



MONTHLY LABOR REVIEW

U.S. Department of Labor  
Bureau of Labor Statistics  
March 1987.



*In this issue:* Expanding the white-collar pay survey  
Comparing medical care expenditures  
Quality of the Consumer Expenditure Survey  
Migration of black Americans, 1915-1940







**U.S. DEPARTMENT OF LABOR**  
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**March cover:**

The photograph on the front and back covers depicts an Afro-American family in Florida packing up to head North as part of the first large black migration from the South. The photographs on the inside back cover depict Afro-Americans at work in the North.

The photographs are part of the exhibition, "Field to Factory: Afro-American Migration, 1915-1940," which is on display at the National Museum of American History, Smithsonian Institution, Washington, D.C. from February 5, 1987 through February 1988.

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# Labor Month In Review



**KLEIN AWARD.** The Lawrence R. Klein Award trustees selected the authors of the best articles published in the *Monthly Labor Review* in 1986 as winners of the 18th annual Klein Award. The award will be presented at the Bureau of Labor Statistics awards ceremony on April 23. The award for the best article by a BLS author is shared by Ronald E. Kutscher, Associate Commissioner for Economic Growth and Employment Projections, and Valerie A. Personick, an economist on his staff, for "Deindustrialization and the shift to services," in the June issue. Winners for the best article by an author outside of the BLS are co-authors Sheldon Danziger and Peter Gottschalk for "Work, poverty, and the working poor: a multifaceted problem," in the September issue. Danziger is a professor of social work and director of the Institute for Research on Poverty, University of Wisconsin—Madison. Gottschalk is a professor of economics at Bowdoin College, and a research affiliate with the Institute for Research on Poverty.

Two authors cited for honorable mention were BLS economist Philip L. Ronces for "An analysis of regional employment growth, 1973-85," in the July issue, and Henry P. Guzda, an industrial relations specialist with the U.S. Department of Labor, for "Ellis Island a welcome site? Only after years of reform," in the same issue.

**The Kutscher-Personick** article presents an analysis designed to determine whether the employment shift to services means that the Nation is losing its industrial base. The authors' findings, based on employment and production data for major sectors and detailed industries, indicate that it does not. In fact, the shift to services has largely been a relative one. In absolute terms, employment in manufacturing has not declined appreciably over the last two decades, and the most recent BLS projections show manufacturing employment recovering most of its current recession-related losses. Further-

more, sector output in real terms has bounced back from the recession and by 1984 had reached a new peak.

To assess micro-level developments, the authors examined data for 150 detailed industries over the period 1969-84. One-half of the industries, including many high-tech durable goods industries, showed consistent gains in both employment and output over the period. Another 37 industries—including textiles, chemicals, and motor vehicles—had output gains but employment losses, still an indication of health if it arises from greater efficiency. But the remaining 24 industries had declines in both output and employment. These industries, all in the manufacturing sector, tend to have longstanding problems related to plant obsolescence, import competition, and other factors.

The authors conclude, "While some manufacturing industries clearly have been in a long-term decline...our data indicate that the United States is not losing its industrial base. Most manufacturing industries, indeed many that would be considered 'heavy' manufacturing, are at least expanding production, if not employment. Future expenditures for new capital equipment and a return to more balanced international currency exchange rates are projected to boost demand for U.S. goods for many years."

**The Danziger-Gottschalk** article probes the relationship of work effort and earnings levels to poverty status. Their study shows that most able-bodied heads of poor households have strong labor force attachment, but that their employment tends to be intermittent, low-paying, or both.

The 1984 poverty rate for all households was somewhat below that for 1967 and about the same as in 1971. However, large changes in the labor market characteristics of the poor occurred over the period. In 1984, the majority of heads of poor households were not expected to work because they were over age 65, disabled, students, or women with children

under age 6. About a fourth of all household heads who were expected to work had low weekly earnings (under \$204). But about 60 percent of their households escaped poverty because of such factors as small family size, multiple earners in the household, or receipt of public cash transfers or private income other than earnings.

Of the remaining poor households with an able-bodied head, most had substantial labor market attachment. About half of all poor able-bodied mothers with no child under age 6 worked at some time during 1984, compared with about 80 percent of men who headed poor households with children. But, "Despite this work effort, poor households remain in poverty because of low annual earnings, which reflect both low weekly earnings and less than full-year work. And most of these households would remain poor even if their heads worked a full year at their current weekly earnings rate."

