

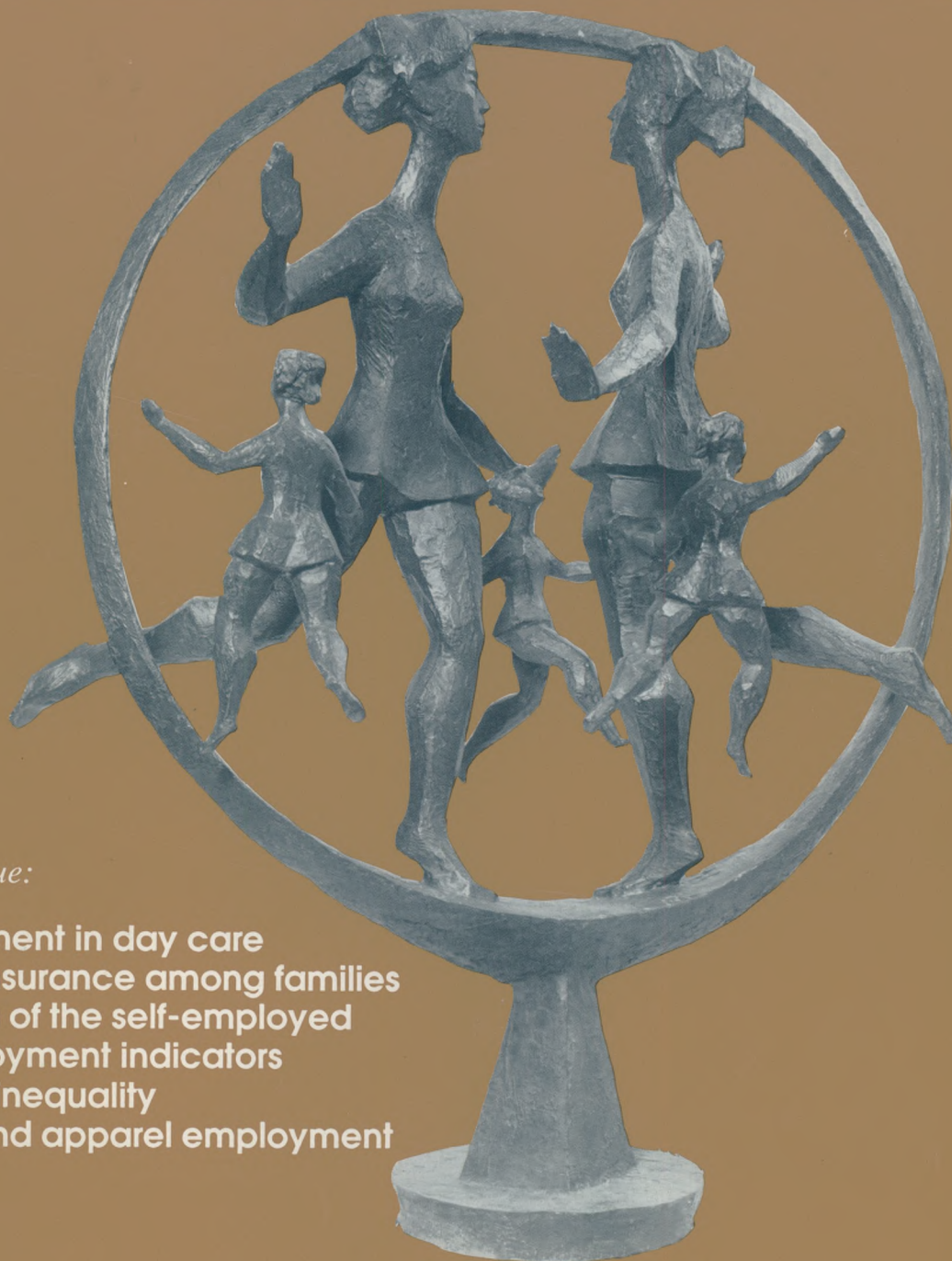
August 1995



M O N T H L Y • L A B O R
REVIEW

U.S. Department of Labor

Bureau of Labor Statistics



In this issue:

Employment in day care
Health insurance among families
Fatalities of the self-employed
Unemployment indicators
Income inequality
Textile and apparel employment



U.S. Department of Labor
Robert B. Reich, Secretary

Bureau of Labor Statistics
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RES **Table of Contents**

Federal Reserve Bank

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N T H L Y L A B O R
REVIEW

SEP 10 1995

August 1995

Volume 118, Number 8

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Family matters

Boom in day care industry the result of many social changes 3
Five major factors are responsible
for the rapid employment increase in this industry
William Goodman

Health insurance coverage for families with children 13
Regardless of incomes, families without coverage are less likely
to receive care than are partially insured families
Geoffrey D. Paulin and Elizabeth Dietz

Other articles

Self employed individuals fatally injured at work 24
Individuals who work for themselves typically face higher risk
of fatalities, compared with their wage and salary counterparts
Martin E. Personick and Janice A. Windau

International unemployment indicators, 1983-93 31
Sweden has the largest increase in labor underutilization
when part-time work for economic reasons is taken into account
Constance Sorrentino

A surge in growing income inequality? 51
A reported surge in income inequality indicates that patterns
of employment growth were consistent with greater income dispersion
Paul Ryscavage

Unraveling employment trends in textiles and apparel 62
These two closely related industries differ in the reasons
for their job losses and the prognosis for their future
Lauren A. Murray

Departments

Labor month in review 2
Industrial relations 73
Book reviews 77
Current labor statistics 79

The August Review

Job, health, and family are cardinal sources of well-being for working Americans. The broad demographic, social, and economic changes shaping the family's involvement in economic life have been covered extensively in the press, academic journals, and this *Review*. This month, we examine some more subtle effects of the forces affecting today's working family.

As William Goodman notes in our lead article, "The daily life of schoolchildren has changed dramatically in the last 20 years." They are much less likely to be directly supervised by relatives and much more likely to be watched by the employees of the rapidly growing day care industry. Goodman proceeds to weave together the five major factors that have led to a tripling of employment in the private day care industry since estimates of its employment were first published by the Bureau in 1972: the growing number of children, a rising percentage of mothers participating in the labor force, more public spending on child care, tax policies providing additional benefits to families, and more widespread corporate and private initiatives to provide day care.

In the June *Review*, we reported on the incidence of and access to health insurance as an employment benefit. In this issue, Geoffrey D. Paulin and Elizabeth M. Dietz rigorously explore the intricate interactions of employment, income, and health insurance coverage on health care spending in families with children. Perhaps the most interesting of these analyses shows that the expenditure on drugs and other medical supplies is an important measure of those who "when they become ill ... become well faster." In their econometric analysis, persons in fully and partially insured families are much more likely to incur such expenditures, even when all else is held constant.

Other articles include Martin E. Personick and Janice A. Windau on fatal injuries among the self-employed, an international comparison of alternative measures of the underutilization of labor written by Constance Sorrentino, an evaluation of income inequality and the possible impact of new survey methods on its measurement by 1994 Klein award winner Paul Ryscavage, and Lauren A. Murray's analysis of trends in textile and apparel jobs. Michael H. Cimini and Charles J. Muhl present their regular analysis of current developments in industrial relations. Pat Nielsen reviews *Why Our Kids Don't Study: An Economist's Perspective* (by John D. Owen) and Steven

Charnovitz reviews *Trade and Labor Standards: A Review of the Issues* (edited by Gary Fields).

The new retirement

The incidence of retirement benefits was fairly stable in the 5-year period from 1989 to 1994, but the form of benefit shifted significantly, according to the Pension and Welfare Benefits Administration of the U.S. Department of Labor. In their report, *Retirement Benefits of American Workers: New Findings from the September 1994 Current Population Survey*, analysts Dan Beller and Richard Hinz find, "Virtually all retirees receive Social Security benefits after the age of 65 and somewhat less than one-half are able to supplement this income with a private pension benefit."

The most significant change has been in the form in which retirement benefits are received. About 48 percent of pension recipients in 1994 received an annuity as part of their income package, compared with fully 60 percent of recipients in 1989. In 1994, just over half of pension beneficiaries received only a lump-sum distribution.

Overall, Social Security and private benefits are replacing about 60 percent of nominal earnings. But, only a small proportion of annuitants receive cost-of-living adjustments. As a result, current retirees have a "real replacement rate" of less than one-half the purchasing power of their prior earnings. "This," the report concludes, "will require them to rely on individual savings or continue to keep working during retirement if they wish to maintain their standard of living."

Employee density

Four of New York City's five boroughs are among the 10 counties in the United States with the greatest "employment density" (that is, the number of persons employed in the county per square mile of county area).

Kent Halstead reports in *Wages and Cost of Living: 508 County Indexes* that Manhattan (New York) is the most dense, with 75,588 employees per square mile, followed by San Francisco (California) with a density of 9,760 employees. The other "dense" counties are Boston (Massachusetts), 7,457; Washington (District of Columbia), 5,893; Brooklyn (New York), 5,167; Bronx (New York), 4,053; Philadelphia (Pennsylvania), 3,999; Baltimore (Maryland), 3,998; Jersey City (New Jersey), 3,885; and Queens (New York), 3,667.

Cyclical loss vs. regional growth

Differences in net job growth across States are caused by variations in their rate of job creation, while fluctuations in employment over the business cycle are associated with variations in the rate of job destruction. This is the central finding of *Cyclical Versus Secular Movements in Employment Creation and Destruction* (NBER Working Paper No. 5162) by Randall W. Eberts and Edward Montgomery.

Because the State-to-State pattern of net job dynamics is so different from the structure of cyclical employment variation, Eberts and Montgomery warn that policymakers should be cautious in applying cyclical models to regional issues. Specifically, they suggest that "promoting new firm creation and expansion might be more fruitful in the long run" for local economies because their employment differences are driven by differences in rates of job creation. But, they note, "Clearly, definitive policy recommendations must await a more structural analysis of the determinants of job creation and destruction."

Fewer Japanese businesses

According to the June 1995 *Japan Labor Bulletin*, a recent survey of Japanese businesses found that both the number of establishments and the count of employees working for them dropped below the levels reported in the previous survey (1991). "This clearly indicates that the adverse effects of the economic slowdown following the bursting of the financial bubble are enormous. It was the first such drop since 1947 when the survey was originated." In April 1994, there were about 6.55 million private-sector firms in operation, a drop of 0.2 percent from the 1991 survey. The total number of employees at these firms was 54,366 million in 1994, a decrease of 1.2 percent from the earlier survey.

Next month

Next month's *Review* will feature articles on earnings mobility, how the intermittent labor force affects women's earnings, employment in the security brokers and dealers industry, trends in unemployment insurance benefits, and a discussion of the old and new measures of educational attainment in the Current Population Survey. □

Boom in day care industry the result of many social changes

The number of employees in the day care industry has increased at a much faster rate than working mothers; five major factors are responsible

William Goodman

The daily life of preschool children in the United States has changed dramatically in the last 20 years. Because mothers of young children are far more likely to work than at any other time in the past, mother and child now spend much less time at home.¹ Furthermore, far more relatives—particularly women—also are employed, and have less time to spend with nephews, nieces, young cousins, and grandchildren. For these and other reasons, young children are more likely to attend day care centers. During the 2 decades, employment in private-sector day care centers increased by more than 250 percent, gaining nearly 400,000 jobs and continuing to grow during two of the four recessions in the period. No single factor influencing the day care industry and examined here has increased as has employment in the industry. Instead, a combination of at least five major factors drives demand for the services of child-care centers.

Trends in day care jobs

Employment growth in the day care industry since 1972 has been much more rapid than the growth of most industries: overall, the number of day care jobs has grown by approximately 250 percent, or 375,000 jobs. Growth occurred almost throughout the 22-year period, except for the early 1980's,

during which two back-to-back recessions occurred. From early 1979 to summer of 1982, 30,000 jobs were lost in day care. Renewed growth from fall 1982 to mid-1985 expanded the number of jobs to above the preceding peak, and strong growth has since continued. Unlike most industries, child day care continued to expand vigorously during the recessions of 1973–75 and 1990–91. Explanations for these movements, including the seemingly inconsistent behavior in the various recessions, are discussed below.

Causes of growth

One way to begin an analysis of employment growth in day care is to distinguish between growth attributable to greater enrollment and the effects of changes in the ratio of enrolled children to staff. Fewer children per staff member generally improve the quality of care. Consistent, regularly timed estimates of the ratio of children to staff are not available. But one publication calculates that the average ratio of children to caregivers and teachers in full-time centers (7 hours a day or more) increased considerably, from 6.8 to 8.5 children per worker, between 1976 and 1990.² Because a staff member supervised more children in 1990, the change in the ratio pushed down employment. If the ratio had remained unchanged, employment in 1990 would have been greater by

William Goodman is an economist in the Office of Employment and Unemployment Statistics, Bureau of Labor Statistics.

Scope of study

This article primarily relies on estimates of employment in day care establishments from the Bureau of Labor Statistics monthly survey of employers. These statistics are from the Current Employment Statistics program of BLS. The CES program produces estimates of employees on all nonfarm payrolls except in private households, based on a monthly survey of about 390,000 work sites.

Data from the survey appear in the monthly BLS periodical *Employment and Earnings*. CES data in this article are seasonally adjusted unless otherwise indicated.

For purposes of the survey, this article uses the Federal Office of Management and Budget's Standard Industrial Classification Manual's definition of the child day care industry, which includes private-sector "establishments primarily engaged in the care of infants or children, or in providing pre-kindergarten education, where medical care or delinquency correction is not a major element."

Including the education of the very young is appropriate, because a definite line between care and education cannot be drawn; many day care centers include education in their programs, and in earliest childhood, play and learning cannot be distinguished clearly.

This definition of the day care industry includes large and small companies doing business for profit or for other purposes, such as social good. Secular and religious non-profit organizations and for-profit companies are included.

However, a few significant exclusions apply. Government day care—for example, day care centers within public school systems, or those provided by government agencies for employees—is not included in the child day care

industry data presented in this article, unless a separate, private organization performs the work of the center. In addition, if day care is provided onsite directly by an employer for its own employees' children, without the use of a contractor but as a company-owned operation, the day care personnel are not included. When care of children is offered by an individual at their own residence, without the use of any employees, the provider is not counted, as the survey measures only employment on payrolls rather than self-employed workers. Nannies and, in fact, all domestic workers also are excluded from the survey.

Because of the various exclusions, the estimates being studied do not represent all child care workers in the country. Trends in Government day care, child care provided by employers for their employees' children, care by domestic workers in the child's home, and care by entrepreneurs working in their own homes may not be exactly the same as the trends of private-sector day care centers. But an abundance of anecdotal evidence suggests that day care provided directly by employers for their own employees' children is growing fast.

Employment in the day care industry as estimated from the survey includes not only employees directly caring for children but all employees of day care companies. According to the BLS Occupational Employment Survey, 8 percent of the child care industry's employees are managers or administrators, 15 percent are clerical workers, 33 percent are teachers, and 25 percent are child care workers. The remaining 19 percent are widely scattered among a variety of other occupations.

110,000 in full-time centers alone.

Because fewer staff members now handle the same number of children, enrollment increases must account for the employment of larger numbers of teachers and child care workers in the industry. Consistent measures of total enrollment of children in day care, at regularly timed intervals, also are not available.³ However, an abundance of indirect evidence indicates tremendous growth in enrollment. In addition, one source concludes that enrollment in full-time early education and care increased from 900,000 children in the mid-1970's to 3.8 million in 1990.⁴

Why enrollment grew

Several factors caused the growth in enrollment. Although an increase in the population of children is the most obvious cause, growth in the proportion of children who are in day-

care programs has had much more influence. The increasing percentage of children in day care reflects large gains in the number of their mothers who have jobs.

U.S. population of youngsters. In 1990, children 3 to 5 years old accounted for 52 percent of day care enrollment; children under 6 accounted for 74 percent.⁵ (See table 1.) While the growth in the populations of these age groups has been gradual, at 1 to 3 percent annually, the aggregate growth of children younger than 6 from 1972 to 1994 has been 3 million. (See table 2 and chart 1.) The number of 3-to-5-year-olds increased by 1.6 million.⁶

If the ratio of day care center employees to all children under 6 is held constant at the 1972 rate, the increase in the population of youngsters under 6 implies relatively slight growth in employment: 22,000 day care employees, or just 6

percent of actual growth. Clearly, changes in these populations are only a minor factor in the expansion of the industry. Evidently, additional factors strongly affect demand.

Changes in the family. Children of working mothers are enrolled in centers as a primary arrangement for care nearly twice as frequently as children of mothers without jobs. As of 1990, if school is excluded as a child care arrangement, 17 percent of children younger than 13 with employed mothers were enrolled in a center as their primary arrangement; among children under 13 with mothers who did not hold jobs, 9 percent were enrolled in centers as a primary arrangement.⁷ The number and proportion of women at work have increased greatly in the last 20 years, rising from 41 percent in 1972 to 54 percent in 1993.⁸ (See table 2 and chart 1.) The proportion of working mothers of children under 6 rose by an even greater percentage: from 33 percent in 1975 to 53 percent in 1993. Mothers of children under 3 also greatly increased their participation in employment, from 28 percent in 1975 to 49 percent in 1993. (See table 1.)

In 1975, 16 percent of mothers with children under 6 did not have a spouse in the household; in 1993, that proportion increased to 26 percent.⁹ One might expect that the absence of a working husband from the household would be a major explanation of why more mothers of young children are at work, but mothers with a husband in the household increased their jobholding far more. Between mothers of young children who had husbands with them and those who did not, the percentages at work were fairly close in the mid-1970's; but women with spouses present increased considerably in percentage employed, while those without spouses present increased only slightly in percent employed. Exact percentages, derived from Current Population Survey data, are shown in the following tabulation:

	1975	1993
Mothers of children under age 6:		
With spouse in household	32	56
Without spouse in household	42	44
Mothers of children aged 3 to 5:		
With spouse in household	37	60
Without spouse in household	49	55

Changes in needs and preferences that caused more of these mothers to go to work affected the group with a husband in the household far more than those without a husband. The group with a spouse present also is much larger. Women who live with their husbands, therefore, made the far heavier contribution to the increased employment of mothers of young children.

The number of working women in general also is important as a factor in the demand for child care: not only mothers but also other relatives who might be available to watch

children¹⁰ become unavailable as a greater percentage of the population becomes employed. From 1972 to 1993, the overall employment-to-population ratio increased from 57.0 percent to 61.6 percent. Although the employment-to-population ratio of men decreased by 5 percent, the ratio among women increased by 13 percentage points to 54.1 percent. At the start of the latest post-recession period, from early 1991 to the end of 1993, job growth among women was greatest among 45-to-54-year-olds. Seventy-two percent of women in that age range were employed at the end of the period¹¹—implying that a great many grandmothers and older aunts are not available as they once were to watch children during the day.

While comprehensive, clear statistics are not available to show a shift from care by relatives to care in centers among all children, the Census Bureau has estimated use of various child-care arrangements by families with working mothers and children under 5 in various years. The results indicate that from 1977 to 1991, use of child care centers increased by 10 percentage points, from 13 percent of such families to 23 percent. Care by relatives other than parents dropped the most, from 31 percent to 24 percent.

In addition, 1991 results appear to have been influenced by the recession and the continued post-recession decline in employment. An abnormally large number of laid-off relatives may have been temporarily available to care for children in 1991. Results from 1990, when employment was not so abnormally depressed, may better typify the 1990's. Indeed, 1990 shows more care in centers and less care by relatives than in 1991. From 1977 to 1990, care in centers more than doubled, increasing from 13 percent to 28 percent, as opposed to 23 percent in 1991. The following tabulation shows the primary child care arrangement in families with children under age 5 and a working mother in selected years (in percent):¹²

	1977	1985	1990	1991
Child cared for by—				
Father	14	16	17	20
Relative other than parent	31	24	23	24
Nonrelative in child's home	7	6	5	5
Nonrelative in another home	22	22	20	18
Organized facility	13	23	28	23
Mother at work	11	8	6	9

The drop in care by nonrelatives in the child's home is confirmed by the household survey's estimate of child care workers in children's homes. This estimate shows a 37-percent drop, representing a reduction of 200,000 workers from 1972 to 1993. The reduced use of child care workers in the parents' home is related to increasing demand for the services of centers, but the relationship between the two trends is not clear. The greater availability of child care centers may decrease the need for household workers. Alternately,

household workers may be less desired by families than in the past. Or, with much larger proportions of women entering occupations in the executive, administrative, managerial, and professional specialty categories,¹³ a smaller proportion of women may be available for lower paying jobs, so household help may be harder to find.

Factors relating to cost and convenience

After 13 years of fairly steady and strong growth, the number of working mothers with children under age 6, and those of children from 3 to 5, seems to have about leveled off in the 1990's.¹⁴ But the number of day care workers continued to increase about as steeply as ever. (See chart 1.) Contrasting trends also occurred in an earlier period: from 1979 to 1982, as the number of working mothers increased sharply, the number of day care workers declined. These contrasts indicate that other factors have important effects on the number of day care workers.

Certain developments have, in effect, lowered the price of day care, making it more practical for some mothers of young children to work outside the home. As a result, more young mothers may have started working.¹⁵ In addition, among working mothers and those who remain at home, these developments also may have increased the popularity of day care centers relative to other available child care arrangements.

Government funding. Several large Federal programs pay billions of dollars for the care and education of young children outside the home, and in some large programs, the funds have increased greatly in recent years. The four largest Federal programs in this area totaled more than \$5 billion in fiscal year 1994.

Project Head Start is the most heavily funded of these pro-

grams, with 1994 appropriations of \$3.3 billion. Local employment in Head Start is largely in the private sector because the program funds local private organizations and local government agencies that perform the work. Head Start is intended to provide comprehensive care for poor or disabled children. Although the project began in 1965, the Congress increased funding substantially in 1990 and continued to increase it greatly in each subsequent year through 1994. (See table 2.) Chart 2 compares the program's appropriations with growth in private-sector child care jobs.

In addition to Head Start, Federal spending was increased significantly for young children in 1990 when, for the first time, comprehensive legislation regarding child care was passed. As in Project Head Start, Federal funds in other major programs are ultimately used to a great extent to pay for the services of private child-care organizations. The Child Care and Development Block Grant, which began in 1990, provides funds to the States for care of the children of poor families and to improve the quality of care. Approximately \$2.5 billion was appropriated for the first 3 years, and, in 1993, the fiscal-year funding rose from \$825 million to \$893 million. Funding remained at that level in 1994.

The "At-Risk" Child Care Program also was created in 1990. It is designed to provide care for children of families "at-risk" of becoming welfare recipients. States must provide matching funds to receive Federal money, which so far has been available at \$300 million annually.

The Family Support Act Child Care Programs started slightly earlier, in 1988. The Federal government distributes money to the States to provide child care for the children of parents receiving Aid to Families With Dependent Children benefits and working, looking for work, or in approved education or training programs, as provided in the Job Opportunities and Basic Skills (JOBS) program. The Family Support Act also provides funds for care of the children of parents

Table 1. Selected factors affecting demand for day care, by age group
(In percent)

Age group	Resident U.S. population, 1994 (thousands) ¹	Percent growth in population, 1972-94 ¹	Use of day care centers as primary arrangement, 1990 ² (percent)	Age group's enrollment as a percentage of total day care enrollment, 1990 ³	Mothers who were employed ⁴	
					1975	1993
Under 3	11,705	17.2	12.0	22	28.3	49.0
3 to 5	11,906	15.8	29.1	52	539.6	558.3
Under 6	23,611	16.5	20.6	74	33.2	52.3
6 to 9	14,975	-3.0	9.1	21	—	—
Under 10	38,586	8.2	15.9	96	—	—

¹ Data are from the U.S. Bureau of the Census PPL-21 document.
² Calculated from percentages in *National Child Care Survey*, 1990, p. 31, and up-to-date population weights.
³ Calculated from percentages in preceding column and up-to-date population weights.
⁴ Data are from the Current Population Survey.
⁵ These mothers had no children under the age of 3.

NOTE: Dash indicates data are not available.

Table 2. Employment in child day care services and related data

Year	Employment in child day care industry (thousands)	Population under 6 years old (thousands)	Ratio of employed women to all women (percent)	Working mothers of children under 6 (thousands)	Working mothers of children under 6 (percent)	Enrollment in Project Head Start (thousands)
1972	145.5	20,570	41.0	—	—	379
1973	151.0	20,248	42.0	—	—	379
1974	172.0	19,937	42.6	—	—	353
1975	198.9	19,667	42.0	4,851	33	349
1976	214.6	19,251	43.2	4,957	35	349
1977	245.2	18,898	44.5	4,887	36	333
1978	284.8	18,891	46.4	5,297	39	391
1979	303.1	19,155	47.5	5,594	41	388
1980	298.9	19,631	47.7	5,886	42	376
1981	289.8	20,022	48.0	6,227	44	387
1982	282.4	20,502	47.7	6,414	43	396
1983	283.8	20,843	48.0	6,489	43	415
1984	291.7	21,092	49.5	7,043	46	442
1985	310.0	21,360	50.4	7,322	48	452
1986	321.9	21,531	51.4	7,602	48	452
1987	333.4	21,662	52.5	8,137	51	447
1988	356.3	21,822	53.4	8,104	51	448
1989	378.4	22,067	54.3	8,478	53	451
1990	391.4	22,528	54.3	8,732	54	541
1991	417.2	22,897	53.7	8,758	53	583
1992	450.8	23,224	53.8	8,662	53	621
1993	473.4	23,479	54.1	8,764	53	714
1994	501.9	23,611	—	—	—	—

NOTE: Dash indicates data are not available or are not comparable.

who have increased their earnings and have been able to leave the AFDC program in the past year. Funds for these Family Support Act programs nearly doubled from fiscal year 1992 to fiscal 1994, when \$745 million was available.

In addition to Federal initiatives, State and local governments provide many child care programs. The level of spending per child varies greatly by State.¹⁶ In addition to programs for poor children and others, State governments frequently fund onsite day care for the children of public employees by setting up a private, not-for-profit corporation that operates the center rent-free.¹⁷

As State governments receive more Federal funds, their revenue may be made available for other purposes. Conversely, when Federal aid to States and localities is cut, the State or local government may find it necessary to reallocate funds from another area of spending. The curve on chart 2, which represents the number of employees in the day care industry, shows a decline in the early 1980's, when two recessions occurred, even though two other recessions, one in the mid-1970's and another in the early 1990's, had no apparent effect on day care employment, which continued to grow vigorously.

Federal outlays for education, training, employment, and social services, adjusted for inflation, represents the first re-

lated statistic examined so far that may explain why employment in the industry dropped in the early 1980's but not during the other recessions. As shown in chart 2, social spending was cut deeply in Federal budgets in the early 1980's, while this broad category of Federal spending declined less during the recession of the mid-1970's and actually increased during the 1990-91 recession. As increases in such Federal spending occurred from 1975 to 1979 and again from 1987 to 1993, day care expanded at a pace greater than the growth rate in the number of children or of jobs held by their mothers.

Tax breaks. In addition to explicit Federal spending, several U.S. tax provisions help bring day care in reach of many families. Perhaps the most important tax change was the initiation and expansion of the Earned Income Credit, which began in 1975 and was increased to a major extent in 1990 and again in 1993. Although a small amount of this credit can be claimed by low-income taxpayers with no children, it benefits primarily lower-income families with children. A credit of up to about \$2,500 goes to taxpayers with earnings of \$11,000 or less. The Earned Income Credit is different among such credits because when the amount claimed by a taxpayer exceeds the income tax liability, he or she is reim-

bursed for the balance. The total amount claimed each year under this credit has increased more than five-fold since 1975, even after inflation, partially because of numerous revisions in the applicable tax rules, particularly in 1987, 1990, and 1993. (See chart 2.)

While the credit does not specifically provide for day care, the credit is often cited in literature concerning the financing of the care of young children. Low-income families use day care facilities; among children in families below the poverty line in which the mother works, 18 percent attended organized day care facilities in 1991.¹⁸

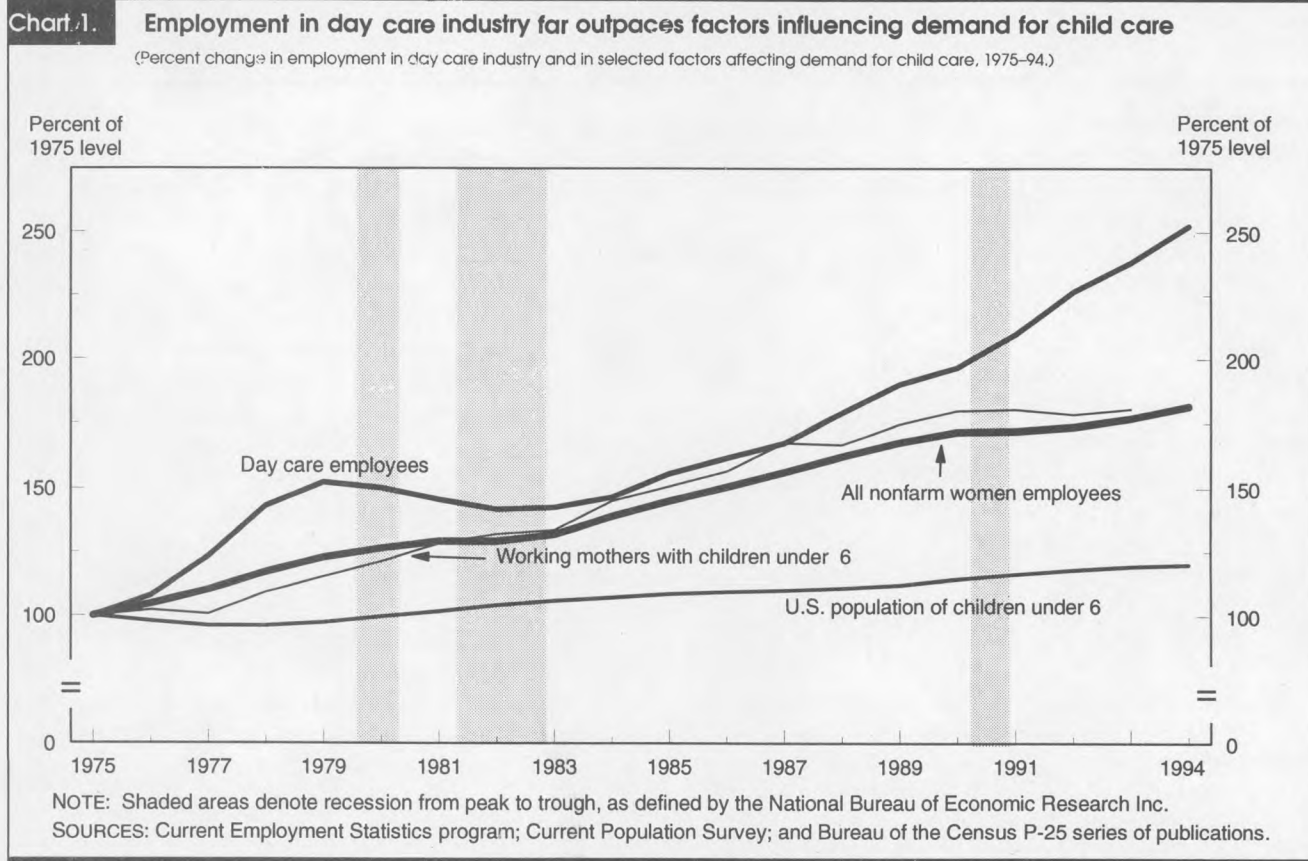
The Dependent Care Tax Credit benefits primarily a more middle-income group of families; in 1992, this credit was claimed to the greatest extent by families with incomes between \$20,000 and \$50,000. The credit can be claimed for expenses incurred for the care of dependents if the care is necessary for the taxpayer to be employed. After adjustment for inflation, the annual amount claimed by taxpayers about tripled from 1976 to 1988. In 1988, tax law changes removed credit for the care of children over 13 and reduced the amount of expenses that could be claimed; the aggregate annual amount claimed by taxpayers suddenly dropped and remained at roughly the same level through 1994, according to projections. But the amount claimed in 1994 was still 85

percent above the 1976 level after adjustment for inflation.¹⁹ (See chart 2.)

Since 1981, certain employer-provided dependent care has been excluded from an employee's gross income for Federal income tax purposes. Such dependent care may be provided in the form of on-site or nearby child care facilities, reimbursement of employees for child care expenses, or reimbursement accounts that are also usable for other nontaxable employee benefits. Many employers offer such benefits; in 1993, 40 percent of full-time employees of medium and large private establishments were eligible for reimbursement accounts that could be used for dependent care.²⁰

Private initiatives. Corporate and nonprofit organizations have made significant efforts to provide day care. The organizations represent a diverse group, including major corporations and religious and other nonprofit organizations.

Employers sometimes operate their own day care centers for employees and in other cases contract with a for-profit or nonprofit child care organization. In at least a few cases, the service also is made available to nonemployee community members. Other companies reimburse parents' expenditures on day care or arrange discounts. Consortia of employers, in some cases also including labor unions, have started



day care centers that are located near several places of work.²¹

Cost effects

The average hourly pay in 1994 for production or nonsupervisory employees was \$11.12 for the private sector and \$6.83 in the day care industry. From 1972 to 1994, average hourly pay of workers in the industry, excluding managers, adjusted for inflation, declined by 10 percent.²² The cost of labor in day care centers is relatively inexpensive and has become less expensive over the years.

Despite the drop in real earnings of day care workers, the price of day care to consumers, as estimated in the consumer price index, rose more rapidly than general inflation in the last few years. An index of day care prices was first produced for a complete year in 1990. From 1990 to 1994, day care prices rose by 20 percent while overall consumer prices for all urban consumers rose by only 13 percent. Tax breaks and government and private day care programs, which deliver care at a below-market price as in Project Head Start, reduce costs to parents and partially account for the huge growth in day care use despite the relatively rapid inflation in the industry. The comparatively low cost of employing day care workers also helps explain the rapid growth of jobs in the industry.

Other surveys

As previously mentioned, estimates of employment from the monthly BLS survey of employers are used in this article as the primary measure of growth in employment. One advantage of this series of estimates is its relatively long history, starting in 1972 and continuing into mid-1995. Estimates from other relevant sources are available; in most cases, they differ in their scope and trend.

The Bureau of the Census estimates employment by industry, based on various Census Bureau sources.²³ Day care services were first estimated in this program in 1988, and estimates for the industry have been produced up to reference year 1992. Census Bureau estimates, like those from the BLS survey of employers, are based on the definition of a day care establishment quoted earlier and exclude Government establishments from the sector. Over the 4-year span, this series, like the BLS survey of employers, shows growth, but not as much growth. Over the 1988–92 period, the Census Bureau program indicates a gain of 55,000 employees, or 15 percent; the BLS series shows an increase of 27 percent.

The Current Population Survey (CPS)²⁴ of households also estimates employment in the child day care industry, beginning in 1983. However, the CPS (household survey) definition of child day care is broader than that of the two employer (establishment) surveys. The initial level of employment from the household survey was 418,000 in 1983, while the BLS establishment survey showed employment of 284,000.

The household survey apparently includes segments of the

day care industry in which employment has grown even faster than in the segments included in the establishment surveys. From 1983 to 1993, the household survey measure of day care employment more than doubled, gaining 465,000 jobs, or 110 percent; the BLS establishment survey showed a gain of 67 percent during the period.

The household survey estimates of employees in the day care industry include government employees, self-employed workers, and private-sector wage and salary workers. (The two surveys of employers include only private-sector wage and salary workers.) Including these additional workers partially explains the differences in numbers of employees, but the household survey's estimates of private wage and salary workers in the day care industry are larger and faster growing than those of the BLS establishment survey.

One reason for the differences in initial level and trend is related to the surveys' different methods of determining the industry classification of workers. In the household survey, the classification is based on individuals' descriptions of their workplaces. Many large employers in industries other than day care provide onsite centers as a convenience to their employees. The household survey assigns the day care workers at such onsite centers to the day care industry if the workers themselves describe their workplace as a day care center. In the establishment survey, if the day care workers are directly on the payroll of the main establishment, rather than that of a separate organization, they are assigned to the main industry classification of the entire establishment.

The household survey also offers estimates of employment by occupation, including child care workers outside of private households and, separately, child care workers in the child's home. (These categories do not include all workers who supervise pre-school children; many employees of centers are pre-kindergarten teachers, a category not distinguishable in the survey from kindergarten teachers and therefore not usable for our immediate purposes.) From 1972 to 1993, individuals employed in the occupation of child care worker not in the child's residence increased from 358,000 to 1 million. (The trends of child care workers employed in the child's home were discussed in an earlier section, in connection with changes in the family.)

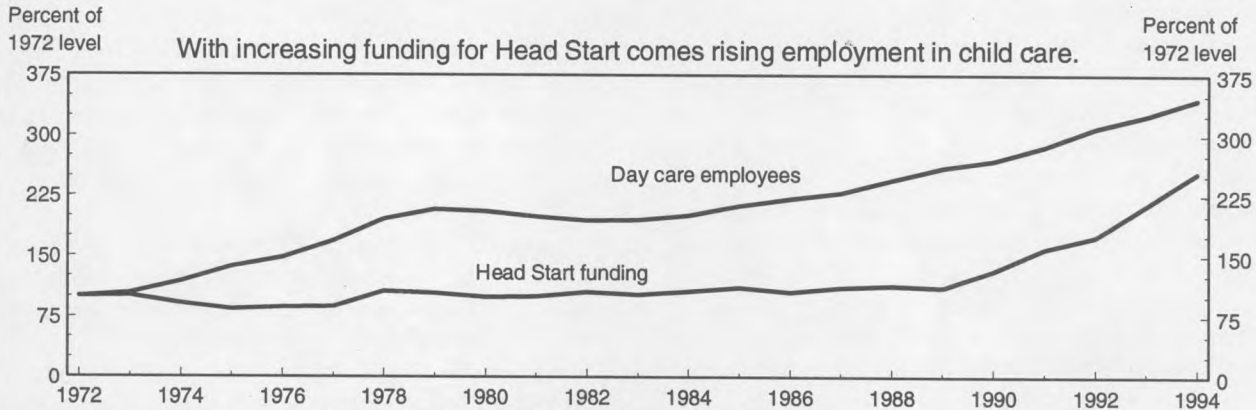
All the surveys show substantial increases in the day care center industry or portions of it. Rates of growth range from 4 percent a year, in the case of the Census Bureau data, to 8 percent a year in the case of the broad industry series from the household survey. The BLS establishment survey's industry estimates, which are the primary source of employment data for purposes of this article, increased by 6 percent annually, on average, from 1972 to 1994.

Outlook

Recently, the population of children has not only increased

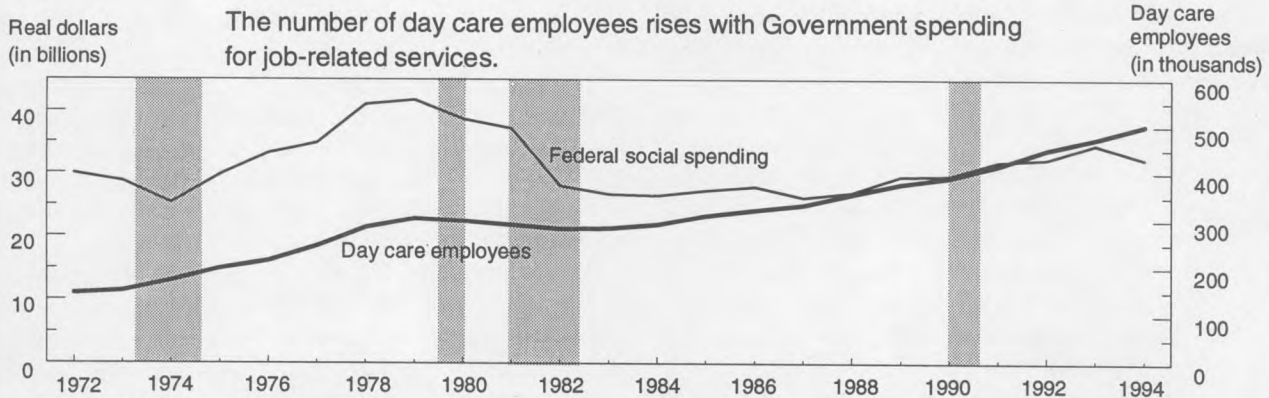
Chart 2. Employment in day care industry far outpaces factors influencing demand for child care.

(Percent change in employment in day care industry and in selected factors affecting demand for child care, 1975-94)



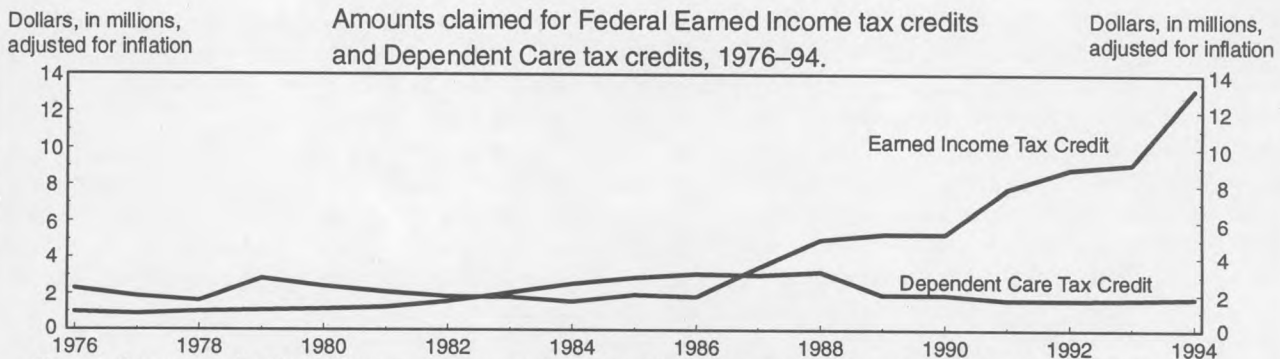
NOTE: Head Start funding amounts are deflated by the 1982-84-based CPI-U.

SOURCES: BLS Current Employment Statistics program and U.S. Department of Health and Human Services.



NOTE: Shaded areas denote recessions from peak to trough, as defined by the National Bureau of Economic Research Inc.

SOURCES: U.S. Office of Management and Budget and BLS Current Employment Statistics program.



NOTES: Amounts for the Earned Income Credit are projected in 1992-96 and are preliminary in 1991. The Dependent Care Tax Credit amounts for 1991 and 1992 are preliminary, and amounts for 1993 and 1994 are projected.

Dollars are deflated by the CPI-U, base period 1982-84.

SOURCE: Joint Congressional Committee on Taxation.

but also accelerated in growth. Although future trends of most of the forces that have driven employment in the industry cannot be predicted with confidence, extensive population projections are available from the Bureau of the Census. These projections show a pattern of deceleration followed by decline in the population of young children:

Time period	Percent change in population	
	3 to 5 years old	Under 6 years old
1983-88	6.2	4.7
1988-93.....	7.7	7.6
1993-98.....	4.8	.1
1998-2003.....	-2.9	-2.1

As can be seen, the recent relatively strong gains in the most relevant age groups are forecast to decelerate by 1998; these populations will fall by 2003.

While final Federal budget figures for fiscal year 1996 and later are not yet available, increases in Federal child-care spending from 1994 to 1995 is expected to slow. Federal child-care spending on certain major programs jumped by 84 percent in 1991 after expansion of the JOBS Child Care, Transitional Child Care, and Head Start programs, and creation of the "At-Risk" programs and the Child Care and Development Block Grants. Since then, the combined funding of these programs and Project Head Start has been increasing by about 20 percent annually. But in 1995, their combined funding is to grow by only 3 percent.

Amounts claimed under the Federal Earned Income Credit are projected to grow vastly, by 89 percent, from 1993 to 1996. But even this growth represents a slight deceleration, as the amount claimed increased by 91 percent from 1990 to 1993.²⁵

These developments suggest deceleration in day care employment. The eventual decrease in the population of young children suggests a greater deceleration or decline in employment in the industry. Although the percentage of working mothers of young children has leveled off in the last few years, projections do not exist.

IN SUM, the number of workers in the private day care industry has more than doubled since its employment was first estimated in 1972, increasing by nearly 400,000 jobs. The industry has been influenced by the increasing population of children; the dramatically climbing percentage of job holders among mothers of young children, and among other women; Federal, State, and local government spending on child care; increased Federal tax breaks for families with children; and many private initiatives to provide needed day care. But at least two of these factors will not continue to increase so rapidly. Federal spending on certain major child-care programs is to decelerate from fiscal 1994 to fiscal 1995, although it may possibly later accelerate. Growth in the U.S. population of young children will decelerate in the next 5 years, and this population will start to decline by 2003. As a result, the industry is unlikely to sustain the rapid growth it has experienced since 1972. □

Footnotes

¹ See Howard V. Hayghe, "Are women leaving the labor force?" *Monthly Labor Review*, July 1994, pp. 37-39.

² Ellen Eliason Kisker, Sandra L. Hofferth, Deborah A. Phillips, and Elizabeth Farquhar, *A Profile of Child Care Settings: Early Education and Care in 1990* (Princeton, NJ, Mathematica Policy Research, Inc., 1991), vol. I, p. 212.

³ Comparable estimates of total enrollees in day care for considerably separated points in time will soon be available. The National Center for Education Statistics of the U.S. Department of Education is conducting the 1995 National Household Education Survey, which, like the 1991 and 1993 surveys of that name, will generate an estimate of national enrollment in day care, and many other statistics relevant to early learning.

⁴ Kisker, Hofferth, Phillips, and Farquhar, *A Profile of Child Care Settings*, vol. I, p. 208.

⁵ Sandra L. Hofferth, April Brayfield, Sharon Deich, and Pamela Holcomb, *National Child Care Survey, 1990* (Washington, The Urban Institute Press, 1991), p. 31.

⁶ Population figures in this article are from the Bureau of the Census P-25 series of publications and PPL-21.

⁷ *National Child Care Survey, 1990*, p.29.

⁸ Statistics on working mothers in this article are from the Current Population Survey. Results for time periods after 1993 are not comparable to earlier results because of changes in methodology and population weights used.

⁹ Data from the Current Population Survey.

¹⁰ Donald J. Hernandez and David E. Myers, "Family Composition, Parents' Work, and the Need for Child Care among Preschool Children: 1940-1987," Paper presented at annual meeting of the Population Association of America, New Orleans, 1987, p. 5.

¹¹ Data from the Current Population Survey. Data after 1993 are not comparable to earlier data because of changes in methodology and population weights.

¹² Lynne M. Casper, Mary Hawkins, and Martin O'Connell, *Who's Minding the Kids? Child Care Arrangements*, Fall 1991 (Washington, U.S. Department of Commerce, Bureau of the Census, 1994), pp. 6, 7.

¹³ From Current Population Survey data.

¹⁴ For further information, see Hayghe, "Are women leaving the labor force?" pp. 37-39.

¹⁵ Jonathan R. Veum and Philip M. Gleason, "Child care: arrangements and costs," *Monthly Labor Review*, October 1991, p. 14.

¹⁶ Information on Federal and other government programs from *The State of America's Children Yearbook* (Washington, Children's Defense Fund, 1994), pp. 29-32, *The State of America's Children 1992* (Children's Defense Fund, 1992), pp. 15-22, and *Child Care and Development Key Facts* (Children's Defense Fund, 1994), pp. 13-17.

¹⁷ Barbara Adolph, "Work and family benefits come of age," *Government*

Finance Review (October 1992), p. 46.

¹⁸ Casper, Hawkins, and O'Connell, *Who's Minding the Kids?* p. 14.

¹⁹ U.S. House Ways and Means Committee, *Overview of Entitlement Programs* (Washington, U.S. Government Printing Office, 1994), pp. 705-7.

²⁰ *Employee Benefits in Medium and Large Private Establishments, 1993, Bulletin 2456* (Bureau of Labor Statistics, November 1994), pp. 5-6.

²¹ *The State of America's Children 1992*, pp. 23, 24; *Child Care and Development Key Facts*, pp. 17-19; and Barri Bronston, "Child Care is Part of the Job," *The Times-Picayune* (New Orleans, LA, June 14, 1993), p. C1.

²² From CES data.

²³ *County Business Patterns*, U.S. Government Printing Office, Washington, annually.

²⁴ The Current Population Survey produces estimates of all civilian employment and unemployment, and other demographic estimates, based on a monthly survey of 60,000 households. Results of the survey appear in *Employment and Earnings*. Results for periods after 1993 are not comparable to earlier results because of changes in methodology and population weights used.

²⁵ Figures from U.S. House Ways and Means Committee, *Overview of Entitlement Programs* (Washington, U.S. Government Printing Office, 1994), p. 704.

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Health insurance coverage for families with children

Findings from Consumer Expenditure Survey show that families without health insurance are less likely to receive some kinds of care than families who are at least partially insured, even when income and other characteristics are held constant

Geoffrey D. Paulin
and
Elizabeth M. Dietz

Health insurance coverage is an important ingredient in the maintenance of good health. This is particularly true for families with children. According to Peter J. Cunningham and Alan C. Monheit, children in families without health insurance coverage are "at a disadvantage regarding access to, quality of, and continuity of health care."¹ Judith D. Kasper finds that uninsured children under 18 are less likely to see a physician at least once during the past year, and are less likely to visit a physician for an immunization or general check-up.² Such regular, preventive medical care is especially important for children who, in general, are more prone to illness than adults. Without preventive care, families may face large medical expenses as their children grow up.

Additionally, health care costs have risen substantially in recent years. Data from the Consumer Price Index show that the price of medical care has risen at a much higher rate than for all other goods and services. From 1989-94, the medical care index increased 41.3 percent, compared with 18.2 percent for all items less medical care. In 1993, the Nation's health care costs rose to \$884.2 billion, up 7.8 percent from 1992.³ A recent article by Geoffrey D. Paulin and Wolf D. Weber suggests that as a result of these large increases, the direct costs of funding health care have been shifting from business and government to families, thus affecting their expenditures for nonhealth items.⁴

Meanwhile, in 1992, more than 8 million American children under age 18 had no health

insurance coverage of any kind.⁵ While many of the poorest families receive health insurance in the form of government-provided medicaid benefits⁶ the percentage of children without public or private health insurance coverage grew by more than 40 percent between 1977 and 1987.⁷

This study identifies families with children that have full health insurance coverage, partial coverage, and no coverage. It examines the demographic characteristics of each insurance group, types of policies held, health care expenditure patterns for each group, and the relationship between the family's demographics and the probability of being in a particular "coverage group."

Background. According to Gloria J. Bazzoli,⁸ studies examining the health insurance status of individuals in an attempt to measure medical indigence have generally defined medical indigence as the "lack of public or private health insurance coverage. The rationale behind this definition is that the uninsured are entirely responsible for their own medical expenses. If they experience a costly illness, they are less likely to be able to afford necessary treatment than similarly ill individuals with insurance coverage."⁹ Bazzoli also describes a study in which the author examines "underinsurance," a status that "depends upon the probability that an individual will experience large out-of-pocket expenses due to a costly illness."¹⁰

In a subsequent study, Richard D. Miller¹¹ uses data from the 1987 Consumer Expenditure

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Interview Survey to identify medically uninsured *consumer units*¹² rather than uninsured individuals. Miller uses a binomial logit model to estimate the relationships between various independent variables and the probability that a family has inadequate coverage—that is, the probability of having at least one member of the consumer unit who lacks health insurance coverage.

A later paper by Elizabeth M. Reise,¹³ which examines only families with children, divides the sample into three groups: those with full health insurance coverage (that is, all members are covered), partial health insurance coverage (that is, at least one, but not all, members are covered) and no health insurance coverage (that is, no member is covered). Reise uses an ordered multinomial logit to examine the probability of being in each group. Reise's paper is important because it distinguishes between those families with no (or at most very limited) health insurance coverage and those families with at least some health insurance coverage. These families have different spending patterns, as described by Paulin and Weber.

This study builds upon and extends the works of Miller and Reise in several ways. In addition to using more recent data, this study, as noted earlier, describes types of policies that families with insurance hold, as well as differences in levels of health care expenditures for families with different levels of coverage. It examines the probability of incurring health care expenditures as well as the probability of being insured.

The data. The data for this study are selected from the 1991–93 Consumer Expenditure Interview Surveys for families with all children under age 18.¹⁴ Families are defined as consumer units consisting of a husband, wife, and their own children with no other persons present, or single parents with their own children and no other persons present.

Because the focus is on families who must rely on private coverage, families covered by the medicaid and medicare programs are excluded from the analysis. In addition to health benefits, medicaid recipients may receive other benefits (such as food stamps) that would distort estimates of the relationship between characteristics (such as income) and the decision to purchase insurance. Similarly, virtually all U.S. citizens who are at least 65 years old are eligible for medicare, thus potentially distorting estimates of the relationship between age and the decision to purchase insurance. Additionally, the costs and benefits of enrolling in medicare (once eligible) are assumed to be different from those of enrolling solely in private insurance programs. Therefore, medicare recipients are also excluded.¹⁵

Consumer Expenditure Survey collects information on the number of family members covered by each policy. It does not record specifically which members are covered by the

policy. The difference between the number of family members and the number of members covered by a household policy is used as a proxy to measure complete or incomplete health insurance coverage. If the family holds more than one policy, the total number of members covered by all policies must be greater than or equal to the number of family members for the family to be considered fully covered. It is assumed that households do not overlap coverage for some members while having no coverage for others. Policies for persons outside the family, or that are limited in coverage (dental only or special policies for injuries related to school athletic programs) are counted as covering zero family members for the purpose of defining coverage status.

As in the studies by Miller and Reise, this analysis uses data only from the second interview of the Consumer Expenditure Interview Survey. Consumer units are interviewed five times on a quarterly basis. The selection of only second-interview families avoids biasing the results by ensuring that all families who are analyzed are unique.

All data presented in this study are unweighted to be consistent with those shown in the regression results. Logistic regression is sensitive to weighting, as described later.

Demographic characteristics. Table 1 shows the differences in demographic characteristics of families with children, by insurance coverage category. Although there is little difference in age or family size for the groups, income (as proxied here by total expenditure outlays¹⁶) appears to be correlated with insurance status. The fully covered have the highest incomes, while the uninsured have the lowest incomes. Similarly, uninsured families have lower levels of education, lower levels of work force participation and therefore fewer earners than the insured families. Uninsured families are also more likely to be black or Hispanic¹⁷ than partially or fully insured families. The uninsured are the only group whose families are about as likely to rent as to own their homes, although the rate of "outright" homeownership (that is, families that own with no mortgage) appears to be highest for the uninsured.

Policies held. Table 2 shows that fully and partially insured families have similar types of policies. About the same percentage in each group holds at least one Blue Cross/Blue Shield policy, other commercial health policy, or dental only policy. (However, the partially insured are less likely to be members of a health maintenance organization—HMO—and to have more limited coverage policies, as denoted by "other health insurance.") The average number of policies held is also similar, though partially insured families have slightly fewer on average. But the quality of the policies held is different. Fully insured families on average cover 113 percent of their members. Partially insured families, however, cover

Table 1. Demographic characteristics of families with children by health insurance status, Consumer Expenditure Survey, 1991-93

Characteristic	Fully insured	Partially insured	Uninsured
Sample size	2,605	347	773
Characteristics of average family			
Age of reference person	37.3	37.1	35.7
Family size	3.8	3.6	3.7
Number of earners	1.8	1.7	1.5
Persons under 18 years old	1.9	1.9	2.0
Total expenditure outlays (annual)			
Mean	\$40,785	\$32,491	\$28,613
Median	\$34,741	\$28,686	\$24,277
Other characteristics (in percent):			
Living in the—			
Northeast	22.8	16.7	14.8
Midwest	28.6	24.2	19.3
South	27.2	36.3	35.5
West	21.5	22.8	30.5
Urban area	87.8	87.3	89.0
Black	7.0	7.8	10.9
Hispanic	4.7	8.7	15.3
Occupation of the reference person:			
Wage and salary	88.2	87.6	75.9
Manager/professional	39.0	30.6	23.3
Technical/sales	18.4	23.9	15.1
Service	5.9	11.2	10.1
Blue collar	24.9	21.9	27.4
Self-employed	7.0	6.6	10.5
Retired .....	.3	.3	.3
Unemployed .....	.4	.3	1.3
Out of the labor force	4.1	5.2	12.0
Education of the reference person:			
Less than high school	7.0	10.7	22.7
High school graduate/some college	58.7	65.4	57.2
College graduate	34.3	23.9	20.2
Family composition:			
Single parent	12.6	30.0	22.5
Husband/wife family	87.4	70.0	77.5
Earner status:			
No earners	0.8	1.4	6.9
One earner	30.9	39.2	44.1
Two earners	60.8	51.6	43.3
At least three earners	7.5	7.8	5.7
Housing tenure:			
Homeowner with mortgage ..	68.9	54.8	41.5
Homeowner, no mortgage ...	7.8	6.9	9.3
Renter	23.3	38.3	49.2
At least one child:			
Under age 6	50.6	47.3	47.6
6 to 11	51.3	43.5	53.6
12 to 17	37.7	42.1	41.3
Student status of reference person:			
Full time	1.4	3.8	2.2
Part time	5.5	4.6	4.9

50 percent of their members. Although partially insured families are more likely to have at least one policy fully paid for by someone outside the family (such as an employer), fully insured families are more likely to have at least one partially paid policy, and partially insured families are more likely to have at least one policy for which they pay entirely.

Children make up a large percentage of individuals not covered in partially insured families. Although the Consumer Expenditure Survey does not ask which members are covered by each policy, under the assumption made earlier that families do not overlap coverage as long as at least one member remains uncovered, a lower and upper bound on the number of children covered can be estimated. To get the lower bound, all families are assumed to follow an "adult first" strategy. That is, the first person covered will be an adult. If the family is a husband/wife family, then if only two members are covered, they will be the husband and the wife. Only if three members are covered will a child be covered. To get the upper bound, families are assumed to follow a "child first" strategy. That is, only after all children are covered will an adult be covered. As shown in the following tabulation, the average partially insured family, which has 1.9 children, has between 0.5 children and 1.5 children covered:

Number of children	1.9
Number of children covered:	
Adults first	0.5
Children first	1.5
Percent of children covered:	
Adults first	26.3
Children first	78.9

In other words, about one-fourth to three-fourths of children are covered in partially insured families. This implies that at least one-fourth of all children in partially insured families have no health insurance coverage. If combined with children in uninsured families, this implies that between one-ninth and one-sixth of the children in the sample lack health insurance coverage.¹⁸

Health care expenditures. Table 3 shows that the fully insured pay the largest amount for health care in total. Although partially insured families appear to pay slightly more for medical services than fully insured families, this difference is not statistically significant.¹⁹

When shares of the health care budget are considered, the fully insured spend the largest share (49 percent) on health insurance, but the smallest on medical services (39 percent). However, the fully and partially insured spend about the same share (12 percent) on prescription drugs. The uninsured spend the largest shares on medical services (57 percent) and prescription drugs and medical supplies (15 percent) and the smallest share for insurance (28 percent).

However, insurance premium payments for the uninsured could be for someone outside the immediate family (perhaps an older relative, a child from a previous marriage, and so forth), and therefore perhaps should not be counted when comparing health care expenditures by insurance status. Furthermore, insurance policies may “favor” certain types of treatment—that is, they may pay for medical services, but not prescription drugs. Therefore, it is interesting to examine health care expenditures for items other than insurance premiums to see how levels and shares differ by insurance status. Of the health care dollars not spent on insurance premiums, the fully insured allocate 76 percent to medical services and 24 percent to prescription drugs and medical supplies. This compares with an 81-percent/19-percent split for the partially insured, and a 79-percent/21-percent split for the uninsured.

Probability of purchase. The fact that the fully and partially insured families spend more on medical services, prescription drugs, and medical supplies does not, by itself, indicate that insurance status is related to health care usage. The uninsured have lower incomes than the insured, so it is to be expected that they spend less on these services. Therefore, to estimate the direct effect of health insurance status, all other factors, such as income, age, and family size must be held constant. Rose M. Rubin and Kenneth Koelln perform such a study.²⁰ They find that indeed, *ceteris paribus*, the presence of insurance is positively correlated with expenditures for medical services, prescription drugs, and medical supplies.

However, Rubin and Koelln do not measure frequency of usage of these goods and services. This may be because the Consumer Expenditure Survey does not measure usage directly; that is, the respondent is not asked how many times a member of the family went to the doctor during the past 3 months. However, if a respondent reports a medical expenditure, then someone in the family must have used such services.

Results of a logistic regression modeling the probability of incurring expenditures for different types of health care are shown in table 4 (medical services) and table 5 (prescription drugs and medical supplies). In this case, the logistic regression is binomial, meaning that the outcome predicted is either “yes” (family did incur an expenditure) or “no” (family did not incur an expenditure). The predicted probability of incurring an expenditure is:

$$P = 1 / \{1 + \exp[-1 * (\alpha + \beta'X)]\}$$

where

P is predicted probability of incurring an expenditure

α is a constant

β' is a vector of parameter estimates

X is a vector of independent variables.

In tables 4 and 5, parameter estimates for the first column represent the coefficients for the fully insured. If statistically significant, these indicate that the variable is important in predicting the probability of incurring an expenditure for medical services (table 4) or prescription drugs (table 5). The second and third columns of parameter estimates show whether the relationship of the variable to the probability of incurring an expenditure is different for the partially insured or uninsured than it is for the fully insured. If the parameter estimate is statistically significant, the relationship is different.

As with any regression, it is important to define a reference group to make comparisons more accurate. In tables 4 and 5, each insurance group consists of families with median income (table 1), whose reference person is between 25 and 44 years old, married with two children, neither black nor Hispanic, and containing two earners.²¹ The probability of incurring an expenditure for each of these groups is shown in the tables. (For example, table 4 shows that members of the fully insured reference group are predicted to have a 73.2-percent probability of incurring expenditures for prescription drugs and medical supplies, compared with a 66.1-percent probability for members of the uninsured reference group.)

Table 2. Health insurance policies, by health insurance coverage status, 1991-93

Characteristic	Fully insured	Partially insured	Uninsured
Family size	3.8	3.6	3.7
Members covered	4.3	1.8	.0
Percent of members covered	113.1	50.0	.0
Percent with at least one—			
Blue Cross policy	28.1	28.5	9.2
Commercial health policy	47.8	44.7	13.7
HMO policy	24.1	18.4	8.9
Dental only policy	9.3	8.7	7.0
Other health insurance policies ¹	13.6	19.0	4.4
Average number of policies held	1.39	1.32	.45
Blue Cross .....	.31	.30	.09
Commercial health .....	.56	.50	.15
HMO .....	.26	.21	.09
Dental only .....	.10	.09	.07
Other health insurance ¹ .....	.16	.22	.05
Percent with at least one policy paid for—			
Entirely by the family	18.6	22.8	8.7
Partially by someone else	56.2	45.0	18.5
Entirely by someone else	39.9	45.5	11.9
Number of policies paid for—			
Entirely by the family .....	.22	.29	.27
Partially by someone else .....	.68	.52	.60
Entirely by someone else .....	.49	.50	.40

¹ Includes policies providing special limited coverage, medicare supplements, and other health insurance policies.

Table 3. Health care expenditures by health insurance coverage status, 1991-93

Expenditure allocation	Fully insured	Partially insured	Uninsured
Total health care (annual)	\$1,880	\$1,668	\$972
Health insurance	920	663	269
Medical services	732	811	556
Prescription drugs/ medical supplies	229	194	147
Percent of health care allocated to—	100.0	100.0	100.0
Health insurance	48.9	39.7	27.6
Medical services	38.9	48.6	57.2
Prescription drugs/ medical supplies	12.2	11.6	15.1
Percent of total expenditure outlays allocated to—			
Health insurance	2.3	2.0	.9
Medical services	1.8	2.5	1.9
Prescription drugs/ medical supplies .....	.6	.6	.5
Percent reporting expenditures (quarterly): ¹			
Health insurance	67.3	58.8	23.0
Medical services	70.1	62.0	51.2
Prescription drugs/ medical supplies	57.7	54.2	40.5

¹ Does not include reimbursements for payments made in previous quarters but received in current quarter.

In tables 4 and 5, probabilities for each group are predicted, given that each reference group family has \$32,175 in total expenditure outlays, which is the median value for the sample as a whole. This value is substantially less than the median value for the fully insured (about \$2,000 less), and substantially more than the median values for the partially insured (about \$6,500 more) and uninsured (about \$7,800 more).

Table 4 shows that insurance status is definitely important for the reference group. The fully and partially insured have similar probabilities of incurring a medical service expenditure. However, when the probability for the fully insured (73.2 percent) is compared with the probability for the uninsured (66.1 percent), the difference is significant in a statistical and economic sense.

Thus, the data may indicate that uninsured families are less likely to seek preventative care, as Kasper finds. By contrast, families with insurance may be more likely to visit the doctor for minor illnesses, as Rubin and Koelln imply. To further investigate the "usage" issue, expenditures for prescription drugs and medical supplies are examined. A family with insurance may automatically incur an expenditure for a doctor visit (either through a deductible or copayment). However, if the illness is not severe, the doctor need not prescribe medicine. If insured families are more likely *ceteris paribus* to incur prescription drug expenditures, then it is

safe to assume that when they become ill, they become well faster than their uninsured counterparts. Furthermore, any reimbursements for these expenditures are treated as if no visit occurred, because the reimbursed visit may have taken place more than 3 months prior to the interview date.

When all characteristics, including income, are held constant, the predicted probabilities that the fully and partially insured will incur an expenditure are once again very similar: 58 percent for the fully insured and 61 percent for the partially insured (table 5). The predicted probability for the uninsured, 47 percent, suggests that this group is much less likely to incur an expenditure for prescription drugs or medical supplies than either of the insured groups, even when all else is held constant. However, because neither the intercept nor income parameter estimate is statistically significant, caution must be used when interpreting this result.

Given the findings of Kasper, those of Rubin and Koelln, and the results shown in tables 4 and 5, it appears that there is a relationship between level of insurance coverage and receipt of medical care. Therefore, it is important to understand the relationship between demographic characteristics and level of insurance coverage.

Probability of coverage. To estimate the relationship between level of health insurance coverage and demographic variables, a different kind of logistic regression is needed. In this case, there are three possible outcomes: full health insurance coverage, partial health insurance coverage, or no health insurance coverage. Therefore, the dependent value can take on values from 1 (fully insured) to 3 (uninsured). Because the dependent variable takes on three distinct, qualitative values of ascending order, the parameters of this model are estimated using an ordered multinomial logistic regression. From these estimated parameters the probabilities that a particular family will be fully, partially, or not insured can be predicted using the following formulas:²²

$$\begin{aligned}
 P_m &= F(\beta'x) \\
 P_{m-1} &= F(\beta'x + \alpha_1) - F(\beta'x) \\
 P_{m-2} &= F(\beta'x + \alpha_1 + \alpha_2) - F(\beta'x + \alpha_1)
 \end{aligned}$$

where

P_m is the probability of being fully insured (in this case)

P_{m-1} is the probability of being partially insured

P_{m-2} is the probability of being uninsured.

The function $F(\cdot)$ has the same form as it does for a binomial logit. For example,

$$F(\beta'x) = 1/[1 + \exp(-1 * \beta'x)]$$

where

β' is a vector of parameter estimates

x is a vector of demographic characteristics.

Several independent variables are chosen for this model. The first is annual total expenditure outlays for the family (that is, quarterly total expenditure outlays multiplied by four), which are used as a proxy for permanent income in accordance with Milton Friedman's "permanent income hypothesis."²³ Before using this variable, though, it is subjected to a Box-Cox transformation to normalize its distribution.²⁴ The formula for a Box-Cox transformation is:

$$Y^* = (Y^\lambda - 1)/\lambda$$

where

Y is the initial value of total expenditure outlays

λ is a variable found through experimentation

Y* is the transformed value of total expenditures.

Using a maximum-likelihood technique described by Stuart Scott and Daniel J. Rope,²⁵ the best estimate of λ is 1/8.²⁶ (This transformation of total expenditure outlays is also used in the binomial logit described earlier.) In addition to normalizing the distribution of total expenditure outlays, the fact that λ is 1/8 is consistent with the assumption that the probability of a family having full health insurance coverage increases with income, but at a decreasing rate. This is a plausible assumption, as it indicates that an increase in income (say, \$1,000) is associated with an increase in probability of having full coverage, but that the increase in probability is greater for a low-income family than for a high-income family receiving the same increase in income.²⁷

Also included are several dummy variables describing characteristics of the reference person including age (under 25 or at least 45), ethnic origin (black or Hispanic), type of occupation or labor force status (if not working), level of education, and student status (enrolled in college full time or part time). Dummy variables describing the family include number of children (one child or three or more), type of family (single parent or husband/wife), children's age (at least one child is older than age 12 because older children may be less prone to ill-

ness than younger children), region of residence (Northeast, Midwest, or West),²⁸ whether the family lives in an urban or rural area, number of earners (no earners, one earner, or at least three earners), and housing tenure (owner without mortgage or renter).²⁹ The omitted category in each case is shown in table 6 with the regression results. The variables are meant to control for differences in "tastes" for insurance (family type, ethnic origin, education); opportunity of obtaining policies (occupation, number of earners, and student status, because some colleges and universities offer special policies to students); and other factors.

Table 4. Results of binomial logit predicting probability of incurring expenditures for medical services, with median income held constant for all insurance groups (\$32,175)

Characteristic	Parameter estimate	Estimate 1	Estimate 2	Fully insured	Partially insured	Uninsured
Reference group:	(1)	(1)	(1)	0.732	0.759	0.661
Intercept	² -3.420	-2.712	³ -2.050	—	—	—
Standard error .....	.587	1.725	1.135	—	—	—
Annual expenditure outlays (Box-Cox)	² .208	³ .134	.081	.737	.766	.669
Standard error .....	.027	.080	.053	—	—	—
Age of reference person (ages 25 to 44)						
Reference person under age 25	-.351	.648	-.024	.658	.809	.573
Standard error .....	.285	.629	.449	—	—	—
Reference person over age 44 .....	.007	-.076	-.304	.734	.747	.592
Standard error .....	.129	.381	.273	—	—	—
Number of children (two)						
One child	² -.233	.376	² .457	.684	.785	.710
Standard error .....	.101	.297	.213	—	—	—
Three or more children .....	.058	.104	-.067	.743	.788	.659
Standard error .....	.123	.380	.245	—	—	—
Family type (husband/wife)						
Single parent	-.058	.402	-.204	.721	.817	.601
Standard error .....	.148	.352	.276	—	—	—
Ethnic origin (white/other)						
Black	² -.708	.060	-.033	.574	.623	.505
Standard error .....	.163	.473	.318	—	—	—
Hispanic	² -.523	-.421	-.154	.619	.551	.498
Standard error .....	.194	.457	.301	—	—	—
Number of earners (one earner)						
No earners	-.487	(4)	-.731	.627	.660	.366
Standard error .....	.432	(1)	.628	—	—	—
One earner	-1.39E-03	-.416	-.111	.732	.675	.636
Standard error	1.09E-01	.313	.213	—	—	—
At least three earners	-.257	.231	.286	.679	.755	.668
Standard error .....	.175	.184	.396	—	—	—

1 Not applicable.
 2 Statistically significant at the 95-percent confidence level.
 3 Statistically significant at the 90-percent confidence level.
 4 Variable omitted from regression. None of the five families in this category incurred a medical service expenditure.

Table 5. Results of binomial logit predicting probability of incurring expenditures for prescription drugs and medical supplies, with median income held constant for all insurance groups (\$32,175)

Characteristic	Parameter estimate	Estimate 1	Estimate 2	Fully Insured	Partially Insured	Uninsured
Reference group:	(¹)	(¹)	(¹)	0.584	0.606	0.468
Intercept	² -3.060	-1.605	-1.055	—	—	—
Standard error .....	.528	1.579	1.064	—	—	—
Annual expenditure outlays (Box-Cox)	² .160	.080	.028	.589	.612	.473
Standard error .....	.024	.073	.049	—	—	—
Age of reference person (ages 25 to 44)						
Reference person under 25	-.135	-.118	.698	.551	.544	.607
Standard error .....	.285	.609	.437	—	—	—
Reference person over age 44 .....	.098	-.018	.181	.608	.625	.538
Standard error .....	.119	.357	.260	—	—	—
Number of children (two)						
One child	-.070	.083	.256	.567	.609	.515
Standard error .....	.093	.278	.206	—	—	—
Three or more children .....	.158	-.047	.135	.622	.632	.541
Standard error .....	.112	.344	.235	—	—	—
Family type (husband/wife)						
Single parent .....	.152	-.178	³ -.459	.621	.599	.393
Standard error .....	.141	.336	.273	—	—	—
Ethnic origin (white/other)						
Black	³ -.264	-.424	-.042	.519	.436	.307
Standard error .....	.161	.471	.314	—	—	—
Hispanic	² -.976	³ .756	.201	.346	.552	.288
Standard error .....	.199	.446	.315	—	—	—
Number of earners (One earner)						
No earners	³ -.922	1.067	.096	.359	.640	.278
Standard error .....	.501	1.136	.664	—	—	—
One earner	² -.229	.031	.099	.528	.557	.436
Standard error .....	.099	.301	.204	—	—	—
At least three earners	³ .300	-.580	-.227	.655	.537	.486
Standard error .....	.170	.475	.381	—	—	—

¹ Not applicable.

² Statistically significant at the 95-percent confidence level.

³ Statistically significant at the 90-percent confidence level.

For the sample as a whole, the median value for annual total expenditure outlays is \$32,175; the average age of the reference person is 36.9, with average family size of 3.8 persons. Therefore, the reference group consists of husband/wife families with two children (both under age 12), median outlays,³⁰ and two earners, whose reference person is between ages 25 and 44, neither black nor Hispanic, working for a wage or salary in a managerial or professional position, a high school (but not college) graduate, and not enrolled in college at present. These families live in homes they own (though they still pay a mortgage) in the urban South.

The data used in this analysis are unweighted. As noted earlier, logistic regression can be sensitive to weighting. If

weighted, the parameter estimates tend to be statistically significant in every case. On the other hand, the relatively small sample size (especially for the partially insured and uninsured), may lead to large standard errors for some parameter estimates, thus understating the number of significant relationships. Therefore, in the interest of obtaining conservative estimates of statistical significance, no weights are applied, but the 90-percent confidence level is used to define statistical significance.

Regression results are shown in table 6. Along with coefficients, the predicted *difference* in probability for each group, compared to the reference group is shown. For example, families whose reference person is under age 25, but who are otherwise identical to the reference group, are about 7 percent less likely to have full coverage than families in the reference group. Thus, for the younger group, the value listed in the fully insured column is -0.074. The younger group has a 5-percent greater probability of being uninsured. Thus, for the uninsured column, the value is shown as 0.053.

Income and insurance status. Perhaps the most important independent variable in any study of consumer expenditure patterns is income. Generally, the more income a family has, the more of any good or service it can afford to purchase, including health insurance. Therefore, it is not surprising that the parameter estimate for income is statistically significant at the 99.9 percent confidence level.

However, despite the statistical strength of the relationship, the probability that a family has full insurance coverage increases slowly with income. Table 7 shows how the predicted probability changes if a family with characteristics of the reference group somehow obtains additional income. Given a 1-percent increase in income, the probability of being fully insured barely increases—rising from 76.7 percent to 76.9 percent. The table shows that even with fairly large increases of income (up to \$3,000 per year, nearly a 10-percent increase), the probability of full coverage does not increase much, rising only to 78.1 percent.

Nevertheless, because three-fourths of the reference group are predicted to have full coverage, and well over four-fifths

are predicted to have at least partial coverage, the reference group is predicted to be relatively well-off when it comes to insurance coverage. Therefore, it may be more interesting to study those who are least well-off: the uninsured.

Table 8 shows the predicted probabilities of coverage for a family with characteristics typical of the uninsured. That is, the family is similar to the reference group, except that it has substantially lower income (\$24,277, the median value for the uninsured), rents its home, has a reference person who is employed in a blue-collar job, and one earner (the reference person in this case).

Uninsured families are similarly slow to purchase health insurance when they receive increases in income. For example, an increase of \$3,000 dollars (a 12-percent increase in income) is associated with a higher probability of full coverage for families with characteristics typical of the uninsured; however, the difference is small—52.6 percent, compared with 50.2 percent.

Other characteristics. Other demographic characteristics are also associated with differences in insurance coverage. Families with young parents (that is those whose reference person is under age 25) are significantly less likely to have full coverage than older families. On the other hand, families with young children (all children are under age 12) are more likely to have health coverage than families who have at least one child over age 12. Families may choose health insurance coverage more readily when the perceived health risks to their children are greater, during the years of early childhood development. Families with older children may also experience the financial pressure of putting extra savings into a college fund and may choose not to spend on health insurance as a result.

Educational attainment also raises the probability of full coverage. Those who did not graduate from high school are less likely to be fully covered than

Table 6. Predicted probabilities for insurance status, multinomial logit results

Characteristic	Parameter estimate	Probability of being—		
		Fully insured	Partially insured	Uninsured
Sample (size: 3,725)	—	0.699	0.093	0.208
Reference group:	—	.757	.090	.153
Intercept 1	¹ -3.743	—	—	—
Standard error .....	.569	—	—	—
Intercept 2	¹ -3.160	—	—	—
Standard error .....	.568	—	—	—
Annual outlays (Box-Cox)	¹ .232	² .005	² -.001	² -.003
Standard error .....	.025	—	—	—
Difference from reference group probability				
Age of reference person (25 to 44)				
Reference person under age 25	³ -.381	-.074	.021	.053
Standard error .....	.199	—	—	—
Reference person at least age 45 .....	.042	.007	-.002	-.005
Standard error .....	.120	—	—	—
Number of children (two children)				
One child .....	.129	.022	-.007	-.015
Standard error .....	.089	—	—	—
Three or more children .....	.061	.011	-.003	-.007
Standard error .....	.103	—	—	—
Family type (husband/wife)				
Single parent .....	.083	.014	-.005	-.010
Standard error .....	.125	—	—	—
Ethnic origin (white/other)				
Black .....	.121	.021	-.007	-.014
Standard error .....	.140	—	—	—
Hispanic	¹ -.412	-.081	.023	.058
Standard error .....	.140	—	—	—
Occupation (manager/professional)				
Technical/sales	-6.20E-04	-.000	.000	.000
Standard error .....	.117	—	—	—
Blue collar	-.052	-.009	.003	.007
Standard error .....	.113	—	—	—
Service	¹ -.348	-.068	.019	.048
Standard error .....	.152	—	—	—
Self-employed	¹ -.717	-.150	.038	.112
Standard error .....	.147	—	—	—
Retired	1.185	.147	-.052	-.095
Standard error .....	.748	—	—	—
Unemployed	-.210	-.039	.012	.028
Standard error .....	.483	—	—	—
Out of labor force	-.238	-.045	.013	.032
Standard error .....	.196	—	—	—
Education (high school/some college)				
Did not graduate high school	¹ -.525	-.106	.029	.077
Standard error .....	.120	—	—	—
College graduate .....	.012	.002	-.001	-.001
Standard error .....	.101	—	—	—
Age of children (all under age 12)				
At least one child over age 12	¹ -.258	-.049	.014	.035
Standard error .....	.090	—	—	—
Region (South)				
Northeast	¹ .648	.095	-.032	-.063
Standard error .....	.113	—	—	—
Midwest	¹ .633	.094	-.032	-.062
Standard error .....	.104	—	—	—
West	-.044	-.008	.002	.005

Table 6. Continued—Predicted probabilities for insurance status, multinomial logit results

Characteristic	Parameter estimate	Fully insured	Partially insured	Uninsured
Degree urbanization (urban)				
Rural	0.188	0.032	-0.010	-0.022
Standard error .....	.123	—	—	—
Number of earners (two earners)				
No earners	¹ -1.266	-.285	.055	.230
Standard error .....	.339	—	—	—
One earner	¹ -.368	-.072	.020	.052
Standard error .....	.097	—	—	—
At least three earners	-.216	-.041	.012	.029
Standard error .....	.163	—	—	—
Housing tenure (owner with mortgage)				
Owner, no mortgage	-.199	-.037	.011	.026
Standard error .....	.143	—	—	—
Renter	¹ -.531	-.107	.029	.078
Standard error .....	.091	—	—	—
Student status (nonstudent)				
Full-time	-.260	-.049	.014	.035
Standard error .....	.266	—	—	—
Part-time .....	.025	.004	-.001	-.003
Standard error .....	.172	—	—	—

¹ Statistically significant at the 95-percent confidence level.
² Difference in predicted probability given \$1,000 increase in annual outlays.
³ Statistically significant at the 90-percent confidence level.

those who did graduate, although there is no statistically significant difference in probability of full coverage for high school and college graduates.

