87.4	95.5	100.8	100.6	99.7	101.6	102.6	106.1	(1)
Compensation per hour	(1)	(1)	37.0	43.9	59.4	86.1	108.4	118.6	130.8	143.1	154.6	161.0	(1)
Real compensation per hour	(1)	(1)	75.8	84.3	92.7	97.0	100.7	99.0	96.2	95.3	97.0	97.9	(1)
Unit labor costs	(1)	(1)	54.4	53.5	68.0	90.2	107.5	117.8	131.2	140.9	150.6	151.8	(1)
Unit nonlabor payments	(1)	(1)	54.6	60.8	63.1	90.8	104.2	106.9	117.4	135.1	138.1	149.1	(1)
Implicit price deflator	(1)	(1)	54.5	56.1	66.3	90.4	106.4	114.1	126.4	138.9	146.3	150.9	(1)
Manufacturing:													
Output per hour of all persons	49.4	56.4	60.0	74.6	79.2	93.4	100.9	101.6	101.7	104.9	107.1	111.6	116.9
Compensation per hour	21.5	28.8	36.7	42.8	57.6	85.5	108.3	118.8	132.7	145.2	158.0	163.4	169.3
Real compensation per hour	54.0	65.1	75.1	82.3	89.8	96.2	100.6	99.2	97.6	96.8	99.2	99.4	98.8
Unit labor costs	43.4	51.0	61.1	57.5	72.7	91.5	107.3	117.0	130.5	138.4	147.6	146.4	144.9
Unit nonlabor payments	54.3	58.6	61.1	69.4	65.1	87.3	102.7	99.9	97.9	111.6	110.5	128.8	(1)
Implicit price deflator	46.6	53.2	61.1	61.0	70.5	90.3	106.0	112.0	120.9	130.6	136.7	141.2	(1)

[1] Not available.

p = preliminary.

92

30. Annual changes in productivity, hourly compensation, unit costs, and prices, 1974–84

Item	Year											Annual rate of change	
	1974	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984[p]	1950–84[p]	1973–84[p]
Business sector:													
Output per hour of all persons	−2.4	2.2	3.3	2.4	0.5	−1.2	−0.5	1.9	0.2	2.7	3.6	2.2	1.1
Compensation per hour	9.4	9.6	8.5	7.7	8.5	9.4	10.4	9.4	8.1	4.3	4.7	6.5	8.2
Real compensation per hour	−1.4	0.5	2.6	1.2	0.8	−1.7	−2.7	−0.9	1.9	1.1	0.4	2.0	0.1
Unit labor costs	12.1	7.3	5.1	5.1	8.0	10.7	11.0	7.3	7.9	1.6	1.1	4.1	7.0
Unit nonlabor payments	4.4	15.1	4.0	6.4	6.7	5.8	5.7	14.6	0.1	6.3	7.7	3.8	6.9
Implicit price deflator	9.5	9.8	4.7	5.6	7.5	9.0	9.3	9.6	5.3	3.0	3.2	4.0	6.9
Nonfarm business sector:													
Output per hour of all persons	−2.5	2.0	3.2	2.2	0.6	−1.5	−0.7	1.5	0.2	3.5	3.1	1.9	1.0
Compensation per hour	9.4	9.6	8.1	7.5	8.6	9.0	10.3	9.6	8.0	4.9	4.6	6.2	8.1
Real compensation per hour	−1.4	0.4	2.2	1.0	0.8	−2.0	−2.8	−0.7	1.7	1.6	0.3	1.7	0.1
Unit labor costs	12.2	7.5	4.7	5.2	8.0	10.7	11.1	8.0	7.7	1.4	1.5	4.2	7.0
Unit nonlabor payments	5.9	16.7	5.7	6.9	5.3	4.8	7.4	13.8	1.4	7.4	6.5	3.9	7.4
Implicit price deflator	10.2	10.3	5.1	5.7	7.1	8.8	10.0	9.8	5.7	3.2	3.1	4.1	7.1
Nonfinancial corporations:													
Output per hour of all employees	−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	9.4	9.6	7.9	7.6	8.4	9.4	10.3	9.4	8.0	4.2	[1]	[1]	[1]
Real compensation per hour	−1.5	0.4	2.0	1.1	0.7	−1.7	−2.8	−0.9	1.8	0.9	[1]	[1]	[1]
Unit labor costs	13.6	6.5	4.9	5.7	7.5	9.6	11.3	7.4	6.9	0.8	[1]	[1]	[1]
Unit nonlabor payments	7.1	20.1	4.6	5.3	4.2	2.6	9.8	15.1	2.3	7.9	[1]	[1]	[1]
Implicit price deflator	11.4	10.9	4.8	5.6	6.4	7.2	10.8	9.8	5.3	3.1	[1]	[1]	[1]
Manufacturing:													
Output per hour of all persons	−2.4	2.9	4.5	2.5	0.9	0.7	0.2	3.1	2.1	4.3	4.7	2.6	2.1
Compensation per hour	10.6	11.9	8.0	8.3	8.3	9.7	11.7	9.4	8.8	3.4	3.6	6.3	8.5
Real compensation per hour	−0.3	2.5	2.1	1.8	0.6	−1.4	−1.6	−0.9	2.5	0.2	−0.6	1.8	0.4
Unit labor costs	13.3	8.8	3.4	5.7	7.3	9.0	11.5	6.1	6.6	−0.8	−1.0	3.6	6.3
Unit nonlabor payments	−1.8	25.9	7.5	6.5	2.7	−2.6	−2.1	14.1	−1.0	16.5	[1]	2.6	6.2
Implicit price deflator	9.0	13.1	4.6	6.0	6.0	5.7	7.9	8.0	4.7	3.3	[1]	3.4	6.8