**About the award.** Trustees of the Klein Award Fund are Lawrence R. Klein; Charles D. Stewart, president; Ben Burdetsky, secretary-treasurer; Peter Henle; Harold Goldstein; Howard Rosen; and Henry Lowenstern. The award was established in 1968 in honor of Lawrence R. Klein, editor-in-chief of the *Monthly Labor Review* for 22 years until his retirement in 1968. Instead of accepting a retirement gift, Klein donated it and matched the amount collected to initiate the fund. Since then, he has contributed regularly to the fund as have others. The purpose of the award is to encourage *Review* articles that (1) exhibit originality of ideas or method of analysis, (2) adhere to the principles of scientific inquiry, and (3) are well written. Each winning article carries a cash prize of \$200.

Tax-deductible contributions to the fund may be sent to Ben Burdetsky, Secretary Treasurer, Lawrence R. Klein Fund, c/o School of Government and Business Administration, The George Washington University, Washington DC 20052. □



# BLS prepares to broaden scope of its white-collar pay survey

*The Survey of Professional, Administrative, Technical, and Clerical Pay is being expanded to cover more services industries and small establishments; in 1987 and 1988, test studies also will be conducted to plan for an even broader based survey of pay and benefits for white-collar workers*

JOHN D. MORTON

Over the last 25 years, the Bureau of Labor Statistics' annual Survey of Professional, Administrative, Technical, and Clerical Pay (PATC survey) has become a key source of information on salaries for a number of occupations. For example, the 1985 survey reported on 25 occupations—ranging from file clerk and drafter to attorney and engineer—by salary and employment. Because occupations typically are divided by BLS into two or more work levels (defined by specific duties and responsibilities), pay variations related to level characteristics are readily identifiable.<sup>1</sup>

An expansion of survey coverage over the 1986–87 period will increase the usefulness of PATC findings. Prior to 1986, the survey was limited to medium and large establishments. It covered most private sector industries but excluded important portions of the services industries, such as hotels, hospitals, and educational institutions. By mid-1987, the survey will have expanded to smaller establishments and all private services industries. In addition, BLS is planning test studies in 1987 and 1988 to assist in developing a new, broad-based survey of white-collar pay and benefits in the private and public sectors that will eventually replace the PATC survey.

The 1986–87 coverage enhances the occupational data reported previously in the PATC survey. The expansion also

permits additional occupations to be surveyed, especially in the health-related field, and allows more intensive analysis of findings.<sup>2</sup>

The 1987–88 test studies will address the following issues: the feasibility of including, in a broad-based survey of occupational pay levels and structures, such important jobs as teachers and salesworkers; ways to implement a probability-based selection of jobs for such a survey; approaches for measuring employee benefits as well as pay; and the feasibility of accounting in an establishment-based survey for the importance of employee characteristics, such as education and experience, as explanations for pay variation among employees in a given occupation.

## Survey background

From its inception in 1959–60, the PATC survey has been closely related to the pay-setting process for white-collar employees of the Federal Government. The Federal Salary Reform Act of 1962 established the principle of making salary rates for these employees comparable to those in private industry for the same levels of work. The comparability principle was continued in the Federal Pay Comparability Act of 1970, which currently governs general pay adjustments for Federal white-collar employees.

Under the 1970 Act, a Pay Agent designated by the President (currently, the Secretary of Labor and the directors of the Office of Management and Budget and the Office of

John D. Morton is a labor economist in the Office of Wages and Industrial Relations, Bureau of Labor Statistics.



Personnel Management) sets up comparability procedures and reports annually to the President. The report compares salaries of Federal employees with those paid in private industry for the same levels of work, as determined by the PATC survey.

The Pay Agent calculates the Federal pay adjustment needed to achieve comparability with private industry. If the President decides on a comparability adjustment, it becomes effective automatically the first pay period on or after October 1; if a comparability adjustment is deemed inappropriate because of "national emergency or economic conditions affecting the general welfare," the President must submit an alternative plan to the Congress before September 1. The alternative plan becomes effective unless rejected within 30 days of submission by a majority vote in either the House of Representatives or the Senate. If the Congress rejects an alternative plan, the comparability increase calculated by the Pay Agent becomes effective in October.<sup>3</sup>

The legislation governing the comparability process calls for a comparison of Federal salaries with those in "private enterprise," but does not define the scope of the comparison. It requires a survey of private industry by the BLS—the PATC

survey—the design of which is determined by the President's Pay Agent. Therefore, the Pay Agent determines the industries and occupations to be studied and the minimum size of surveyed establishments.