Occupational status appears to be associated with different levels of health insurance coverage. The reference group consists of salaried professional or managerial workers; these are the workers who are expected to have high-coverage health benefit plans. However, of the wage or salary occupations, only those families whose reference person is employed in services have a lower probability of being fully insured than members of the reference group. Families whose reference person is self-employed are even less likely to have full coverage.³¹

As expected, number of earners in the family is significantly related to the level of health insurance coverage. Families with two earners (the reference group) are expected to have more health coverage on average than families with fewer earners but equal income, because the two-earner family may have a choice between two employer-sponsored health insurance plans. (Or at least there is a greater chance that someone in the family is eligible for such a plan.) Families with more than two paychecks may need several incomes to cover the family's expenses. If all members earn relatively low wages, they may be in jobs which have poor benefits. Therefore, families with more than two earners are expected to have a lower probability of full coverage. The negative coefficient for multiple earner families seems to confirm this intuition, but it is not statistically significant. Therefore, no firm inference can be drawn.

Cultural differences by race and ethnicity may make certain groups less averse to the risk of being uninsured. Although the coefficient for black families is not statistically significant, the coefficient for Hispanics is very significant. Its negative sign indicates Hispanic families are less likely to be insured.

Regional differences are significantly related to differences in health insurance coverage. Compared with the South, which is the most populous region, families in the Northeast and Midwest have a much higher probability of being fully insured. This may be attributed to any number of factors, including differences by region in State laws, costs of health care, unionization of the work force (which may result in greater availability of employer-provided health plans), rates at which employers offer benefits, or other factors. The West, however, is not significantly different from the South.

In most cases, the probability of being partially insured does not change much with characteristics. This may imply that families "vault over" the partially insured category—that is, if they get extra income, they will move from no insurance to full coverage. But this is not necessarily true in all cases. For example, it is possible that a two-earner family with full insurance coverage moves to the partial coverage class if an earner loses a job, rather than slipping all the way into no coverage. Some of those with partial coverage may move to the no coverage category under similar circumstances. Thus, the probability of partial coverage is similar across demographic characteristics, even though some families may be moving in and out of the category.

Table 7. Predicted probability of health insurance status for families with median income (\$32,175)

Item	Probability of being—		
	Fully insured	Partially insured	Uninsured
At present level of income	0.767	0.088	0.145
Given an increase in income of—			
One percent	0.769	0.087	0.144
\$1,000	0.772	0.086	0.142
\$2,000	0.776	0.085	0.139
\$3,000	0.781	0.084	0.136

HEALTH INSURANCE status plays an important role in providing health care to families. This study finds that families with children and at least partial coverage are more likely to receive at least some kinds of care (medical services) than uninsured families with children, even when income and other characteristics are equal.

Certain characteristics are related to the ability to obtain health insurance coverage. In this study, income, age, education and number of earners are found to be positively related to a family's level of health insurance coverage. Characteristics of the reference person such as being a service worker, self-employed, or Hispanic are negatively related to the probability of coverage.

Although income is an important predictor of insurance status, families do not change their level of coverage much, even when income increases substantially. This would indicate that if increased health insurance coverage is a desired outcome, direct grants of cash to families will not raise levels of coverage in any substantial way. Although prices and qualities of insurance plans are not studied in this article it would be useful to find out what influence these fac-

Table 8. Predicted probability of health insurance status for families with characteristics typical of the uninsured (median income: \$24,277)

Item	Probability of being—		
	Fully insured	Partially insured	Uninsured
At present level of income	0.502	0.142	0.357
Given an increase in income of—			
One percent	0.504	0.141	0.355
\$1,000	0.510	0.141	0.349
\$2,000	0.518	0.140	0.342
\$3,000	0.526	0.139	0.335

tors have on the probability of receiving coverage. Also, data on difficulty of obtaining access to health insurance coverage is useful to understanding why some families are uninsured. For example, if plans are readily available through an employer, are families likely to take advantage of them?³² Exploration of these issues should provide for interesting future research. □

Footnotes

- ¹ Peter J. Cunningham and Alan C. Monheit, "Insuring the Children: A Decade of Change," *Health Affairs*, Winter 1990, p. 78.
- ² Judith D. Kasper, "The Importance of Type of Usual Source of Care for Children's Physician Access and Expenditures," *Medical Care*, May 1987, 25(5), pp. 386-98, especially tables 4 and 7.
- ³ *HHS News*, U.S. Department of Health and Human Services, November 1994, p.1.
- ⁴ Geoffrey D. Paulin, and Wolf D. Weber, "The effects of health insurance on consumer spending," *Monthly Labor Review*, March 1995, pp. 34-54.
- ⁵ *Statistical Abstract of the United States: 1994* (U.S. Bureau of the Census, 1994), table no. 165. "Health Insurance Coverage Status, by Selected Characteristics: 1987-92," p. 118.
- ⁶ Cunningham and Monheit, pp. 77-78.
- ⁷ Cunningham and Monheit, p. 80. Based on data from the 1977 National Medical Care Expenditure Survey, 1977 and the National Medical Expenditure Survey, 1987. (See exhibit 2, p. 81.)
- ⁸ Gloria J. Bazzoli, "Health Care for the Indigent: Overview of Critical Issues," *Health Services Research*, August 1986, pp. 353-93.
- ⁹ *Ibid.*, p. 356.
- ¹⁰ *Ibid.*, p. 357.
- ¹¹ Richard D. Miller, "Another Look at the Medically Uninsured Using the 1987 Consumer Expenditure Survey," *Bureau of Labor Statistics Working Paper 205*, October 1990.
- ¹² A consumer unit is a single person living alone or sharing a household with others who are all financially independent; members of a household related by blood, marriage, adoption, or other legal arrangement; or two or more persons living together who share responsibility for at least two out of three major types of expenses: food, housing, and other expenses.
- ¹³ Elizabeth M. Reise, "A Look at Private Health Insurance Coverage of Families with Children under 18 Using Data from the Consumer Expenditure Interview Survey 1989-91," *Proceedings of the Social Statistics Section* (Alexandria, VA, American Statistical Association, 1993), pp. 827-32.
- ¹⁴ This includes all children living at home. Presumably, most children who

- are over 18 and living away from home are independent, and responsible for their own health insurance. The Consumer Expenditure Survey considers college students who live at school to be separate consumer units.
- ¹⁵ The numbers of families excluded from the sample are as follows: medicaid only: 454; medicare only: 32; medicaid and medicare: 16.
- ¹⁶ The total expenditure definition used in the Consumer Expenditure Survey excludes mortgage principal payments (though it includes mortgage interest payments), and includes the full purchase price of a vehicle, if one is purchased. In the present study total expenditure outlays are defined to include mortgage principal payments, because they are an important component of the homeowner's budget, and are not easily changed once negotiated. Additionally, the full purchase price of a vehicle is replaced by actual outlays. That is, if the respondent reports vehicle payments, including finance charges, these are included rather than the full purchase price, unless the vehicle is purchased outright.
- ¹⁷ Ethnic origin of the reference person is used to define these variables. Families are defined as black if reference person's ethnicity is described as "Afro-American." Families are defined as Hispanic if the reference person's ethnicity is described as "Mexican American," "Chicano," "Mexican," "Puerto Rican," "Cuban," "Central or South American," or "Other Spanish." Families are defined as white and other if the reference person's ethnicity is described as "German," "Italian," "French," "Polish," "Russian," "English," "Scottish," "Dutch," "Swedish," "Hungarian," "Other," or "Do not know."
- A separate variable identifying race of the reference person (white; black; American Indian, Aleut, Eskimo; Asian or Pacific Islander; other) is not used in these definitions. The distinction between race and ethnicity is especially important for the model results shown later. For example, someone who is Hispanic by ethnic origin but black by race is still classified as Hispanic in these models.
- ¹⁸ The number of uninsured children is calculated by multiplying the average number of children per uninsured family (2.0) by the number of uninsured families (773). The number of fully insured children found similarly for the fully insured families (1.9 multiplied by 2,605). Uninsured children from partially insured families are found for "children first" families by multiplying the percentage of uninsured children (1-0.789) by the number of children in these families (1.9 multiplied by 347). Similarly, the number of uninsured children

in partially insured, "adult first" families can be calculated. The total number of uninsured children (that is, children from uninsured families added to uninsured children from partially insured families) provides the numerator for a percent calculation. The total number of children, regardless of coverage, provides the denominator. If all partially insured families follow the "children first" strategy, then 11.2 percent of children in the sample are uninsured. If they all follow the "adult first" strategy, then 15.8 percent of children in the sample are uninsured.

¹⁹ The standard errors of the means for medical services are 32.49 for the fully insured and 92.64 for the uninsured.

²⁰ Rose M. Rubin and Kenneth Koelln, "Determinants of Household Out-of-Pocket Health Expenditures," *Social Science Quarterly*, December 1993, pp. 721-35.

²¹ These variables are a subset of those chosen for the multinomial logit model described later in the multinomial logit section.

²² See G.S. Maddala, *Limited Dependent and Qualitative Variables in Econometrics* (Cambridge, England, Cambridge University Press, 1983), pp. 46-47.

²³ Milton Friedman, *A Theory of the Consumption Function* (Princeton, NJ, Princeton University Press for National Bureau of Economic Research, 1957), p. 211.

The use of total expenditures as a proxy for permanent income is common in the literature (for example Miller, Reise, and Paulin and Weber). Rubin and Koelln use an instrumental variable form of total expenditures as a proxy for permanent income to avoid simultaneous equations bias in predicting health care expenditures (pp. 727-28). That is, health care expenditures are a sub-component of total expenditures, so using total expenditures to predict health care expenditures may result in a bias. No such instrument is necessary in the present case, because only probabilities, not levels, of expenditures are predicted.

Other recent studies that use total expenditures as a proxy for permanent income to model expenditures other than health care include Julie Nelson, "Individual Consumption Within the Household: A Study of Expenditure on Clothing," *Journal of Consumer Affairs*, Summer 1989, pp. 21-43; and E. Raphael Branch, "Short Run Income Elasticity of Demand for Residential Electricity Using Consumer Expenditure Survey Data," *The Energy Journal*, 1993, pp. 111-21.

²⁴ G.E.P. Box and D.R. Cox, "An analysis of Transformations," *Journal of the Royal Statistical Society, Series B*, 1964, pp. 211-43.

²⁵ Stuart Scott and Daniel J. Rope, "Distributions and Transformations for Family Expenditures," *Proceedings of the Section on Social Statistics* (Alexandria, VA, American Statistical Association, 1993), pp. 741-46.

²⁶ Using a computer program written by Daniel J. Rope, the variable *l* was tested over the a range of values from zero to one with increments of 1/16.

²⁷ Further evidence of the plausibility of this assumption comes from Reise, "A Look at Private Health Insurance" and Miller, "Another Look." Both authors test for a *lack* of health insurance coverage. Reise uses the natural log of total expenditures in her model, and finds the coefficient negative and statistically significant, indicating that the probability of a *lack* of coverage decreases with income at a decreasing rate. Miller uses total expenditures and total expenditures squared in his model. He finds a negative coefficient for total expenditures and a positive coefficient for total expenditures squared. Both coefficients are statistically significant. As in Reise's study, the signs of Miller's coefficients also indicate the *lack* of insurance coverage is decreasing at a decreasing rate with respect to income. If the problem is reversed, that is, the probability of *full* insurance coverage is estimated instead of a *lack* of coverage, the signs of the coefficients reverse, indicating that the probability of having full insurance coverage *increases* with income, though still at a decreasing rate, as postulated in this article.

Note also that both Reise's and Miller's specifications are forms of the Box-Cox transformation. Reise, in effect, assumes the optimal value of *l* is zero; that is, the natural log is the appropriate transformation. Miller assumes the optimal value of *l* is 2; that is, a squared term is appropriate. As noted earlier, in this study, the optimal value of *l* is found to be 1/8, which is between the Reise and Miller estimates.

²⁸ Regions are designated by standard U.S. Bureau of the Census definitions.

²⁹ In Miller, "Another Look," the author includes a dummy variable for renters (as opposed to homeowners) "as a proxy for wealth" (p. 8), and finds that renters are significantly more likely to lack full insurance coverage than are homeowners (p. 24). In this study a dummy variable is also included to distinguish families that own their homes outright from families that still pay a mortgage. Paulin finds that families that own outright spend about 11 cents out of every additional dollar on health and personal care, compared to 5 cents for mortgage payers and renters. This may reflect a wealth effect, or simply the fact that families that own outright have more money available to spend than those who must pay a mortgage, *ceteris paribus*. See Geoffrey D. Paulin, "A Comparison of Consumer Expenditures by Housing Tenure," *Journal of Consumer Affairs*, Summer 1995, pp. 164-98, especially p. 189.

³⁰ The median is chosen, as opposed to the mean, because outlays are not normally distributed. Table 3 shows that the mean is substantially higher than the median for all three insurance groups, which would raise predicted probabilities. Because the median represents the "middle" family better than the mean in this case, median outlays are chosen for the reference group.

³¹ In fact, *ceteris paribus*, only families with no earners are predicted to have a lower probability of full coverage than those families whose reference person is self-employed.

³² See William J. Wiatrowski, "Who really has access to employer-provided health benefits?" *Monthly Labor Review*, June 1995, pp. 36-44.

Self-employed individuals fatally injured at work

Individuals working for themselves, especially on farms and in retailing, typically face a higher risk of fatal injury than do their wage and salary counterparts

Martin E. Personick
and
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*"His brow is wet with honest sweat.
He earns whate'er he can,
And looks the whole world in the face,
For he owes not any man."*

—Henry Wadsworth Longfellow
The Village Blacksmith (1842)

Working for oneself can be rewarding for individuals, like Longfellow's smithy, who place a high value on controlling the nature and pace of their efforts and are not overly concerned about an unpredictable earnings stream. Being self-employed, however, can carry considerable safety risks and responsibilities, such as tackling hazardous work activities without adequate resources for safety training and equipment and without the oversight and guidance of government safety regulations. (See the appendix for a description of worker safety and health coverage by Federal and State agencies.) In 1993, the self-employed as a group made up about 1 in every 5 fatal injuries at work, higher than their one-tenth share of the American work force, according to the Census of Fatal Occupational Injuries and the Current Population Survey (CPS).¹ And certain groups of the self-employed faced an especially high risk of dying on the job, such as older farmers operating tractors and other vehicles and managers and proprietors tending stores, bars, restaurants, and repair shops where many robbery-related homicides occur.

This article analyzes new information on the self-employed who are fatally injured at work, such as their occupation, age, and other characteristics; the industry they worked in; and the circumstances surrounding their death. The BLS

Census of Fatal Occupational Injuries is the source of these data. It cross-references death certificates, newspapers, and other reports to verify that fatal injuries were work related and to obtain key information on the "who and how" of each incident. Of the 6,271 fatal work injuries counted in the 1993 BLS census, 1,191 were identified as self-employed individuals, 4,981 were wage and salary workers, and 99 others were primarily family workers.

The self-employed at a glance

Although some counts of the self-employed date back to the late 19th century, the 1940 Decennial Census marks the beginning of truly systematic efforts to count and profile that worker group. In 1940, there were nearly 10 million self-employed persons operating unincorporated business enterprises. Nine-tenths of those self-employed were men, most of them working in agriculture, forestry, and fishing.²

In 1993, the unincorporated self-employed still numbered about 10 million, but their characteristics and share of the work force had changed dramatically since 1940. Back then, the self-employed were about 20 percent of the civilian work force; now they are 9 percent of a much larger labor pool. Services industries, moreover, have replaced agriculture as by far the leading industry of the self-employed, accounting for two-fifths of that group's workers in 1993. And the share of self-employed women has grown from one-tenth of all self-employed in 1940 to one-third in 1993; still, that is somewhat lower than their 45-percent share of all workers.³

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The employment characteristics of today's self-employed differ in many respects from those of wage and salary workers. The following comparisons of such staffing differences shed some light on why their fatality profiles also differ and why the self-employed as a group appear to be at a comparatively high risk of fatal injury.

The self-employed tend to be older than wage and salary workers, a pattern evident over many decades.⁴ This difference is especially noteworthy for workers in the oldest age group because they face a relatively high risk of fatal injury.⁵ In 1993, about one-fifth of the self-employed were age 55 and older, double the proportion of wage and salary workers in this age category. The difference is even more pronounced within agriculture, where older workers are fully one-third of all the self-employed, but just one-tenth of all wage and salary workers.

Most self-employed and wage and salary workers work in service-producing industries, where, with a few notable exceptions such as transportation industries, the risk of fatal injury is relatively low for both. Staffing divergences within three goods-producing industries, however, illustrate why the self-employed as a group face a relatively higher risk of fatal injury. For example, agriculture, the industry with the highest rate of fatal injury for all workers, accounted for 13 percent of the self-employed, but just 2 percent of those working for wages and salaries. Construction, another high risk industry, engaged proportionately more of the self-employed (about one-sixth) than of all wage and salary workers (one-twentieth). And by contrast, manufacturing, an industry with a relatively low risk of fatal injury, accounted for a smaller share (one-twentieth) of the self-employed than its one-fifth share of all wage and salary workers.

About half of all self-employed and wage and salary workers held a white-collar job either within the broad occupational grouping of "managerial and professional specialty" or the classification, "technical, sales, and administrative support." Both broad groupings carry a relatively low risk of fatal injury. However, within these groupings are two occupations—managers of food serving and lodging services and sales supervisors and proprietors—for which there is an elevated risk of becoming a homicide victim during a robbery. Together, those two occupations made up a larger share (one-eighth) of self-employed workers than of wage and salary workers (one-twentieth). Self-employed workers also included relatively large shares of farmers and construction tradesworkers, two other occupations with high rates of fatal injury. But proportionately more of the wage and salary workers (one-seventh) than the self-employed (one-twentieth) were "operators, fabricators, and laborers," a comparatively high risk group that includes, for example, motor vehicle operators and construction laborers.

Self-employed workers typically work longer hours than

do wage and salary workers and are paid less. The following tabulation shows the disparity between the two groups in average hours worked per week during 1993 for those on full-time schedules:⁶

Industry	Average weekly hours	
	Self employed	Wage and salary
Agricultural	54	47
Nonagricultural	48	43

The disparity is even more striking when one looks at the percentage of workers who logged more than 48 hours a week:

Industry	Percent working more than 48 hours	
	Self employed	Wage and salary
Agricultural	60	37
Nonagricultural	46	23

Thus, the average self-employed worker is exposed to work hazards for a longer period of time and also may be more subject to the effects of fatigue while operating a vehicle or hazardous machinery.⁷ Finally, self-employed individuals typically earn less than their wage and salary counterparts and, thus, appear to have few extra resources to spend on safety education and equipment that often are provided by employers at little or no cost to their wage and salary workers.⁸

The fatalities

The 1993 Census of Fatal Occupational Injuries counted 1,191 fatalities among self-employed persons who had been working either on a primary or a secondary job at the time of their death. Although it was designed to count only "the unincorporated" as self-employed, the BLS fatality census also includes in this count some owners of incorporated businesses and members of partnerships if their corporate status could not be ascertained through normal data collection efforts. Thus, the coverage of fatalities among the self-employed in the BLS census is somewhat broader than the Current Population Survey's definition of self-employed workers (unincorporated, primary job only). Because of these differences, fatality rates for the self-employed and for wage and salary workers by various worker characteristics and types of cases are not included in this article.⁹

Still, much can be learned about the relative fatality risks of the self-employed by identifying the leading ways in which they died, the primary industries and occupations where the fatal injury occurred, and the age group of the self-employed fatally injured. Tables 1 through 3 profile these characteristics both for the self-employed and for the wage and salary worker, revealing several important differences in fatality

patterns between the two.

Fatal event and exposure. Work-related homicide led all other fatal event and exposure categories for the self-employed and ranked second to highway incidents for the wage and salary worker (table 1). Homicide accounted for a slightly larger share of fatal injuries among the self-employed fatally injured (22 percent) than among wage and salary workers (16 percent), suggesting that the risk of violent death at work is higher for the self-employed than for wage and salary work-

ers.¹⁰ The self-employed also were more likely to die at work of a self-inflicted injury than were wage and salary workers.

Nonhighway fatalities, except rail, air, and water incidents, were the second leading way in which the self-employed died at work. Many happened on farms and commonly involved tractors and other farm vehicles overturning on their drivers or occupants falling from and being struck by such vehicles. Some nonhighway incidents occurred off of farms (for example, on industrial premises) and in other ways, such as self-employed workers killed solely by falling from a moving vehicle or piece of mobile equipment or by colliding with other vehicles or striking stationary objects, such as trees. The whole category "nonhighway incidents, except rail, air, and water" accounted for 14 percent of the self-employed fatalities and 4 percent of all wage and salary worker deaths reported in the 1993 BLS census.

Highway incidents and persons struck by objects other than vehicles or mobile equipment were the two other event and exposure categories to account for at least one-tenth each of the self-employed fatality total. About half of the highway fatalities resulted from collisions between vehicles or mobile equipment; most of the rest were noncollision incidents resulting from vehicles jackknifing, overturning, or running off the highway. Falling objects, such as trees and construction materials, also pose a notable hazard for the self-employed. Unlike the other major categories of fatal events, highway incidents appear to pose a lower fatality risk for the self-employed than for wage and salary workers.

Occupation of the fatally injured. Farm operator and manager was, by far, the occupation with the largest number of self-employed fatal injuries reported by the 1993 BLS census. (See table 2.) That farming category accounted for three-tenths of the 1,191 self-employed fatalities, triple its one-tenth share of the 10 million unincorporated self-employed reported in the 1993 CPS. The following tabulation shows the various types of fatal events and exposures that occurred to the self-employed in farming and other agricultural occupations such as groundskeepers and gardeners:

Farming fatalities:

Number	413
Percent	100
Transportation incident	49
Nonhighway (for example, tractor rollover)	34
Other	15
Contact with object or equipment	34
Struck by object	17
Caught in or compressed by equipment or object	13
Other	4
Exposure to harmful substance or environment	7
All other events	10

Sales occupations accounted for about one-sixth of all self-employed fatalities. Most of the fatalities to self-employed salesworkers were robbery-related homicides involving shop-

Table 1. Fatal work injuries among self-employed and wage and salary workers, by event or exposure, 1993

[In percent]

Event or exposure ¹	Self-employed	Wage and salary
Number	1,191	4,981
Percent	100	100
Transportation incident	34	41
Highway	11	22
Collision between vehicles, mobile equipment	5	12
Noncollision	4	6
Jack-knifed, overturned	3	4
Nonhighway (farm, industrial)	14	4
Noncollision	13	4
Overturned	9	2
Fell from and struck by vehicle, mobile equipment	2	1
Aircraft	3	5
Worker struck by vehicle	3	6
Water vehicle	3	2
Railway	1	2
Assault and violent act	29	19
Homicide	22	16
Shooting	19	13
Stabbing	1	2
Self-inflicted injury	6	3
Contact with object, equipment	20	16
Struck by object	12	8
Falling object	7	5
Caught in or compressed by equipment or object	6	4
Running equipment, machinery	3	2
Caught in or crushed in collapsing materials	2	2
Fall	8	10
From roof	2	2
From ladder, scaffold, staging	2	2
Exposure to harmful substance or environment	7	10
Contact with electric current	3	6
Exposure to caustic or noxious substance	2	2
Oxygen deficiency, including drowning, submersion	2	2
Fire and explosion	2	4

¹ Based on the 1992 BLS Occupational Injury and Illness Classification Structures.

NOTE: Total for a major event category may include data for subcategories not shown separately. Percentages may not add to totals because of rounding.

keepers and other proprietors of small businesses. Sales supervisors and proprietors, in fact, were especially risky occupations for the self-employed, accounting for 13 percent of all fatal work injuries among those who work for themselves, yet making up about 8 percent of the employment total for the unincorporated self-employed. By contrast, sales supervisor and proprietor occupations had roughly the same share (about 2 percent) of both the fatality and employment totals for wage and salary workers.¹¹

The classification "executive, administrative, and managerial" is the remaining occupational group having at least one-tenth of the fatality total for the self-employed. Like sales occupations, many workers in this group were homicide victims; but most were not, as the following tabulation of fatal events for self-employed executives, administrators, and managers points out:

Fatalities to executives, administrators, and managers:	
Number	168
Percent	100
Assault and violent act	45
Homicide	35
Self-inflicted injury	10
Transportation incident	19
Highway	9
Aircraft	5
Other	5
Contact with object or equipment	14
Fall	11
Exposure to harmful substance or environment	9
Other	2

Other characteristics of the fatally injured. More than nine-tenths of both classes of workers who were fatally injured were men, well above their shares of the Nation's employment. (See table 3.) Men are fatally injured more often than women primarily because of differences in the jobs men and women hold. By race, whites dominate employment and fatality counts, but Asians, Pacific Islanders, and races other than white or black appear to have a higher risk of a fatal injury on the job than the average self-employed or wage and salary worker.¹² A partial explanation for their higher risk may be that, compared with blacks and whites, they are employed disproportionately in jobs in which the risk of violent death is relatively high. Homicide accounted for four-fifths of fatal on-the-job injuries to the self-employed who were not black or white and for about half of the wage and salary workers of these minority races. By contrast, homicide accounted for 22 percent of all self-employed workers and 16 percent of wage and salary workers dying on the job. (See table 1.)

As mentioned earlier, older workers face a higher risk of fatal injury than do younger workers. This is especially true for the self-employed, 55 years and older. They made up

more than two-fifths of all self-employed fatally injured in 1993, well above their one-fourth share of all employment for the unincorporated self-employed. Those self-employed, aged 65 years and older faced an even higher fatality risk, accounting for nearly one-tenth of the employment, but nearly one-fourth of the fatal injuries of the self-employed. Wage and salary workers also face higher risks with increasing age.

Agricultural industries accounted for more fatalities among the self-employed than any of the other major industry divisions. (See table 3.) Agriculture includes crop and livestock production as well as services performed on a contract or fee basis, such as crop harvesting, veterinary medicine, and landscaping. These agricultural activities are

Table 2. Fatal work injuries among self-employed and wage and salary workers, by occupation, 1993

[In percent]		
Occupation ¹	Self-employed	Wage and salary
Number	1,191	4,981
Percent	100	100
Managerial and professional	17	10
Executive, administrative, and managerial	14	5
Manager, food serving and lodging establishment	3	1
Professional specialty	3	4
Writer, artist, entertainer, athlete	1	1
Technical, sales, and administrative support	17	12
Sales occupation	16	7
Supervisor, proprietor	13	2
Technical and administrative support	2	5
Service	2	10
Farming, forestry, fishing	42	8
Farm operator and manager	29	1
Farmworker and supervisor	4	3
Timber cutting and logging	3	2
Fisher	3	1
Precision production, craft, and repair	12	19
Mechanic and repairer	4	5
Vehicle repairer	2	3
Construction trade	6	10
Nonsupervisory worker	4	8
Carpenter	1	2
Electrician	1	1
Operator, fabricator, laborer	10	37
Transportation and material moving operation	8	22
Motor vehicle operator	7	17
Truck driver	4	14
Cab driver and chauffeur	2	2
Material moving equipment operator	1	3
Handler, helper, laborer	1	11
Military occupation	—	2

¹ Based on the 1990 Occupational Classification System developed by the Bureau of the Census.

NOTE: Totals for major occupational categories may include data for subcategories not shown separately. Percentages may not add to totals because of rounding. Dash indicates that the category is not applicable.

highly risky and account for about one-third of the fatal work injury total of the self-employed, but only about one-eighth of their employment total. Wage and salary workers in agriculture also face fatality risks much higher than their 2-percent share of wage and salary employment would suggest. Interestingly, workers, 55 years and older are a clear majority of the self-employed fatally injured in agricultural industries, but are a small fraction of wage and salary workers dying in that industry.

Retail trade establishments, such as grocery stores and restaurants, had contrasting risk patterns by class of worker. Their share of the self-employed who were fatally injured (18 percent) was slightly larger than their 15-percent share of the unincorporated self-employed in 1993. But wage and salary workers in retail trade faced below-average risks of fatal injury (11 percent share of the wage and salary fatality total and 17 percent of wage and salary employees). Part of the difference may reflect the elevated risk of robbery-related homicide faced by the self-employed when working alone in retail businesses during evening hours.

Services industries are relatively safe workplaces both for the self-employed and for wage and salary workers. Both groups had about a one-eighth share of total fatalities, which is well below the shares (ranging from 25 percent for wage and salary workers to nearly 40 percent for the self-employed) of their employment totals. For the self-employed, "automotive repair, services, and parking" was the services industry reporting the most fatal injuries in 1993; 44 out of 147 deaths in all services. For wage and salary workers, business services, such as armored car and personnel supply firms, led all other services industries; they reported 172 out of 604 service industry deaths.

Like retail trade, construction industries manifest contrasting risk patterns by type of worker. But in the construction industry, it is the wage and salary worker, rather than the self-employed individual, who faces relatively high fatality risks on the job.¹³ Construction makes up 16 percent of all wage and salary workers fatally injured, triple its 5-percent share of the employment total for that worker group. By contrast, the industry's share of the self-employed fatally injured (11 percent) was slightly lower than its 15-percent employment share, suggesting that the fatality rate is lower for self-employed construction workers than for the average self-employed worker.

Relatively low fatality risks for the self-employed in construction partly reflect their favorable mix of relatively safe construction work, such as carpentry and painting.¹⁴ Differences in work experience and the amount of actual construction work performed are other factors that might help explain why the self-employed in the construction industry typically face a lower risk of fatal injury than do the wage and salary worker, even within the same trade.

Summary findings

Data from the 1993 Census of Fatal Occupational Injuries and 1993 Current Population Survey show that the self-employed as a group sustain a larger share of all fatal work injuries than their share of total employment would suggest. Compared with wage and salary workers, the self-employed as a group show relatively high risks of fatal injuries, partly reflecting their disproportionate employment in hazardous industries like agriculture and construction and their tendency to be older workers, who are more prone to a fatal injury. In construction, the fact that the self-employed appear to be at less risk than wage and salary workers offsets, in part, the industry's contribution to the risk differences between the two working groups. Many occupational groups of the self-employed also tend to be at relatively high risk, especially farmers and shopkeepers.

Table 3. Fatal work injuries among self-employed and wage and salary workers, by sex, age, race, and major industry, 1993

[In percent]

Characteristic	Self-employed	Wage and salary
Number	1,191	4,981
Percent	100	100
Sex and age		
Men	95	92
Women	5	8
Both sexes:		
Under 35 years	16	39
35 to 44 years	22	26
45 to 54 years	20	19
55 years and older	42	17
55-64 years	19	12
65 years and older	23	5
Race		
White	85	80
Black	6	12
Asian or Pacific Islander	5	3
Other or unspecified	4	5
Major industry		
Agriculture	36	6
Under age 55	15	4
55 years and older	21	1
Nonagricultural (private)	64	81
Forestry and fishing	4	1
Mining	1	3
Construction	11	16
Manufacturing	5	14
Transportation and public utilities.....	7	16
Wholesale trade	2	5
Retail trade	18	11
Finance, insurance, and real estate ..	2	2
Services	12	12
Government	—	13

NOTE: Percentages may not add to totals because of rounding. Dash indicates that the category is not applicable.

The Census of Fatal Occupational Injuries contains rich sets of information about how deadly incidents occur. Such deadly patterns differed by type of worker. The self-employed were more likely to become a homicide victim than were wage and salary workers. The next most common ways in which the self-employed died at work were tractor rollovers and other nonhighway events, being struck by trees and other

nonvehicular objects, and highway incidents. The latter deadly events led all others for wage and salary workers, followed by homicides, being struck by objects, and falls from elevations. Clearly, safety and health practitioners who study these fatalities in greater depth could gain valuable insights into the safety and health problems of the self-employed and their wage and salary counterparts. □

Footnotes

¹ For a comprehensive account of the 1993 BLS Census of Fatal Occupational Injuries, see Guy Toscano and Janice Windau, "The changing character of fatal work injuries," *Monthly Labor Review*, October 1994, pp. 17-28.

The 1993 employment data are based on the Current Population Survey (CPS), conducted for the Bureau of Labor Statistics by the Bureau of the Census. The CPS estimates about 10 million self-employed operating unincorporated businesses in 1993. In addition, there were about 3 to 4 million incorporated self-employed that year counted in the CPS as "other wage and salary workers." The self-employed as a percent of the total work force (about 120 million in 1993) increases slightly to almost an eighth if both groups of self-employed are combined, still less than their share of all fatal injuries at work.

² See Joseph D. Phillips, *The Self-Employed in the United States* (Urbana, IL, University of Illinois, 1962), p. 28.

³ See Phillips, *The Self-Employed*, for 1940 data and the Current Population Survey, 1993 annual averages.

⁴ For an analysis of age differences between the self-employed and workers paid wages and salaries, see Eugene H. Becker, "Self-employed workers: an update to 1983," *Monthly Labor Review*, July 1984, pp. 14-18. Current data are from the CPS, 1993 annual averages.

⁵ The fatality rate was 7 per 100,000 workers, aged 55 to 64 and 15 per 100,000 workers, 65 years and older. These compare with a rate of 5 per 100,000 workers, ages 25 to 34. For more information on serious injuries affecting older workers, see Martin Personick and Janice Windau, "Characteristics of older workers' injuries," *Fatal Workplace Injuries in 1993: A Collection of Data and Analysis*, Report 891 (Bureau of Labor Statistics, June 1995), pp. 23-27.

⁶ The hours at work data are from unpublished tabulations of Current Population Survey, 1993 annual averages.

⁷ See *Factors that Affect Fatigue in Heavy Truck Accidents*, Safety Study NTSB/SS-95/01 (Washington, National Transportation Safety Board, January 1995).

⁸ For a discussion of earnings levels by class of worker, see Theresa J. Devine, "Characteristics of self-employed women in the United States," *Monthly Labor Review*, March 1994, especially pp. 29-32.

⁹ Even when the incorporated self-employed and individuals who work as wage and salary workers in their primary job, but who are self-employed in their second job, are included in the self-employed's employment figures, the fatality share for the self-employed is greater than their employment share. And the fatality-rate gap would narrow somewhat between the self-employed and wage and salary workers when the longer hours of the self-employed are considered.

¹⁰ Because the overall fatality rate is higher for the self-employed than for

wage and salary workers, the risk premium for the self-employed is somewhat larger than the overall premium for fatal event and exposure categories that make up an equal or larger share of all self-employed fatalities than of wage and salary workers. For example, let us assume an overall fatality rate of 10 per 100,000 self-employed and 5 per 100,000 wage and salary workers. Applying the homicide shares to each overall rate, the 22-percent share for the self-employed results in a homicide rate of 2.2 per 100,000 self-employed; the 16-percent share for wage and salary workers results in a 0.8-rate per 100,000 workers.

Moreover, the self-employed may also face a relatively higher risk for certain other events and exposures, like fatal falls, when such events are a slightly larger share of the wage and salary fatality total than of the self-employed fatality total. Using the same overall fatality rates, the self-employed fatality rate for falls would be about 0.8 per 100,000 workers (8 percent of an overall rate of 10 per 100,000 workers), compared with 0.5 for wage and salary workers (10 percent of a rate of 5 per 100,000 workers).

¹¹ Employment by occupation and class of worker appears in unpublished tabulations from the Current Population Survey, 1993 annual averages.

¹² Employment by race and class of worker appears in unpublished tabulations from the Current Population Survey, 1993 annual averages. The tabulations show that races other than white or black were 4 percent of the self-employed and 2 percent of the wage and salary employment totals that year. Shares of fatal work injuries held by "races other than white or black" were well above the employment shares for this group in 1993.

¹³ This pattern also holds for an important subset of occupations in the construction industry—construction trades. This subset excludes two risky jobs in the construction industry—construction helpers and laborers—which employ far more wage and salary workers than self-employed individuals. Table 2 shows that construction trades composed 6 percent of all self-employed fatalities, which compares with 11 percent of total employment for the unincorporated self-employed in 1993. By contrast, those trades were 10 percent of the fatality total for wage and salary workers, well above their 3-percent share of total employment for those workers.

¹⁴ Risk differences in construction between the two classes of workers in part are explained by differences in staffing patterns among individual construction trades. Within the construction trades category, the self-employed are mostly employed as carpenters or painters, two trades having a relatively low risk of fatal injury; those two trades are only a third of all wage and salary workers in construction trades. Electricians, electrical power installers and repairers, and structural metal workers, by contrast three occupations with relatively high fatality risks, together are about 20 percent of total wage and salary worker employment in all construction trades, but only 5 percent of the self-employed total for all construction trades.

APPENDIX: The Census of Fatal Occupational Injuries

Definitions. For a fatality to be considered within the scope of the program, the decedent must have been employed (that is, working for pay, compensation, or profit) at the time of the event, engaged in a legal work activity, or present at the site of the incident as a requirement of his or her job. These criteria are generally broader than those used by Federal and State agencies administering specific laws and regulations. Fatalities that occur during a person's commute to or from work are excluded from the census counts.

Data presented in this article include deaths occurring in 1993 that resulted from traumatic occupational injuries. An injury is defined as any intentional or unintentional wound or damage to the body resulting from acute exposure to energy, such as heat or electricity or kinetic energy from a crash, or from the absence of such essentials as heat or oxygen caused by a specific event or incident or series of events within a single workday or shift. Included are open wounds, intracranial and internal injuries, heat-stroke, hypothermia, asphyxiations, acute poisonings resulting from a short-term exposure (limited to the worker's shift), suicides and homicides, and work injuries listed as underlying or contributory causes of death.

Information on work-related illnesses are excluded from the BLS census because of the latency period of many occupational illnesses and the resulting difficulties associated with linking illnesses to work. Partial information on fatal occupational illnesses, compiled separately, is available for 1991 through 1993 in BLS Report 891.

Measurement techniques and limitations. Data for the Census of Fatal Occupational Injuries are compiled from various State and Federal administrative sources—including death certificates, workers' compensation reports and claims, reports to various regulatory agencies, and medical examiner reports—as well as news reports. Multiple sources are used because studies have shown that no single source captures all job-related fatalities. Source documents are matched so that each fatality is counted only once. To ensure that a fatality occurred while the decedent was at work, information is verified from two or more independent source documents, or from a source document and a followup questionnaire. Approximately 30 data elements are collected, coded, and tabulated, including information about the worker, the fatal incident, and the machinery and equipment involved.

Because some State laws and regulations prohibit enumerators from contacting the next-of-kin, it was not possible to independently verify work relationship (whether a fatality is job related) for 277 fatal work injuries in 1993; however, the information on the initiating source document for these cases was sufficient to determine that

the circumstances of the incident was likely to be job related. Data for these fatalities, which primarily affected the self-employed, are included in the Census of Fatal Occupational Injuries counts. An additional 49 fatalities submitted by the States were not included because the initiating source document had insufficient information to determine work relationship, which could not be verified by either an independent source document or a followup questionnaire.

States may identify additional fatal work injuries after data collection closeout for a reference year. In addition, other fatalities excluded from the published count because of insufficient information to determine work relationship may be subsequently verified as work related. States, therefore, have up to 1 year to update their initial published State counts. This procedure ensures that fatality data are disseminated as quickly as possible and that no legitimate case is excluded from the counts. As data collection methods improve, future fatal work injury counts may become more complete.

Federal/State agency coverage. The Census of Fatal Occupational Injuries include data for all fatal work injuries, whether they are covered by the Occupational Safety and Health Administration (OSHA) or other Federal or State agencies or are outside the scope of regulatory coverage. Thus, any comparison between the BLS census counts and those released by other agencies should take into account the different coverage and definitions being used.

Several Federal and State agencies have jurisdiction over workplace safety and health. OSHA and affiliated agencies in States with approved safety programs cover the largest portion of America's workers. However, injuries and illnesses occurring in several other industries, such as coal, metal, and nonmetal mining, and transportation on water, rails, or in the air, are excluded from OSHA coverage because they are covered by other Federal agencies, such as the Mine Safety and Health Administration, the U.S. Coast Guard, the Federal Railroad Administration, and the Federal Aviation Administration. Fatalities occurring in industries regulated by Federal agencies other than OSHA accounted for about 11 percent of the fatal work injuries in 1993.

Fatalities occurring among several other groups of workers generally are not covered by any Federal or State agencies. These groups include self-employed and unpaid family workers, which together accounted for about 21 percent of the fatality total; laborers on small farms, making up about 5 percent of that total; and State and local government employees in States without OSHA-approved safety programs, about 4 percent. (About half of the States have approved OSHA safety programs which include State and local government employees in their coverage.)

International unemployment indicators, 1983-93

Sweden has the largest increase in labor underutilization for 1983-93 when part-time work for economic reasons is taken into account; Japan's rate increases most when discouraged workers are added

Constance Sorrentino

Seven unemployment indicators, known as U-1 to U-7, for nine major industrial countries were presented in the March 1993 issue of the *Monthly Labor Review*.¹ The data in the initial analysis covered just the year 1989. The indicators have a large cyclical component, and international relationships might change, depending on the phase of the business cycle in each country. To investigate these relationships further, this article presents data for a series of years, spanning relatively high and low unemployment periods from 1983 to 1993.

The sequence of indicators U-1 to U-7 illustrates a range of unemployment measures going from a very narrow to a very broad view. Under this framework, U-5 is the official, usually cited U.S. unemployment rate, referred to as the *conventional measure* here. U-1 through U-4 narrow in on certain types of unemployment that reflect parts of U-5, while U-6 and U-7 portray broader concepts of underutilization than U-5, respectively bringing into consideration persons working part time for economic reasons and discouraged workers.

In general, this article reinforces the findings of the 1993 one. The principal finding of that study was that Japan and Sweden, the countries with the lowest unemployment rates as conventionally measured, had by far the largest increases when the definition was expanded to include persons working part time for economic reasons and discouraged workers. This continued to be the case. The current study shows that,

in times of recession and recovery alike, the Japanese unemployment rate consistently tripled when these additional measures of underutilization of labor were incorporated. For Sweden, the most inclusive indicator more than doubled until 1992-93, when labor market conditions deteriorated drastically and the conventional rate jumped sharply, resulting in some closing of the differential between the conventional and expanded rates.

Sweden's unemployment rate, which was the lowest of all countries in the earlier study, has subsequently risen to unprecedented postwar levels due to a severe recession. In 1993, Sweden's unemployment rate of 9.3 percent, as conventionally defined, surpassed the U.S. rate for the first time. Understanding the effect of Sweden's pioneering programs for retraining and employing the unemployed is important to gaining an appreciation of that country's labor market situation. The addition of persons in labor market programs further increased Sweden's already high 1993 conventional unemployment rate to 14 percent. Of course, other countries have persons in labor market programs, but their proportion of the labor force is small compared with Sweden's.

In the earlier study, Sweden maintained the lowest rates for most of the indicators, even when labor market program participants were added. In this new study, Japan replaces Sweden as the country with the best labor market performance across the entire spectrum of indicators in 1992-93.

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Upcoming changes in alternative indicators

From 1976 to 1993, the Bureau of Labor Statistics published a range of indicators known as U-1 to U-7. The framework embodying these indicators was introduced in Julius Shiskin, "Employment and unemployment: the doughnut or the hole?" *Monthly Labor Review*, February 1976, pp. 3-10. From January 1977 until December 1993, the seven indicators for the United States were published each month in the news release, *Employment Situation*.

The Current Population Survey, which is the source of the U.S. data used in the current article, was revised as of January 1994. The survey was redesigned to include new and revised questions regarding individuals' employment and unemployment activities, and the collection methodology was changed to a totally computerized environment. (For further information, see "Revisions in the Current Population Survey Effective January 1994," *Employment and Earnings* (Bureau of Labor Statistics, February 1994), pp. 17-22.) As a result, publication of the alternative unemployment indicators for the United States was suspended. A forthcoming article in the *Review* will introduce a new framework of alternative indicators for the United States. The series of international indicators, U-1 to U-7, ends with the 1993 figures shown in the current article. Upon its introduction, the new U.S. framework will be assessed to see whether international comparisons are feasible.

Another way of looking at the data is to present them in the form of three elements of labor underutilization: unemployment, part-time work for economic reasons, and discouragement with the labor market. Such a classification shows that unemployment is the largest of the three in all of the countries studied except Japan and Sweden. Thus, for these two countries, standard unemployment comparisons miss a great deal of labor force underutilization. Also, ranking the countries according to total labor underutilization rates differs from ranking them according to unemployment rates. For example, Italy was in the middle of the range of unemployment rates, but had the highest rate of total labor underutilization.

Data for Australia, which was not covered in the earlier study, are included in this article. For Germany, the earlier study referred to the former West Germany. In the present study, data for West Germany continue to be presented until 1992, when the coverage changes to unified Germany. The addition of what was formerly East Germany raised the indicators for Germany throughout the spectrum. Some small revisions are made to the previously published data for Sweden and the United Kingdom, and significant revisions are made to three of the indicators for France and to the U-7 indicator for Japan. (See the appendix for information about these revisions.)

Seven indicators

In recognition of the fact that the official rate of unemployment is not ideally suited to all types of analyses or uses, the Bureau of Labor Statistics for many years published a series of alternative measures of unemployment based on definitions that were either narrower or broader than the conventional measure. The box on page 33 defines the seven indicators.²

Some of the indicators yield lower unemployment figures than the conventional standard does, while others result in higher figures. Under the U-1 through U-7 framework, U-5 is the official, usually cited unemployment rate—the rate from which all the others are derived by either adding or subtracting different population groups. The first four, narrow, indicators (U-1 to U-4) focus on certain "more serious" types of unemployment—respectively, long-term unemployment, job loss, adult unemployment, and unemployment of seekers of full-time jobs.

U-6 and U-7 portray broader concepts of unemployment than does U-5, bringing into consideration two additional elements of underutilization of labor: persons working part time for economic reasons and discouraged workers.³ U-6 includes the number of unemployed persons seeking full-time work, plus one-half of the number of unemployed persons seeking part-time work and one-half of the number of those involuntarily on part-time schedules for economic reasons. The reasoning behind this formulation is that involuntary part-time workers should be counted as at least partially unemployed; similarly, unemployed persons seeking only part-time work should be given just half the weight of unemployed persons seeking full-time jobs, because their employed counterparts work, on average, only about half of a full workweek. This indicator moves from the activity-based concept of the labor force used in all the earlier indicators to a "time lost" type of concept.

Discouraged workers, added at U-7, are defined as persons without work who want a job, but who are not looking for work because they believe that their search will be unsuccessful.⁴ Discouraged workers are somewhat more broadly defined in the data presented for Japan and Italy. In both countries, because of the special nature of their labor markets, there is a sizable group of persons who want work, are available for work, and are classified as unemployed,⁵ even though they did not seek employment in the 4 weeks preceding the survey. These persons are awaiting the results of previous applications. The Bureau adjusts the data for Japan and Italy by removing such individuals from U-5, but adding them to U-7. This group does not fit precisely into the framework of rates, falling somewhere between U-5 and U-7. No similar adjustment is needed for the other countries studied, because the numbers involved are small.⁶

The conventionally defined unemployment rate, U-5, remains the most widely accepted measure of unemployment

in all countries. Although the other indicators—particularly the expanded ones—are viewed with interest, none of them has been widely adopted by data users for either domestic or international analysis.⁷ There are three basic reasons for this. First, the U-5 definition is simple and objective, involving no value judgments about a person's relative need for work or personal characteristics. Second, as will be shown later, while the alternative measures differ significantly in level, they reflect very similar trends over time; that is, they all send out essentially the same "signal" regarding whether labor market conditions are improving or deteriorating. Third, for purposes of comparison with other countries—especially the major U.S. trading partners—users recognize the need for a "common currency": the rate based on the International Labor Office standards. U-5 is the most readily available, well-understood, and comparable measure.

Nevertheless, it is instructive to assess international differences in terms of the alternative measures, because they point out differences that are not expressed by the conventional measure.

Period studied

The year 1983 was chosen as the initial year for the analysis because it was the first year a new series of European Union labor force surveys⁸ was compiled in accordance with International Labor Office (ILO) concepts that allowed for international comparisons. A historically compatible series of indicators could be calculated for the full period 1983-93 for five countries: the United States, Canada, Australia, France, and the United Kingdom. However, even for three of these countries, a few indicators were missing for some years: U-7 was unavailable for France before 1989, and U-2 began in 1987 for Australia and in 1984 for the United Kingdom. Japan's series was fully available from 1984 onward. Thus, only the United States and Canada had the full complement of indicators available for all of the years studied.

For the other countries examined, time series analysis for the period was further constrained by changes in surveys. Because of the unavailability of comparable data for earlier years, the German series begins (partially) in 1984, Italy's in 1986, and Sweden's in 1987. Only three of the indicators could be calculated for Germany in 1984; a more complete series (missing only U-7) begins in 1985.

In 1992, revisions were made in European Union survey definitions, causing a historical break more significant for Italy and the Netherlands than for France, Germany, and the United Kingdom. Because of this break, as well as a significant modification in the Dutch national definitions, the data series for the Netherlands terminates in 1991 in this article.

Italian data for 1992 and 1993 are shown, but the rates for earlier years are somewhat understated.

The data are annual averages for the United States, Canada, Australia, and Sweden. Japan's data refer to February of each year, and the data for the European Union countries generally refer to the spring, except that Italian data for 1992 are for October.

Patterns over time

Table 1 shows the seven indicators for the United States and the nine foreign countries studied for the years from 1983 to 1993 for which data were available. The figures relate to both sexes combined; figures were also calculated for men and women separately, but are not shown in the table.⁹ Some averages for men and for women are presented later in the article.

Chart 1 depicts the trend over time of six indicators (U-4 is excluded because it is virtually the same as U-5) for the United States, Australia, Japan, France, Italy, and Sweden.

Alternative unemployment indicators

U-1 *Long-duration unemployment rate*: Persons unemployed 13 weeks (see footnote 2 in text) or longer, as a percent of the civilian labor force.

U-2 *Job loser rate*: Job losers, as a percent of the civilian labor force.

U-3 *Adult unemployment rate*: Unemployed persons aged 25 and older, as a percent of the civilian labor force aged 25 and older.

U-4 *Full-time unemployment rate*: Unemployed seekers of full-time jobs, as a percent of the full-time labor force.

U-5 *Conventional unemployment rate*: Number of persons not working, but available for and seeking work, as a percent of the civilian labor force. Only persons on layoff and persons waiting to start a new job are not required to seek work in the past 4 weeks, a necessary condition for all others classified as unemployed.

U-6 *Rate encompassing half of the persons working part time for economic reasons*: Number of seekers of full-time jobs, plus one-half of all seekers of part-time jobs, plus one-half of all persons working part time for economic reasons, as a percent of the civilian labor force, less one-half of the part-time labor force.

U-7 *Rate adding discouraged workers*: U-6 plus discouraged workers in the numerator and denominator.

Table 1. Alternative unemployment indicators, U-1 to U-7, 10 countries, available years, 1983-93

[In percent]

Country and year	U-1	U-2	U-3	U-4	U-5	U-6	U-7
United States							
1983	4.0	5.6	7.5	9.5	9.6	12.6	13.9
1984	2.6	3.9	5.8	7.2	7.5	10.1	11.2
1985	2.2	3.6	5.6	6.8	7.2	9.6	10.6
1986	2.1	3.4	5.4	6.6	7.0	9.4	10.3
1987	1.8	3.0	4.8	5.8	6.2	8.5	9.3
1988	1.5	2.5	4.3	5.2	5.5	7.6	8.4
1989	1.2	2.4	4.0	4.9	5.3	7.2	7.9
1990	1.3	2.7	4.4	5.2	5.5	7.6	8.2
1991	2.0	3.7	5.4	6.5	6.7	9.2	10.0
1992	2.8	4.2	6.1	7.1	7.4	10.0	10.8
1993	2.5	3.7	5.6	6.5	6.8	9.3	10.2
Canada							
1983	6.1	7.0	10.3	11.9	11.8	14.3	15.7
1984	5.4	6.4	9.3	11.2	11.2	13.8	14.8
1985	5.0	5.8	8.8	10.3	10.5	12.9	13.8
1986	4.3	5.3	8.0	9.4	9.5	12.0	12.7
1987	4.0	4.8	7.5	8.7	8.8	11.1	11.7
1988	3.3	4.0	6.7	7.6	7.8	9.8	10.3
1989	3.1	3.9	6.6	7.4	7.5	9.5	9.9
1990	3.3	4.4	7.0	8.0	8.1	10.1	10.6
1991	4.8	6.1	9.0	10.3	10.3	12.9	13.6
1992	5.7	6.7	9.9	11.1	11.3	14.2	14.9
1993	5.9	6.5	9.9	11.0	11.2	14.4	15.2
Australia							
1983	6.2	(¹)	7.0	10.1	10.0	12.2	13.6
1984	5.7	(¹)	6.3	9.0	9.0	11.0	12.3
1985	5.1	(¹)	5.9	8.1	8.3	10.1	11.2
1986	4.7	(¹)	5.7	7.9	8.1	10.1	11.1
1987	4.8	2.7	5.9	8.0	8.1	10.3	11.4
1988	4.1	2.3	5.3	6.9	7.2	9.3	10.3
1989	3.2	1.8	4.6	5.8	6.2	8.3	9.2
1990	3.5	2.4	5.1	6.7	6.9	9.4	10.4
1991	5.9	4.1	7.3	9.6	9.6	12.9	14.3
1992	7.4	4.4	8.4	10.9	10.8	14.7	16.2
1993	7.4	3.9	8.7	11.0	10.9	14.8	16.3
Japan							
1984	1.4	.8	2.3	2.2	2.6	3.8	7.6
1985	1.3	.8	2.2	2.2	2.6	3.7	8.0
1986	1.4	.8	2.2	2.2	2.6	3.7	8.1
1987	1.6	.7	2.3	2.3	2.8	3.9	8.6
1988	1.4	.7	2.1	2.0	2.6	3.3	7.7
1989	1.1	.5	1.8	1.8	2.2	3.1	7.1
1990	1.0	.4	1.7	1.6	2.1	2.7	6.4
1991 .....	.9	.4	1.4	1.5	1.9	2.5	6.0
1992 .....	.9	.4	1.5	1.6	1.9	2.7	6.1
1993	1.1	.6	1.8	1.8	2.2	3.2	7.0
Sweden							
1987 .....	.9	1.2	1.6	2.2	2.2	4.9	5.5
1988 .....	.7	.9	1.4	2.0	1.9	4.1	4.5
1989 .....	.6	.7	1.1	1.6	1.6	3.7	4.1
1990 .....	.6	.8	1.3	1.9	1.8	4.1	4.6
1991	1.2	1.7	2.3	3.3	3.1	6.0	6.9
1992	2.7	3.5	4.2	6.2	5.6	9.5	10.8
1993	5.1	6.4	6.7	9.9	9.3	14.3	15.8
European Union							
France							
1983	6.7	3.4	5.6	8.3	8.0	9.5	(¹)
1984	8.0	.9	6.5	10.2	9.6	11.5	(¹)
1985	8.9	4.1	7.2	10.9	10.3	12.5	(¹)
1986	8.8	4.2	7.7	10.8	10.3	13.3	(¹)
1987	9.2	4.7	8.4	11.3	10.8	13.5	(¹)
1988	8.6	4.4	8.2	10.7	10.3	12.8	(¹)
1989	8.1	4.1	8.1	10.0	9.7	12.3	12.4

Table 1. Continued—Alternative unemployment indicators, U-1 to U-7, 10 countries, available years, 1983-93

[In percent]

Country and year	U-1	U-2	U-3	U-4	U-5	U-6	U-7
Continued—France							
1990	7.6	4.5	7.7	9.7	9.5	11.7	11.8
1991	7.5	4.5	7.7	9.7	9.3	11.3	11.5
1992	7.5	5.9	8.7	10.8	10.4	12.7	12.9
1993	8.5	6.9	9.6	12.1	11.5	14.5	14.7
Germany							
West Germany							
1983	(¹)	(¹)	(¹)	(¹)	(¹)	(¹)	(¹)
1984	5.4	(¹)	5.8	(¹)	6.7	(¹)	(¹)
1985	5.6	2.4	6.2	6.5	6.9	7.2	(¹)
1986	5.5	2.3	6.3	6.2	6.7	7.0	(¹)
1987	5.6	2.5	6.7	6.5	6.9	7.3	(¹)
1988	5.2	2.1	6.2	5.9	6.4	6.7	(¹)
1989	4.6	1.7	5.8	5.3	5.8	6.0	(¹)
1990	4.0	1.3	5.0	4.6	4.9	5.2	(¹)
1991	3.2	1.1	4.2	4.0	4.1	4.5	(¹)
Unified Germany							
1992	5.0	3.6	6.4	6.4	6.4	7.1	(¹)
1993	6.1	4.4	7.8	7.9	7.7	8.8	(¹)
Italy							
1986	6.8	.6	3.3	7.4	7.2	9.7	15.9
1987	7.2	.7	3.7	7.9	7.6	10.3	16.1
1988	7.3	.6	3.9	8.0	7.7	10.1	16.0
1989	7.3	.6	4.3	8.0	7.8	10.0	15.8
1990	6.3	.5	3.8	6.9	6.6	8.5	13.8
1991	6.4	.6	3.9	7.0	6.8	9.0	15.0
1992 ²	8.0	1.4	6.0	9.5	9.5	11.5	6.2
1993	9.3	1.9	6.8	10.4	10.4	12.7	18.0
Netherlands							
1983	10.4	(¹)	9.5	11.6	11.9		
1984	(¹)	(¹)	(¹)	(¹)	(¹)	(¹)	(¹)
1985	9.2	(¹)	8.8	10.2	10.6	12.1	12.4
1986	(¹)	(¹)	(¹)	(¹)	(¹)	(¹)	(¹)
1987	7.8	(¹)	8.0	7.8	10.0	12.5	13.4
1988	7.5	1.2	8.1	7.5	9.5	12.4	13.3
1989	6.9	1.1	7.6	6.9	8.8	11.8	12.6
1990	5.9	.6	6.9	5.8	7.8	10.5	11.4
1991	5.3	.6	6.4	5.5	7.4	10.2	10.9
United Kingdom							
1983	9.0	(¹)	8.5	13.0	11.1	13.1	13.9
1984	8.7	3.2	8.6	12.5	11.0	13.0	13.8
1985	9.1	2.8	9.5	12.5	11.5	13.3	14.1
1986	8.9	2.7	9.5	12.6	11.6	13.4	14.3
1987	8.5	2.6	9.6	12.2	11.1	13.0	13.6
1988	6.8	2.1	7.8	9.7	9.1	10.6	11.1
1989	5.2	1.5	6.6	8.0	7.4	8.7	9.1
1990	4.7	1.4	6.1	7.5	7.0	8.1	8.4
1991	5.8	2.6	7.3	9.6	8.6	10.3	10.6
1992	7.4	4.0	8.4	11.5	9.8	12.2	12.8
1993	8.2	4.2	8.8	12.1	10.3	13.1	13.8

¹ Not available.

² Break in series for Italy. New survey methods were introduced in 1992 that raised the adjusted U-5 rate by approximately 1 percentage point.

NOTE: U-1, long-term unemployment rate; U-2, job loser rate; U-3, adult unemployment rate; U-4, full-time unemployment rate; U-5, conventional rate;

U-6, rate encompassing persons working part time for economic reasons; U-7, U-6 plus discouraged workers.

SOURCE: Compiled by Bureau of Labor Statistics from labor force surveys for each country. Some adjustments are made for comparability with U.S. concepts.

Chart 1. Alternative unemployment indicators, U-1 to U-3 and U-5 to U-7, six countries, 1983-93

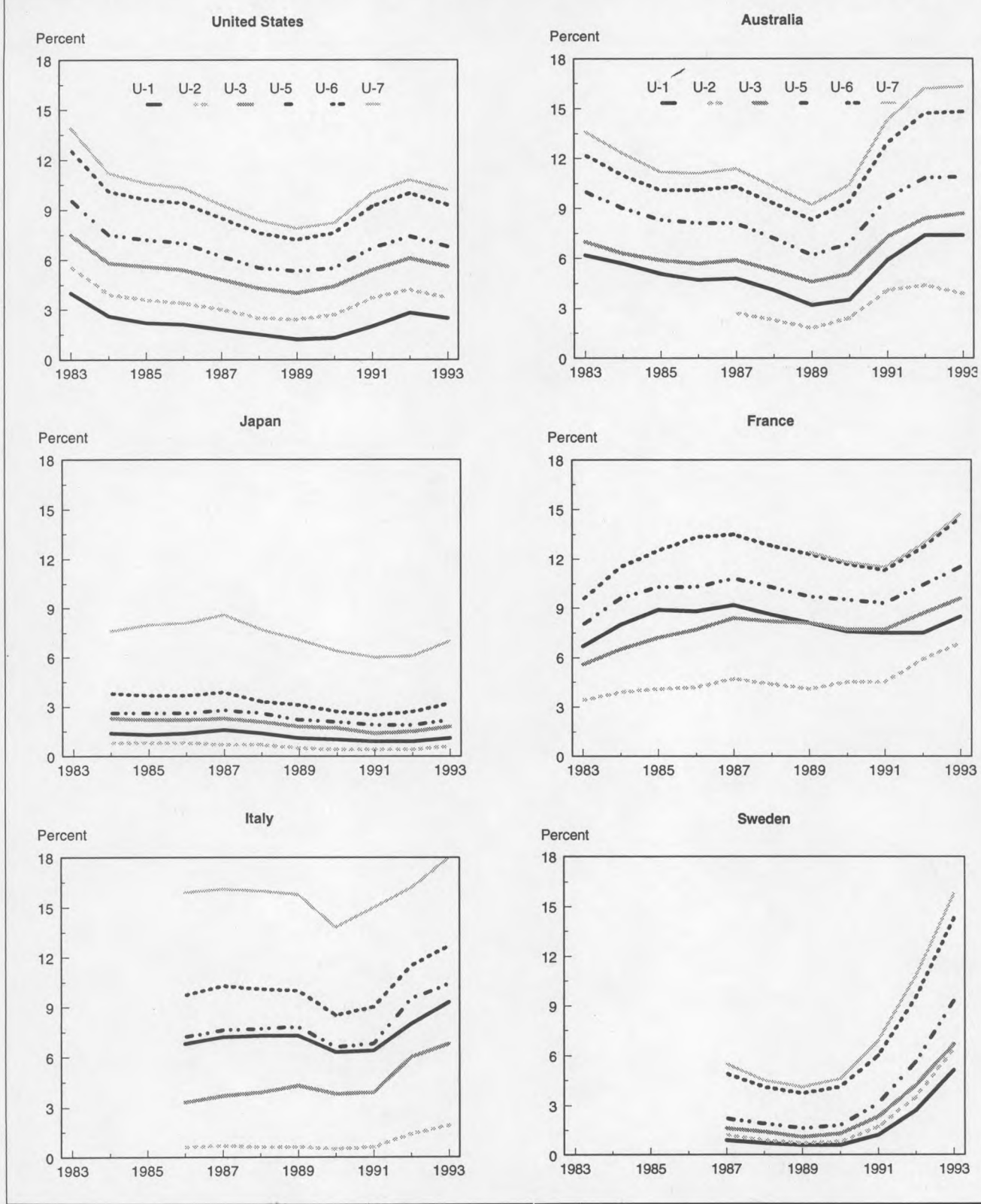


Table 2. Alternative unemployment indicators, U-1 to U-7, 10 countries, average rates for available years, 1983-93

[In percent]

Country	Years	U-1	U-2	U-3	U-4	U-5	U-6	U-7
Both sexes								
United States	1983-93	2.2	3.5	5.4	6.5	6.8	9.2	10.1
Canada	1983-93	4.6	5.5	8.5	9.7	9.8	12.3	13.0
Australia	1983-93	5.3	¹ 3.1	6.4	8.5	8.6	11.2	12.4
Japan	1984-93	1.2	.6	1.9	1.9	2.4	3.3	7.3
Sweden	1987-93	1.7	2.2	2.7	3.9	3.6	6.7	7.5
European Union:								
France	1983-93	8.1	4.6	7.8	10.4	10.0	12.3	² 12.7
Germany ³	1985-93	5.0	2.4	6.1	5.9	6.2	6.6	(⁴)
West Germany	1985-91	4.8	1.9	5.8	5.6	6.0	6.3	(⁴)
Unified Germany	1992-93	5.6	4.0	7.1	7.2	7.1	8.0	(⁴)
Italy	1986-93	7.3	.9	4.5	8.1	8.0	10.2	15.9
Netherlands	1983, 1985, 1987-91	7.6	⁵ .9	7.9	7.9	9.4	11.7	12.4
United Kingdom	1983-93	7.5	⁶ 2.7	8.2	11.0	9.9	11.7	12.3
Men								
United States	1983-93	2.6	4.3	5.4	6.5	6.9	8.8	9.5
Canada	1983-93	4.8	6.5	8.1	9.6	9.9	11.3	11.9
Australia	1983-93	5.6	¹ 3.9	6.4	8.3	8.5	10.1	10.6
Japan	1984-93	1.2	.7	1.7	1.9	2.1	2.7	4.3
Sweden	1987-93	2.0	2.6	3.0	4.1	4.1	5.5	6.2
European Union:								
France	1983-93	6.4	4.3	6.2	8.4	8.0	9.2	² 9.2
Germany ³	1985-93	4.2	2.2	5.0	5.2	5.2	5.5	(⁴)
West Germany	1985-91	4.1	1.9	4.8	5.0	5.1	5.2	(⁴)
Unified Germany	1992-93	4.4	3.2	5.7	5.7	5.8	6.3	(⁴)
Italy	1986-93	5.2	.8	3.0	5.8	5.7	7.5	10.3
Netherlands	1983, 1985, 1987-91	6.3	⁵ .9	6.2	7.3	7.7	8.7	9.0
United Kingdom	1983-93	8.5	⁶ 3.7	8.9	11.1	10.7	11.7	12.3
Women								
United States	1983-93	1.8	2.6	5.3	6.5	6.7	9.7	10.9
Canada	1983-93	4.3	4.3	8.7	9.8	9.9	13.7	14.7
Australia	1983-93	4.8	¹ 2.0	6.3	9.2	8.8	13.0	15.5
Japan	1984-93	1.3	.5	2.4	2.0	2.8	4.3	11.8
Sweden	1987-93	1.4	1.7	2.3	3.5	3.6	8.2	9.1
European Union:								
France	1983-93	10.3	5.1	9.8	13.6	12.4	16.7	² 17.4
Germany ³	1985-93	6.1	2.6	7.7	7.4	7.6	8.6	(⁴)
West Germany	1985-91	5.8	1.9	7.3	6.8	7.3	8.1	(⁴)
Unified Germany	1992-93	7.0	5.1	9.1	9.7	8.8	10.6	(⁴)
Italy	1986-93	11.2	.9	7.2	13.1	12.0	15.7	25.7
Netherlands	1983, 1985, 1987-91	9.6	⁵ .9	11.0	9.4	12.2	17.9	19.2
United Kingdom	1983-93	6.0	⁶ 1.4	7.3	10.7	8.8	11.7	12.4

¹ 1987-93.

² 1989-93.

³ Former West Germany, 1985-91; unified Germany, 1992-93.

⁴ Data not available.

⁵ 1988-91.

⁶ 1984-93.

SOURCE: Compiled by Bureau of Labor Statistics from labor force surveys for each country. Some adjustments are made for comparability with U.S. concepts.

The general pattern of all seven indicators in all of the countries studied, including those not shown, is movement in tandem. Another observation is that only in the two North American countries (Canada's pattern is similar to the United States') and Sweden did U-1 through U-7 represent a progression from low to successively higher unemployment rates.

Although U-4 is not shown in the chart, some mention of it should be made. In most countries, the unemployment rate relating to full-time workers (U-4) was noticeably higher than the adult unemployment rate (U-3). The gap between these two rates was widest in Italy, where adult unemployment is very low and most unemployment is associated with young persons. By contrast, in Japan, the youth-adult differential was much narrower than in Italy, and the two rates tended to be the same. Germany and the Netherlands had the same pattern as Japan for U-3 and U-4.

In all but the Netherlands and the United Kingdom, U-4 (the rate for full-time workers) virtually coincided with U-5, the conventional measure. In these two countries, the unemployment rates associated with seekers of full-time and of part-time jobs were widely different. In the Netherlands, the rate for seekers of part-time jobs was almost twice as high as the rate for seekers of full-time jobs. Consequently, U-4 was substantially below U-5 in that country. In the United Kingdom, the opposite was true, and the high rate for seekers of full-time jobs was reflected in U-4's surpassing U-5.

The upward climb of unemployment in Sweden since 1990 is dramatically portrayed in the chart. Sweden's series begins with the year 1987, but earlier years would have shown rates in the range of the low 1987 levels. Sweden's U-5 rate averaged 3 percent from 1983 to 1986, equivalent to about 2.6 percent according to the survey methods and definitions used in 1993.

Averages over time

Table 2 presents the indicators in terms of their averages over the available years of the 1983-93 period. Table 3 expresses these figures in terms of each indicator's ratio to the conventional measure, U-5. This is a convenient means of comparing the various rates within and among countries. The averages for the period would generally show the same comparative results as the figures for any given year; exceptions are the higher levels of unemployment experienced in Sweden and unified Germany in 1992-93, which changed some relationships that existed in prior years. Tables 2 and 3 show the data for the former West Germany and unified Germany separately.

In each table, figures are shown for both sexes, for men, and for women. Data for U-7 are not available for Germany. For France, data on discouraged workers were available only

for 1989-93, and the average for these years is included in the table.

Tables 2 and 3 recapture some of the findings already portrayed in chart 1. The ratios form a progression from low to successively higher rates only in the United States and Canada. Sweden's pattern is similar, except that U-4 is above U-5. All the European Union countries had much higher ratios at U-1 than at U-2, and Australia was more like the European countries than the North American countries. Italy was at the extreme: on average, long-duration unemployment made up more than 90 percent of conventionally measured unemployment in Italy, while job losers accounted for only about 10 percent. West Germany had a very low job loser rate, but unified Germany's rate was above the U.S. average.

Table 3 shows that Sweden had by far the largest proportionate increases in unemployment as measured by U-6, which takes into account the hours lost by persons working part time for economic reasons. The Swedish U-6 rate was more than 80 percent higher than the U-5 rate, on average, whereas the increases for the other countries were much smaller. Sweden's ratio of U-6 to U-5 declined as unemployment rose in 1992-93. However, even the lower values of this ratio were higher than the U-6/U-5 ratio in other countries. Germany had the smallest increase in U-6 over U-5, and even the higher 1992-93 figures for unified Germany were lower than for the other countries. In the United States, U-6 ranged from 31 percent to 38 percent higher than U-5 throughout the 1983-93 period. Except for Sweden, other countries also had ratios that fluctuated over time within a narrow range.

Japan had by far the largest proportionate increase in unemployment as measured by U-7. The rate accounting for both persons holding part-time jobs for economic reasons and discouraged workers was about triple the conventional measure in every year of the period. In those years in which unemployment was lowest in Japan (1991-92), U-7 was about 320 percent higher than U-5; in the year when Japanese unemployment was highest (1987), U-7 was 307 percent higher than the conventional rate. Thus, a large contingent of potential workers who are not in the labor force overhangs the Japanese labor market at all times.

Japan's increase in U-6 over U-5 was about the same as that for the United States, but the addition of discouraged workers made U-7 increase much more in Japan than in the United States and other countries. Italy also experienced a large increase in its U-7 rate.

With some differences in degree, the foregoing relationships held for both men and women. (See table 3.) For the narrower indicators, U-1 through U-4, the differences between the rates for men and women in relation to U-5 were not large for most countries. Women tended to have lower

Table 3. Alternative unemployment indicators, U-1 to U-7, 10 countries, average ratios of each indicator to U-5 for available years, 1983-93

[In percent]

Country	Years	U-1	U-2	U-3	U-4	U-5	U-6	U-7
Both sexes								
United States	1983-93	32	51	79	96	100	135	149
Canada	1983-93	47	56	87	99	100	126	133
Australia	1983-93	62	¹ 36	74	99	100	130	144
Japan	1984-93	50	25	79	79	100	138	304
Sweden	1987-93	47	61	75	108	100	186	208
European Union:								
France	1983-93	81	46	78	104	100	123	² 127
Germany ³	1985-93	81	39	98	95	100	106	(⁴)
West Germany	1985-91	80	32	97	93	100	105	(⁴)
Unified Germany	1992-93	79	56	100	101	100	113	(⁴)
Italy	1986-93	91	11	56	101	100	128	199
Netherlands	1983, 1985, 1987-91	81	⁵ 10	84	84	100	124	132
United Kingdom	1983-93	76	⁶ 27	83	111	100	118	124
Men								
United States	1983-93	38	62	78	94	100	128	138
Canada	1983-93	48	66	82	97	100	114	120
Australia	1983-93	66	¹ 46	75	98	100	119	125
Japan	1984-93	57	33	81	90	100	129	205
Sweden	1987-93	49	63	73	100	100	134	151
European Union:								
France	1983-93	80	54	78	105	100	115	² 115
Germany ³	1985-93	81	42	96	100	100	106	(⁴)
West Germany	1985-91	80	37	94	98	100	102	(⁴)
Unified Germany	1992-93	76	55	98	98	100	109	(⁴)
Italy	1986-93	91	14	53	102	100	132	181
Netherlands	1983, 1985, 1987-91	82	⁵ 12	81	95	100	113	117
United Kingdom	1983-93	79	⁶ 35	83	104	100	109	115
Women								
United States	1983-93	27	39	79	97	100	145	163
Canada	1983-93	43	43	88	99	100	138	148
Australia	1983-93	55	¹ 23	72	105	100	148	176
Japan	1984-93	46	18	86	71	100	154	421
Sweden	1987-93	39	47	64	97	100	228	253
European Union:								
France	1983-93	83	41	79	110	100	135	² 140
Germany ³	1985-93	80	34	101	97	100	113	(⁴)
West Germany	1985-91	79	26	100	93	100	111	(⁴)
Unified Germany	1992-93	80	58	103	110	100	120	(⁴)
Italy	1986-93	93	8	60	109	100	131	214
Netherlands	1983, 1985, 1987-91	79	⁵ 7	90	77	100	147	157
United Kingdom	1983-93	68	⁶ 16	83	122	100	133	141

¹ 1987-93

² 1989-93.

³ Former West Germany, 1985-91; unified Germany, 1992-93.

⁴ Data not available.

⁵ 1988-91.

⁶ 1984-93.

SOURCE: Compiled by Bureau of Labor Statistics from labor force surveys for each country. Some adjustments are made for comparability with U.S. concepts.

U-1 (long-duration unemployment) rates, compared with U-5, than did men in those countries that were not members of the European Union. Within the Union, except for the United Kingdom, the differences between U-1 and U-5 were about the same for men as for women. In all the countries, the job loser rate (U-2) was more favorable for women than for men, compared with U-5. With few exceptions, adult unemployment rates (U-3) and full-time unemployment rates (U-4) had similar relationships to U-5 for both men and women.

Greater sex-related differences showed up in the expanded rates. In every country studied except Italy, underutilization, as measured by U-6 and U-7, increased to a considerably greater extent for women than it did for men, and in Sweden and Japan in particular, the difference was very large. (See

table 3.) In Sweden, the U-7 rate increased just 50 percent for men, but about 2-1/2 times for women, over the U-5 rate. In Japan, U-7 for men was more than double the U-5 rate, but for women it was more than 4 times as great as U-5. In Italy, the ratios of U-6 to U-5 were virtually the same for both sexes, but the spread at U-7 was less favorable for women. These tendencies generally held during recession and recovery alike.

Rankings

Table 4 ranks the 10 countries examined in terms of each of the seven indicators, from lowest (best) to highest (worst), on average, over the available years of the 1983-93 period. Japan's labor market outperformed the others with regard to every

Table 4. Rankings of 10 countries from lowest to highest average rate, available years, 1983-93

Rank	U-1	U-2	U-3	U-4	U-5	U-6	U-7
Both sexes							
1	Japan 1.2	Japan 0.6	Japan 1.9	Japan 1.9	Japan 2.4	Japan 3.3	Japan 7.3
2	Sweden 1.7	Italy .9	Sweden 2.7	Sweden 3.9	Sweden 3.6	Germany 6.6	Sweden 7.5
3	United States 2.0	Netherlands .9	Italy 4.5	Germany 5.9	Germany 6.2	Sweden 6.7	United States 10.1
4	Canada 4.6	Sweden 2.2	United States 5.4	United States 6.5	United States 6.8	United States 9.2	United Kingdom 12.3
5	Germany 5.0	Germany 2.4	Germany 6.1	Netherlands 7.9	Italy 8.0	Italy 10.2	Australia 12.4
6	Australia 5.3	United Kingdom 2.7	Australia 6.4	Italy 8.1	Australia 8.6	Australia 11.2	Netherlands 12.4
7	Italy 7.3	Australia 3.1	France 7.8	Australia 8.5	Netherlands 9.4	Netherlands 11.7	France 12.7
8	United Kingdom 7.5	United States 3.5	Netherlands 7.9	Canada 9.7	Canada 9.8	United Kingdom 11.7	Canada 13.0
9	Netherlands 7.6	France 4.6	United Kingdom 8.2	France 10.4	United Kingdom 9.9	Canada 12.3	Italy 15.9
10	France 8.1	Canada 5.5	Canada 8.5	United Kingdom 11.0	France 10.0	France 12.3	Germany (1)
Men							
1	Japan 1.2	Japan .7	Japan .7	Japan 1.9	Japan 2.1	Japan 2.7	Japan 4.3
2	Sweden 2.0	Italy .8	Italy .8	Sweden 4.1	Sweden 4.1	Germany 5.5	Sweden 6.2
3	United States 2.6	Netherlands .9	Netherlands .9	Germany 5.2	Germany 5.2	Sweden 5.5	Netherlands 9.0
4	Germany 4.2	Germany 2.2	Germany 2.2	Italy 5.8	Italy 5.7	Italy 7.5	France 9.2
5	Canada 4.8	Sweden 2.6	Sweden 3.0	United States 6.5	United States 6.9	Netherlands 8.7	United States 9.5
6	Italy 5.2	United Kingdom 3.7	United Kingdom 3.7	Netherlands 7.3	Netherlands 7.7	United States 8.8	Italy 10.3
7	Australia 5.6	Australia 3.9	Australia 3.9	Australia 8.3	France 8.0	France 9.2	Australia 10.6
8	Netherlands 6.3	United States 4.3	United States 4.3	France 8.4	Australia 8.5	Australia 10.1	Canada 11.9
9	France 6.4	France 4.3	France 4.3	Canada 9.6	Canada 9.9	Canada 11.3	United Kingdom 12.3
10	United Kingdom 8.5	Canada 6.5	Canada 6.5	United Kingdom 11.1	United Kingdom 10.7	United Kingdom 11.7	Germany (1)
Women							
1	Japan 1.3	Japan .5	Sweden 2.3	Japan 2.0	Japan 2.8	Japan 4.3	Sweden 9.1
2	Sweden 1.4	Italy .9	Japan 2.4	Sweden 3.5	Sweden 3.6	Sweden 8.2	United States 10.9
3	United States 1.8	Netherlands .9	United States 5.3	United States 6.5	United States 6.7	Germany 8.6	Japan 11.8
4	Canada 4.3	United Kingdom 1.4	Australia 6.3	Germany 7.4	Germany 7.6	United States 9.7	United Kingdom 12.4
5	Australia 4.8	Sweden 1.7	Italy 7.2	Australia 9.2	Australia 8.8	United Kingdom 11.7	Canada 14.7
6	United Kingdom 6.0	Australia 2.0	United Kingdom 7.3	Netherlands 9.4	United Kingdom 8.8	Australia 13.0	Australia 15.5
7	Germany 6.1	Germany 2.6	Germany 7.7	Canada 9.8	Canada 9.9	Canada 13.7	France 17.4
8	Netherlands 9.6	United States 2.6	Canada 8.7	United Kingdom 10.7	Italy 12.0	Italy 15.7	Netherlands 19.2
9	France 10.3	Canada 4.3	France 9.8	Italy 13.1	Netherlands 12.2	France 16.7	Italy 25.7
10	Italy 11.2	France 5.1	Netherlands 11.0	France 13.6	France 12.4	Netherlands 17.9	Germany (1)

¹ No data available to rank Germany.