[1] Not available.

p = preliminary.

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

[1977 = 100]

Item	Annual average		Quarterly indexes										
			1982			1983				1984			
	1983	1984[p]	II	III	IV	I	II	III	IV	I	II	III[r]	IV[p]
Business sector:													
Output per hour of all persons	103.7	107.4	100.3	100.9	101.6	102.2	103.6	104.3	104.7	105.7	107.0	107.2	107.9
Compensation per hour	161.7	169.3	153.9	156.7	158.4	160.2	161.0	161.8	164.2	166.7	167.5	169.3	171.0
Real compensation per hour	98.4	98.8	97.2	97.3	98.0	99.0	98.5	98.0	98.4	98.6	98.2	98.4	98.5
Unit labor costs	156.0	157.7	153.4	155.3	155.9	156.8	155.4	155,1	156.8	157.7	156.5	158.0	158.5
Unit nonlabor payments	145.5	156.6	137.0	135.8	136.5	139.8	144.6	147.9	149.1	151.6	157.2	158.5	159.4
Implicit price deflator	152.4	157.3	147.9	148.7	149.3	151.0	151.7	152.7	154.2	155.6	156.7	158.1	158.8
Nonfarm business sector:													
Output per hour of all persons	103.4	106.6	99.4	100.3	100.5	101.6	103.6	104.1	104.4	105.2	106.6	106.3	106.7
Compensation per hour	162.0	169.5	153.2	156.0	157.9	160.1	161.5	162.4	164.0	166.5	168.0	169.5	170.9
Real compensation per hour	98.6	98.9	96.8	96.9	97.7	99.0	98.8	98.3	98.2	98.5	98.5	98.5	98.4
Unit labor costs	156.6	158.9	154.2	155.6	157.1	157.6	155.9	155.9	157.1	158.3	157.6	159.5	160.2
Unit nonlabor payments	147.0	156.6	137.5	136.8	136.4	140.6	146.4	149.4	151.4	152.2	156.8	158.0	159.5
Implicit price deflator	153.4	158.1	148.6	149.3	150.2	151.9	152.7	153.8	155.2	156.3	157.3	159.0	159.9
Nonfinancial corporations:													
Output per hour of all employees	106.1	[1]	102.1	103.3	103.2	104.0	105.8	107.2	107.2	108.1	108.9	108.2	[1]
Compensation per hour	161.0	[1]	153.5	156.2	157.7	159.2	160.6	161.8	162.6	164.8	165.8	167.1	[1]
Real compensation per hour	97.9	[1]	97.0	97.0	97.5	98.4	98.2	98.0	97.4	97.5	97.2	97.1	[1]
Total unit costs	155.2	[1]	154.0	154.7	157.0	156.7	155.2	154.4	154.7	155.0	155.0	157.5	[1]
Unit labor costs	151.8	[1]	150.3	151.3	152.9	153.1	151.7	150.9	151.7	152.5	152.3	154.5	[1]
Unit nonlabor costs	164.9	[1]	164.3	164.4	168.8	167.0	165.1	164.4	163.3	162.0	162.8	165.9	[1]
Unit profits	117.2	[1]	86.8	86.6	75.6	92.5	111.8	126.6	135.9	143.2	151.1	145.3	[1]
Implicit price deflator	150.9	[1]	146.3	146.9	147.7	149.4	150.2	151.2	152.6	153.6	154.6	156.1	[1]
Manufacturing:													
Output per hour of all persons	111.6	116.9	106.3	108.8	107.8	109.1	110.8	113.4	113.1	114.2	115.3	117.4	117.2
Compensation per hour	163.4	169.3	157.2	159.8	161.0	162.7	163.0	163.5	164.6	167.1	168.3	169.9	171.8
Real compensation per hour	99.4	98.8	99.4	99.2	99.6	100.6	99.7	99.0	98.6	98.9	98.7	98.7	98.9
Unit labor costs	146.4	144.9	148.0	146.9	149.3	149.1	147.0	144.1	145.5	146.4	146.0	144.7	146.6