In response to decisions of the Pay Agent, the scope of the PATC survey has changed over the years. In the early 1960's, for example, the survey was limited to establishments in specified industries employing at least 250 workers and located in metropolitan areas.<sup>4</sup> Since then, the survey has expanded to nonmetropolitan areas, more nonmanufacturing industries, and to smaller establishments. (See exhibit 1.)

The occupations included in the PATC survey have also changed. (See exhibit 2.) Of the 19 occupations surveyed in 1960–61, 15 remained in the 1985 survey, although their definitions and work levels have been modified.<sup>5</sup> Because of modifications in occupational structure and the needs of the comparability process, 10 more jobs were added by 1985.<sup>6</sup>

The 1985 survey provided data for 107 work levels that span the 25 occupations studied.<sup>7</sup> Industrial coverage and minimum establishment size were as follows: mining and construction, 250 workers; manufacturing, 100 or 250

**Exhibit 1. Changes to the PATC survey, 1959–86**

Year	Scope	Number of occupational work levels studied
1959–60	An initial experimental survey covered establishments in metropolitan areas employing 100 workers or more in manufacturing; transportation (part), communications, electric, gas and sanitary services; wholesale trade; retail trade; finance, insurance, and real estate; engineering and architectural services; and research, development, and testing laboratories.	77
1961	Minimum establishment size raised from 100 to 250 workers.	68
1965	Nonmetropolitan areas added.	74
1966	Minimum establishment size lowered from 250 to 100 workers in transportation, communications, electric, gas, and sanitary services; wholesale trade; engineering and architectural services; and research, development, and testing laboratories; and to 50 workers in finance, insurance, and real estate. (No change in manufacturing or retail trade.)	82
1972	Minimum establishment size raised from 50 to 100 workers in finance, insurance, and real estate.	77
1977	Added mining, construction, and transportation industries not previously included (250 minimum employment); consumer credit and mercantile reporting and adjustment and collection agencies; computer and data processing services; management, consulting, and public relations services; and noncommercial education, scientific, and research organizations (100 minimum employment). Minimum establishment size lowered from 250 to 100 workers in the chemicals, petroleum refining, machinery, transportation equipment, and measuring, analyzing, and controlling instruments industries.	78
1979	Added accounting, auditing, and bookkeeping services (50 workers minimum).	89
1980–85	No change.	107
1986	Minimum establishment size lowered to 50 workers in all covered industries.	112



workers; transportation, communications, electric, gas, and sanitary services, 100 or 250 workers; wholesale trade, 100 workers; retail trade, 250 workers; finance, insurance, and real estate, 100 workers; and selected services, 50 or 100 workers. Approximately 43,000 establishments were within scope of the survey. They employed a total of 22.7 million workers, 2.1 million of whom were in the surveyed occupations.

### Expansion proposals

The adequacy of the scope of the PATC survey has long been a matter of controversy. In 1973, the U.S. General Accounting Office recommended legislative changes that would allow inclusion of State and local governments in the pay comparisons.<sup>8</sup> The President's Panel on Federal Compensation echoed this suggestion in 1975, as did President Carter's Reorganization Project in 1978, the President's Private Sector Survey on Cost Control in 1984, and the Pay Agent in its report to the President in 1985.<sup>9</sup> Some of these groups also recommended inclusion of private services industries not covered, while others suggested lowering the minimum employment size of surveyed establishments.

While some changes occurred in 1977 and 1979, several longstanding recommendations were not acted upon until 1985, when the President's Cabinet Council on Management and Administration reviewed Federal pay policy and issued a formal proposal for expanding the PATC survey. The proposal called for bringing within the PATC survey scope: small private sector establishments, that is, units employing as few as 20 workers; services industries, such as hotels, hospitals, and educational institutions; and State and local governments. As indicated in the 1985 Pay Agent's report, information from State and local governments cannot be used in the comparability process without enabling legislation, but can provide a basis for discussing the technical merits of such inclusion.

To conserve resources, the Cabinet Council's proposal called for splitting the PATC survey universe into two parts—(1) the existing (1985) survey scope and (2) all services industries plus State and local governments.<sup>10</sup> These segments were to be surveyed on alternating biennial cycles, with data for the segment not surveyed in a given year estimated by adjusting the previous year's findings by the percentage change in an appropriate component of the BLS Employment Cost Index. This plan was subsequently revised by the Congress, as discussed later.

### 1986 coverage

In March 1986, BLS began the expansion of the PATC survey proposed by the Cabinet Council. The same industries were surveyed in 1986 as in 1985, but the minimum employment size of establishments covered by the survey was reduced to 50 workers.