NOTE: See table 2 for available years for each indicator.

SOURCE: Table 2.

indicator. Sweden was second to Japan except for U-2 (job losers), where it was displaced by Italy and the Netherlands, and U-6, where it was virtually tied with Germany for second place. Sweden's rankings are undoubtedly affected by the lack of data for the years 1983-86, which were years of relatively low unemployment. If they had been included, Sweden would most likely have outranked Japan, as it did in each year of the 1987-90 period.¹⁰ Also, the table ranks Germany's averages for the 1985-93 period, with the 1985-91 data referring to the former West Germany and 1992 and 1993 referring to unified Germany. Because of the higher unemployment in the former East Germany, a ranking for unified Germany based only on the 1992-93 period would have been less favorable for all of the indicators except U-6.

The United States ranked from third to fourth best for every indicator except job losers (U-2). At 3.5 percent, the U.S. average for this rate was relatively high. Indeed, only France's and Canada's U-2 rates were higher. Job loser unemployment averaged under 1 percent in Japan, Italy, and the Netherlands.

All indicators for France, Canada (except U-1), and the United Kingdom, the countries with the highest conventional (U-5) rates, were at the high (worst) end of the spectrum. Canada had the highest job loser and adult unemployment rates and was virtually tied with France for the highest U-6 rate. France's long-duration unemployment rate (U-1) ranked highest, while the United Kingdom had the highest full-time unemployment rate (U-4). Italy, which had a midrange U-5 rate, had the highest U-7 rate.

The rankings changed somewhat when the sex of the person was taken into account. The most striking change was for Japanese women, who experienced a relatively high U-7 rate. Ranking best in their U-6 rate among women in all the countries

studied, Japanese women fell behind women in both the United States and Sweden when discouraged workers were added. Dutch women had the highest (again, worst) U-3 and U-6 rankings and the next-to-highest U-5 and U-7 rankings. Dutch men fared much better in these categories.

The 1993 study presented an indepth analysis of each of the seven indicators and the reasons behind the international differences noted. The next two sections highlight results relating to two of the narrow indicators—U-2 and U-3—and the section that follows uses the data developed for U-6 and U-7 to present measures of total labor underutilization. The final section, on Sweden, takes into account that country's participants in labor market programs, through a broader measure of labor underutilization.

Unemployment by former status

Unemployed persons can be classified into four categories based on their former employment status: job losers, job leavers, new entrants into the labor force, and reentrants into the labor force. Table 5 shows each of these four groups as a percent of the civilian labor force, averaged for the available years from 1983 to 1993.¹¹ U-2 focuses on job losers.

The foregoing analysis showed that U-2 rates were relatively low in Japan and Europe (except for France), compared with North America, throughout the period studied. This reflects the greater level of job security and protection for regular workers in Japan and Europe. Italy was an extreme case, with virtually no job loser unemployment, but a very high proportion of unemployment associated with new entrants into the labor market. Throughout the 1986-93 period, new entrants in Italy

Table 5. Unemployment rates by former status, average of available years, 1983-93

[In percent]

Country	Job losers	Job leavers	New entrants	Reentrants
United States	3.5	0.8	0.8	1.7
Canada	5.5	1.7	.4	2.3
Australia	3.1	1.4	1.5	2.2
Japan .....	.6	.9	(¹)	(¹)
Sweden	2.2	.3	.5	.6
European Union				
France	4.6	2.0	1.3	2.1
Germany	2.4	1.9	.4	1.5
West Germany (1985-91)	1.9	2.0	.5	1.6
Unified Germany (1992-93)	4.0	1.4	.3	1.4
Italy .....	.9	.2	5.2	1.7
Netherlands .....	.9	1.9	1.7	3.7
United Kingdom	2.7	2.6	1.0	3.2

¹ Not available separately; combined rate for new entrants and reentrants was 0.9 percent.

NOTE: Available years as noted on table 1 for U-2.

SOURCE: Compiled by Bureau of Labor Statistics from labor force surveys for each country. Some adjustments are made for comparability with U.S. concepts.

had unemployment rates in the 5-percent range. This figure stands out because none of the other countries studied had an unemployment rate for new entrants exceeding 2 percent during the period.

Among the European Union countries, only France had a pattern similar to North America's, with job losers bearing the brunt of unemployment among the four categories listed. The 1993 study postulated that this was because 1989 was a year of high unemployment for France, and job losses tend to be cyclical. However, even in France's years of lower unemployment during the 1980's, the higher job loser rates persisted. West Germany had the more typical European Union pattern in most years, with job losers having rates similar to or lower than those of job leavers. Nonetheless, unified Germany experienced much higher job loser rates compared with the other categories. This resulted in the job loser average for Germany moving above the averages of the other groups for the period. The phenomenon was related to the difficulties of transition to a market economy in the former East Germany.

Youth and adult unemployment

Unemployment among adults (aged 25 and older), as reflected in U-3, was significantly lower than unemployment among youth (under age 25) in every country studied except Germany, where a strong apprenticeship system shields many youth from unemployment. In all the other countries, there was a significant youth-adult differential, as shown in the following tabulation of averages for the available years:

	<i>Adult rate</i>	<i>Youth rate</i>	<i>Ratio, youth to adult</i>
United States	5.4	13.1	2.4
Canada	8.5	15.9	1.9
Australia	6.4	15.8	2.5
Japan	2.0	5.6	2.8
Sweden	2.7	9.7	3.6
European Union:			
France	7.8	22.5	2.9
Germany	6.0	7.1	1.2
West Germany	5.8	7.2	1.2
Unified Germany	7.1	7.0	1.0
Italy	4.5	25.9	5.8
Netherlands	7.9	15.3	1.9
United Kingdom	8.2	15.8	1.9

Because of the low youth-adult unemployment differential in Germany, that country's U-3 and U-5 unemployment rates were virtually identical. The incorporation of the former East

Germany into unified Germany in 1992 did not alter this fact. In contrast, U-3 was significantly lower than the conventional U-5 rate in all the other countries studied. (See table 3.)

Italy's U-3 measure was particularly low in relation to U-5 because youth unemployment there was about 6 times higher than adult unemployment. Indeed, most Italian unemployment occurs among persons under age 25, a phenomenon related to the job loser-new entrant difference for Italy. New entrants into the Italian labor market tend to be young persons, and adults with established jobs tend to be shielded from unemployment in Italy, although they may be subject to underemployment in the form of reduced hours. Nevertheless, the gap between youth and adult unemployment closed somewhat in 1992 and 1993 as the youth-to-adult ratio fell to under 5 percent. Some of this decline could have been caused by the changes instituted in the Italian survey in 1992. (See appendix.)

Elements of labor underutilization

Going beyond the U-1 to U-7 framework, we can use the data developed in this study to analyze labor underutilization across countries in its three readily measurable forms: unemployment as conventionally defined (the U-5 indicator); persons working part time for economic reasons (part of the U-6 indicator); and discouraged workers (added at the U-7 level). In the reformulation of the data that is set forth in this section, there is no half-weighting of involuntary part-time workers and persons seeking part-time jobs, as was done with U-6 and U-7 earlier. Therefore, the new indicator to be presented represents the number of people underutilized to some degree, either partially or totally.

Two types of measurement are shown in table 6: (1) a proportionate distribution of the three types of labor underutilization and (2) each form of underutilization as a percent of the civilian labor force. (Note that discouraged workers are not part of the labor force, but if they were added to the labor force in these calculations, the results would be virtually the same.) The data are averages for the available years from 1983 to 1993.

Table 6 and chart 2 show that unemployment is the largest of the three elements in all of the countries studied except Japan and Sweden. By this measure, unemployed persons in the United States comprised, on average, a little more than half of all underutilized persons. The unemployed were around three-fifths of the total in Canada, Australia, and the Netherlands, and accounted for even higher proportions in France, Germany, and the United Kingdom. (However, Germany does not measure discouraged workers, so that the German proportions relate to only two of the three elements.)

In Japan, unemployed persons made up only somewhat more than one-quarter of all persons who were underutilized.

Table 6. Elements of labor underutilization, 10 countries, averages of available years, 1983-93

Country	Percent distribution			Percent of civilian labor force			
	Unemployed	Part time for economic reasons	Discouraged workers	Unemployed	Part time for economic reasons	Discouraged workers	Total labor underutilization
United States	54.6	38.0	7.4	6.8	4.7	0.9	12.4
Canada	64.0	30.7	5.2	9.8	4.7	.8	15.3
Australia	58.6	32.6	8.7	8.6	4.8	1.3	14.8
Japan	27.3	23.7	48.9	2.3	2.0	4.2	8.6
Sweden	40.8	50.5	8.7	3.6	4.5	.8	8.9
European Union							
France	70.2	28.7	1.1	10.1	4.1	.2	14.3
Germany	85.7	14.3	(¹)	6.2	1.0	(¹)	(¹)
West Germany	86.9	13.1	(¹)	5.9	.9	(¹)	(¹)
Unified Germany	83.1	16.9	(¹)	7.1	1.4	(¹)	(¹)
Italy	45.3	18.9	35.8	8.0	3.3	6.3	17.5
Netherlands	62.9	32.8	4.4	9.5	5.0	.7	15.2
United Kingdom	77.4	17.9	4.7	9.8	2.3	.6	12.7

¹ Not available.

NOTE: See table 7 for available years. Persons seeking part-time jobs and persons working part time for economic reasons are fully counted in this tabulation, in contrast to U-6 and U-7, for which they are only half-weighted.

SOURCE: Compiled by Bureau of Labor Statistics from labor force surveys for each country. Some adjustments are made for comparability with U.S. concepts.

Discouraged workers were the predominant manifestation of labor underutilization in Japan, at almost half of the total. Thus, discouraged workers in Japan comprised about the same proportion of underutilization as unemployed persons did in the United States. In Sweden, persons involuntarily working part time were the main element of underutilization.

Persons working part time for economic reasons and discouraged workers together added 5 to 7 percentage points to the unemployment rate in most countries, on average, for the 1983-93 period. The United Kingdom had the smallest addition—about 3 percentage points, while Italy had the largest—9.5 percentage points.

Unemployment rates, on average for the period, varied from 2.3 percent in Japan to 10 percent in France. On the other hand, the rate of total labor underutilization varied from 8 percent in Japan and 10 percent in Sweden to 17.5 percent in Italy. France, the country with the highest unemployment rate, ranked in the middle of the range on the total underutilization basis because its discouraged worker rates were very low. (The discouraged worker rates for France were averages for 1989-93, the only years for which such rates were available.) Italy, on the other hand, ranked in the middle of the range of unemployment rates, but had the highest rate of total labor underutilization.

The economic part-time rate was highest in the Netherlands, at 5 percent. With the exception of the Netherlands, involuntary part-time rates in the European Union countries were significantly lower than in North America, Australia, and Sweden. The discouraged worker rates were 4 percent in Japan and 6 percent in Italy, far higher than in any of the other countries. As noted earlier, the definition of discour-

aged workers is somewhat broader in these countries, including within its scope persons who are awaiting the results of jobseeking efforts. Discouraged worker rates were 1 percent or less in all the other countries studied.

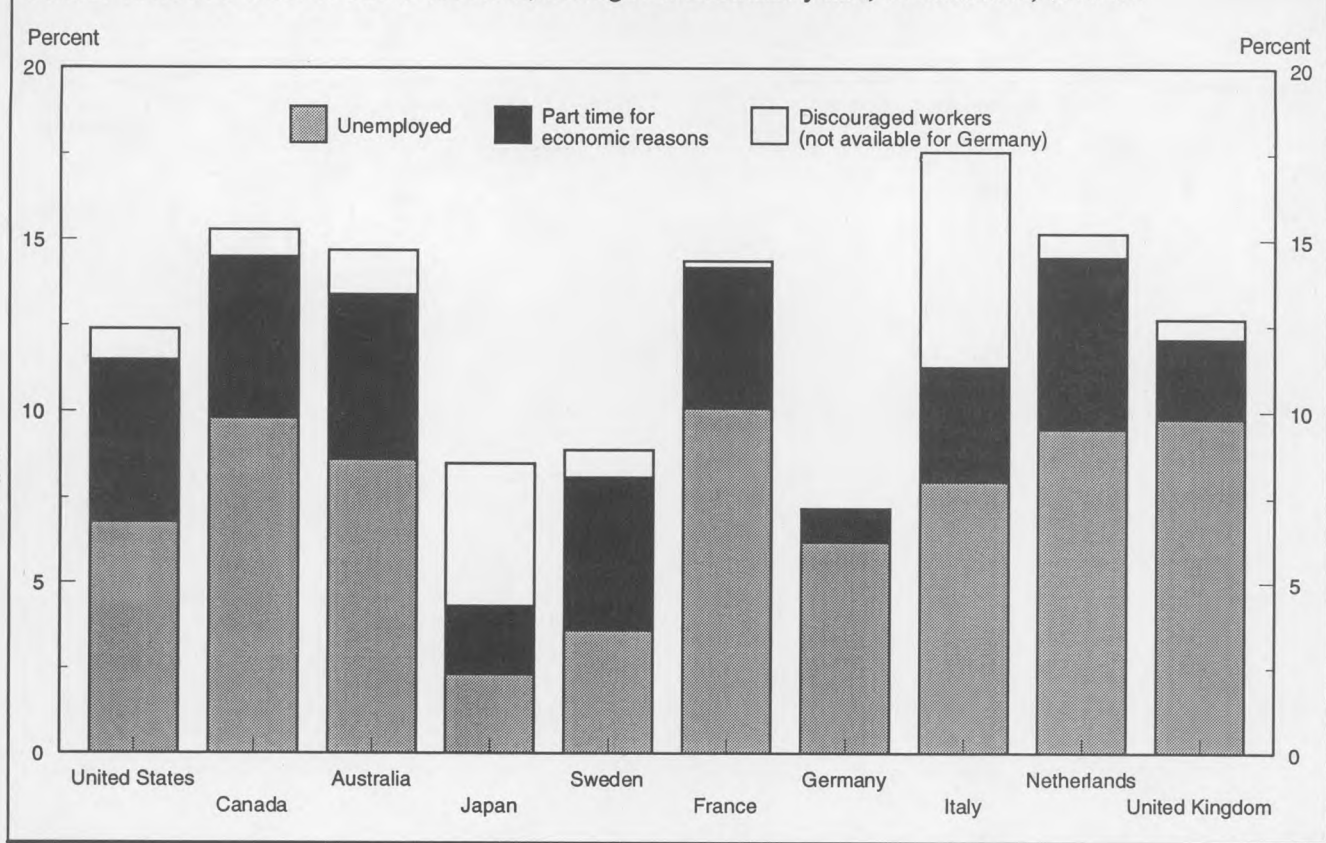
In Japan, large numbers of women who are temporary or casual workers withdraw from the labor force when they lose their jobs, rather than seek work. Such workers generally bear the brunt of labor market adjustments in Japan. In this way, Japanese employers have flexibility in their work forces during economic downturns, enabling regular workers—predominantly men in larger Japanese enterprises—to be virtually assured of employment until they retire, under Japan's so called lifetime employment system.¹¹

Italy's labor market matches people with jobs very slowly. Hence, there is a large number of persons who want work and are awaiting the results of previous job applications or are awaiting the results of competitions for jobs in the public sector (which can take a year or longer), rather than actively seeking work. As noted earlier, they have been added to the discouraged worker figures for Italy, even though they may not be in a state of mind we would characterize as discouragement.

Over time, the three component rates of labor underutilization tended to move cyclically in the same direction, as would be expected, but cyclical movements in the rates of unemployment were generally greater than movements in the rates of those working part time for economic reasons and in the rates of discouraged workers. These trends are illustrated in table 7. There were some exceptions, however.

In the United States, unemployment declined from 7.4 per-

Chart 2. Elements of labor underutilization, averages of available years, 10 countries, 1983-93



cent in 1992 to 6.8 percent in 1993, but the involuntary part-time and discouraged worker rates remained the same. Thus, improvement in the labor market was first seen in the unemployment rate, but other forms of labor underutilization remained high. In previous years, when the declines in unemployment rates were greater, these other forms also moved downward.

Sweden's sharp upward trend in unemployment in the early 1990's was accompanied by significant increases in both involuntary part-time and discouraged workers. The unemployment rate in 1993 was more than 4 times as high as the rate in 1987, while the discouraged worker rate in 1993 was 2-1/2 times the rate in 1987. The involuntary part-time rate was about 40 percent higher in 1993 than in 1987.

Unified Germany's upward movement in unemployment was accompanied by increases in involuntary part-time workers. Prior to 1992, the rate of those working part time for economic reasons moved narrowly and was generally 1 percent or less of the labor force. In 1992-93, for unified Germany, the rate rose to more than 1 percent of the labor force. (No data on discouraged workers were available for Germany for the entire period studied.)

Sweden's labor market programs

Sweden has been a pioneer in the provision of labor market programs for retraining and employing the unemployed.¹² These programs have been used as an economic instrument for countercyclical purposes. For many years, the programs helped keep Swedish unemployment low, even during economic downturns. However, as Swedish unemployment rose to unprecedented postwar levels in the early 1990's, the number of persons participating in the programs increased, but they could no longer hold down unemployment, as they had in previous, milder recessions. Even after completing the programs, participants could not find work, due to a lack of job creation in Sweden.

A special unemployment rate can be constructed to take into account Sweden's labor market programs, which absorb a substantial number of potentially unemployed persons. In 1993, when the conventionally unemployed in Sweden totaled 415,000, there were, on average, about 220,000 persons in these programs. Without such programs, most of these individuals would probably have been either unemployed or discouraged workers.

Sweden's U-5 rate of 9.3 percent in 1993 would have risen

Table 7. Elements of labor underutilization in 10 countries, available years, 1983-93

Country and year	Unemployed	Part time for economic reasons	Discouraged workers	Total labor underutilization	Country and year	Unemployed	Part time for economic reasons	Discouraged workers	Total labor underutilization
United States					Continued—France				
1983	9.6	5.6	1.4	16.7	1985	10.3	3.3	(¹)	(¹)
1984	7.5	5.1	1.1	13.7	1986	10.3	4.9	(¹)	(¹)
1985	7.2	4.8	1.0	13.1	1987	10.8	4.4	(¹)	(¹)
1986	7.0	4.7	1.0	12.7	1988	10.3	4.2	(¹)	(¹)
1987	6.2	4.5	.9	11.6	1989	9.7	4.4	.2	14.3
1988	5.5	4.3	.8	10.6	1990	9.5	3.8	.2	13.5
1989	5.3	4.0	.7	9.9	1991	9.3	3.4	.1	12.8
1990	5.5	4.1	.7	10.3	1992	10.4	3.9	.1	14.4
1991	6.7	4.8	.8	12.4	1993	11.5	5.0	.2	16.7
1992	7.4	5.0	.9	13.3	Average, 1989-93 ² ..	10.1	4.1	.2	14.3
1993	6.8	5.0	.9	12.7	Germany				
Average, 1983-93 ..	6.8	4.7	.9	12.4	West Germany				
Canada					1985	6.9	.9	(¹)	(¹)
1983	11.8	4.6	1.5	18.0	1986	6.7	1.0	(¹)	(¹)
1984	11.2	4.9	1.2	17.3	1987	6.9	1.1	(¹)	(¹)
1985	10.5	4.8	.9	16.1	1988	6.4	1.0	(¹)	(¹)
1986	9.5	4.7	.8	15.0	1989	5.8	.9	(¹)	(¹)
1987	8.8	4.4	.7	13.9	1990	4.9	.7	(¹)	(¹)
1988	7.8	4.0	.5	12.2	1991	4.1	.7	(¹)	(¹)
1989	7.5	3.7	.5	11.8	Average, 1985-91 ..	5.9	.9	(¹)	(¹)
1990	8.1	3.9	.5	12.5	Unified Germany				
1991	10.3	4.9	.8	16.0	1992	6.4	1.2	(¹)	(¹)
1992	11.3	5.6	.8	17.7	1993	7.7	1.6	(¹)	(¹)
1993	11.2	6.2	.9	18.3	Average, 1992-93 ..	7.1	1.4	(¹)	(¹)
Average, 1983-93 ..	9.8	4.7	.8	15.3	Average, 1985-93 ..	6.2	1.0	(¹)	(¹)
Australia					Italy				
1983	10.0	4.0	1.6	15.6	1986	7.2	3.5	6.9	17.6
1984	9.0	3.7	1.4	14.1	1987	7.6	3.8	6.5	17.9
1985	8.3	3.5	1.2	12.9	1988	7.7	3.4	6.6	17.7
1986	8.1	3.8	1.1	13.0	1989	7.8	3.3	6.4	17.5
1987	8.1	4.2	1.1	13.4	1990	6.6	2.9	5.8	15.3
1988	7.2	4.0	1.1	12.3	1991	6.8	3.2	6.6	16.6
1989	6.2	4.1	.9	11.2	1992 ³	9.5	3.1	5.1	17.8
1990	6.9	4.7	1.0	12.6	1993	10.4	3.3	6.1	19.8
1991	9.6	6.1	1.5	17.1	Average, 1986-93 ..	8.0	3.3	6.3	17.5
1992	10.8	7.0	1.7	19.5	Netherlands				
1993	10.9	7.0	1.7	19.6	1983	11.9	1.0	.2	13.1
Average, 1983-93 ..	8.6	4.8	1.3	14.8	1984	(¹)	(¹)	(¹)	(¹)
Japan					1985	10.6	2.8	.4	13.7
1984	2.6	2.4	4.0	9.1	1986	(¹)	(¹)	(¹)	(¹)
1985	2.6	2.4	4.6	9.5	1987	10.0	5.8	.9	16.7
1986	2.6	2.4	4.7	9.7	1988	9.5	6.2	.9	16.6
1987	2.8	2.5	5.0	10.3	1989	8.8	6.4	.7	15.9
1988	2.6	1.9	4.6	9.1	1990	7.8	5.9	.8	14.5
1989	2.2	2.1	4.1	8.4	1991	7.4	5.9	.6	13.9
1990	2.1	1.6	3.9	7.5	Average, 1983, 1985, 1987-91	9.5	5.0	.7	15.2
1991	1.9	1.4	3.7	6.9	United Kingdom				
1992	1.9	1.6	3.6	7.1	1983	11.1	1.9	.8	13.8
1993	2.2	2.1	3.9	8.2	1984	11.0	2.2	.9	14.1
Average, 1984-93 ..	2.3	2.0	4.2	8.6	1985	11.5	2.2	.9	14.6
Sweden					1986	11.6	2.3	.9	14.8
1987	2.2	4.4	.6	7.1	1987	11.1	2.4	.6	14.1
1988	1.9	3.6	.4	5.9	1988	9.1	2.2	.4	11.7
1989	1.6	3.4	.4	5.3	1989	7.4	1.8	.4	9.6
1990	1.8	3.6	.5	5.9	1990	7.0	1.6	.3	8.9
1991	3.1	4.6	.8	8.5	1991	8.6	2.2	.3	11.0
1992	5.6	5.6	1.3	12.5	1992	9.8	2.9	.6	13.2
1993	9.3	6.3	1.5	17.2	1993	10.3	3.3	.7	14.3
Average, 1987-93 ..	3.6	4.5	.8	8.9	Average, 1983-93 ..	9.8	2.3	.6	12.7
European Union:					France				
France					1983	8.0	2.4	(¹)	(¹)
1983	8.0	2.4	(¹)	(¹)	1984	9.6	2.9	(¹)	(¹)
1984	9.6	2.9	(¹)	(¹)					

¹ Not available.

² Averages calculated only for 1989-93 because of lack of data on discouraged workers in 1983-88.

³ Break in series for Italy. New survey methods were introduced that raised the adjusted U-5 rate by approximately 1 percentage point.

NOTE: Persons seeking part-time jobs and persons working part time for economic reasons are fully counted in this tabulation, in contrast to U-6 and U-7, for which they are only half-weighted.

SOURCE: Compiled by Bureau of Labor Statistics from labor force surveys for each country. Some adjustments are made for comparability with U.S. concepts.

to 14 percent if all of the individuals in the labor market programs had been unemployed. Adding these persons to the U-7 rate would have increased it from 15.8 percent to 20.8 percent. A figure of this magnitude would have ranked Sweden, instead of Italy, as the country with the highest U-7 rate. This is a major change from the situation in 1989, when a comparably derived rate left Sweden virtually tied with Japan for the low-

est U-7 rate among the countries studied. In terms of total labor underutilization, Sweden's 1993 rate would have increased from 17 percent to 22 percent of the labor force. With U-7 measured this way, Sweden would have had the highest labor underutilization of all the countries studied. Of course, other countries have persons in labor market programs, but in each, the size of the group is small compared with Sweden's.

Footnotes

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¹ Constance Sorrentino, "International comparisons of unemployment indicators," *Monthly Labor Review*, March 1993, pp. 3-24.

² U-1 has been redefined slightly for comparative purposes. In the published figures pertaining to the United States, it represented persons unemployed 15 weeks or longer, as a percent of the civilian labor force. However, most other countries break their categories denoting duration of employment at 3 months (13 weeks), rather than 15 weeks. Because U.S. data are available (in unpublished form) for durations of a single week, these data were used to modify the U-1 measure for the United States to conform with the definition citing 13 weeks or longer as the breakpoint. This modification makes only a slight difference in the U-1 rate for the United States, increasing it by about one-tenth of 1 percentage point.

³ U-7 is not available for Germany throughout the years covered and is not available for France prior to 1989.

⁴ This was the U.S. definition prevailing prior to the 1994 revisions to the Current Population Survey. Beginning in 1994, persons classified as discouraged must also have looked for a job within the past year and must have been available for work during the reference week. (A direct question on availability was added in 1994; previously, the availability of these persons had been inferred from other responses.)

⁵ Italy has excluded these persons from the unemployed since October 1992. (See appendix.)

⁶ For example, Canada's 1993 survey enumerated only 21,000 persons "waiting for replies" among those who want work and are available for work, but who are not classified as unemployed. Their inclusion would add 0.1 percentage point to the Canadian discouraged worker rate. Data from the Statistical Office of the European Communities (EUROSTAT) also indicate very small numbers of such persons in the major European Union countries, except for Italy.

⁷ The Organization for Economic Cooperation and Development (OECD) frequently cites data on persons working part time for economic reasons and on discouraged workers in analyses published in its *Employment Outlook* series. The July 1995 edition of *Employment Outlook* contains a chapter entitled "Supplementary Measures of Labour Market Slack," which examines in detail the data on involuntary part-time workers and discouraged workers in OECD member countries.

⁸ EUROSTAT processes and disseminates data forwarded by member countries from labor force surveys conducted each spring. These surveys have been carried out annually in most countries since 1983.

⁹ Tabulations of the indicators by sex are available upon request from the author.

¹⁰ Sweden's unemployment rates in 1983-86 averaged about 3 percent, slightly above the average for Japan (2.7 percent). However, Sweden's rates for 1983-86 are probably overstated by about 0.4 percentage point for comparisons, because they include persons seeking jobs within the past 60 days. In 1987, Sweden's definition of unemployment was changed to come into accord with the 4-week job search period used in the United States.

¹¹ A deep recession in Japan beginning in the early 1990's has resulted in pressures on the lifetime employment system. Indeed, some employers in hard-hit industries have begun to solicit the early retirement of middle-aged white-collar workers who expected lifetime employment. For a further analysis, see Haruo Shimada, "Recession and changes in labour practices in Japan," *International Labour Review*, vol. 132, no. 2, 1993, pp. 159-60.

¹² For further information see Sorrentino, "International comparisons," p. 17, and the accompanying citations.

APPENDIX: Revisions and addition of statistics on Australia

This appendix presents information on (1) revisions to the European Union surveys; (2) revisions to a component of the statistics on persons working part time for economic reasons in France and on discouraged workers in the United Kingdom; (3) revisions made in the methods applied to the data on Japanese unemployment; (4) revisions to account for a break in the series on Swedish unemployment; and (5) unemployment statistics for Australia, a country not included in the 1993 study. That study¹ contained an appendix² explaining the sources, methods, and definitions used. The information is, in general, applicable to the current study and will not be repeated in this appendix.

European Union surveys. The European Union surveys compiled and published by the Statistical Office of the European Union

(EUROSTAT) are the source of data on the alternative indicators for France, Germany, Italy, the Netherlands, and the United Kingdom. The concepts and definitions used in the EUROSTAT surveys have been derived from the International Labor Office (ILO) guidelines since 1983. With minor exceptions, the United States and other countries also apply these guidelines.

The integration into the 1992 surveys of a more exact implementation of the ILO guidelines implies that the comparability between the 1983-91 series and the new series from 1992 is slightly impaired. EUROSTAT states that "the fact that both sets of definitions continue to rest upon the ILO guidelines ensures that the differences are minimal."³

The first of the changes instituted in 1992 has to do with the definition of the *population of working age*, which has been modi-

fied to apply to persons aged 15 years or older (instead of 14 years, as in the previous survey). The effect of this change is minimal, as very few 14-year-olds were included in the labor force of the European Union countries in 1991.

The definition of *employed persons* is unchanged. The definition of *unemployed persons* contains the following differences:

- Persons seeking to become self-employed are now considered unemployed only if they satisfy the same criteria of seeking work and availability for work as persons seeking work as employees. That is, they must be taking specific actions to become self-employed in the past 4 weeks (such as applying for a business license or looking for a business location) and be available to start work in the next 2 weeks. Before 1992, these criteria were not applied to this small group.
- Persons not at work and hoping to be reengaged by a former employer ("temporary layoffs") are, similarly, now considered unemployed only if they satisfy the usual criteria of seeking work and availability for work, which were not previously applied. These individuals also are a very small group.
- Persons without employment are considered unemployed only if they are available for work and have used an active method of job search within the past 4 weeks. The survey questionnaires were modified to permit active methods to be distinguished from passive methods. Persons using only passive forms of job search—awaiting the results of having applied for a job, waiting for a call from a public employment office, awaiting the results of a competitive recruitment exam for the public sector—are no longer enumerated as unemployed.⁴ In the absence of comparative data from both the old and new sets of questions, it is difficult to estimate the effect of this change, but most member countries had already complied with the new definition.

All three of the foregoing modifications serve to lower unemployment, compared with the prior surveys. Together, then, they could result in some degree of overstatement in those surveys, compared with the 1992–93 surveys. EUROSTAT believes that the effect of the changes in 1992 were negligible for France, Germany, and the United Kingdom, but considerable for the Netherlands and Italy. EUROSTAT provided the following tabulation estimating unemployment under the old definition and comparing it with unemployment under the new definition in 1992 for four of the countries (figures are in thousands):

	<i>Old</i>	<i>New</i>
France	2,524	2,514
Germany	2,494	2,467
Italy	3,141	2,191
United Kingdom	2,795	2,755

The Bureau of Labor Statistics has made adjustments to the pre-1992 data for Italy that mitigate the difference indicated by this tabulation. These adjustments were also made to the 1989 data for Italy in the 1993 article and throughout the time series for Italy for 1986–91 in the current article. (See the discussion of Italy in the next column.) No adjustments were made for the other countries because, except for the Netherlands, the differences were small. (EUROSTAT could not provide data on the old basis for the Netherlands.)

The changes that were implemented may have resulted in

certain inconsistencies in the data, which should be remedied as the new version of the survey becomes more familiar. In some countries, it was not possible for all of the modifications to be implemented fully. In France, the new questionnaire was implemented only for that section of the sample which was interviewed using computers, with the result that nonresponse rates were very high for some variables. This effect will gradually disappear with the general phasing-in of computer interviewing. Nonresponses were distributed by BLS according to the proportions derived from the respondents.

In the Netherlands, beginning in 1992, the ILO guidelines were not observed with respect to the 1-hour criterion for classification as employed, so certain figures had to be imputed by EUROSTAT. The Dutch national definition was changed in 1992 to include an employment threshold of 12 hours: persons were counted as employed only if they worked 12 or more hours during the reference week and as unemployed only if they sought at least 12 hours of work for that week. The ILO definition recommends the use of a 1-hour threshold for employment and imposes no hours threshold for the seeking of employment. Because there are no Dutch data relating to these two conditions, the ILO (and EUROSTAT) definition could not be well reproduced in the data for the Netherlands. Indeed, after careful study, BLS found the 1992 and 1993 Dutch data out of line with past trends and decided to exclude those years from the study, ending the Dutch series of indicators in 1991.

Italy's statistical office made a major revision to the labor force survey in October 1992 that brought it more in line with the EUROSTAT guidelines. A new method of automatic editing and imputation of missing data was introduced. The definition of unemployment was changed to include only those who were actively looking for a job within the 30 days preceding the survey and who were available for work. Under the definitions prevailing prior to 1992, the Italian national data, as well as the data reported by EUROSTAT, counted many persons as unemployed who engaged in passive job searches only, such as awaiting the results of recruitment exams in the public sector. In the 1993 study, BLS made an adjustment to exclude these persons, but data on both the old and the new basis for 1992 indicate that the adjustment was probably too high. The adjustment of the old 1992 data resulted in an unemployment rate that was 1 percentage point below the rate for the data on the new basis. This overadjustment was partially due to inaccurate adjustments for nonrespondents. The change in the Italian survey methods and questionnaire also had an impact on the results. The new survey questionnaire, for example, has produced an increase in reported job search activity by unemployed persons.

BLS has adjusted Italy's unemployment rates for 1987–91 downward by excluding from the unemployed persons who had not actively sought work in the past 30 days (plus an estimated number of nonrespondents), according to data reported by the Italian statistical office. Although this adjustment is probably too high (based on the aforementioned 1992 relationships), it continues to be used in the present study because the Italian statistical office has not published detailed data on the new basis for any period prior to October 1992. Thus, Italy's unemployment rates for 1991 and earlier years shown in this study are likely to be somewhat understated in comparison with the 1992–93 data.

EUROSTAT used the October 1992 survey results for Italy, rather than the spring survey results, because of the aforementioned change. For all other European Union countries, the 1992 survey data refer to the spring. Data for 1993 refer to the spring for all European Union countries, including Italy.

Revision for France. For France, in the 1993 study, a proxy had to be used for "persons working part time because they could not find full-time work," a component of persons working part time for economic reasons (involving calculations of U-4, U-6, and U-7). The proxy was the number of persons working part time who worked their usual (or more) hours and who were seeking another or a second job. The 1993 article had noted that "this proxy understates the true number to the extent that persons working part time involuntarily did not seek more work."⁵ In 1992, an actual figure for the group working part time because they could not find a full-time position became available from the French labor force survey, as reported to EUROSTAT. The new data revealed that the proxy severely understated the size of this group: instead of the 276,000 persons indicated by the proxy, 852,000 persons were enumerated as working part time because they could not find a full-time position. Using the actual figure, BLS raised U-6 from 11.6 percent to 12.7 percent in 1992 and moved U-7 up from 11.7 percent to 12.9 percent. U-4, the unemployment rate applicable to persons seeking full-time jobs, was revised downward from 11.2 percent to 10.8 percent because the level of the full-time labor force was increased by the revision. (The full-time labor force includes all persons working part time for economic reasons.) A similar downward revision was indicated by the 1993 figures. An adjustment was made for all years from 1983 to 1991, based on the 1992 proportions.

Revision for the United Kingdom. The British Department of Employment alerted BLS to an error in the calculation of data on discouraged workers reported to EUROSTAT. This error has now been corrected by the Department, and the revised figures were supplied to BLS for all years relevant to the study. The effect of the revision was small, lowering the 1989 U-7 rate from 9.3 percent to 9.1 percent.

Revisions for Japan. Consultation with the Japanese Statistics Bureau and statistics available for the first time in the 1994 survey resulted in some revisions to the Japanese data. The following three revisions were made:

- Previously, the entire National Defense Force was subtracted from the labor force in the surveys, to arrive at the civilian labor force. However, members of the National Defense Force who reside in private households are included in the surveys, and they amount to about half of the total National Defense Force. Therefore, only half of the National Defense Force should be subtracted from the reported labor force.
- A previous adjustment to the Japanese data added all persons, except students, waiting to start a new job within 30 days to the unemployed, for comparability with U.S. concepts.⁶ This adjustment was too high, because some of these persons were not available to begin work, a requirement under U.S. concepts, and no information was available on their number. The February 1994 *Report on the Special Survey of the Labour Force Survey* provided such information for the first time, indicating that about half of the persons enumerated as waiting to start a new job in March (excluding students) were not available for work in February.⁷ Therefore, BLS has excluded half of these persons from the adjustment in all years of the study period.
- The method of allocating "jobseekers not in the labor force" according to whether they were seeking full-time or part-time work was modified, on the advice of the Japanese Sta-

istics Bureau. The result was an increase in the number of persons seeking a full-time job and a decrease in the number of persons seeking a part-time job.

The overall effect of these changes was small, lowering both the Japanese conventional unemployment rate and the alternative indicators by no more than one-tenth of 1 percentage point in some years and leaving them unchanged in most years.

A more significant change is the BLS revision of the data on discouraged workers used in the U-7 rate for Japan. Discouraged workers are not enumerated as such in the Japanese survey. In the 1993 study, BLS constructed an estimate of discouraged workers under U.S. concepts by summing the following groups: (1) all persons who were not in the labor force, who wanted work but were not seeking it because there was "no prospect of finding a job," and who said that they were available to take a job if they found one; (2) half of the persons who were not in the labor force, who wanted work but who were not seeking work because there was "no prospect of finding a job," and who were either not available or undecided about their availability for work if offered a job; and (3) half of the persons enumerated as unemployed, but who were not seeking work in the past 4 weeks because they were awaiting the results of previous job applications. The rationale for half-weighting groups (2) and (3) was that they seemed to only partially fit the U.S. concept of discouraged workers.

In the current study, BLS has reconsidered the treatment of groups (2) and (3). This reevaluation led to the elimination of group (2) and the inclusion of *all* persons in group (3), rather than only half of them, in the estimate of discouraged workers for Japan. Overall, the revised method resulted in a decrease of about 0.7 percentage point in Japan's U-7 rate: the rate published for 1990 in the 1993 article was 7.2 percent, and it decreased slightly to 7.1 percent due to the preceding three revisions. The rate decreased further to 6.4 percent with the changes in the method of determining the number of discouraged workers.

Some discussion of the U.S. method of enumerating discouraged workers prior to 1994 is necessary to explain the reasons behind the elimination of group (2). All persons not in the labor force are first asked, "Do you want a regular job now, either full or part time?" All who respond "Yes" or "Maybe, it depends" are then asked why they did not look for work in the previous 4 weeks. If multiple responses are given, reasons indicating that respondents are not discouraged take precedence over reasons indicating that they are. For example, if the multiple responses are "believes no work is available" and "in school," the respondent is not classified as discouraged. Thus, an implied availability test is built into the classification method.

In the Japanese survey, persons not in the labor force are first asked whether they want work. The question is phrased as follows: "Do you wish to do any work for pay or profit?" Those responding "Yes" or "Yes, if conditions are favorable" are then asked why they are not looking for work. Unlike the U.S. survey, which allowed multiple responses, the Japanese survey permits only one response. Presumably, the response given is the main reason why the person is not seeking work. Thus, all respondents who indicate that they are discouraged ("no prospect of finding a job") are potentially discouraged under U.S. concepts.

The Japanese survey then asks an explicit question about the respondent's availability: "If you find a job now, can you take it up?" Possible responses to this question are "Yes, immediately," "Yes, but later," and "No or undecided." The main point to note is that the U.S. survey had an *implied* availability requirement, while

the Japanese survey *actually asks explicitly* whether a person could take up a job now if he or she found one.

The U.S. and Japanese questions are clearly different, and a decision must be made on the best match with the U.S. concept. BLS decided that the responses "Yes" and "Yes, if conditions are favorable" to the first question in the Japanese survey approximate the responses "Yes" and "Maybe, it depends" to the first question in the U.S. survey. Of those who answer in either of the two ways mentioned in the Japanese survey, all who further respond "no prospect of finding a job" and also respond "Yes, immediately" or "Yes, but later" are taken to be discouraged workers under U.S. concepts. The group responding "Yes, but later" is included because these are persons who would accept a job *now* to start *later*. It is likely that a person in this situation would have been enumerated as discouraged in the U.S. survey. However, those responding "no or not decided" to the last question in the Japanese survey would probably not have been counted as discouraged in the United States, as those who meant "no" would not be counted because they were not available. Those who were not sure of their availability ("not decided") would most likely not be classified as discouraged under the U.S. concept either, because they were undecided about their *availability* rather than about their desire for a job. They are apparently interested in having a job at some time, but are not sure they would accept a job now even if one were offered. This implies a stage of labor force inactivity that lies beyond the scope of being a discouraged worker under U.S. concepts.

Consider now the group of persons who are classified as unemployed in the Japanese survey, but were not considered unemployed under U.S. concepts because they were not actively seeking work in the past 4 weeks. Instead, they were awaiting the results of previous job applications. BLS subtracts this group from U-5. Members of the group are in a situation somewhere between unemployment and discouragement. Some may be discouraged, while others are waiting for developments in the process of job selection, but are ready and willing to go to work now. These latter individuals, as well as those who were truly discouraged, should be fully, rather than partially, counted in a measure of underutilization, and it was decided to count them fully in the U-7 measure.

Break in series and adjustments for Sweden. In 1993, the measurement period for the Swedish labor force survey was changed to represent all 52 weeks of the year, rather than 1 week each month, and a new adjustment for population totals was introduced. The impact was to raise the unemployment rate by approximately 0.5 percentage point. One reason for the increase is that the prior surveys for the month of June were taken in a week before students were out of school; now all weeks in June are surveyed, and school leavers seeking vacation work are included in the unemployed. Other school vacation or holiday periods are also more completely covered by the new survey. As a result, youth unemployment moved upward more sharply in 1993 than would have been the case under the previous surveys. Statistics Sweden has published adjustment factors for 1987-92 in considerable detail, and BLS has applied these factors to arrive at adjusted figures for these years.

Data needed to adjust the Swedish data on discouraged workers to U.S. concepts are not published. Statistics Sweden has provided unpublished data to BLS for the years 1989 and 1991-93. Figures for the other years were estimated on the basis of proportions emerging from these data.

In Sweden, the concept that corresponds to "discouraged worker" is *latent arbetsokande*, or "potentially looking for a job." Falling into this category are persons who wanted work and were available for work in the reference week, but who were not seeking work for

reasons related to the labor market (for example, because no suitable work was available locally or because they thought they had little chance of finding work). One of the reasons listed in the Swedish survey is "never got around to looking for work." In addition, under Swedish definitions, full-time students who were currently available and actively seeking work during the school term are included in the concept of *latent arbetsokande*. Both of these groups have been excluded from the discouraged worker count for comparability with U.S. concepts. The students (published data on their numbers are available each year) have been reclassified as unemployed under the definition of U-5, while people who "never got around to looking for work" (number provided by Statistics Sweden for 1989 and 1991-93 and estimated by BLS for other years) remain outside the labor force.

The adjustment for students is normally small, but in 1993 it became more significant because of both the general rise in Swedish unemployment and the changes in the Swedish survey's timing. In 1993, the adjustment resulted in an increase in the Swedish U-5 rate from 8.1 percent to 9.3 percent. Before 1992, the number of students looking and available for work during the school term was very small each year.

In addition to the preceding adjustments for historical comparability, several small adjustments were made to the Swedish data on persons working "part time for economic reasons," for comparability with U.S. concepts. For the 1993 study, Statistics Sweden provided BLS with unpublished tabulations of adjusted data for 1989. Because the adjustments were very small, BLS has applied the 1989 proportions to adjust data for the other years.

Australia. The Australian Bureau of Statistics compiled the data for the U-1 to U-7 indicators for this article based on specifications supplied by the Bureau of Labor Statistics. The data are annual averages for the period 1983-93 derived from the monthly labor force survey. The Australian survey is very close in concepts and definitions to the U.S. labor force survey, and no adjustments were made to any of the indicators for comparability with U.S. concepts.

There is a slight understatement of persons working part time for economic reasons in the Australian statistics because the category "bad weather and plant breakdown" could not be divided into two separate subcategories. Working part time because of "bad weather" is not considered an economic reason in the U.S. survey, while doing so because of a "plant breakdown" is an economic reason. On the advice of the Australian Bureau of Statistics, BLS decided to exclude the entire category.

Data on discouraged workers in Australia were available not for every month, but generally only for March and September of each year. The Australian Bureau of Statistics annualized the semiannual figures for this study. Data for job losers (U-2) were available only from 1987 onward, because no such data were collected in the earlier years.

The appendix to the 1993 study included a tabulation showing, for each country, the significant aspects of coverage and reliability of the labor force surveys used to calculate the alternative indicators. The following tabulation gives similar data for Australia, relating to the year 1989:

- Number of households in sample: 30,903
- Number of persons in sample: 66,769
- Sampling ratio: 0.5 percent
- Origin of sampling frame: population census
- Unemployment rate, 1989: 6.2 percent
- One standard error: 6.1 percent to 6.3 percent
- Two standard errors: 6.0 percent to 6.4 percent.

Footnotes to the appendix

¹ Constance Sorrentino, "International comparisons of unemployment indicators," *Monthly Labor Review*, March 1993, pp. 3-24.

² *Ibid.*, pp. 19-24.

³ *Labour Force Survey: Results, 1992* (Luxembourg: Office for Official Publications of the European Union, 1994), p. 10.

⁴ However, persons only looking at advertisements in newspapers or journals are counted as unemployed in the 1992 and earlier European Union surveys. Such a form of job search is not enough for classification as unemployed in the United States, but it is in Canada, where those who employ only this method account for about 5 percent of the unemployed. In the European Union countries, indications are that this group is also in the 5-percent range of the unemployed. No adjustment has been made on this point for Canada or the European Union countries. (Although for Italy, because the group is relatively large, an adjustment is made to exclude passive jobseekers from U-5 and add them to U-7 prior to 1992; for 1992

and 1993, data on such persons continue to be collected even though they are no longer counted as unemployed in the U-5 measure. For those 2 years, BLS has added them to U-7 without needing to subtract them from U-5.) In Japan, the number of passive jobseekers—mainly persons awaiting the results of having applied for a job—is also large, and an adjustment is made to exclude them from U-5 and add them to U-7.

⁵ Sorrentino, "International comparisons," p. 21.

⁶ In January 1994, the U.S. Current Population Survey definitions were changed to require a job search on the part of persons waiting to start a new job within 30 days. However, the data used in this article are not adjusted to the new U.S. concept, but remain in accord with the concepts in place prior to 1994.

⁷ *Report on the Special Survey of the Labour Force Survey* (Japanese Statistics Bureau, Management and Coordination Agency, 1994).

A surge in growing income inequality?

Examination of a reported surge in income inequality in 1993 indicates that, despite changes in survey methodology, patterns of employment growth were consistent with greater income dispersion

Paul Ryscavage

Last fall, the Census Bureau announced that in 1993 incomes had dropped and poverty had increased. The Agency also reported that income inequality had risen.¹ The latter piece of news received much attention, similarly to other reports in recent years that have focused on the growing dispersion in the distribution of household incomes.

Inequalities of various kinds in the United States have become a popular topic in the media. But growing income inequality is particularly worrisome because of its immediate implications for social conflict and tension. The economist Paul Krugman recently wrote: "The ultimate effect[s] of growing economic disparities on our social and political health may be hard to predict, but they are unlikely to be pleasant."² Krugman's statement is significant because the size of the 1992–93 increase in income inequality reported by the Census Bureau could be easily characterized as a surge. The Gini index, one of the tools the Agency uses to measure income inequality, rose from .434 in 1992 to .447 in 1993, the largest 1-year increase since the statistical series on household income inequality began in 1967.³ (See chart 1.) But this apparent surge was qualified by the Census Bureau in its analysis of the data.

The Census Bureau cautioned that the size of the increase may have been an artifact of technical changes made in how the data on income were collected in the Current Population Survey (CPS).⁴ In addition, other changes to the CPS could have affected the income data for 1993.

The increase in inequality nevertheless occurred at a time when an increase might have

been anticipated. The recession of 1990–91 had an unusually strong impact on well-paid white-collar workers caught in the downsizing of much of corporate America. In the ensuing recovery between 1991 and 1993, many of these workers resumed their full-time careers. Not only was employment rising and unemployment falling, but according to the Bureau of Labor Statistics, when the data are stratified by occupation, most of the net increase in employment in the 1992–93 period occurred in jobs paying above-average wages.⁵ The question therefore becomes, How much of the increase in income inequality between 1992 and 1993 was due to changes in the economy, and how much was due to technical changes in the CPS?

This article explores both aspects of this question in a descriptive way, to provide users with further evidence concerning the issue of rising income inequality between 1992 and 1993. First, CPS income data are discussed—in particular, changes that were made in the collection of the 1993 data. Then, long-run and short-run trends in household income inequality are reviewed. Next, the 1992–93 changes are examined, first from the standpoint of the technical changes in the CPS and then from the standpoint of the changes that took place in the economy. Finally, the conclusions of the analysis are presented.

CPS data and technical changes

The CPS, of course, is one of the primary sources of income data used by researchers for measuring and studying how the Nation's income (as well as earnings) distribution has changed. A

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survey of some 60,000 households, the CPS is designed to measure employment and unemployment each month for the Bureau of Labor Statistics by means of a series of questions relating to current labor force activity. In March, an additional series of questions, called the Annual Demographic Supplement, is asked. These questions concern the work experience and the sources and amounts of income of survey members in the previous calendar year.

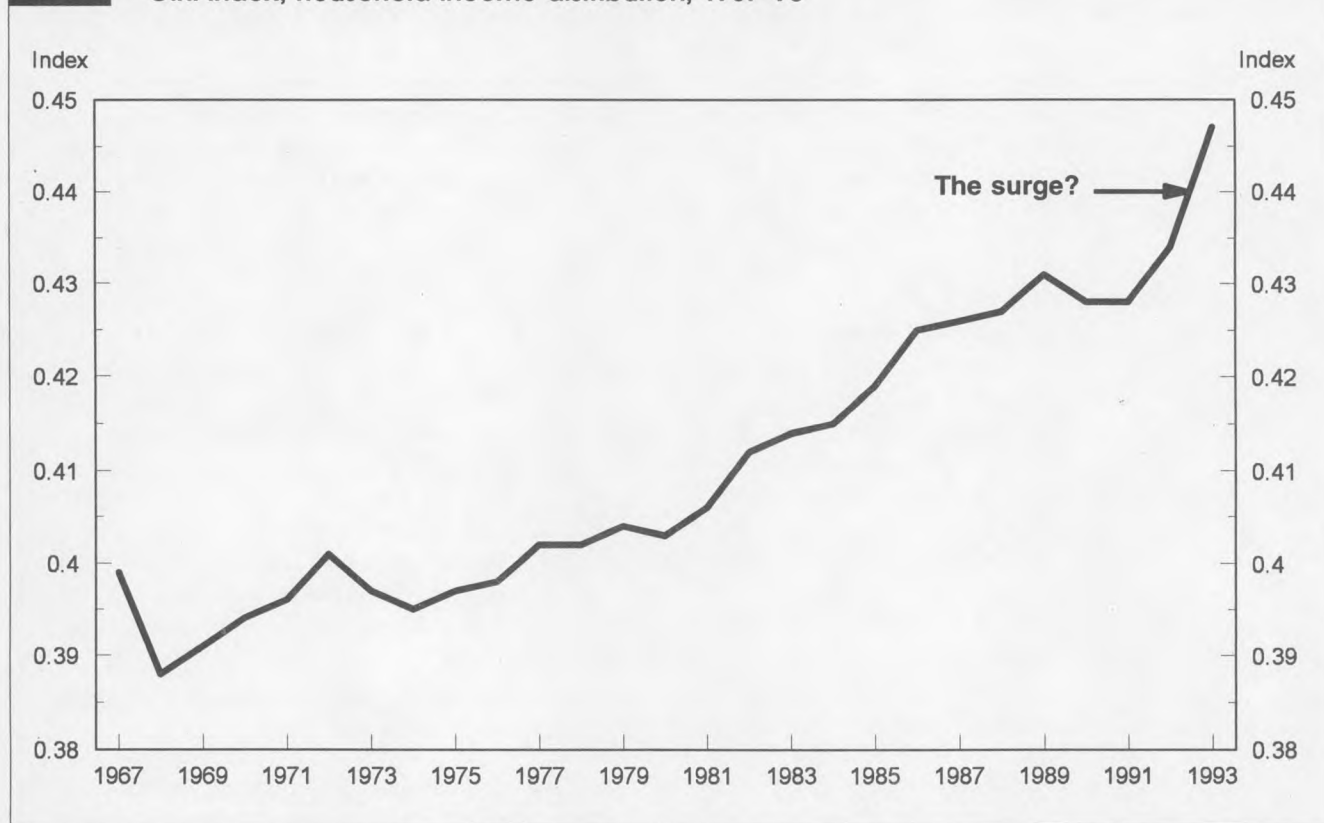
Concept and limitations. The CPS questions on income relate to *money* income only (that is, they exclude all noncash income items, such as food stamps and employer-provided health insurance, as well as any capital gains), *before* deductions for Federal, State, and local taxes are applied. Money income is broken down into labor market money income (wage and salary earnings, as well as farm and non-farm self-employment income) and non-labor-market money income (for example, interest, dividends, and pensions).

The money income data collected in the CPS also contain certain limitations. Underreporting of income and truncation bias are two limitations that have particular significance for studying income inequality. Because the CPS is based on a probability sample of households, all the estimates derived from it are subject to sampling and nonsampling er-

rors. The income estimates are known to be biased downward due to nonsampling error (relating, for example, to noninterviews, undercoverage, inaccurate responses, and missing data). For 1990, the CPS collected data on 88 percent of aggregate income derived from independent estimates. While it did quite well for wages and salaries (accounting for 97 percent of such income), it did poorly for dividend income (garnering information on only 33 percent of this source of income).⁶ Obviously, underreporting of income can affect income inequality measurements, because both the receipt and the amounts of certain income items vary across the distribution.

Truncation bias occurs as a result of the suppression of income amounts above a certain upper limit. These amounts are suppressed in order to reduce the effects of interviewer error and to provide confidentiality to survey respondents. However, the limits, or top codes, can be problematic in the measurement of income inequality:⁷ if the distribution is becoming more unequal as a result of rising incomes at the upper end, top codes will bias measurements of income inequality downward, because the high incomes will be suppressed. Constant nominal-dollar top codes have been used in the CPS questionnaire and are increased from time to time to accommodate rising incomes. While one-time adjustments

Chart 1. Gini index, household income distribution, 1967-93



reduce truncation bias, the top codes will eventually become problematic again.

Technical changes. During the 1980's and early 1990's, the Bureau of Labor Statistics, with the assistance of the Census Bureau, was engaged in an effort to modernize the monthly CPS. In general, the focus of the modernization was on redesigning the monthly labor force questionnaire and introducing a system known as computer-assisted survey information collection (CASIC). Beginning in January of 1994, the new CPS was put into operation. The redesign had implications for the Annual Demographic Supplement conducted in March of that year. While the questions on work experience and income concerning calendar year 1993 were not changed from those of previous years, the new CASIC system was used.

The CASIC technology replaced the traditional paper-and-pencil interviewing procedure. In that procedure, two separate questionnaires—the Monthly Labor Force questionnaire and the Annual Demographic Supplement questionnaire—were filled out by the CPS enumerator in the course of the March interview. In the CASIC system, all the CPS questions are administered from a computer (either a laptop or a com-

puter located in a centralized telephoning facility), as if only one questionnaire is in use. Unlike previous March CPS interviews, in which the interviewer had to physically shift from the labor force questionnaire to that on work experience and income, the mechanics of CASIC avoid any significant interruption of the interview process.

In addition to this change in mode of interview, two other technical changes occurred in the March 1994 CPS that could affect income data and the measurement of income inequality for 1993.⁸ First, as occurs after every decennial census of the population, data from Census Bureau surveys are reweighted in accordance with estimates of the civilian noninstitutional population derived from the most recent decennial census. The CPS income data for 1993 reflect new weights derived from the 1990 census, and they have also been adjusted for the estimated census undercount.

The second change concerns top codes. As mentioned earlier, top codes used in the CPS are occasionally increased to reflect rising nominal incomes; such an increase occurred in the March 1994 CPS. The most important top code that was increased related to earnings from the longest job or business. It was increased from \$299,999 to \$999,999 be-

Chart 2. Percent distribution of households by money income, 1967 and 1993

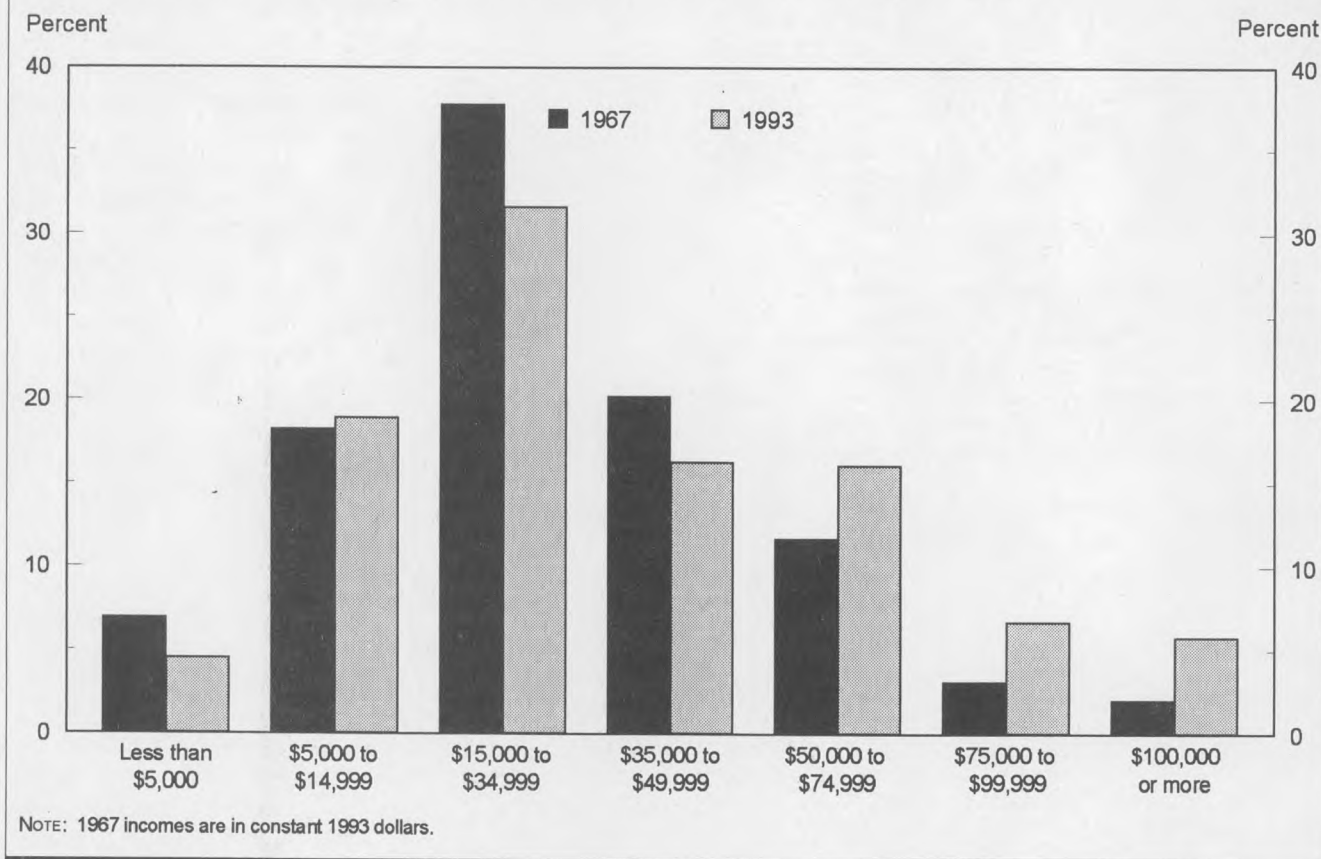


Table 1. Shares of aggregate household income received by each fifth and top 5 percent of households, 1967–93

[In percent]

Year	Lowest fifth	Second fifth	Third fifth	Fourth fifth	Highest fifth	Top 5 percent	Gini index
1967	4.0	10.8	17.3	24.2	43.8	17.5	.399
1968	4.2	11.1	17.5	24.4	42.8	16.6	.388
1969	4.1	10.9	17.5	24.5	43.0	16.6	.391
1970	4.1	10.8	17.4	24.5	43.3	16.6	.394
1971 ¹	4.1	10.6	17.3	24.5	43.5	16.7	.396
1972	4.1	10.5	17.1	24.5	43.9	17.0	.401
1973	4.2	10.5	17.1	24.6	43.6	16.6	.397
1974	4.3	10.6	17.0	24.6	43.5	16.5	.395
1975	4.3	10.4	17.0	24.7	43.6	16.6	.397
1976	4.3	10.3	17.0	24.7	43.7	16.6	.398
1977	4.2	10.2	16.9	24.7	44.0	16.8	.402
1978	4.2	10.2	16.9	24.7	44.1	16.8	.402
1979 ²	4.1	10.2	16.8	24.7	44.2	16.9	.404
1980	4.2	10.2	16.8	24.8	44.1	16.5	.403
1981	4.1	10.1	16.7	24.8	44.4	16.5	.406
1982	4.0	10.0	16.5	24.5	45.0	17.0	.412
1983	4.0	9.9	16.4	24.6	45.1	17.1	.414
1984	4.0	9.9	16.3	24.6	45.2	17.1	.415
1985 ³	3.9	9.8	16.2	24.4	45.6	17.6	.419
1986	3.8	9.7	16.2	24.3	46.1	18.0	.425
1987	3.8	9.6	16.1	24.3	46.2	18.2	.426
1988	3.8	9.6	16.0	24.3	46.3	18.3	.427
1989	3.8	9.5	15.8	24.0	46.8	18.9	.431
1990	3.9	9.6	15.9	24.0	46.6	18.6	.428
1991	3.8	9.6	15.9	24.2	46.5	18.1	.428
1992	3.8	9.4	15.8	24.2	46.9	18.6	.433
1992 ⁴	3.8	9.4	15.8	24.2	46.9	18.6	.434
1993 ⁵	3.6	9.1	15.3	23.8	48.2	20.0	.447
1993 ⁶	3.6	9.0	15.1	23.5	48.9	21.0	.454

¹ Implementation of weights derived from 1970 population census.² Implementation of weights derived from 1980 population census.³ Upper limit for earnings from longest job or business raised to \$299,999; upper limits for other income items also raised.⁴ Implementation of weights derived from 1990 population census.⁵ Upper limits in effect in 1992 applied to 1993 income data.⁶ Introduction of CASIC; upper limit for earnings from longest job or business raised to \$999,999; upper limits for other income items also raised. (See footnote 9 in text.)

tween 1992 and 1993.⁹ The last time a change was made on this top code was in March 1986, for the survey year 1985, when it was raised from \$99,999 to \$299,999.

Trends in inequality

Chart 2 depicts how the Nation's household income distribution changed between 1967 (in 1993 dollars) and 1993.¹⁰ Clearly, there was a shift to the right, with greater proportions of households in 1993 having incomes above \$50,000 than in 1967 (28.8 percent, compared with 16.8 percent), a much smaller proportion with incomes between \$15,000 and

\$50,000 (31.0 percent, compared with 39.3 percent), and slightly fewer below \$15,000 (23.4 percent, compared with 25.1 percent). Median household income grew from \$28,434 in 1967 to \$33,685 by 1989, but then declined to \$31,241 in 1993, largely reflecting the recession of the early 1990's. Had the rate of growth in median household income occurred uniformly across the entire distribution from 1967 to 1993, there would have been no change in inequality.

In measuring inequality, the Census Bureau ranks household incomes from poorest to richest and then divides them into equal quantiles. From such a rearrangement, it becomes possible to observe how much of aggregate income is received by similar proportions of households and how these proportions have changed over time. Table 1 presents the shares of aggregate income received by each fifth, or quintile, of the household income distribution for the entire 1967–93 period. The Gini index of income concentration, a summary measure of income inequality, is also presented.¹¹

Generally speaking, the table shows that from the end of the 1960's to the end of the 1980's, the share of income going to the households in the highest quintile increased, while the shares going to the lower quintiles declined or changed very little. The dividing line between the top of the fourth quintile and the bottom of the fifth increased from \$47,136 (in 1993 dollars) in 1967 to \$60,280 in 1993.

The Gini indexes indicate that the long-run trend toward greater income in-

equality did not occur smoothly over the 1967–93 period. Indeed, as shown in chart 1, the trend was very gradual from 1967 to 1979. Between 1979 and 1989, however, the index grew rapidly—from .404 to .431—after which it slowed, ending at .433 in 1992.¹²

The slowing growth of household income inequality was no doubt related to the winding down of the economic expansion of the 1980's and the ensuing recession in the early 1990's. This slowdown received little attention in the media and in the research community, but developments during the period can help one gain an understanding of the apparent surge in inequality between 1992 and 1993.

Table 2 presents real mean household incomes for each quintile (as well as households in the top ventile) of the income distribution for the years 1979, 1989, 1991, 1992, and 1993, as well as the annual rates of change between each succeeding pair of years. Chart 3 displays the annual rates of change. The statistical cause of the rise in inequality in the 1980's can be seen quite easily: mean household incomes for the richest 20 percent of households were increasing by 1.7 percent a year, compared with a 0.4-percent increase for the poorest 20 percent.

The situation in the 1989-91 period stands out in stark contrast to that in 1979-89. During 1989-91, mean household incomes plummeted, not only for the lowest quintile, but also for those quintiles in the middle and at the top of the distribution. The mean household income in the highest ventile slid by almost 5 percent a year. The impact of corporate downsizing and restructuring was particularly severe among white-collar workers.¹³ Ironically, the collapse of incomes across the distribution in this period halted the rise in income inequality.¹⁴ (See chart 1.)

By 1992, the economy was slowly beginning to recover from the recession. Mean household income remained virtually unchanged between 1991 and 1992, but not for all households in the distribution. In particular, mean incomes of households in the bottom three quintiles continued to decline, while those of the top 5 percent continued to grow (although the increase was not statistically significant). This difference in income growth, however, helped push the Gini index up from .428 to .433, and although it was not a statistically significant change, it perhaps was a signal of things to come.

The change in inequality in the 1992-93 period is considerably more difficult to interpret, because of the aforementioned technical changes in the CPS. Some of the effects of the changes, however, are quantifiable and are presented in table 1. With respect to the reweighting of estimates as a result of the 1990 decennial census, the impact on measuring inequality was minimal. As shown in the table, the 1992 income shares and Gini indexes have been calculated using both 1980 and 1990 population weights. Shares were unaffected in 1992, and the Gini index was only slightly different (rising from .433 to .434, but not a statistically significant change).

Increasing the upper limits, or top codes, in 1993, however, had a significant impact both on the Gini index and on the shares of aggregate income received by various quintiles of the distribution, as can be seen in the table. If the new top codes had been used, the Gini index for 1993 would have been .454 instead of .447—.020 point higher than the 1992 Gini, instead of .013 point higher. Using comparable top codes between 1992 and 1993, however, preserved some analytical comparability between years.

Table 2. Mean income of each fifth and top 5 percent of the household income distribution, 1979, 1989, 1991, 1992, and 1993

[In 1993 dollars]

Year	Lowest fifth	Second fifth	Third fifth	Fourth fifth	Highest fifth	Top 5 percent
1979	\$7,823	\$19,457	\$32,079	\$47,076	\$84,484	\$128,847
1989	8,182	20,278	33,707	50,986	99,669	161,030
1991	7,706	19,255	31,984	48,758	93,501	145,913
1992 ¹	7,547	18,828	31,716	48,649	94,233	149,592
1992 ²	7,506	18,725	31,548	48,429	93,837	148,937
1993 ³	7,411	18,647	31,260	48,572	98,589	163,228
Annual rate of change (percent):⁴						
1979-89	0.4	0.4	0.5	0.8	1.7	2.2
1989-91	-3.0	-2.6	-2.6	-2.2	-3.2	-4.9
1991-92 ⁵	-2.1	-2.2	-8	-2	.8	2.5
1992-93	-1.3	-4	-9	.3	5.1	9.6

¹ Survey weights derived from 1980 population census.

² Survey weights derived from 1990 population census.

³ Introduction of casic; upper limits in 1993 are the same as in 1992.

⁴ Compounded.

⁵ Change based on income data using 1980 weights.

Chart 3 and table 2 show the percent changes in mean household incomes across quintiles (and in the top ventile) for the 1992 and 1993 distributions, both of which are weighted according to 1990 population controls, and both of which use the upper income limits of 1992. Incomes in the top ventile rose from \$149,000 to \$163,000, or almost 10 percent. The highest quintile's mean income increased by 5.1 percent, from \$94,000 to almost \$99,000. In contrast to the further declines in mean incomes in the bottom and third quintiles, these very sizable increases pushed inequality up, as measured by Gini index, by the largest amount for 1 year since the statistical series on household income inequality began.

The question, of course, remains: even after controlling for changes in the weighting of the income data and for top coding between 1992 and 1993, how much of the increase was due to the new mode of data collection (CASIC), and how much was due to changes taking place in the economy?

Survey changes or economic changes?

Attempts to quantify or decompose the effects of various factors on changes in survey data are a common exercise among economists and other researchers. Several statistical procedures are available for estimating such effects. In the case of

the apparent surge in income inequality between 1992 and 1993, however, the potential source of the change arises not only from factors outside the survey (that is, the economy), but also from factors inside the survey (for example, the data collection methodology). Untangling these potential effects, therefore, is even more challenging and, for the purposes of this article, will consist simply of drawing inferences from evidence relating to changes in the quality of the data and evidence relating to changes in the nature of job growth.

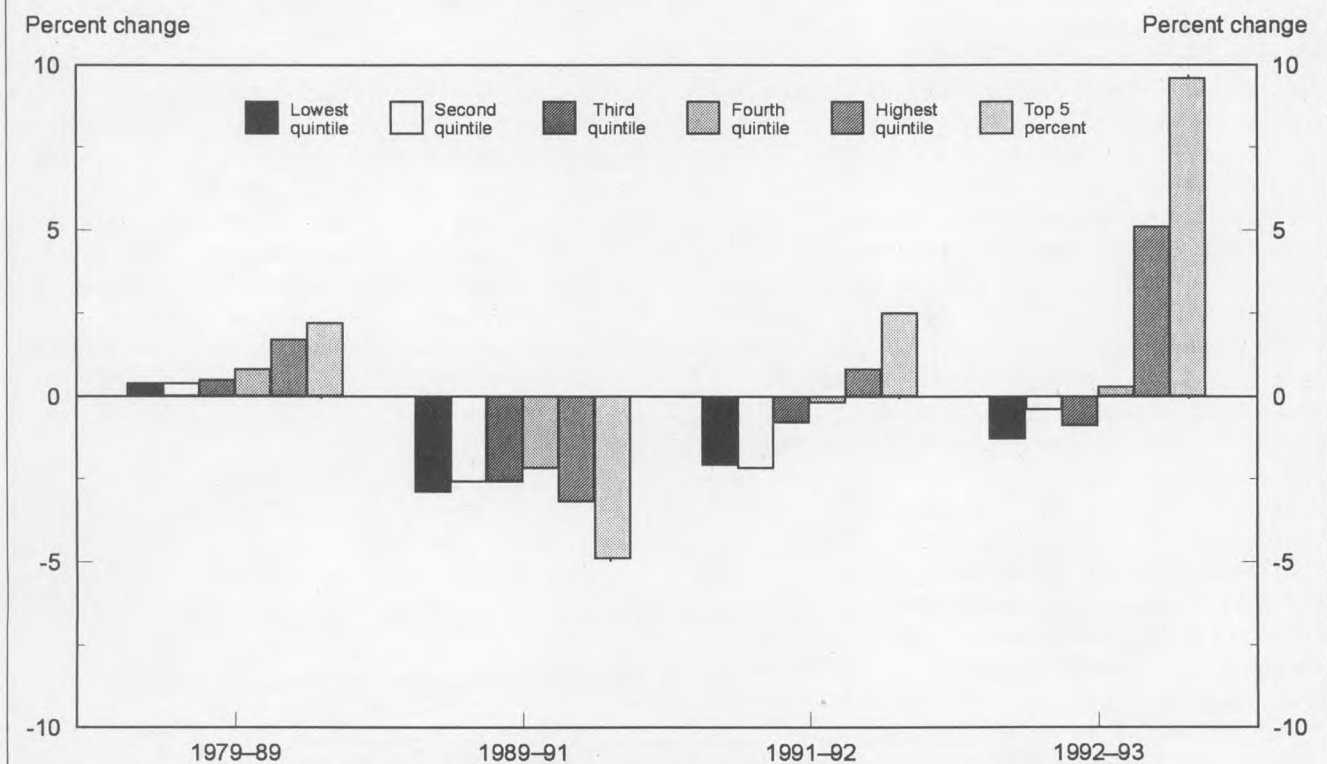
Changes in the quality of the data. Because the redesign of the monthly CPS was so extensive, the Census Bureau and the Bureau of Labor Statistics went to great lengths to assess the impact of the changes on the monthly estimates of employment and unemployment.¹⁵ The results of their evaluation suggested that the national unemployment rate would be 0.5 percentage point higher in 1993 based on a parallel survey using the new questionnaire and technology than it actually was using the old questionnaire and collection methods.¹⁶ Since that time, however, BLS has reexamined the effects of the changes and

found them to be less (0.2 percentage point), but the Agency continues to warn data users about the possible effects of the changes on the estimates.¹⁷ The assessment of CASIC's impact on the income data collected in the March 1994 CPS Annual Demographic Supplement, on the other hand, was much more limited, because only the mode of collection had been changed.¹⁸ Basically, aspects of data quality were examined.

One of the most important reasons for computer-assisted interviewing is to simplify the job of the interviewer. The computer automatically brings the appropriate questions to the screen, it can be programmed to perform editing functions and identify inconsistent answers, and it has the ability to store and display data from earlier interviews. With these advantages, however, come certain disadvantages, such as a breakdown or malfunction of the computer, interviewer errors in recording responses, and, in those households in which a laptop computer was used in the home, the possible inhibiting influence on respondents of the computer's presence.

In reviewing the income data that were collected in March 1994, it was observed that certain income estimates were significantly lower than the previous year's estimates. Further review found that an unusually large number of subannual (that

Chart 3. Annual rates of change in real mean household income, by quintiles and top 5 percent, 1979-89, 1989-91, 1991-92, and 1992-93



NOTE: Annual rates of change for 1979-89 and 1989-91 are average annual rates; 1992-93 changes are based on 1990 weights.

is, weekly or monthly) income amounts were being recorded. Lack of familiarity with the new technology on the part of the interviewers was the suspected cause of the problem. To correct for those income recipients with unusually low amounts, reinterviews were conducted in August 1994, and the incorrect amounts were adjusted.¹⁹ Other than this finding, the evidence with respect to the quality of the data was inconclusive. The Census Bureau, however, warned users that the data from the March 1994 CPS would “not [be] strictly comparable to [data from] earlier years.”²⁰

Another aspect of the quality of the data that has been examined involves the imputation of information on income that occurs because a response to a question about income was not forthcoming. Table 3 presents information on this issue. For persons with earnings (wages and salaries, or income from self-employment, or both) from their longest job or business in 1992 and 1993, the table shows the proportions that (1) actually reported their earnings from their longest job or business, or (2) had only their earnings from their longest job or business imputed, using the Census Bureau’s “hot deck” procedure, or (3) had all information on them imputed in the Annual Demographic Supplement, including earnings from their longest job or business.²¹ These proportions are displayed by broad earnings classes to see whether differential effects were evident.

For many households, of course, the earnings of persons from their longest jobs or businesses represents the largest part of household income and should be a fairly good indicator of the quality of the household income data. Table 3 shows that there was a slight overall decline from 1992 to 1993 in the proportion of individuals who actually reported their earnings to Census Bureau interviewers—from 79.6 percent to 77.7 percent. By earnings classes, changes in the proportions of persons who actually reported their earnings were statistically significant, with the lone exception of those with earnings of \$75,000 or more.

A significant increase took place from 1992 to 1993 in the proportion of persons who had only their earnings from the longest job or business imputed—from 9.3 percent to 12.8 percent. However, all earnings classes experienced significant increases in imputations by item. High earners—those with earnings of \$100,000 a year or more—had a higher rate of imputation by item than did any of the other earnings groups—17.4 percent.

The proportion of earners who had all their work experience and income information imputed declined from 11.1 percent in 1992 to 9.5 percent in 1993. The

improvements were statistically significant in the earnings classes below \$50,000 and between \$75,000 and \$99,999. The lowering of this rate is probably the result of the smoother transition between the monthly portion of the CPS and the supplemental questions as a result of CASIC.

Reaching any firm conclusion about the impact of CASIC on the quality of the income data after examining these estimates is difficult because the evidence is mixed: imputations by item increased, but overall imputations declined. In addition, the fact that there was no discernible pattern across earnings classes lends further support to the notion that CASIC’s impact on the income data was inconclusive.

Changes in the nature of job growth. Research into the causes of rising inequality of incomes among households in recent years has generally focused on changes taking place in the Nation’s economy—specifically, changes in the wage distribution. This is because labor market earnings represent such a large part of aggregate household income.

As has been well documented, the wage distribution has grown more unequal over time, just as the income distribution has. Shifts in labor demand toward more highly skilled and well-educated workers within industries and away from workers with relatively poorer skill endowments are thought to be responsible for this development.²² Technological changes in the production of goods and services that are “skill biased” are thought to underlie these shifts.

The impact of this economic development on growing income inequality has been compounded by societal changes in living arrangements. The well-known rise in single-parent households over the last couple of decades has increased income dispersion because single-parent households tend to have much lower incomes than married-couple households do.²³ In addition, to the extent that growing proportions of men and women with similar skill profiles, and therefore

Table 3. Percent of persons with earnings from longest job or business whose earnings were actually reported, item imputed, or totally imputed, by earnings, 1992 and 1993

Earnings	Reported		Item imputed		Totally imputed	
	1992	1993	1992	1993	1992	1993
Total	79.6	77.7	9.3	12.8	11.1	9.5
Less than \$25,000	79.5	77.0	9.2	13.3	11.3	9.7
\$25,000 to \$49,999	80.3	79.7	8.9	11.3	10.7	9.0
\$50,000 to \$74,999	79.6	78.1	10.0	12.3	10.4	9.6
\$75,000 to \$99,999	75.5	76.0	11.2	14.9	13.3	9.2
\$100,000 or more	73.2	70.8	14.3	17.4	12.4	11.8

NOTE: Estimates are based on weighted counts of earners in 1992 and 1993; weights are derived from 1990 population census.