[1] Not available.

r = revised.
p = preliminary.

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					
	II 1983 to III 1983	III 1983 to IV 1983	IV 1983 to I 1984	I 1984 to II 1984	II 1984 to III 1984[r]	III 1984 to IV 1984[p]	III 1982 to III 1983	IV 1982 to IV 1983	I 1983 to I 1984	II 1983 to II 1984	III 1983 to III 1984[r]	IV 1983 to IV 1984[p]
Business sector:												
Output per hour of all persons	2.8	1.4	4.0	4.9	0.6	2.6	3.4	3.1	3.5	3.3	2.7	3.0
Compensation per hour	2.0	6.1	6.2	1.9	4.4	4.1	3.3	3.7	4.1	4.0	4.6	4.1
Real compensation per hour	−2.1	1.6	1.2	−1.8	0.8	0.3	0.7	0.3	−0.4	−0.3	0.4	0.1
Unit labor costs	−0.8	4.6	2.1	−2.9	3.7	1.5	−0.1	0.6	0.6	0.7	1.9	1.1
Unit nonlabor payments	9.5	3.1	7.0	15.4	−3.4	2.3	8.9	9.2	8.4	8.7	7.1	6.9
Implicit price deflator	2.5	4.1	3.7	2.9	−3.6	1.8	2.7	3.3	3.0	3.3	3.6	3.0
Nonfarm business sector:												
Output per hour of all persons	2.1	1.0	2.9	5.5	−1.1	1.7	3.9	3.9	3.5	2.9	2.1	2.2
Compensation per hour	2.2	4.1	6.1	3.7	3.6	3.5	4.1	3.9	4.0	4.0	4.4	4.2
Real compensation per hour	−1.9	−0.3	1.0	0.0	0.0	0.3	1.5	0.6	−0.5	−0.3	0.2	0.2
Unit labor costs	0.1	3.0	3.1	−1.7	4.7	1.8	0.2	0.0	0.4	1.1	2.3	1.9
Unit nonlabor payments	8.4	5.3	2.3	12.5	3.1	4.0	9.2	10.9	8.3	7.1	5.7	5.4
Implicit price deflator	2.7	3.7	2.8	2.8	4.2	2.5	3.0	3.3	2.9	3.0	3.4	3.1
Nonfinancial corporations:												
Output per hour of all employees	5.3	−0.2	3.6	2.8	−2.5	([1])	3.8	3.9	4.0	2.9	0.9	([1])
Compensation per hour	3.1	2.0	5.7	2.4	3.2	([1])	3.6	3.1	3.6	3.3	3.3	([1])
Real compensation per hour	−1.0	−2.4	0.7	−1.3	−0.3	([1])	1.0	−0.2	−0.9	−1.0	−0.8	([1])
Total units costs	−2.0	0.8	0.6	0.2	6.5	([1])	−0.2	−1.5	−1.1	−0.1	2.0	([1])
Unit labor costs	−2.1	2.1	2.0	−0.4	5.9	([1])	−0.2	−0.8	−0.4	0.4	2.4	([1])
Unit nonlabor costs	−1.7	−2.6	−3.2	2.0	8.0	([1])	0.0	−3.2	−3.0	−1.4	0.9	([1])
Unit profits	64.8	32.6	23.4	23.8	−14.5	([1])	46.3	79.8	54.8	35.2	14.7	([1])
Implicit price deflator	2.8	3.6	2.7	2.6	3.9	([1])	3.0	3.3	2.8	2.9	3.2	([1])
Manufacturing:												
Output per hour of all persons	9.7	−1.0	3.7	4.0	7.4	0.6	4.3	4.9	4.7	4.1	3.5	3.6
Compensation per hour	1.3	2.9	6.2	2.9	3.7	4.6	2.3	2.2	2.7	3.3	3.9	4.4
Real compensation per hour	−2.8	−1.5	1.1	−0.8	0.2	0.7	−0.3	−1.0	−1.7	−1.0	−0.2	0.3
Unit labor costs	−7.7	3.9	2.3	−1.1	−3.4	5.3	−1.9	−2.6	−1.9	−0.7	0.4	0.7