Coverage of smaller establishments enhances the usefulness of findings for individual occupations and allows more

**Exhibit 2. The changing occupational profile of the PATC survey, 1961 to 1985**

Occupation	Work levels studied in 1985
Occupations in the 1961 and 1985 surveys:	
Accountants .....	6
Auditors .....	4
Chief accountants .....	5
Attorneys .....	6
Chemists .....	8
Engineers .....	8
Job analysts .....	4
Directors of personnel .....	5
Drafters .....	5
Accounting clerks .....	4
File clerks .....	3
Key entry operators .....	2
Messengers .....	1
Stenographers .....	2
Typists .....	2
Occupations in the 1961 survey but not in the 1985:	
Managers, office services .....	4
Bookkeeping machine operators .....	2
Switchboard operators .....	2
Tabulating machine operators ..	2
Occupations in the 1985 survey but not in the 1961:	
Public accountants .....	4
Buyers .....	4
Computer programmers .....	5
Computer systems analysts ....	6
Engineering technicians .....	5
Computer operators .....	6
Photographers .....	5
Secretaries .....	5
Personnel clerks/assistants .....	5
Purchasing clerks/assistants ....	3

detailed analysis of the effect of employment size on establishment pay levels. To permit comparisons with the 1985 survey findings, the 1986 report includes separate data for medium and large firms.<sup>11</sup>

The 1986 data show that larger establishments (those with 2,500 workers or more) generally pay higher salaries to white-collar employees than do small firms (50 to 999 workers), although the pay advantage varies by occupation and skill level.<sup>12</sup> In roughly three-fourths of the clerical occupational work levels analyzed, average salary levels in large establishments were 10 to 20 percent above those in small establishments. Among professional, administrative, and technical occupations, the large establishment pay advantage was generally less than 10 percent; differentials greater than 10 percent were usually in the lower levels of these occupations. Pay levels for workers in establishments with 1,000 to 2,499 workers generally fell between those of their counterparts in larger and smaller firms.



Expansion of survey scope also permitted study of additional occupations which, in terms of employment, are important in both the Federal Government and private industries. Additions to the 1986 survey included a general clerk occupation (with 4 work levels) and a new bottom level for the already surveyed purchasing clerk/assistant job.

### 1987 coverage

As mentioned earlier, plans for a 1987 survey covering all services industries plus State and local governments were revised as a result of congressional action. The Congress directed that the BLS develop a broad-based national white-collar salary and benefits survey ". . . that meets not only the needs of the Federal pay agent but also provides general information about the levels of compensation of all segments of the white-collar workforce."<sup>13</sup> Furthermore, the BLS was requested to submit to the Congress, by August 1987, plans for implementing this new, broad-based white-collar survey.

As a result, the March 1987 PATC survey will be conducted in the private services industries only, but will cover all establishments with at least 20 workers. Additionally, a series of research and test studies will be conducted that address a wide range of issues and concerns pertinent to the development of a broad-based white-collar salary and benefits survey.

The 1987 PATC survey will permit, for the first time, separate analysis of occupational pay and staffing patterns in all private services industries. Where possible, data by size of establishment and for all metropolitan areas combined will be published. Also, data for two key service sectors—business services and health services—will be published. The 1987 survey will add the following occupations: registered nurse (4 levels), licensed practical nurse (3 levels), nursing assistant (4 levels), and civil engineering technician (5 levels).

There will be a dramatic increase in employment coverage stemming from PATC survey expansions. Consequently,

data available to the Pay Agent will represent salaries in about 300,000 establishments (1986 plus 1987 survey coverage) that employ a total of 47 million workers, compared with 43,000 establishments and 23 million workers in 1985 (of which 2 million workers were classified in PATC survey occupations). At the time of the 1985 survey, 51 percent of the 23 million workers within the scope of the survey were employed in manufacturing industries and 49 percent in nonmanufacturing. After the 1987 survey expansion, the proportions will be 68 percent in nonmanufacturing and 32 percent in manufacturing, more closely paralleling the industrial composition of the U.S. private, nonfarm economy.

*Test studies.* The 1987 test studies will be coordinated with portions of ongoing Bureau surveys, such as the Employee Benefits Survey in State and local governments and, in the private sector, Area Wage Surveys which provide occupational pay data on a locality basis. These studies will examine such issues as: (1) pay, benefits, and work arrangements for white-collar jobs not currently surveyed; (2) testing methods to identify work levels (for example, trainee, fully qualified, supervisory) within a broad spectrum of professional/managerial occupations; (3) handling classification and pay practices (for example, commissions) for a wide variety of sales occupations; (4) determining whether employee characteristics, such as education and experience, can be readily identified in an establishment-based survey; and (5) evaluating which statistical methods and survey designs (for example, probability selection of occupations) are appropriate for the broad-based survey of occupational pay levels and structures.