Table 4. Percent distribution of persons with work experience, by hourly earnings and household income, 1979 and 1993

Hourly earnings	Total	Less than \$14,000	\$14,000 to \$27,999	\$28,000 to \$41,999	\$42,000 to \$55,999	\$56,000 or more
1979 (in 1993 dollars)						
Total	100.0	7.2	17.7	22.0	19.8	33.2
Less than \$7.00	31.0	5.6	7.6	6.3	4.5	7.0
\$7.00 to \$13.99	38.5	1.3	9.0	9.9	7.9	10.3
\$14.00 to \$20.99	18.7	.2	.7	5.2	5.2	7.4
\$21.00 to \$27.99	6.7	.1	.2	.3	1.9	4.2
\$28.00 or more	5.1	.2	.2	.2	.3	4.4
1993						
Total	100.0	8.1	18.3	20.4	17.3	35.8
Less than \$7.00	32.9	6.7	9.2	6.8	4.0	6.3
\$7.00 to \$13.99	36.7	1.1	8.3	9.3	7.6	10.0
\$14.00 to \$20.99	17.5	.2	.6	3.6	4.0	9.1
\$21.00 to \$27.99	6.8	.1	.1	.3	1.2	5.1
\$28.00 or more	6.1	.1	.2	.3	.3	5.3

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

earnings, tend to marry and work, they also produce dispersion in the income distribution.²⁴ By themselves, however, changes in living arrangements occur only over long periods of time and were not likely to have any appreciable effect on the apparent surge in income inequality between 1992 and 1993.²⁵ Rather, most of the surge is likely to be related to changes in the nature of the employment growth that occurred during the period.

Some perspective on the nature of employment growth between 1992 and 1993 can be obtained by comparing that growth with what happened in the 1979–89 and 1989–92 periods. Table 4 shows the distribution of persons with some work experience in 1979 and 1993, cross-classified by their average hourly earnings and the annual income of the household in which they lived.²⁶ The table relates to *all* workers—from those who worked only a few weeks at part-time jobs to those who worked year round at full-time jobs. The data can be summarized by focusing on three broad groups accounting for approximately 75 percent of all persons with work experience in both years:

- Persons with hourly earnings of less than \$7 and household incomes of less than \$42,000 a year
- Persons with hourly earnings between \$7 and \$27.99 and annual household incomes between \$14,000 and \$56,000
- Persons with hourly earnings of more than \$14 and yearly household incomes of \$56,000 or more.

As is known, both earnings and income inequality rose between 1979 and 1993, and the changes in the proportions of persons in these groups help to explain why. Low-earning workers from households with incomes of less than \$42,000 a year increased from 19.5 percent to 22.7 percent of all workers, those with midlevel earnings and income declined from 39.1 percent to 34.3 percent of the total, and those with hourly earnings from the middle to high range who lived in high-income households increased from 16.0 percent to 19.5 percent of all workers. In other words, the table shows the much-talked-about shift of middle-earnings employment away from middle-income households to low-income households and especially high-income households. (It is interesting to note that about 10 percent of all workers earned less than \$7 an hour, but were from households with incomes of \$42,000 a year or more.)

Table 5 presents the average annual changes that occurred in these broad earnings-income groups from 1979 to 1989, 1989 to 1992, and 1992 to 1993. The table shows that between 1979 and 1989 employment was growing rapidly—by 1.8 million persons a year. Much of the increase in average annual employment was taking place among persons with middle to high earnings who lived in high-income households. Employment in this earnings-income category was rising, on average, by about 921,000 persons a year during the 1980's. Employment was also growing, however, at the other end of the earnings-income distribution. The employment of workers with low hourly earnings who were from households with incomes of less than \$42,000 a year increased by about 494,000 persons per year. But among workers with middle-level earnings who were from middle-income households, employment growth was meager at best—35,000 persons a year. The following tabulation presents Gini indexes for earnings alone for selected years from 1979 to 1993 (the figures in parentheses are the years of population censuses from which the survey weights for the given years are derived):

Year	Gini index
1979 (1980) .....	.385
1989 (1980) .....	.428
1992 (1980) .....	.414
1992 (1990) .....	.414
1993 (1990) .....	.449

Table 5. Annual average net change in persons with work experience, by hourly earnings and household income, 1979-89, 1989-92, and 1992-93

[In thousands]

Hourly earnings	Total	Less than \$14,000	\$14,000 to \$27,999	\$28,000 to \$41,999	\$42,000 to \$55,999	\$56,000 or more
1979-89						
Total	1,756	116	187	132	74	1,248
Less than \$7.00	602	152	217	125	39	68
\$7.00 to \$13.99	361	-28	-9	58	82	258
\$14.00 to \$20.99	340	-6	-16	-48	-22	433
\$21.00 to \$27.99	201	0	-3	-2	-26	232
\$28.00 or more	252	-3	-2	-1	1	256
1989-92						
Total	310	465	663	120	168	-1,106
Less than \$7.00	603	381	296	140	71	-284
\$7.00 to \$13.99	366	56	291	77	182	-241
\$14.00 to \$20.99	-212	15	56	-113	4	-174
\$21.00 to \$27.99	-203	-2	2	9	-99	-112
\$28.00 or more	-244	15	18	8	10	-295
1992-93						
Total	1,459	-21	290	545	-721	1,366
Less than \$7.00	421	-183	380	120	-425	530
\$7.00 to \$13.99	510	86	-77	699	-85	-113
\$14.00 to \$20.99	-424	38	-45	-316	-299	199
\$21.00 to \$27.99	246	23	0	-25	25	222
\$28.00 or more	706	16	33	66	63	528

NOTE: Data for 1992 and 1993 use survey weights from the 1990 population census. Due to rounding, totals may not equal sums of individual items.

During the 1979-89 period, the Gini index based on these workers' earnings distributions increased from .385 to .428, reflecting the foregoing annual average net changes in employment.

Table 5 also presents data for the recession that took place between 1989 and 1992. The annual average net change in employment during that period was much less than that of the previous period—only 310,000 persons a year—and there were noticeable differences in where employment was growing. Employment declined, on average, by 581,000 persons for those with middle to high earnings who were from high-income households. This decline reflected not only the loss of many high-paying blue-collar jobs as a result of the recession, but also a reduction in employment of high-paying white-collar jobs.

In contrast, employment gains were recorded among low-earning workers in low- to middle-income households

(817,000 per year) and workers in the middle of the earnings and income distribution (342,000). These net changes actually produced a decline in earnings inequality: the Gini index was .428 in 1989 and .414 in 1992.

The 1992-93 period represented a return to the pattern of employment growth of the 1980's, but in a more extreme way. Table 5 shows that the employment growth of persons with middle to high earnings who were from high-income households rose by 949,000 during that period. At the same time, however, there was only modest employment growth among persons with low earnings who were from low- to middle-income households—about 317,000 persons. And, as in the 1980's, persons in the middle earnings and income group experienced no employment growth. (The group actually lost 53,000 workers.) The Gini index for these workers' earnings distributions shot up from .414 to .449 between 1992 and 1993, and although 1-year changes should obviously be viewed with caution, it is clear that this development was reflected in the apparent surge in income inequality.

According to these data, then, the pattern of employment growth in the 1992-93 period represented not only a return to the pattern seen in the 1980's, but an *exaggeration* of that pattern. While the ratio of employment growth at the top

end of the distribution to that at the bottom end averaged about 1.86 to 1 in the 1980's, in the 1992-93 period it was 2.99 to 1. This development may have been the result of the combined effect of the return to the work force of many highly paid workers who were laid off in the early 1990's along with the resumption of the secular trend toward job creation at both ends of the wage distribution with little growth in the middle.

Conclusions

The result of efforts to improve the quality of economic data oftentimes is like a two-edged sword: on the one hand, the data are improved, but on the other, the comparability of the improved data with previously collected data comes into question. Such is the situation confronting those examining the change in income inequality between 1992 and 1993.

This article has discussed, in an inferential way, one possible interpretation of the change. It does appear that the reported surge in income inequality was driven by an unusually large increase in incomes in the highest quintile of the distribution—especially the top 5 percent of households.²⁷ An examination of the effects of the introduction of CASIC on the data showed that incomes of a certain number of households had been misrecorded, but that this misrecording affected only households in much lower income ranges. Imputation rates also were examined, especially at the high end of the distribution, but the changes there did not indicate any greater inclination on the part of high earners to report their earnings. For those who did report, however, it was apparent that considerably greater earnings were being reported, given the overall increase in incomes at the top end of the distribution. Whether or not the use of the computer in the survey process caused those who reported their earnings and

incomes to be more forthcoming than usual is, unfortunately, a difficult hypothesis to test.

Evidence was shown that the increase in inequality could have been induced by changes taking place in the nature of employment growth as the economy moved out of the recession. Very strong employment gains were registered among persons with middle to high earnings who lived in high-income households. With the return to work at full capacity of many highly paid white-collar workers caught in the recession of the early 1990's, and with the resumption of the "two-tiered" employment growth characteristic of the 1980's, the forces for greater income inequality may have been particularly strong between 1992 and 1993. It remains for us to await the data from the March 1995 CPS to obtain more evidence on how to apportion the 1992–93 changes in household income inequality between changes in survey techniques and changes in the nature of employment growth. □

Footnotes

¹ See "Census Bureau Announces Number of Americans in Poverty Up for a Fourth Year although Poverty Rate Unchanged; Household Income and Health Care Coverage Drop," *United States Department of Commerce News*, CB94-159 (Bureau of the Census, Oct. 6, 1994). See also Daniel H. Weinberg, press briefing statement on the 1993 income and poverty estimates (Bureau of the Census, Oct. 6, 1994).

² See Paul Krugman, "Long-Term Riches, Short-Term Pain," *The New York Times*, Sept. 25, 1994, p. F9.

³ The Gini index is a bounded measure of income inequality that ranges from 0 (all households receive the same share of aggregate income) to 1 (one household receives all income). There are many other measures of inequality, such as the ratio of incomes of households at the 90th percentile of the distribution to those of households at the 10th percentile, the variance of the logarithms of incomes, the coefficient of variation, the Theil index, and so on. While all of these measures are constructed differently and have different properties, each has indicated a growing dispersion in household income distribution in recent years.

⁴ See Weinberg's press briefing statement, p. 5.

⁵ See "Nature of Employment Growth Examined by BLS," *NEWS*, USDL 94-410 (Bureau of Labor Statistics, Aug. 24, 1994), p. 2.

⁶ See "Money Income of Households, Families, and Persons in the United States: 1992," *Current Population Reports, Consumer Income*, Series P60-184 (Bureau of the Census, September 1993), p. C-12.

⁷ See Rudy Fichtenbaum and Hushang Shahidi, "Truncation Bias and the Measurement of Income Inequality," *Journal of Business and Economic Statistics*, vol. 6, no. 3, July 1988, pp. 335-37.

⁸ For a further discussion of these changes, see "Money Income of Households, Families, and Persons: 1993," *Current Population Reports, Consumer Income*, Series P60-188 (Bureau of the Census, forthcoming).

⁹ Other top codes that were increased were earnings from all other jobs or businesses (from \$99,999 to \$999,999), income from Social Security (from \$29,999 to \$49,999), Supplemental Security Income (from \$9,999 to \$24,999), public assistance (from \$19,999 to \$24,999), and veteran's benefits (from \$29,999 to \$99,999). Top codes appearing in CPS public-use data files, however, were not changed and are lower than pre-1993 top codes. For example, the top code on the public-use file for earnings from the longest job or business is \$99,999.

¹⁰ All income data in this article have been adjusted for inflation using the BLS experimental consumer price index for all urban consumers, abbreviated CPI-U-X1.

¹¹ Two facts about the measurement of income inequality should be mentioned in this context. First, all measures of inequality have certain limitations

embodied in them. The Gini index, which is a summary measure, can obscure the location in the income distribution where changes are occurring. A conceptually more difficult problem occurs when Lorenz curves, from which the Gini index is derived, cross. Lorenz curves show the relationship between the cumulative percentage of aggregate income and the cumulative percentage of recipients, and when the curves intersect for different years (or countries, groups, and so forth), a condition of Lorenz dominance prevails that makes it impossible to determine which distribution of income is more unequal.

Second, researchers who study income inequality and who focus more directly on the welfare implications of their findings customarily adjust the household or family income data for differences in the number of household or family members because of presumed economies of scale. No such adjustments were made to the data reported by the Census Bureau, nor were they made to the data used in this article; and even if they were made, they would not substantively change the findings presented.

¹² Actually, the slowdown began in 1987. The change in the Gini index between 1987 and 1989 was not statistically significant, nor was the change between 1989 and 1992. Changes in estimates are statistically significant unless otherwise stated.

¹³ See Joseph Meisenheimer II, Earl Mellor, and Leo Rydzewski, "Job market slid in early 1991, then struggled to find footing," *Monthly Labor Review*, February 1992, pp. 3-17, especially p. 14; and Jennifer M. Gardner, "The 1990-91 recession: how bad was the labor market?" *Monthly Labor Review*, June 1994, pp. 3-11.

¹⁴ Income growth patterns in the five quintiles during the 1987-88 and 1988-89 periods were also more uniform than in the 1979-87 period, and income inequality was virtually unchanged in the first two periods.

¹⁵ For a discussion of the two Agencies' evaluation plan, see Chester E. Bowie, Lawrence S. Cahoon, and Elizabeth A. Martin, "Overhauling the Current Population Survey: Evaluating changes in the estimates," *Monthly Labor Review*, September 1993, pp. 29-33.

¹⁶ See Sharon R. Cohany, Anne E. Polivka, and Jennifer M. Rothgeb, "Revisions in the Current Population Survey Effective January 1994," *Employment and Earnings* (Bureau of Labor Statistics, February 1994), pp. 13-37.

¹⁷ See "Statement of Katharine G. Abraham, Commissioner, Bureau of Labor Statistics, before the Joint Economic Committee, United States Congress," Dec. 2, 1994, p. 4.

¹⁸ "Money Income: 1993."

¹⁹ A total 5,422 cases were targeted for reinterview, and 3,634 of those were completed. A proportion of the cases that were targeted but not reinterviewed had their income amounts adjusted on the basis of likelihood functions derived from completed reinterviews. See "Money Income: 1993."

²⁰ "Money Income: 1993."

²¹ For a discussion of the "hot deck" method of imputation and recent changes to it, see Edward J. Welniak, Jr., "Effects of the March Current Population Survey's New Processing System on Estimates of Income and Poverty," paper presented before the 1990 meeting of the American Statistical Association, Anaheim, California, Aug. 2, 1990.

²² See Lawrence F. Katz and Kevin M. Murphy, "Changes in Relative Wages, 1963-1987: Supply and Demand Factors," *Quarterly Journal of Economics*, February 1992, pp. 35-78; and John Bound and George Johnson, "Changes in the Structure of Wages in the 1980's: An Evaluation of Alternative Explanations," *American Economic Review*, June 1992, pp. 371-92.

²³ See, for example, Lynn Karoly, "The Trend in Inequality among Families, Individuals, and Workers in the United States: A Twenty-Five Year Perspective," in Sheldon Danziger and Peter Gottschalk, eds., *Uneven Tides: Rising Inequality in the 1980s* (New York, Russel Sage Foundation, 1993); and Paul Ryscavage, Gordon Green, and Edward Welniak, "The Impact of Demographic, Social, and Economic Changes on the Distribution of Income," in *Studies in the Distribution of Income, Current Population Reports, Consumer Income*, P60-183 (Bureau of the Census, October 1992).

²⁴ See Lynn A. Karoly and Gary Burtless, "The Effects of Rising Earnings

Inequality on the Distribution of U.S. Income," Dec. 20, 1993 (mimeograph).

²⁵ It is interesting to note that, while the proportion of all *households* that were maintained by single parents was 15.7 percent in 1992 and 15.8 percent in 1993, the proportion of all *families* in which a wife was in the paid labor force increased from 46.0 percent to 47.0 percent.

²⁶ Average hourly earnings were obtained by dividing the annual earnings (wages and salaries, as well as self-employment income) of those workers by the product of the number of weeks and the usual number of hours per week they worked. Although this technique for estimating annual hours is crude because it involves usual, and not actual, hours worked (as well as having other problems), the resulting estimates are sufficiently reliable for the purpose of the intended comparison. The 1979 data are weighted according to 1980 weights, and the 1993 data are weighted according to 1990 weights.

²⁷ According to early estimates from the Internal Revenue Service for 1993, the number of tax returns with adjusted gross incomes of \$100,000 or more was 3,557,000. This was 7.4 percent more than the figure for 1992 (3,312,000). The number of returns increased by 0.4 percent. (See *SOI Bulletin*, vol. 14, no. 2 (Internal Revenue Service, Fall 1994), p. 20; and *SOI Bulletin*, vol. 13, no. 2 (Internal Revenue Service, Fall 1993), p. 24.

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Unraveling employment trends in textiles and apparel

Both of these industries continue to shed large numbers of workers; although textiles and apparel are closely related, the reasons for their job losses, and the prognosis for their future, differ

Lauren A. Murray

The U.S. textiles and apparel industries employ about 1.6 million U.S. workers—1 in 10 manufacturing workers and more than the auto and aircraft industries combined.¹ Textiles and apparel reached employment peaks long ago and both have been influenced by similar forces, including productivity, foreign trade, competition and business cycles. While employment losses have affected the two industries, the duration and depth of those losses differ.

The textiles industry produces base products such as threads, yarn, and cordage and woven fabrics, carpets, and rugs; in contrast, the apparel industry produces finished clothing products made from base fabrics. Employment in the textiles industry peaked in 1948, 25 years before the apparel industry. The textiles industry has lost one-half of its employment base since its peak level; the apparel industry has trimmed one-third of its jobs since its peak in 1973. And since 1970, the industries have lost 30 percent of their combined work force; in the current expansion, the industries have failed to participate in the strong cyclical growth that has been prevalent in much of manufacturing. (See table 1.)

Although the textiles and apparel industries are closely related, different reasons account for their respective job losses. Both industries will continue to face intense global competition in the current decade, and, while some manufacturers may become more profitable, employment will most likely continue to fall.

This article focuses on the employment trends in textiles and apparel over the past half century, with an emphasis on developments since the 1970's. The underlying causes of the protracted employment declines in each industry are examined and some of the issues that will affect future employment needs are discussed.

Long-term trends

Employment in the U.S. textiles industry reached an all-time high of 1.3 million jobs in June 1948, reflecting the overwhelming dominance of the United States in the world economy following World War II. Employment subsequently declined through several business cycles, with new levels rarely returning to 1 million. However, this long-term decline in employment is not reflected in a corresponding drop in production. On the contrary, production *increased* by nearly 190 percent between 1948 and 1994 while employment *dropped* by nearly 50 percent.² (See chart 1.) Labor productivity grew by 180 percent in the textiles industry between 1950 and 1973.³ In contrast, the apparel industry experienced productivity growth of only 73 percent during that same period, which was more in line with total manufacturing labor productivity growth of 84 percent. Thus, labor productivity growth in the textiles industry was twice the rate of all of manufacturing, while labor productivity growth in the apparel industry lagged behind other manufacturing.

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The apparel industry's all-time peak employment level of 1.4 million occurred in April 1973. (See chart 2.) The level of apparel employment appears to have been greatly influenced by the amount of apparel imports entering the United States. Beginning in the 1960's, imports of apparel products increased rapidly and gained a larger share of the domestic market, contributing to the subsequent employment declines in the industry. In the early 1960's, imports comprised about 2 percent of domestic consumption; by 1980 the proportion had risen to nearly 15 percent,⁴ and in 1988 it was 26 percent. (See chart 3.)

Since its peak in 1973, the long-term employment trend of the apparel industry has closely followed that of the textiles industry. Through successive business cycles, apparel manufacturers failed to fully recover jobs lost during downturns. Moreover, underscoring the industry's long-term, non-cyclical decline, periods of employment growth have been shorter, while the periods of job loss have become more persistent. The most recent employment contraction lasted 7 years and followed a growth cycle of only 16 months. The industry lost 220,000 jobs between its April 1984 peak and April 1991 recession trough, while productivity increased by 13 percent and imports continued to expand.

The textiles industry

Increased spending by textile manufacturers in the 1970's set the stage for productivity advances that occurred in the 1980's. The increased spending boosted productivity levels substantially, which helped manufacturers compete with rising imports. Several recessions, combined with continued technological advances and rising imports, produced a period of rapid employment losses.

Productivity and structural changes. In the late 1960's and early 1970's, textiles manufacturers made major strides in automation. Although the industry has historically spent considerable amounts of money on capital investments, spending in the 1970's was significant because most of it was invested in radical new technologies. Before 1968, the primary source of productivity gains was decreased manual handling of materials.⁵ For more than 100 years the industry had updated and modified existing machinery. But in the 1970's, completely new technology, such as open-end spinning and shuttleless looms, became available. These technologies drastically reduced the time and number of workers needed to produce fabrics. For example, a water- or air-driven shuttleless loom not only produced fabric three times faster than its wooden fly shuttle predecessor, but it also could produce seven or eight times more fabric because it was able to weave wider widths. Open-end spinning boosted the rate of production of yarn four times over the older ring-spinning tech-

Table 1. Employment in apparel and textiles, selected years, 1939-94

Year	Textiles		Apparel	
	Employment in thousands	Percent change	Employment in thousands	Percent change
1939	1,193.0	(¹)	924.0	(¹)
1949	1,187.0	-0.5	1,173.0	26.9
1959	945.7	-20.3	1,225.9	4.5
1969	1,002.5	6.0	1,409.1	14.9
1979	885.1	-11.7	1,304.3	-7.4
1989	719.8	-18.7	1,075.7	-17.5
1990	691.4	-3.9	1,036.2	-3.7
1991	670.0	-3.1	1,006.0	-2.9
1992	674.1	.6	1,007.2	.1
1993	674.8	.1	984.6	-2.2
1994	672.0	-4	954.3	-3.1

¹ Data are not available.

nique and reduced the number of steps involved in manufacturing some kinds of yarn from 15 to 3.6

While the technology available was revolutionary, it also was expensive. U.S. textile manufacturers spent an average of \$3.1 billion (in constant 1987 dollars) annually between 1969 and 1974 on capital purchases, 90 percent of which was for new equipment purchases. During the first half of the decade, manufacturers spent between 6 percent and 7 percent of their value of shipments on capital investment. In the latter half of the decade the spending dropped to about 5 percent of the value of shipments, or \$2.4 billion annually. During much of the 1970's, capital expenditures for the industry were greater than profits.⁷

As a result of the automation during the 1970's, labor productivity, expressed in terms of output per employee hour, increased 56 percent between 1969 and 1979. Constant dollar shipments⁸ rose by \$11.5 billion annually during the decade, while employment declined by more than 125,000 jobs. In the early and mid-1980's, profits in the textile industry began to decline dramatically due to the rising value of the dollar, a substantial drop in exports of textile products, and two recessions in the early 1980's. Capital spending declined to an average of \$2.2 billion, and in 1986, fell to \$1.8 billion, its lowest level since 1963. In the mid-1980's, textile manufacturers took part in several mergers and acquisitions. This restructuring led to the establishment of several dominant firms in the industry.⁹

Many textiles companies were the targets of leveraged buyouts. Because the industry had a history of erratic earnings, many manufacturers' stock was traded below book value. Its low was attractive to buyers who were able to raise capital by using the company's assets as collateral. This was the case for at least four major manufacturers: Cannon Mills, Cone Mills, Dan River Inc., and Burlington, which were purchased during the 1980's. The size of the new firms lent

itself to achieving greater economies of scale, and gave the newly formed companies a larger capital base with which to invest in emerging technologies. Capital investments rebounded to an average of \$2.4 billion between 1987 and 1990.¹⁰

Between December 1978 and the April 1991 employment trough, employment declined 26 percent, or 230,000 jobs. Labor productivity gains averaged 2.7 percent a year between 1979 and 1991, more in line with total manufacturing productivity growth of 2.6 percent. Production grew even as employment losses persisted, and reached a new all-time high in April 1989, before the most recent recession began and demand weakened. Following the 1990-91 recession, the textile industry enjoyed 2 years of employment growth before it again began trimming payrolls in June 1993. However, production continued to increase: December 1994 levels were 8 percent above the April 1989 peak level.

Imports and exports. A second reason for the decline in textile employment was increased imports. The textile industry fared far better than the apparel industry against rising imports in the 1970's. The textile industry not only kept its share of the domestic market throughout the decade, but it also maintained a trade surplus for the latter half of the decade and into the early 1980's. The ability of the industry to maintain its market share was, very likely, due to the technological advances that reduced needed labor and accelerated the production process. Capital expenditures required to obtain this type of technology were prohibitive to many developing countries, particularly those with a large number of small, fragmented producers. Low wages in developing countries may also have limited pressures on those textile manufacturers to introduce new labor-saving technologies.¹¹ Thus, U.S. manufacturers were more competitive with the low-wage countries.

The U.S. textiles industry also performed much better than its European counterparts. The United States was the only major industrialized country to maintain its domestic market share in the 1970's; imports comprised only 4.5 percent of domestic market share in 1970 and 1980. Germany's and the United Kingdom's textile import penetration increased substantially. Import penetration by Japan, the largest post-World War II exporter, and Italy, while still posting a trade surplus in the textiles industry, also increased.¹²

Chart 1. Employment and production in textiles, 1950-94



From 1980 to 1988, the import share of total U.S. textile consumption increased by less than 3 percentage points, rising to 7 percent of domestic consumption. In contrast, the apparel industry's import penetration had reached 26 percent by 1988, an increase of 13 percentage points from 1980. In 1992, imports still accounted for a relatively small 11 percent of all domestic textile consumption.

Exports offset some of the increase in textile imports during the late 1980's. Although exports fell during the first half of the decade because of an overvalued dollar, they began to rebound in 1986, providing some stimulus for the industry. In 1989, exports comprised 4 percent of industry shipments. The impact of exports on employment is even greater when indirect exports, such as the use of fabric in clothing that is exported, is considered; nearly 10 percent of textile employment was related to direct and indirect exports in 1989.¹³

As was indicated above, the U.S. textiles industry does not appear to have greatly suffered from direct imports. However, the industry was significantly affected by the surge of apparel imports. The U.S. textile industry supplies most of the textile products required by domestic apparel producers. As apparel imports rose and continued to gain domestic market share, U.S. apparel producers required less domestic textile products.

The apparel industry

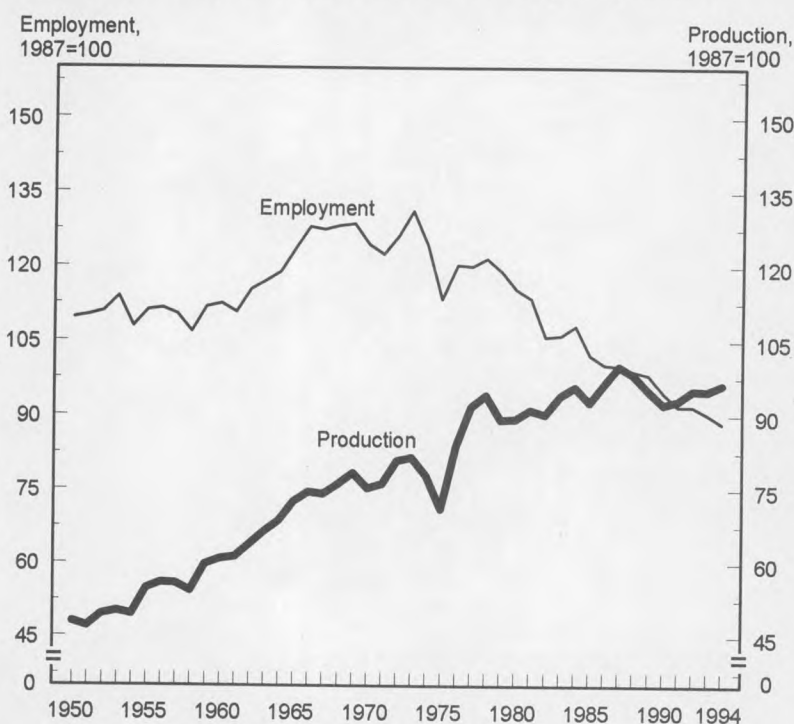
Employment in the apparel industry declined significantly in the 1970's and 1980's. Technology introduced in this period was less revolutionary than that in the textiles industry. Most likely, apparel imports had the principal influence on employment. Apparel employment peaked in 1973 with production peaking in July 1987; both production and employment have continued to decline in the 1990's.

Productivity and structural changes. Technological innovations in the apparel industry during the 1970's and 1980's were less sweeping and more incremental than changes in the textiles industry. Examples of technologies that were developed in the 1970's and 1980's are programmable sewing machines that allow operators to work more than one machine at a time, Computer Aided Design (CAD) that reduces lead time, and computer controlled cutting of material. Labor productivity increased by 26 percent between 1969 and 1979; this was slightly less than the 33-percent rate for all manufacturing.

In the 1970's, the apparel industry spent more on capital investments than it had during the 1950's and 1960's combined. However, the industry still spent at only two-fifths of the textiles industry's rate, primarily due to a lack of new technology. (See chart 4.) The new technology that was available to apparel manufacturers was not as powerful or expensive as that available to textile manufacturers. However, another reason for the low level of spending, and perhaps the limited new technology available, can be explained by the structure of the apparel industry: firms in the apparel industry are typically smaller and more disconnected than firms in the textiles industry. For example, 23,600 domestic apparel establishments employed about 1.3 million people in January 1976. By contrast, about 7,300 textile establishments employed slightly more than 900,000 workers. Twenty-four percent of textile workers were employed in establishments of more than 1,000 employees in 1976 compared with only 8 percent in the apparel industry; at the other extreme, nearly 20 percent of apparel workers were employed in establishments of fewer than 50 workers, versus less than 7 percent of textile workers.¹⁴

The size of many apparel firms was often an obstacle to large capital investments. Small firms typically operate on a

Chart 2. Employment and production in apparel, 1950-94



SOURCES: Employment data from the Bureau of Labor Statistics; production data from the Federal Reserve Board.

low profit margin, and the cost of new, technologically advanced equipment would be prohibitive to many of them. But labor productivity continued to rise in the 1980's as production of apparel products grew by 7 percent while employment fell. Labor productivity grew at an annual average rate of 2.4 percent between 1979 and 1991.¹⁵ Yet it is impossible to know if employment would have declined less without the productivity gains, because the higher labor costs would have made the industry even less competitive with imports.

In 1990, 30 percent more labor was required for every dollar of output in the apparel industry than in the textiles industry.¹⁶ The textiles industry continued to invest far more in capital in the 1980's than the apparel industry, spending \$23 billion, or 4 percent of the industry's value of shipments, while the apparel industry spent only \$8 billion, or 1.5 percent of that industry's value of shipments. In addition, the apparel industry directed only half of those expenditures to new equipment, while the textiles industry spent three-fourths of its outlays on new equipment.

Imports and exports. Imports in the apparel industry increased from 5 percent of total consumption in 1970 to 26 percent in 1988, or from \$1.3 billion to \$22 billion annually. This contrasts with the textiles industry, which lost less mar-

ket share to overseas productions. Apparel imports not only grew rapidly, but comprised a large share of total sales. This import growth led to large-scale employment declines.

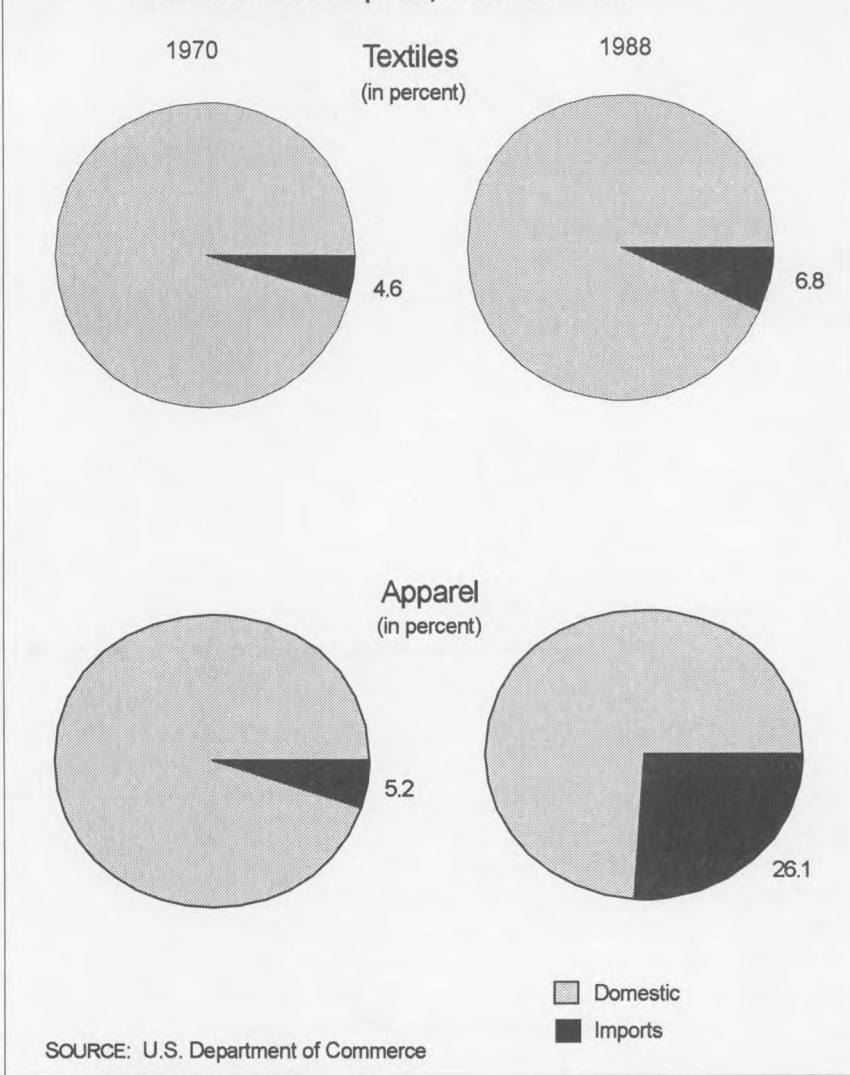
The apparel industry was particularly hard hit by imports from developing countries. Less developed countries traditionally have begun industrialization with the apparel and textiles industries because raw materials are relatively common, and because the two industries require less capital than most other manufacturing activities.¹⁷ Thus, developing countries with an abundance of cheap labor but very little capital can produce textiles and apparel products.

An example of this type of industrialization policy can be seen in Japan following World War II. Faced with the destruction of much of their manufacturing base, the Japanese focused on the textiles and apparel industries to rebuild. In 1950, textiles accounted for 24 percent of total shipments and 48 percent of exports. By 1980, the figures had dropped to 5.2 and 4.8 percent. Textiles and apparel declined in importance as Japan became more industrialized and wage pressures grew. Japanese industrial policy focused more on high technology industries with larger profit margins. Japanese textile producers today are similar to U.S. producers: they are more capital intensive, and they also manufacture more expensive fabrics.

Developing countries rapidly increased their share of the world export market in apparel. In 1965, world apparel exports totaled \$3 billion and developing countries supplied only 14 percent; by 1991, world apparel exports totaled \$119 billion and developing countries supplied 59 percent. The developing economies in Asia (China, Korea, Mongolia, and Vietnam) supplied half of the world's apparel exports in 1991, while the United States supplied less than 3 percent. At the same time, the United States received 19.4 percent of world exports, including a third of the exports from developing countries.¹⁸ (See table 2 and chart 5.)

Despite the loss of international market share in the 1970's, U.S. apparel exports increased in value. During the first half of the 1980's, apparel exports declined as the value of the dollar rose (in 1984, U.S. apparel exports accounted

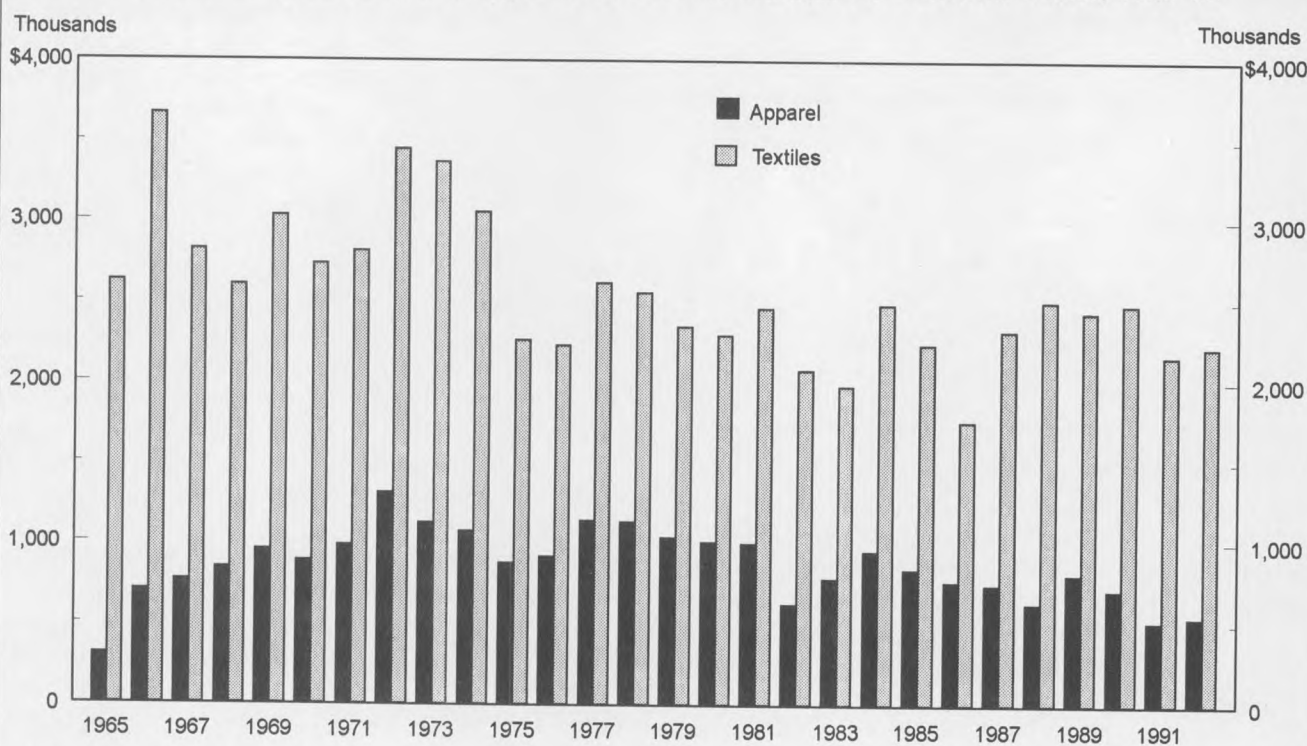
Chart 3. Textile and apparel imports as a proportion of domestic consumption, 1970 and 1988



for only 1.8 percent of world apparel exports), and grew modestly in the latter half. But in contrast to the textiles industry, the apparel industry never experienced a trade surplus. In 1989, exports accounted for only 4 percent of total shipments (the same ratio as for textiles), and were overwhelmed by imports. The industry's trade imbalance has steadily worsened since 1980. In 1992, the apparel industry's trade deficit was nearly \$26 billion, eight times greater than the textile industry's imbalance, and the worst imbalance of all the manufacturing industries. (See chart 6.)

The apparel industry's practice of using manufacturing workers in Caribbean countries contributed to a portion of increased imports. "Sourcing," or "807 Sourcing," as it is called in the apparel industry, refers to cutting material in the United States and assembling it in other nations.¹⁹ The

Chart 4. Capital investment by the apparel and textiles industries in constant dollars, 1965-92



Source: U.S. Department of Commerce

product is then imported back to the United States, with duties paid only on the value added, and shipped by the U.S. manufacturer for sale.²⁰ Thus, the count of imports includes the value added by assembly in these sourcing arrangements.

Although this practice began in the late 1960's, the amount of shipments allowed to reenter the United States was limited by quotas. In 1985, under new bilateral agreements with the Caribbean Basin countries,²¹ unlimited access was negotiated for firms that, in addition to cutting the material in the United States, also used U.S.-made material. This new sourcing agreement is termed 807a, a traditional type of outsourcing. Firms in the United States operate under 807 and 807a sourcing methods. As a result of this lifting of import quotas, imports from the Caribbean Basin have grown rapidly. Between 1987 and 1992, imports under the 807 sourcing programs increased by 180 percent, to \$3.8 billion in 1992. Nevertheless, this was still just 14 percent of total U.S. apparel imports.²²

Despite the use of labor that is outside the United States, determining the precise impact on jobs is impossible. Many industry leaders—in the American Apparel Manufacturers Association, the U.S. Department of Commerce, and other organizations and agencies—believe that, without the practice of 807 sourcing, many U.S. apparel manufacturers

would go out of business, causing a significant loss of jobs in the industry. Because of this arrangement, domestic manufacturers have been able to take advantage of the relatively cheap labor in Mexico and the Caribbean to manufacture apparel products that are more competitively priced compared with East-Asian products. For this reason, 807 sourcing may have reduced the demand for imports from Asia, protecting the employment of domestic workers who contribute to some parts of the manufacturing process. As a result, although some apparel assembly jobs in the United States have moved to the Caribbean Basin or Mexico, even more might have been lost to East-Asian imports without this legislation.

Meanwhile, the apparel industry is still confronted by growing imports. While imports under section 807 are comprising a larger share of total imports, most imports continue to come from developing Asia (nearly 80 percent in 1990).²³ In 1992, apparel imports accounted for 31 percent of domestic consumption.

Employment outlook and trade agreements

GATT and the Multi-Fiber Arrangement. Among the factors that are expected to have a substantial impact on employ-

Table 2. Developing and developed countries' share of the world export market, in percent, 1965-90

Year	Textiles		Apparel	
	Developing market economies	Developed market economies	Developing market economies	Developed market economies
1965	16.0	76.4	14.8	69.7
1970	15.4	77.6	21.1	63.5
1975	17.6	74.6	32.0	54.5
1980	22.1	69.8	36.5	51.2
1985	28.0	62.2	47.9	41.5
1990	39.0	59.1	56.4	41.3

NOTE: Based on SITC 65 for textiles and SITC 84 for apparel.

SOURCE: United Nations

ment in the textiles and apparel industries, perhaps the most influential will be the trade policy agreed to in the General Agreement on Tariffs and Trade (GATT). With the support of the United States, the Multi-Fiber Arrangement will be phased out over 10 years. This arrangement has been the textiles and apparel trade agreement in effect among most nations since 1974, and has been renegotiated and ratified four times, most recently in 1986.²⁴

The Multi-Fiber Arrangement, a network of bilateral trade agreements, operates outside the regulations of GATT, and allows countries to place import quotas on textiles and apparel products that, under GATT, would not be permitted. The Multi-Fiber Arrangement permits importing countries to place quotas on apparel and textile products from selected countries to avoid domestic market disruption. While the arrangement has undoubtedly protected some domestic jobs, it was criticized by consumer groups, several academics, and proponents of free trade because of its cost to consumers and its protectionist type quotas. A study by William Cline found that 214,000 jobs were saved in the apparel industry due to the Multi-Fiber Arrangement, at a cost to consumers of \$46,000 annually per job.²⁵ A separate study by Gary Clyde Hufbauer, Diane Berliner, and Kimberly Ann Elliott found that the Multi-Fiber Arrangement had saved 460,000 jobs in the apparel industry at a consumer cost of \$39,000 per job.²⁶

With the phase-out of the Multi-Fiber Arrangement, textile and apparel trade will be conducted under rules and regulations of GATT. The phase-out of the Multi-Fiber Arrangement will allow increased imports by releasing some products from quota limits at set intervals, while the quota limits on the remaining protected products are raised each year. These regulations will be set for participating countries and should allow for freer trade of textile and apparel products among these countries. As a result of the phase-out, import restrictions will be eliminated 10 years after it is enacted.²⁷

Several groups have estimated the impact on employment from the phase-out of the Multi-Fiber Arrangement, but es-

timates vary dramatically. Estimating effects on employment is difficult because several important facets of the agreement have not yet been decided.²⁸ For example, the status of quota limits for products from China is unknown because that country is not a member of GATT.²⁹ Estimating demand for U.S. products from foreign countries that will have freer markets also is difficult. In a study published in January 1992, Wharton Economic Forecasting Associates states that the "direct and indirect impact on the textile and apparel industries is estimated to be a job loss of 647,000 . . .".³⁰ A study by the American Textile Manufacturers Institute estimates that number of jobs will fall by 1.4 million during the same period, leaving only 300,000 jobs in the industries.³¹ However, the U.S. International Trade Commission estimated that eliminating all import quotas and tariffs would reduce employment in the two industries by between 230,000 and 290,000. The Congressional Budget Office notes that the losses may be even lighter than the trade commission estimates because the commission's study did not take into account the proposal that all industrialized countries remove their restrictions at the same time; the continued application of import quotas to countries that are not members of GATT, such as Taiwan and China; and that tariffs on the products may still remain even after quotas are removed.³²

The apparel industry, which is far more labor intensive and less competitive internationally than the textile industry, will probably sustain most of the losses from the new trade environment. As noted, the textiles industry does not suffer from severe import competition as does the apparel industry, but is affected more indirectly: less domestic apparel production means fewer domestic textiles are needed.

A possible advantage of the new agreements would be the opening of markets in developing countries that restrict imports of U.S. textile and apparel products. Because the U.S. textiles industry uses fairly efficient production processes, demand from foreign apparel producers could increase.

NAFTA. Future employment levels also will be affected by the North American Free Trade Agreement (NAFTA). The agreement, which took effect January 1, 1994, created a free-trade zone among the United States, Canada, and Mexico. NAFTA is expected to contribute to employment declines in the apparel industry but may generate job growth in the textiles industry.

With the relatively cheap labor that is available in Mexico, some apparel manufacturers are likely to move their operations south to be more competitive. NAFTA also may cause apparel manufacturers to slowly discontinue 807 sourcing operations in the Caribbean as they reinvest in Mexico, where finished products would not be subject to duties. A study by the International Trade Commission concluded that a free

trade agreement would introduce incentives that favor apparel investment shifts from Caribbean Basin countries to Mexico; but the study could not quantify any effects of this shift.³³ According to this study, companies that already have invested heavily in the Caribbean may invest in Mexico to remain competitive, although this would require large capital expenditures.

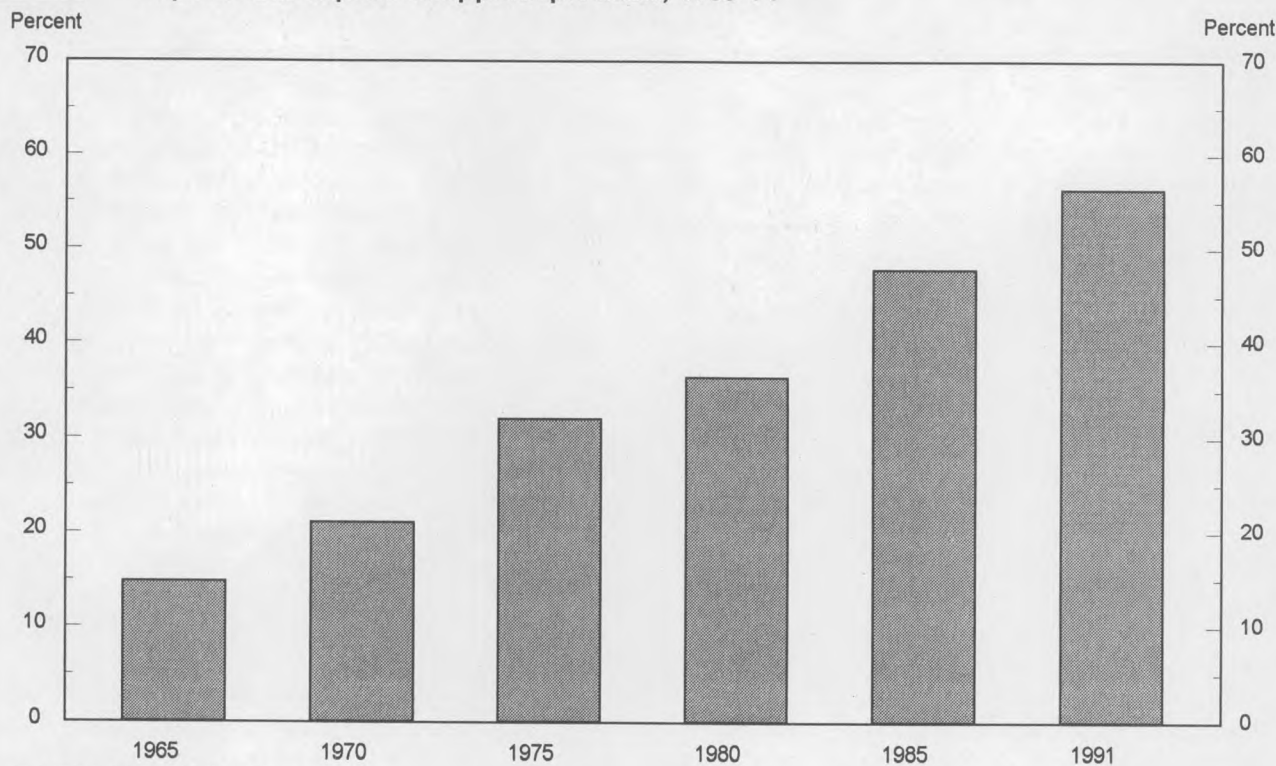
The textiles industry would probably not undergo the same shift in its manufacturing base. Because the textiles industry is much less labor intensive than the apparel industry, U.S. companies would not have the same incentive to relocate production. Further, the United States is the largest supplier of textile goods to Mexico's clothing manufacturers and, for apparel products to remain duty-free throughout the free-trade zone, the apparel products must be made from North American fiber, spun in North American mills. With an efficient production process in place, U.S. textiles manufacturers would benefit from increased production in the free-trade zone. The U.S. textiles manufacturers are more efficient than Mexican textile manufacturers, and the elimination of tariffs would make U.S. textile products more attractive to Mexican apparel producers. Mexican textile manufacturers could, in the long run, invest in better facilities, but the large capital outlays required for efficient plants, coupled with a water

supply that is inadequate for dyeing and finishing yarns will impede investments in the near future.³⁴ This will provide further stimulus to the U.S. textiles industry. In addition, NAFTA will boost production and imports of U.S.-made fabrics, according to the Wharton Economic Forecasting Associates.³⁵

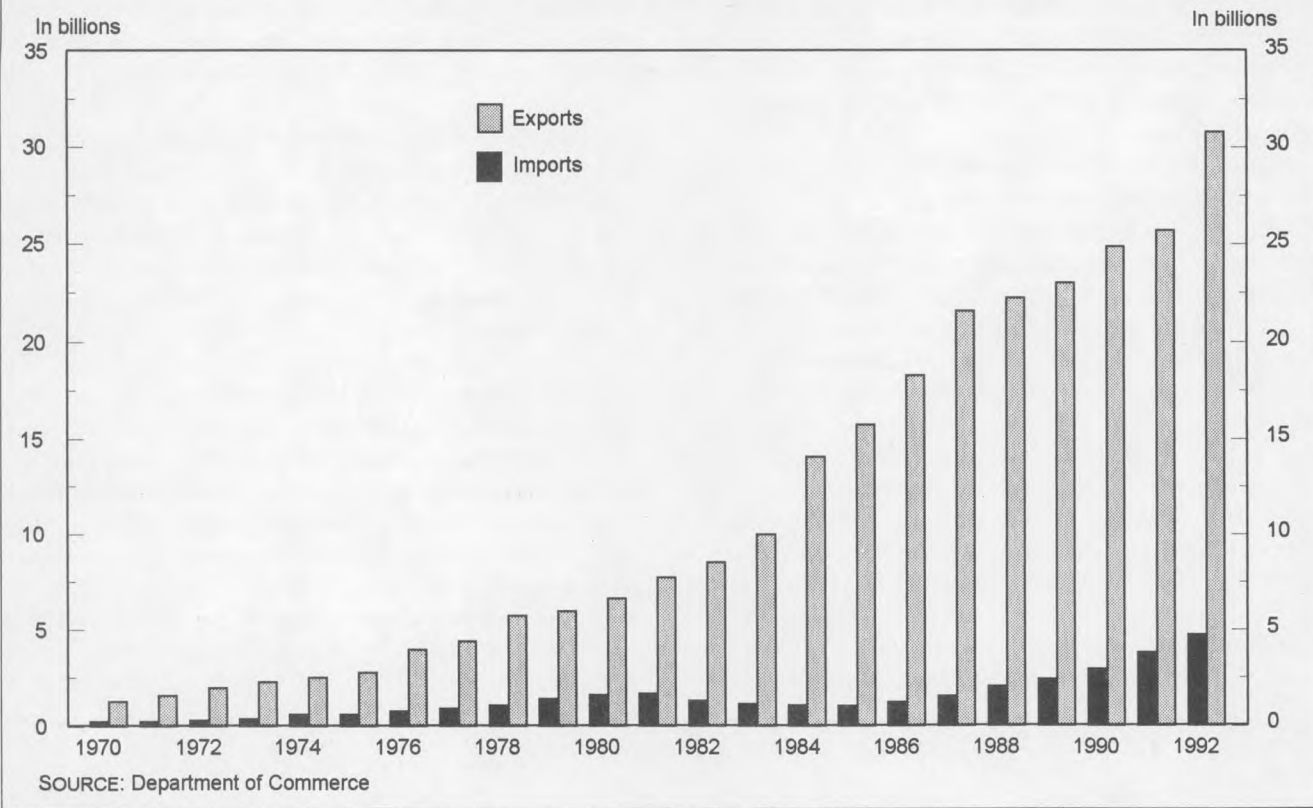
The impact of NAFTA on imports, exports, and employment would be expected to occur incrementally over many years. During 1994, the first year after NAFTA took effect, annual average employment in textiles was relatively flat for the third consecutive year, and declines in apparel continued. Both developments were in line with expectations for employment trends under NAFTA.

Eastern Europe. The changing political and economic status of Eastern Europe also may negatively affect employment prospects for apparel. With the opening of Eastern European markets, these countries have the ability to become bigger players internationally. Unlike many apparel workers in East Asia, those in Eastern European countries are very skilled. This level of skill, coupled with the very low wages, may allow these countries to produce more expensive apparel products, such as tailored suits and coats, at a fraction of the price paid by U.S. manufacturers. For example, in 1991 the aver-

Chart 5. Imports and exports of apparel products, 1965-91



SOURCE: United Nations

Chart 6. Developing countries' share of world exports in apparel products, 1965-92

age U.S. apparel worker earned \$6.77 an hour; a similarly skilled worker in the former Soviet Union earned \$0.36.³⁶ As incomes rise, however, the appeal of U.S. clothing could attract buyers in these same countries.

Productivity

Even if the current trade regime were to remain unchanged, the industries' employment levels would still be expected to decline. The Bureau of Labor Statistics estimates that, depending on the economy's growth, the textiles industry will lose between 85,000 and 160,000 jobs between 1992 and 2005, while losses in the apparel industry will range from 240,000 to 350,000.³⁷ Under the current trade regulations, the Wharton estimate is that the textile and apparel industries, combined, will lose 400,000 jobs during the 1993-2002 period. This estimate also is based on expected productivity increases and the domestic industries' competitive disadvantages.

Productivity will continue to have a major impact on employment in the 1990's. Productivity advances will continue to build on the uses of computer integrated manufacturing and quick response. Use of computer integrated manufac-

turing already has begun in the textiles industry. A fully computer-integrated spinning mill that virtually eliminates the need for laborers already has been established in Japan. The entire process, from placing bales in the opening line to loading trucks for shipment, is achieved without human hands touching the material; maintaining and controlling the entire plant requires only nine employees.

In the United States, many plants use some form of computer integration in manufacturing. For example, a Mountain City, TN, automated yarn spinning plant produces 600,000 pounds per week of cotton yarn with fewer than 200 employees. The only handling of material occurs when cotton is unloaded from trucks and when packed yarn is reloaded for delivery.³⁸ Computer integrated manufacturing reduces labor costs and enhances quality and reduces error. Optical scanning can detect errors and alert operators immediately.

Fully automated apparel plants are only in the early stages of development. A fully operational computer integrated manufacturing system has the potential to reduce the time needed to complete a season's line from 30 weeks to between 5 and 6 weeks.³⁹ Many apparel manufacturers already have started using computer-aided design systems and modular manufacturing. These systems have allowed garment manufacturers

to substantially reduce the time needed for design. Modular manufacturing consists of units or small teams of employees who produce an entire garment. This team system has increased quality and minimized downtime in many plants.⁴⁰

Dean Vought, president of Textile and Clothing Technology Corp., an independent research firm, believes that "advances in manufacturing technology, while needed and welcome, have a limited impact. . . the wide variety of style changes and limp fabrics that must be accommodated in manufacturing make it unlikely that we could reduce direct labor content by more than 25 percent through all currently conceivable mechanization and automation." That still may not be enough to compete with low wage countries. Vought emphasized that resources may be better spent "on developing technology to reduce calendar time rather than cost. Time, service and more accurate response to consumer demand are where we have an advantage that can be strengthened through technology." Thus, computer integrated manufacturing in the apparel industry may be focused on time-saving techniques. This type of technology takes the form of improved communications, data manipulation, graphics, video imaging, and satellite transmissions and can be used in product development, marketing and customer service.⁴¹

Quick response manufacturing follows the time-oriented concept that quicker is better, and is becoming the norm in the apparel and textiles industry. Quick response programs use computers to speed the goods, services, and information in domestic apparel production, tying apparel producers with textile suppliers and retailers.⁴² Quick response has become important in the apparel industry because more retailers are demanding it as they seek to minimize inventories and markdowns while restocking popular items. For apparel manufacturers to provide retailers with goods on a quick-turn-around basis, they must be able to receive their manufacturing inputs quickly. Therefore, this chain of demand is requiring closer partnerships among retailers, apparel manufacturers, and textile manufacturers.

Quick response helps the U.S. apparel industry to compete against foreign manufacturers. Many retailers have little control over the quality of the products they purchase from abroad, and many times the quality of the products is not consistent among shipments. Quick response gives domestic manufacturers an advantage because they can deliver better quality items more quickly. The link between manufacturers and retailers also provides incentives for producers to deliver better quality items. One survey of apparel manufacturers found that 61 percent of respondents had quick response programs with their retail partners in 1991, up from

51 percent in 1990, while 32 percent had such programs with their textile partners, up from 23 percent in 1990.⁴³

All of the above technologies and trends are combining to enable producers to create better quality products, more quickly and for less money in both industries. In a time of rapidly changing economies, and with prospects of freer trade on the horizon, these practices can enable the textiles and apparel industry to maintain, or perhaps increase, their share of the world market.

IN SUM, employment has declined in the textile and apparel industries over the past two decades—together they have lost more than 750,000 jobs. Although the industries are closely linked, their operations are very different. The textiles industry is concentrated, automated, and efficient. Because the apparel industry is still very labor intensive, despite new technologies, it has difficulty competing with foreign producers in low-wage countries. The apparel industry also is not as concentrated as the textiles industry. In the United States in 1987, 21,000 apparel companies shipped goods valued at \$64 billion. The textiles industry had only 5,000 companies producing \$63 billion in shipments.⁴⁴

Between 1949 and 1991, labor productivity in the textiles industry grew at an average annual rate of 3.9 percent, much faster than the annual average rate of 2.5 percent for all manufacturing. Labor productivity in the apparel industry grew at an annual average rate of only 2.2 percent during the same time period, slightly slower than the rate for all manufacturing.

Imports in the textile industry gained about 5 percentage points of domestic market share from 1970 to 1993, rising from 4.5 percent to 9 percent. The apparel industry, by contrast, saw imports rise from about 5 percent to 31 percent during the same period. Textile production continues to reach new heights, but apparel production has not returned to its peak level that occurred in 1987. Industrial production in the apparel industry is off 6 percent from its July 1987 peak, according to December 1994 data.

Although the apparel industry continued to lay off workers in 1994, employment in textiles was relatively flat. Over the long term, declines are expected to continue, particularly in apparel. Competition will be even fiercer with stepped up global trade and the lifting of import restrictions. Labor-saving and time-saving technologies will help domestic manufacturers compete against low-wage countries to maintain (and perhaps expand) domestic and world market share. Therefore, emerging technologies and opening markets should be the main forces behind the employment trends in the next 10 years. □

Footnotes

¹ Employment data are from the Current Employment Statistics Survey and appear in *Employment, Hours, and Earnings, United States, 1909-1990, Volume II*, Bulletin 2370, and *Employment, Hours, and Earnings, United States, 1981-93*, Bulletin 2429 (Bureau of Labor Statistics, 1991 and August).

² Production data from *Federal Reserve Statistical Release, Industrial Production and Capacity Utilization*, (Federal Reserve System), various issues.

³ Productivity data based on unpublished data from the Office of Productivity and Technology, Bureau of Labor Statistics, September 1992. Productivity data for apparel and textiles are available only through 1991.

⁴ William R. Cline, *The Future of World Trade in Textiles and Apparel* (Washington, Institute for International Economics, 1987), table 2.5.

⁵ Centre on Transnational Corporations, *Transnational Corporations in the Man-made Fibre, Textile and Clothing Industries* (United Nations, 1987), p. 75.

⁶ Fariborz Ghadar, William H. Davidson, and Charles S. Feigenoff, *U.S. Industrial Competitiveness, The Case of the Textile and Apparel Industries* (Lexington, MA, Lexington Books, D.C. Heath and Co., 1987), pp. 19-20.

⁷ Data are "corporate profits before taxes" obtained from U.S. Department of Commerce, Bureau of Economic Analysis, *National Income and Products Accounts, 1959-1988*, vol. 2, (July 1992), table 6.17.

⁸ Constant-dollar shipments were deflated using the Producer Price Index for textile and apparel products. The base year is 1982.

⁹ Some of the larger consolidations were West Point-Pepperell's acquisition of J.P. Stevens and Cluett, Peabody & Co.; the subsequent acquisition of West Point-Pepperell by a majority stockholder of Fruit of the Loom; the merger of Spring Industries and M. Lowenstein; and the sale of Cannon Mills to Fieldcrest, becoming Fieldcrest Cannon. *Standard and Poor's Industry Surveys*, Nov. 28, 1991, pp. T76-T77.

¹⁰ The information on leveraged buy-outs was primarily obtained from *Standard and Poor's Industry Surveys*, Nov. 28, 1991, pp. T76-T77.

¹¹ United Nations Centre on Transnational Corporations, *Transnational Corporations in the Man-made Fibre, Textile and Clothing Industries*, p. 80.

¹² Cline, *The Future of World Trade*, table 5.5. The high level of import penetration in the European countries also reflects a higher degree of intraindustry trade in the European Economic Community.

All international trade statistics are based on Standard Industrial Trade Classification codes 65 for textile products and 84 for apparel products. *sic* 65 includes fabricated textile products; *sic* 22 does not. *sic* 84 includes only clothing while *sic* 23 includes clothing and fabricated textile products. Therefore, *sic*'s 22 and 23 are not strictly comparable to *sic*'s 65 and 84.

¹³ *Exports From Manufacturing Establishments, 1988 and 1989*, AR89-1 (Bureau of the Census, November 1992), p. 30.

¹⁴ Bureau of Labor Statistics, Office of Employment and Unemployment Statistics, unpublished data. Data available beginning in 1976.

¹⁵ The labor productivity rates may be overstated because some U.S. apparel products are shipped to the Caribbean or Mexico for assembly or other work, and then shipped to the United States where they are included in the U.S. industry's total shipments. Therefore, some labor used in manufacturing the product may not be included in the productivity measures.

¹⁶ This figure was derived using the annual average aggregate hours from the Current Employment Statistics Survey and total shipments from the Bureau of the Census.

¹⁷ Ghadar and others, *U.S. Industrial Competitiveness*, pp. 16-17.

¹⁸ *Monthly Bulletin of Statistics*, vol. XXXV, no. 5, special table D, and vol. XI, no. 2, special table C and various other issues including special tables C and D. (New York, United Nations, Department of Economic and Social Development, Statistical Division, May 1981). The makeup of countries included in the developing economies has changed as centrally planned economies, such as Eastern European countries, shift to open markets.

¹⁹ "The term 807 refers to a tariff paragraph in Schedule 8 of the U.S. Tariff Code that defines the covered articles as follows: 'Articles assembled abroad in whole or in part of fabricated components, the product of the United States, which a) were exported in condition ready for assembly without further fabrication, b) have not lost their physical identity in such articles by change in form, shape or otherwise, and c) have not been advanced in value or improved in condition abroad except by being assembled and except by operations incidental to the assembly process such as cleaning, lubricating, and painting.'" See *U.S. Apparel Imports Under 807* (Arlington, VA, American Apparel Manu-

facturers Association, undated), p. 1.

²⁰ Although most of tariff code 807 imports are from the Caribbean Basin, the same agreement is in effect with Mexico and is called Special Regime. These imports from Mexico still enter the United States under tariff code 807 and any reference here to 807 imports includes imports from the Caribbean and Mexico.

²¹ Belize, Costa Rica, the Dominican Republic, El Salvador, Guatemala, Haiti, Honduras, and Jamaica are the primary countries in the Caribbean Basin initiative.

²² "U.S. 807 Apparel Imports," Table 1.

²³ *Monthly Bulletin of Statistics*, vol. XLVII, no. 5 (New York, United Nations, Department of Economic and Social Development, Statistical Division), special table D.

²⁴ Four multi-fiber arrangements were negotiated between 1973 and 1986 (MFA I-MFA IV). The Multi-Fiber Arrangement was not negotiated and ratified again upon its expiration in 1991 because most countries had agreed that it would be eliminated. But until negotiations for elimination of the arrangement were completed, MFA IV was extended.

²⁵ Cline, *The Future of World Trade*, p. 193.

²⁶ Gary Clyde Hufbauer, Diane Berliner, and Kimberly Ann Elliott, *Trade Protection in the United States: 31 Case Studies* (Washington, Institute for International Economics, 1986), p. 148.

²⁷ The information on the schedule of the Multi-Fiber Arrangement phase-out was obtained from "Multilateral Trade Negotiations, The Uruguay Round," UR-91-0185 (New York, Trade Negotiations Committee, General Agreement on Tariffs and Trade Secretariat, December 20, 1991).

²⁸ Three studies from the Wharton Economic Forecasting Association, American Textile Manufacturers Institute, and U.S. International Trade Commission assume that import quotas will be lifted from all countries.

²⁹ According to the *Executive Summary, Results of the GATT Uruguay Round of Multilateral Trade Negotiations* "China will not be permitted to sign the agreement on textiles and clothing until it becomes a member of GATT, and, until then, will not be the beneficiary of any quota liberalization by the United States."

³⁰ "The Impact of Eliminating the Multi-Fiber Arrangement on the U.S. Economy, Isolating the Textile and Apparel Components of GATT" (Philadelphia, the WEFA Group, 1992).

³¹ Carlos Moore, "Phasing Out the Multi-Fiber Arrangement in the Uruguay Round: The Impact on U.S. and Foreign Producers" (Washington, DC, American Textile Manufacturers Institute, March 1991).

³² "Trade Restraints and the Competitive Status of the Textile, Apparel, and Nonrubber Footwear Industries" (Congressional Budget Office, 1991).

³³ "Potential Effects of a North American Free Trade Agreement on Apparel Investment in CBERA Countries" Report to the U.S. Trade Representative (Washington, United States International Trade Commission, July 1992) p. 72.

³⁴ "Potential Impact on the U.S. Economy and Selected Industries of the North American Free-Trade Agreement," Publication 2596 (Washington, U.S. International Trade Commission, January, 1993) p. 8-3.

³⁵ "A brighter day is dawning for U.S. textiles in 1993," *Textile World*, January 1993, p. 40.

³⁶ The hourly wage figure for workers in the former Soviet Union was obtained from "Labor costs - From Pakistan to Portugal," *Bobbin Magazine*, September 1992, pp. 116-119.

³⁷ James C. Franklin, "Industry output and employment," *Monthly Labor Review*, November 1993, p. 54, table 50.

³⁸ "Mountain City: Oh, What a Mill!" *Textile World*, June 1991, p. 50.

³⁹ "The Impact of Technology on Apparel, Part 1," *1991 Report of the Technical Advisory Committee*, American Apparel Manufacturers Association, p. 12.

⁴⁰ *Industry Trade and Technology Review* (Washington, U.S. International Trade Commission, October, 1992), p. 9.

⁴¹ "Time is of the Essence at [TC]," *Bobbin Magazine*, May 1992, p. 24.

⁴² *Industry Trade and Technology Review* (Washington, U.S. International Trade Commission, October, 1992), p. 9.

⁴³ *Ibid.*, p. 9.

⁴⁴ *1987 Census of Manufacturers: Concentration Ratios in Manufacturing*, MC87-S-6 (Bureau of the Census, February 1992), table 5.

Rubber Workers ends strike

The United Rubber Workers ended its 10-month strike against Bridgestone/Firestone, Inc.—the longest work stoppage ever in the rubber industry—following the return to work of 700 members of Local 713 in Decatur, IL. The union accepted the terms of the tiremaker's "final offer," which had triggered the international's walkout at five of the company's plants last July, idling some 4,200 workers. After the walkout, Bridgestone/Firestone unilaterally imposed terms of its final offer, which included cuts in wages, health insurance, and pension benefits, and changes in work rules. In addition, the company hired some 2,300 workers to permanently replace strikers.

According to one union insider, the agreement to return to work was not a capitulation on the part of the union, but a strategic attempt to forestall a union decertification election, keep the company from hiring more replacement workers, and stop union members from crossing picket lines at the plants. According to the press, the union also was worried about its members, who had been without paychecks for 10 months.

A Bridgestone/Firestone spokesperson said the company was glad to receive the union's offer to unconditionally return to work. He said the company would evaluate workload and staffing requirements before informing the union of the number of employees who would be needed. Press reports subsequently indicated that the company would recall 153 strikers.

Under terms of the imposed agreement, hourly wages for most job classifications are slashed \$5.34, to around \$12. Pay for new hires is cut 30 percent, and incentive rates are reduced.

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

Pension benefits are frozen at their existing levels. The work schedule is amended to allow for continuous operations with 12-hour shifts—that is, 12 hours on, followed by 12 hours off.

Following its failed strike against Bridgestone/Firestone, the Rubber Workers (URW) approved a merger with the United Steelworkers of America (USA). In a joint statement, union leaders said the merger will "combine our strength and resources in the political and legislative arenas, at the bargaining table, and . . . will open the door wide for aggressive organizing among workers wanting to join a growing force in democratic unionism."

Both unions have suffered declining membership in recent years. The current URW membership of 98,000 is down from a peak of 180,000 in 1980, while USA membership has steadily fallen from more than 1 million in 1980 to its current level of 565,000. The merger will result in a combined union of approximately 665,000 members.

The merger gives URW members access to the USA strike fund, currently at \$162 million. The financial support is important because the walkout at Bridgestone/Firestone depleted the URW's strike fund in December 1994. The union was forced to borrow \$3 million and raise membership dues to continue paying strike benefits. The timing of the merger is also fortuitous for the URW because the union faces a heavy bargaining schedule in 1995–96, when it renegotiates 232 contracts.

Cost saving plans reached at USAir

On the heels of a similar settlement with the Air Line Pilots Association, USAir Group signed a 5-year tentative agreement with the International Association of Machinists (IAM)—moving the financially strapped carrier closer to its goal of reducing total labor costs by \$2.5 billion over the next 5 years. The airline reportedly has pledged to

slash an additional \$2.5 billion in operating costs over the same period by eliminating routes, selling old aircraft, and instituting other cost savings as part of a broader financial rescue package designed to ensure the carrier's survival. Like the Pilots' agreement, the IAM pact is contingent on approval of USAir's board of directors and stockholders, as well as the signing of agreements with all the carrier's unions.

Negotiators for USAir and the IAM agreed to cut wages and introduce rule changes that are intended to provide "substantial" cost savings to the carrier in exchange for improved job security, a greater say in how the company is run, and certain financial returns. The accord covered some 14,500 IAM members, including 8,000 mechanics and related employees and 6,500 fleet service employees, for whom this will be their first agreement.

The major terms of the cost saving plan call for IAM members to take a 12.9-percent pay cut in exchange for 20 percent of USAir's common stock and \$400 million in preferred stock to be distributed among all employees, 4 employee-selected members on the company's new 12-member board of directors, and a profit-sharing plan. The accord also enhances job security by including a no-layoff clause for the duration of the agreement, banning the transfer of work to foreign-based maintenance facilities, granting preferential hiring at commuter carriers that are part of the USAir system, and providing job protection in event of an asset sale or merger. Other terms allow for 4-day, 10-hour-a-day workweeks; and increase pension benefits by \$15,000 for employees aged 58 or older.

The Association of Flight Attendants tentatively signed a pact similar to the one reached by the IAM, but it was rejected by the rank and file. The carrier has yet to negotiate an agreement with its remaining union, the Transport Workers, which represents about 270 employees.

Early settlement at Bell Atlantic

More than 3 months before their contract was set to expire, Bell Atlantic Corp. and Locals 827 and 1944 of the International Brotherhood of Electrical Workers reached agreement on a 5-year contract covering some 9,500 employees, most of whom work in New Jersey and Pennsylvania. Bell Atlantic hopes that the settlement will serve as a pattern for its other major bargaining unit, 37,000 employees represented by the Communications Workers of America.

According to Bell Atlantic's chief negotiator, Al Koeppe, "This is a progressive contract that fairly balances the needs of Bell Atlantic in a competitive marketplace with the needs of employees and the IBEW for job security. It embodies the spirit of respect, trust, and teamwork between the company and the IBEW—and our resolve to work cooperatively to meet competitive threats."

The accord calls for a \$1,000 ratification bonus, plus wage increases of 3 percent in the first year of the contract, 2.75 percent in both the second and third years, and 3 percent in each of the final 2 years. The first \$300 of the first-year wage increase will be paid as a lump sum.

The settlement includes several changes in benefits and work rules. It improves the profit-sharing plan and increases pension benefits. The contract requires employees who retired after 1989 to contribute 2 percent of their annual pension benefits to a trust fund to help pay for health insurance premiums beginning in 1997, with the rate increasing to a maximum of 10 percent after the year 2000. The pact establishes two pilot programs, a 9-month test program of 4-day workweeks for construction workers and a 1-month test of telecommuting (working at home using computers and other electronic equipment) by clerical workers. Under the telecommuting program, the company will provide all necessary equipment.

Other terms add coverage of preventive care services to health benefits; provide \$750 awards to employees who complete training programs "which enhance competitive technology and customer service skills in telecommunications"; and strengthen job security provisions by providing protection against layoffs for many bargaining unit employees and guaranteeing "virtually all" feeder and distribution facilities work on Bell Atlantic's new broadband network to bargaining unit employees.

Twin Cities nurses reach accord

Using interest-based bargaining that emphasized the exchange of issues important to each side, the Minnesota Nurses Association and the Metropolitan Healthcare Council settled on a 3-year pact that clarifies the role of registered nurses in the health care delivery process. The agreement, which also provides wage increases, improves advanced education benefits, and addresses workplace violence, covers some 7,000 nurses at 12 Minneapolis-St. Paul area hospitals represented by the council. Using the "win-win" bargaining approach, the parties were able to reach agreement 2 weeks prior to the expiration of the previous contract, in stark contrast to past contentious negotiations that included a 39-day strike in 1984. The parties recognized "a mutual interest in developing health care delivery systems which will provide quality care on a cost efficient basis [and] recognize the accountability of the registered nurse."

Like other health care providers nationwide, the Twin Cities hospitals faced declining revenues and increasing expenses in recent years. Fearing that local hospitals might follow the industry pattern of replacing higher-paid registered nurses with unlicensed technical or assistant personnel to reduce labor costs, the union

sought to include protective measures to ease the transition following a change in work force composition.

The accord addresses a number of workplace issues, including the nurses' role in providing health care to patients. Contract language guarantees that only nurses will "assess, plan, and evaluate patient or client nursing care needs." The pact establishes a labor-management committee to address any proposed changes in health care delivery systems and to determine the exact role of nurses and unlicensed assistants in delivering care. Nurses are permitted "to delegate those aspects of nursing care the nurse determines appropriate based on her or his assessment." Each hospital must provide a system of patient classification based on demonstrated patient needs and appropriate nursing interventions that will be used to determine nursing staff levels. Any potential changes to patient care delivery systems must be discussed jointly by the committee and the hospitals.

The hospitals agreed to provide cross-training to prepare nurses for industry changes that may result in the use of more unlicensed assistants. Nurses are eligible for up to \$300 per year for training to prepare them for a second clinical service, for national certification in their area of practice, or for complementary therapies that may enhance their skills. Nurses pursuing an advanced degree also are eligible for annual tuition reimbursement of \$2,000 (was \$1,500) and may work flexible schedules to attend classes.

The pact requires the hospitals to notify nurses of an impending layoff, and to offer voluntary leaves of absence to all nurses before reducing nursing care hours. Nurses adversely affected by a reduction in nursing care hours have the option to transfer to other vacant positions for which they are qualified, to replace less senior nurses within their clinical group or in other clinical groups, or to accept

layoff and retain full recall rights. In the event of a layoff or major restructuring, full-time senior nurses aged 58 or older with 20 years of service have the option to choose early retirement with complete health insurance until age 65.

To protect bargaining unit positions, hospitals are required to give advance notice of any promotion or transfer of an employee out of the bargaining unit. Furthermore, hospitals must provide written notice of the establishment of any new nonexecutive position and their initial determination as to whether the position will be included in the bargaining unit—which the union may contest. The union also must be notified of any new programs or business ventures, including any possible effect on the number of positions in the bargaining unit.

Nurses will receive wage increases of 3 percent in the first and second contract years, and 2.6 percent in the third year. The starting salary for nurses ranges from \$2,774 to \$2,872 per month, depending on educational level. Nurses with 20 or more years of experience earn between \$4,161 and \$4,263 per month. Effective June 1, 1997, each nurse certified in a specialty area will receive an annual bonus of \$360.

Citing a commitment to provide a workplace free of hostile, abusive, and disrespectful behavior, the parties agreed to form "response teams" to address all emergency situations in which physical violence, the threat of physical violence, or verbal abuse occurs. Participating hospitals will educate employees on methods of preventing workplace violence. In addition, nonemergency incidents will be recorded, reported, and evaluated by the nursing Health and Safety Committee when a registered nurse is involved.

Other terms of the contract grant 3 additional days of leave for nurses with 15 to 19 years of service and 5 additional days for those with 20 or more years of service for professional development, continuing education, or personal renewal; provide a \$100 monthly

supplement to nurses with master's degrees beginning in 1996; and increase the maximum monthly long-term disability payment to 65 (was 60) percent of monthly compensation, to a maximum of \$5,000, while lowering the work requirement for long-term disability insurance eligibility from 64 to 48 hours every 2 weeks.

LA cleaning service pact

As part of its "Justice for Janitors" drive to organize and bargain for commercial cleaning service workers, Local 339 of the Service Employees International Union (SEIU) negotiated separate but parallel 5-year contracts covering some 8,500 janitors working for 21 cleaning companies in the Los Angeles, CA, area. The pacts bring workers under one unified wage and benefit system, while maintaining health and pension benefits and strengthening job protection. The two largest employers participating in the coordinated bargaining were International Service Systems, Inc. and American Building Maintenance, each with about 3,000 employees.

The settlement will replace the 4-tiered wage and benefit structure with one that provides the same wage and benefit levels to all employees. Under the prior contract, tier 1 employees received a starting rate of \$6.80 per hour and full family health care coverage paid for by the employers; tier 2 employees received \$5.40 per hour and full individual health care coverage; and tier 3 workers received \$4.70 per hour and no benefits except for paid vacations. The union was recognized as the bargaining agent for tier 4 workers, but did not negotiate economic benefits for them. Tier 1 employees will receive a wage increase of \$1 per hour over the contract term, while employees in tiers 2–4 will be brought up to the existing wage and benefit levels specified for tier 1 workers over the next 5 years.