[1]Not available.

r = revised.
p = preliminary.

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	1983				1984				Percent change	
										3 months ended	12 months ended
	Dec.	March	June	Sept.	Dec.	March	June	Sept.	Dec.	December 1984	
Civilian workers[1]	111.4	113.2	114.5	116.5	117.8	119.8	120.8	122.4	123.9	1.2	5.2
Workers, by occupational group											
White-collar workers	111.9	113.7	114.9	117.6	118.9	120.9	122.1	124.0	125.5	1.2	5.6
Blue-collar workers	110.5	112.3	113.6	114.8	115.8	117.7	118.6	119.6	120.9	1.1	4.4
Service workers	112.4	114.3	115.1	116.7	119.1	122.0	122.1	124.6	126.8	1.8	6.5
Workers, by industry division											
Manufacturing	110.4	112.5	113.5	115.0	116.0	117.9	119.1	120.4	122.0	1.3	5.2
Nonmanufacturing	111.8	113.5	114.9	117.2	118.6	120.7	121.6	123.3	124.8	1.2	5.2
Services	115.0	116.6	117.1	121.1	122.6	125.0	125.5	128.8	130.9	1.6	6.8
Public administration[2]	113.6	116.2	117.0	119.8	121.4	122.9	123.7	126.9	128.6	1.3	5.9
Private industry workers	110.7	112.6	113.9	115.6	117.0	119.0	120.1	121.1	122.7	1.3	4.9
Workers, by occupational group											
White-collar workers	110.8	112.8	114.2	116.5	117.9	119.9	121.4	122.4	123.9	1.2	5.1
Blue-collar workers	110.3	112.1	113.5	114.6	115.7	117.5	118.4	119.3	120.6	1.1	4.2
Service workers	111.8	113.8	114.6	115.1	117.9	121.5	121.2	123.2	125.7	2.0	6.6
Workers, by industry division											
Manufacturing	110.4	112.5	113.5	115.0	116.0	117.9	119.1	120.4	122.0	1.3	5.2
Nonmanufacturing	110.8	112.6	114.2	116.0	117.5	119.6	120.7	121.6	123.1	1.2	4.8
State and local government workers	115.1	116.5	117.1	120.8	122.0	123.9	124.4	128.8	130.1	1.0	6.6
Workers, by occupational group											
White-collar workers	115.8	117.0	117.5	121.5	122.6	124.5	125.0	129.7	131.1	1.1	6.9
Blue-collar workers	113.0	114.9	115.8	118.0	119.2	121.9	122.3	125.0	125.9	0.7	5.6
Workers, by industry division											
Services	115.9	116.8	117.4	121.7	122.6	124.5	125.0	129.9	131.3	1.1	7.1
Schools	115.8	116.6	116.9	121.9	122.6	124.5	124.7	130.6	132.0	1.1	7.7
Elementary and secondary	116.6	117.2	117.4	123.3	123.9	125.4	125.7	132.1	133.5	1.1	7.7
Hospitals and other services[3]	116.0	117.5	118.8	121.1	122.6	124.4	125.7	127.9	129.2	1.0	5.4
Public administration[2]	113.6	116.2	117.0	119.8	121.4	122.9	123.7	126.9	128.6	1.3	5.9