PLANS FOR THE PATC SURVEY are indefinite beyond 1987, as the new broad-based white-collar survey develops to take its place. The scope of the PATC survey during the transition period will probably alternate between the 1986 and 1987 coverage; some adjustments will be made to the minimum requirements on establishment employments. □

### —FOOTNOTES—

<sup>1</sup> The surveys have usually found larger pay differences between the various skill levels of the same occupation than across occupations at the same skill level. For example, in March 1986, average annual salaries in the following occupational work levels (all evaluated as equivalent to level 13 occupations in the Federal Government's General Schedule) fell within a 9-percent range: Engineer VI (\$58,883), Chemist VI (\$60,796), Accountant VI (\$61,546), Attorney IV (\$63,933), and Chief Accountant III (\$62,880). Meanwhile, pay averages within these occupations commonly differed by 15 to 25 percent between adjacent skill levels.

<sup>2</sup> For analyses based on PATC survey data, see Martin E. Personick and Carl B. Barsky, "White-collar pay levels linked to corporate work force size," *Monthly Labor Review*, May 1982, pp. 23–28; Martin E. Personick, "White-collar pay determination under range-of-rate systems," *Monthly Labor Review*, December 1984, pp. 25–30; and Mark S. Sieling, "Staffing patterns prominent in female-male earnings gap," *Monthly Labor Review*, June 1984, pp. 29–33.

<sup>3</sup> The provision for legislative veto of the alternative plan by a single House of the Congress is currently being litigated. For a more detailed description of the pay comparability process, including the role of the BLS survey, see George L. Stelluto, "Federal pay comparability: facts to temper the debate," *Monthly Labor Review*, June 1979, pp. 18–28.

<sup>4</sup> The scope, occupational definitions, and data for the 1960–61 survey are presented in *National Survey of Professional, Administrative, Technical, and Clerical Pay, Winter 1960–61*, Bulletin 1310 (Bureau of Labor Statistics, 1961). The initial PATC survey, for the winter of 1959–60, was experimental and applied to establishments with 100 or more workers. Industrial coverage, however, was the same as in 1960–61.

<sup>5</sup> All but one of the occupations surveyed in 1985—messenger—were divided into two or more work levels. Definitions of these work levels, as well as occupational descriptions, are developed by the Pay Agent, with technical assistance from BLS, to permit salary comparisons between the



private and Federal sectors at narrowly defined levels of work. Each occupational work level in the PATC survey can be equated to a specific grade level in the Federal Government's General Schedule pay system.

<sup>6</sup> Although PATC sample establishments are selected on a probability basis, survey occupations are picked judgmentally by the Pay Agent. The occupations appropriately span a broad range of Federal white-collar occupations and work levels; they are not chosen, however, to be a representative sample of all these occupations. The BLS Employment Cost Index, also occupationally based, uses probability techniques to select jobs for a study of pay and compensation trends outside the Federal Government.

<sup>7</sup> See *National Survey of Professional, Administrative, Technical, and Clerical Pay, March 1985*, Bulletin 2243 (Bureau of Labor Statistics, 1985).

<sup>8</sup> See *Improvements Needed In the Survey of Non-Federal Salaries Used As Basis for Adjusting Federal White-Collar Salaries*, B-167266 (U.S. General Accounting Office, May 11, 1973).

<sup>9</sup> See *Report to The President of the President's Panel on Federal Compensation* (December 1975); *The President's Reorganization Project, Personnel Management Project, Final Staff Report*, Vol. I (December 1977); *President's Private Sector Survey on Cost Control, A Report to The President* (January 1984); and *Comparability of the Federal Statutory Pay*

*Systems With Private Enterprise Pay Rates*, Annual Report of The President's Pay Agent (Aug. 20, 1985).

<sup>10</sup> Prior to the expansion, surveyed services industries were limited to engineering, architectural, and surveying services; commercially operated research, development, and testing laboratories; credit reporting and collection agencies; computer and data processing services; management, consulting and public relations services; noncommercial educational, scientific, and research organizations; and accounting, auditing, and book-keeping services. These industries would be included in the all services portion of future surveys.

<sup>11</sup> See *National Survey of Professional, Administrative, Technical, and Clerical Pay, March 1986*, Bulletin 2271 (Bureau of Labor Statistics, 1986).