Language changes in the contract im-

prove job security and selection provisions. Employers must now cite specific reasons, such as a building vacancy or a change in cleaning specifications, before implementing a work force reduction. Previously, the employers could lay off employees based solely on their own or their clients' needs. Terms also stipulate that the selection of employees for vacancies will be determined by seniority as long as selected applicants can perform the job in question. Seniority had previously been the determining factor only when merit and ability were judged equal.

Other terms of the pact include a maintenance of benefits provision for health care, under which employers pay all premium costs and cover prescription drugs and vision care; and a continued employer contribution of 10 cents per hour to the pension fund for tier 1 employees.

The new agreement is the culmination of an 8-year organizing campaign by the union to represent workers of commercial cleaning firms in the Los Angeles area. The union has increased its representation in the industry from about 1,500 workers in 1987 to 8,500 in 1995, about 70 percent of the area's cleaning service employees.

Alaska Airlines pact ends long stalemate

After more than 3-1/2 years of contract talks, negotiators for Alaska Airlines and the International Association of Machinists (IAM) reached agreement on a 4-year contract covering 2,200 clerical, office, and passenger service workers employed in a variety of locations served by the airline, including Anchorage and Juneau, AK; Portland, OR; Los Angeles and San Francisco, CA; Phoenix, AZ; and Seattle, WA. The settlement came just 4 days after the National Mediation Board—the Federal Agency that administers labor law in the industry—declared a "30-day cooling-off" period following the parties' refusal to resolve their dispute through arbitration. Wage

increases and benefits were the major sticking points in negotiations.

Alaska Airlines sought a 5-year wage freeze, elimination of the cost-of-living adjustment (COLA) provision, and increased employee copayments towards health insurance premiums, while the union opposed these proposals. The eventual settlement between the carrier and IAM allows Alaska airlines to hold operating costs in check and preserves employees' health care coverage.

The contract calls for seniority-based bonuses ranging between \$750 and \$1,500 in each of the first 3 contract years. In the fourth year, employees will receive a general wage increase of 3 percent. The settlement eliminates the parties' COLA clause.

Other changes increase the maximum annual accrual of compensatory time from 40 to 120 hours; permit training to be counted as time worked for overtime calculation; and continue the employee option to use a health maintenance organization or preferred-provider organization, while adding dental and vision coverage. The parties also agreed to an "early reopener" in May 1999, which requires them to seek mediatory assistance from the National Mediation Board if a settlement is not reached within 6 months.

Like many carriers in the industry, Alaska Airlines was in a financially precarious position in the late 1980's because of revenue decreases that had resulted from fare wars and cut-throat competition in its short-haul Northwest markets, and because of high operating costs, in part from labor contracts. When current chairman and CEO Ray Vecci took control in 1991, the airline undertook severe cost-cutting measures that included canceling construction of two new maintenance bases, deferring planned aircraft purchases worth \$2 billion, renegotiating aircraft leases, dis-

continuing flights in unprofitable markets, and even cutting back on the in-flight meals that had contributed to the carrier's high customer service ratings.

Furthermore, Alaska Airlines attempted to negotiate cost cuts and constraints in its labor contracts, producing strained relations and protracted negotiations with pilots, flight attendants, and other service workers. The carrier reached cost-cutting agreements that included flexibility in pay and scheduling with IAM-represented ground service workers in November 1992, after 4 years of negotiations (see *Monthly Labor Review*, Feb. 1993, p. 65); the pilots in January 1993; and flight attendants in February 1994, after 3-1/2 years of negotiations and a number of short, sporadic work stoppages (see *Monthly Labor Review*, June 1994). In spite of the sometimes tense negotiations between the parties, airline and union leaders have indicated that their relationship has improved because they have recognized the need for collective effort in meeting the challenges presented in their markets.

As a result of Alaska Airlines' cost-cutting initiatives, its financial viability has recently improved, despite the entry of Southwest Airlines and the United Shuttle into its market. During the first 9 months of 1994, the carrier reported a profit of \$27.6 million on \$997.7 million in gross revenue, compared with a \$10.6 million loss on \$851.1 million in revenue during the same period in 1993. The carrier's cost per seat mile declined from 10.2 cents in 1992 to 9.9 cents in 1993, and to 8.6 cents in 1994.

Settlement at Rockwell International

Members of Local 1362 of the International Brotherhood of Electrical Workers approved a tentative 3-year contract

covering some 2,000 production and maintenance workers at Rockwell International Corp.'s Collins Division facility in Cedar Rapids, IA.

The settlement calls for an immediate \$600 lump-sum payment, a 50-cent hourly wage increase in the first year of the contract, an \$1,800 lump-sum payment in the second year, and a 3-percent wage increase in the third year. It continues the existing cost-of-living adjustment provision, which provides quarterly payments equal to 1 cent an hour for each 0.3-point increase in the Consumer Price Index for Urban Wage Earners and Clerical Workers—but adds a trigger in each year. The index must rise 4 percent in the first year and 3 percent in the last 2 years before COLA's are paid.

The pact introduces several changes in benefits. It sets employee contributions towards medical insurance premiums at \$4 per month (was \$14) for single coverage, \$7 per month (new) for 2-party coverage, and \$11.50 per month (new) for family coverage. The contract levies a \$35-per-month penalty for spouses of employees enrolled in a Rockwell health care plan who refuse coverage under their own employers' health care plans. The accord cuts the amount of time laid-off employees can continue medical coverage at their own expense, from 24 to 18 months immediately and to 12 months effective May 1, 1996. The settlement obligates Rockwell to match the first 1 percent of salary that an employee invests in the 401(k) thrift savings plan, up to \$250 per year.

Other terms create an employee skill development program designed to provide employees with skills they will need in the future; enhance recall rights; and require the company to discuss subcontracting of work that can not be done by bargaining unit employees for "competitive reasons." □

Making school pay

Why Our Kids Don't Study: An Economist's Perspective. John D. Owen. Baltimore, MD, The Johns Hopkins University Press, 1995, 136 pp., \$29.95.

High school graduates in the United States are academically among the most poorly prepared in the world. John D. Owen, in *Why Our Kids Don't Study: An Economist's Perspective*, suggests that this situation can be explained as an economic phenomenon. Students are economic beings and, in their scholastic behavior, respond to incentives, or the lack of them.

Owen, an economist at Wayne State University in Detroit, uses the tools of labor economics to analyze shortfalls in student achievement. He has tried to reach beyond economists and other social scientists by avoiding mathematical analysis, graphs and charts, and fully explaining technical terms. The result is a highly readable book that will appeal to anyone concerned with problems in education in the United States.

Owen briefly reviews the prevailing theories about why students do not study. Among the culprits are excessive exposure to television and popular music; the notion that study is a challenge to youth self-esteem; and that adults place little value on studying and achievement. Although these factors may play a part in low academic achievement, the real explanation is that studying does not pay, Owen writes. In other words, students do not see economic returns from their academic effort. Students generally may stay in high school with little effort, and upon graduation, find their academic record counts for very little in obtaining a job. In addition, colleges, particularly those that are not among the elite, may accept students more on their ability to pay than on their academic record. As a result, the labor market does not adequately reward study and does not provide

needed incentives to achieve in school.

Moreover, bias against academic achievement is a problem in the public school system, Owen writes. Institutions receive financial incentives for large enrollments, regardless of the quality of students, and may even receive additional funds when achievement drops. He also cites studies that imply a societal bias against education for its own sake when education promotes appreciation of subjects such as art and literature, or what is termed "culture."

Owen proposes to change the incentives for students, teachers, and schools. Students would work harder if schools and employers improved the exchange of student academic information and employers used this information in hiring decisions. He includes a role for Federal Government policies that could foster integration of school and work in work-study programs.

National or regional examinations might encourage students, teachers, and schools to work harder if employers used the results of these exams in hiring decisions. Policies to encourage school choice would force schools to compete for students and students would compete for school admissions.

Not everyone will agree with Owen's analysis of the problem or with his proposals, but few would dispute the need for a better educated work force to raise U.S. productivity and allow corporations to better compete in world markets. The findings and proposals in John Owen's book are valuable additions to the debate about educational reform.

—Pat Nielsen

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Labor rights overseas

Trade and Labor Standards: A Review of the Issues. Gary Fields, ed. Paris, OECD, 1995, \$14, 35 pp.

The decision last year by officials of the Organization for Economic Coop-

eration and Development to study trade and labor standards represented a break from the past. In April, the OECD, through the efforts of its two directorates covering trade and employment and labor issues, released the first product, *Trade and Labor Standards: A Review of the Issues*, edited by economist Gary Fields. The book aims to review the main issues of the debate on whether and how to promote labor rights internationally.

The book's strongest feature is its analytical framework. It contends that certain labor regulations may reflect "basic human rights in the workplace" to be honored in poor and rich countries alike. These include:

- a prohibition on slavery;
- a responsibility to provide information about unhealthy working conditions;
- the right of children to not work; long hours whenever family circumstances allow; and
- freedom of association.

Fields suggests that governments seek international agreements on these rights. But he does not explain why the current International Labor Organization Conventions on these issues are inadequate.

Beyond these four rights, the book suggests that setting labor standards be left to individual countries. He criticizes more ambitious efforts to coordinate labor standards for being intrusive, patronizing, or protectionist. The book also faults national laws banning the import of prison-made goods despite international trade rules that permit such bans. Fields says that if prison inmates are forced to work, their output should be marketed in domestic and foreign markets.

Another issue the book covers is whether legislation can "push up," or improve labor conditions. The author suggests that labor markets do not suffer "market failure," and that, as a result, government's role should be mini-

mal. Yet little is said about the inability of employers to tailor labor standards to each employee. Moreover, the book does not discuss noneconomic rationales for government intervention. This is an odd omission in a book about labor standards, considering the longtime international cooperation in advancing worker rights.

Fields suggests that the "pull" of economic development on labor conditions can be powerful. Relying on several studies, he concludes that higher national income translates into greater returns to labor. He also cites evidence from Asian economies demonstrating that "labour earnings do not have to be suppressed in order for outward-oriented economic growth to be rapid."

Fields also points to some negative implications. Giving "primacy to labor standards, if premature, can preclude competitiveness in trade," he says. Unfortunately, he does not cite specific examples to back this claim. The reader is left to wonder if these cases involve adherence to international labor conventions, or episodes in which governments have taken actions not required by ILO conventions, such as raising wages.

The greatest disappointment in the book is its failure to review many key issues. For example, do high labor standards contribute to human development

and economic growth? What have been the economic effects in episodes where governments retreated on legislated worker rights? Does a higher GDP per capita increase the chances that a government will ratify ILO conventions? How much international trade is produced in conditions that seriously violate core ILO Conventions?

In 1964, when the Johnson Administration first considered seeking OECD involvement in matters related to trade and labor standards, an internal Federal Government memorandum cautioned that "OECD consideration of a matter of this kind is likely to be very slow moving." More than 30 years later, this prediction remains on the mark. For a first effort, this new OECD publication is a useful addition to the literature. But as the OECD continues its work program on this topic, I hope that future studies will offer more in-depth analysis.

Steve Charnovitz

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State of the union

The State of Working America, 1994-1995. By Lawrence Mishel and Jared Bernstein. Armonk, NY, M. E. Sharpe, 1994, 410 pp., \$55, cloth, \$24.95, paper.

Every 2 years the Economic Policy Institute releases its latest findings on the country's economic health, with emphasis on changes affecting working men and women. In this volume, fourth in the series, the authors present a broad variety of published and unpublished data about employment, unemployment, wages, hours, family incomes, taxes, wealth, and poverty in well-crafted prose, and illustrated in 225 tables and 77 charts.

All told, their diagnosis is "one of great disparities" in income and wealth, caused partly by market disadvantages that hinder three-fourths of the work force who do not have a college degree. Their documentation of disturbing trends in wages and benefits is particularly comprehensive; much of it is based on their own original analysis of detailed data.

In their view, the forces behind those trends—shrinking manufacturing jobs, dwindling unionization, a falling minimum wage, defense downsizing, and expansion of international trade—hold out no prospect for an early decline in inequality. The fifth volume in this series, due in December 1996, will reexamine that prognosis.

—Robert A. Senser
Reston, VA

Notes on Labor Statistics 80

Comparative indicators

- 1. Labor market indicators 90
- 2. Annual and quarterly percent changes in compensation, prices, and productivity 91
- 3. Alternative measures of wages and compensation changes 91

Labor force data

- 4. Employment status of the population, seasonally adjusted 92
- 5. Selected employment indicators, seasonally adjusted 93
- 6. Selected unemployment indicators, seasonally adjusted 94
- 7. Duration of unemployment, seasonally adjusted 94
- 8. Unemployed persons by reason for unemployment, seasonally adjusted 95
- 9. Unemployment rates by sex and age, seasonally adjusted 95
- 10. Unemployment rates by States, seasonally adjusted 96
- 11. Employment of workers by States, seasonally adjusted 96
- 12. Employment of workers by industry, seasonally adjusted 97
- 13. Average weekly hours by industry, seasonally adjusted 99
- 14. Average hourly earnings by industry, seasonally adjusted 99
- 15. Average hourly earnings by industry 100
- 16. Average weekly earnings by industry 101
- 17. Diffusion indexes of employment change, seasonally adjusted 102
- 18. Annual data: Employment status of the population 102
- 19. Annual data: Employment levels by industry 103
- 20. Annual data: Average hours and earnings levels by industry 103

Labor compensation and collective bargaining data

- 21. Employment Cost Index, compensation, by occupation and industry group 104
- 22. Employment Cost Index, wages and salaries, by occupation and industry group 106
- 23. Employment Cost Index, benefits, private industry workers, by occupation and industry group 107
- 24. Employment Cost Index, private nonfarm workers, by bargaining status, region, and area size 108
- 25. Participants in employer-provided benefit plans 109
- 26. Specified compensation and wage rate changes from contract settlements, and effective wage rate changes, agreements covering 1,000 workers or more 110

Labor compensation and collective bargaining data—Continued

- 27. Average specified compensation and wage rate changes, bargaining agreements covering 1,000 workers or more 111
- 28. Specified changes in cost of compensation in private industry settlements covering 5,000 workers or more 112
- 29. Specified compensation and wage adjustments, State and local government bargaining situations covering 1,000 workers or more 113
- 30. Work stoppages involving 1,000 workers or more 113

Price data

- 31. Consumer Price Index: U.S. city average, by expenditure category and commodity and service groups 114
- 32. Consumer Price Index: U.S. city average and local data, all items 117
- 33. Annual data: Consumer Price Index, all items and major groups 118
- 34. Producer Price Indexes by stage of processing 119
- 35. Producer Price Indexes for the net output of major industry groups 120
- 36. Annual data: Producer Price Indexes by stage of processing 120
- 37. U.S. export price indexes by Standard International Trade Classification 121
- 38. U.S. import price indexes by Standard International Trade Classification 122
- 39. U.S. export price indexes by end-use category 123
- 40. U.S. import price indexes by end-use category 123
- 41. U.S. international price indexes for selected categories of services 124

Productivity data

- 42. Indexes of productivity, hourly compensation, and unit costs, data seasonally adjusted 124
- 43. Annual indexes of multifactor productivity 125
- 44. Annual indexes of productivity, hourly compensation, unit costs, and prices 125
- 45. Annual indexes of output per hour for selected industries 126

International comparisons data

- 46. Unemployment rates in nine countries, data seasonally adjusted 128
- 47. Annual data: Employment status of the civilian working-age population, 10 countries 129
- 48. Annual indexes of productivity and related measures, 12 countries 130

Injury and illness data

- 49. Annual data: Occupational injury and illness incidence rates 131

Notes on Current Labor Statistics

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

General notes

The following notes apply to several tables in this section:

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

Seasonally adjusted data appear in tables 1-14, 16-17, 42, and 46. Seasonally adjusted labor force data for 1994 in tables 1 and 4-9 were revised in the February 1995 issue of the *Review*. Seasonally adjusted establishment survey data shown in tables 12-14 and 16-17 were revised in the July 1995 *Review* and reflect the experience through March 1995. A brief explanation of the seasonal adjustment methodology appears in "Notes on the data."

Revisions in the productivity data in table 42 are usually introduced in the September issue. Seasonally adjusted indexes and percent changes from month-to-month and quarter-to-quarter are published for numerous Consumer and Producer Price Index series. However, seasonally adjusted indexes are not published for the U.S. average All-Items CPI. Only seasonally adjusted percent changes are available for this series.

Adjustments for price changes. Some data—such as the "real" earnings shown in table 14—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 appro-

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 1982 = 100, the hourly rate expressed in 1982 dollars is \$2 ($\$3/150 \times 100 = \2). The \$2 (or any other resulting values) are described as "real," "constant," or "1982" dollars.

Sources of information

Data that supplement the tables in this section are published by the Bureau in a variety of sources. Definitions of each series and notes on the data are contained in later sections of these Notes describing each set of data. For detailed descriptions of each data series, see *BLS Handbook of Methods*, Bulletin 2414. Users also may wish to consult *Major Programs of the Bureau of Labor Statistics*, Report 871. News releases provide the latest statistical information published by the Bureau; the major recurring releases are published according to the schedule appearing on the back cover of this issue.

More information about labor force, employment, and unemployment data and the household and establishment surveys underlying the data are available in the Bureau's monthly publication, *Employment and Earnings*. Historical unadjusted data from the household survey are published in *Labor Force Statistics Derived From the Current Population Survey*, BLS Bulletin 2307. Historical seasonally adjusted data are available from the Bureau upon request. Historically comparable unadjusted and seasonally adjusted data from the establishment survey are published in *Employment, Hours, and Earnings, United States*, a BLS annual bulletin. Additional information on labor force data for sub-States are provided in the BLS annual report, *Geographic Profile of Employment and Unemployment*.

More detailed information on employee compensation and collective bargaining settlements is published in the monthly periodical, *Compensation and Working Conditions*. For a comprehensive discussion of the Employment Cost Index, see *Employment Cost Indexes and Levels, 1975-93*, BLS Bulletin 2447. The most recent data from the Employee Benefits Survey appear in the following Bureau of Labor Statistics bulletins: *Employee Benefits in Medium and Large Firms*; *Employee Benefits in Small Private Establishments*; and *Employee Benefits in State and Local Governments*. Historical data on the collective bargaining settlements series appear in the March issue of *Compensation and Working Conditions*.

More detailed data on consumer and producer prices are published in the monthly periodicals, *The CPI Detailed Report* and *Producer Price Indexes*. For an overview of the CPI reflecting 1982-84 expenditure patterns, see *The Consumer Price Index: 1987 Revision*, BLS Report 736. Additional data on international prices appear in monthly news releases.

For a listing of available industry productivity indexes and their components, see *Productivity Measures for Selected Industries and Government Services*, BLS Bulletin 2440.

For additional information on international comparisons data, see *International Comparisons of Unemployment*, BLS Bulletin 1979.

Detailed data on the occupational injury and illness series are published in *Occupational Injuries and Illnesses in the United States, by Industry*, a BLS annual bulletin.

Finally, the *Monthly Labor Review* carries analytical articles on annual and longer term developments in labor force, employment, and unemployment; employee compensation and collective bargaining; prices; productivity; international comparisons; and injury and illness data.

Symbols

n.e.c. = not elsewhere classified.

n.e.s. = not elsewhere specified.

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

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

Comparative Indicators

(Tables 1-3)

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

Labor market indicators include employment measures from two major surveys and information on rates of change in compensation provided by the Employment Cost Index (ECI) program. The labor force participation rate, the employment-to-population

ratio, and unemployment rates for major demographic groups based on the Current Population ("household") Survey are presented, while measures of employment and average weekly hours by major industry sector are given using nonfarm payroll data. The Employment Cost Index (compensation), by major sector and by bargaining status, is chosen from a variety of BLS compensation and wage measures because it provides a comprehensive measure of employer costs for hiring labor, not just outlays for wages, and it is not affected by employment shifts among occupations and industries.

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

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

Notes on the data

Definitions of each series and notes on the data are contained in later sections of these notes describing each set of data.

Employment and Unemployment Data

(Tables 1; 4-20)

Household survey data

Description of the series

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

Definitions

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

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

The civilian labor force consists of all employed or unemployed persons in the civilian noninstitutional population. Persons **not in the labor force** are those not classified as employed or unemployed. This group includes discouraged workers, defined as persons who want and are available for a job and who have looked for work sometime in the past 12 months (or since the end of their last job if they held one within the past 12 months), but are not currently looking, because they believe there are no jobs available or there are none for which they would qualify. **The civilian 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. **The civilian labor force participation rate** is the proportion of the civilian noninstitutional population that is in the labor force. **The employment-population ra-**

tio is employment as a percent of the civilian noninstitutional population.

Notes on the data

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

Labor force data in tables 1 and 4-9 are seasonally adjusted. Since January 1980, national labor force data have been seasonally adjusted with a procedure called X-11 ARIMA which was developed at Statistics Canada as an extension of the standard X-11 method previously used by BLS. A detailed description of the procedure appears in the X-11 *ARIMA Seasonal Adjustment Method*, by Estela Bee Dagum (Statistics Canada, Catalogue No. 12-564E, January 1983).

At the end of each calendar year, seasonally adjusted data for the previous 5 years usually are revised, and projected seasonal adjustment factors are calculated for use during the January-June period. Because of the changes introduced into the CPS in January 1994, only seasonally adjusted data for 1994 were revised at the end of 1994. In July, new seasonal adjustment factors, which incorporate the experience through June, are produced for the July-December period, but no revisions are made in the historical data.

FOR ADDITIONAL INFORMATION on national household survey data, contact the Division of Labor Force Statistics: (202) 606-6378.

Establishment survey data

Description of the series

EMPLOYMENT, HOURS, AND EARNINGS DATA in this section are compiled from payroll records reported monthly on a voluntary basis to the Bureau of Labor Statistics and its cooperating State agencies by about 390,000 establishments representing all industries except agriculture. Industries are classified in accordance with the 1987 *Standard Industrial Classification (SIC) Manual*. 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

Revisions to household data

Data relating to 1994 and subsequent years are not directly comparable with data for 1993 and earlier years because of the introduction of a major redesign of the survey questionnaire and collection methodology, and the introduction of 1990 census-based population controls, adjusted for the estimated undercount. An explanation of the changes and their effect on labor force data appears in the February 1994 issue of *Employment and Earnings*, a monthly publication of the Bureau of Labor Statistics.

Seasonally adjusted data for 1994 were revised at the end of 1994. Additional information on the revisions appears in the January 1995 issue of *Employment and Earnings*.

because they are excluded from establishment records. This largely accounts for the difference in employment figures between the household and establishment surveys.

Definitions

An **establishment** is an economic unit which produces goods or services (such as a factory or store) at a single location and is engaged in one type of economic activity.

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

Production workers in manufacturing include working supervisors and nonsupervisory workers closely associated with production operations. Those workers mentioned in tables 11–16 include production workers in manufacturing and mining; construction workers in construction; and nonsupervisory workers in the following industries: transportation and public utilities; wholesale and retail trade; finance, insurance, and real estate; and services. These groups account for about four-fifths of the total employment on private nonagricultural payrolls.

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

Hours represent the average weekly hours of production or nonsupervisory workers for which pay was received, and are different from standard or scheduled hours.

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

The Diffusion Index represents the percent of industries in which employment was rising over the indicated period, plus one-half of the industries with unchanged employment; 50 percent indicates an equal balance between industries with increasing and decreasing employment. In line with Bureau practice, data for the 1-, 3-, and 6-month spans are seasonally adjusted, while those for the 12-month span are unadjusted. Data are centered within the span. Table 17 provides an index on private nonfarm employment based on 356 industries, and a manufacturing index based on 139 industries. These indexes are useful for measuring the

dispersion of economic gains or losses and are also economic indicators.

Notes on the data

Establishment survey data are annually adjusted to comprehensive counts of employment (called "benchmarks"). The latest adjustment, which incorporated March 1994 benchmarks, was made with the release of May 1995 data, published in the July 1995 issue of the *Review*. Coincident with the benchmark adjustment, seasonally adjusted data were revised to reflect the experience through March 1995. Comparable revisions in State data (table 11) occurred with the publication of January 1995 data. Unadjusted data from April 1994 forward and seasonally adjusted data from January 1991 forward are subject to revision in future benchmarks.

The BLS also uses the X-11 ARIMA methodology to seasonally adjust establishment survey data. Beginning in June 1989, projected seasonal adjustment factors are calculated and published twice a year. The change makes the procedure used for the establishment survey data more parallel to that used in adjusting the household survey data. Revisions of data, usually for the most recent 5-year period, are made once a year coincident with the benchmark revisions.

In the establishment survey, estimates for the most recent 2 months are based on incomplete returns and are published as preliminary in the tables (12–17 in the *Review*). When all returns have been received, the estimates are revised and published as "final" (prior to any benchmark revisions) in the third month of their appearance. Thus, December data are published as preliminary in January and February and as final in March. For the same reasons, quarterly establishment data (table 1) are preliminary for the first 2 months of publication and final in the third month. Thus, fourth-quarter data are published as preliminary in January and February and as final in March.

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.

FOR ADDITIONAL INFORMATION on establishment survey data, contact the Division of Monthly Industry Employment Statistics: (202) 606-6555.

Unemployment data by State

Description of the series

Data presented in this section are obtained from two major sources—the Current Popu-

lation Survey (CPS) and the Local Area Unemployment Statistics (LAUS) program, which is conducted in cooperation with State employment security agencies.

Monthly estimates of the labor force, employment, and unemployment for States and sub-State areas are a key indicator of local economic conditions, and form the basis for determining the eligibility of an area for benefits under Federal economic assistance programs such as the Job Training Partnership Act. Seasonally adjusted unemployment rates are presented in table 10. Insofar as possible, the concepts and definitions underlying these data are those used in the national estimates obtained from the CPS.

Notes on the data

Data refer to State of residence. Monthly data for 11 States—California, Florida, Illinois, Massachusetts, Michigan, New York, New Jersey, North Carolina, Ohio, Pennsylvania, and Texas—are obtained directly from the CPS because the size of the sample is large enough to meet BLS standards of reliability. Data for the remaining 39 States and the District of Columbia are derived using standardized procedures established by BLS. Once a year, estimates for the 11 States are revised to new population controls, usually with publication of January estimates. For the remaining States and the District of Columbia, data are benchmarked to annual average CPS levels. Data for 1994 are not directly comparable with those for 1993 as a result of the redesign of the CPS and other methodological changes. See "Revisions in State and Area Estimates Effective January 1994," *Employment and Earnings*, March 1994.

FOR ADDITIONAL INFORMATION on data in this series, call (202) 606-6392 (table 10) or (202) 606-6589 (table 11).

Compensation and Wage Data

(Tables 1–3; 21–30)

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

Employment Cost Index

Description of the series

The **Employment Cost Index** (ECI) is a quarterly measure of the rate of change in compensation per hour worked and includes wages, salaries, and employer costs of em-

ployee benefits. It uses a fixed market basket of labor—similar in concept to the Consumer Price Index's fixed market basket of goods and services—to measure change over time in employer costs of employing labor.

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

The Employment Cost Index probability sample consists of about 4,400 private nonfarm establishments providing about 23,000 occupational observations and 1,000 State and local government establishments providing 6,000 occupational observations selected to represent total employment in each sector. On average, each reporting unit provides wage and compensation information on five well-specified occupations. Data are collected each quarter for the pay period including the 12th day of March, June, September, and December.

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

Definitions

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

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

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

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

Notes on the data

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

FOR ADDITIONAL INFORMATION on the Employment Cost Index, contact the Division of Employment Cost Trends: (202) 606-6199.

Employee Benefits Survey

Description of the series

Employee benefits data are obtained from the Employee Benefits Survey, an annual survey of the incidence and provisions of selected benefits provided by employers. The survey collects data from a sample of approximately 6,000 private sector and State and local government establishments. The data are presented as a percentage of employees who participate in a certain benefit, or as an average benefit provision (for example, the average number of paid holidays provided to employees per year). Selected data from the survey are presented in table 25.

The survey covers paid leave benefits such as lunch and rest periods, holidays and vacations, and personal, funeral, jury duty, military, parental, and sick leave; sickness and accident, long-term disability, and life insurance; medical, dental, and vision care plans; defined benefit and defined contribution plans; flexible benefits plans; reimbursement accounts; and unpaid parental leave.

Also, data are tabulated on the incidence of several other benefits, such as severance pay, child-care assistance, wellness programs, and employee assistance programs.

Definitions

Employer-provided benefits are benefits that are financed either wholly or partly by the employer. They may be sponsored by a union or other third party, as long as there is some employer financing. However, some benefits that are fully paid for by the employee also are included. For example, long-term care insurance and postretirement life insurance paid entirely by the employee are included because the guarantee of insurability and availability at group premium rates are considered a benefit.

Participants are workers who are covered by a benefit, whether or not they use that benefit. If the benefit plan is financed wholly by employers and requires employees to complete a minimum length of service for eligibility, the workers are considered participants whether or not they have met the requirement. If workers are required to contribute towards the cost of a plan, they are considered participants only if they elect the plan and agree to make the required contributions.

Defined benefit pension plans use predetermined formulas to calculate a retirement benefit, and obligate the employer to provide those benefits. Benefits are generally based on salary, years of service, or both.

Defined contribution plans generally specify the level of employer and employee contributions to a plan, but not the formula for determining eventual benefits. Instead, individual accounts are set up for participants, and benefits are based on amounts credited to these accounts.

Tax-deferred savings plans are a type of defined contribution plan that allow participants to contribute a portion of their salary to an employer-sponsored plan and defer income taxes until withdrawal.

Flexible benefit plans allow employees to choose among several benefits, such as life insurance, medical care, and vacation days, and among several levels of care within a given benefit.

Notes on the data

Surveys of employees in medium and large establishments conducted over the 1979-86 period included establishments that employed at least 50, 100, or 250 workers, depending on the industry (most service industries were excluded). The survey conducted in 1987 covered only State and local governments with 50 or more employees. The surveys conducted in 1988 and 1989 included medium and large establishments with 100 workers or more in private industries. All surveys conducted over the 1979-89 period

excluded establishments in Alaska and Hawaii, as well as part-time employees.

Beginning in 1990, surveys of State and local governments and small establishments are conducted in even-numbered years and surveys of medium and large establishments are conducted in odd-numbered years. The small establishment survey includes all private nonfarm establishments with fewer than 100 workers, while the State and local government survey includes all governments, regardless of the number of workers. All three surveys include full- and part-time workers, and workers in all 50 States and the District of Columbia.

FOR ADDITIONAL INFORMATION on the Employee Benefits Survey, contact the Division of Occupational Pay and Employee Benefit Levels: (202) 606-6222.

Collective bargaining settlements

Description of the series

Collective bargaining settlements data provide statistical measures of negotiated changes (increases, decreases, and zero change) in wage rates alone and in compensation (wages and benefits), quarterly for private nonagricultural industries and semi-annually for State and local governments. Wage rate changes cover collective bargaining settlements negotiated in the reference period involving 1,000 or more workers, and compensation changes cover settlements reached in the reference period involving 5,000 or more workers. These data are not seasonally adjusted and are calculated using information obtained from bargaining agreements on file with the Bureau, parties to the agreements, and secondary sources, such as newspaper accounts.

The wage and compensation rate changes are the percent difference between the average rate per work hour just prior to the start of a new agreement and the average rate per work hour that would exist at the end of the first 365 days of the new agreement (first-year measure) or at its expiration date (over-the-life measure). These data exclude lump-sum payments.

The compensation cost change is the percent difference between the average cost of compensation per work hour, including the hourly cost of lump-sum payments made during the term of the expiring agreement, just prior to the start of a new agreement and the average cost of compensation per work hour under the settlement. The timing of the changes in compensation rates is reflected in the compensation cost series, but not in compensation rate series.

Data on changes in settlements exclude potential changes under cost-of-living adjustment clauses. Averages reflect the change under each settlement weighted by the number of workers covered. Estimates of changes are based on the assumption that conditions existing at the time of the settlement (for example, composition of the labor force or methods of funding pensions) will remain constant over the term of the agreement.

Wage rate changes under all major agreements (those covering 1,000 or more workers) measure all wage increases, decreases, and zero changes occurring in the reference period, regardless of the settlement date. Included are changes from settlements reached in the calendar year, changes deferred from settlements negotiated in earlier years, and changes under cost-of-living adjustment (COLA) clauses. The change in the wage rate for each agreement is the percent difference between the average wage rate just prior to the start of the reference period and the average wage rate at the end of the reference period. The change for each agreement is weighted by the number of workers covered to determine the average change under all agreements.

Definitions

Wage rate is the average straight-time hourly wage rate plus shift premiums.

Compensation rates include the wage rate, premium pay (for example, for overtime and holidays); paid leave; life, health, and sickness and accident insurance; pension and other retirement plans; severance pay; and legally required benefits.

Compensation costs include the items covered by compensation rates plus specified lump-sum payments, the cost of contractually required training programs that are not a cost of doing business, and the additional costs of changes in legally required insurance known at the time of settlement to be mandated during the contract term.

Cash payments include wages and lump-sum payments.

Contingent pay provisions are clauses which could provide compensation changes beyond those specified in the settlement. COLA clauses and lump-sum provisions that call for a payment only if a company's profits exceed a specific amount are examples.

Notes on the data

Comparisons of major collective bargaining settlements for State and local government with those for private industry should note differences in occupational mix, bargaining practices, and settlement characteristics.

Professional and white-collar employees, for example, make up a much larger proportion of the workers covered by government than by private industry settlements. Lump-sum payments and COLA clauses, on the other hand, are rare in government but common in private industry settlements. Also, State and local government bargaining frequently excludes items such as pension benefits and holidays, that are prescribed by law, while these items are typical bargaining issues in private industry.

FOR ADDITIONAL INFORMATION on collective bargaining settlements, contact the Division of Developments in Labor-Management Relations: (202) 606-6276 (private industry data) or (202) 606-6280 (State and local government data).

Work stoppages

Description of the series

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

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

Definitions

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

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

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

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

Notes on the data

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

FOR ADDITIONAL INFORMATION on work stoppages data, contact the Division of De-

velopments in Labor-Management Relations: (202) 606-6288.

Price Data

(Tables 2; 31-41)

PRICE DATA are gathered by the Bureau of Labor Statistics from retail and primary markets in the United States. Price indexes are given in relation to a base period—1982 = 100 for many Producer Price Indexes, 1982-84 = 100 for many Consumer Price Indexes (unless otherwise noted), and 1990 = 100 for International Price Indexes.

Consumer Price Indexes

Description of the series

The **Consumer Price Index (CPI)** is a measure of the average change in the prices paid by urban consumers for a fixed market basket of goods and services. The CPI is calculated monthly for two population groups, one consisting only of urban households whose primary source of income is derived from the employment of wage earners and clerical workers, and the other consisting of all urban households. The wage earner index (CPI-W) is a continuation of the historic index that was introduced well over a half-century ago for use in wage negotiations. As new uses were developed for the CPI in recent years, the need for a broader and more representative index became apparent. The all-urban consumer index (CPI-U), introduced in 1978, is representative of the 1982-84 buying habits of about 80 percent of the noninstitutional population of the United States at that time, compared with 32 percent represented in the CPI-W. In addition to wage earners and clerical workers, the CPI-U covers professional, managerial, and technical workers, the self-employed, short-term workers, the unemployed, retirees, and others not in the labor force.

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

Data collected from more than 19,000 retail establishments and 57,000 housing units in 85 urban areas across the country are used to develop the "U.S. city average." Separate estimates for 15 major urban cen-

ters are presented in table 32. The areas listed are as indicated in footnote 1 to the table. The area indexes measure only the average change in prices for each area since the base period, and do not indicate differences in the level of prices among cities.

Notes on the data

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

FOR ADDITIONAL INFORMATION on consumer prices, contact the Division of Consumer Prices and Price Indexes: (202) 606-7000.

Producer Price Indexes

Description of the series

Producer Price Indexes (PPI) measure average changes in prices received by domestic producers of commodities in all stages of processing. The sample used for calculating these indexes currently contains about 3,200 commodities and about 80,000 quotations per month, selected to represent the movement of prices of all commodities produced in the manufacturing; agriculture, forestry, and fishing; mining; and gas and electricity and public utilities sectors. The stage-of-processing structure of PPI organizes products by class of buyer and degree of fabrication (that is, finished goods, intermediate goods, and crude materials). The traditional commodity structure of PPI organizes products by similarity of end use or material composition. The industry and product structure of PPI organizes data in accordance with the Standard Industrial Classification (SIC) and the product code extension of the SIC developed by the U.S. Bureau of the Census.

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

ally are reported for the Tuesday of the week containing the 13th day of the month.

Since January 1992, price changes for the various commodities have been averaged together with implicit quantity weights representing their importance in the total net selling value of all commodities as of 1987. The detailed data are aggregated to obtain indexes for stage-of-processing groupings, commodity groupings, durability-of-product groupings, and a number of special composite groups. All Producer Price Index data are subject to revision 4 months after original publication.

FOR ADDITIONAL INFORMATION on producer prices, contact the Division of Industrial Prices and Price Indexes: (202) 606-7705.

International Price Indexes

Description of the series

The **International Price Program** produces monthly and quarterly export and import price indexes for nonmilitary goods traded between the United States and the rest of the world. The export price index provides a measure of price change for all products sold by U.S. residents to foreign buyers. ("Residents" is defined as in the national income accounts; it includes corporations, businesses, and individuals, but does not require the organizations to be U.S. owned nor the individuals to have U.S. citizenship.) The import price index provides a measure of price change for goods purchased from other countries by U.S. residents.

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

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

In addition to general indexes of prices for U.S. exports and imports, indexes are also published for detailed product categories of exports and imports. These catego-

ries are defined according to the five-digit level of detail for the Bureau of Economic Analysis End-use Classification (SITC), and the four-digit level of detail for the Harmonized System. Aggregate import indexes by country or region of origin are also available.

BLS publishes indexes for selected categories of internationally traded services, calculated on an international basis and on a balance-of-payments basis.

Notes on the data

The export and import price indexes are weighted indexes of the Laspeyres type. Price relatives are assigned equal importance within each harmonized group and are then aggregated to the higher level. The values assigned to each weight category are based on trade value figures compiled by the Bureau of the Census. The trade weights currently used to compute both indexes relate to 1990.

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

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

FOR ADDITIONAL INFORMATION on international prices, contact the Division of International Prices: (202) 606-7155.

Productivity Data

(Tables 2; 42-45)

Business sector and major sectors

Description of the series

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

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

Definitions

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

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

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

Unit labor costs are the labor compensation costs expended in the production of a unit of output and are derived by dividing compensation by output. **Unit nonlabor payments** include profits, depreciation,

interest, and indirect taxes per unit of output. They are computed by subtracting compensation of all persons from current-dollar value of output and dividing by output. **Unit nonlabor costs** contain all the components of unit nonlabor payments except unit profits.

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

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

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

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

Notes on the data

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

The productivity and associated cost measures in tables 42-45 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 ADDITIONAL INFORMATION on this productivity series, contact the Division of Productivity Research: (202) 606-5606.

Industry productivity measures

Description of the series

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

Definitions

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

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

Notes on the data

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

For most industries, the productivity indexes refer to the output per hour of all employees. For some transportation industries, only indexes of output per employee are prepared. For some trade and service industries, indexes of output per hour of

all persons (including self-employed) are constructed.

FOR ADDITIONAL INFORMATION on this series, contact the Division of Industry Productivity Studies: (202) 606-5618.

International Comparisons

(Tables 46-48)

Labor force and unemployment

Description of the series

Tables 46 and 47 present comparative measures of the labor force, employment, and unemployment—approximating U.S. concepts—for the United States, Canada, Australia, Japan, and several European countries. The unemployment statistics (and, to a lesser extent, employment statistics) published by other industrial countries are not, in most cases, comparable to U.S. unemployment statistics. Therefore, the Bureau adjusts the figures for selected countries, where necessary, for all known major definitional differences. Although precise comparability may not be achieved, these adjusted figures provide a better basis for international comparisons than the figures regularly published by each country.

Definitions

For the principal U.S. definitions of the **labor force**, **employment**, and **unemployment**, see the Notes section on Employment and Unemployment Data: Household survey data.

Notes on the data

The adjusted statistics have been adapted to the age at which compulsory schooling ends in each country, rather than to the U.S. standard of 16 years of age and older. Therefore, the adjusted statistics relate to the population age 16 and older in France, Sweden, and from 1973 onward in the United Kingdom; 15 and older in Canada, Australia, Japan, Germany, Italy, the Netherlands, and prior to 1973, the United Kingdom; and 14 and older in Italy prior to 1993. The institutional population is included in the denominator of the labor force participation rates and employment-population ratios for Japan and Germany; it is excluded for the United States and the other countries.

In the U.S. labor force survey, persons on layoff who are awaiting recall to their jobs are classified as unemployed. European and Japanese layoff practices are quite dif-

ferent in nature from those in the United States; therefore, strict application of the U.S. definition has not been made on this point. For further information, see *Monthly Labor Review*, December 1981, pp. 8-11.

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

There are breaks in the data series for the United States (1994), Italy (1986, 1991, 1993), and Sweden (1987, 1993). For the United States, the break in series reflects a number of changes in the labor force survey beginning with data for January 1994. Data for 1994 are not directly comparable with those for earlier years. See the Notes section on Employment and Unemployment Data of this *Review*.

For Italy, the 1986 break in series reflects more accurate enumeration of the number of people reported as seeking work in the last 30 days. The impact was to increase the Italian unemployment rates approximating U.S. concepts by about 1 percentage point. In 1991, the survey sample was modified to obtain more reliable estimates by sex and age. The impact was to raise the adjusted Italian unemployment rate by approximately 0.3 percentage point. In 1993, the survey methodology was revised and the definition of unemployment was changed to include only those who were actively looking for a job within the 30 days preceding the survey and who were available for work. In addition, the lower age limit for the labor force was raised from 14 to 15 years. (Prior to these changes, BLS adjusted Italy's published unemployment rate downward by excluding from the unemployed persons who had not actively sought work in the past 30 days.) The break in the series also reflects the incorporation of the 1991 population census results. The impact of these changes was to raise Italy's adjusted unemployment rate by approximately 1.1 percentage points. These changes did not affect employment significantly, except in 1993. Estimates by the Italian Statistical Office indicate that employment declined by about 3 percent in 1993, rather than the 4.5 percent indicated by the data shown in table 47. This difference is attributable mainly to the incorporation of the 1991 population census benchmarks in the 1993 data. Data for earlier years have not yet been adjusted to incorporate the 1991 census results.

Sweden introduced a new questionnaire in 1987. Questions regarding current availability were added and the period of active

workseeking was reduced from 60 days to 4 weeks. These changes result in lowering Sweden's unemployment rate by 0.5 percentage point. In 1993, the measurement period for the labor force survey was changed to represent all 52 weeks of the year, rather than one week each month, and a new adjustment for population totals was introduced. The impact was to raise the unemployment rate by approximately 0.5 percentage point. The data for 1993 onward are not seasonally adjusted because the previous seasonal adjustment pattern is not applicable following the 1993 break in series.

Preliminary estimates by the Swedish Statistics Bureau indicate that employment linked for the 1993 break in series declined by about 5-1/2 percent in 1993, rather than the nearly 7 percent indicated by the data shown in table 47.

FOR ADDITIONAL INFORMATION on this series, contact the Division of Foreign Labor Statistics: (202) 606-5654.

Manufacturing productivity and labor costs

Description of the series

Table 48 presents comparative measures of manufacturing labor productivity, hourly compensation costs, and unit labor costs for the United States, Canada, Japan, and nine European countries. These measures are limited to trend comparisons—that is, intercountry series of changes over time—rather than level comparisons because reliable international comparisons of the levels of manufacturing output are unavailable. The hours and compensation measures refer to all employed persons, including self-employed persons and unpaid family workers, in the United States and Canada and to all employees (wage and salary earners) in the other countries.

Definitions

Output, in general, refers to value added in manufacturing (gross product originating) in constant prices from the national accounts of each country. However, output for Japan prior to 1970 and the Netherlands from 1969 to 1977 are indexes of industrial production. The national accounts measures for the United Kingdom are essentially identical to its indexes of industrial production. While methods of deriving national accounts measures differ substantially from country to country, the use of different procedures does not, in itself, connote lack of comparability—rather, it reflects differences among countries in the availability and reliability of underlying data series.

Hours refer to hours worked in all countries. The measures are developed from statistics of manufacturing employment and average hours. The series used for France (from 1970 forward), Norway, and Sweden are official series published with the national accounts. Where official total hours series are not available. The measures are developed by the Bureau using employment figures published with the national accounts, or other comprehensive employment series, and estimates of annual hours worked.

Compensation (labor cost) includes all payments in cash or kind made directly to employees plus employer expenditures for legally required insurance programs and contractual and private benefit plans. In addition, for some countries, compensation is increased to account for other significant taxes on payrolls or employment (or reduced to reflect subsidies), even if they are not for the direct benefit of workers, because such taxes are regarded as labor costs. However, compensation does not include all items of labor costs. The costs of recruitment, employee training, and plant facilities and services—such as cafeterias and medical clinics—are not covered because data are not available for most countries. The compensation measures are from the national accounts, except those for Belgium, which are developed by the Bureau using statistics on employment, average hours, and hourly compensation. Self-employed workers are included in the U.S. and Canadian compensation figures by assuming that their hourly compensation is equal to the average for wage and salary employees.

Notes on the data

In general, the measures relate to total manufacturing as defined by the International Standard Industrial Classification. However, the measures for France (beginning 1970), and the United Kingdom (beginning 1971) refer to mining and manufacturing less energy-related products; the measures for Denmark include mining and exclude manufacturing handicrafts from 1960 to 1966; and the measures for the Netherlands exclude petroleum refining and include coal mining from 1969 to 1976.

The figures for one or more recent years are generally based on current indicators of manufacturing output (such as industrial production indexes), employment, average hours, and hourly compensation and are considered preliminary until the national accounts and other statistics used for the long-term measures becomes available.

FOR ADDITIONAL INFORMATION on this series, contact the Division of Foreign Labor Statistics: (202) 606-5654.

Occupational Injury and Illness Data

(Table 49)

Description of the series

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

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

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

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

Definitions

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

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

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

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

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

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

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

The number of days away from work or days of restricted work activity does not include the day of injury or onset of illness or

any days on which the employee would not have worked even though able to work.

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

Notes on the data

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

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

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

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

The Supplementary Data System provides detailed information describing various factors associated with work-related injuries and illnesses. These data are obtained from information reported by employers to State workers' compensation agencies. The Work Injury Report program examines selected types of accidents through an employee survey which focuses on the circumstances surrounding the injury. These data are available from the BLS Office of Safety, Health, and Working Conditions.

The definitions of occupational injuries and illnesses and lost workdays are from *Recordkeeping Requirements under the Occupational Safety and Health Act of 1970*.

FOR ADDITIONAL INFORMATION on occupational injuries and illnesses, contact the Division of Safety and Health Statistics: (202) 606-6166.

Current Labor Statistics: Comparative Indicators

1. Labor market indicators

Selected indicators	1993	1994	1993			1994				1995
			II	III	IV	I	II	III	IV	I
Employment data¹										
Employment status of the civilian noninstitutionalized population (household survey): ²										
Labor force participation rate	66.2	66.6	66.2	66.1	66.2	66.7	66.5	66.5	66.6	66.9
Employment-population ratio	61.6	62.5	61.6	61.7	61.9	62.3	62.4	62.5	62.9	63.2
Unemployment rate	6.8	6.1	7.0	6.7	6.5	6.6	6.2	6.0	5.6	5.5
Men	7.1	6.2	7.3	7.1	6.7	6.7	6.2	6.0	5.6	5.5
16 to 24 years	14.3	13.2	14.9	14.2	13.5	14.1	13.3	13.1	12.2	11.9
25 years and over	5.8	4.8	5.8	5.8	5.5	5.2	4.8	4.7	4.4	4.2
Women	6.5	6.0	6.6	6.4	6.3	6.4	6.2	5.9	5.6	5.6
16 to 24 years	12.2	11.6	12.6	11.7	11.6	12.1	11.9	11.6	11.0	11.2
25 years and over	5.4	4.9	5.4	5.3	5.3	5.3	5.0	4.8	4.5	4.4
Employment, nonfarm (payroll data), in thousands: ²										
Total	110,730	114,034	110,354	111,021	111,816	112,655	112,995	114,481	115,329	116,078
Private sector	91,889	94,917	91,550	92,143	92,877	93,656	93,990	95,314	96,099	96,841
Goods-producing	23,352	23,913	23,301	23,345	23,481	23,646	23,534	23,978	24,162	24,329
Manufacturing	18,075	18,303	18,064	18,049	18,096	18,181	18,020	18,333	18,436	18,517
Service-producing	87,378	90,121	87,052	87,676	88,335	89,008	89,461	90,503	91,167	91,749
Average hours:										
Private sector	34.5	34.7	34.5	34.5	34.5	34.6	34.7	34.7	34.7	34.7
Manufacturing	41.4	42.0	41.3	41.5	41.7	41.7	42.1	42.0	42.1	42.1
Overtime	4.1	4.7	4.1	4.1	4.4	4.5	4.7	4.7	4.8	4.8
Employment Cost Index										
Percent change in the ECI, compensation:										
All workers (excluding farm, household, and Federal workers)	3.5	3.0	.7	1.0	.6	.9	.7	1.0	.4	.8
Private industry workers	3.6	3.1	.8	.9	.6	1.0	.8	.8	.4	.8
Goods-producing ³	3.9	3.1	.9	.7	.6	1.0	1.0	.7	.3	.8
Service-producing ³	3.6	2.9	.8	1.0	.7	.9	.7	.9	.4	.9
State and local government workers	2.8	3.0	.3	1.5	.4	.6	.4	1.5	.5	.6
Workers by bargaining status (private industry):										
Union	4.3	2.7	1.1	.8	.8	.8	.9	.7	.3	.7
Nonunion	3.5	3.1	.8	.9	.6	1.0	.8	.8	.4	.9

¹ Data for 1994 are not directly comparable with data for 1993 and prior years. For additional information, see the box note under "Employment and Unemployment Data" in the notes to this section.

² Quarterly data seasonally adjusted.

³ Goods-producing industries include mining, construction, and manufacturing. Service-producing industries include all other private sector industries.

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

Selected measures	1993	1994	1993			1994				1995
			II	III	IV	I	II	III	IV	
Compensation data: 1, 2										
Employment Cost Index--compensation (wages, salaries, benefits):										
Civilian nonfarm	3.5	3.0	0.7	1.0	0.6	0.9	0.7	1.0	0.4	0.8
Private nonfarm	3.6	3.1	.8	.9	.6	1.0	.8	.8	.4	.8
Employment Cost Index--wages and salaries										
Civilian nonfarm	3.1	2.8	.6	1.0	.6	.6	.7	1.0	.5	.7
Private nonfarm	3.1	2.8	.6	1.0	.6	.7	.8	.8	.5	.8
Price data:1										
Consumer Price Index (All urban consumers): All items										
	2.7	2.7	.5	.5	1.0	.5	.9	.2	1.1	.7
Producer Price Index:										
Finished goods .....	.2	1.7	-1.4	.2	.6	.6	.0	.5	.6	1.0
Finished consumer goods	-.2	1.6	-1.5	-.2	.6	.6	.2	.3	.5	1.2
Capital equipment	1.8	2.0	-.5	1.7	.8	.4	-.5	1.2	.7	.4
Intermediate materials, supplies, components	1.0	4.4	.1	-.7	.7	1.2	1.6	.8	2.1	1.8
Crude materials .....	.1	-.5	-3.1	.0	3.1	-.9	-3.4	.8	1.8	1.1
Productivity data:3										
Output per hour of all persons:										
Business sector	1.3	2.4	.6	2.2	5.0	1.8	-1.4	3.2	4.3	2.2
Nonfarm business sector	1.3	2.2	.4	2.9	4.2	1.7	-1.4	2.7	4.3	2.7
Nonfinancial corporations 4	2.8	2.5	4.6	3.2	3.9	2.0	-.8	1.6	3.4	1.8

1 Annual changes are December-to-December change. Quarterly changes are calculated using the last month of each quarter. Compensation and price data are not seasonally adjusted and the price data are not compounded.

2 Excludes Federal and private household workers.

3 Annual rates of change are computed by comparing annual averages. Quarterly percent changes reflect annual rates of change in quarterly indexes. The data are seasonally adjusted.

4 Output per hour of all employees.

3. Alternative measures of wage and compensation changes

Components	Quarterly average						Four quarters ended--					
	1993	1994				1995	1993	1994				1995
	IV	I	II	III	IV	I	IV	I	II	III	IV	I
Average hourly compensation:1												
All persons, business sector	1.7	5.1	0.9	3.1	3.6	4.0	2.3	2.9	2.3	2.7	3.2	2.9
All persons, nonfarm business sector	1.6	4.9	1.4	2.7	3.8	4.3	1.9	2.6	2.3	2.6	3.2	3.0
Employment Cost Index--compensation:												
Civilian nonfarm 2 .....	.6	.9	.7	1.0	.4	.8	3.5	3.2	3.2	3.2	3.0	2.9
Private nonfarm .....	.6	1.0	.8	.8	.4	.8	3.6	3.3	3.4	3.3	3.1	2.9
Union .....	.8	.8	.9	.7	.3	.7	4.3	3.5	3.3	3.2	2.7	2.6
Nonunion .....	.6	1.0	.8	.8	.4	.9	3.5	3.3	3.4	3.3	3.1	3.0
State and local governments .....	.4	.6	.4	1.5	.5	.6	2.8	2.8	2.9	3.0	3.0	3.1
Employment Cost Index--wages and salaries:												
Civilian nonfarm 2 .....	.6	.6	.7	1.0	.5	.7	3.1	2.9	3.0	2.9	2.8	3.0
Private nonfarm .....	.6	.7	.8	.8	.5	.8	3.1	2.9	3.1	2.9	2.8	2.9
Union .....	.8	.7	.9	.9	.4	.6	3.0	3.0	3.2	3.3	2.9	2.8
Nonunion .....	.6	.7	.8	.8	.5	.8	3.1	2.9	3.0	2.8	2.7	2.9
State and local governments .....	.3	.6	.2	1.7	.5	.7	2.7	2.7	2.8	2.9	3.1	3.2
Total effective wage adjustments:3												
From current settlements .....	.5	.1	.2	.1	.2	(*)	.9	.9	.9	.8	.6	.5
From prior settlements .....	.2	.3	.6	.7	.3	.2	1.9	1.8	1.7	1.9	1.9	1.9
From cost-of-living provision	(*)	(*)	.1	.1	.1	(*)	.2	.2	.2	.2	.2	.3
Negotiated wage adjustments from settlements:3												
First-year adjustments	2.8	3.0	2.0	1.0	2.2	1.9	2.3	2.4	2.2	2.3	2.0	1.8
Annual rate over life of contract	2.0	2.4	2.4	1.9	2.5	1.9	2.1	2.1	2.1	2.2	2.3	2.3
Negotiated wage and benefit adjustments from settlements:5												
First-year adjustment	3.8	3.0	3.4	(*)	1.5	1.4	3.0	3.0	3.1	3.1	2.3	2.1
Annual rate over life of contract	2.5	2.6	2.9	1.4	2.1	1.6	2.4	2.3	2.4	2.5	2.4	2.3

1 Seasonally adjusted.

2 Excludes Federal and household workers.

3 Limited to major collective bargaining units of 1,000 workers or more. The most recent data are preliminary.

4 Data round to zero.

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

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

(Numbers in thousands)

Employment status	Annual average		1994								1995				
	1993	1994	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
TOTAL															
Civilian noninstitutional population ¹	193,550	196,814	196,510	196,693	196,859	197,043	197,248	197,430	197,607	197,765	197,753	197,886	198,007	198,148	198,286
Civilian labor force	128,040	131,056	130,699	130,538	130,774	131,086	131,291	131,646	131,718	131,725	132,136	132,308	132,511	132,737	131,811
Participation rate	66.2	66.6	66.5	66.4	66.4	66.5	66.6	66.7	66.7	66.6	66.8	66.9	66.9	67.0	66.5
Employed	119,306	123,060	122,703	122,635	122,781	123,197	123,644	124,141	124,403	124,570	124,639	125,125	125,274	125,072	124,319
Employment-population ratio ²	61.6	62.5	62.4	62.3	62.4	62.5	62.7	62.9	63.0	63.0	63.0	63.2	63.3	63.1	62.7
Unemployed	8,734	7,996	7,996	7,903	7,993	7,889	7,647	7,505	7,315	7,155	7,498	7,183	7,237	7,665	7,492
Unemployment rate	6.8	6.1	6.1	6.1	6.1	6.0	5.8	5.7	5.6	5.4	5.7	5.4	5.5	5.8	5.7
Not in labor force	65,509	65,758	65,811	66,155	66,085	65,957	65,957	65,784	65,889	66,040	65,617	65,578	65,496	65,412	66,476
Men, 20 years and over															
Civilian noninstitutional population ¹	85,907	87,151	87,000	87,095	87,123	87,248	87,321	87,439	87,529	87,617	87,528	87,572	87,622	87,664	87,691
Civilian labor force	66,069	66,921	66,652	66,602	66,747	66,817	66,909	67,177	67,345	67,450	67,539	67,552	67,643	67,563	67,250
Participation rate	76.9	76.8	76.6	76.5	76.6	76.6	76.6	76.8	76.9	77.0	77.2	77.1	77.2	77.1	76.7
Employed	61,865	63,294	63,080	63,043	63,076	63,271	63,517	63,820	64,051	64,281	64,133	64,478	64,465	64,224	63,841
Employment-population ratio ²	72.0	72.6	72.5	72.4	72.4	72.5	72.7	73.0	73.2	73.4	73.3	73.6	73.6	73.3	72.8
Agriculture	2,263	2,351	2,384	2,334	2,314	2,377	2,293	2,329	2,377	2,410	2,390	2,512	2,519	2,384	2,242
Nonagricultural industries	59,602	60,943	60,696	60,709	60,762	60,894	61,224	61,491	61,674	61,871	61,743	61,965	61,946	61,840	61,599
Unemployed	4,204	3,627	3,572	3,559	3,671	3,546	3,392	3,357	3,294	3,169	3,406	3,074	3,178	3,339	3,410
Unemployment rate	6.4	5.4	5.4	5.3	5.5	5.3	5.1	5.0	4.9	4.7	5.0	4.6	4.7	4.9	5.1
Women, 20 years and over															
Civilian noninstitutional population ¹	94,388	95,467	95,329	95,407	95,469	95,544	95,658	95,729	95,821	95,873	95,961	96,020	96,037	96,099	96,141
Civilian labor force	55,146	56,655	56,545	56,384	56,536	56,747	57,031	56,951	56,984	56,725	56,951	57,096	57,042	57,360	56,819
Participation rate	58.4	59.3	59.3	59.1	59.2	59.4	59.6	59.5	59.5	59.2	59.3	59.5	59.4	59.7	59.1
Employed	51,912	53,606	53,481	53,328	53,541	53,722	54,044	54,090	54,129	54,037	54,134	54,334	54,242	54,403	54,097
Employment-population ratio ²	55.0	56.2	56.1	55.9	56.1	56.2	56.5	56.5	56.5	56.4	56.4	56.6	56.5	56.6	56.3
Agriculture	599	809	789	739	790	815	847	863	850	882	877	898	913	925	828
Nonagricultural industries	51,313	52,796	52,692	52,589	52,751	52,907	53,197	53,227	53,279	53,155	53,257	53,436	53,329	53,477	53,268
Unemployed	3,234	3,049	3,064	3,056	2,995	3,025	2,987	2,861	2,855	2,688	2,817	2,763	2,800	2,957	2,722
Unemployment rate	5.9	5.4	5.4	5.4	5.3	5.3	5.2	5.0	5.0	4.7	4.9	4.8	4.9	5.2	4.8
Both sexes, 16 to 19 years															
Civilian noninstitutional population ¹	13,255	14,196	14,181	14,191	14,267	14,251	14,269	14,261	14,257	14,274	14,263	14,294	14,348	14,385	14,454
Civilian labor force	6,826	7,481	7,502	7,552	7,491	7,522	7,351	7,518	7,389	7,550	7,646	7,660	7,826	7,814	7,742
Participation rate	51.5	52.7	52.9	53.2	52.5	52.8	51.5	52.7	51.8	52.9	53.6	53.6	54.5	54.3	53.6
Employed	5,530	6,161	6,142	6,264	6,164	6,204	6,083	6,231	6,223	6,252	6,372	6,313	6,567	6,446	6,381
Employment-population ratio ²	41.7	43.4	43.3	44.1	43.2	43.5	42.6	43.7	43.6	43.8	44.7	44.2	45.8	44.8	44.1
Agriculture	212	249	240	221	229	244	271	302	273	240	308	245	266	285	287
Nonagricultural industries	5,317	5,912	5,902	6,043	5,935	5,960	5,812	5,929	5,950	6,012	6,064	6,068	6,300	6,160	6,094
Unemployed	1,296	1,320	1,360	1,288	1,327	1,318	1,268	1,287	1,166	1,298	1,274	1,347	1,260	1,369	1,360
Unemployment rate	19.0	17.6	18.1	17.1	17.7	17.5	17.2	17.1	15.8	17.2	16.7	17.6	16.1	17.5	17.6
White															
Civilian noninstitutional population ¹	163,921	165,555	165,351	165,472	165,576	165,696	165,832	165,954	166,072	166,175	166,361	166,444	166,521	166,613	166,708
Civilian labor force	109,359	111,082	110,829	110,523	110,911	111,186	111,381	111,555	111,637	111,715	111,876	111,830	111,999	112,153	111,568
Participation rate	66.7	67.1	67.0	66.8	67.0	67.1	67.2	67.2	67.2	67.2	67.2	67.2	67.3	67.3	66.9
Employed	102,812	105,190	104,978	104,687	105,006	105,401	105,740	106,010	106,242	106,352	106,366	106,604	106,698	106,500	105,935
Employment-population ratio ²	62.7	63.5	63.5	63.3	63.4	63.6	63.8	63.9	64.0	64.0	63.9	64.0	64.1	63.9	63.5
Unemployed	6,547	5,892	5,851	5,836	5,905	5,785	5,641	5,545	5,395	5,363	5,510	5,226	5,301	5,653	5,633
Unemployment rate	6.0	5.3	5.3	5.3	5.3	5.2	5.1	5.0	4.8	4.8	4.9	4.7	4.7	5.0	5.0
Black															
Civilian noninstitutional population ¹	22,329	22,879	22,824	22,855	22,883	22,917	22,955	22,990	23,023	23,052	23,089	23,117	23,142	23,169	23,192
Civilian labor force	13,943	14,502	14,510	14,481	14,380	14,429	14,477	14,649	14,578	14,541	14,697	14,868	14,818	14,938	14,803
Participation rate	62.4	63.4	63.6	63.4	62.8	63.0	63.1	63.7	63.3	63.1	63.7	64.3	64.0	64.5	63.8
Employed	12,146	12,835	12,810	12,838	12,767	12,795	12,927	13,022	13,054	13,119	13,192	13,362	13,370	13,337	13,336
Employment-population ratio ²	54.4	56.1	56.1	56.2	55.8	55.8	56.3	56.6	56.7	56.9	57.1	57.8	57.8	57.6	57.5
Unemployed	1,796	1,666	1,700	1,643	1,613	1,634	1,550	1,627	1,524	1,422	1,505	1,505	1,448	1,601	1,467
Unemployment rate	12.9	11.5	11.7	11.3	11.2	11.3	10.7	11.1	10.5	9.8	10.2	10.1	9.8	10.7	9.9

See footnotes at end of table.

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

(Numbers in thousands)

Employment status	Annual average		1994								1995				
	1993	1994	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
Hispanic origin															
Civilian noninstitutional population ¹	15,753	18,117	18,041	18,092	18,143	18,193	18,244	18,291	18,339	18,385	18,368	18,413	18,458	18,509	18,554
Civilian labor force	10,377	11,975	11,916	11,896	11,956	12,002	11,997	12,222	12,324	12,224	12,036	12,017	12,001	12,131	12,111
Participation rate	65.9	66.1	66.0	65.8	65.9	66.0	65.8	66.8	67.2	66.5	65.5	65.3	65.0	65.5	65.3
Employed	9,272	10,788	10,735	10,682	10,760	10,786	10,806	11,074	11,236	11,105	10,811	10,943	10,903	11,058	10,895
Employment-population ratio ²	58.9	59.5	59.5	59.0	59.3	59.3	59.2	60.5	61.3	60.4	58.9	59.4	59.1	59.7	58.7
Unemployed	1,104	1,187	1,181	1,214	1,196	1,216	1,191	1,148	1,088	1,119	1,224	1,073	1,098	1,073	1,216
Unemployment rate	10.6	9.9	9.9	10.2	10.0	10.1	9.9	9.4	8.8	9.2	10.2	8.9	9.1	8.8	10.0

¹ The population figures are not seasonally adjusted.

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

NOTE: Data for 1994 are not directly comparable with data for 1993 and earlier years. For additional information, see the box note under "Employment and Unemployment

Data" in the notes to this section.

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.

5. Selected employment indicators, monthly data seasonally adjusted

(In thousands)

Selected categories	Annual average		1994								1995				
	1993	1994	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
CHARACTERISTIC															
Employed, 16 years and over	119,306	123,060	122,703	122,635	122,781	123,197	123,644	124,141	124,403	124,570	124,639	125,125	125,274	125,072	124,319
Men	64,700	66,450	66,197	66,255	66,226	66,458	66,682	67,059	67,244	67,483	67,386	67,709	67,811	67,588	67,110
Women	54,606	56,610	56,506	56,380	56,555	56,739	56,962	57,082	57,159	57,087	57,252	57,416	57,462	57,484	57,208
Married men, spouse present ..	40,869	41,414	41,330	41,313	41,281	41,487	41,557	41,511	41,530	41,608	41,601	42,190	42,132	42,086	41,874
Married women, spouse present	30,512	31,536	31,372	31,193	31,462	31,593	31,905	31,764	31,775	31,723	31,705	31,893	32,135	32,108	32,022
Women who maintain families ..	6,764	7,053	7,061	7,008	7,016	6,974	7,029	7,098	7,141	7,074	7,199	7,067	7,071	7,152	7,175
CLASS OF WORKER															
Agriculture:															
Wage and salary workers	1,637	1,715	1,736	1,675	1,669	1,728	1,712	1,764	1,767	1,738	1,866	1,970	1,987	1,884	1,747
Self-employed workers	1,332	1,645	1,637	1,584	1,619	1,654	1,630	1,652	1,677	1,714	1,663	1,684	1,674	1,649	1,560
Unpaid family workers	105	49	43	46	50	50	63	43	48	49	35	27	57	70	55
Nonagricultural industries:															
Wage and salary workers	107,011	110,517	110,164	110,215	110,345	110,576	111,100	111,686	111,770	111,960	111,987	112,461	112,649	112,578	112,111
Government	18,504	18,293	18,378	18,294	18,281	18,225	18,306	18,201	18,357	18,340	18,295	18,504	18,685	18,646	18,493
Private industries	88,507	92,224	91,786	91,921	92,064	92,351	92,794	93,485	93,413	93,620	93,692	93,957	93,964	93,932	93,619
Private households	1,105	966	978	966	940	881	903	935	999	1,023	1,075	1,075	1,039	988	913
Other	87,402	91,258	90,808	90,955	91,124	91,470	91,891	92,550	92,414	92,597	92,617	92,882	92,925	92,945	92,705
Self-employed workers	9,003	9,003	9,049	8,964	8,962	9,021	8,989	8,878	8,915	8,959	9,039	8,904	8,865	8,848	8,763
Unpaid family workers	218	131	129	148	140	131	134	131	120	121	95	118	129	110	125
PERSONS AT WORK PART TIME¹															
All industries:															
Part time for economic reasons ..	6,348	4,625	4,792	4,766	4,467	4,348	4,333	4,411	4,411	4,422	4,693	4,460	4,530	4,469	4,476
Slack work or business conditions	3,140	2,432	2,503	2,464	2,431	2,396	2,404	2,394	2,394	2,384	2,504	2,372	2,333	2,517	2,502
Could only find part-time work ..	2,908	1,871	1,981	1,927	1,698	1,618	1,697	1,791	1,736	1,734	1,777	1,739	1,902	1,686	1,720
Part time for noneconomic reasons	15,062	17,638	17,441	17,452	17,922	17,955	17,609	17,644	17,756	17,576	17,940	18,041	17,627	18,121	17,666
Nonagricultural industries:															
Part time for economic reasons ..	6,106	4,414	4,583	4,510	4,273	4,173	4,154	4,226	4,246	4,254	4,430	4,187	4,347	4,171	4,289
Slack work or business conditions	2,977	2,311	2,386	2,349	2,318	2,272	2,290	2,257	2,282	2,272	2,359	2,216	2,226	2,328	2,364
Could only find part-time work ..	2,832	1,824	1,942	1,883	1,661	1,583	1,646	1,756	1,689	1,690	1,737	1,687	1,854	1,624	1,698
Part time for noneconomic reasons	14,637	17,007	16,841	16,909	17,308	17,314	16,982	16,992	17,101	16,917	17,307	17,381	16,991	17,232	17,034

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

NOTE: Data for 1994 are not directly comparable with data for 1993 and earlier years. For additional information, see the box note under "Employment and Unemployment Data" in the notes to this section.

6. Selected unemployment indicators, monthly data seasonally adjusted

(Unemployment rates)

Selected categories	Annual average		1994								1995				
	1993	1994	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
CHARACTERISTIC															
Total, all workers	6.8	6.1	6.1	6.1	6.1	6.0	5.8	5.7	5.6	5.4	5.7	5.4	5.5	5.8	5.7
Both sexes, 16 to 19 years	19.0	17.6	18.1	17.1	17.7	17.5	17.2	17.1	15.8	17.2	16.7	17.6	16.1	17.5	17.6
Men, 20 years and over	6.4	5.4	5.4	5.3	5.5	5.3	5.1	5.0	4.9	4.7	5.0	4.6	4.7	4.9	5.1
Women, 20 years and over	5.9	5.4	5.4	5.4	5.3	5.3	5.2	5.0	5.0	4.7	4.9	4.8	4.9	5.2	4.8
White, total	6.0	5.3	5.3	5.3	5.3	5.2	5.1	5.0	4.8	4.8	4.9	4.7	4.7	5.0	5.0
Both sexes, 16 to 19 years	16.2	15.1	15.5	14.3	14.7	14.6	14.8	14.4	13.5	14.7	14.1	14.7	13.6	14.6	14.8
Men, 16 to 19 years	17.6	16.3	17.0	15.1	16.1	15.4	16.2	15.2	14.3	16.0	15.0	16.1	14.7	15.3	15.2
Women, 16 to 19 years	14.6	13.8	13.7	13.6	13.1	13.7	13.3	13.5	12.6	13.2	13.1	13.1	12.4	13.8	14.3
Men, 20 years and over	5.6	4.8	4.7	4.7	4.8	4.6	4.4	4.4	4.3	4.2	4.4	4.0	4.2	4.4	4.6
Women, 20 years and over	5.1	4.6	4.6	4.7	4.7	4.6	4.6	4.4	4.3	4.1	4.3	4.1	4.2	4.5	4.3
Black, total	12.9	11.5	11.7	11.3	11.2	11.3	10.7	11.1	10.5	9.8	10.2	10.1	9.8	10.7	9.9
Both sexes, 16 to 19 years	38.9	35.2	38.2	36.1	37.3	36.1	32.1	37.5	33.0	34.6	35.5	35.7	31.2	35.6	35.1
Men, 16 to 19 years	40.1	37.6	40.9	39.3	41.4	39.9	30.8	35.9	32.0	34.3	34.0	38.7	31.7	35.4	40.0
Women, 16 to 19 years	37.5	32.6	35.0	32.6	32.7	31.9	33.4	39.1	34.1	35.0	37.1	32.4	30.7	35.8	30.5
Men, 20 years and over	12.1	10.3	10.3	10.0	10.4	10.2	9.8	9.5	9.2	8.3	9.2	7.9	7.8	8.9	8.8
Women, 20 years and over	10.6	9.8	10.0	9.5	8.8	9.4	9.0	9.2	8.9	8.3	8.5	9.0	9.1	9.3	7.8
Hispanic origin, total	10.6	9.9	9.9	10.2	10.0	10.1	9.9	9.4	8.8	9.2	10.2	8.9	9.1	8.8	10.0
Married men, spouse present	4.4	3.7	3.7	3.6	3.6	3.5	3.4	3.3	3.2	3.2	3.4	3.0	3.2	3.4	3.4
Married women, spouse present	4.6	4.1	4.1	4.2	4.0	4.1	4.0	4.0	3.9	3.7	3.7	3.6	3.9	4.2	3.9
Women who maintain families	9.5	8.9	8.9	8.8	7.9	8.8	8.9	8.9	8.7	8.8	8.9	8.1	7.6	9.0	8.0
Full-time workers	7.4	6.8	6.1	6.1	6.1	6.0	5.8	5.8	5.6	5.3	5.5	5.3	5.4	5.6	5.6
Part-time workers	7.4	7.1	6.2	5.9	6.0	6.2	5.8	5.6	5.4	5.9	6.2	6.0	5.8	6.3	6.1
INDUSTRY															
Nonagricultural private wage and salary workers	7.0	6.3	6.4	6.3	6.3	6.1	6.0	5.9	5.9	5.6	5.7	5.5	5.5	5.9	6.0
Mining	7.3	5.4	6.0	6.1	6.0	5.0	5.1	4.7	4.5	3.9	5.1	5.2	6.1	4.3	4.9
Construction	14.3	11.8	11.7	11.7	11.1	10.7	10.7	10.7	10.9	11.7	10.5	10.8	11.8	12.6	
Manufacturing	7.2	5.6	5.6	5.5	5.6	5.3	5.3	5.1	5.1	4.9	4.7	4.4	4.5	4.8	5.5
Durable goods	7.1	5.2	5.3	5.2	5.5	5.3	5.3	4.8	4.3	4.6	4.2	3.9	4.2	4.4	5.3
Nondurable goods	7.3	6.0	5.9	5.9	5.8	5.3	5.4	5.6	6.0	5.4	5.4	5.0	4.9	5.4	6.0
Transportation and public utilities	5.1	4.8	4.9	4.9	5.1	4.8	4.5	4.4	4.6	4.2	4.7	4.5	4.5	4.6	4.0
Wholesale and retail trade	7.8	7.4	7.4	7.2	7.5	7.4	7.0	7.2	7.0	6.7	6.6	6.4	6.2	6.8	6.7
Finance, insurance, and real estate	4.1	3.6	3.6	3.7	3.7	3.7	4.3	3.4	3.6	2.9	2.9	3.5	3.3	3.4	3.7
Services	6.5	6.1	6.0	5.9	5.9	5.7	5.5	5.3	5.4	5.2	5.2	5.2	5.3	5.6	5.5
Government workers	3.3	3.4	3.5	3.7	3.4	3.6	3.2	3.2	2.7	3.1	3.2	2.8	2.7	3.1	2.8
Agricultural wage and salary workers	11.6	11.3	8.8	8.6	12.1	11.1	11.1	10.3	10.4	11.1	10.7	9.1	10.5	11.3	12.5

NOTE: Data for 1994 are not directly comparable with data for 1993 and earlier years. For additional information, see the box note under "Employment and Unemployment Data" in the notes to this section.

7. Duration of unemployment, monthly data seasonally adjusted

(Numbers in thousands)

Weeks of unemployment	Annual average		1994								1995				
	1993	1994	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
Less than 5 weeks	3,160	2,728	2,651	2,754	2,768	2,655	2,675	2,434	2,599	2,587	2,937	2,600	2,523	2,629	2,598
5 to 14 weeks	2,522	2,408	2,461	2,452	2,365	2,572	2,294	2,256	2,163	2,149	2,122	2,165	2,319	2,430	2,304
15 weeks and over	3,052	2,860	2,853	2,740	2,823	2,773	2,768	2,934	2,661	2,456	2,386	2,298	2,266	2,505	2,585
15 to 26 weeks	1,274	1,237	1,160	1,193	1,234	1,198	1,213	1,344	1,187	1,088	1,033	1,090	920	1,115	1,282
27 weeks and over	1,778	1,623	1,693	1,547	1,589	1,575	1,555	1,590	1,474	1,368	1,353	1,207	1,347	1,390	1,303
Mean duration, in weeks	18.1	18.8	19.4	18.4	19.0	18.9	18.8	19.3	18.2	17.8	16.7	16.9	17.5	17.7	16.9
Median duration, in weeks	8.4	9.2	9.2	9.1	9.2	9.2	9.5	10.1	9.1	8.7	7.9	7.8	7.9	8.5	9.0

NOTE: In the three tables above, data for 1994 are not directly comparable with data for 1993 and earlier years. For additional information, see the box note under "Employment and Unemployment Data" in the notes to this section.

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

(Numbers in thousands)

Reason for unemployment	Annual average		1994									1995				
	1993	1994	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	
Job losers ¹	4,769	3,815	3,640	3,734	3,863	3,706	3,574	3,513	3,495	3,442	3,658	3,339	3,352	3,532	3,614	
On temporary layoff	1,104	977	811	931	1,031	1,012	824	848	881	930	1,061	1,025	1,032	1,145	958	
Not on temporary layoff	3,664	2,838	2,829	2,803	2,832	2,694	2,750	2,665	2,614	2,512	2,598	2,314	2,320	2,387	2,657	
Job leavers	946	791	796	788	770	786	874	755	710	704	694	773	811	817	870	
Reentrants	2,145	2,786	2,863	2,785	2,766	2,758	2,620	2,626	2,575	2,525	2,488	2,474	2,430	2,779	2,458	
New entrants	874	604	611	498	594	621	600	614	578	555	597	582	604	637	522	
PERCENT OF UNEMPLOYED																
Job losers ¹	54.6	47.7	46.0	47.8	48.3	47.1	46.6	46.8	47.5	47.6	49.2	46.6	46.6	45.5	48.4	
On temporary layoff	12.6	12.2	10.3	11.9	12.9	12.9	10.7	11.3	12.0	12.9	14.3	14.3	14.3	14.7	12.8	
Not on temporary layoff	42.0	35.5	35.8	35.9	35.4	34.2	35.9	35.5	35.5	34.8	34.9	32.3	32.2	30.7	35.6	
Job leavers	10.8	9.9	10.1	10.1	9.6	10.0	11.4	10.1	9.6	9.7	9.3	10.8	11.3	10.5	11.7	
Reentrants	24.6	34.8	36.2	35.7	34.6	35.0	34.2	35.0	35.0	34.9	33.4	34.5	33.8	35.8	32.9	
New entrants	10.0	7.6	7.7	6.4	7.4	7.9	7.8	8.2	7.9	7.7	8.0	8.1	8.4	8.2	7.0	
PERCENT OF CIVILIAN LABOR FORCE																
Job losers ¹	3.7	2.9	2.8	2.9	3.0	2.8	2.7	2.7	2.7	2.6	2.8	2.5	2.5	2.7	2.7	
Job leavers .....	.7	.6	.6	.6	.6	.6	.7	.6	.5	.5	.5	.6	.6	.6	.7
Reentrants	1.7	2.1	2.2	2.1	2.1	2.1	2.0	2.0	2.0	1.9	1.9	1.9	1.8	2.1	1.9	
New entrants .....	.7	.5	.5	.4	.5	.5	.5	.5	.4	.4	.5	.4	.5	.5	.4

¹ Includes persons who completed temporary jobs.