[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
	Dec.	March	June	Sept.	Dec.	March	June	Sept.	Dec.	December 1984	
Civilian workers[1]	110.9	112.2	113.4	115.3	116.5	117.9	118.8	120.3	121.7	1.2	4.5
Workers, by occupational group											
White-collar workers	111.4	113.0	114.2	116.7	117.9	119.3	120.4	122.2	123.5	1.1	4.7
Blue-collar workers	109.8	110.8	112.0	113.1	114.0	115.3	116.1	117.0	118.2	1.0	3.7
Service workers	111.8	113.2	113.9	115.1	117.4	120.0	119.8	122.3	124.3	1.6	5.9
Workers, by industry division											
Manufacturing	109.8	111.0	112.0	113.3	114.5	115.7	116.8	118.0	119.5	1.3	4.4
Nonmanufacturing	111.3	112.7	114.0	116.1	117.4	118.9	119.7	121.3	122.6	1.1	4.4
Services	114.4	115.8	116.3	120.1	121.3	123.3	123.8	127.2	128.9	1.3	6.3
Public administration[2]	112.6	114.6	115.4	118.2	119.4	120.4	121.3	124.4	125.7	1.0	5.3
Private industry workers	110.3	111.6	112.9	114.5	115.8	117.2	118.2	119.2	120.6	1.2	4.1
Workers, by occupational group											
White-collar workers	110.6	112.2	113.6	115.9	117.2	118.5	119.9	120.9	122.3	1.2	4.4
Professional and technical workers	112.9	114.8	115.9	119.9	120.4	122.2	123.8	125.2	127.3	1.7	5.7
Managers and administrators	109.3	112.0	114.0	114.8	115.7	118.0	119.2	121.0	122.2	1.0	5.6
Salesworkers	106.2	105.7	107.1	108.4	111.2	110.2	111.9	110.5	111.6	1.0	.4
Clerical workers	111.6	113.4	114.6	116.7	118.3	119.8	120.7	122.0	122.9	.7	3.9
Blue-collar workers	109.7	110.7	111.9	112.9	113.9	115.1	115.9	116.7	118.0	1.1	3.6
Craft and kindred workers	111.2	112.2	113.4	114.3	115.4	116.5	117.3	118.0	119.4	1.2	3.5
Operatives, except transport	109.3	110.0	111.1	112.3	113.6	114.9	115.8	116.6	117.9	1.1	3.8
Transport equipment operatives	106.9	108.0	110.3	110.7	110.2	111.7	112.7	113.4	114.0	.5	3.4
Nonfarm laborers	107.8	109.0	109.8	110.8	112.1	112.9	114.1	114.7	115.9	1.0	3.4
Service workers	111.4	112.9	113.5	113.7	116.5	119.8	119.3	121.2	123.7	2.1	6.2
Workers, by industry division											
Manufacturing	109.8	111.0	112.0	113.3	114.5	115.7	116.8	118.0	119.5	1.3	4.4
Durables	110.3	111.1	111.8	112.9	114.4	115.7	116.6	117.7	119.1	1.2	4.1
Nondurables	109.1	110.9	112.3	113.9	114.6	115.8	117.1	118.6	120.2	1.3	4.9
Nonmanufacturing	110.5	112.0	113.4	115.2	116.5	118.0	119.0	119.9	121.2	1.1	4.0
Construction	109.7	110.4	112.1	112.2	112.9	113.3	114.0	114.3	114.4	.1	1.3
Transportation and public utilities	111.1	112.9	114.7	115.7	116.8	118.5	119.3	119.9	120.7	.7	3.3
Wholesale and retail trade	107.2	108.5	110.8	111.5	112.3	114.3	116.0	116.5	118.1	1.4	5.2
Wholesale trade	109.8	111.8	114.1	115.7	116.5	118.2	120.0	120.7	122.9	1.8	5.5
Retail trade	106.1	107.2	109.4	109.9	110.6	112.8	114.4	114.9	116.2	1.1	5.1
Finance, insurance, and real estate	109.0	110.6	111.1	113.5	116.9	116.1	116.9	115.3	115.8	.4	−.9
Services	114.3	116.0	116.6	120.4	121.9	124.2	124.7	127.1	129.5	1.9	6.2
State and local government workers	114.0	115.1	115.7	119.2	120.0	121.6	122.0	126.1	127.1	.8	5.9
Workers, by occupational group											
White-collar workers	114.6	115.6	116.1	119.8	120.6	122.2	122.5	127.1	128.0	.7	6.1
Blue-collar workers	112.0	113.3	114.3	116.4	116.9	119.1	119.6	121.9	122.5	.5	4.8
Workers, by industry division											
Services	114.6	115.5	115.9	119.8	120.6	122.2	122.5	127.2	128.1	.7	6.2
Schools	114.5	115.2	115.4	119.9	120.6	122.2	122.3	127.8	128.7	.7	6.7
Elementary and secondary	115.1	115.6	115.8	121.1	121.7	122.9	123.0	129.3	130.2	.7	7.0
Hospitals and other services[3]	114.9	116.5	117.7	119.7	120.6	121.9	123.1	125.1	125.9	.6	4.4
Public administration[2]	112.6	114.6	115.4	118.2	119.4	120.4	121.3	124.4	125.7	1.0	5.3