<sup>12</sup> The PATC survey data relate to straight-time salaries, excluding premium pay for overtime and for work on weekends, holidays, and late shifts. Also excluded are performance bonuses and lump-sum payments of the type negotiated in the auto and aerospace industries, as well as profit-sharing payments, attendance bonuses, Christmas or year end bonuses, and other nonproduction bonuses. Pay increases—but not bonuses—under cost-of-living allowance clauses, and incentive payments are included.

<sup>13</sup> See *Departments of Labor, Health and Human Services, and Education and Related Agencies Appropriation Bill, 1987*, Report 99-711 (U.S. House of Representatives, 99th Cong. 2d Sess., July 27, 1986), p. 18.

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### Setting wage rates

One result of having an internal labor market is that occupational wage rates are not set by the free market as in the basic supply/demand model. In this case, a method has to be devised to set wage rates for the hierarchy of occupations employed. This method has to provide rates that are perceived as fair and will motivate workers to acquire skills and work hard for promotions. One such method is "job evaluation" in which the various factors that people consider important in determining a fair wage structure are scored for each occupation and the relative wage rates are determined by each occupation's total score. Among the factors considered are the level of skill required by the occupation, the level of responsibility, use of expensive equipment, and hazards or discomfort in working conditions. In this way, a wage rate structure is developed for all the occupations in the internal labor market.

—*Using Labor Market Information in Career Exploration and Decision Making: A Resource Guide* (Garrett Park, MD, Garrett Park Press, 1986), p. 64.

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# The Consumer Expenditure Survey: quality control by comparative analysis

*As with any statistical program, assessment of results is an important part of the expenditure survey; a vital component of BLS postsurvey evaluation is comparison with other data on aggregate spending, most notably those from the National Accounts*

RAYMOND GIESEMAN

Postsurvey evaluation is an integral part of a program of quality assurance for the ongoing Consumer Expenditure Survey (CE). Comparisons with data from independent sources serve to monitor consistency of results from the survey and help identify areas where survey performance can be improved. This article highlights some of the findings obtained by comparing aggregate consumer expenditures from the CE with data from alternative sources.

## **The expenditure survey described**

The Consumer Expenditure Survey provides a continuous and comprehensive flow of data on the expenditures, income, and other selected characteristics of American consumers. The survey, which is conducted by the Bureau of the Census for the Bureau of Labor Statistics, consists of two components: (1) A Diary, or recordkeeping, survey completed by participating consumer units<sup>1</sup> for two consecutive 1-week periods; and (2) an Interview survey in which the expenditures of consumer units are obtained in five consecutive quarterly interviews.

Each component of the survey addresses an independent sample of consumer units which is representative of the U.S. population. Over 52 weeks of the year, 5,000 consumer units are sampled for the Diary survey. Because each unit keeps a diary for two 1-week periods, approximately 10,000 diaries are obtained each year. The interview sample is selected on a rotating panel basis, targeted at 5,000 consumer units each quarter. The data are collected on an ongoing basis in 101 areas of the country.

The Interview survey is designed to capture expenditures which respondents can recall for a period of 3 months or longer. In general, these include relatively large expenditures, such as those for real property, automobiles, and major appliances, or expenditures which occur on a fairly regular basis, such as rent, utility payments, or insurance premiums. The Interview survey also provides data on expenditures incurred while on overnight trips and vacations. Including "global estimates" of spending for food, about 95 percent of all expenditures are covered in the Interview phase. Excluded are nonprescription drugs, household supplies, and personal care items.

The Diary survey is designed to obtain detailed expenditures on small, frequently purchased items which are normally difficult for respondents to recall. Records of expenses are kept for food and beverages, both at home and in eating places, tobacco, housekeeping supplies, nonprescrip-

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Raymond Gieseeman is an economist in the Division of Consumer Expenditure Surveys, Bureau of Labor Statistics. This article is derived from a paper presented by the author at the annual meeting of the American Statistical Association, Aug. 18, 1986, in Chicago.



tion drugs, and personal care products and services. This kind of detail is needed for the periodic rebasing of the Consumer Price Index. Expenditures incurred by members of the consumer unit while away from home overnight or longer are not collected in the Diary survey. CE estimates of food expenditures are particularly affected by this feature.

Expenditure estimates from the CE are transaction costs, including excise and sales taxes, for goods and services acquired during the survey reference period. The full cost of each purchase is recorded, even though full payment may not have been made at the time of purchase. Business-related expenditures and reimbursed expenses are excluded.