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

(Civilian workers)

Sex and age	Annual average		1994									1995				
	1993	1994	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	
Total, 16 years and over	6.8	6.1	6.1	6.1	6.1	6.0	5.8	5.7	5.6	5.4	5.7	5.4	5.5	5.8	5.7	
16 to 24 years	13.3	12.5	12.6	12.2	12.5	12.6	12.1	11.8	11.4	11.6	11.4	11.7	11.6	11.8	11.8	
16 to 19 years	19.0	17.6	18.1	17.1	17.7	17.5	17.2	17.1	15.8	17.2	16.7	17.6	16.1	17.5	17.6	
16 to 17 years	21.3	19.9	20.4	20.1	20.3	19.9	18.8	17.8	17.2	18.1	20.0	20.7	20.0	20.6	21.5	
18 to 19 years	17.5	16.0	16.3	15.4	15.7	15.6	16.0	16.8	14.7	16.6	14.2	15.3	13.0	15.7	14.7	
20 to 24 years	10.5	9.7	9.6	9.5	9.7	9.9	9.4	9.0	9.1	8.6	8.5	8.5	9.1	8.7	8.6	
25 years and over	5.6	4.8	4.8	4.8	4.8	4.7	4.6	4.5	4.5	4.3	4.5	4.2	4.2	4.6	4.5	
25 to 54 years	5.8	5.0	4.9	4.9	4.9	4.8	4.8	4.7	4.5	4.4	4.6	4.3	4.3	4.7	4.6	
55 years and over	4.3	4.1	4.2	4.0	4.2	4.2	3.8	3.9	3.9	3.5	3.9	3.4	3.5	3.8	3.8	
Men, 16 years and over	7.1	6.2	6.2	6.0	6.3	6.1	5.8	5.7	5.5	5.5	5.7	5.4	5.4	5.7	5.8	
16 to 24 years	14.3	13.2	13.5	12.7	13.4	13.3	12.6	12.4	11.8	12.2	12.0	12.1	11.7	11.8	12.3	
16 to 19 years	20.4	19.0	19.9	18.0	19.4	18.8	18.5	18.1	16.5	18.5	17.4	19.4	17.0	17.8	18.4	
16 to 17 years	22.8	21.0	22.4	21.6	20.9	20.7	19.4	18.2	16.5	18.8	20.9	22.6	20.2	21.7	22.6	
18 to 19 years	18.8	17.6	18.0	16.6	18.0	17.1	17.5	18.1	16.5	18.2	14.5	16.7	14.6	16.1	15.2	
20 to 24 years	11.3	10.2	10.1	9.9	10.3	10.5	9.5	9.4	9.5	9.0	9.1	8.2	8.9	8.6	8.9	
25 years and over	5.8	4.8	4.7	4.8	4.9	4.7	4.5	4.5	4.4	4.3	4.5	4.0	4.1	4.5	4.6	
25 to 54 years	5.9	4.9	4.8	4.8	4.9	4.8	4.6	4.6	4.4	4.3	4.6	4.2	4.2	4.5	4.7	
55 years and over	4.7	4.3	4.4	4.2	4.5	4.2	3.9	4.1	4.0	3.5	4.0	3.6	3.7	4.3	4.0	
Women, 16 years and over	6.5	6.0	6.1	6.1	5.9	6.0	5.8	5.7	5.6	5.4	5.6	5.5	5.5	5.9	5.5	
16 to 24 years	12.2	11.6	11.6	11.6	11.5	11.7	11.6	11.2	10.9	10.9	10.7	11.2	11.5	11.9	11.4	
16 to 19 years	17.4	16.2	16.2	16.0	15.9	16.1	15.9	16.0	15.0	15.8	15.9	15.6	15.2	17.2	16.7	
16 to 17 years	19.6	18.7	18.3	18.5	19.7	19.0	18.2	17.4	17.9	17.4	19.1	18.7	19.8	19.4	20.4	
18 to 19 years	16.0	14.3	14.6	14.2	13.1	14.0	14.2	15.4	12.8	14.9	13.9	13.7	11.3	15.2	14.0	
20 to 24 years	9.6	9.2	9.0	9.1	9.1	9.3	9.3	8.6	8.7	8.1	7.8	8.7	9.4	8.8	8.2	
25 years and over	5.4	4.9	5.0	4.9	4.8	4.8	4.7	4.6	4.6	4.3	4.6	4.3	4.3	4.7	4.4	
25 to 54 years	5.6	5.0	5.1	5.1	5.0	4.9	5.0	4.8	4.7	4.4	4.6	4.5	4.4	5.0	4.6	
55 years and over	3.8	3.9	3.9	3.8	3.7	4.1	3.6	3.7	3.8	3.4	3.7	3.2	3.4	3.3	3.6	

10. Unemployment rates by State, seasonally adjusted

State	May 1994	Apr. 1995	May 1995 ^P	State	May 1994	Apr. 1995	May 1995 ^P
Alabama	6.1	5.8	5.9	Montana	4.9	5.3	5.5
Alaska	8.0	6.7	6.4	Nebraska	2.8	2.5	2.6
Arizona	6.4	5.5	5.6	Nevada	6.2	5.8	5.9
Arkansas	5.5	5.0	4.1	New Hampshire	4.8	4.0	3.8
California	8.5	7.9	8.5	New Jersey	6.9	6.3	6.5
Colorado	4.4	4.0	3.9	New Mexico	6.4	6.0	5.7
Connecticut	5.5	5.2	5.1	New York	6.5	6.8	6.3
Delaware	5.1	4.1	4.3	North Carolina	4.2	4.7	4.3
District of Columbia	8.1	8.4	8.6	North Dakota	3.8	3.3	3.3
Florida	6.8	5.6	5.1	Ohio	6.4	4.5	4.7
Georgia	5.2	4.7	4.8	Oklahoma	6.0	4.9	4.6
Hawaii	6.0	5.2	5.1	Oregon	5.5	4.6	5.2
Idaho	5.3	5.1	5.1	Pennsylvania	6.2	5.8	5.7
Illinois	5.8	5.7	5.5	Rhode Island	7.1	5.8	6.4
Indiana	4.9	4.8	4.7	South Carolina	6.5	4.9	4.9
Iowa	3.7	3.4	3.3	South Dakota	3.2	3.3	2.3
Kansas	5.2	4.6	4.7	Tennessee	4.9	4.4	4.6
Kentucky	5.4	4.8	5.0	Texas	6.7	5.9	6.0
Louisiana	8.1	7.6	7.1	Utah	3.7	3.6	3.7
Maine	7.0	5.8	6.2	Vermont	4.7	4.2	3.9
Maryland	5.2	4.9	5.0	Virginia	4.9	4.4	4.5
Massachusetts	5.8	5.9	5.0	Washington	6.7	6.1	6.1
Michigan	5.9	5.8	5.7	West Virginia	8.8	7.3	7.6
Minnesota	4.0	3.7	3.9	Wisconsin	4.6	3.9	3.9
Mississippi	6.6	5.5	6.0	Wyoming	5.3	4.4	4.8
Missouri	4.9	4.9	5.1				

^P = preliminary

11. Employment of workers on nonfarm payrolls by State, seasonally adjusted

(In thousands)

State	May 1994	Apr. 1995	May 1995 ^P	State	May 1994	Apr. 1995	May 1995 ^P
Alabama	1,746.5	1,774.6	1,770.8	Montana	337.8	348.6	349.9
Alaska	258.2	261.3	261.3	Nebraska	791.6	812.0	808.4
Arizona	1,674.2	1,751.3	1,752.6	Nevada	730.7	772.1	773.3
Arkansas	1,027.4	1,070.6	1,069.6	New Hampshire	520.0	534.1	533.6
California	12,135.5	12,234.4	12,243.6	New Jersey	3,548.6	3,603.3	3,604.1
Colorado	1,742.3	1,791.2	1,787.5	New Mexico	651.6	685.6	684.2
Connecticut	1,542.5	1,545.8	1,545.7	New York	7,804.0	7,837.1	7,826.0
Delaware	353.8	360.2	359.7	North Carolina	3,347.3	3,436.9	3,434.8
District of Columbia	658.9	647.4	646.6	North Dakota	293.3	301.4	301.3
Florida	5,765.6	5,967.4	5,985.4	Ohio	5,067.1	5,173.9	5,169.8
Georgia	3,242.7	3,382.5	3,384.1	Oklahoma	1,272.7	1,296.6	1,299.3
Hawaii	534.0	534.6	533.6	Oregon	1,356.3	1,409.5	1,413.4
Idaho	460.2	476.7	474.9	Pennsylvania	5,184.1	5,222.8	5,200.9
Illinois	5,443.0	5,541.1	5,526.8	Rhode Island	433.2	434.4	431.9
Indiana	2,707.5	2,768.0	2,762.3	South Carolina	1,600.6	1,626.6	1,626.8
Iowa	1,313.7	1,349.8	1,348.7	South Dakota	330.6	341.6	341.3
Kansas	1,159.9	1,190.9	1,195.6	Tennessee	2,411.4	2,485.8	2,487.1
Kentucky	1,592.2	1,629.0	1,633.8	Texas	7,698.7	7,975.8	7,975.1
Louisiana	1,705.2	1,788.7	1,794.4	Utah	853.3	898.3	902.7
Maine	530.7	542.3	541.7	Vermont	264.2	269.0	267.7
Maryland	2,142.7	2,162.4	2,160.4	Virginia	2,992.1	3,075.2	3,073.1
Massachusetts	2,888.0	2,951.5	2,948.3	Washington	2,293.2	2,359.4	2,360.4
Michigan	4,125.7	4,255.2	4,258.8	West Virginia	682.9	686.8	687.9
Minnesota	2,304.7	2,361.7	2,361.8	Wisconsin	2,471.4	2,535.3	2,540.4
Mississippi	1,051.0	1,055.8	1,056.3	Wyoming	216.0	220.4	218.7
Missouri	2,456.1	2,545.9	2,535.3				

^P = preliminary

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

12. Employment of workers on nonfarm payrolls by industry, monthly data seasonally adjusted

(In thousands)

Industry	Annual average		1994									1995				
	1993	1994	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr. ^P	May ^P	
TOTAL	110,730	114,034	113,638	113,943	114,171	114,510	114,762	114,935	115,427	115,624	115,810	116,123	116,302	116,295	116,194	
PRIVATE SECTOR	91,889	94,917	94,545	94,840	95,061	95,327	95,555	95,740	96,152	96,405	96,588	96,882	97,054	97,048	96,969	
GOODS-PRODUCING	23,352	23,913	23,837	23,905	23,922	23,981	24,030	24,081	24,175	24,230	24,293	24,324	24,370	24,320	24,205	
Mining ¹	610	600	599	602	596	597	598	595	592	592	590	588	589	583	581	
Metal mining	50	49	48	49	49	49	49	49	49	50	50	51	51	51	51	
Oil and gas extraction	350	336	336	337	332	333	336	331	328	326	325	323	323	319	319	
Nonmetallic minerals, except fuels	102	103	103	103	103	103	103	104	104	104	105	105	106	105	104	
Construction	4,668	5,010	4,981	5,006	5,029	5,038	5,077	5,088	5,144	5,166	5,201	5,213	5,256	5,237	5,180	
General building contractors	1,120	1,201	1,192	1,197	1,199	1,206	1,214	1,222	1,234	1,241	1,250	1,250	1,258	1,255	1,236	
Heavy construction, except building	713	736	737	738	743	738	740	734	740	739	742	740	747	743	730	
Special trades contractors	2,836	3,073	3,052	3,071	3,087	3,094	3,123	3,132	3,170	3,186	3,209	3,223	3,251	3,239	3,214	
Manufacturing	18,075	18,303	18,257	18,297	18,297	18,346	18,355	18,398	18,439	18,472	18,502	18,523	18,525	18,500	18,444	
Production workers	12,341	12,615	12,569	12,609	12,610	12,658	12,671	12,709	12,759	12,785	12,813	12,833	12,832	12,819	12,776	
Durable goods	10,221	10,431	10,388	10,426	10,422	10,465	10,481	10,513	10,550	10,574	10,596	10,622	10,633	10,629	10,600	
Production workers	6,849	7,092	7,050	7,086	7,088	7,128	7,145	7,175	7,218	7,239	7,259	7,288	7,297	7,295	7,269	
Lumber and wood products	709	752	748	752	755	757	758	761	766	766	767	766	767	761	756	
Furniture and fixtures	487	502	500	502	504	504	504	505	507	507	508	509	509	506	504	
Stone, clay, and glass products	517	533	531	532	533	534	535	537	539	540	542	545	547	546	543	
Primary metal industries	683	699	692	697	700	699	704	708	712	715	716	718	718	719	718	
Blast furnaces and basic steel products	240	239	235	239	240	238	239	239	240	240	239	240	240	240	241	
Fabricated metal products	1,339	1,387	1,378	1,386	1,390	1,396	1,397	1,405	1,412	1,421	1,428	1,435	1,439	1,441	1,436	
Industrial machinery and equipment	1,931	1,985	1,981	1,989	1,983	1,992	1,995	1,999	2,006	2,010	2,017	2,025	2,029	2,035	2,031	
Computer and office equipment	363	351	354	355	352	350	348	345	344	342	341	340	336	336	334	
Electronic and other electrical equipment	1,526	1,571	1,561	1,570	1,570	1,581	1,586	1,589	1,595	1,603	1,608	1,613	1,614	1,617	1,618	
Electronic components and accessories	528	544	539	542	545	549	552	554	556	560	563	565	569	571	575	
Transportation equipment	1,756	1,749	1,741	1,746	1,736	1,751	1,753	1,761	1,764	1,764	1,764	1,766	1,767	1,765	1,758	
Motor vehicles and equipment	837	899	885	893	893	908	913	921	924	926	932	934	937	938	935	
Aircraft and parts	542	480	485	480	475	473	469	467	465	462	459	457	455	454	450	
Instruments and related products	896	863	867	863	859	859	857	854	854	853	850	849	847	845	844	
Miscellaneous manufacturing industries	378	390	389	389	392	392	392	394	395	395	396	396	396	394	392	
Nondurable goods	7,854	7,872	7,869	7,871	7,875	7,881	7,874	7,885	7,889	7,898	7,906	7,901	7,892	7,871	7,844	
Production workers	5,492	5,523	5,519	5,523	5,522	5,530	5,526	5,534	5,541	5,546	5,554	5,545	5,535	5,524	5,507	
Food and kindred products	1,680	1,680	1,679	1,680	1,681	1,679	1,677	1,677	1,683	1,684	1,690	1,689	1,690	1,687	1,687	
Tobacco products	44	42	43	42	42	42	41	41	41	41	40	40	39	40	39	
Textile mill products	675	673	673	673	673	674	671	674	674	673	672	671	670	669	664	
Apparel and other textile products	989	969	973	972	969	972	971	970	963	960	957	951	946	939	932	
Paper and allied products	692	691	691	691	692	691	689	692	692	692	693	692	691	692	689	
Printing and publishing	1,517	1,542	1,537	1,540	1,544	1,547	1,547	1,550	1,551	1,556	1,557	1,561	1,561	1,557	1,554	
Chemicals and allied products	1,081	1,061	1,062	1,061	1,060	1,057	1,056	1,055	1,054	1,054	1,055	1,054	1,053	1,050	1,049	
Petroleum and coal products	152	149	149	148	148	150	149	149	149	150	147	148	148	146	145	
Rubber and miscellaneous plastics products	909	952	948	950	953	956	960	965	970	975	982	983	982	980	976	
Leather and leather products	117	114	114	114	113	113	113	112	112	113	113	112	112	111	109	
SERVICE-PRODUCING	87,378	90,121	89,801	90,038	90,249	90,529	90,732	90,854	91,252	91,394	91,517	91,799	91,932	91,975	91,989	
Transportation and public utilities	5,829	6,006	5,994	6,008	6,022	6,045	6,048	6,061	6,092	6,121	6,129	6,156	6,175	6,186	6,182	
Transportation	3,615	3,775	3,766	3,781	3,794	3,810	3,813	3,821	3,846	3,870	3,886	3,900	3,914	3,921	3,919	
Railroad transportation	248	241	239	241	240	237	240	240	242	241	241	242	242	242	242	
Local and interurban passenger transit	379	410	405	411	415	425	418	417	421	425	428	431	433	437	441	
Trucking and warehousing	1,698	1,797	1,797	1,808	1,813	1,819	1,824	1,828	1,843	1,857	1,864	1,871	1,877	1,879	1,872	
Water transportation	168	169	172	169	171	168	168	167	165	164	166	165	164	164	163	
Transportation by air	740	748	747	745	744	746	746	748	750	754	754	756	760	761	761	
Pipelines, except natural gas	18	18	18	18	17	18	18	18	18	18	17	17	17	17	17	
Transportation services	363	392	388	389	394	397	399	403	407	411	416	418	421	421	423	
Communications and public utilities	2,214	2,231	2,228	2,227	2,228	2,235	2,235	2,240	2,246	2,251	2,243	2,256	2,261	2,265	2,263	
Communications	1,269	1,305	1,298	1,301	1,305	1,314	1,314	1,320	1,325	1,331	1,327	1,343	1,351	1,355	1,357	
Electric, gas, and sanitary services	944	927	930	926	923	921	921	920	921	920	916	913	910	910	906	
Wholesale trade	5,981	6,140	6,118	6,131	6,138	6,163	6,181	6,195	6,210	6,229	6,251	6,275	6,287	6,301	6,292	
Retail trade	19,773	20,437	20,356	20,408	20,459	20,497	20,565	20,580	20,703	20,759	20,760	20,794	20,760	20,763	20,755	
Building materials and garden supplies	779	828	825	829	833	835	838	840	844	846	851	851	849	853	850	
General merchandise stores	2,488	2,545	2,532	2,534	2,542	2,551	2,555	2,563	2,598	2,585	2,562	2,545	2,530	2,539	2,539	
Department stores	2,140	2,212	2,198	2,201	2,211	2,219	2,225	2,232	2,268	2,256	2,236	2,223	2,207	2,218	2,221	
Food stores	3,224	3,289	3,289	3,285	3,292	3,297	3,296	3,298	3,308	3,320	3,325	3,328	3,332	3,343	3,334	

See footnotes at end of table.

12. Continued—Employment of workers on nonfarm payrolls by industry, monthly data seasonally adjusted

(In thousands)

Industry	Annual average		1994								1995				
	1993	1994	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr. ^P	May ^P
Automotive dealers and service stations	2,014	2,123	2,112	2,119	2,122	2,135	2,145	2,154	2,165	2,173	2,182	2,191	2,202	2,206	2,207
New and used car dealers	908	964	959	964	967	971	975	979	984	989	993	996	998	1,000	1,001
Apparel and accessory stores	1,144	1,134	1,133	1,133	1,134	1,132	1,135	1,136	1,130	1,126	1,122	1,118	1,110	1,104	1,094
Furniture and home furnishings stores	828	890	877	883	893	899	906	915	926	927	933	936	943	945	944
Eating and drinking places	6,821	7,069	7,045	7,067	7,076	7,084	7,103	7,086	7,134	7,182	7,188	7,221	7,191	7,171	7,181
Miscellaneous retail establishments	2,476	2,560	2,543	2,558	2,567	2,564	2,587	2,588	2,598	2,600	2,597	2,604	2,603	2,602	2,606
Finance, insurance, and real estate	6,757	6,933	6,935	6,946	6,947	6,948	6,942	6,935	6,937	6,931	6,927	6,929	6,938	6,919	6,916
Finance	3,238	3,323	3,328	3,332	3,332	3,329	3,324	3,320	3,319	3,317	3,312	3,312	3,313	3,303	3,307
Depository institutions	2,089	2,075	2,075	2,075	2,076	2,074	2,072	2,072	2,071	2,070	2,067	2,066	2,066	2,062	2,061
Commercial banks	1,497	1,492	1,488	1,489	1,492	1,492	1,492	1,496	1,498	1,498	1,497	1,497	1,499	1,493	1,491
Savings institutions	324	308	313	310	308	305	303	300	296	295	293	291	289	288	289
Nondepository institutions	455	499	507	506	502	499	494	490	485	481	478	475	475	472	476
Security and commodity brokers	472	518	516	520	522	524	525	525	528	530	530	532	532	528	528
Holding and other investment offices	223	231	230	231	232	232	233	233	235	236	237	239	240	241	242
Insurance	2,197	2,237	2,239	2,240	2,238	2,238	2,236	2,236	2,236	2,232	2,233	2,233	2,238	2,238	2,233
Insurance carriers	1,529	1,551	1,555	1,554	1,551	1,549	1,546	1,544	1,542	1,537	1,535	1,534	1,536	1,536	1,533
Insurance agents, brokers and service	668	686	684	686	687	689	690	692	694	695	698	699	702	702	700
Real estate	1,322	1,373	1,368	1,374	1,377	1,381	1,382	1,379	1,382	1,382	1,382	1,384	1,387	1,378	1,376
Services¹	30,197	31,488	31,305	31,442	31,573	31,693	31,789	31,888	32,035	32,135	32,228	32,404	32,524	32,559	32,619
Agricultural services	519	565	560	563	567	571	574	578	584	588	575	580	584	589	567
Hotels and other lodging places	1,596	1,618	1,621	1,625	1,625	1,620	1,617	1,612	1,605	1,612	1,614	1,614	1,616	1,609	1,613
Personal services	1,137	1,139	1,135	1,135	1,135	1,139	1,139	1,140	1,140	1,138	1,148	1,160	1,158	1,157	1,144
Business services	5,735	6,239	6,158	6,219	6,274	6,314	6,358	6,392	6,457	6,487	6,513	6,555	6,570	6,539	6,568
Services to buildings	823	855	848	854	858	860	861	861	869	870	868	870	871	865	865
Personnel supply services	1,906	2,254	2,209	2,250	2,281	2,296	2,321	2,337	2,373	2,386	2,408	2,427	2,399	2,372	2,377
Help supply services	1,669	2,002	1,960	1,997	2,026	2,040	2,061	2,077	2,107	2,118	2,138	2,152	2,138	2,102	2,103
Computer and data processing services	893	950	938	945	949	958	967	974	984	991	994	1,006	1,017	1,025	1,036
Auto repair services, and parking	925	971	961	968	971	979	984	989	995	1,000	1,006	1,010	1,014	1,016	1,016
Miscellaneous repair services	349	334	333	333	333	334	334	335	337	338	340	342	344	342	341
Motion pictures	412	471	453	461	470	481	491	505	519	529	545	566	577	598	623
Amusement and recreation services	1,258	1,344	1,343	1,355	1,361	1,365	1,354	1,364	1,371	1,375	1,380	1,398	1,434	1,453	1,457
Health services	8,756	9,001	8,970	8,991	9,011	9,037	9,055	9,074	9,096	9,121	9,141	9,168	9,197	9,211	9,221
Offices and clinics of medical doctors	1,506	1,541	1,535	1,538	1,541	1,549	1,548	1,553	1,557	1,562	1,563	1,570	1,576	1,579	1,580
Nursing and personal care facilities	1,585	1,649	1,644	1,649	1,654	1,657	1,659	1,661	1,663	1,667	1,672	1,676	1,679	1,681	1,679
Hospitals	3,779	3,774	3,770	3,769	3,772	3,776	3,779	3,781	3,785	3,790	3,792	3,796	3,802	3,810	3,811
Home health care services	469	555	548	554	560	566	572	575	579	588	591	596	599	597	601
Legal services	924	927	926	923	925	927	928	928	930	930	931	932	933	932	930
Educational services	1,711	1,822	1,819	1,821	1,826	1,831	1,840	1,843	1,851	1,854	1,843	1,864	1,863	1,866	1,880
Social services	2,070	2,181	2,163	2,178	2,191	2,205	2,211	2,216	2,226	2,233	2,244	2,254	2,264	2,263	2,271
Child day care services	473	502	497	501	506	518	509	510	512	512	514	517	519	518	521
Residential care	567	602	597	600	603	606	610	613	617	620	623	626	629	631	633
Museums and botanical and zoological gardens	76	79	79	79	79	80	79	79	80	80	80	81	81	81	81
Membership organizations	2,035	2,059	2,059	2,060	2,058	2,060	2,065	2,066	2,066	2,062	2,062	2,060	2,059	2,056	2,056
Engineering and management services	2,521	2,567	2,554	2,560	2,575	2,578	2,589	2,595	2,606	2,616	2,634	2,648	2,658	2,675	2,678
Engineering and architectural services	757	775	770	773	778	780	785	785	787	790	793	795	795	799	798
Management and public relations	688	716	709	711	716	719	725	731	737	742	752	762	773	785	792
Government	18,841	19,118	19,093	19,103	19,110	19,183	19,207	19,195	19,275	19,219	19,222	19,241	19,248	19,247	19,225
Federal	2,915	2,870	2,873	2,866	2,864	2,861	2,858	2,858	2,854	2,853	2,838	2,831	2,828	2,808	2,802
Federal, except Postal Service	2,128	2,053	2,062	2,051	2,045	2,041	2,039	2,031	2,022	2,014	2,004	1,997	1,992	1,969	1,961
State	4,488	4,562	4,548	4,553	4,572	4,594	4,589	4,589	4,596	4,598	4,599	4,610	4,613	4,607	4,602
Education	1,834	1,875	1,867	1,868	1,872	1,900	1,891	1,888	1,892	1,891	1,889	1,901	1,904	1,906	1,911
Other State government	2,654	2,687	2,681	2,685	2,690	2,694	2,698	2,701	2,704	2,707	2,710	2,709	2,709	2,701	2,691
Local	11,438	11,685	11,672	11,684	11,674	11,728	11,755	11,748	11,825	11,768	11,785	11,800	11,807	11,832	11,821
Education	6,353	6,490	6,465	6,480	6,497	6,548	6,554	6,544	6,549	6,557	6,577	6,591	6,599	6,617	6,619
Other local government	5,085	5,195	5,207	5,204	5,177	5,180	5,201	5,204	5,276	5,211	5,208	5,209	5,208	5,215	5,202

¹ Includes other industries not shown separately.^P = preliminary

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

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

Industry	Annual average		1994									1995				
	1993	1994	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr. ^P	May ^P	
PRIVATE SECTOR	34.5	34.7	34.7	34.7	34.7	34.6	34.7	34.9	34.6	34.7	34.8	34.6	34.6	34.6	34.3	
GOODS-PRODUCING	40.9	41.4	41.4	41.4	41.4	41.4	41.4	41.4	41.4	41.5	41.6	41.4	41.3	40.7	40.7	
MINING	44.3	44.7	44.6	44.9	45.4	44.6	44.9	44.8	44.9	44.7	44.9	44.9	44.6	44.6	44.3	
MANUFACTURING	41.4	42.0	42.0	42.0	42.0	42.0	42.1	42.1	42.1	42.1	42.2	42.1	42.0	41.5	41.5	
Overtime hours	4.1	4.7	4.6	4.7	4.7	4.7	4.8	4.7	4.8	4.8	4.9	4.8	4.7	4.5	4.3	
Durable goods	42.1	42.8	42.9	42.8	42.7	42.9	42.9	42.9	43.0	43.0	43.0	43.0	42.8	42.3	42.2	
Overtime hours	4.3	5.0	5.0	5.0	5.0	5.0	5.1	5.0	5.1	5.1	5.3	5.2	5.1	4.9	4.6	
Lumber and wood products	40.8	41.2	41.3	41.4	41.2	41.2	41.0	41.3	41.1	41.2	41.2	40.9	40.7	40.5	40.4	
Furniture and fixtures	40.1	40.4	40.4	40.7	40.5	40.5	40.7	40.7	40.6	40.4	40.8	40.5	39.8	38.7	39.1	
Stone, clay, and glass products	42.7	43.4	43.5	43.5	43.5	43.4	43.6	43.5	43.5	43.5	43.6	43.3	43.4	42.5	42.6	
Primary metal industries	43.7	44.7	44.7	44.5	44.6	44.7	44.9	44.9	45.0	45.0	44.8	44.8	44.5	43.3	44.0	
Blast furnaces and basic steel products	44.1	44.9	44.8	44.5	44.8	45.1	45.3	45.5	45.6	45.6	45.7	45.4	45.1	45.0	44.3	
Fabricated metal products	42.1	42.9	42.8	42.7	42.7	42.9	42.9	42.9	43.0	43.0	43.2	43.1	42.8	42.0	42.2	
Industrial machinery and equipment	43.0	43.7	43.7	43.8	43.6	43.6	43.8	43.7	43.8	43.8	44.0	44.0	43.9	43.2	43.5	
Electronic and other electrical equipment	41.8	42.2	42.2	42.2	42.2	42.2	42.0	42.2	42.1	42.0	42.1	41.9	41.8	41.5	41.3	
Transportation equipment	43.0	44.3	44.3	44.1	43.6	44.4	44.3	44.4	44.7	44.7	44.6	44.7	44.5	44.5	43.5	
Motor vehicles and equipment	44.3	46.0	45.8	45.5	44.8	45.9	45.9	45.8	46.4	46.2	46.1	46.1	45.8	43.4	44.1	
Instruments and related products	41.1	41.7	41.7	41.6	41.9	41.8	41.8	41.9	41.8	41.7	41.8	41.7	41.7	41.4	41.4	
Miscellaneous manufacturing	39.8	40.0	40.2	40.2	40.2	40.0	39.9	40.1	40.0	39.9	40.1	40.2	39.9	40.1	39.9	
Nondurable goods	40.6	40.9	40.9	41.0	41.1	40.9	41.0	41.0	41.0	41.1	41.0	41.0	40.9	40.4	40.5	
Overtime hours	4.0	4.3	4.2	4.3	4.3	4.2	4.3	4.3	4.3	4.3	4.4	4.3	4.2	4.0	4.0	
Food and kindred products	40.7	41.3	41.0	41.2	41.6	41.3	41.4	41.3	41.5	41.5	41.5	41.3	41.3	40.7	41.1	
Textile mill products	41.4	41.6	41.7	41.8	41.7	41.6	41.6	41.8	41.5	41.6	41.8	41.9	41.8	41.0	40.4	
Apparel and other textile products	37.2	37.5	37.7	37.7	37.6	37.6	37.6	37.7	37.6	37.7	37.5	37.7	37.6	36.9	37.0	
Paper and allied products	43.6	43.9	43.9	44.0	44.2	44.1	43.9	44.0	43.9	44.0	44.0	43.9	43.7	43.1	43.1	
Printing and publishing	38.3	38.6	38.8	38.7	38.6	38.6	38.6	38.7	38.6	38.7	38.5	38.5	38.4	38.3	38.4	
Chemicals and allied products	43.1	43.2	43.3	43.2	43.3	43.2	43.2	43.4	43.4	43.2	43.3	43.4	43.4	43.4	42.9	
Rubber and miscellaneous plastics products	41.8	42.2	42.2	42.2	42.3	42.2	42.3	42.3	42.3	42.3	42.3	42.3	42.0	41.1	41.8	
Leather and leather products	38.6	38.6	38.5	38.4	38.0	38.6	38.6	39.0	38.7	38.6	38.0	38.4	38.4	38.1	38.7	
SERVICE-PRODUCING	32.7	32.8	32.9	32.8	32.8	32.7	32.8	33.0	32.7	32.8	32.9	32.7	32.7	32.9	32.5	
TRANSPORTATION AND PUBLIC UTILITIES	39.6	39.9	39.9	39.9	39.9	39.7	40.0	40.0	39.8	39.6	39.8	39.7	39.5	39.7	39.4	
WHOLESALE TRADE	38.2	38.4	38.4	38.4	38.3	38.2	38.4	38.6	38.4	38.4	38.4	38.4	38.2	38.3	37.9	
RETAIL TRADE	28.8	28.9	28.9	29.0	29.0	28.9	28.9	29.2	28.9	28.9	29.0	28.8	28.8	29.1	28.7	

^P = preliminary

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

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

Industry	Annual average		1994									1995				
	1993	1994	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr. ^P	May ^P	
PRIVATE SECTOR (in current dollars)	\$10.83	\$11.13	\$11.08	\$11.09	\$11.13	\$11.14	\$11.18	\$11.25	\$11.24	\$11.27	\$11.29	\$11.32	\$11.34	\$11.40	\$11.38	
GOODS-PRODUCING	12.37	12.71	12.65	12.68	12.72	12.74	12.78	12.81	12.83	12.83	12.84	12.89	12.91	12.94	12.94	
Mining	14.60	14.89	14.81	14.78	14.84	14.85	14.95	15.04	15.04	15.08	15.08	15.12	15.15	15.15	15.21	
Construction	14.38	14.72	14.65	14.70	14.76	14.74	14.82	14.90	14.84	14.81	14.74	14.88	14.90	14.95	15.01	
Manufacturing	11.74	12.06	12.00	12.03	12.06	12.09	12.12	12.14	12.17	12.18	12.21	12.24	12.25	12.28	12.27	
Excluding overtime	11.18	11.42	11.38	11.40	11.42	11.44	11.47	11.49	11.52	11.53	11.56	11.60	11.61	11.72	11.65	
SERVICE-PRODUCING	10.30	10.57	10.53	10.54	10.57	10.57	10.62	10.70	10.68	10.71	10.74	10.76	10.79	10.87	10.84	
Transportation and public utilities	13.62	13.86	13.79	13.79	13.84	13.87	13.88	13.99	14.02	14.01	14.03	14.00	14.05	14.14	14.07	
Wholesale trade	11.74	12.05	12.01	12.03	12.06	12.05	12.08	12.22	12.15	12.20	12.23	12.24	12.27	12.41	12.31	
Retail trade	7.29	7.49	7.47	7.48	7.50	7.51	7.53	7.56	7.56	7.60	7.59	7.60	7.61	7.63	7.68	
Finance, insurance, and real estate	11.35	11.83	11.80	11.77	11.82	11.81	11.90	12.05	11.99	12.01	12.06	12.09	12.16	12.28	12.20	
Services	10.78	11.05	11.01	11.02	11.06	11.06	11.11	11.20	11.17	11.21	11.26	11.28	11.30	11.39	11.36	
PRIVATE SECTOR (in constant (1982) dollars)	7.39	7.41	7.41	7.39	7.39	7.37	7.38	7.42	7.40	7.40	7.39	7.39	7.38	7.40	-	

- Data not available.

^P = preliminary

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

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

Industry	Annual average		1994									1995				
	1993	1994	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr. ^p	May ^p	
PRIVATE SECTOR	\$10.83	\$11.13	\$11.09	\$11.03	\$11.05	\$11.05	\$11.22	\$11.28	\$11.27	\$11.28	\$11.36	\$11.36	\$11.36	\$11.41	\$11.39	
MINING	14.60	14.89	14.83	14.74	14.73	14.69	14.92	14.91	14.97	15.09	15.25	15.26	15.24	15.29	15.24	
CONSTRUCTION	14.38	14.72	14.62	14.59	14.75	14.79	14.97	15.05	14.87	14.83	14.67	14.82	14.84	14.88	14.98	
MANUFACTURING	11.74	12.06	12.01	12.03	12.04	12.01	12.14	12.10	12.17	12.26	12.23	12.24	12.25	12.29	12.27	
Durable goods	12.33	12.67	12.62	12.63	12.62	12.62	12.76	12.70	12.77	12.87	12.81	12.83	12.83	12.80	12.80	
Lumber and wood products	9.61	9.84	9.80	9.84	9.87	9.87	9.95	9.96	9.93	9.97	9.95	9.94	9.95	9.98	10.03	
Furniture and fixtures	9.27	9.55	9.45	9.48	9.54	9.56	9.69	9.70	9.67	9.76	9.67	9.66	9.67	9.76	9.72	
Stone, clay, and glass products	11.85	12.13	12.10	12.15	12.17	12.19	12.27	12.22	12.21	12.21	12.19	12.23	12.25	12.43	12.31	
Primary metal industries	13.99	14.33	14.24	14.31	14.40	14.34	14.40	14.37	14.44	14.53	14.54	14.43	14.41	14.78	14.48	
Blast furnaces and basic steel products	16.36	16.85	16.74	16.79	16.93	16.95	17.05	17.08	17.13	17.16	17.30	17.09	17.03	17.67	17.23	
Fabricated metal products	11.69	11.93	11.89	11.90	11.86	11.87	11.99	11.92	12.03	12.09	12.04	12.03	12.05	12.02	12.05	
Industrial machinery and equipment	12.73	12.99	12.95	12.95	12.94	12.92	13.04	13.03	13.11	13.19	13.15	13.15	13.15	13.05	13.17	
Electronic and other electrical equipment	11.24	11.50	11.48	11.53	11.56	11.52	11.57	11.51	11.54	11.59	11.59	11.53	11.54	11.48	11.54	
Transportation equipment	15.80	16.48	16.41	16.42	16.41	16.44	16.71	16.52	16.62	16.83	16.60	16.71	16.66	16.46	16.42	
Motor vehicles and equipment	16.10	16.98	16.92	16.93	16.89	16.92	17.27	16.98	17.11	17.37	17.12	17.26	17.23	17.00	16.91	
Instruments and related products	12.23	12.47	12.37	12.43	12.46	12.48	12.55	12.54	12.55	12.63	12.54	12.63	12.63	12.68	12.66	
Miscellaneous manufacturing	9.39	9.66	9.60	9.60	9.61	9.63	9.71	9.72	9.79	9.90	9.98	9.94	9.90	9.94	9.94	
Nondurable goods	10.98	11.25	11.19	11.21	11.28	11.20	11.31	11.30	11.35	11.42	11.44	11.43	11.45	11.59	11.53	
Food and kindred products	10.45	10.66	10.64	10.65	10.68	10.59	10.64	10.65	10.81	10.85	10.85	10.83	10.87	10.95	10.94	
Tobacco products	16.89	19.10	20.27	20.78	20.60	18.91	18.89	18.71	19.46	18.64	18.71	19.67	20.44	20.03	21.66	
Textile mill products	8.88	9.13	9.06	9.11	9.12	9.12	9.20	9.19	9.26	9.31	9.35	9.31	9.30	9.38	9.38	
Apparel and other textile products	7.09	7.34	7.28	7.33	7.31	7.36	7.44	7.43	7.45	7.47	7.53	7.48	7.51	7.62	7.56	
Paper and allied products	13.42	13.77	13.71	13.68	13.83	13.80	13.96	13.89	13.92	13.98	14.01	14.02	14.03	14.27	14.18	
Printing and publishing	11.93	12.13	12.05	12.08	12.12	12.12	12.26	12.23	12.20	12.26	12.24	12.24	12.26	12.21	12.21	
Chemicals and allied products	14.82	15.14	15.05	15.08	15.16	15.08	15.27	15.30	15.29	15.42	15.40	15.42	15.43	15.72	15.53	
Petroleum and coal products	18.53	19.07	18.76	18.87	18.94	18.76	19.32	19.29	19.25	19.32	19.19	19.55	19.38	19.55	18.83	
Rubber and miscellaneous plastics products	10.57	10.70	10.69	10.72	10.75	10.65	10.65	10.66	10.69	10.79	10.82	10.76	10.80	10.78	10.90	
Leather and leather products	7.63	7.98	7.97	7.96	7.98	7.97	7.99	8.03	8.05	8.06	8.13	8.14	8.13	8.33	8.31	
TRANSPORTATION AND PUBLIC UTILITIES	13.62	13.86	13.74	13.70	13.81	13.84	13.91	14.01	14.07	14.04	14.08	14.04	14.06	14.13	14.01	
WHOLESALE TRADE	11.74	12.05	12.03	11.98	12.04	12.00	12.09	12.20	12.15	12.21	12.30	12.28	12.25	12.45	12.32	
RETAIL TRADE	7.29	7.49	7.47	7.46	7.46	7.44	7.54	7.57	7.57	7.59	7.64	7.63	7.63	7.65	7.68	
FINANCE, INSURANCE, AND REAL ESTATE	11.35	11.83	11.84	11.67	11.72	11.73	11.85	12.02	11.98	12.05	12.17	12.19	12.21	12.32	12.25	
SERVICES	10.78	11.05	11.01	10.90	10.90	10.90	11.11	11.20	11.22	11.29	11.39	11.38	11.36	11.40	11.36	

^p = preliminary

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

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

Industry	Annual average		1994								1995				
	1993	1994	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr. ^P	May ^P
PRIVATE SECTOR															
Current dollars	\$373.64	\$386.21	\$385.93	\$383.84	\$386.75	\$386.75	\$390.46	\$394.80	\$389.94	\$392.54	\$390.78	\$388.51	\$389.65	\$391.36	\$390.68
Seasonally adjusted	-	-	384.48	384.82	386.21	385.44	387.95	392.63	388.90	391.07	392.89	391.67	392.36	394.44	390.33
Constant (1982) dollars	254.87	256.96	258.15	255.72	256.98	255.79	257.56	260.25	256.54	258.42	256.25	253.93	253.84	253.96	-
MINING	646.78	665.58	659.94	661.83	661.38	661.05	677.37	673.93	679.64	680.56	683.20	677.54	670.56	675.82	675.13
CONSTRUCTION	553.63	572.61	580.41	579.22	587.05	588.64	598.80	595.98	572.50	573.92	553.06	546.86	565.40	560.98	576.73
MANUFACTURING															
Current dollars	486.04	506.52	504.42	507.67	500.86	504.42	514.74	511.83	517.23	525.95	513.66	510.41	510.83	496.52	509.21
Constant (1982) dollars	331.54	337.01	337.40	338.22	332.80	333.61	339.54	337.40	340.28	346.25	336.83	333.60	332.79	322.21	-
Durable goods	519.09	542.28	541.40	543.09	532.56	538.87	549.96	547.37	552.94	563.71	549.55	546.56	546.56	524.80	541.44
Lumber and wood products	392.09	405.41	407.68	409.34	404.67	410.59	412.93	414.34	409.12	414.75	404.97	397.60	401.98	401.20	408.22
Furniture and fixtures	371.73	385.82	377.06	385.84	383.51	389.09	399.23	399.64	396.47	406.02	392.60	383.50	381.00	367.95	375.19
Stone, clay, and glass products	506.00	526.44	533.61	537.03	533.05	536.36	542.33	540.12	533.58	528.69	515.64	512.44	520.63	525.79	531.79
Primary metal industries	611.36	640.55	637.95	639.66	639.36	636.70	648.00	642.34	652.69	662.57	652.85	643.58	639.80	637.02	638.57
Blast furnaces and basic steel products	721.48	756.57	749.95	752.19	766.93	764.45	780.89	772.02	779.42	787.64	787.15	769.05	761.24	795.15	763.29
Fabricated metal products	492.15	511.80	508.89	510.51	498.12	508.04	517.97	514.94	523.31	531.96	518.92	513.68	512.13	484.41	508.51
Industrial machinery and equipment	547.39	567.66	565.92	567.21	557.71	556.85	569.85	569.41	575.53	590.91	581.23	578.60	577.29	544.19	572.90
Electronic and other electrical equipment	469.83	485.30	483.31	487.72	479.74	483.84	488.25	486.87	491.60	499.53	489.10	478.50	478.91	461.50	475.45
Transportation equipment	679.40	730.06	731.89	729.05	697.43	725.00	748.61	735.14	747.90	767.45	735.38	741.92	741.37	696.26	719.20
Motor vehicles and equipment	713.23	781.08	786.78	780.47	729.65	771.55	801.33	779.38	797.33	818.13	780.67	792.23	790.86	734.40	757.57
Instruments and related products	502.65	520.00	514.59	518.33	515.84	517.92	524.59	524.17	528.36	538.04	525.43	524.15	526.67	512.27	522.86
Miscellaneous manufacturing	373.72	386.40	384.00	384.96	379.60	384.24	389.37	394.63	398.45	399.96	397.20	395.61	395.01	386.67	394.62
Nondurable goods	445.79	460.13	456.55	460.73	460.22	460.32	468.23	466.69	471.03	476.21	465.61	462.92	463.73	458.96	465.81
Food and kindred products	425.32	440.26	433.05	437.72	444.29	442.66	450.07	445.17	456.18	457.87	445.94	438.62	441.32	435.81	446.35
Tobacco products	631.69	750.63	788.50	835.36	782.80	746.95	778.27	783.95	776.45	767.97	731.56	759.26	778.76	773.16	892.39
Textile mill products	367.63	379.81	378.71	386.26	375.74	382.13	387.32	385.98	387.07	391.02	388.03	383.57	383.16	374.26	379.89
Apparel and other textile products	263.75	275.25	274.46	278.54	272.66	278.21	281.23	282.34	283.10	284.61	280.12	279.00	280.12	270.51	280.48
Paper and allied products	585.11	604.50	600.50	601.92	607.14	605.82	619.82	615.33	615.26	626.30	616.44	607.07	604.69	605.05	609.74
Printing and publishing	456.92	468.22	462.72	463.87	464.20	469.04	479.37	475.75	477.02	481.82	466.34	466.34	470.78	461.54	463.98
Chemicals and allied products	638.74	654.05	650.16	651.46	653.40	646.93	658.14	664.02	668.17	678.48	666.82	666.14	668.12	680.68	666.24
Petroleum and coal products	819.03	846.71	821.69	830.28	829.57	816.06	894.52	869.98	854.70	853.94	840.52	868.02	841.09	858.25	798.39
Rubber and miscellaneous plastics products	441.83	451.54	452.19	455.60	447.20	448.37	450.50	450.92	455.39	463.97	456.60	451.92	451.44	433.36	455.62
Leather and leather products	294.52	308.03	306.85	309.64	302.44	307.64	310.81	314.78	313.95	314.34	307.31	309.32	309.75	309.04	321.60
TRANSPORTATION AND PUBLIC UTILITIES	539.35	553.01	549.60	549.37	556.54	556.37	557.79	563.20	559.99	555.98	554.75	551.77	549.75	558.14	553.40
WHOLESALE TRADE	448.47	462.72	464.36	461.23	462.34	459.60	464.26	472.14	466.56	470.09	469.86	467.87	465.50	476.84	469.39
RETAIL TRADE	209.95	216.46	215.88	218.58	222.31	220.97	218.66	220.29	217.26	222.39	215.45	214.40	215.93	221.09	220.42
FINANCE, INSURANCE, AND REAL ESTATE	406.33	423.51	427.42	415.45	418.40	416.42	420.68	435.12	425.29	430.19	441.77	435.18	433.46	447.22	432.43
SERVICES	350.35	359.13	358.93	354.25	356.43	356.43	359.96	366.24	362.41	365.80	369.04	367.57	365.79	370.50	365.79

- Data not available.

^P = preliminary

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

17. Diffusion indexes of employment change, seasonally adjusted

(In percent)

Time span and year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Private nonfarm payrolls, 356 industries												
Over 1-month span:												
1993	57.6	61.5	51.4	58.3	61.4	55.1	57.7	56.3	61.4	59.7	61.1	60.7
1994	60.0	63.3	65.9	62.4	58.0	63.8	60.5	61.5	60.7	61.1	65.3	61.1
1995	60.3	61.7	57.6	49.6	44.4	-	-	-	-	-	-	-
Over 3-month span:												
1993	64.0	61.2	61.8	58.8	61.4	61.8	59.3	61.8	62.6	66.7	65.7	63.6
1994	68.8	70.9	69.8	67.1	66.0	66.0	68.4	68.3	67.8	67.3	68.1	67.4
1995	66.4	64.9	56.6	47.5	-	-	-	-	-	-	-	-
Over 6-month span:												
1993	63.2	63.8	62.8	64.2	60.8	63.9	64.5	64.7	66.2	67.3	70.8	70.8
1994	71.2	70.2	70.5	69.5	69.8	69.1	70.5	70.9	69.0	69.0	67.4	67.0
1995	65.0	58.0	-	-	-	-	-	-	-	-	-	-
Over 12-month span:												
1993	64.9	63.9	64.0	65.4	67.0	67.6	67.6	67.0	70.2	69.4	68.8	69.4
1994	68.4	70.8	71.9	70.2	69.5	69.7	70.4	70.8	70.4	70.2	65.9	-
1995	-	-	-	-	-	-	-	-	-	-	-	-
Manufacturing payrolls, 139 industries												
Over 1-month span:												
1993	52.2	57.9	52.9	44.2	51.4	46.0	50.7	48.6	56.1	54.7	56.5	54.3
1994	59.4	61.2	59.4	56.5	55.0	59.0	54.0	56.5	53.2	59.4	59.0	57.6
1995	56.8	54.7	49.6	42.4	37.4	-	-	-	-	-	-	-
Over 3-month span:												
1993	60.8	60.4	57.2	46.4	46.4	50.7	49.6	54.3	53.2	60.1	56.1	57.6
1994	65.1	66.5	64.4	59.0	58.6	58.3	61.5	59.0	61.5	60.4	64.0	62.2
1995	61.5	56.1	45.3	35.6	-	-	-	-	-	-	-	-
Over 6-month span:												
1993	57.6	56.5	56.1	55.0	49.3	52.2	55.4	57.9	56.8	57.6	65.1	62.9
1994	61.9	62.9	64.4	61.5	60.8	59.0	62.2	62.6	61.5	64.0	61.5	61.5
1995	55.4	46.8	-	-	-	-	-	-	-	-	-	-
Over 12-month span:												
1993	56.8	57.9	55.8	58.6	57.2	57.6	58.6	59.0	61.2	60.4	60.1	59.4
1994	58.3	59.7	61.9	61.5	61.5	61.5	61.9	63.3	61.5	59.0	56.1	-
1995	-	-	-	-	-	-	-	-	-	-	-	-

- Data not available.

NOTE: Figures are the percent of industries with employment increasing plus one-half of the industries with unchanged employment, where 50 percent indicates an equal balance between industries with increasing and decreasing

employment. Data for the 2 most recent months shown in each span are preliminary. See the "Definitions" in this section. See "Notes on the data" for a description of the most recent benchmark revision.

18. Annual data: Employment status of the population

(Numbers in thousands)

Employment status	1986	1987	1988	1989	1990	1991	1992	1993	1994
Civilian noninstitutional population	180,587	182,753	184,613	186,393	188,049	189,765	191,576	193,550	196,814
Civilian labor force	117,834	119,865	121,669	123,869	124,787	125,303	126,982	128,040	131,056
Labor force participation rate	65.3	65.6	65.9	66.5	66.4	66.0	66.3	66.2	66.6
Employed	109,597	112,440	114,968	117,342	117,914	116,877	117,598	119,306	123,060
Employment-population ratio	60.7	61.5	62.3	63.0	62.7	61.6	61.4	61.6	62.5
Agriculture	3,163	3,208	3,169	3,199	3,186	3,233	3,207	3,074	3,409
Nonagricultural industries	106,434	109,232	111,800	114,142	114,728	113,644	114,391	116,232	119,651
Unemployed	8,237	7,425	6,701	6,528	6,874	8,426	9,384	8,734	7,996
Unemployment rate	7.0	6.2	5.5	5.3	5.5	6.7	7.4	6.8	6.1
Not in labor force	62,752	62,888	62,944	62,523	63,262	64,462	64,593	65,509	65,758

19. Annual data: Employment levels by industry

(In thousands)

Industry	1986	1987	1988	1989	1990	1991	1992	1993	1994
Total employment	99,344	101,958	105,210	107,895	109,419	108,256	108,604	110,730	114,034
Private sector	82,651	84,948	87,824	90,117	91,115	89,854	89,959	91,889	94,917
Goods-producing	24,533	24,674	25,125	25,254	24,905	23,745	23,231	23,352	23,913
Mining	777	717	713	692	709	689	635	610	600
Construction	4,810	4,958	5,098	5,171	5,120	4,650	4,492	4,668	5,010
Manufacturing	18,947	18,999	19,314	19,391	19,076	18,406	18,104	18,075	18,303
Service-producing	74,811	77,284	80,086	82,642	84,514	84,511	85,373	87,378	90,121
Transportation and public utilities	5,247	5,362	5,514	5,625	5,793	5,762	5,721	5,829	6,006
Wholesale trade	5,761	5,848	6,030	6,187	6,173	6,081	5,997	5,981	6,140
Retail trade	17,880	18,422	19,023	19,475	19,601	19,284	19,356	19,773	20,437
Finance, insurance, and real estate	6,273	6,533	6,630	6,668	6,709	6,646	6,602	6,757	6,933
Services	22,957	24,110	25,504	26,907	27,934	28,336	29,052	30,197	31,488
Government	16,693	17,010	17,386	17,779	18,304	18,402	18,645	18,841	19,118
Federal	2,899	2,943	2,971	2,988	3,085	2,966	2,969	2,915	2,870
State	3,893	3,967	4,076	4,182	4,305	4,355	4,408	4,488	4,562
Local	9,901	10,100	10,339	10,609	10,914	11,081	11,267	11,438	11,685

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

20. Annual data: Average hours and earnings of production or nonsupervisory workers on nonfarm payrolls, by industry

Industry	1986	1987	1988	1989	1990	1991	1992	1993	1994
Private sector:									
Average weekly hours	34.8	34.8	34.7	34.6	34.5	34.3	34.4	34.5	34.7
Average hourly earnings (in dollars)	8.76	8.98	9.28	9.66	10.01	10.32	10.57	10.83	11.13
Average weekly earnings (in dollars)	304.85	312.50	322.02	334.24	345.35	353.98	363.61	373.64	386.21
Mining:									
Average weekly hours	42.2	42.4	42.3	43.0	44.1	44.4	43.9	44.3	44.7
Average hourly earnings (in dollars)	12.46	12.54	12.80	13.26	13.68	14.19	14.54	14.60	14.89
Average weekly earnings (in dollars)	525.81	531.70	541.44	570.18	603.29	630.04	638.31	646.78	665.58
Construction:									
Average weekly hours	37.4	37.8	37.9	37.9	38.2	38.1	38.0	38.5	38.9
Average hourly earnings (in dollars)	12.48	12.71	13.08	13.54	13.77	14.00	14.15	14.38	14.72
Average weekly earnings (in dollars)	466.75	480.44	495.73	513.17	526.01	533.40	537.70	553.63	572.61
Manufacturing:									
Average weekly hours	40.7	41.0	41.1	41.0	40.8	40.7	41.0	41.4	42.0
Average hourly earnings (in dollars)	9.73	9.91	10.19	10.48	10.83	11.18	11.46	11.74	12.06
Average weekly earnings (in dollars)	396.01	406.31	418.81	429.68	441.86	455.03	469.86	486.04	506.52
Transportation and public utilities:									
Average weekly hours	39.2	39.2	38.8	38.9	38.9	38.7	38.9	39.6	39.9
Average hourly earnings (in dollars)	11.70	12.03	12.26	12.60	12.97	13.22	13.45	13.62	13.86
Average weekly earnings (in dollars)	458.64	471.58	475.69	490.14	504.53	511.61	523.21	539.35	553.01
Wholesale trade:									
Average weekly hours	38.3	38.1	38.1	38.0	38.1	38.1	38.2	38.2	38.4
Average hourly earnings (in dollars)	9.34	9.59	9.98	10.39	10.79	11.15	11.39	11.74	12.05
Average weekly earnings (in dollars)	357.72	365.38	380.24	394.82	411.10	424.82	435.10	448.47	462.72
Retail trade:									
Average weekly hours	29.2	29.2	29.1	28.9	28.8	28.6	28.8	28.8	28.9
Average hourly earnings (in dollars)	6.03	6.12	6.31	6.53	6.75	6.94	7.12	7.29	7.49
Average weekly earnings (in dollars)	176.08	178.70	183.62	188.72	194.40	198.48	205.06	209.95	216.46
Finance, insurance, and real estate:									
Average weekly hours	36.4	36.3	35.9	35.8	35.8	35.7	35.8	35.8	35.8
Average hourly earnings (in dollars)	8.36	8.73	9.06	9.53	9.97	10.39	10.82	11.35	11.83
Average weekly earnings (in dollars)	304.30	316.90	325.25	341.17	356.93	370.92	387.36	406.33	423.51
Services:									
Average weekly hours	32.5	32.5	32.6	32.6	32.5	32.4	32.5	32.5	32.5
Average hourly earnings (in dollars)	8.18	8.49	8.88	9.38	9.83	10.23	10.54	10.78	11.05
Average weekly earnings (in dollars)	265.85	275.93	289.49	305.79	319.48	331.45	342.55	350.35	359.13

21. Employment Cost Index, compensation,¹ by occupation and industry group

(June 1989=100)

Series	1993				1994				1995	Percent change	
	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	3 months ended	12 months ended
										Mar. 1995	
Civilian workers²	117.5	118.3	119.5	120.2	121.3	122.1	123.3	123.8	124.8	0.8	2.9
Workers, by occupational group:											
White-collar workers	117.9	118.6	119.9	120.6	121.8	122.6	123.9	124.4	125.5	.9	3.0
Professional specialty and technical	120.1	120.6	122.0	122.5	123.7	124.2	125.7	126.2	127.0	.6	2.7
Executive, administrative, and managerial	116.9	117.5	118.6	119.4	120.6	121.6	122.9	123.6	125.2	1.3	3.8
Administrative support, including clerical	118.3	119.3	120.4	121.3	122.6	123.5	124.6	125.2	126.5	1.0	3.2
Blue-collar workers	116.7	117.8	118.8	119.4	120.4	121.3	122.4	122.7	123.6	.7	2.7
Service occupations	117.9	118.7	119.9	120.5	121.6	122.1	123.5	124.3	125.0	.6	2.8
Workers, by industry division:											
Goods-producing	118.0	119.1	120.0	120.6	121.9	123.0	123.9	124.4	125.3	.7	2.8
Manufacturing	118.6	119.7	120.6	121.3	122.5	123.5	124.4	125.1	126.2	.9	3.0
Service-producing	117.2	118.0	119.3	120.0	121.0	121.7	123.1	123.6	124.6	.8	3.0
Services	120.1	120.6	122.2	122.9	123.8	124.2	125.8	126.4	127.2	.6	2.7
Health services	122.3	123.2	124.4	125.4	126.1	126.6	127.8	128.5	129.4	.7	2.6
Hospitals	122.0	122.6	123.9	125.0	125.9	126.4	127.5	128.4	128.8	.3	2.3
Educational services	120.1	120.2	122.6	122.9	123.2	123.6	126.0	126.4	126.9	.4	3.0
Public administration ³	117.6	118.0	119.3	120.0	121.5	122.2	123.7	124.2	125.4	1.0	3.2
Nonmanufacturing	117.1	117.9	119.2	119.8	120.9	121.7	123.0	123.4	124.4	.8	2.9
Private industry workers	117.1	118.0	119.1	119.8	121.0	122.0	123.0	123.5	124.5	.8	2.9
Excluding sales occupations	117.5	118.5	119.5	120.2	121.4	122.3	123.4	123.9	125.0	.9	3.0
Workers, by occupational group:											
White-collar workers	117.4	118.3	119.4	120.2	121.5	122.5	123.5	124.1	125.3	1.0	3.1
Excluding sales occupations	118.3	119.2	120.2	121.0	122.4	123.3	124.4	125.1	126.3	1.0	3.2
Professional specialty and technical occupations	120.4	121.3	122.2	122.9	124.6	125.3	126.3	126.8	127.7	.7	2.5
Executive, administrative, and managerial occupations	116.5	117.2	118.1	118.9	120.3	121.3	122.6	123.3	124.9	1.3	3.8
Sales occupations	112.9	113.8	115.6	116.5	117.2	118.8	119.2	119.6	120.2	.5	2.6
Administrative support occupations, including clerical	118.1	119.2	120.3	121.2	122.5	123.5	124.5	125.1	126.5	1.1	3.3
Blue-collar workers	116.6	117.7	118.7	119.3	120.3	121.2	122.3	122.6	123.5	.7	2.7
Precision production, craft, and repair occupations	116.6	117.6	118.7	118.9	120.2	121.2	122.5	122.5	123.4	.7	2.7
Machine operators, assemblers, and inspectors	117.8	119.0	120.0	120.8	121.3	122.2	122.9	123.4	124.2	.6	2.4
Transportation and material moving occupations	113.9	115.2	115.9	117.0	118.5	119.1	120.3	120.6	121.8	1.0	2.8
Handlers, equipment cleaners, helpers, and laborers	116.8	117.6	118.4	119.1	120.2	121.4	122.7	122.9	124.1	1.0	3.2
Service occupations	117.2	118.0	118.9	119.5	120.6	121.0	121.8	122.9	123.4	.4	2.3
Production and nonsupervisory occupations ⁴	116.9	117.9	119.0	119.7	120.7	121.6	122.6	123.1	124.1	.8	2.8
Workers, by industry division:											
Goods-producing	118.0	119.1	119.9	120.6	121.8	123.0	123.9	124.3	125.3	.8	2.9
Excluding sales occupations	117.8	118.8	119.6	120.1	121.4	122.5	123.5	124.0	124.9	.7	2.9
White-collar occupations	118.6	119.6	120.5	121.1	123.0	124.3	125.1	125.9	127.2	1.0	3.4
Excluding sales occupations	118.1	119.0	119.7	119.9	121.9	123.2	124.1	125.0	126.2	1.0	3.5
Blue-collar occupations	117.6	118.7	119.6	120.2	121.1	122.2	123.1	123.4	124.1	.6	2.5
Service occupations	120.0	120.6	121.5	122.4	123.5	123.8	126.5	126.3	127.3	.8	3.1
Construction	114.9	116.0	116.8	116.5	118.6	120.2	121.4	120.8	121.1	.2	2.1
Manufacturing	118.6	119.7	120.6	121.3	122.5	123.5	124.4	125.1	126.2	.9	3.0
White-collar occupations	118.7	119.7	120.5	121.3	122.7	123.9	124.9	126.0	127.4	1.1	3.8
Excluding sales occupations	118.0	118.8	119.5	119.9	121.3	122.5	123.6	124.9	126.1	1.0	4.0
Blue-collar occupations	118.5	119.6	120.5	121.3	122.3	123.2	124.0	124.5	125.3	.6	2.5
Service occupations	120.3	120.7	121.7	122.7	123.8	124.1	127.0	127.0	128.0	.8	3.4
Durables	119.0	120.0	121.0	121.9	122.9	123.8	125.1	125.8	127.0	1.0	3.3
Nondurables	117.9	119.0	119.7	120.3	121.7	122.8	123.2	123.8	124.7	.7	2.5
Service-producing	116.4	117.3	118.5	119.3	120.4	121.2	122.3	122.8	123.9	.9	2.9
Excluding sales occupations	117.3	118.3	119.3	120.2	121.4	122.1	123.3	123.8	125.0	1.0	3.0
White-collar occupations	116.9	117.8	119.0	119.8	121.0	121.9	122.9	123.4	124.6	1.0	3.0
Excluding sales occupations	118.4	119.3	120.4	121.4	122.7	123.4	124.6	125.1	126.4	1.0	3.0
Blue-collar occupations	114.3	115.5	116.6	117.2	118.4	119.1	120.6	120.7	122.1	1.2	3.1
Service occupations	116.8	117.7	118.6	119.1	120.2	120.7	121.3	122.5	123.0	.4	2.3
Transportation and public utilities	114.8	116.0	116.8	117.5	119.2	119.8	121.4	122.1	124.0	1.6	4.0
Transportation	112.8	114.1	114.8	115.7	117.1	117.7	119.7	120.3	122.3	1.7	4.4
Public utilities	117.4	118.3	119.2	119.9	121.7	122.6	123.6	124.4	126.1	1.4	3.6
Communications	116.5	117.5	118.5	119.2	121.0	122.1	122.9	124.0	126.3	1.9	4.4
Electric, gas, and sanitary services	118.6	119.4	120.2	120.8	122.7	123.2	124.4	124.8	125.9	.9	2.6
Wholesale and retail trade	114.7	115.9	116.4	117.1	117.6	119.4	120.5	120.6	121.7	.9	3.5
Excluding sales occupations	115.4	116.2	117.0	118.0	118.6	119.8	120.9	120.9	122.4	1.2	3.2
Wholesale trade	115.3	116.4	116.6	117.8	117.9	119.7	120.6	121.5	123.2	1.4	4.5
Excluding sales occupations	116.0	116.8	117.6	118.7	119.3	120.3	121.3	122.0	124.4	2.0	4.3
Retail trade	114.5	115.6	116.2	116.8	117.5	119.2	120.4	120.1	120.9	.7	2.9
Food stores	115.9	117.2	117.1	118.3	119.6	120.6	120.3	120.0	120.8	.7	1.0
General merchandise stores	114.1	114.7	115.5	116.3	115.3	118.0	118.7	119.3	120.1	.7	4.2

See footnotes at end of table.

21. Continued—Employment Cost Index, compensation,¹ by occupation and industry group

(June 1989=100)

Series	1993				1994				1995	Percent change	
	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	3 months ended	12 months ended
										Mar. 1995	
Finance, insurance, and real estate	112.6	113.1	115.7	116.4	117.7	117.7	118.5	118.9	120.2	1.1	2.1
Excluding sales occupations	114.9	116.4	117.5	118.2	119.7	120.3	121.5	121.8	123.7	1.6	3.3
Banking, savings and loan, and other credit agencies	114.6	116.0	116.9	117.8	118.7	119.4	120.8	120.5	123.5	2.5	4.0
Insurance	114.3	116.1	117.4	119.7	119.9	120.5	121.5	122.3	123.5	1.0	3.0
Services	120.1	120.9	122.3	123.1	124.4	124.9	125.9	126.6	127.5	.7	2.5
Business services	116.5	117.4	118.1	118.6	121.3	122.1	122.4	123.0	124.5	1.2	2.6
Health services	123.0	124.0	125.0	126.0	126.7	127.1	127.9	128.7	129.7	.8	2.4
Hospitals	122.7	123.4	124.5	125.6	126.7	127.1	127.7	128.6	128.9	.2	1.7
Educational services	120.5	120.6	123.8	124.1	124.5	125.4	128.2	128.4	128.8	.3	3.5
Colleges and universities	121.5	121.5	125.0	125.3	125.7	126.0	128.5	128.8	129.3	.4	2.9
Nonmanufacturing	116.3	117.2	118.4	119.0	120.3	121.2	122.3	122.6	123.7	.9	2.8
White-collar occupations	117.0	117.9	119.0	119.9	121.1	122.1	123.1	123.5	124.7	1.0	3.0
Excluding sales occupations	118.5	119.4	120.4	121.4	122.8	123.6	124.7	125.1	126.4	1.0	2.9
Blue-collar occupations	114.6	115.6	116.6	117.1	118.2	119.1	120.5	120.5	121.5	.8	2.8
Service occupations	116.8	117.7	118.6	119.1	120.2	120.7	121.3	122.4	123.0	.5	2.3
State and local government workers	119.3	119.6	121.4	121.9	122.6	123.1	125.0	125.6	126.4	.6	3.1
Workers, by occupational group:											
White-collar workers	119.5	119.6	121.5	121.9	122.6	122.9	124.9	125.5	126.2	.6	2.9
Professional specialty and technical	119.6	119.7	121.7	122.0	122.5	122.7	125.0	125.5	126.0	.4	2.9
Executive, administrative, and managerial	119.0	119.2	121.0	121.6	122.8	123.4	124.7	125.3	126.9	1.3	3.3
Administrative support, including clerical	119.2	119.6	121.0	121.6	122.7	123.3	124.9	125.6	126.3	.6	2.9
Blue-collar workers	118.3	118.7	120.5	121.4	122.3	122.7	124.2	124.7	125.4	.6	2.5
Workers, by industry division:											
Services	120.0	120.2	122.2	122.6	123.1	123.4	125.6	126.1	126.7	.5	2.9
Services excluding schools ⁵	119.6	120.0	121.4	121.9	122.8	123.3	124.9	125.6	126.4	.6	2.9
Health services	120.2	120.7	122.2	123.1	124.2	125.2	127.2	127.7	128.4	.5	3.4
Hospitals	120.0	120.4	122.0	123.3	123.7	124.5	127.0	127.7	128.4	.5	3.8
Educational services	120.0	120.1	122.3	122.7	122.9	123.1	125.5	126.0	126.5	.4	2.9
Schools	120.2	120.3	122.5	122.9	123.2	123.4	125.9	126.3	126.8	.4	2.9
Elementary and secondary	120.7	120.8	123.0	123.6	123.7	123.8	126.3	126.5	127.1	.5	2.7
Colleges and universities	118.4	118.5	120.8	120.7	121.5	122.0	124.5	125.5	126.0	.4	3.7
Public administration ³	117.6	118.0	119.3	120.0	121.5	122.2	123.7	124.2	125.4	1.0	3.2

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

² Consist of private industry workers (excluding farm and household workers) and State and local government (excluding Federal Government) workers.

³ Consist of legislative, judicial, administrative, and regulatory activities.

⁴ This series has the same industry and occupational coverage as the Hourly Earnings Index, which was discontinued in January 1989.

⁵ Includes, for example, library, social, and health services.

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

(June 1989 = 100)

Series	1993				1994				1995	Percent change	
	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	3 months ended	12 months ended
										Mar. 1995	
Civilian workers ¹	114.5	115.2	116.4	117.1	117.8	118.6	119.8	120.4	121.3	0.7	3.0
Workers, by occupational group:											
White-collar workers	115.4	116.0	117.4	118.1	118.8	119.7	120.8	121.5	122.4	.7	3.0
Professional specialty and technical	117.5	118.0	119.5	120.0	120.7	121.3	122.8	123.5	124.2	.6	2.9
Executive, administrative, and managerial	115.0	115.5	116.5	117.3	118.1	119.0	120.2	120.8	122.2	1.2	3.5
Administrative support, including clerical	115.3	116.1	117.1	118.0	118.9	119.8	120.9	121.6	122.8	1.0	3.3
Blue-collar workers	112.7	113.4	114.4	115.0	115.8	116.7	117.8	118.2	119.2	.8	2.9
Service occupations	114.5	115.2	116.1	116.6	117.5	118.1	119.4	120.4	121.2	.7	3.1
Workers, by industry division:											
Goods-producing	113.8	114.6	115.4	116.2	117.0	118.0	119.0	119.6	120.5	.8	3.0
Manufacturing	114.7	115.5	116.3	117.3	118.0	119.0	120.0	120.8	121.9	.9	3.3
Service-producing	114.8	115.5	116.8	117.5	118.2	118.9	120.2	120.7	121.7	.8	3.0
Services	117.4	117.8	119.5	120.0	120.9	121.3	122.8	123.5	124.4	.7	2.9
Health services	119.5	120.3	121.4	122.2	122.8	123.4	124.4	125.4	126.1	.6	2.7
Hospitals	118.9	119.5	120.7	121.7	122.4	123.0	124.0	124.9	125.5	.5	2.5
Educational services	117.9	118.0	120.4	120.7	121.0	121.3	123.8	124.3	125.0	.6	3.3
Public administration ²	114.4	114.9	115.9	116.6	117.9	118.5	119.9	120.6	121.9	1.1	3.4
Nonmanufacturing	114.4	115.1	116.4	117.0	117.7	118.5	119.7	120.2	121.1	.7	2.9
Private industry workers	113.9	114.6	115.7	116.4	117.2	118.1	119.1	119.7	120.6	.8	2.9
Excluding sales occupations	114.2	115.0	115.9	116.6	117.5	118.3	119.4	120.0	121.0	.8	3.0
Workers, by occupational group:											
White-collar workers	114.7	115.5	116.7	117.5	118.3	119.3	120.2	120.8	121.7	.7	2.9
Excluding sales occupations	115.7	116.4	117.4	118.2	119.0	119.9	121.0	121.7	122.8	.9	3.2
Professional specialty and technical occupations	117.1	117.9	118.9	119.5	120.4	121.3	122.2	123.0	123.7	.6	2.7
Executive, administrative, and managerial occupations	114.7	115.3	116.2	117.0	117.8	118.8	120.0	120.5	121.9	1.2	3.5
Sales occupations	110.5	111.6	113.8	114.7	114.8	116.2	116.5	116.7	116.9	.2	1.8
Administrative support occupations, including clerical	115.2	116.1	117.1	118.0	119.0	119.9	120.9	121.6	122.9	1.1	3.3
Blue-collar workers	112.5	113.2	114.1	114.8	115.6	116.5	117.5	118.0	119.0	.8	2.9
Precision production, craft, and repair occupations	112.4	113.2	114.2	114.7	115.5	116.5	117.8	117.9	118.8	.8	2.9
Machine operators, assemblers, and inspectors	113.2	113.8	114.7	115.6	116.2	117.2	118.0	118.8	119.6	.7	2.9
Transportation and material moving occupations	110.0	111.2	111.7	112.6	113.5	114.0	115.2	115.6	117.0	1.2	3.1
Handlers, equipment cleaners, helpers, and laborers	113.6	114.3	114.9	115.7	116.6	117.3	117.9	118.9	120.1	1.0	3.0
Service occupations	113.5	114.1	114.9	115.3	116.3	116.8	117.6	118.8	119.4	.5	2.7
Production and nonsupervisory occupations ³	113.4	114.2	115.3	115.9	116.6	117.5	118.5	119.1	119.9	.7	2.8
Workers, by industry division:											
Goods-producing	113.8	114.5	115.3	116.1	116.9	118.0	118.9	119.6	120.4	.7	3.0
Excluding sales occupations	113.5	114.2	114.9	115.6	116.4	117.4	118.4	119.1	119.9	.7	3.0
White-collar occupations	115.4	116.4	117.3	118.2	119.1	120.3	121.1	122.0	123.0	.8	3.3
Excluding sales occupations	114.9	115.6	116.4	116.8	117.7	118.8	119.8	120.8	121.8	.8	3.5
Blue-collar occupations	112.8	113.4	114.1	114.9	115.6	116.6	117.5	118.1	118.8	.6	2.8
Service occupations	113.9	114.4	115.7	116.9	116.4	117.7	120.1	119.7	120.6	.8	3.6
Construction	109.5	110.4	111.3	111.1	112.2	113.6	114.6	114.7	114.8	.1	2.3
Manufacturing	114.7	115.5	116.3	117.3	118.0	119.0	120.0	120.8	121.9	.9	3.3
White-collar occupations	116.0	116.9	117.7	118.8	119.5	120.6	121.7	122.7	123.9	1.0	3.7
Excluding sales occupations	115.3	115.9	116.7	117.2	118.0	119.1	120.2	121.4	122.4	.8	3.7
Blue-collar occupations	113.9	114.5	115.2	116.2	116.9	117.8	118.7	119.5	120.4	.8	3.0
Service occupations	114.3	114.5	116.0	117.3	116.8	118.2	120.6	120.6	121.5	.7	4.0
Durables	114.4	115.1	115.9	117.2	117.8	118.7	119.8	120.8	121.9	.9	3.5
Nondurables	115.5	116.3	116.9	117.5	118.3	119.5	120.3	120.8	121.9	.9	3.0
Service-producing	113.9	114.7	115.9	116.6	117.3	118.2	119.2	119.7	120.7	.8	2.9
Excluding sales occupations	114.8	115.6	116.6	117.4	118.3	119.0	120.2	120.7	121.8	.9	3.0
White-collar occupations	114.5	115.2	116.5	117.3	118.0	118.9	119.9	120.4	121.3	.7	2.8
Excluding sales occupations	116.0	116.8	117.8	118.7	119.6	120.4	121.5	122.1	123.2	.9	3.0
Blue-collar occupations	111.9	112.9	114.1	114.6	115.5	116.2	117.5	117.6	119.2	1.4	3.2
Service occupations	113.5	114.1	114.9	115.2	116.3	116.7	117.3	118.7	119.3	.5	2.6
Transportation and public utilities	112.9	114.0	114.7	115.4	116.4	117.2	118.9	119.6	121.2	1.3	4.1
Transportation	110.8	112.0	112.6	113.4	114.2	114.8	116.7	117.5	119.0	1.3	4.2
Public utilities	115.4	116.4	117.2	117.9	119.1	120.1	121.4	122.3	123.9	1.3	4.0
Communications	114.7	115.6	116.5	117.1	118.4	119.5	121.0	122.1	124.3	1.8	5.0
Electric, gas, and sanitary services	116.3	117.4	118.2	118.8	119.9	120.9	121.9	122.4	123.4	.8	2.9

See footnotes at end of table.

22. Continued— Employment Cost Index, wages and salaries, by occupation and industry group

(June 1989=100)

Series	1993				1994				1995	Percent change	
	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	3 months ended	12 months ended
										Mar. 1995	
Wholesale and retail trade	113.0	114.2	114.7	115.4	115.5	117.4	118.3	118.4	119.4	0.8	3.4
Excluding sales occupations	113.6	114.4	115.2	116.1	116.5	117.8	118.7	118.8	120.2	1.2	3.2
Wholesale trade	113.9	115.1	115.1	116.4	116.2	118.3	118.9	119.9	120.9	.8	4.0
Excluding sales occupations	114.7	115.5	116.3	117.5	117.8	118.8	119.6	120.2	122.2	1.7	3.7
Retail trade	112.6	113.8	114.5	115.0	115.2	117.0	118.0	117.8	118.7	.8	3.0
Food stores	114.6	115.4	114.9	115.9	117.0	117.8	117.4	117.3	117.8	.4	.7
General merchandise stores	112.4	113.4	114.5	115.0	114.0	116.4	116.5	117.5	117.9	.3	3.4
Finance, insurance, and real estate	109.3	109.3	112.3	112.9	113.7	113.2	113.8	114.2	115.0	.7	1.1
Excluding sales occupations	112.0	113.1	114.0	114.6	115.5	116.0	117.2	117.4	119.3	1.6	3.3
Banking, savings and loan, and other credit agencies	112.1	112.9	113.7	114.5	114.7	115.0	116.5	116.2	119.2	2.6	3.9
Insurance	111.2	112.9	113.9	116.6	116.0	116.8	117.7	118.6	119.8	1.0	3.3
Services	117.0	117.6	118.9	119.6	120.8	121.3	122.2	123.0	123.9	.7	2.6
Business services	114.2	114.6	115.3	115.7	118.8	119.4	119.9	120.4	122.1	1.4	2.8
Health services	119.8	120.7	121.7	122.6	123.1	123.5	124.3	125.4	126.2	.6	2.5
Hospitals	119.3	119.9	121.0	122.0	122.8	123.3	123.9	124.8	125.4	.5	2.1
Educational services	117.5	117.4	120.7	120.9	121.2	122.2	124.9	125.1	125.6	.4	3.6
Colleges and universities	118.0	117.7	121.3	121.6	122.0	122.2	124.5	124.9	125.5	.5	2.9
Nonmanufacturing	113.4	114.2	115.4	116.0	116.8	117.7	118.7	119.1	120.0	.8	2.7
White-collar occupations	114.4	115.2	116.4	117.2	117.9	118.9	119.7	120.2	121.1	.7	2.7
Excluding sales occupations	115.8	116.6	117.6	118.5	119.4	120.2	121.3	121.8	122.9	.9	2.9
Blue-collar occupations	111.1	111.9	113.0	113.4	114.2	115.1	116.4	116.4	117.5	.9	2.9
Service occupations	113.4	114.1	114.8	115.1	116.3	116.7	117.3	118.6	119.2	.5	2.5
State and local government workers	117.2	117.4	119.3	119.7	120.4	120.7	122.8	123.4	124.3	.7	3.2
Workers, by occupational group:											
White-collar workers	117.5	117.6	119.6	119.9	120.6	120.9	122.9	123.6	124.4	.6	3.2
Professional specialty and technical	118.1	118.2	120.4	120.7	121.1	121.3	123.6	124.2	124.8	.5	3.1
Executive, administrative, and managerial	116.5	116.6	118.2	118.8	119.8	120.3	121.6	122.4	124.1	1.4	3.6
Administrative support, including clerical	115.4	115.9	117.2	117.8	118.9	119.4	120.9	121.7	122.5	.7	3.0
Blue-collar workers	116.2	116.5	118.4	119.0	119.7	120.1	121.8	122.5	123.1	.5	2.8
Workers, by industry division:											
Services	118.1	118.2	120.3	120.6	121.1	121.3	123.6	124.2	124.9	.6	3.1
Services excluding schools ⁴	118.4	118.7	120.1	120.4	121.3	121.9	123.2	124.0	125.0	.8	3.1
Health services	118.1	118.8	120.4	121.0	121.9	122.9	124.7	125.3	126.0	.6	3.4
Hospitals	117.6	118.2	119.9	120.7	121.2	122.0	124.2	125.1	125.8	.6	3.8
Educational services	118.0	118.1	120.3	120.6	120.9	121.1	123.6	124.2	124.8	.5	3.2
Schools	117.9	118.0	120.3	120.7	121.0	121.2	123.8	124.3	125.0	.6	3.3
Elementary and secondary	118.7	118.8	121.1	121.6	121.7	121.8	124.5	124.9	125.5	.5	3.1
Colleges and universities	115.5	115.6	117.8	117.7	118.6	119.2	121.5	122.5	123.2	.6	3.9
Public administration ²	114.4	114.9	115.9	116.6	117.9	118.5	119.9	120.6	121.9	1.1	3.4

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

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

³ This series has the same industry and occupational coverage as the Hourly Earnings Index, which was discontinued in January 1989.