[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
	Dec.	March	June	Sept.	Dec.	March	June	Sept.	Dec.	December 1984	
COMPENSATION											
Workers, by bargaining status[1]											
Union	112.3	114.5	116.0	117.8	118.8	120.6	121.7	122.6	123.9	1.1	4.3
Manufacturing	111.8	114.0	114.8	116.3	117.2	119.3	120.5	121.6	123.2	1.3	5.1
Nonmanufacturing	112.8	114.9	117.1	119.2	120.4	121.9	122.8	123.6	124.5	0.7	3.4
Nonunion	109.7	111.5	112.8	114.4	115.9	118.0	119.2	120.3	121.9	1.3	5.2
Manufacturing	109.2	111.2	112.3	113.8	114.9	116.6	117.9	119.3	120.8	1.3	5.1
Nonmanufacturing	109.9	111.6	113.0	114.7	116.4	118.6	119.8	120.7	122.4	1.4	5.2
Workers, by region[1]											
Northeast	111.7	112.6	114.3	116.0	117.5	118.9	120.7	122.4	123.8	1.1	5.4
South	110.6	112.5	113.5	115.6	117.1	119.7	120.7	120.7	122.2	1.2	4.4
North Central	108.6	110.9	112.5	113.9	114.7	117.2	117.9	119.7	120.8	.9	5.3
West	112.9	115.4	116.6	118.0	120.0	121.0	122.2	122.5	124.9	2.0	4.1
Workers, by area size[1]											
Metropolitan areas	110.9	112.9	114.2	116.0	117.4	119.4	120.6	121.5	123.2	1.4	4.9
Other areas	109.1	110.8	112.3	113.4	114.5	116.7	117.4	119.0	119.8	.7	4.6
WAGES AND SALARIES											
Workers, by bargaining status[1]											
Union	111.8	112.9	114.2	116.0	116.9	118.1	119.0	119.8	120.9	.9	3.4
Manufacturing	110.8	111.4	112.3	113.7	114.8	116.1	117.1	118.1	119.5	1.2	4.1
Nonmanufacturing	112.7	114.3	116.0	118.3	118.9	120.1	120.7	121.3	122.1	.7	2.7
Nonunion	109.5	110.9	112.2	113.7	115.2	116.7	117.8	118.8	120.4	1.3	4.5
Manufacturing	109.1	110.7	111.8	113.0	114.2	115.4	116.5	117.9	119.5	1.4	4.6
Nonmanufacturing	109.6	111.0	112.4	114.0	115.6	117.2	118.3	119.2	120.7	1.3	4.4
Workers, by region[1]											
Northeast	111.5	112.0	113.6	115.3	116.6	117.4	118.9	120.5	121.9	1.2	4.5
South	109.8	111.4	112.5	114.3	115.7	117.9	119.0	119.0	120.2	1.0	3.9
North Central	108.6	110.1	111.5	112.8	113.6	115.5	116.0	117.8	118.7	.8	4.5
West	112.0	114.1	114.9	116.5	118.5	118.8	119.6	120.0	122.5	2.1	3.4
Workers by area size[1]											
Metropolitan areas	110.5	111.9	113.2	114.9	116.2	117.6	118.6	119.5	121.0	1.3	4.1
Other areas	108.8	110.1	111.4	112.3	113.4	115.1	116.0	117.5	118.3	.7	4.3

[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.