Even from this limited description, one can discern a number of possible sources of error in the expenditure survey. As in all sample surveys, the results are subject not only to sampling error, but also to many of the same limitations that would apply to a complete census. The time and effort required to keep a diary of purchases, or to complete an interview, are quite likely to have an impact on the completeness with which expenditures are reported by respondents. Aspects of the collection methodology, interviewer quality, environmental conditioning, processing error, and other factors influence the findings.

There can be overreporting or underreporting of the expenditures. For example, in reporting food expenditures, participants in the Diary survey may record purchases from grocery stores, but overlook food items purchased from a convenience store. In the quarterly Interview survey, participants might not recall some items of clothing purchased 2 or 3 months ago, or might report an incorrect transaction amount. The constraints on respondents' time or the lack of participation in the survey by all consumer unit members might cause several purchases to be overlooked.

As we shall see, available evidence suggests possible underreporting for many items in the expenditure survey; overreporting does not appear to be a problem. This article focuses on comparisons of CE data with other, related data, but some of the expenditure survey data themselves also point to sources of underreporting. For example, in the Interview survey, it has been found that expenditures for many items are reported more frequently for the month immediately preceding the interview than for earlier months.<sup>2</sup> In the Diary survey, it has been found that average reported food expenditures tend to decline across days of participation.<sup>3</sup>

### Overview of postsurvey evaluation

The primary role of postsurvey evaluation is to access the cumulative effects of nonsampling errors on the quality of the data obtained from the survey. Comparisons with data from external sources are important in shedding light on the strengths and weaknesses of survey findings. Since the start of the ongoing Consumer Expenditure Survey in 1980, such comparisons have become a regular part of the CE program. What was expected from these comparisons was a sense of

degree and direction of possible survey errors, rather than an exact measure of bias, because the specific estimates from other sources are not necessarily the "true" values.

A principal source of independent data, but not the only source for this purpose, is estimates of expenditures for goods and services from the personal sector of the National Income and Product Accounts. In these accounts, estimates of expenditures are based largely on records of sales by business and government enterprises. While these data are not subject to the same errors inherent in household surveys, they are subject to their own measurement errors and to judgment errors in the estimation and allocation of sales to the personal sector and other sectors of the accounts. Such errors cannot be quantified easily.

*Personal Consumption Expenditures.* The Personal Consumption Expenditures (PCE) component of the National Income and Product Accounts (NIPA), prepared by the Bureau of Economic Analysis of the U.S. Department of Commerce, provides estimates for many types of spending that can be compared with CE expenditure components. The series is derived by complex methods which trace the flow of goods and services through the economy.<sup>4</sup> The procedure requires estimating total production, then allocating production to intermediate users and to final demand. Cost and profit margins are estimated to arrive at final market values. Primary sources of the data are the Census of Manufactures, available once every 5 years, and other economic censuses.

The estimates for a particular year are updated the following year as more current source data are incorporated. They also are subject to periodic revision if additional sources of information become available. Finally, "benchmark estimates" of consumer spending are derived every 5 years as the results of economic censuses become available.

The latest benchmark estimates of consumer spending, released in December 1985, were based on findings from the 1977 economic censuses. One result of the most recent benchmarking was to increase the amount for food in "purchased meals and beverages" in 1984 by 9.2 percent. The estimate of expenditures for kitchen and household appliances for the same year was lowered 10.6 percent. The fact that substantial revisions to PCE take place as much as 5 years after publication reinforces the point that there is no "true" value for consumer expenditure estimates.

Personal Consumption Expenditures represent the market value of goods and services purchased by the entire personal sector of the U.S. economy, including net purchases of used goods. Also included are operating expenses of nonprofit institutions serving individuals, and the value of food, fuel, clothing, rent of dwellings, and financial services received in kind by individuals. The PCE purchasing universe is slightly larger than that covered in the Consumer Expenditure Survey. Included in PCE estimates are purchases by the military and the institutional population not accounted for elsewhere in the government sector of the National Ac-

counts, and purchases of goods and services provided by nonprofit organizations. PCE categories also include expenditures in the United States by foreigners.

In an earlier work, H.S. Houthakker and Lester D. Taylor compared "private consumption expenditures" from the National Accounts with aggregate spending by consumer units from the 1960-61 Survey of Consumer Expenditures, and pointed out some of the differences in the measurement and classification of expenditures that must be addressed when comparing data from the two sources.<sup>5</sup> In an extensive comparison of CE expenditures with data from independent sources, Robert B. Pearl relied heavily upon the National Accounts to assess findings from the 1972-73 survey.<sup>6</sup> Both of these studies provided evidence that, for several categories of goods and services, expenditures were underreported in the Consumer Expenditure Survey.