⁴ Includes, for example, library, social and health services.

23. Employment Cost Index, benefits, private industry workers by occupation and industry group

(June 1989 = 100)

Series	1993				1994				1995	Percent change	
	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	3 months ended	12 months ended
										Mar. 1995	
Private industry workers	125.2	126.7	127.7	128.3	130.7	131.7	132.8	133.0	134.5	1.1	2.9
Workers, by occupational group:											
White-collar workers	124.7	125.9	126.8	127.6	130.5	131.6	132.8	133.3	135.2	1.4	3.6
Blue-collar workers	125.5	127.3	128.4	128.9	130.5	131.5	132.7	132.5	133.3	.6	2.1
Workers, by industry group:											
Goods-producing	127.3	129.0	130.0	130.3	132.7	133.9	134.8	134.8	135.9	.8	2.4
Service-producing	123.4	124.6	125.7	126.7	128.9	129.7	131.2	131.5	133.2	1.3	3.3
Manufacturing	126.8	128.6	129.7	130.0	132.0	133.0	133.9	134.3	135.4	.8	2.6
Nonmanufacturing	124.2	125.5	126.5	127.4	129.9	130.8	132.2	132.3	133.9	1.2	3.1

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

(June 1989=100)

Series	1993				1994				1995	Percent change	
	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	3 months ended	12 months ended
										Mar. 1995	
COMPENSATION											
Workers, by bargaining status¹											
Union	117.8	119.1	120.0	120.9	121.9	123.0	123.8	124.2	125.1	0.7	2.6
Goods-producing	118.7	120.0	121.0	121.9	122.5	123.8	124.4	124.7	125.2	.4	2.2
Service-producing	116.7	117.7	118.6	119.6	121.0	121.8	122.9	123.6	124.8	1.0	3.1
Manufacturing	119.8	121.1	121.9	123.0	123.6	124.8	125.3	125.8	126.3	.4	2.2
Nonmanufacturing	116.3	117.4	118.5	119.3	120.5	121.5	122.6	123.0	124.0	.8	2.9
Nonunion	116.8	117.7	118.8	119.5	120.7	121.7	122.7	123.2	124.3	.9	3.0
Goods-producing	117.7	118.6	119.4	119.9	121.5	122.6	123.6	124.1	125.2	.9	3.0
Service-producing	116.3	117.2	118.4	119.2	120.3	121.1	122.2	122.7	123.8	.9	2.9
Manufacturing	118.1	119.0	120.0	120.6	122.0	122.9	124.0	124.8	126.1	1.0	3.4
Nonmanufacturing	116.3	117.2	118.3	119.0	120.2	121.1	122.2	122.5	123.6	.9	2.8
Workers, by region¹											
Northeast	117.8	119.1	120.2	120.7	121.6	122.8	124.0	124.3	125.6	1.0	3.3
South	116.2	117.0	118.1	118.8	120.0	120.8	121.8	122.5	123.7	1.0	3.1
Midwest (formerly North Central)	117.9	119.3	120.1	121.2	122.8	123.6	124.6	125.0	125.8	.6	2.4
West	116.2	116.4	117.8	118.1	119.4	120.5	121.3	121.7	122.6	.7	2.7
Workers, by area size¹											
Metropolitan areas	117.1	118.1	119.1	119.8	120.9	121.9	122.9	123.4	124.5	.9	3.0
Other areas	117.0	117.8	118.7	119.7	121.3	122.5	123.2	123.5	124.8	1.1	2.9
WAGES AND SALARIES											
Workers, by bargaining status¹											
Union	113.1	113.9	114.8	115.7	116.5	117.6	118.6	119.1	119.8	.6	2.8
Goods-producing	112.2	113.0	113.8	114.8	115.4	116.7	117.5	117.9	118.4	.4	2.6
Service-producing	114.2	115.1	116.0	116.8	118.0	118.7	120.1	120.6	121.6	.8	3.1
Manufacturing	113.2	113.9	114.6	115.9	116.6	117.8	118.5	119.2	119.8	.5	2.7
Nonmanufacturing	113.0	113.9	114.9	115.5	116.4	117.3	118.6	119.0	119.8	.7	2.9
Nonunion	114.1	114.8	115.9	116.6	117.4	118.3	119.2	119.8	120.8	.8	2.9
Goods-producing	114.4	115.2	116.0	116.7	117.6	118.6	119.5	120.3	121.3	.8	3.1
Service-producing	113.8	114.6	115.9	116.6	117.2	118.1	119.0	119.5	120.5	.8	2.8
Manufacturing	115.4	116.1	117.0	117.9	118.6	119.5	120.5	121.5	122.7	1.0	3.5
Nonmanufacturing	113.5	114.3	115.5	116.1	116.9	117.8	118.7	119.1	120.0	.8	2.7
Workers, by region¹											
Northeast	114.6	115.7	116.8	117.3	117.8	118.8	120.0	120.2	121.3	.9	3.0
South	113.6	114.3	115.3	116.0	116.6	117.4	118.5	119.1	120.0	.8	2.9
Midwest (formerly North Central)	113.5	114.6	115.2	116.5	117.5	118.3	119.5	120.1	120.9	.7	2.9
West	113.6	113.7	115.3	115.7	116.6	117.9	118.1	119.0	119.9	.8	2.8
Workers, by area size¹											
Metropolitan areas	113.9	114.7	115.8	116.5	117.2	118.1	119.1	119.7	120.6	.8	2.9
Other areas	113.5	114.4	115.0	115.8	117.0	118.1	118.6	119.0	120.5	1.3	3.0

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

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

25. Percent of full-time employees participating in employer-provided benefit plans, 1980-91

Item	Medium and large private establishments ¹										Small private establishments ²	State and local governments ³	
	1980	1981	1982	1983	1984	1985	1986	1988	1989	1991	1990	1987	1990
Time-off plans													
Participants with:													
Paid lunch time	10	10	9	11	9	10	10	11	10	8	8	4	11
Average minutes per day	-	-	25	25	26	27	27	29	26	30	37	54	36
Paid rest time	75	75	76	74	73	72	72	71	67	48	48	58	56
Average minutes per day	-	-	25	25	26	26	26	26	26	27	29	29	29
Paid funeral leave	-	-	-	-	-	88	88	85	84	80	47	56	63
Average days per occurrence	-	-	-	-	-	3.2	3.2	3.2	3.3	3.3	2.9	3.7	3.7
Paid holidays	99	99	99	99	99	98	99	96	97	92	84	81	74
Average days per year	10.1	10.2	10.0	9.8	9.8	10.1	10.0	9.4	9.2	10.2	9.5	10.9	13.6
Paid personal leave	20	23	24	25	23	26	25	24	22	21	11	38	39
Average days per year	-	-	3.8	3.7	3.6	3.7	3.7	3.5	3.1	3.3	2.8	2.7	2.9
Paid vacations	100	99	99	100	99	99	100	98	97	96	88	72	67
Paid sick leave	62	65	67	67	67	67	70	69	68	67	47	97	95
Unpaid maternity leave	-	-	-	-	-	-	-	33	37	37	17	57	51
Unpaid paternity leave	-	-	-	-	-	-	-	16	18	26	8	30	33
Insurance plans													
Participants in medical care plans	97	97	97	96	97	96	95	90	92	83	69	93	93
Participants with coverage for:													
Home health care	-	-	-	37	46	56	66	76	75	81	79	76	82
Extended care facilities	58	60	62	58	62	67	70	79	80	80	83	78	79
Mental health care	98	99	99	99	99	99	99	98	97	98	98	98	99
Alcohol abuse treatment	-	-	50	53	61	68	70	80	97	97	97	87	99
Drug abuse treatment	-	-	37	43	52	61	66	74	96	96	94	86	98
Participants with employee contribution required for:													
Self coverage	26	27	27	33	36	36	43	44	47	51	42	35	38
Average monthly contribution	-	-	-	\$10.13	\$11.93	\$12.05	\$12.80	\$19.29	\$25.31	\$26.60	\$25.13	\$15.74	\$25.53
Family coverage	46	49	51	54	58	56	63	64	66	69	67	71	65
Average monthly contribution ⁵	-	-	-	\$32.51	\$35.93	\$38.33	\$41.40	\$60.07	\$72.10	\$96.97	\$109.34	\$71.89	\$117.59
Participants in life insurance plans	96	96	96	96	96	96	96	92	94	94	64	85	88
Participants with:													
Accidental death and dismemberment insurance	69	72	72	72	74	73	72	76	71	71	78	67	67
Survivor income benefits	-	-	-	-	-	13	10	8	7	6	1	1	1
Retiree protection available	-	64	64	66	64	62	59	49	42	44	19	55	45
Participants in long-term disability insurance plans	40	41	43	45	47	48	48	42	45	40	19	31	27
Participants in sickness and accident insurance plans	54	50	51	49	51	52	49	46	43	45	26	14	21
Retirement plans													
Participants in defined benefit pension plans ⁶	84	84	84	82	82	80	76	63	63	59	20	93	90
Participants with:													
Normal retirement prior to age 65	55	56	58	64	63	67	64	59	62	55	54	92	89
Early retirement available	98	98	97	97	97	97	98	98	97	98	95	90	88
Ad hoc pension increase in last 5 years	-	-	-	51	47	41	35	26	22	7	7	33	16
Terminal earnings formula	53	50	52	54	54	57	57	55	64	56	58	100	100
Benefit coordinated with Social Security	45	43	45	55	56	61	62	62	63	54	49	18	8
Participants in defined contribution plans	-	-	-	-	-	53	60	45	48	48	31	9	9
Participants in plans with tax-deferred savings arrangements	-	-	-	-	-	26	33	36	41	44	17	28	45
Other benefits													
Employees eligible for:													
Flexible benefits plans	-	-	-	-	-	-	2	5	9	10	1	5	5
Reimbursement accounts	-	-	-	-	-	-	5	12	23	36	8	5	31

¹ From 1979 to 1986, data were collected in private sector establishments with a minimum employment varying from 50 to 250 employees, depending upon industry. In addition, coverage in service industries was limited. Beginning in 1988, data were collected in all private sector establishments employing 100 workers or more in all industries.

² Includes private sector establishments with fewer than 100 workers.

³ In 1987, coverage excluded local governments employing fewer than 50 workers. In 1990, coverage included all State and local governments.

⁴ Data exclude college teachers.

⁵ Data for 1983 refer to the average monthly employee contribution for dependent coverage, excluding the employee. Beginning in 1984, data refer

to the average monthly employee contribution for family coverage, which includes the employee.

⁶ Prior to 1985, data on participation in defined benefit pension plans included a small percentage of workers participating in money purchase pension plans. Beginning in 1985, these workers were classified as participating in defined contribution plans.

⁷ Includes employees who participated in Payroll-based Employee Stock Ownership Plans. Beginning in 1987, these plans were no longer available.

NOTE: Dash indicates data were not collected in this year.

26. Specified compensation and wage rate changes from contract settlements, and wage rate changes under all agreements, private industry collective bargaining agreements covering 1,000 workers or more (in percent)

Measure	Annual average		Quarterly average							
	1992	1993	1993			1994				1995
			II	III	IV	I	II	III	IV	
Rate changes under settlements:										
Specified total compensation changes, settlements covering 5,000 workers or more:										
First year of contract	3.0	3.0	3.2	1.0	3.8	3.0	3.4	0.0	1.5	1.4
Annual average over life of contract	3.1	2.4	2.6	1.4	2.5	2.6	2.9	1.4	2.1	1.6
Specified wage changes, settlements covering 1,000 workers or more:										
First year of contract	2.7	2.3	2.5	1.1	2.8	3.0	2.0	1.0	2.2	1.9
Annual average over life of contract	3.0	2.1	2.5	1.7	2.0	2.4	2.4	1.9	2.5	1.9
Wage rate changes under all agreements:										
Average wage change ¹	3.1	3.0	.9	.8	.7	.4	.8	.9	.6	.3
Source:										
Current settlements .....	.8	.9	.2	.1	.5	.1	.2	.1	.2	.0
Prior settlements	1.9	1.9	.7	.6	.2	.3	.6	.7	.3	.2
COLA provisions .....	.4	.2	.1	(²)	(²)	(²)	.1	.1	.1	.0

¹ Because of rounding, total may not equal sum of parts.

² = preliminary.

² More than zero but less than 0.05 percent.

27. Specified compensation and wage rate changes from contract settlements, and wage rate changes under all agreements, private industry collective bargaining agreements covering 1,000 workers or more during 4-quarter periods (in percent)

Measure	Average for four quarters ending--							
	1993			1994				1995
	II	III	IV	I	II	III	IV	^P
Rate changes under settlements:								
Specified total compensation changes, settlements covering 5,000 workers or more, all industries:								
First year of contract	2.9	2.1	3.0	3.0	3.1	3.1	2.3	2.1
Annual average over life of contract	2.9	2.4	2.4	2.3	2.4	2.5	2.4	2.3
Specified wage changes, settlements covering 1,000 workers or more:								
All industries:								
First year of contract	2.5	2.0	2.3	2.4	2.2	2.3	2.0	1.8
Contracts with COLA clauses	2.7	2.5	2.8	2.7	3.0	2.9	2.7	2.5
Contracts without COLA clauses	2.5	1.8	2.1	2.3	1.9	2.0	1.8	1.6
Contracts with either lump sums, COLA, or both	2.6	2.3	2.6	2.6	2.8	2.7	2.5	2.3
Contracts with neither lump sums nor COLA	2.5	1.7	2.0	2.1	1.5	1.6	1.6	1.5
Annual average over life of contract	2.7	2.3	2.1	2.1	2.1	2.2	2.3	2.3
Contracts with COLA clauses	2.5	2.1	1.4	1.0	1.5	1.7	2.5	2.4
Contracts without COLA clauses	2.8	2.4	2.5	2.5	2.4	2.3	2.3	2.2
Contracts with either lump sums, COLA, or both	2.7	2.1	1.9	1.8	2.0	2.1	2.3	2.2
Contracts with neither lump sums nor COLA	2.8	2.5	2.5	2.5	2.2	2.2	2.3	2.3
Manufacturing:								
First year of contract	2.8	2.5	2.7	2.5	2.7	2.6	2.4	2.2
Contracts with COLA clauses	2.4	2.6	2.9	2.7	3.0	3.0	3.0	2.6
Contracts without COLA clauses	3.0	2.5	2.3	1.9	1.9	1.9	1.8	1.8
Contracts with either lump sums, COLA, or both	2.3	2.3	2.7	2.4	2.7	2.7	2.4	2.2
Contracts with neither lump sums nor COLA	3.3	3.1	2.9	2.6	2.6	2.2	2.2	2.2
Annual average over life of contract	2.6	2.1	1.5	1.3	1.5	1.7	2.3	2.1
Contracts with COLA clauses	2.3	1.9	1.3	1.0	1.3	1.5	2.5	2.3
Contracts without COLA clauses	2.8	2.5	2.1	1.9	2.0	1.9	2.1	1.9
Contracts with either lump sums, COLA, or both	2.2	1.8	1.3	1.0	1.4	1.5	2.3	2.1
Contracts with neither lump sums nor COLA	3.0	2.9	2.5	2.3	2.3	2.0	2.2	2.2
Nonmanufacturing:								
First year of contract	2.5	1.7	2.1	2.3	2.0	2.0	1.8	1.6
Contracts with COLA clauses	3.0	2.5	1.8	1.9	2.9	2.5	2.2	2.2
Contracts without COLA clauses	2.4	1.6	2.1	2.3	1.9	2.0	1.8	1.5
Contracts with either lump sums, COLA, or both	2.7	2.3	2.4	2.8	2.9	2.8	2.6	2.4
Contracts with neither lump sums nor COLA	2.4	1.5	1.8	2.0	1.3	1.4	1.6	1.4
Annual average over life of contract	2.8	2.4	2.5	2.6	2.4	2.5	2.3	2.3
Contracts with COLA clauses	2.7	2.7	2.3	2.5	2.7	2.7	2.6	2.6
Contracts without COLA clauses	2.8	2.4	2.6	2.6	2.4	2.5	2.3	2.3
Contracts with either lump sums, COLA, or both	2.9	2.5	2.6	2.7	2.7	2.7	2.4	2.4
Contracts with neither lump sums nor COLA	2.7	2.4	2.5	2.5	2.2	2.3	2.3	2.3
Construction:								
First year of contract	1.8	2.0	2.1	2.4	1.7	1.8	1.8	1.5
Annual average over life of contract	2.4	2.4	2.6	2.7	2.5	2.6	2.5	2.4
Wage rate changes under all agreements:								
Average wage change ¹	2.9	2.6	3.0	2.9	2.7	2.9	2.7	2.6
Source:								
Current settlements .....	.7	.6	.9	.9	.9	.8	.6	.5
Prior settlements	1.8	1.8	1.9	1.8	1.7	1.9	1.9	1.9
COLA provisions .....	.4	.3	.2	.2	.2	.2	.2	.3

¹ Because of rounding, total may not equal sum of parts.

^P = preliminary.

28. Specified changes in the cost of compensation and components annualized over the life of the contract in private industry collective bargaining settlements covering 5,000 workers or more, by quarter, and during 4-quarter periods (in percent)

Measure	1993			1994				1995
	II	III	IV	I	II	III	IV	I
	Quarterly average							
All industries:								
Compensation	1.8	0.9	1.8	2.0	1.9	0.8	1.2	1.1
Cash payments	1.7	.8	1.4	1.9	1.4	.9	1.5	1.2
Wages	1.7	.7	1.4	1.7	1.4	.9	1.5	1.1
Benefits	1.8	1.1	2.4	2.1	2.7	.5	.6	.9
	Average for four quarters							
All industries:								
Compensation	1.9	1.4	1.6	1.6	1.6	1.7	1.6	1.4
Cash payments	1.7	1.2	1.3	1.3	1.3	1.4	1.4	1.3
Wages	1.8	1.3	1.3	1.3	1.3	1.4	1.3	1.3
Benefits	2.3	1.7	2.1	2.0	2.2	2.2	1.8	1.6
With contingent pay provisions:								
Compensation	2.0	1.4	1.5	1.4	1.7	1.9	2.2	2.1
Cash payments	1.7	1.2	1.2	1.2	1.3	1.4	1.8	1.7
Wages	1.9	1.4	1.4	1.3	1.4	1.6	1.7	1.6
Benefits	2.5	1.8	2.0	1.8	2.3	2.5	3.0	2.8
Without contingent pay provisions:								
Compensation	1.9	1.4	1.7	1.8	1.6	1.5	1.3	1.1
Cash payments	1.7	1.3	1.4	1.6	1.3	1.3	1.3	1.1
Wages	1.7	1.2	1.3	1.4	1.1	1.1	1.2	1.1
Benefits	2.3	1.6	2.1	2.2	2.1	1.8	1.3	1.1
Manufacturing:								
Compensation	1.8	1.1	1.2	1.1	1.3	1.5	1.9	1.7
Cash payments	1.3	1.0	.8	.7	.9	1.0	1.7	1.6
Wages	1.7	1.2	1.1	.9	1.1	1.2	1.6	1.4
Benefits	2.7	1.4	1.6	1.5	1.9	2.1	2.3	2.0
Nonmanufacturing:								
Compensation	2.0	1.5	1.9	2.0	1.8	1.8	1.4	1.3
Cash payments	1.8	1.3	1.6	1.8	1.5	1.6	1.3	1.2
Wages	1.8	1.3	1.5	1.6	1.4	1.5	1.3	1.2
Benefits	2.2	1.8	2.4	2.3	2.4	2.2	1.6	1.5
Goods-producing:								
Compensation	1.9	1.6	1.4	1.4	1.4	1.4	1.6	1.4
Cash payments	1.6	1.4	1.1	1.2	1.1	1.2	1.5	1.3
Wages	1.8	1.5	1.2	1.2	1.1	1.2	1.4	1.2
Benefits	2.7	2.1	1.9	1.8	1.8	1.8	1.6	1.5
Service-producing:								
Compensation	2.0	1.2	1.8	1.8	2.0	2.0	1.5	1.5
Cash payments	1.8	1.1	1.5	1.6	1.6	1.6	1.3	1.3
Wages	1.8	1.0	1.5	1.5	1.5	1.6	1.3	1.3
Benefits	2.2	1.3	2.3	2.2	2.7	2.6	1.9	1.8

29. Specified compensation and wage rate changes from contract settlements, and wage rate changes under all agreements, State and local government collective bargaining agreements covering 1,000 workers or more (in percent)

Measure	Annual average		
	1992	1993	1994
Changes under settlements:			
Total compensation ¹ changes, ² settlements covering 5,000 workers or more:			
First year of contract	0.6	0.9	2.8
Annual average over life of contract	1.9	1.8	3.1
Wage changes, settlements covering 1,000 workers or more:			
First year of contract	1.1	1.1	2.7
Annual average over life of contract	2.1	2.1	3.0
Wage changes under all agreements:			
Average wage change ³	1.9	2.8	3.3
Source:			
Current settlements .....	.8	1.6	1.4
Prior settlements	1.1	1.1	1.9
COLA provisions	(*)	(*)	(*)

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

² Changes are the net result of increases, decreases, and zero change in

compensation or wages.

³ Because of rounding, total may not equal sum of parts.

⁴ Less than 0.05 percent.

30. Work stoppages involving 1,000 workers or more

Measure	Annual totals		1994								1995			
	1993	1994	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan. ^P	Feb. ^P	Mar. ^P	Apr. ^P
Number of stoppages:														
Beginning in period	35	45	4	9	4	5	7	4	1	0	1	1	4	2
In effect during period	36	45	6	11	9	11	14	9	6	4	4	4	7	5
Workers involved:														
Beginning in period (in thousands)	18.2	322.2	13.5	38.7	14.3	58.6	32.0	8.0	2.6	.0	37.7	3.0	17.6	32.0
In effect during period (in thousands)	18.4	322.2	18.0	43.2	33.1	88.2	59.4	32.7	26.8	17.2	52.9	18.2	32.8	56.9
Days idle:														
Number (in thousands)	3,981.0	5,020.5	133.5	367.0	436.1	678.5	638.5	505.9	420.8	342.2	368.5	306.8	367.8	529.7
Percent of estimated working time ¹ .....	.01	.02	.02	.01	.02	.02	.02	.02	.02	.02	.01	.01	.01	.01

¹ Agricultural and government employees are included in the total employed and total working time; private household, forestry, and fishery employees are excluded. An explanation of the measurement of idleness as a percentage of the total time

worked is found in "'Total economy' measure of strike idleness," *Monthly Labor Review*, October 1968, pp. 54-56.

^P = preliminary.

31. Consumer Price Indexes for All Urban Consumers and for Urban Wage Earners and Clerical Workers: U.S. city average, by expenditure category and commodity or service group

(1982-84 = 100, unless otherwise indicated)

Series	Annual average		1994								1995				
	1993	1994	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
	CONSUMER PRICE INDEX FOR ALL URBAN CONSUMERS:														
All items	144.5	148.2	147.5	148.0	148.4	149.0	149.4	149.5	149.7	149.7	150.3	150.9	151.4	151.9	152.2
All items (1967 = 100)	432.7	444.0	441.9	443.3	444.4	446.4	447.5	448.0	448.6	448.4	450.3	452.0	453.5	455.0	455.8
Food and beverages	141.6	144.9	144.1	144.2	144.8	145.3	145.6	145.6	145.9	147.2	147.9	147.8	147.9	148.9	148.7
Food	140.9	144.3	143.5	143.5	144.2	144.8	145.0	145.0	145.3	146.8	147.5	147.4	147.4	148.4	148.3
Food at home	140.1	144.1	143.0	142.9	144.0	144.7	145.0	144.8	145.1	147.3	148.2	147.9	147.6	149.2	148.7
Cereals and bakery products	156.6	163.0	162.3	163.4	163.9	164.7	164.8	164.6	163.7	164.2	164.6	165.8	165.3	166.9	166.6
Meats, poultry, fish, and eggs	135.5	137.2	137.1	137.2	136.7	137.1	137.3	136.8	136.9	136.4	137.3	137.6	138.4	137.7	137.3
Dairy products	129.4	131.7	132.0	132.2	131.8	131.8	131.3	131.5	131.7	131.6	132.7	132.1	132.2	132.1	132.8
Fruits and vegetables	159.0	165.0	163.2	161.6	164.4	162.8	163.2	162.9	165.7	180.3	180.4	177.1	174.0	183.1	181.0
Other foods at home	130.5	135.6	132.8	132.9	135.7	138.9	139.4	139.5	139.0	138.8	140.3	140.6	140.7	140.9	140.8
Sugar and sweets	133.4	135.2	135.5	134.9	135.2	135.1	135.4	135.6	134.5	134.5	135.5	135.8	136.4	136.7	137.3
Fats and oils	130.0	133.5	133.4	133.5	135.1	134.1	134.2	135.0	134.3	134.2	136.4	136.8	136.8	137.2	137.1
Nonalcoholic beverages	114.6	123.2	115.6	115.8	122.8	131.3	132.1	132.7	132.4	131.7	133.3	133.7	132.9	132.9	131.7
Other prepared foods	143.7	147.5	147.0	147.2	147.6	148.4	148.8	148.5	148.1	148.1	149.4	149.7	150.5	150.6	151.3
Food away from home	143.2	145.7	145.3	145.5	145.6	145.9	146.2	146.4	146.8	147.1	147.4	147.6	148.1	148.3	148.6
Alcoholic beverages	149.6	151.5	151.5	151.7	151.6	151.3	151.4	151.6	151.9	151.8	152.0	152.4	153.1	153.6	153.9
Housing	141.2	144.8	144.1	144.9	145.4	145.9	145.8	145.7	145.5	145.4	146.4	147.0	147.4	147.4	147.6
Shelter	155.7	160.5	159.6	160.1	160.8	161.7	161.6	162.0	162.1	161.8	162.9	163.8	164.5	164.7	164.8
Renters' costs (12/82 = 100)	165.0	169.4	168.5	169.6	171.0	172.1	169.4	169.8	168.9	168.2	170.7	172.9	174.6	174.1	173.7
Rent, residential	150.3	154.0	153.3	153.4	153.9	154.5	155.0	155.2	155.6	155.7	156.1	156.4	156.7	157.0	157.2
Other renters' costs	190.3	196.3	194.9	198.9	203.2	205.9	193.5	194.0	189.2	186.2	195.0	202.9	208.7	206.0	203.4
Homeowners' costs (12/82 = 100)	160.2	165.5	164.5	164.8	165.3	166.1	167.1	167.5	167.9	167.8	168.4	168.9	169.2	169.6	170.0
Owners' equivalent rent (12/82 = 100)	160.5	165.8	164.8	165.1	165.5	166.4	167.3	167.8	168.2	168.1	168.7	169.1	169.5	169.9	170.3
Household insurance (12/82 = 100)	146.9	152.3	150.8	151.9	153.2	154.0	154.3	154.5	155.0	155.4	155.9	156.1	157.1	157.2	157.4
Maintenance and repairs	130.6	130.8	131.0	131.5	131.3	131.2	131.6	130.8	131.2	132.7	133.1	133.8	134.2	134.2	134.6
Maintenance and repair services	135.0	134.5	135.0	135.4	135.4	135.4	135.8	135.9	136.4	137.0	137.3	137.9	138.8	139.0	139.4
Maintenance and repair commodities	124.6	125.8	125.7	126.2	125.9	125.6	126.0	123.8	124.3	126.8	127.5	128.2	128.2	127.6	128.1
Fuel and other utilities	121.3	122.8	122.2	124.2	124.3	124.3	124.2	122.4	121.8	122.0	122.9	122.6	122.3	122.1	122.5
Fuels	111.2	111.7	110.6	113.9	114.1	114.0	113.8	110.8	109.9	110.1	110.7	110.4	109.8	109.3	109.8
Fuel oil, coal, and bottled gas	90.3	88.8	88.7	87.7	87.1	86.8	86.8	87.0	87.7	88.4	89.4	89.6	89.0	88.4	88.3
Gas (piped) and electricity	118.5	119.2	118.0	122.1	122.3	122.2	122.1	118.5	117.3	117.4	118.0	117.6	117.1	116.6	117.2
Other utilities and public services	147.0	150.2	150.4	150.4	150.4	150.6	150.3	150.4	150.5	150.6	152.1	151.8	151.9	152.2	152.3
Household furnishings and operations	119.3	121.0	121.1	121.4	121.5	121.4	121.4	121.4	121.1	120.8	121.8	122.4	122.6	122.6	122.7
Housefurnishings	109.5	111.0	111.4	111.6	111.5	111.5	111.2	110.9	110.8	110.3	110.5	111.1	111.2	111.2	111.0
Housekeeping supplies	130.7	132.3	131.9	132.4	132.2	132.2	132.6	133.7	132.6	132.9	133.8	134.6	135.7	135.9	136.4
Housekeeping services	135.8	138.5	138.1	138.4	138.6	138.9	139.3	139.4	139.1	139.1	142.4	142.8	142.9	142.9	143.3
Apparel and upkeep	133.7	133.4	135.6	133.8	130.9	131.1	134.2	135.2	134.2	130.5	129.4	131.1	134.4	134.8	133.4
Apparel commodities	131.0	130.4	132.8	130.8	127.6	127.8	131.2	132.3	131.1	127.2	126.0	127.7	131.3	131.7	130.2
Men's and boys' apparel	127.5	126.4	127.4	125.9	124.9	125.7	128.4	128.9	129.2	125.3	124.0	125.6	127.2	127.0	127.9
Women's and girls' apparel	132.6	130.9	135.1	131.6	125.7	125.5	131.1	133.4	130.5	125.7	123.0	125.9	131.5	132.2	129.6
Infants' and toddlers' apparel	127.1	128.1	125.2	128.4	129.2	128.6	129.5	128.6	131.2	131.3	129.0	126.8	127.1	127.1	123.6
Footwear	125.9	126.0	128.5	127.3	125.0	124.5	125.1	125.5	125.7	123.6	124.0	124.8	125.9	127.2	126.6
Other apparel commodities	145.6	149.5	149.9	149.7	150.6	152.4	152.3	151.4	150.8	146.5	150.1	150.4	155.0	154.4	150.3
Apparel services	151.7	155.4	155.0	155.5	155.7	155.9	156.3	156.4	156.3	156.4	157.0	157.3	157.6	157.7	157.7
Transportation	130.4	134.3	132.8	133.8	134.6	135.9	135.9	136.1	137.1	137.1	137.3	137.5	138.0	139.1	140.3
Private transportation	127.5	131.4	130.0	131.0	131.8	133.0	133.1	133.6	134.8	134.9	135.0	135.2	136.2	137.5	
New vehicles	132.7	137.6	137.2	137.4	137.4	137.3	137.5	138.4	139.4	140.1	140.6	140.7	141.1	141.1	
New cars	131.5	136.0	135.7	135.8	135.8	135.6	135.7	136.6	137.7	138.5	139.0	139.1	139.0	139.3	
Used cars	133.9	141.7	137.9	140.9	142.6	144.0	145.4	147.7	150.1	151.5	152.4	153.3	154.8	156.7	157.7
Motor fuel	98.0	98.5	96.0	98.2	100.5	104.1	103.7	101.8	102.7	100.4	98.7	98.0	97.5	99.5	104.2
Gasoline	97.7	98.2	95.6	97.9	100.4	104.1	103.6	101.7	102.6	100.2	98.4	97.7	97.2	99.3	104.2
Maintenance and repair	145.9	150.2	149.7	149.8	150.0	150.7	151.2	151.7	151.8	151.9	152.0	152.5	152.7	153.2	153.8
Other private transportation	156.8	162.1	160.8	161.3	161.5	162.0	162.1	164.1	166.2	167.6	168.8	169.4	170.2	170.9	170.5
Other private transportation commodities	103.4	103.5	103.4	103.4	103.3	103.3	103.2	103.1	104.0	104.3	104.2	104.6	104.6	104.5	104.7
Other private transportation services	169.1	175.8	174.0	174.8	175.1	175.7	175.8	178.4	180.7	182.4	184.0	184.6	185.6	186.5	185.9
Public transportation	167.0	172.0	169.9	169.9	171.4	173.2	171.7	168.4	167.2	165.6	168.4	169.9	174.5	176.7	176.7
Medical care	201.4	211.0	209.7	210.4	211.5	212.2	212.8	214.0	214.7	215.3	216.6	217.9	218.4	218.9	219.3
Medical care commodities	195.0	200.7	200.1	200.5	201.3	201.7	201.7	202.2	202.7	202.9	203.1	203.5	203.7	203.6	203.4
Medical care services	202.9	213.4	212.0	212.6	213.8	214.7	215.4	216.8	217.5	218.2	219.8	221.3	221.8	222.4	223.0
Professional services	184.7	192.5	191.7	192.3	193.0	193.5	194.0	195.1	195.5	196.0	197.2	198.5	199.1	199.5	200.2
Hospital and related services	231.9	245.6	243.5	244.1	246.1	247.3	248.1	249.8	250.6	251.3	253.2	254.7	255.3	255.6	
Entertainment	145.8	150.1	149.9	149.8	150.2	150.2	150.7	151.0	151.6						

31. Continued— Consumer Price Indexes for All Urban Consumers and for Urban Wage Earners and Clerical Workers: U.S. city average, by expenditure category and commodity or service group

(1982-84 = 100, unless otherwise indicated)

Series	Annual average		1994									1995				
	1993	1994	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	
All items	144.5	148.2	147.5	148.0	148.4	149.0	149.4	149.5	149.7	149.7	150.3	150.9	151.4	151.9	152.2	
Commodities	131.5	133.8	133.4	133.5	133.7	134.3	134.8	134.9	135.2	135.1	135.1	135.4	135.9	136.6	136.9	
Food and beverages	141.6	144.9	144.1	144.2	144.8	145.3	145.6	145.6	145.9	147.2	147.9	147.8	147.9	148.9	148.7	
Commodities less food and beverages	125.3	126.9	126.8	126.9	126.8	127.5	128.1	128.3	128.6	127.6	127.4	127.9	128.6	129.2	129.7	
Nondurables less food and beverages	128.1	128.4	128.5	128.4	128.1	129.2	130.3	130.2	130.1	128.1	127.5	128.1	129.2	129.9	130.8	
Apparel commodities	131.0	130.4	132.8	130.8	127.6	127.8	131.2	132.3	131.1	127.2	126.0	127.7	131.3	131.7	130.2	
Nondurables less food, beverages, and apparel	129.6	130.3	129.3	130.2	131.3	132.8	132.8	132.2	132.5	131.5	131.2	131.3	131.1	132.0	134.2	
Durables	121.3	124.8	124.4	124.9	125.1	125.1	125.1	125.7	126.5	126.9	127.2	127.6	127.7	128.1	128.1	
Services	157.9	163.1	162.0	162.8	163.4	164.2	164.4	164.6	164.7	164.7	165.9	166.7	167.3	167.5	167.7	
Rent of shelter (12/82=100)	162.0	167.0	166.0	166.6	167.3	168.2	168.2	168.6	168.6	168.3	169.4	170.4	171.2	171.3	171.5	
Household services less rent of shelter (12/82=100)	134.2	136.3	135.7	137.7	137.9	138.0	137.9	136.3	135.8	135.9	137.2	137.0	136.9	136.7	137.1	
Transportation services	162.9	168.6	167.1	167.5	168.1	168.9	168.8	169.5	170.5	171.1	172.6	173.4	175.0	176.1	175.9	
Medical care services	202.9	213.4	212.0	212.6	213.8	214.7	215.4	216.8	217.5	218.2	219.8	221.3	221.8	222.4	223.0	
Other services	177.0	185.4	183.9	184.3	184.7	185.8	187.8	188.5	189.0	188.9	189.7	190.9	191.1	191.4	191.7	
Special indexes:																
All items less food	145.1	149.0	148.3	148.8	149.1	149.8	150.2	150.4	150.6	150.2	150.8	151.5	152.1	152.5	152.9	
All items less shelter	141.4	144.8	144.2	144.6	144.9	145.5	146.0	146.1	146.3	146.3	146.8	147.2	147.7	148.3	148.6	
All items less homeowners' costs (12/82=100)	146.0	149.5	148.9	149.4	149.8	150.4	150.6	150.7	150.9	150.8	151.5	152.1	152.7	153.2	153.4	
All items less medical care	141.2	144.7	144.0	144.5	144.8	145.5	145.8	145.9	146.1	146.0	146.6	147.1	147.6	148.1	148.4	
Commodities less food	126.3	127.9	127.8	127.9	127.8	128.4	129.0	129.3	129.5	128.5	128.3	128.8	129.5	130.1	130.6	
Nondurables less food	129.3	129.7	129.8	129.7	129.4	130.4	131.4	131.4	131.2	129.5	128.9	129.5	130.5	131.3	132.1	
Nondurables less food and apparel	130.7	131.6	130.6	131.4	132.4	133.7	133.7	133.2	133.5	132.6	132.4	132.5	132.4	133.3	135.2	
Nondurables	135.1	136.8	136.5	136.5	136.6	137.4	138.1	138.1	138.2	137.8	137.8	138.1	138.7	139.6	139.9	
Services less rent of shelter (12/82=100)	164.8	170.7	169.5	170.5	171.0	171.7	172.2	172.2	172.4	172.7	174.0	174.7	175.1	175.5	175.8	
Services less medical care	153.6	158.4	157.4	158.2	158.7	159.4	159.6	159.7	159.8	159.7	160.9	161.6	162.2	162.4	162.6	
Energy	104.2	104.6	102.9	105.7	106.8	108.5	108.2	105.8	105.7	104.7	104.2	103.7	103.2	103.9	106.3	
All items less energy	150.0	154.1	153.5	153.7	154.0	154.6	155.0	155.5	155.7	155.7	156.5	157.2	157.8	158.3	158.3	
All items less food and energy	152.2	156.5	156.0	156.2	156.4	157.0	157.5	158.0	158.2	157.9	158.7	159.6	160.4	160.7	160.8	
Commodities less food and energy	135.2	137.1	137.5	137.3	136.8	136.8	137.7	138.3	138.4	137.6	137.7	138.4	139.4	139.7	139.6	
Energy commodities	97.3	97.6	95.4	97.2	99.2	102.4	102.0	100.4	101.2	99.2	97.9	97.2	96.7	98.4	102.6	
Services less energy	161.9	167.6	166.6	167.1	167.7	168.5	168.8	169.3	169.6	169.6	170.8	171.7	172.4	172.7	172.9	
Purchasing power of the consumer dollar:																
1982-84 = \$1.00	69.2	67.5	67.8	67.6	67.4	67.1	66.9	66.9	66.8	66.8	66.5	66.3	66.0	65.8	65.7	
1967 = \$1.00	23.1	22.5	22.6	22.6	22.5	22.4	22.3	22.3	22.3	22.3	22.2	22.1	22.0	22.0	21.9	
CONSUMER PRICE INDEX FOR URBAN WAGE EARNERS AND CLERICAL WORKERS:																
All items	142.1	145.6	144.9	145.4	145.8	146.5	146.9	147.0	147.3	147.2	147.8	148.3	148.7	149.3	149.6	
All items (1967=100)	423.1	433.8	431.7	433.2	434.3	436.4	437.5	437.8	438.6	438.6	440.2	441.7	443.0	444.6	445.6	
Food and beverages	141.2	144.4	143.7	143.8	144.4	144.9	145.1	145.1	145.3	146.6	147.2	147.3	147.3	148.3	148.1	
Food	140.5	143.9	143.1	143.2	143.8	144.4	144.6	144.6	144.8	146.2	146.9	146.9	146.8	147.9	147.7	
Food at home	139.6	143.4	142.4	142.4	143.4	144.1	144.4	144.1	144.3	146.3	147.2	147.1	146.8	148.2	147.8	
Cereals and bakery products	156.3	162.7	162.0	163.1	163.6	164.4	164.6	164.3	163.5	163.9	164.3	165.6	165.1	166.7	166.3	
Meats, poultry, fish, and eggs	135.4	137.0	137.0	137.0	136.4	136.9	137.2	136.6	136.7	136.0	137.1	137.4	138.1	137.3	136.9	
Dairy products	129.1	131.5	131.7	132.1	131.6	131.6	131.0	131.2	131.4	131.4	132.4	131.8	131.9	131.8	132.5	
Fruits and vegetables	158.2	164.2	162.3	161.1	163.8	162.3	162.6	162.0	164.5	178.8	178.8	175.8	172.7	182.1	179.8	
Other foods at home	130.4	135.3	132.7	132.7	135.4	138.3	138.8	139.0	138.5	138.3	139.7	140.2	140.3	140.4	140.4	
Sugar and sweets	133.1	135.2	135.4	134.7	135.1	135.1	135.4	135.5	134.5	134.4	135.5	135.8	136.4	136.6	137.3	
Fats and oils	129.9	133.5	133.4	133.4	135.1	134.0	134.2	135.0	134.1	134.1	136.3	136.7	136.7	137.1	136.9	
Nonalcoholic beverages	115.1	122.9	116.1	116.2	122.4	130.2	130.9	131.5	131.1	130.6	132.2	132.9	132.2	132.1	131.0	
Other prepared foods	143.5	147.2	146.7	146.9	147.4	148.1	148.5	148.2	147.8	148.0	149.1	149.5	150.2	150.3	151.0	
Food away from home	143.1	145.5	145.2	145.4	145.5	145.8	146.1	146.3	146.7	147.0	147.3	147.5	147.9	148.2	148.5	
Alcoholic beverages	149.3	151.0	150.9	151.3	151.1	150.7	150.9	151.1	151.3	151.4	151.6	152.0	152.7	153.2	153.4	
Housing	138.5	142.0	141.3	142.1	142.5	143.0	143.0	142.8	142.7	142.7	143.5	144.0	144.3	144.4	144.6	
Shelter	151.6	156.2	155.3	155.8	156.4	157.2	157.4	157.7	157.9	157.7	158.6	159.3	159.9	160.1	160.3	
Renters' costs (12/84=100)	144.7	148.5	147.7	148.4	149.5	150.3	148.9	149.2	148.8	148.5	149.9	151.3	152.3	152.1	152.0	
Rent, residential	150.0	153.7	153.0	153.1	153.6	154.2	154.7	154.9	155.4	155.4	155.7	156.1	156.4	156.7	156.9	
Other renters' costs	190.2	196.6	194.9	199.1	204.2	206.7	194.1	194.4	189.6	187.2	195.3	202.9	208.5	205.8	203.8	
Homeowners' costs (12/84=100)	146.1	150.9	150.0	150.3	150.7	151.5	152.3	152.8	153.1	153.1	153.6	154.0	154.3	154.7	155.1	
Owners' equivalent rent (12/84=100)	146.3	151.1	150.2	150.5	150.9	151.7	152.6	153.0	153.3	153.3	153.8	154.2	154.5	154.9	155.3	
Household insurance (12/84=100)	134.4	139.7	138.1	139.1	140.5	141.4	141.7	141.9	142.4	142.9	143.2	143.4	144.2	144.5	144.6	
Maintenance and repairs	130.9	130.8	130.9	131.5	131.4	131.3	131.8	131.0	131.4	132.4	132.8	133.2	133.7	133.7	134.1	
Maintenance and repair services	138.6	138.1	138.8	139.1	139.1	139.1	139.1	139.4	139.5	140.0	140.3	140.5	140.8	141.7	141.9	
Maintenance and repair commodities	120.7	121.1	120.6	121.4	121.1	120.9	121.6	120.0	120.2	121.9	122.5	123.0	123.1	122.9	123.2	
Fuel and other utilities	121.1	122.5	121.9	124.0	124.0	124.0	123.9	122.0	121.5	121.6	122.5	122.2	121.9	121.6	122.0	
Fuels	110.7	111.1	110.0	113.5	113.6	113.5	113.3	110.2	109.3	109.5	110.1	109.7	109.1	108.4	109.1	
Fuel oil, coal, and bottled gas	90.2	88.7	88.6	87.6	87.0	86.6	86.7	86.9	87.6	88.3	89.3	89.5	88.9	88.3	88.2	
Gas (piped) and electricity	118.0	118.7	117.4	121.5	121.7	121.6	121.5	117.8	116.7	116.8	117.4	116.9</				

31. Continued— Consumer Price Indexes for All Urban Consumers and for Urban Wage Earners and Clerical Workers: U.S. city average, by expenditure category and commodity or service group

(1982-84 = 100, unless otherwise indicated)

Series	Annual average		1994									1995				
	1993	1994	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	
Apparel and upkeep	132.4	132.2	134.3	132.4	129.8	130.2	133.1	133.9	133.0	129.3	128.3	130.0	133.2	133.6	132.1	
Apparel commodities	129.8	129.4	131.6	129.6	126.7	127.2	130.2	131.1	130.1	126.1	125.0	126.8	130.3	130.7	129.1	
Men's and boys' apparel	126.8	125.8	126.5	125.3	124.6	125.3	127.8	128.1	128.4	124.5	123.5	125.2	126.7	126.5	127.8	
Women's and girls' apparel	130.4	129.2	132.7	129.5	124.2	124.5	129.4	131.7	129.1	124.0	121.2	124.3	129.8	130.6	128.1	
Infants' and toddlers' apparel	128.9	129.3	126.2	129.6	130.8	129.9	131.1	130.3	133.2	132.9	130.3	127.0	127.4	127.7	123.9	
Footwear	126.5	126.9	129.5	128.2	125.8	125.3	126.0	126.3	126.1	124.2	124.4	125.3	126.8	127.9	127.4	
Other apparel commodities	145.4	148.7	151.3	148.3	148.3	151.5	151.3	149.9	149.1	144.1	149.1	149.7	154.6	153.5	146.9	
Apparel services	151.2	154.9	154.5	155.0	155.1	155.4	155.9	156.0	155.8	155.9	156.5	156.8	157.1	157.2	157.1	
Transportation	129.4	133.4	131.8	132.9	133.9	135.2	135.3	135.6	136.7	136.7	136.9	137.1	137.6	138.7	140.1	
Private transportation	127.4	131.4	129.8	131.0	132.0	133.3	133.5	133.9	135.1	135.2	135.2	135.4	135.7	136.8	138.3	
New vehicles	133.3	138.3	138.0	138.2	138.3	138.2	138.4	139.2	140.1	140.9	141.2	141.4	141.5	141.9	141.9	
New cars	131.2	135.7	135.4	135.6	135.6	135.3	135.4	136.3	137.3	138.1	138.6	138.7	138.7	139.0	138.9	
Used cars	134.6	142.4	138.6	141.5	143.3	144.7	146.1	148.4	150.8	152.1	153.0	154.0	155.5	157.4	158.4	
Motor fuel	97.9	98.4	96.0	98.2	100.5	104.2	103.7	101.7	102.6	100.2	98.5	97.8	97.3	99.5	104.2	
Gasoline	97.6	98.2	95.6	97.9	100.4	104.3	103.7	101.5	102.5	100.0	98.3	97.5	97.0	99.3	104.3	
Maintenance and repair	146.5	150.9	150.5	150.5	150.8	151.4	151.9	152.4	152.5	152.6	152.7	153.3	153.5	154.0	154.6	
Other private transportation	152.9	157.9	156.6	157.3	157.5	157.8	158.0	160.0	162.0	163.4	164.7	165.4	166.3	166.9	166.5	
Other private transportation commodities	102.8	102.8	102.8	102.8	102.6	102.6	102.4	102.4	103.2	103.5	103.4	103.8	103.8	103.7	103.9	
Other private transportation services	165.0	171.5	169.8	170.7	171.0	171.5	171.8	174.3	176.6	178.4	180.0	180.9	181.9	182.8	182.2	
Public transportation	163.0	167.7	166.4	165.9	167.1	168.7	167.6	164.8	163.8	162.5	164.8	166.5	170.1	172.3	172.5	
Medical care	200.9	210.4	209.1	209.7	210.8	211.5	212.0	213.4	214.0	214.6	215.9	217.3	217.7	218.2	218.7	
Medical care commodities	193.2	198.6	198.2	199.7	199.0	199.5	199.3	199.9	200.6	200.8	200.9	201.3	201.5	201.3	201.0	
Medical care services	202.7	213.0	211.5	212.2	213.4	214.2	214.9	216.4	217.1	217.7	219.3	220.9	221.4	222.0	222.6	
Professional services	185.2	193.4	192.5	193.1	193.9	194.4	194.9	196.0	196.5	196.9	198.1	199.4	200.0	200.5	201.2	
Hospital and related services	229.2	242.7	240.0	241.3	243.2	244.4	245.2	246.9	247.7	248.5	250.5	252.1	252.2	252.8	253.1	
Entertainment	144.1	148.2	148.1	148.0	148.4	148.3	148.6	149.0	149.6	149.2	150.1	150.4	150.6	151.3	151.5	
Entertainment commodities	132.9	135.5	135.7	135.6	136.0	135.9	136.0	136.2	136.6	136.1	136.8	136.8	136.7	137.5	137.5	
Entertainment services	160.5	166.7	166.1	166.2	166.5	166.5	167.0	167.5	168.5	168.3	169.2	170.1	170.6	171.2	171.8	
Other goods and services	192.2	196.4	195.3	195.8	196.3	197.5	198.9	199.4	199.8	200.0	200.5	201.5	201.4	201.7	202.5	
Tobacco products	228.3	220.1	220.6	220.7	221.4	222.1	221.1	221.6	221.2	222.2	222.4	222.9	222.6	223.1	225.4	
Personal care	141.6	144.8	144.7	145.3	145.1	145.2	145.4	145.5	145.9	146.1	146.0	146.4	146.1	146.5	146.8	
Toilet goods and personal care appliances	139.6	142.2	142.4	142.3	142.5	142.6	142.8	143.1	143.5	143.1	143.4	143.4	142.9	143.1	143.7	
Personal care services	143.9	147.9	147.3	149.0	148.2	148.2	148.6	148.6	149.1	149.2	149.5	150.1	150.2	150.7	150.6	
Personal and educational expenses	206.9	219.2	216.6	217.2	217.9	220.2	223.6	224.4	224.9	226.0	226.0	227.5	227.7	227.8	228.0	
School books and supplies	199.2	207.1	205.9	206.4	206.9	207.5	209.8	208.8	208.8	208.5	213.4	213.4	213.6	213.7	213.2	
Personal and educational services	207.8	220.4	217.7	218.4	219.0	221.5	225.0	225.9	226.5	226.5	227.2	228.9	229.0	229.2	229.5	
All items	142.1	145.6	144.9	145.4	145.8	146.5	146.9	147.0	147.3	147.2	147.8	148.3	148.7	149.3	149.6	
Commodities	131.2	133.4	132.9	133.2	133.4	134.1	134.6	134.7	135.0	134.8	134.9	135.3	135.7	136.5	136.9	
Food and beverages	141.2	144.4	143.7	143.8	144.4	144.9	145.1	145.1	145.3	146.6	147.2	147.3	147.3	148.3	148.1	
Commodities less food and beverages	125.0	126.6	126.3	126.6	126.7	127.5	128.1	128.2	128.6	127.6	127.4	127.9	128.6	129.3	130.0	
Nondurables less food and beverages	127.7	127.9	127.9	127.9	127.8	129.1	129.9	129.7	129.7	127.0	127.0	127.6	128.5	129.4	130.5	
Apparel commodities	129.8	129.4	131.6	129.6	126.7	127.2	130.2	131.1	130.1	126.1	125.0	126.8	130.3	130.7	129.1	
Nondurables less food, beverages, and apparel	129.7	130.1	129.0	130.0	131.2	133.0	132.8	132.0	132.4	131.3	130.9	130.8	130.6	131.7	134.2	
Durables	120.1	123.8	123.1	123.8	124.2	124.3	124.4	125.1	126.0	126.5	126.8	127.2	127.5	128.0	128.1	
Services	155.5	160.6	159.6	160.4	160.9	161.6	161.9	162.1	162.3	162.4	163.4	164.1	164.6	164.8	165.1	
Rent of shelter (12/84 = 100)	145.8	150.3	149.4	149.9	150.5	151.3	151.4	151.8	151.9	151.7	152.5	153.3	153.8	154.0	154.2	
Household services less rent of shelter (12/84 = 100)	123.5	125.4	124.8	126.7	126.8	126.9	126.9	125.2	124.7	124.9	126.1	125.8	125.6	125.4	125.9	
Transportation services	160.0	165.7	164.3	164.8	165.2	165.9	166.0	167.2	168.4	169.2	170.6	171.5	172.8	173.8	173.6	
Medical care services	202.7	213.0	211.5	212.2	213.4	214.2	214.9	216.4	217.1	217.7	219.3	220.9	221.4	222.0	222.6	
Other services	174.1	182.4	181.0	181.5	181.8	182.9	184.7	185.3	185.9	185.9	186.6	187.7	188.0	188.3	188.6	
Special indexes:																
All items less food	142.3	145.9	145.2	145.8	146.1	146.8	147.2	147.4	147.7	147.4	147.9	148.5	149.0	149.5	149.9	
All items less shelter	139.7	143.0	142.3	142.8	143.1	143.8	144.2	144.3	144.6	144.6	145.0	145.5	145.9	146.5	146.9	
All items less homeowners' costs (12/84 = 100)	133.9	137.0	136.4	136.9	137.3	137.9	138.1	138.2	138.4	138.4	139.0	139.4	139.9	140.4	140.7	
All items less medical care	139.2	142.6	141.9	142.4	142.7	143.4	143.8	143.8	144.1	144.0	144.6	145.0	145.5	146.0	146.3	
Commodities less food	125.9	127.6	127.3	127.6	127.7	128.4	128.9	129.1	129.4	128.5	128.3	128.8	129.5	130.2	130.9	
Nondurables less food	128.9	129.2	129.2	129.2	129.1	130.3	131.1	130.9	130.8	129.0	128.4	129.0	129.9	130.7	131.8	
Nondurables less food and apparel	130.7	131.2	130.3	131.2	132.2	133.7	133.6	133.0	133.3	132.4	132.0	132.0	131.9	132.9	135.1	
Nondurables	134.7	136.4	136.1	136.1	136.4	137.3	137.8	137.7	137.8	137.4	137.4	137.7	138.2	139.1	139.6	
Services less rent of shelter (12/84 = 100)	147.0	152.1	151.0	152.1	152.5	153.0	153.5	153.4	153.7	154.0	155.2	155.8	156.1	156.4	156.7	
Services less medical care	151.4	156.1	155.1	155.9	156.4	157.1	157.3	157.4	157.6	157.6	158.6	159.3	159.7	160.0	160.2	
Energy	103.6	104.1	102.3	105.1	106.3	108.2	107.8	105.3	105.3	104.2	103.6	103.1	102.5	103.3	106.0	
All items less energy	147.5	151.5	150.9	151.1	151.4	151.9	152.4	152.9	153.2	153.3	154.0	154.6	155.2	155.7	155.7	
All items less food and energy	149.3	153.5	152.9	153.2	153.4	153.9	154.4	155.0	155.3	155.1	155.8	156.6	157.3	157.7	157.8	
Commodities less food and energy	134.3	136.2	136.4	136.3	135.9	136.1	136.9	137.5	137.7	137.1	137.1	137.9	138.8	139.3	139.1	
Energy commodities	97.5	97.8	95.6	97.5	99.6	102.9	102.4	100.6	101.5</							

32. Consumer Price Index: U.S. city average and available local area data: all items

(1982-84 = 100, unless otherwise indicated)

Area ¹	Pricing schedule ²	All Urban Consumers						Urban Wage Earners							
		1994		1995				1994		1995					
		Apr.	May	Jan.	Feb.	Mar.	Apr.	May	Apr.	May	Jan.	Feb.	Mar.	Apr.	May
U.S. city average	M	147.4	147.5	150.3	150.9	151.4	151.9	152.2	144.7	144.9	147.8	148.3	148.7	149.3	149.6
Region and area size³															
Northeast urban	M	154.4	154.2	157.1	157.6	158.0	158.3	158.5	151.8	151.7	154.8	155.2	155.5	155.8	156.1
Size A - More than 1,200,000	M	155.0	154.7	157.7	158.3	158.7	159.0	159.2	151.4	151.1	154.3	154.8	155.1	155.4	155.7
Size B - 500,000 to 1,200,000	M	153.3	152.8	155.4	155.7	155.9	156.3	156.4	151.1	150.8	153.3	153.7	153.9	154.2	154.3
Size C - 50,000 to 500,000	M	152.6	152.7	155.7	156.0	156.6	157.0	157.1	153.9	154.2	157.4	157.6	158.1	158.6	158.8
North Central urban	M	142.9	143.3	146.1	146.7	147.3	148.1	148.3	139.8	140.2	143.0	143.6	144.2	145.0	145.2
Size A - More than 1,200,000	M	144.1	144.5	147.3	148.0	148.5	149.0	149.0	140.3	140.7	143.5	144.2	144.7	145.3	145.2
Size B - 360,000 to 1,200,000	M	142.2	142.0	144.4	145.2	146.1	146.9	147.3	138.5	138.4	140.9	141.8	142.6	143.4	143.9
Size C - 50,000 to 360,000	M	143.7	144.4	147.4	147.7	148.3	149.5	150.0	141.2	141.9	144.9	145.2	145.6	146.9	147.5
Size D - Nonmetropolitan (less than 50,000)	M	137.9	138.8	141.5	142.3	142.7	143.9	144.6	136.4	137.3	139.8	140.4	141.0	142.2	142.9
South urban	M	143.8	144.3	146.7	147.4	148.0	148.4	148.8	142.2	142.8	145.3	145.9	146.5	147.0	147.4
Size A - More than 1,200,000	M	144.4	144.7	146.6	147.3	148.0	148.3	148.7	142.4	142.8	144.8	145.4	146.1	146.4	147.1
Size B - 450,000 to 1,200,000	M	145.5	146.3	148.9	149.6	150.4	150.9	150.8	141.8	142.8	145.6	146.3	146.9	147.4	147.4
Size C - 50,000 to 450,000	M	142.9	143.1	145.7	146.2	146.6	147.3	147.6	142.6	142.8	145.7	146.1	146.5	147.3	147.8
Size D - Nonmetropolitan (less than 50,000)	M	141.3	142.3	145.2	146.1	146.6	147.1	148.0	141.4	142.5	145.6	146.4	146.7	147.3	148.2
West urban	M	148.9	148.8	152.0	152.4	152.8	153.2	153.5	145.9	146.0	149.2	149.4	149.8	150.3	150.6
Size A - More than 1,250,000	M	150.4	150.4	152.9	153.1	153.6	154.0	154.2	145.8	146.0	148.5	148.7	149.1	149.6	149.7
Size C - 50,000 to 330,000	M	148.6	147.8	154.1	155.1	155.2	155.9	156.4	146.3	145.7	151.4	152.2	152.2	152.8	153.8
Size classes:															
A (12/86 = 100)	M	133.9	133.9	136.2	136.7	137.2	137.5	137.7	132.7	132.9	135.3	135.7	136.2	136.6	136.8
B	M	146.8	147.0	149.9	150.5	151.1	151.6	151.8	144.1	144.4	147.3	147.9	148.5	148.9	149.1
C	M	145.8	146.0	149.3	149.8	150.2	151.0	151.4	144.9	145.2	148.6	149.0	149.3	150.2	150.7
D	M	142.1	143.0	145.9	146.6	147.1	147.7	148.5	141.4	142.3	145.2	145.8	146.3	147.0	147.9
Selected local areas															
Chicago, IL-Northwestern IN ...	M	147.9	147.6	151.8	152.3	152.6	153.1	153.0	143.3	143.1	147.1	147.5	147.8	148.3	148.2
Los Angeles-Long Beach, Anaheim, CA	M	152.0	151.4	154.3	154.5	154.6	154.7	155.1	146.6	146.2	149.0	149.2	149.3	149.5	149.8
New York, NY-Northeastern NJ	M	157.7	157.3	159.9	160.3	160.9	161.4	161.8	153.9	153.6	156.3	156.6	157.1	157.5	158.0
Philadelphia, PA-NJ	M	153.1	153.2	156.6	157.8	158.0	157.8	157.8	152.6	152.7	156.4	157.5	157.5	157.4	157.4
San Francisco-Oakland, CA	M	148.0	148.3	150.3	150.5	151.1	151.5	151.3	145.6	146.1	148.2	148.3	148.9	149.4	149.0
Baltimore, MD	1	-	145.8	148.7	-	150.3	-	150.4	-	144.9	147.7	-	149.1	-	149.4
Boston, MA	1	-	153.6	158.0	-	158.4	-	157.7	-	152.2	157.0	-	156.9	-	156.5
Cleveland, OH	1	-	143.7	146.6	-	147.3	-	147.4	-	136.1	139.0	-	139.7	-	139.9
Miami, FL	1	-	143.3	147.3	-	148.7	-	148.6	-	141.2	145.3	-	146.6	-	146.8
St. Louis, MO-IL	1	-	140.0	142.9	-	144.5	-	144.6	-	139.2	142.3	-	143.9	-	144.2
Washington, DC-MD-VA	1	-	151.4	153.8	-	155.1	-	154.7	-	149.2	151.2	-	152.4	-	152.3
Dallas-Ft. Worth, TX	2	140.3	-	-	143.3	-	145.0	-	139.3	-	-	142.7	-	144.5	-
Detroit, MI	2	142.6	-	-	147.3	-	148.1	-	137.9	-	-	142.7	-	143.6	-
Houston, TX	2	136.8	-	-	139.3	-	138.0	-	136.2	-	-	138.9	-	137.6	-
Pittsburgh, PA	2	143.9	-	-	147.3	-	148.9	-	137.4	-	-	141.1	-	142.6	-

¹ Area definitions are those established by the Office of Management and Budget in 1983, except for Boston-Lawrence-Salem, MA-NH, Area (excludes Monroe County); and Milwaukee, WI, Area (includes only the Milwaukee MSA). Definitions do not include revisions made since 1983. Excludes farms and the military.

² Foods, fuels, and several other items priced every month in all areas; most other goods and services priced as indicated.

M - Every month.

1 - January, March, May, July, September, and November.

2 - February, April, June, August, October, and December.

³ Regions are defined as the four Census regions.

- Data not available.

NOTE: Local area CPI indexes are byproducts of the national CPI program. Because each local index is a small subset of the national index, it has a smaller sample size and is, therefore, subject to substantially more sampling and other measurement error than the national index. As a result, local area indexes show greater volatility than the national index, although their long-term trends are quite similar. Therefore, the Bureau of Labor Statistics strongly urges users to consider adopting the national average CPI for use in escalator clauses.

33. Annual data: Consumer Price Index, U.S. city average, all items and major groups

(1982-84 = 100)

Series	1986	1987	1988	1989	1990	1991	1992	1993	1994
Consumer Price Index for All Urban Consumers:									
All items:									
Index	109.6	113.6	118.3	124.0	130.7	136.2	140.3	144.5	148.2
Percent change	1.9	3.6	4.1	4.8	5.4	4.2	3.0	3.0	2.6
Food and beverages:									
Index	109.1	113.5	118.2	124.9	132.1	136.8	138.7	141.6	144.9
Percent change	3.3	4.0	4.1	5.7	5.8	3.6	1.4	2.1	2.3
Housing:									
Index	110.9	114.2	118.5	123.0	128.5	133.6	137.5	141.2	144.8
Percent change	3.0	3.0	3.8	3.8	4.5	4.0	2.9	2.7	2.5
Apparel and upkeep:									
Index	105.9	110.6	115.4	118.6	124.1	128.7	131.9	133.7	133.4
Percent change .....	.9	4.4	4.3	2.8	4.6	3.7	2.5	1.4	-2
Transportation:									
Index	102.3	105.4	108.7	114.1	120.5	123.8	126.5	130.4	134.3
Percent change	-3.9	3.0	3.1	5.0	5.6	2.7	2.2	3.1	3.0
Medical care:									
Index	122.0	130.1	138.6	149.3	162.8	177.0	190.1	201.4	211.0
Percent change	7.5	6.6	6.5	7.7	9.0	8.7	7.4	5.9	4.8
Entertainment:									
Index	111.6	115.3	120.3	126.5	132.4	138.4	142.3	145.8	150.1
Percent change	3.4	3.3	4.3	5.2	4.7	4.5	2.8	2.5	2.9
Other goods and services:									
Index	121.4	128.5	137.0	147.7	159.0	171.6	183.3	192.9	198.5
Percent change	6.0	5.8	6.6	7.8	7.7	7.9	6.8	5.2	2.9
Consumer Price Index for Urban Wage Earners and Clerical Workers:									
All items:									
Index	108.6	112.5	117.0	122.6	129.0	134.3	138.2	142.1	145.6
Percent change	1.6	3.6	4.0	4.8	5.2	4.1	2.9	2.8	2.5

34. Producer Price Indexes, by stage of processing

(1982 = 100)

Grouping	Annual average		1994							1995				
	1993	1994	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
Finished goods	124.7	125.5	125.6	126.0	126.5	125.6	125.8	126.1	126.2	126.6	126.9	126.9	127.6	128.0
Finished consumer goods	125.7	126.8	125.9	126.2	126.6	126.3	126.1	126.9	128.6	127.9	128.3	128.5	128.5	127.9
Finished consumer goods	125.7	126.8	125.9	126.2	126.6	126.3	126.1	126.9	128.6	127.9	128.3	128.5	128.5	127.9
Finished consumer goods excluding foods	121.7	121.6	122.0	122.5	123.4	122.2	122.0	122.3	121.8	122.4	122.6	122.7	123.8	124.7
Nondurable goods less food	117.6	116.2	116.9	117.5	118.7	117.8	116.3	116.7	115.9	116.7	116.9	117.1	118.7	120.0
Durable goods	128.0	130.9	130.8	130.9	131.0	129.2	132.1	132.1	132.2	132.6	132.6	132.4	132.4	132.4
Capital equipment	78.0	77.0	78.3	79.6	81.4	79.6	77.1	77.7	75.9	76.6	76.6	76.4	78.8	80.4
Intermediate materials, supplies, and components	116.2	118.5	118.2	118.7	119.5	120.1	120.0	120.9	121.1	122.5	123.3	123.7	124.7	125.3
Materials and components for manufacturing	118.9	122.1	121.2	121.7	122.5	123.7	124.5	125.5	126.2	128.1	129.1	129.5	130.6	130.8
Materials for food manufacturing	115.6	118.5	118.0	116.2	117.8	118.5	116.8	118.0	117.5	117.8	118.5	119.0	117.1	116.5
Materials for nondurable manufacturing	115.5	119.2	117.1	118.1	119.7	122.3	124.3	125.4	126.7	129.7	131.5	132.4	135.7	136.5
Materials for durable manufacturing	119.1	125.2	124.2	125.1	126.0	127.4	128.5	130.6	131.8	134.6	136.1	136.5	136.8	136.5
Components for manufacturing	123.0	124.3	124.2	124.4	124.3	124.5	124.6	124.8	124.9	125.7	125.9	125.9	126.2	126.3
Materials and components for construction	84.6	83.0	84.2	85.8	87.3	86.5	83.0	83.4	82.2	82.2	82.4	82.3	83.9	85.6
Processed fuels and lubricants	123.8	127.1	126.3	126.7	127.3	128.3	129.2	130.2	130.9	132.6	133.6	134.1	135.2	135.5
Containers	135.8	137.1	137.1	137.1	137.2	136.4	137.8	137.8	138.1	138.7	139.0	139.1	139.4	139.7
Supplies	125.0	127.0	126.9	126.9	126.9	127.2	127.5	127.9	128.4	129.5	129.8	130.4	131.2	131.3
Crude materials for further processing ...	102.4	101.8	103.2	102.2	101.9	99.7	98.2	99.1	100.5	101.5	102.7	102.3	103.9	103.5
Foodstuffs and feedstuffs	108.4	106.5	107.8	103.6	101.8	101.3	98.9	100.4	101.6	102.2	104.0	103.2	101.9	99.5
Crude nonfood materials	76.7	72.1	75.2	75.3	75.6	71.3	70.2	69.3	69.9	69.8	69.8	69.2	72.9	74.1
Special groupings:														
Finished goods, excluding foods	124.4	125.1	125.4	125.8	126.4	125.3	125.6	125.8	125.5	126.2	126.4	126.4	127.3	128.0
Finished energy goods	78.0	77.0	78.3	79.6	81.4	79.6	77.1	77.7	75.9	76.6	76.6	76.4	78.8	80.4
Finished goods less energy	132.9	134.2	133.9	134.0	134.2	133.6	134.5	134.7	135.4	135.7	136.0	136.1	136.3	136.3
Finished consumer goods less energy	133.5	134.2	133.8	133.9	134.1	133.6	134.4	134.7	135.5	135.6	135.9	136.1	136.3	136.3
Finished goods less food and energy	135.8	137.1	137.1	137.1	137.2	136.4	137.8	137.8	138.1	138.7	139.0	139.1	139.4	139.7
Finished consumer goods less food and energy	138.5	139.0	138.9	138.9	139.0	138.2	139.6	139.7	140.0	140.5	140.8	141.0	141.3	141.7
Consumer nondurable goods less food and energy	146.1	144.4	144.3	144.2	144.4	144.6	144.7	144.8	145.2	145.9	146.3	147.0	147.4	148.2
Intermediate materials less foods and feeds	116.4	118.7	118.3	119.0	119.8	120.4	120.4	121.3	121.6	123.0	123.9	124.3	125.4	126.0
Intermediate foods and feeds	112.7	114.8	115.5	113.4	113.6	113.9	112.2	112.1	111.5	111.8	111.8	112.7	111.7	110.7
Intermediate energy goods	84.6	83.0	84.2	85.8	87.3	86.5	83.0	83.4	82.2	82.2	82.4	82.3	83.9	85.6
Intermediate goods less energy	123.2	126.3	125.6	125.9	126.5	127.5	128.2	129.1	129.7	131.4	132.4	132.9	133.8	134.0
Intermediate materials less foods and energy	123.8	127.1	126.3	126.7	127.3	128.3	129.2	130.2	130.9	132.6	133.6	134.1	135.2	135.5
Crude energy materials	76.7	72.1	75.2	75.3	75.6	71.3	70.2	69.3	69.9	69.8	69.8	69.2	72.9	74.1
Crude materials less energy	116.3	119.3	119.1	117.0	116.4	116.4	114.6	117.0	119.1	121.0	123.1	122.9	122.6	120.6
Crude nonfood materials less energy	140.2	156.2	152.4	155.6	157.9	159.2	159.3	164.1	168.4	174.1	177.0	178.3	180.7	179.8

35. Producer price indexes for the net output of major industry groups

(December 1984 = 100, unless otherwise indicated)

Industry	SIC	Annual average		1994							1995				
		1993	1994	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
Total mining industries		76.4	73.3	74.9	74.3	75.0	72.4	71.0	70.5	72.0	72.1	71.4	70.9	73.5	74.3
Metal mining	10	69.7	81.4	81.4	84.9	84.4	87.6	88.3	91.1	94.2	101.9	99.0	101.8	105.0	99.1
Coal mining (12/85=100)	12	93.3	93.2	92.0	92.1	92.7	94.3	95.0	94.9	92.0	88.4	88.5	91.5	94.4	92.1
Oil and gas extraction (12/85=100)	13	76.2	71.1	73.5	72.4	73.3	69.2	67.1	66.2	68.6	68.7	67.9	66.4	69.4	71.2
Mining and quarrying of nonmetallic minerals, except fuels	14	118.8	120.5	120.5	120.5	120.4	120.5	120.7	120.8	120.9	122.4	123.3	123.3	123.1	123.1
Total manufacturing industries		119.1	120.7	120.4	120.9	121.5	121.1	121.5	121.9	121.7	122.6	123.0	123.2	124.0	124.5
Food and kindred products	20	118.7	120.1	119.8	119.7	120.1	119.9	119.6	119.6	119.4	120.2	120.9	121.0	120.2	120.2
Tobacco manufactures	21	218.0	187.8	187.7	187.7	187.7	187.9	187.6	188.1	187.9	188.1	188.8	190.6	190.8	195.3
Textile mill products	22	113.6	113.6	113.5	113.6	113.8	113.8	113.9	114.2	114.3	114.7	115.5	115.7	116.0	116.6
Apparel and other finished products made from fabrics and similar materials	23	119.2	119.7	119.5	119.8	119.7	119.7	119.8	119.7	119.8	120.0	120.1	120.3	120.6	120.5
Lumber and wood products, except furniture	24	148.3	154.4	153.7	152.7	153.3	154.1	153.9	155.9	155.5	155.7	155.5	155.7	155.0	154.6
Furniture and fixtures	25	125.4	129.7	130.1	130.2	130.1	130.3	130.5	130.9	131.0	131.5	131.9	132.1	132.5	132.9
Paper and allied products	26	120.2	123.7	121.6	122.1	123.3	125.5	128.2	130.4	132.8	136.0	138.8	140.8	143.7	145.6
Printing, publishing, and allied industries	27	145.6	149.7	149.2	149.4	149.6	150.3	150.8	151.7	152.4	154.7	155.2	156.0	157.0	157.4
Chemicals and allied products	28	127.2	130.0	128.4	129.2	130.3	132.0	133.6	134.4	136.1	138.4	140.3	141.0	143.3	145.0
Petroleum refining and related products	29	77.6	74.8	74.7	78.0	82.5	79.5	76.2	77.8	73.5	74.3	74.7	74.3	80.6	84.4
Rubber and miscellaneous plastic products	30	115.4	117.1	116.4	116.7	117.0	117.9	118.8	119.5	120.1	121.3	121.4	122.4	123.1	123.2
Leather and leather products	31	129.0	130.6	130.1	130.3	130.6	131.3	131.7	132.1	132.5	133.3	133.8	133.9	134.1	134.4
Stone, clay, glass, and concrete products	32	115.4	119.6	119.8	120.1	120.4	120.7	121.1	121.4	121.6	122.4	122.8	123.6	124.6	124.8
Primary metal industries	33	111.4	117.0	116.0	117.0	117.5	118.7	119.7	121.7	122.9	126.6	128.2	129.1	129.4	129.1
Fabricated metal products, except machinery and transportation equipment	34	118.2	120.3	120.0	120.3	120.6	120.8	121.2	121.6	121.8	122.6	123.8	124.2	124.6	124.7
Machinery, except electrical	35	116.8	117.5	117.5	117.6	117.6	117.7	117.7	117.7	117.8	118.3	118.8	118.9	119.0	119.0
Electrical and electronic machinery, equipment, and supplies	36	112.0	112.7	112.7	112.8	112.7	112.6	112.6	112.6	112.7	113.1	113.4	113.1	113.1	113.4
Transportation equipment	37	126.3	130.1	129.9	130.1	130.1	128.2	131.5	131.2	131.6	132.2	132.2	131.9	132.0	131.8
Measuring and controlling instruments; photographic, medical, optical goods; watches, clocks	38	120.8	122.1	122.1	122.3	122.2	122.0	122.3	122.6	122.6	122.9	123.1	123.4	123.7	123.6
Miscellaneous manufacturing industries (12/85=100)	39	121.5	123.3	123.3	123.5	123.5	123.6	123.6	123.8	124.0	125.0	125.1	125.2	125.5	125.6
Service industries:															
Motor freight transportation and warehousing (06/93=100)	42	-	101.9	101.9	102.1	102.2	102.3	102.7	102.7	102.9	103.1	104.1	104.4	104.6	104.5
U.S. Postal Service (06/89=100)	43	119.8	119.8	119.8	119.8	119.8	119.8	119.8	119.8	119.8	132.1	132.1	132.1	132.1	132.1
Water transportation (12/92=100)	44	99.7	100.0	99.1	99.5	100.1	100.3	102.9	101.4	101.6	102.6	102.6	102.6	101.9	102.2
Transportation by air (12/92=100)	45	105.6	108.5	109.1	109.0	109.0	108.5	108.3	108.1	107.9	108.1	109.7	110.7	110.1	113.6
Pipelines, except natural gas (12/86=100)	46	96.6	102.6	101.0	102.3	102.9	103.0	103.7	106.5	107.0	110.9	110.9	110.9	110.9	110.9

- Data not available.