36. Wage and compensation change, major collective bargaining settlements, 1980 to date

[In percent]

Measure	Annual average					Quarterly average								
						1982	1983				1984p			
	1980	1981	1982	1983	1984p	IV	I	II	III	IV	I	II	III	IV
Total compensation changes, covering 5,000 workers or more, all industries:														
First year of contract	10.4	10.2	3.2	3.4	3.6	3.3	−1.6	4.4	5.0	4.9	5.1	3.5	2.7	3.8
Annual rate over life of contract	7.1	8.3	2.8	3.0	2.8	4.8	1.4	3.6	4.3	3.1	4.7	3.2	3.1	2.0
Wage rate changes covering at least 1,000 workers, all industries:														
First year of contract	9.5	9.8	3.8	2.6	2.4	3.8	−1.2	2.7	3.7	4.2	2.8	2.6	2.1	2.3
Annual rate over life of contract	7.1	7.9	3.6	2.8	2.3	4.8	2.2	2.8	3.6	2.8	3.3	2.7	2.6	1.4
Manufacturing:														
First year of contract	7.4	7.2	2.8	0.4	2.3	4.1	−3.4	1.3	3.4	2.9	2.5	2.5	2.3	2.2
Annual rate over life of contract	5.4	6.1	2.6	2.1	1.4	3.9	4.5	.9	3.5	3.1	2.5	2.7	2.5	.9
Nonmanufacturing (excluding construction):														
First year of contract	9.5	9.8	4.3	5.0	3.4	3.6	3.3	5.9	5.8	4.8	4.2	4.3	2.0	4.0
Annual rate over life of contract	6.6	7.3	4.1	3.7	3.8	5.2	5.3	5.2	4.3	2.7	4.8	4.2	2.8	3.8
Construction:														
First year of contract	13.6	13.5	6.5	1.5	.5	3.4	.7	1.7	1.5	1.1	−3.6	1.1	2.0	−2.8
Annual rate over life of contract	11.5	11.3	6.3	2.4	1.0	2.9	2.4	2.1	2.9	2.6	−2.8	1.4	2.1	−.8

p = preliminary.

37. Effective wage adjustments in collective bargaining units covering 1,000 workers or more, 1980 to date

Measure	Year					Year and quarter								
						1982	1983				1984p			
	1980	1981	1982	1983	1984p	IV	I	II	III	IV	I	II	III	IV
Average percent adjustment (including no change):														
All industries	9.9	9.5	6.8	4.0	3.7	1.3	0.3	1.3	1.2	1.1	0.9	0.9	1.2	0.7
Manufacturing	10.2	9.4	5.2	2.7	4.3	1.5	−.5	1.1	1.2	.9	1.2	1.0	1.0	1.1
Nonmanufacturing	9.7	9.5	7.9	4.8	3.3	1.2	.9	1.5	1.2	1.2	.7	.9	1.3	.4
From settlements reached in period	3.6	2.5	1.7	.8	.7	.6	−.2	.3	.2	.6	.1	.1	.2	.3
Deferred from settlements reached in earlier period	3.5	3.8	3.6	2.5	2.0	.4	.4	1.0	.8	.3	.4	.7	.7	.2
From cost-of-living clauses	2.8	3.2	1.4	.6	.9	.3	.1	.1	.2	.2	.3	.2	.3	.2
Total number of workers receiving wage change (in thousands)[1]	—	8,648	7,852	6,530	6,196	3,441	2,875	3,061	3,025	2,887	2,696	2,485	2,386	1,839
From settlements reached in period	—	2,270	1,907	2,327	1,830	825	448	561	599	996	295	349	406	895
Deferred from settlements reached in earlier period	—	6,267	4,846	3,260	3,681	860	812	1,405	1,317	669	986	1,159	1,581	453
From cost-of-living clauses	—	4,593	3,830	2,327	2,514	1,970	1,938	1,299	1,218	1,290	1,459	1,150	1,214	1,063
Number of workers receiving no adjustments (in thousands)	—	145	483	1,187	1,134	4,895	4,842	4,656	4,693	4,830	4,634	4,844	4,944	5,491

[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
1984	64		376		8,352	.03
1984 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	8	20	68.4	104.1	1,221.7	.06
August	4	18	21.5	100.9	1,623.3	.07
September	9	17	103.6	117.9	716.4	.04
October	4	15	15.8	33.7	498.7	.02
November	4	15	12.0	30.7	482.1	.02
December	2	12	41.2	57.7	665.4	.03
1985[p] January	2	9	4.7	16.0	276.3	.01

p = preliminary.

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