36. Annual data: Producer Price Indexes, by stage of processing

(1982=100)

Index	1986	1987	1988	1989	1990	1991	1992	1993	1994
Finished goods:									
Total	103.2	105.4	108.0	113.6	119.2	121.7	123.2	124.7	125.5
Foods	107.3	109.5	112.6	118.7	124.4	124.1	123.3	125.7	126.8
Energy	63.0	61.8	59.8	65.7	75.0	78.1	77.8	78.0	77.0
Other	110.6	113.3	117.0	122.1	126.6	131.1	134.2	135.8	137.1
Intermediate materials, supplies, and components:									
Total	99.1	101.5	107.1	112.0	114.5	114.4	114.7	116.2	118.5
Foods	102.2	105.3	113.2	118.1	118.7	118.1	117.9	118.9	122.1
Energy	72.6	73.0	70.9	76.1	85.5	85.1	84.3	84.6	83.0
Other	104.9	107.8	115.2	120.2	120.9	121.4	122.0	123.8	127.1
Crude materials for further processing:									
Total	87.7	93.7	96.0	103.1	108.9	101.2	100.4	102.4	101.8
Foods	93.2	96.2	106.1	111.2	113.1	105.5	105.1	108.4	106.5
Energy	71.8	75.0	67.7	75.9	85.9	80.4	78.8	76.7	72.1
Other	103.1	115.7	133.0	137.9	136.3	128.2	128.4	140.2	156.2

37. U.S. export price indexes by Standard International Trade Classification

(1990 = 100, unless otherwise indicated)

Category	SITC Rev. 3	1994							1995			
		June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.
Food and live animals	0	103.9	102.7	102.6	102.4	103.9	105.2	106.7	105.7	106.6	108.3	111.2
Meat and meat preparations	01	107.3	105.3	105.9	107.7	108.8	112.4	109.0	109.3	108.7	112.4	113.6
Cereals and cereal preparations	04	101.8	95.7	93.7	96.1	99.6	100.8	103.9	102.8	104.6	103.1	106.7
Vegetables, fruit, and nuts, prepared fresh or dry	05	109.6	116.7	117.5	109.6	106.6	109.2	113.3	109.9	109.2	116.8	122.5
Crude materials, inedible, except fuels	2	108.1	109.7	109.4	108.9	108.9	112.7	116.8	120.4	124.3	127.4	130.2
Hides, skins, and furskins, raw	21	94.4	97.9	101.0	103.9	107.2	109.9	110.4	111.2	110.7	109.6	108.3
Oilseeds and oleaginous fruits	22	112.9	104.0	96.0	96.2	87.4	89.5	91.9	91.9	92.0	93.7	96.5
Crude rubber (including synthetic and reclaimed)	23	96.1	99.3	100.8	99.3	102.0	104.5	104.7	109.6	115.8	117.0	121.1
Cork and wood	24	149.4	149.6	149.9	149.1	149.0	151.0	151.5	154.6	157.8	157.3	159.4
Pulp and waste paper	25	94.6	109.6	110.5	105.0	108.6	118.5	126.8	135.5	145.9	155.8	169.6
Textile fibers and their waste	26	105.0	102.7	102.1	101.8	100.2	103.8	110.5	116.2	122.8	132.9	131.0
Crude fertilizers and crude minerals	27	95.6	95.4	95.8	96.2	95.4	96.4	96.4	97.5	97.2	98.4	98.5
Metalliferous ores and metal scrap	28	91.2	95.9	98.7	100.2	104.3	108.9	116.5	119.9	124.4	124.7	125.0
Mineral fuels, lubricants, and related products	3	87.4	89.5	91.0	87.6	87.5	88.2	89.3	89.3	89.4	88.9	90.5
Coal, coke, and briquettes	32	93.9	93.4	93.1	93.3	93.6	93.9	94.1	94.0	94.7	94.7	96.0
Petroleum, petroleum products, and related materials	33	80.3	84.2	87.0	81.1	80.6	81.1	82.8	82.8	82.4	81.8	83.6
Animal and vegetable oils, fats, and waxes	4	110.0	107.4	109.0	116.2	118.1	119.1	132.1	134.7	124.2	121.8	116.1
Chemicals and related products, n.e.s.	5	99.0	100.0	101.5	103.8	106.6	108.1	109.2	112.4	113.8	115.1	116.3
Medicinal and pharmaceutical products	54	108.4	107.7	107.9	107.9	107.6	107.5	107.5	107.5	107.7	108.0	108.1
Essential oils; polishing and cleaning preparations	55	109.2	109.5	109.4	109.7	109.5	109.7	109.4	109.7	110.1	110.4	110.4
Plastics in primary forms (12/92=100)	57	106.5	109.8	113.8	121.5	129.5	132.5	134.0	137.0	138.6	141.5	143.3
Plastics in nonprimary forms (12/92=100)	58	99.5	99.8	100.2	101.4	104.6	104.2	104.8	105.7	106.0	106.5	108.1
Chemical materials and products, n.e.s.	59	108.7	108.5	108.9	109.0	109.2	109.7	110.9	113.1	114.3	113.1	114.3
Manufactured goods classified chiefly by materials	6	104.4	105.3	106.1	106.6	108.0	109.3	110.9	112.1	113.1	113.8	115.1
Rubber manufactures, n.e.s.	62	109.2	109.0	109.3	110.2	110.7	110.3	110.5	111.6	112.6	114.6	114.0
Paper, paperboard, and articles of paper, pulp, and paperboard	64	96.2	98.5	100.3	101.8	105.9	108.2	111.0	115.6	117.1	118.5	123.7
Nonmetallic mineral manufactures, n.e.s.	66	107.3	107.3	107.4	107.6	107.6	107.4	108.6	108.6	108.5	109.3	109.3
Nonferrous metals	68	92.5	95.6	97.6	98.7	102.5	107.1	111.4	113.8	116.1	115.2	116.2
Machinery and transport equipment	7	104.1	104.1	103.8	103.7	103.7	103.8	103.7	104.0	104.2	104.2	104.3
Power generating machinery and equipment	71	112.8	113.1	113.5	113.7	113.6	114.5	114.6	115.1	115.3	114.4	114.5
Machinery specialized for particular industries	72	109.8	109.4	109.3	109.9	109.9	109.9	109.9	110.6	111.1	111.6	112.1
General industrial machines and parts, n.e.s., and machine parts	74	110.1	110.1	110.3	110.5	110.5	110.5	110.5	111.2	111.8	111.8	111.9
Computer equipment and office machines	75	81.0	80.8	78.8	78.8	78.5	78.4	78.1	77.6	77.2	76.9	77.0
Telecommunications and sound recording and reproducing apparatus and equipment	76	107.3	107.5	107.3	106.8	106.7	106.7	106.4	107.1	107.1	106.4	105.9
Electrical machinery and equipment	77	103.2	103.0	103.1	101.8	101.9	101.7	101.5	101.8	101.5	102.3	102.5
Road vehicles	78	106.3	106.5	106.5	106.6	107.2	107.2	107.3	107.4	107.7	107.8	107.8
Professional, scientific, and controlling instruments and apparatus	87	111.6	111.9	111.9	112.5	112.2	113.1	112.6	113.5	113.4	113.2	113.0

38. U.S. import price indexes by Standard International Trade Classification

(1990=100, unless otherwise indicated)

Category	SITC Rev.3	1994					1995				
		Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
Food and live animals	0	118.0	118.8	120.6	118.4	118.7	120.1	116.9	120.6	116.0	117.9
Meat and meat preparations	01	90.7	91.9	91.0	90.9	91.7	90.3	89.7	88.6	86.6	85.1
Fish and crustaceans, mollusks, and other aquatic invertebrates	03	123.6	123.5	126.1	126.5	127.9	125.7	125.6	127.7	127.0	126.0
Cereals and cereal preparations	04	101.7	100.5	102.5	101.9	101.9	101.6	101.5	102.0	93.3	99.4
Vegetables and fruit, prepared fresh or dried	05	99.9	100.1	99.4	100.6	112.6	120.3	110.0	114.4	104.1	111.6
Sugars, sugar preparations, and honey	06	98.8	96.8	97.1	96.7	97.2	98.3	98.8	98.1	99.6	98.4
Coffee, tea, cocoa, spices, and manufactures thereof	07	195.9	202.2	212.0	194.5	172.3	172.2	168.6	183.7	176.6	178.1
Beverages and tobacco	1	113.6	113.4	113.6	113.7	113.5	114.0	113.4	114.4	115.0	114.6
Beverages	11	113.1	113.5	113.6	113.8	113.6	114.2	113.6	114.5	114.7	114.7
Crude materials, inedible, except fuels	2	107.2	108.5	110.4	113.9	114.6	118.9	121.6	121.3	123.1	123.5
Crude rubber (including synthetic and reclaimed)	23	119.6	121.0	134.0	135.7	143.8	159.8	164.8	165.6	170.4	167.3
Cork and wood	24	154.8	155.4	151.3	157.2	149.6	152.7	150.0	143.3	141.1	139.2
Pulp and waste paper	25	76.7	80.1	86.4	90.0	90.7	97.4	97.4	104.7	108.1	109.5
Crude fertilizers	27	82.4	82.3	86.0	86.1	86.6	87.9	87.9	89.6	91.8	97.2
Metalliferous ores and metal scrap	28	90.2	92.3	92.8	94.3	97.2	98.6	101.1	106.6	105.8	105.8
Crude animal and vegetable materials, n.e.s.	29	118.6	118.3	117.4	126.6	139.2	142.8	166.3	140.1	154.7	160.9
Mineral fuels, lubricants, and related products	3	79.2	73.5	73.9	76.9	75.3	76.0	77.8	79.1	82.3	84.9
Petroleum, petroleum products, and related materials	33	78.6	72.6	73.1	76.1	74.5	75.4	77.5	79.0	82.4	85.0
Gas, natural and manufactured	34	86.9	87.4	86.0	87.5	88.3	84.8	81.7	79.1	79.2	81.4
Electrical energy	35	92.4	88.8	86.2	83.3	83.5	82.3	79.9	78.0	77.4	81.1
Animal and vegetable oils, fats, and waxes	4	136.9	140.0	141.6	144.1	155.0	152.2	145.4	151.8	153.6	157.3
Chemicals and related products, n.e.s.	5	103.9	105.7	106.6	107.8	108.8	109.1	110.1	110.8	111.2	113.3
Inorganic chemicals	52	100.7	102.7	105.6	106.8	107.6	108.5	109.4	113.1	112.2	113.2
Dyeing, tanning, and coloring materials	53	102.7	102.5	102.9	103.2	102.9	102.4	103.3	106.4	110.9	109.1
Medicinal and pharmaceutical products	54	120.3	119.7	120.2	121.4	120.5	120.2	120.7	121.4	124.6	128.9
Essential oils; polishing and cleaning preparations	55	110.7	110.5	111.8	112.7	113.4	114.5	115.3	116.8	120.1	124.1
Fertilizers	56	101.0	102.1	105.0	107.0	107.2	108.2	109.7	112.0	113.1	112.8
Plastics in primary forms (12/92=100)	57	103.1	101.6	101.4	102.1	102.9	107.3	107.3	106.8	109.0	110.3
Plastics in nonprimary forms (12/92=100)	58	99.4	102.8	102.1	105.8	107.1	110.0	112.8	115.5	116.5	119.9
Chemical materials and products, n.e.s.	59	103.1	105.2	103.1	103.4	103.7	102.6	103.4	103.8	105.0	105.7
Manufactured goods classified chiefly by material	6	102.4	103.0	103.9	105.4	106.4	107.4	108.8	109.2	110.6	112.0
Rubber manufactures, n.e.s.	62	102.2	101.5	102.5	102.6	102.3	102.4	102.1	102.8	103.7	105.2
Paper, paperboard, and articles of paper pulp, paper, or paperboard	64	97.9	99.4	99.2	101.3	105.2	108.6	109.9	114.3	119.4	125.2
Nonmetallic mineral manufactures, n.e.s.	66	108.9	109.8	109.6	109.9	110.5	110.4	110.7	110.8	111.1	111.3
Nonferrous metals	68	90.0	91.0	95.6	99.1	103.1	105.6	110.8	106.1	105.6	106.0
Manufactures of metals, n.e.s.	69	105.7	106.0	106.2	107.0	106.4	106.3	107.0	108.5	110.0	110.6
Machinery and transport equipment	7	107.4	107.4	108.1	108.2	108.0	107.9	108.2	108.5	109.5	110.2
Machinery specialized for particular industries	72	111.5	111.5	112.0	112.8	112.5	112.3	113.2	114.0	116.0	117.1
General industrial machinery and equipment, n.e.s., and machine parts	74	110.5	110.3	110.9	111.6	111.6	112.1	112.8	113.0	115.8	116.5
Computer equipment and office machines	75	86.0	86.0	85.7	84.5	84.8	84.7	84.6	84.0	84.2	84.1
Telecommunications and sound recording and reproducing apparatus and equipment	76	97.8	97.5	97.6	97.7	97.7	97.4	97.6	97.7	98.8	99.8
Electrical machinery and equipment	77	106.8	106.6	106.9	106.7	106.5	106.4	106.6	106.9	107.6	108.9
Road vehicles	78	113.4	113.5	115.0	115.3	115.1	115.0	115.3	115.8	116.3	116.8
Footwear	85	101.0	101.0	101.0	101.3	101.1	100.7	101.0	101.1	101.5	101.7
Photographic apparatus, equipment, and supplies, and optical goods, n.e.s.	88	110.6	110.8	111.1	110.8	110.6	109.9	110.7	111.0	113.4	115.6

39. U.S. export price indexes by end-use category

(1990 = 100 unless otherwise indicated)

Category	1994					1995				
	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
ALL COMMODITIES	103.6	103.8	104.4	105.1	105.8	106.7	107.3	107.9	108.9	109.2
Foods, feeds, and beverages	101.1	101.3	101.5	102.9	104.7	103.8	104.5	106.0	108.7	109.5
Agricultural foods, feeds, and beverages	100.1	100.3	100.1	101.5	103.4	102.5	102.8	103.9	106.8	107.7
Nonagricultural (fish, beverages) food products	108.2	107.9	112.1	112.8	113.0	113.5	117.1	122.1	123.3	122.6
Industrial supplies and materials	103.5	104.3	106.0	107.9	109.9	112.5	114.1	115.3	117.1	117.8
Agricultural industrial supplies and materials	105.7	107.1	107.7	109.7	114.4	117.7	118.7	122.0	120.6	120.3
Fuels and lubricants	92.9	90.3	90.0	90.6	91.4	91.5	91.6	91.0	92.7	94.1
Nonagricultural supplies and materials, excluding fuel and building materials	101.2	102.6	104.9	107.1	109.2	112.2	114.2	115.5	117.9	119.0
Selected building materials	147.4	147.2	147.3	148.6	149.7	151.4	153.3	153.4	153.5	151.0
Capital goods	103.7	103.7	103.6	103.7	103.6	103.9	104.0	104.2	104.6	104.7
Electric and electrical generating equipment	106.5	106.6	106.7	106.8	106.4	106.9	107.0	107.2	108.1	107.9
Nonelectrical machinery	101.0	100.8	100.6	100.8	100.6	100.9	100.9	101.0	101.4	101.5
Automotive vehicles, parts, and engines	106.6	106.7	107.2	107.2	107.3	107.4	107.7	107.4	107.4	107.5
Consumer goods, excluding automotive	107.9	108.1	108.2	108.3	108.2	108.3	108.8	109.0	109.3	109.5
Nondurables, manufactured	109.9	110.1	110.1	110.2	110.0	110.3	110.9	111.3	111.6	111.8
Durables, manufactured	106.0	106.3	106.5	106.6	106.3	106.3	106.9	106.9	107.2	107.3
Nonmanufactured consumer goods	99.3	98.4	99.3	98.9	100.7	-	-	99.9	.0	.0
Agricultural commodities	101.2	101.7	101.6	103.2	105.7	105.6	106.1	107.7	109.7	110.3
Nonagricultural commodities	104.0	104.2	104.9	105.5	106.0	107.0	107.7	108.1	108.9	109.2

- Data not available.

40. U.S. import price indexes by end-use category

(1990 = 100)

Category	1994					1995				
	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May
ALL COMMODITIES	103.3	102.8	103.5	104.2	104.1	104.4	105.1	105.7	106.7	107.8
Foods, feeds, and beverages	119.0	120.0	121.8	120.1	120.2	121.1	118.7	121.9	118.8	120.2
Agricultural foods, feeds, and beverages	117.2	118.5	120.2	117.7	117.6	119.4	116.2	119.9	115.7	118.0
Nonagricultural (fish, beverages) food products	123.2	123.5	125.3	125.7	126.7	125.1	125.0	126.7	126.3	125.5
Industrial supplies and materials	92.5	90.6	91.5	93.8	93.7	94.8	96.6	97.7	99.8	101.7
Fuels and lubricants	80.0	74.5	74.8	77.7	76.1	77.0	78.7	80.3	83.5	86.1
Petroleum and petroleum products	78.1	72.2	72.8	75.8	74.2	75.1	77.1	78.6	81.9	84.4
Paper and paper base stocks	90.9	93.0	94.7	96.8	100.1	104.7	107.2	112.2	117.1	121.3
Materials associated with nondurable supplies and materials	104.6	106.4	107.5	109.4	110.3	111.5	112.7	113.3	113.8	115.3
Selected building materials	128.4	128.6	126.5	129.8	125.7	125.7	125.2	123.1	122.4	122.0
Unfinished metals associated with durable goods	93.9	95.3	98.1	100.1	102.5	103.8	107.5	106.2	106.8	106.7
Nonmetals associated with durable goods	98.7	98.0	100.4	100.5	100.7	100.8	101.2	103.0	104.4	107.5
Capital goods	104.9	104.8	105.1	105.0	104.9	104.7	105.1	105.2	106.3	107.2
Electric and electrical generating equipment	107.7	107.4	107.7	108.3	108.1	107.9	109.2	109.6	110.9	112.2
Nonelectrical machinery	103.7	103.7	103.9	103.7	103.6	103.4	103.7	103.8	104.9	105.8
Transportation equipment, excluding motor vehicles and spacecraft (12/92 = 100)	104.7	105.2	105.7	105.8	105.3	-	-	-	-	-
Automotive vehicles, parts and engines	111.5	111.6	112.9	113.2	113.0	112.9	113.2	113.6	114.3	115.0
Consumer goods, excluding automobiles	105.9	106.0	106.2	106.4	106.4	106.3	106.8	106.8	107.3	107.9
Nondurables, manufactured	105.8	106.0	106.2	106.5	106.4	106.1	106.4	106.9	107.1	107.7
Durables, manufactured	105.5	105.6	105.6	105.6	105.6	105.6	106.0	106.2	106.6	107.4
Nonmanufactured consumer goods	110.0	110.3	110.6	112.0	113.4	114.0	117.2	112.1	114.1	114.8

- Data not available.

41. U.S. international price indexes for selected categories of services

(1990=100 unless otherwise indicated)

Category	1993				1994				1995
	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.
Air freight (inbound)	100.1	106.4	106.6	106.1	105.9	108.1	108.6	110.4	115.4
Air freight (outbound)	97.3	96.6	95.6	96.4	96.5	96.2	96.2	97.3	98.1
Air passenger fares (U.S. carriers)	109.8	117.2	119.0	111.4	113.1	119.7	121.4	113.8	116.1
Air passenger fares (foreign carriers)	108.0	115.7	117.0	107.2	108.1	114.6	118.1	110.0	113.8
Ocean liner freight (inbound)	104.0	103.5	103.3	102.1	103.4	106.3	106.2	106.6	106.6

42. Indexes of productivity, hourly compensation, and unit costs, quarterly data seasonally adjusted

(1982=100)

Item	Quarterly Indexes										
	1992		1993				1994				1995
	III	IV	I	II	III	IV	I	II	III	IV	I
Business:											
Output per hour of all persons	115.8	116.8	116.2	116.3	117.0	118.4	118.9	118.5	119.5	120.7	121.4
Compensation per hour	156.0	157.7	158.7	159.9	160.6	161.3	163.3	163.6	164.9	166.4	168.0
Real compensation per hour	106.8	107.1	107.0	107.0	107.0	106.6	107.4	106.9	106.8	107.2	107.4
Unit labor costs	134.7	135.1	136.6	137.5	137.3	136.2	137.3	138.1	138.0	137.8	138.4
Unit nonlabor payments	145.8	150.2	149.5	149.6	150.5	154.0	153.4	155.6	157.8	159.0	159.5
Implicit price deflator	138.3	140.1	140.8	141.4	141.6	142.1	142.6	143.8	144.5	144.8	145.3
Nonfarm business:											
Output per hour of all persons	113.9	115.0	114.3	114.5	115.3	116.5	117.0	116.6	117.3	118.6	119.4
Compensation per hour	154.7	156.4	157.2	158.1	158.7	159.3	161.2	161.8	162.9	164.4	166.2
Real compensation per hour	105.9	106.2	105.9	105.8	105.7	105.3	106.0	105.7	105.5	105.9	106.2
Unit labor costs	135.8	136.1	137.4	138.1	137.7	136.8	137.8	138.8	138.8	138.7	139.2
Unit nonlabor payments	147.1	152.1	151.5	151.8	153.6	156.3	155.5	158.3	160.9	161.8	162.3
Implicit price deflator	139.5	141.2	142.0	142.5	142.8	143.1	143.5	145.1	145.9	146.1	146.7
Nonfinancial corporations:											
Output per hour of all employees	119.1	120.6	119.9	121.2	122.2	123.4	124.0	123.8	124.3	125.3	125.9
Compensation per hour	151.5	153.1	153.9	154.4	154.8	155.0	156.5	156.8	157.9	159.1	160.6
Real compensation per hour	103.7	104.0	103.7	103.3	103.1	102.5	102.9	102.4	102.3	102.5	102.7
Total unit costs	124.9	123.8	125.0	124.1	123.6	122.6	123.5	123.4	124.0	123.8	124.3
Unit labor costs	127.2	127.0	128.3	127.3	126.7	125.7	126.2	126.7	127.1	127.0	127.6
Unit nonlabor costs	119.0	115.7	116.8	115.8	115.8	114.8	116.6	115.2	116.2	115.9	116.1
Unit profits	171.0	191.2	183.7	199.4	202.5	220.9	218.2	228.7	228.8	230.3	224.9
Unit nonlabor payments	128.8	129.9	129.4	131.5	132.1	134.8	135.7	136.6	137.4	137.4	136.6
Implicit price deflator	127.7	127.9	128.7	128.7	128.5	128.7	129.4	129.9	130.5	130.4	130.5
Manufacturing:											
Output per hour of all persons	127.6	129.1	130.8	131.3	132.1	133.6	135.4	136.8	138.0	139.3	140.4
Compensation per hour	148.3	150.7	149.9	151.7	152.5	153.3	154.3	153.6	154.5	155.9	157.7
Real compensation per hour	101.6	102.3	101.0	101.5	101.6	101.4	101.4	100.3	100.0	100.4	100.8
Unit labor costs	116.3	116.8	114.6	115.5	115.4	114.7	113.9	112.2	111.9	112.0	112.3

43. Annual indexes of multifactor productivity and related measures, selected years

(1987=100)

Item	1960	1970	1973	1980	1986	1987	1988	1989	1990	1991	1992	1993
Private business:												
Productivity:												
Output per hour of all persons	53.5	74.8	83.0	89.1	99.6	100.0	100.9	101.0	101.9	102.9	105.9	106.6
Output per unit of capital services	116.0	115.1	120.1	105.8	99.7	100.0	101.4	101.3	99.8	96.8	97.9	98.8
Multifactor productivity	70.5	87.2	95.3	96.0	99.8	100.0	100.5	100.3	100.0	99.0	100.5	101.1
Output	37.8	57.4	67.9	79.9	96.7	100.0	104.3	107.0	107.9	106.5	109.3	112.5
Inputs:												
Labor input	66.7	74.2	78.7	86.8	96.8	100.0	104.2	107.2	107.8	106.5	107.5	110.1
Capital services	32.6	49.8	56.6	75.5	97.0	100.0	102.9	105.6	108.2	110.0	111.6	113.8
Combined units of labor and capital input	53.4	65.7	71.1	83.1	96.8	100.0	103.7	106.7	107.8	107.5	108.6	-
Capital per hour of all persons	46.3	64.9	69.2	84.2	99.8	100.0	99.6	99.7	102.1	106.1	107.9	-
Private nonfarm business:												
Productivity:												
Output per hour of all persons	57.7	77.3	85.6	90.6	99.8	100.0	100.9	100.7	101.3	102.5	105.1	105.9
Output per unit of capital services	122.6	120.5	125.3	108.2	100.0	100.0	101.3	100.9	99.1	96.0	96.8	97.8
Multifactor productivity	74.9	89.9	98.1	97.7	100.0	100.0	100.5	99.9	99.4	98.5	99.6	100.3
Output	37.4	57.4	68.3	80.2	96.7	100.0	104.5	107.1	107.8	106.4	108.9	112.4
Inputs:												
Labor input	61.4	72.0	76.9	85.7	96.6	100.0	104.4	107.6	108.3	106.8	108.0	110.9
Capital services	30.5	47.7	54.5	74.2	96.7	100.0	103.2	106.1	108.8	110.8	112.6	115.0
Combined units of labor and capital input	49.7	63.8	69.4	82.0	96.6	100.0	103.9	107.1	108.4	107.9	109.2	-
Capital per hour of all persons	47.1	64.0	68.3	83.8	99.8	100.0	99.6	99.9	102.3	106.6	108.5	-

- Data not available.

NOTE: Productivity and output in this table have not been revised for

consistency with the December 1991 comprehensive revisions to the National Income and Product Accounts.

44. Annual indexes of productivity, hourly compensation, unit costs, and prices, selected years

(1982=100)

Item	1960	1970	1973	1983	1985	1987	1988	1989	1990	1991	1992	1993	1994
Business:													
Output per hour of all persons	65.6	87.0	95.1	102.3	106.3	109.6	110.7	109.9	110.7	112.1	115.5	117.0	119.7
Compensation per hour	21.1	36.7	45.1	103.8	113.2	123.1	128.5	133.0	140.6	147.4	154.9	160.1	165.1
Real compensation per hour	68.8	91.3	98.1	100.6	101.5	104.6	104.8	103.5	103.8	104.4	106.6	106.9	107.5
Unit labor costs	32.2	42.2	47.5	101.5	106.5	112.3	116.0	121.0	127.1	131.5	134.2	136.9	137.9
Unit nonlabor payments	33.6	42.7	52.1	107.5	120.8	125.5	130.6	136.6	139.8	144.9	148.3	150.9	156.3
Implicit price deflator	32.6	42.4	49.0	103.4	111.2	116.6	120.8	126.1	131.2	135.9	138.8	141.5	143.9
Nonfarm business:													
Output per hour of all persons	69.9	88.5	96.4	102.5	105.6	108.6	109.6	108.6	109.1	110.7	113.7	115.2	117.7
Compensation per hour	22.2	37.0	45.4	104.0	112.8	122.5	127.7	132.0	139.2	146.2	153.7	158.3	163.1
Real compensation per hour	72.4	92.0	98.7	100.8	101.1	104.1	104.2	102.7	102.8	103.6	105.7	105.7	106.2
Unit labor costs	31.8	41.8	47.1	101.5	106.8	112.8	116.5	121.5	127.6	132.1	135.2	137.5	138.6
Unit nonlabor payments	33.3	43.0	49.6	109.2	121.6	126.6	131.8	137.1	140.6	146.5	149.7	153.4	159.1
Implicit price deflator	32.3	42.2	47.9	104.0	111.6	117.2	121.4	126.5	131.8	136.7	139.9	142.6	145.2
Nonfinancial corporations:													
Output per hour of all employees	75.3	90.3	95.0	103.8	106.5	111.2	113.3	111.5	112.7	115.0	118.5	121.8	124.8
Compensation per hour	23.6	38.4	46.6	103.4	112.0	120.9	125.9	130.2	137.1	143.8	150.4	154.6	158.2
Real compensation per hour	77.0	95.4	101.2	100.2	100.4	102.7	102.7	101.3	101.3	101.9	103.5	103.3	103.0
Total unit costs	29.5	40.5	46.5	99.5	103.7	107.0	109.8	115.7	120.1	123.7	124.4	123.8	123.7
Unit labor costs	31.4	42.5	49.0	99.6	105.2	108.8	111.1	116.8	121.7	125.0	126.9	127.0	126.7
Unit nonlabor costs	24.8	35.5	40.2	99.3	100.1	102.5	106.4	112.9	116.3	120.5	118.0	115.8	116.0
Unit profits	75.1	69.5	87.9	135.9	168.1	172.1	183.5	168.5	167.5	164.7	177.2	201.9	226.5
Unit nonlabor payments	34.2	41.9	49.2	106.2	112.9	115.6	120.9	123.3	125.9	128.8	129.1	132.0	136.8
Implicit price deflator	32.3	42.3	49.1	101.8	107.7	111.0	114.3	119.0	123.1	126.3	127.7	128.6	130.0
Manufacturing:													
Output per hour of all persons	-	-	-	102.2	106.7	116.6	119.2	119.9	122.1	124.9	127.5	132.0	137.4
Compensation per hour	-	-	-	102.7	111.3	118.4	123.1	127.9	134.7	141.9	147.9	152.0	154.5
Real compensation per hour	-	-	-	99.5	99.8	100.6	100.4	99.5	99.5	100.5	101.7	101.5	100.6
Unit labor costs	-	-	-	100.5	104.2	101.6	103.2	106.7	110.4	113.7	116.0	115.1	112.5
Unit nonlabor payments	-	-	-	113.5	120.1	134.5	147.4	153.3	153.7	157.0	157.0	160.8	-
Implicit price deflator	-	-	-	103.8	108.2	109.8	114.3	118.4	121.2	124.5	126.3	126.5	-

- Data not available.

45. Annual indexes of output per hour for selected industries

(1987=100)

Industry	SIC	1973	1979	1985	1986	1987	1988	1989	1990	1991
Iron mining, usable ore	101	151.7	151.8	176.6	179.6	100.0	103.7	99.5	90.0	87.0
Copper mining, recoverable metal	102	142.4	148.5	193.6	109.7	100.0	109.8	107.8	104.5	102.9
Coal mining	12	168.9	154.5	185.1	192.4	100.0	110.6	116.5	118.5	122.1
Crude petroleum and natural gas	131	1173.5	1110.3	183.0	190.3	100.0	101.0	98.1	97.0	98.1
Nonmetallic minerals, except fuels	14	186.5	192.6	195.1	195.1	100.0	102.2	101.9	108.3	103.6
Meatpacking plants	2011	165.1	175.0	198.3	198.7	100.0	99.5	92.2	92.9	94.9
Sausages and other prepared meats	2013	167.2	192.8	197.8	198.6	100.0	105.6	99.8	93.6	90.8
Poultry dressing and processing	2015	158.0	181.7	100.5	195.6	100.0	95.9	101.2	107.7	114.2
Cheese, natural and processed	2022	156.6	179.8	194.7	101.1	100.0	106.4	104.3	101.1	98.9
Fluid milk	2026	149.5	162.7	188.3	194.0	100.0	103.9	106.7	108.0	110.7
Canned fruits and vegetables	2033	166.0	174.0	193.0	198.4	100.0	100.2	92.5	96.2	103.4
Frozen fruits and vegetables	2037	180.1	186.6	197.0	104.9	100.0	95.1	98.9	92.3	98.7
Flour and other grain mill products	2041	168.5	180.5	195.8	195.9	100.0	102.0	101.6	107.0	107.4
Cereal breakfast foods	2043	165.6	174.2	197.1	198.6	100.0	98.6	96.0	102.0	105.3
Rice milling	2044	159.3	169.3	168.6	172.7	100.0	83.8	98.6	106.9	101.1
Wet corn milling	2046	124.1	147.1	174.6	197.3	100.0	96.6	103.0	104.7	100.1
Prepared feeds for animals and fowls	2047,48	151.6	166.5	196.9	195.2	100.0	101.2	103.1	106.6	107.2
Bakery products	2051,52	182.3	183.8	195.6	100.1	100.0	93.8	93.2	96.2	92.9
Raw and refined cane sugar	2061,62	176.7	196.4	196.6	196.9	100.0	97.5	97.4	100.9	101.3
Beet sugar	2063	175.9	178.3	173.4	180.8	100.0	95.3	87.9	91.1	93.4
Malt beverages	2082	143.3	163.8	173.7	185.1	100.0	99.1	102.0	110.9	110.1
Bottled and canned soft drinks	2086	149.2	164.4	185.2	191.4	100.0	109.9	119.3	126.7	135.1
Fresh or frozen fish and seafood	2092	193.2	193.8	188.0	191.2	100.0	99.2	92.9	87.1	84.8
Cigarettes, chewing and smoking tobacco	211,3	179.4	190.3	193.5	195.3	100.0	106.8	107.3	112.9	119.2
Cotton and synthetic broadwoven fabrics	221,2	158.1	175.6	193.4	199.0	100.0	100.3	104.5	109.3	115.2
Hosiery	2251,52	163.2	193.3	100.9	102.5	100.0	107.0	108.4	106.0	111.3
Yarn spinning mills	2281	155.9	168.3	189.6	193.2	100.0	98.6	103.6	106.7	106.3
Men's and boys' suits and coats	231	175.6	195.9	106.3	103.5	100.0	102.5	101.9	98.8	91.3
Sawmills and planing mills, general	2421	168.3	173.3	193.5	102.3	100.0	101.7	101.0	101.5	105.0
Hardwood dimension and flooring	2426	184.0	183.0	195.1	198.8	100.0	97.4	96.5	95.4	98.2
Millwork	2431	1104.2	195.4	197.4	102.2	100.0	98.3	97.7	97.9	95.8
Wood kitchen cabinets	2434	180.5	189.1	187.1	185.2	100.0	97.8	91.0	93.7	92.6
Hardwood veneer and plywood	2435	180.2	179.6	184.5	183.2	100.0	98.3	97.4	90.2	90.7
Softwood veneer and plywood	2436	167.7	165.6	188.3	190.4	100.0	100.3	102.0	107.3	113.0
Wood containers	244	-	172.9	199.6	198.7	100.0	103.4	108.9	112.0	114.2
Wood household furniture	2511,17	191.2	190.4	193.3	100.2	100.0	101.0	100.1	98.8	100.2
Upholstered household furniture	2512	171.9	182.8	198.6	100.6	100.0	99.8	101.0	98.5	103.4
Metal household furniture	2514	175.6	172.5	198.8	101.7	100.0	100.6	100.0	103.9	107.3
Mattresses and bedsprings	2515	171.6	186.2	177.2	183.1	100.0	99.2	105.0	105.7	110.3
Wood office furniture	2521	182.5	1117.0	199.4	196.2	100.0	94.8	94.2	95.8	99.1
Office furniture, except wood	2522	170.6	176.7	196.9	100.6	100.0	96.0	99.0	95.7	93.0
Pulp, paper, and paperboard mills	261,2,3	167.1	177.3	187.6	193.3	100.0	102.9	103.2	102.1	101.5
Corrugated and solid fiber boxes	2653	170.3	187.2	199.6	102.8	100.0	99.6	97.7	100.3	100.0
Folding paperboard boxes	2657	186.4	190.7	190.0	188.5	100.0	99.6	101.1	99.4	102.8
Paper and plastic bags	2673,74	190.7	194.1	199.7	101.8	100.0	97.4	93.6	91.4	88.6
Alkalies and chlorine	2812	138.4	150.8	170.8	197.7	100.0	100.9	92.6	90.7	84.0
Inorganic pigments	2816	172.6	167.8	184.4	188.6	100.0	101.2	107.3	102.5	96.3
Industrial inorganic chemicals, not elsewhere classified	2819 pt.	190.6	191.5	187.3	188.6	100.0	96.8	104.3	106.8	99.0
Synthetic fibers	2823,24	138.4	170.9	179.3	190.8	100.0	102.7	103.5	98.3	97.1
Soaps and detergents	2841	189.1	191.0	191.5	192.3	100.0	103.4	110.7	132.1	131.7
Cosmetics and other toiletries	2844	188.6	193.6	190.3	196.6	100.0	105.0	101.6	100.8	103.4
Paints and allied products	285	163.2	179.8	196.9	198.0	100.0	103.0	106.6	111.4	111.2
Industrial organic chemicals, not elsewhere classified	2869	173.1	193.0	187.8	192.3	100.0	110.7	109.9	99.5	93.2
Nitrogenous fertilizers	2873	165.4	172.7	100.7	190.5	100.0	101.7	105.4	108.9	110.1
Phosphatic fertilizers	2874	162.4	168.3	184.2	179.6	100.0	93.4	85.6	104.5	114.5
Fertilizers, mixing only	2875	190.5	1110.9	100.8	195.1	100.0	103.4	110.8	108.7	109.3
Agricultural chemicals, not elsewhere classified	2879	174.3	183.6	192.9	193.2	100.0	108.4	108.9	106.2	102.8
Petroleum refining	291	184.0	182.6	184.7	194.9	100.0	105.3	109.6	109.1	106.7
Tires and inner tubes	301	156.0	163.9	189.3	192.6	100.0	104.6	107.2	108.3	109.5
Rubber and plastics hose and belting	3052	179.3	180.6	100.5	102.2	100.0	107.3	96.3	100.9	93.0
Miscellaneous plastic products, not elsewhere classified	308	172.8	174.3	188.2	188.9	100.0	98.4	97.5	100.4	100.9
Footwear	314	189.9	194.5	199.9	101.7	100.0	102.4	101.4	93.0	93.3
Glass containers	3221	175.2	183.8	193.4	198.5	100.0	101.1	104.8	112.5	114.9
Cement, hydraulic	324	171.3	168.7	191.8	197.1	100.0	103.3	110.1	112.5	108.3
Clay construction products	3251,53,59	178.5	179.0	194.2	195.5	100.0	103.9	96.7	100.5	95.1
Clay refractories	3255	180.1	193.9	194.9	100.8	100.0	101.3	97.3	102.2	96.2
Concrete products	3271,72	192.5	191.3	199.5	104.4	100.0	102.3	105.2	104.6	105.9
Ready-mixed concrete	3273	199.1	196.2	193.7	196.1	100.0	100.3	101.0	99.7	96.1
Steel	331	164.2	165.9	185.8	189.7	100.0	113.4	108.5	110.5	108.1
Gray and ductile iron foundries	3321	191.3	192.4	196.9	199.3	100.0	106.8	104.1	104.1	99.3
Steel foundries	3324,25	1105.8	1104.5	199.5	104.9	100.0	95.3	96.6	95.9	93.2
Primary copper	3331	132.8	141.1	173.8	188.7	100.0	103.7	96.8	86.3	84.7
Primary aluminum	3334	173.6	174.7	197.6	102.7	100.0	102.2	104.6	106.3	110.3
Copper rolling and drawing	3351	177.5	182.0	186.2	192.3	100.0	100.0	94.1	93.9	96.9
Aluminum rolling and drawing	3353,54,55	179.0	184.3	185.7	195.8	100.0	96.9	91.2	92.4	92.0

See footnotes at end of table.

45. Continued—Annual indexes of output per hour for selected industries

(1987 = 100)

Industry	SIC	1973	1979	1985	1986	1987	1988	1989	1990	1991
Metal cans	3411	1 59.2	1 75.2	1 99.2	1 95.9	1 100.0	1 107.4	1 109.0	1 119.1	1 126.0
Hand and edge tools, not elsewhere classified	3423	1 108.6	1 111.6	1 98.8	1 97.1	1 100.0	1 100.9	1 102.1	1 96.4	1 95.0
Heating equipment, except electric	3433	1 78.0	1 86.2	1 91.9	1 96.2	1 100.0	1 112.7	1 103.2	1 111.2	1 115.4
Fabricated structural metal	3441	1 98.1	1 86.0	1 98.6	1 98.8	1 100.0	1 98.9	1 94.7	1 96.8	1 98.3
Metal doors, sash, and trim	3442	1 90.5	1 92.6	1 104.8	1 102.0	1 100.0	1 102.4	1 101.5	1 97.0	1 94.7
Bolts, nuts, rivets, and washers	3452	1 75.8	1 78.9	1 88.8	1 91.0	1 100.0	1 97.0	1 93.8	1 93.7	1 96.2
Automotive stampings	3465	1 74.9	1 81.4	1 94.5	1 95.7	1 100.0	1 104.5	1 104.7	1 100.8	1 104.2
Metal stampings, not elsewhere classified	3469	1 96.8	1 100.2	1 88.6	1 93.9	1 100.0	1 99.6	1 98.3	1 95.1	1 96.3
Valves and pipe fittings	3491,92,94	1 93.6	1 95.7	1 94.4	1 93.9	1 100.0	1 101.3	1 101.0	1 101.9	1 101.2
Fabricated pipe and fittings	3498	1 140.8	1 116.0	1 120.0	1 121.4	1 100.0	1 99.2	1 101.7	1 106.5	1 113.3
Internal combustion engines, not elsewhere classified	3519	1 83.1	1 86.4	1 92.0	1 98.5	1 100.0	1 105.1	1 110.9	1 105.0	1 98.9
Farm machinery and equipment	3523	1 108.6	1 112.6	1 101.6	1 95.7	1 100.0	1 112.5	1 123.1	1 130.6	1 123.6
Lawn and garden equipment	3524	1 70.0	1 83.3	1 82.4	1 93.2	1 100.0	1 97.2	1 91.9	1 93.4	1 94.5
Construction machinery	3531	1 87.9	1 91.5	1 92.2	1 99.1	1 100.0	1 107.2	1 109.7	1 108.9	1 98.2
Mining machinery	3532	1 102.2	1 89.3	1 93.7	1 95.1	1 100.0	1 102.2	1 107.3	1 99.0	1 90.7
Oil and gas field machinery	3533	1 105.9	1 100.6	1 92.3	1 95.0	1 100.0	1 99.3	1 104.6	1 107.4	1 109.2
Metal-cutting machine tools	3541	1 101.4	1 100.9	1 89.9	1 92.0	1 100.0	1 96.1	1 101.2	1 103.1	1 100.2
Metal-forming machine tools	3542	1 112.5	1 98.5	1 93.1	1 93.7	1 100.0	1 113.8	1 109.9	1 100.6	1 91.9
Machine tool accessories	3545	1 105.9	1 100.6	1 92.3	1 95.0	1 100.0	1 99.3	1 104.6	1 107.4	1 109.2
Pumps and pumping equipment	3561,94	1 84.0	1 91.4	1 91.9	1 92.7	1 100.0	1 107.3	1 101.4	1 103.4	1 102.6
Ball and roller bearings	3562	1 108.0	1 110.2	1 91.6	1 94.1	1 100.0	1 102.4	1 98.2	1 92.1	1 88.3
Air and gas compressors	3563	1 87.6	1 86.1	1 92.2	1 96.0	1 100.0	1 104.1	1 106.1	1 109.2	1 111.8
Refrigeration and heating equipment	3585	1 100.3	1 98.8	1 98.1	1 95.8	1 100.0	1 103.5	1 105.7	1 104.6	1 102.6
Carburetors, pistons, rings, and valves	3592	1 102.9	1 82.0	1 98.9	1 95.7	1 100.0	1 108.8	1 117.1	1 110.9	1 110.7
Transformers, except electronic	3612	1 100.2	1 109.8	1 97.0	1 99.3	1 100.0	1 102.9	1 103.9	1 107.8	1 111.4
Switchgear and switchboard apparatus	3613	1 88.2	1 87.5	1 95.1	1 95.9	1 100.0	1 109.5	1 106.6	1 107.8	1 105.7
Motors and generators	3621	1 89.0	1 89.7	1 94.9	1 96.8	1 100.0	1 103.3	1 103.8	1 102.4	1 106.4
Household cooking equipment	3631	1 61.8	1 79.1	1 90.3	1 104.6	1 100.0	1 116.4	1 99.4	1 100.1	1 106.2
Household refrigerators and freezers	3632	1 70.1	1 86.8	1 104.1	1 101.2	1 100.0	1 103.1	1 106.9	1 107.4	1 112.3
Household laundry equipment	3633	1 72.3	1 84.7	1 93.8	1 97.4	1 100.0	1 106.6	1 100.8	1 104.8	1 111.4
Household appliances, not elsewhere classified	3639	1 63.7	1 76.1	1 86.3	1 89.1	1 100.0	1 101.0	1 98.4	1 91.9	1 81.1
Electric lamps	3641	1 61.3	1 76.1	1 94.2	1 91.5	1 100.0	1 101.1	1 86.2	1 91.4	1 97.0
Lighting fixtures and equipment	3645,46,47,48	1 84.1	1 86.2	1 96.7	1 103.0	1 100.0	1 98.3	1 97.2	1 96.5	1 94.7
Household audio and video equipment	3651	1 22.3	1 39.1	1 96.3	1 106.9	1 100.0	1 107.3	1 122.3	1 128.4	1 142.0
Motor vehicles and equipment	371	1 68.7	1 77.7	1 95.3	1 95.1	1 100.0	1 103.2	1 103.3	1 102.5	1 96.9
Aircraft	3721	1 79.2	1 98.6	1 94.2	1 93.5	1 100.0	1 104.8	1 108.2	1 109.8	1 126.7
Instruments to measure electricity	3825	1 63.7	1 70.8	1 95.4	1 90.4	1 100.0	1 106.6	1 109.6	1 108.2	1 111.5
Photographic equipment and supplies	386	1 58.9	1 79.0	1 86.1	1 94.1	1 100.0	1 106.8	1 115.7	1 111.7	1 115.6
Railroad transportation, revenue traffic	4011	1 49.3	1 54.0	1 79.8	1 86.1	1 100.0	1 109.3	1 115.4	1 122.6	1 128.1
Bus carriers, class 1	411,13,14 pts.	1 116.8	1 108.3	1 96.1	1 95.6	1 100.0	1 107.9	1 104.6	-	-
Trucking, except local	4213	1 69.5	1 83.9	1 93.8	1 96.8	1 100.0	1 105.2	1 109.4	-	-
Air transportation	4512,13,22 pts.	1 54.3	1 75.5	1 92.0	1 93.8	1 100.0	1 99.5	1 95.1	1 92.2	1 92.5
Petroleum pipelines	4612,13	1 93.2	1 96.9	1 99.9	1 102.0	1 100.0	1 104.8	1 103.2	1 102.5	1 99.1
Telephone communications	481	1 46.2	1 68.7	1 92.6	1 98.1	1 100.0	1 107.8	1 113.4	1 115.1	1 121.8
Electric utilities	491,493 pt.	1 88.4	1 95.3	1 93.0	1 95.2	1 100.0	1 104.9	1 107.7	1 110.0	1 113.3
Gas utilities	492,493 pt.	1 145.5	1 141.4	1 111.9	1 102.1	1 100.0	1 105.5	1 103.6	1 95.0	1 94.2
Scrap and waste materials	5093	-	1 81.1	1 93.4	1 97.7	1 100.0	1 94.3	1 87.8	1 92.2	1 93.1
Hardware stores	525	1 83.3	1 97.5	1 95.6	1 101.6	1 100.0	1 108.7	1 115.4	1 110.5	1 102.5
Department stores	531	1 60.8	1 74.0	1 92.6	1 97.4	1 100.0	1 99.4	1 97.4	1 94.8	1 99.2
Variety stores	533	1 148.9	1 123.3	1 129.2	1 106.7	1 100.0	1 97.3	1 113.7	1 132.1	1 130.2
Grocery stores	541	1 109.1	1 106.8	1 105.7	1 103.8	1 100.0	1 98.6	1 95.8	1 94.8	1 94.0
Retail bakeries	546	1 125.6	1 112.3	1 87.6	1 93.6	1 100.0	1 94.2	1 87.3	1 84.8	1 90.0
New and used car dealers	551	1 85.1	1 86.3	1 99.8	1 101.6	1 100.0	1 102.7	1 103.8	1 107.1	1 105.6
Auto and home supply stores	553	1 71.1	1 80.1	1 94.5	1 94.3	1 100.0	1 106.5	1 108.9	1 114.2	1 114.6
Gasoline service stations	554	1 59.5	1 73.7	1 93.5	1 101.8	1 100.0	1 102.4	1 104.0	1 101.0	1 102.0
Men's and boys' clothing stores	561	1 77.6	1 82.3	1 98.3	1 100.7	1 100.0	1 102.6	1 102.3	1 101.6	1 102.0
Women's clothing stores	562	1 58.9	1 72.8	1 99.8	1 107.0	1 100.0	1 99.4	1 102.9	1 106.7	1 110.1
Family clothing stores	565	1 76.2	1 75.4	1 103.1	1 103.3	1 100.0	1 101.3	1 103.2	1 101.5	1 102.3
Shoe stores	566	1 81.3	1 90.9	1 97.6	1 105.5	1 100.0	1 102.7	1 107.3	1 106.3	1 105.5
Furniture and home furnishings stores	571	1 83.9	1 91.0	1 94.8	1 101.2	1 100.0	1 99.5	1 102.6	1 104.3	1 104.2
Household appliance stores	572	1 59.8	1 72.9	1 94.9	1 106.5	1 100.0	1 101.1	1 108.7	1 111.2	1 117.4
Radio, television, and computer stores	573	1 45.6	1 53.0	1 89.3	1 94.1	1 100.0	1 122.2	1 122.0	1 131.4	1 146.2
Eating and drinking places	581	1 110.3	1 106.6	1 96.2	1 99.3	1 100.0	1 102.6	1 101.9	1 103.1	1 104.5
Drug and proprietary stores	591	1 92.2	1 101.8	1 102.5	1 101.6	1 100.0	1 102.0	1 102.8	1 104.1	1 105.5
Liquor stores	592	1 95.0	1 90.2	1 101.9	1 93.8	1 100.0	1 99.9	1 104.7	1 110.6	1 112.3
Commercial banks	602	1 81.2	1 84.1	1 94.3	1 96.2	1 100.0	1 103.4	1 102.2	1 108.6	1 112.3
Hotels and motels	701	1 102.4	1 109.7	1 101.2	1 98.9	1 100.0	1 95.8	1 91.4	1 90.6	1 91.3
Laundry, cleaning, and garment services	721	1 110.8	1 109.9	1 103.3	1 100.8	1 100.0	1 97.1	1 98.6	1 99.0	1 96.6
Beauty shops	723	1 85.9	1 89.4	1 96.1	1 96.9	1 100.0	1 93.3	1 96.0	1 91.3	1 87.6
Automotive repair shops	753	1 109.3	1 105.0	1 99.4	1 96.1	1 100.0	1 105.6	1 107.8	1 106.3	1 99.9

1 Revised.

- Data not available.

46. Unemployment rates, approximating U.S. concepts, in nine countries, quarterly data seasonally adjusted

Country	Annual average		1993		1994				1995
	1993	1994	III	IV	I	II	III	IV	I
United States ¹	6.8	6.1	6.7	6.5	6.6	6.2	6.0	5.6	5.5
Canada	11.2	10.4	11.4	11.2	11.0	10.6	10.2	9.8	9.7
Australia	10.9	9.7	10.9	10.8	10.4	10.0	9.5	9.1	8.9
Japan	2.5	2.9	2.6	2.8	2.8	2.9	3.0	2.9	3.0
France	11.8	12.3	12.0	12.2	12.3	12.3	12.3	12.3	12.1
Germany	5.8	6.5	5.9	6.2	6.4	6.5	6.5	6.5	6.4
Italy ²	10.3	11.4	10.5	11.0	11.0	11.6	11.1	11.8	12.2
Sweden ³	9.3	7.8	9.2	8.2	8.2	7.6	8.4	7.2	7.7
United Kingdom	10.4	9.5	10.5	10.1	9.9	9.7	9.5	9.0	8.7

¹ Data for 1994 are not directly comparable with data for 1993 and earlier years. For additional information, see the box note under "Employment and Unemployment Data" in the notes to this section.

² Quarterly rates are for the first month of the quarter. Break in series beginning in 1993.

³ Break in series beginning in 1993. Data for 1993 on-

ward are not seasonally adjusted.

NOTE: Quarterly figures for France, Germany, and the United Kingdom are calculated by applying annual adjustment factors to current published data and therefore should be viewed as less precise indicators of unemployment under U.S. concepts than the annual figures. See "Notes on the data" for information on breaks in series.

47. Annual data: Employment status of the working-age population, approximating U.S. concepts, 10 countries

(Numbers in thousands)

Employment status and country	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Civilian labor force										
United States ¹	115,461	117,834	119,865	121,669	123,869	124,787	125,303	126,982	128,040	131,056
Canada	13,123	13,378	13,631	13,900	14,151	14,329	14,408	14,482	14,663	14,832
Australia	7,300	7,588	7,758	7,974	8,228	8,444	8,490	8,562	8,619	8,776
Japan	58,820	59,410	60,050	60,860	61,920	63,050	64,280	65,400	65,470	65,780
France	23,620	23,760	23,890	23,980	24,170	24,300	24,490	24,560	24,630	24,890
Germany	28,020	28,240	28,390	28,610	28,840	29,410	29,760	30,040	29,960	29,840
Italy	21,800	22,290	22,350	22,660	22,530	22,670	22,940	22,910	22,570	22,450
Netherlands	6,250	6,380	6,500	6,530	6,640	6,770	6,870	6,970	7,070	-
Sweden	4,418	4,443	4,437	4,494	4,552	4,597	4,591	4,520	4,443	4,418
United Kingdom	27,210	27,380	27,720	28,150	28,420	28,540	28,400	28,230	28,150	-
Participation rate²										
United States ¹	64.8	65.3	65.6	65.9	66.5	66.4	66.0	66.3	66.2	66.6
Canada	65.8	66.3	66.7	67.2	67.5	67.3	66.7	65.9	65.5	65.3
Australia	61.6	62.8	63.0	63.3	64.0	64.6	64.1	63.9	63.6	63.9
Japan	62.3	62.1	61.9	61.9	62.2	62.6	63.2	63.4	63.3	63.1
France	56.9	56.9	56.7	56.4	56.1	55.6	55.6	55.8	55.6	55.9
Germany	54.7	54.9	55.0	55.1	55.2	55.0	55.4	55.1	54.5	-
Italy	47.2	47.8	47.6	47.4	47.3	47.2	48.6	48.5	48.3	48.0
Netherlands	55.5	56.0	56.3	56.1	56.5	56.8	57.5	57.9	58.6	-
Sweden	66.9	67.0	66.4	66.9	67.3	67.0	66.6	65.3	64.2	63.6
United Kingdom	62.2	62.2	62.6	63.4	63.8	63.9	63.4	62.8	62.6	-
Employed										
United States ¹	107,150	109,597	112,440	114,968	117,342	117,914	116,877	117,598	119,306	123,060
Canada	11,742	12,095	12,422	12,819	13,086	13,165	12,916	12,842	13,015	13,292
Australia	6,697	6,974	7,129	7,398	7,720	7,859	7,676	7,637	7,680	7,921
Japan	57,260	57,740	58,320	59,310	60,500	61,710	62,920	63,620	63,810	63,860
France	21,150	21,240	21,320	21,520	21,850	22,100	22,140	22,010	21,720	21,830
Germany	26,010	26,380	26,590	26,800	27,200	27,950	28,480	28,660	28,220	27,900
Italy	20,490	20,610	20,590	20,870	20,770	21,080	21,360	21,230	20,240	19,890
Netherlands	5,650	5,740	5,850	5,920	6,070	6,260	6,380	6,470	6,450	-
Sweden	4,293	4,326	4,340	4,410	4,480	4,513	4,447	4,265	4,028	3,992
United Kingdom	24,150	24,300	24,860	25,730	26,350	26,580	25,910	25,410	25,220	-
Employment-population ratio³										
United States ¹	60.1	60.7	61.5	62.3	63.0	62.7	61.6	61.4	61.6	62.5
Canada	58.9	59.9	60.8	62.0	62.4	61.9	59.8	58.4	58.2	58.5
Australia	56.5	57.7	57.9	58.7	60.1	60.1	57.9	57.0	56.6	57.7
Japan	60.6	60.4	60.1	60.4	60.8	61.3	61.8	62.0	61.7	61.3
France	51.0	50.8	50.6	50.6	50.7	50.5	50.3	50.0	49.0	49.1
Germany	50.7	51.3	51.5	51.6	52.0	52.2	53.0	52.6	51.3	-
Italy	44.4	44.2	43.8	43.7	43.6	43.9	45.3	44.9	43.3	42.5
Netherlands	50.1	50.3	50.7	50.8	51.7	52.5	53.4	53.8	53.4	-
Sweden	65.0	65.2	65.0	65.7	66.2	65.8	64.5	61.7	58.2	57.4
United Kingdom	55.2	55.2	56.2	57.9	59.1	59.5	57.8	56.5	56.1	-
Unemployed										
United States ¹	8,312	8,237	7,425	6,701	6,528	6,874	8,426	9,384	8,734	7,996
Canada	1,381	1,283	1,208	1,082	1,065	1,164	1,492	1,640	1,649	1,541
Australia	603	613	629	576	508	585	814	925	939	856
Japan	1,560	1,670	1,730	1,550	1,420	1,340	1,360	1,420	1,660	1,920
France	2,470	2,520	2,570	2,460	2,320	2,200	2,350	2,550	2,910	3,060
Germany	2,010	1,860	1,800	1,810	1,640	1,460	1,280	1,380	1,740	1,940
Italy	1,310	1,680	1,760	1,790	1,760	1,590	1,580	1,680	2,330	2,560
Netherlands	600	640	650	610	570	510	490	500	620	-
Sweden	125	117	97	84	72	84	144	255	415	426
United Kingdom	3,060	3,080	2,860	2,420	2,070	1,960	2,490	2,820	2,930	-
Unemployment rate										
United States ¹	7.2	7.0	6.2	5.5	5.3	5.5	6.7	7.4	6.8	6.1
Canada	10.5	9.6	8.9	7.8	7.5	8.1	10.4	11.3	11.2	10.4
Australia	8.3	8.1	8.1	7.2	6.2	6.9	9.6	10.8	10.9	9.7
Japan	2.6	2.8	2.9	2.5	2.3	2.1	2.1	2.2	2.5	2.9
France	10.5	10.6	10.8	10.3	9.6	9.1	9.6	10.4	11.8	12.3
Germany	7.2	6.6	6.3	6.3	5.7	5.0	4.3	4.6	5.8	6.5
Italy	6.0	7.5	7.9	7.9	7.8	7.0	6.9	7.3	10.3	11.4
Netherlands	9.6	10.0	10.0	9.3	8.6	7.5	7.1	7.2	8.8	-
Sweden	2.8	2.6	2.2	1.9	1.6	1.8	3.1	5.6	9.3	9.6
United Kingdom	11.2	11.2	10.3	8.6	7.3	6.9	8.8	10.0	10.4	9.5

¹ Data for 1994 are not directly comparable with data for 1993 and earlier years. For additional information, see the box note under "Employment and Unemployment Data" in the notes to this section.

² Labor force as a percent of the working-age population.

³ Employment as a percent of the working-age population.

- Data not available.

NOTE: See "Notes on the data" for information on breaks in series for Italy and Sweden.

48. Annual indexes of manufacturing productivity and related measures, 12 countries

(1982=100)

Item and country	1960	1970	1973	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993
Output per hour													
United States	-	-	-	103.5	106.7	109.5	116.6	119.2	119.9	122.1	124.9	127.5	131.6
Canada	51.6	76.9	91.9	116.3	119.8	117.9	119.0	119.5	120.0	122.0	122.9	128.0	130.9
Japan	18.5	50.3	64.4	107.9	114.9	113.0	122.4	129.6	138.7	149.1	156.9	156.8	157.3
Belgium	24.1	44.0	57.4	117.5	119.6	121.4	123.8	128.9	134.5	134.1	137.0	142.2	146.4
Denmark	32.4	57.2	72.7	104.3	105.0	98.9	98.4	102.1	105.6	105.5	105.5	107.7	113.9
France	29.6	58.6	69.4	103.9	107.9	109.7	111.6	119.3	125.4	127.6	128.0	130.9	132.3
Germany	37.1	66.4	77.9	109.0	113.4	114.2	112.7	116.7	120.5	125.6	130.1	128.0	130.0
Italy	29.1	54.6	65.2	115.7	123.3	123.7	127.2	130.0	134.0	139.3	143.8	150.8	159.2
Netherlands	26.5	52.9	67.3	115.0	118.7	120.1	120.7	124.4	128.5	130.1	131.4	132.2	133.8
Norway	46.4	73.0	85.4	112.2	115.8	114.7	120.4	119.5	125.3	129.3	130.3	132.5	135.3
Sweden	36.1	69.0	81.2	111.9	113.6	115.4	117.6	119.3	123.1	125.0	126.1	132.8	141.5
United Kingdom	50.3	72.1	86.2	112.4	116.4	120.6	126.9	133.5	138.4	140.1	145.3	152.4	159.7
Output													
United States	-	-	-	111.3	114.0	115.2	123.5	130.0	131.2	130.6	128.2	130.1	135.4
Canada	44.1	78.5	100.0	120.2	127.0	127.9	134.1	140.9	142.1	136.8	127.5	128.3	134.7
Japan	15.1	55.1	71.8	113.2	121.2	117.9	126.5	138.2	149.3	160.6	170.8	167.7	160.7
Belgium	37.6	70.4	86.3	109.9	111.8	111.9	112.3	118.0	125.0	126.5	125.9	125.8	120.5
Denmark	45.4	75.7	88.5	111.7	115.3	115.3	110.6	112.3	113.6	112.4	111.1	112.5	113.2
France	35.1	72.7	87.0	98.7	99.1	99.1	98.9	104.6	110.3	112.4	110.6	109.8	106.3
Germany	51.0	87.0	96.4	104.6	108.4	110.1	108.1	111.5	115.4	121.7	126.2	123.3	113.8
Italy	28.0	58.4	70.7	105.4	108.9	111.5	116.3	125.0	129.7	132.3	132.1	132.4	129.6
Netherlands	42.7	80.3	91.2	107.9	111.1	113.8	115.4	119.7	125.2	129.3	129.9	129.0	125.8
Norway	56.0	88.4	101.3	105.0	108.8	108.8	110.8	105.5	103.8	104.5	102.3	104.2	105.9
Sweden	51.8	91.1	98.7	113.6	115.7	117.1	120.0	123.7	125.1	124.3	117.4	113.3	115.1
United Kingdom	82.9	110.5	121.9	105.9	108.9	110.3	115.5	123.6	129.1	128.9	121.9	121.1	122.8
Total hours													
United States	94.1	106.5	112.6	107.6	106.8	105.2	106.0	109.0	109.4	107.0	102.6	102.0	102.9
Canada	85.5	102.1	108.8	103.3	106.0	108.5	112.7	117.9	118.4	112.2	103.7	100.3	102.9
Japan	81.7	109.6	111.5	104.9	105.5	104.3	103.4	106.7	107.6	107.7	108.8	106.9	102.2
Belgium	156.2	159.9	150.3	93.6	93.5	92.2	90.7	91.5	93.0	94.3	91.9	88.4	82.3
Denmark	140.0	132.3	121.8	107.1	109.8	116.6	112.4	110.0	107.6	106.6	105.3	104.4	99.4
France	118.5	123.9	125.3	95.0	91.8	90.3	88.6	87.7	88.0	88.1	86.4	83.8	80.3
Germany	137.2	131.1	123.7	96.0	95.6	96.4	95.9	95.6	96.7	96.9	97.0	96.3	87.6
Italy	96.2	107.0	108.3	91.1	89.0	90.1	91.4	96.1	96.8	95.0	91.8	87.8	81.4
Netherlands	160.9	152.0	135.6	93.8	93.6	94.8	95.6	96.2	97.4	99.4	98.9	97.6	94.0
Norway	120.9	121.1	118.7	93.5	94.0	94.8	92.0	88.3	82.9	80.9	78.5	78.6	78.3
Sweden	143.7	132.0	121.6	101.5	101.9	101.5	102.0	103.6	101.6	99.4	93.1	85.4	81.4
United Kingdom	164.9	153.3	141.4	94.2	93.5	91.5	91.0	92.6	93.3	92.0	83.9	79.5	76.9
Compensation per hour													
United States	-	-	-	106.0	111.3	115.8	118.4	123.1	127.9	134.7	141.9	147.9	152.8
Canada	16.4	28.7	35.9	111.1	116.8	121.3	125.0	130.5	135.4	143.0	151.7	158.1	159.0
Japan	6.6	25.0	40.7	105.8	110.1	115.8	118.6	120.6	128.2	138.3	146.2	153.0	157.1
Belgium	9.1	23.2	35.5	114.8	122.0	127.0	130.0	132.7	139.7	147.5	156.8	164.9	171.2
Denmark	7.7	22.3	34.5	113.0	120.6	123.1	134.6	139.4	147.3	156.5	162.2	167.2	171.4
France	7.6	18.5	26.2	119.6	129.6	135.1	140.0	145.4	153.2	161.3	168.3	174.1	179.8
Germany	13.5	34.5	48.2	110.0	116.3	121.2	126.9	131.8	138.2	147.9	157.8	165.6	177.8
Italy	3.9	11.6	17.7	134.3	150.9	157.1	166.0	172.5	189.5	210.8	233.1	249.7	266.1
Netherlands	8.9	27.8	43.4	106.6	111.5	115.4	118.8	119.5	120.1	123.3	129.2	136.6	140.5
Norway	9.9	24.6	35.3	120.9	132.2	145.0	165.6	175.7	183.4	193.7	202.8	208.4	210.4
Sweden	9.3	24.4	34.3	119.6	131.8	142.4	151.9	161.8	179.0	197.5	215.1	225.0	221.6
United Kingdom	7.1	14.7	22.6	114.6	125.1	135.4	149.8	159.4	174.7	180.6	199.4	219.7	236.1
Unit labor costs: National currency basis													
United States	-	-	-	102.4	104.2	105.8	101.6	103.2	106.7	110.4	113.7	116.0	116.1
Canada	31.9	37.3	39.1	95.5	97.6	102.9	105.0	109.2	112.8	117.2	123.4	123.5	121.4
Japan	35.5	49.7	63.2	98.1	95.8	102.4	96.8	93.1	92.4	92.7	93.2	97.5	99.9
Belgium	38.0	52.6	61.8	97.7	102.0	104.7	105.0	103.0	103.8	110.0	114.4	115.9	117.0
Denmark	23.8	39.0	47.4	108.3	114.9	124.5	136.8	136.5	139.5	148.3	153.8	155.1	150.5
France	25.7	31.5	37.7	115.2	120.2	123.2	125.5	121.8	122.2	126.4	131.5	133.0	135.9
Germany	36.4	51.9	61.9	101.0	102.6	106.2	112.6	113.0	114.6	117.8	121.3	129.4	136.8
Italy	13.5	21.3	27.1	116.1	123.4	127.1	130.5	132.6	141.4	151.3	162.1	165.6	167.2
Netherlands	33.4	52.7	64.5	92.7	93.9	96.1	98.4	96.0	93.5	94.7	98.3	103.3	105.1
Norway	21.3	33.7	41.4	107.8	114.2	126.4	137.5	147.1	146.3	149.8	155.6	157.3	155.5
Sweden	25.8	35.4	42.2	106.9	116.1	123.4	129.1	135.6	145.4	158.0	170.6	169.5	156.6
United Kingdom	14.2	20.4	26.3	101.9	107.5	112.3	118.0	119.4	126.2	128.9	137.2	144.2	147.8
Unit labor costs: U.S. dollar basis													
United States	-	-	-	102.4	104.2	105.8	101.6	103.2	106.7	110.4	113.7	116.0	116.1
Canada	40.6	44.1	48.2	91.0	88.2	91.4	97.8	109.5	117.6	124.0	132.9	126.2	116.2
Japan	24.6	34.6	58.1	102.9	100.1	151.5	166.8	180.9	166.7	159.3	172.5	191.6	223.9
Belgium	34.9	48.5	72.8	77.5	78.7	107.3	128.7	128.1	120.6	150.7	153.2	165.1	154.8
Denmark	28.8	43.4	65.7	87.3	90.4	128.3	166.7	169.0	159.0	200.0	200.4	214.4	193.6
France	34.4	37.5	55.9	86.7	88.0	117.0	137.3	134.5	128.0	152.7	153.2	165.3	157.8
Germany	21.2	34.6	56.8	86.2	84.7	118.8	152.1	156.1	148.0	176.9	177.3	201.2	200.8
Italy	29.5	46.0	63.1	89.5	87.5	115.4	136.3	137.9	139.5	170.9	176.8	182.0	143.8
Netherlands	23.7	38.9	62.0	77.2	75.6	104.8	129.8	129.8	117.7	138.9	140.3	157.0	151.0
Norway	19.3	30.4	46.5	85.3	85.8	110.3	131.7	145.5	136.6	154.7	154.8	163.4	141.5
Sweden	31.4	42.8	60.9	81.2	84.8	108.8	127.8	138.8	141.5	167.6	177.1	182.8	126.3
United Kingdom	22.8	28.0	36.8	77.9	79.8	94.3	110.7	121.6	118.3	131.6	138.7	145.7	127.0

- Data not available.

49. Occupational injury and illness incidence rates by industry,¹ United States

Industry and type of case ²	Incidence rates per 100 full-time workers ³								
	1985	1986	1987	1988	1989 ¹	1990	1991	1992	1993 ⁴
PRIVATE SECTOR⁵									
Total cases	7.9	7.9	8.3	8.6	8.6	8.8	8.4	8.9	8.5
Lost workday cases	3.6	3.6	3.8	4.0	4.0	4.1	3.9	3.9	3.8
Lost workdays	64.9	65.8	69.9	76.1	78.7	84.0	86.5	93.8	-
Agriculture, forestry, and fishing⁵									
Total cases	11.4	11.2	11.2	10.9	10.9	11.6	10.8	11.6	11.2
Lost workday cases	5.7	5.6	5.7	5.6	5.7	5.9	5.4	5.4	5.0
Lost workdays	91.3	93.6	94.1	101.8	100.9	112.2	108.3	126.9	-
Mining									
Total cases	8.4	7.4	8.5	8.8	8.5	8.3	7.4	7.3	6.8
Lost workday cases	4.8	4.1	4.9	5.1	4.8	5.0	4.5	4.1	3.9
Lost workdays	145.3	125.9	144.0	152.1	137.2	119.5	129.6	204.7	-
Construction									
Total cases	15.2	15.2	14.7	14.6	14.3	14.2	13.0	13.1	12.2
Lost workday cases	6.8	6.9	6.8	6.8	6.8	6.7	6.1	5.8	5.5
Lost workdays	128.9	134.5	135.8	142.2	143.3	147.9	148.1	161.9	-
General building contractors:									
Total cases	15.2	14.9	14.2	14.0	13.9	13.4	12.0	12.2	11.5
Lost workday cases	6.8	6.6	6.5	6.4	6.5	6.4	5.5	5.4	5.1
Lost workdays	120.4	122.7	134.0	132.2	137.3	137.6	132.0	142.7	-
Heavy construction, except building:									
Total cases	14.5	14.7	14.5	15.1	13.8	13.8	12.8	12.1	11.1
Lost workday cases	6.3	6.3	6.4	7.0	6.5	6.3	6.0	5.4	5.1
Lost workdays	127.3	132.9	139.1	162.3	147.1	144.6	160.1	165.8	-
Special trade contractors:									
Total cases	15.4	15.6	15.0	14.7	14.6	14.7	13.5	13.8	12.8
Lost workday cases	7.0	7.2	7.1	7.0	6.9	6.9	6.3	6.1	5.8
Lost workdays	133.3	140.4	135.7	141.1	144.9	153.1	151.3	168.3	-
Manufacturing									
Total cases	10.4	10.6	11.9	13.1	13.1	13.2	12.7	12.5	12.1
Lost workday cases	4.6	4.7	5.3	5.7	5.8	5.8	5.6	5.4	5.3
Lost workdays	80.2	85.2	95.5	107.4	113.0	120.7	121.5	124.6	-
Durable goods:									
Total cases	10.9	11.0	12.5	14.2	14.1	14.2	13.6	13.4	13.1
Lost workday cases	4.7	4.8	5.4	5.9	6.0	6.0	5.7	5.5	5.4
Lost workdays	82.0	87.1	98.8	111.1	116.5	123.3	122.9	126.7	-
Lumber and wood products:									
Total cases	18.5	18.9	18.9	19.5	18.4	18.1	16.8	16.3	15.9
Lost workday cases	9.3	9.7	9.6	10.0	9.4	8.8	8.3	7.6	7.6
Lost workdays	171.4	177.2	176.5	189.1	177.5	172.5	172.0	165.8	-
Furniture and fixtures:									
Total cases	15.0	15.2	15.4	16.6	16.1	16.9	15.9	14.8	14.6
Lost workday cases	6.3	6.3	6.7	7.3	7.2	7.8	7.2	6.6	6.5
Lost workdays	100.4	103.0	103.6	115.7	-	-	-	128.4	-
Stone, clay, and glass products:									
Total cases	13.9	13.6	14.9	16.0	15.5	15.4	14.8	13.6	13.8
Lost workday cases	6.7	6.5	7.1	7.5	7.4	7.3	6.8	6.1	6.3
Lost workdays	127.8	126.0	135.8	141.0	149.8	160.5	156.0	152.2	-
Primary metal industries:									
Total cases	12.6	13.6	17.0	19.4	18.7	19.0	17.7	17.5	17.0
Lost workday cases	5.7	6.1	7.4	8.2	8.1	8.1	7.4	7.1	7.3
Lost workdays	113.8	125.5	145.8	161.3	168.3	180.2	169.1	175.5	-
Fabricated metal products:									
Total cases	16.3	16.0	17.0	18.8	18.5	18.7	17.4	16.8	16.2
Lost workday cases	6.9	6.8	7.2	8.0	7.9	7.9	7.1	6.6	6.7
Lost workdays	110.1	115.5	121.9	138.8	147.6	155.7	146.6	144.0	-
Industrial machinery and equipment:									
Total cases	10.8	10.7	11.3	12.1	12.1	12.0	11.2	11.1	11.1
Lost workday cases	4.2	4.2	4.4	4.7	4.8	4.7	4.4	4.2	4.2
Lost workdays	69.3	72.0	72.7	82.8	86.8	88.9	86.6	87.7	-
Electronic and other electrical equipment:									
Total cases	6.4	6.4	7.2	8.0	9.1	9.1	8.6	8.4	8.3
Lost workday cases	2.7	2.7	3.1	3.3	3.9	3.8	3.7	3.6	3.5
Lost workdays	45.7	49.8	55.9	64.6	77.5	79.4	83.0	81.2	-
Transportation equipment:									
Total cases	9.0	9.6	13.5	17.7	17.7	17.8	18.3	18.7	18.5
Lost workday cases	3.9	4.1	5.7	6.6	6.8	6.9	7.0	7.1	7.1
Lost workdays	71.6	79.1	105.7	134.2	138.6	153.7	166.1	186.6	-
Instruments and related products:									
Total cases	5.2	5.3	5.8	6.1	5.6	5.9	6.0	5.9	5.6
Lost workday cases	2.2	2.3	2.4	2.6	2.5	2.7	2.7	2.7	2.5
Lost workdays	37.9	42.2	43.9	51.5	55.4	57.8	64.4	65.3	-
Miscellaneous manufacturing industries:									
Total cases	9.7	10.2	10.7	11.3	11.1	11.3	11.3	10.7	10.0
Lost workday cases	4.2	4.3	4.6	5.1	5.1	5.1	5.1	5.0	4.6
Lost workdays	73.2	70.9	81.5	91.0	97.6	113.1	104.0	108.2	-
Nondurable goods:									
Total cases	9.6	10.0	11.1	11.4	11.6	11.7	11.5	11.3	10.7

See footnotes at end of table.

49. Continued— Occupational injury and illness incidence rates by industry,¹ United States

Industry and type of case ²	Incidence rates per 100 full-time workers ³								
	1985	1986	1987	1988	1989 ¹	1990	1991	1992	1993 ⁴
Lost workday cases	4.4	4.6	5.1	5.4	5.5	5.6	5.5	5.3	5.0
Lost workdays	77.6	82.3	93.5	101.7	107.8	116.9	119.7	121.8	-
Food and kindred products:									
Total cases	16.7	16.5	17.7	18.5	18.5	20.0	19.5	18.8	17.6
Lost workday cases	8.1	8.0	8.6	9.2	9.3	9.9	9.9	9.5	8.9
Lost workdays	138.0	137.8	153.7	169.7	174.7	202.6	207.2	211.9	-
Tobacco products:									
Total cases	7.3	6.7	8.6	9.3	8.7	7.7	6.4	6.0	5.8
Lost workday cases	3.0	2.5	2.5	2.9	3.4	3.2	2.8	2.4	2.3
Lost workdays	51.7	45.6	46.4	53.0	64.2	62.3	52.0	42.9	-
Textile mill products:									
Total cases	7.5	7.8	9.0	9.6	10.3	9.6	10.0	9.9	9.7
Lost workday cases	3.0	3.1	3.6	4.0	4.2	4.0	4.4	4.2	4.1
Lost workdays	57.4	59.3	65.9	78.8	81.4	85.1	88.3	87.1	-
Apparel and other textile products:									
Total cases	6.7	6.7	7.4	8.1	8.6	8.8	9.2	9.5	9.0
Lost workday cases	2.6	2.7	3.1	3.5	3.8	3.9	4.2	4.0	3.8
Lost workdays	44.1	49.4	59.5	68.2	80.5	92.1	99.9	104.6	-
Paper and allied products:									
Total cases	10.2	10.5	12.8	13.1	12.7	12.1	11.2	11.0	9.9
Lost workday cases	4.7	4.7	5.8	5.9	5.8	5.5	5.0	5.0	4.6
Lost workdays	94.6	99.5	122.3	124.3	132.9	124.8	122.7	125.9	-
Printing and publishing:									
Total cases	6.3	6.5	6.7	6.6	6.9	6.9	6.7	7.3	6.9
Lost workday cases	2.9	2.9	3.1	3.2	3.3	3.3	3.2	3.2	3.1
Lost workdays	49.2	50.8	55.1	59.8	63.8	69.8	74.5	74.8	-
Chemicals and allied products:									
Total cases	5.1	6.3	7.0	7.0	7.0	6.5	6.4	6.0	5.9
Lost workday cases	2.3	2.7	3.1	3.3	3.2	3.1	3.1	2.8	2.7
Lost workdays	38.8	49.4	58.8	59.0	63.4	61.6	62.4	64.2	-
Petroleum and coal products:									
Total cases	5.1	7.1	7.3	7.0	6.6	6.6	6.2	5.9	5.2
Lost workday cases	2.4	3.2	3.1	3.2	3.3	3.1	2.9	2.8	2.5
Lost workdays	49.9	67.5	65.9	68.4	68.1	77.3	68.2	71.2	-
Rubber and miscellaneous plastics products:									
Total cases	13.4	14.0	15.9	16.3	16.2	16.2	15.1	14.5	13.9
Lost workday cases	6.3	6.6	7.6	8.1	8.0	7.8	7.2	6.8	6.5
Lost workdays	107.4	118.2	130.8	142.9	147.2	151.3	150.9	153.3	-
Leather and leather products:									
Total cases	10.3	10.5	12.4	11.4	13.6	12.1	12.5	12.1	12.1
Lost workday cases	4.6	4.8	5.8	5.6	6.5	5.9	5.9	5.4	5.5
Lost workdays	88.3	83.4	114.5	128.2	130.4	152.3	140.8	128.5	-
Transportation and public utilities									
Total cases	8.6	8.2	8.4	8.9	9.2	9.6	9.3	9.1	9.5
Lost workday cases	5.0	4.8	4.9	5.1	5.3	5.5	5.4	5.1	5.4
Lost workdays	107.1	102.1	108.1	118.6	121.5	134.1	140.0	144.0	-
Wholesale and retail trade									
Total cases	7.4	7.7	7.7	7.8	8.0	7.9	7.6	8.4	8.1
Lost workday cases	3.2	3.3	3.4	3.5	3.6	3.5	3.4	3.5	3.4
Lost workdays	50.7	54.0	56.1	60.9	63.5	65.6	72.0	80.1	-
Wholesale trade:									
Total cases	7.2	7.2	7.4	7.6	7.7	7.4	7.2	7.6	7.8
Lost workday cases	3.5	3.6	3.7	3.8	4.0	3.7	3.7	3.6	3.7
Lost workdays	59.8	62.5	64.0	69.2	71.9	71.5	79.2	82.4	-
Retail trade:									
Total cases	7.5	7.8	7.8	7.9	8.1	8.1	7.7	8.7	8.2
Lost workday cases	3.1	3.2	3.3	3.4	3.4	3.4	3.3	3.4	3.3
Lost workdays	47.0	50.5	52.9	57.6	60.0	63.2	69.1	79.2	-
Finance, insurance, and real estate									
Total cases	2.0	2.0	2.0	2.0	2.0	2.4	2.4	2.9	2.9
Lost workday cases .....	.9	.9	.9	.9	.9	1.1	1.1	1.2	1.2
Lost workdays	15.4	17.1	14.3	17.2	17.6	27.3	24.1	32.9	-
Services									
Total cases	5.4	5.3	5.5	5.4	5.5	6.0	6.2	7.1	6.7
Lost workday cases	2.6	2.5	2.7	2.6	2.7	2.8	2.8	3.0	2.8
Lost workdays	45.4	43.0	45.8	47.7	51.2	56.4	60.0	68.6	-

¹ Data for 1989 and subsequent years are based on the *Standard Industrial Classification Manual*, 1987 Edition. For this reason, they are not strictly comparable with data for the years 1985-88, which were based on the *Standard Industrial Classification Manual*, 1972 Edition, 1977 Supplement.

² Beginning with the 1992 survey, the annual survey measures only nonfatal injuries and illnesses, while past surveys covered both fatal and nonfatal incidents. To better address fatalities, a basic element of workplace safety, BLS implemented the Census of Fatal Occupational Injuries.

³ The incidence rates represent the number of injuries and illnesses or lost workdays per 100 full-time workers and were calculated as: (N/EH) X 200,000, where:

N = number of injuries and illnesses or lost workdays.

EH = total hours worked by all employees during the calendar year.

200,000 = base for 100 full-time equivalent workers (working 40 hours per week, 50 weeks per year).

⁴ Beginning with the 1993 survey, lost workday estimates will not be generated. As of 1992, BLS began generating percent distributions and the median number of days away from work by industry and for groups of workers sustaining similar work disabilities.

⁵ Excludes farms with fewer than 11 employees since 1976.

- Data not available.

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Schedule of release dates for BLS statistical series

Series	Release date	Period covered	Release date	Period covered	Release date	Period covered	MLR table number
U.S. Import and Export Price Indexes	August 1	June	August 29	July	September 29	August	37-41
Employment situation	August 4	July	September 1	August	October 6	September	1; 4-20
Productivity and costs:							
Nonfarm business and manufacturing	August 8	2 nd quarter					2; 42-45
Nonfinancial corporations			September 7	2 nd quarter			2; 42-45
Producer Price Indexes	August 10	July	September 12	August	October 12	September	2; 34-36
Consumer Price Indexes	August 11	July	September 13	August	October 13	September	2; 31-33
Real earnings	August 11	July	September 13	August	October 13	September	13-16
Employment Cost Index					October 31	3 rd quarter	1-3; 21-24
Major collective bargaining settlements					October 31	3 rd quarter	3; 26-29