Unfortunately, a straightforward comparison between CE and PCE components of spending is not possible. For some components of expenditure, differences in concepts are so great as to render the comparison meaningless. For other spending components, there are differences in coverage that must be accounted for before a comparison can be made. A couple of examples illustrate this process.

CE aggregate expenditures for health care cannot be compared with medical care expenditures in PCE. The expenditure survey in general is concerned with direct payments by households for goods or services. Therefore, costs for health care are out-of-pocket expenditures by households for insurance, medical commodities, professional services, and hospital care. Payments for insurance by employers or reimbursements by insurance companies are not included. The PCE on the other hand, is concerned with the total value of private health care, regardless of who is actually incurring the expenditure.

CE and PCE expenditures for owned dwellings also are not comparable. CE expenditures for owned dwellings, as published, are actual outlays reported by all homeowners for mortgage interest, property taxes, and insurance, maintenance, and repairs. PCE published estimates are the space rental value of owned shelter.<sup>7</sup> Other components not compared because of intractable conceptual differences are educational expenses; contributions to religious, political, and charitable organizations; and all insurance.

However, CE and PCE expenditures for rented shelter can be compared after adjustment. In the expenditure survey, rent is based on "contract rent," which includes the implicit cost of utilities paid for by landlords, while PCE rent for tenant-occupied dwellings is space rent excluding any utilities. By adding the two components for both series, an estimate for "rented shelter, fuel, and utilities" can be compared. For the comparative analysis of CE and PCE estimates, almost every expenditure component requires some adjustment.<sup>8</sup>

*Other data sources.* It is possible to compare aggregate

expenditure findings from the survey with national industry and trade statistics, where the transactions refer directly to consumer units. Several independent sources that provide data suitable for this purpose have been identified and are used to evaluate expenditure findings for some of the categories of goods and services included in the CE.

*Method of analysis.* Assessments of findings have been made for both the Interview and the Diary portions of the Consumer Expenditure Survey. Personal Consumption Expenditure estimates were compared to Interview survey results for many categories of household spending, and to food expenditures from the Diary survey. Data on direct costs to consumers for medical care from the National Health Accounts, prepared by the U.S. Department of Health and Human Services, were matched against out-of-pocket medical care costs reported in the Interview Survey.<sup>9</sup> Data on grocery store sales from trade publications also were examined relative to detailed food expenditure estimates from the Diary survey.

To compare the data, CE aggregate expenditure estimates were first developed, based on consumer unit counts and average expenditures per unit for specified groups of goods and services.<sup>10</sup> These estimates were compared with estimates of aggregate spending from independent sources for similar goods and services, and ratios were calculated. Throughout the discussion that follows, it should be kept in mind that because the various data series are used for different purposes, there usually are significant differences in concept, coverage, and classification of expenditures.

### **Interview survey versus PCE**

Results of comparing CE Interview survey data with selected components of PCE for the period 1980-84 are shown in table 1. Although CE aggregate expenditures were lower than those for PCE for all components of spending except personal care services, the relationship over the 5 years was consistent. The components of expenditure for which the two aggregate estimates were closest included rent, fuel and utilities, telephone service charges, furniture, and transportation. These components typically either have regular periodic billing and payment or involve major outlays that may readily be recalled by respondents and substantiated with records.

Except for furniture, Interview survey expenditures for household durables were low relative to PCE. Spending for household appliances was one-third to one-fourth lower than PCE estimates, and that for radio, TV, and musical instruments was also about one-third lower. The inclusion of minor appliances, for which purchases may be more difficult to recall, could partially explain the lower relative CE findings for household appliances. Also, the allocation of major appliance production in the National Accounts between PCE and intermediate purchases by contractors and landlords is particularly uncertain. Among radio, TV, and



musical instruments are a number of small items such as video cassettes and recorders, TV games, records, and tapes, Outlays for these products could have been forgotten by survey participants.

Interview survey expenditures for private transportation were comparable with PCE estimates. However, CE expenditures for public transportation were low, ranging between 56 percent and 63 percent of PCE figures. Public transportation expenditures include airline fares, local and interarea mass transit charges, and taxicab fares. These same components are especially difficult to estimate in PCE because expenditures must be allocated between businesses and households.

The results of the comparisons point to several areas where underreporting of expenditures appears to be a problem in the Interview survey. Among these are alcoholic beverages, some housefurnishings and equipment, apparel, entertainment, reading materials, tobacco, and miscellaneous expenditures. Spending on alcoholic beverages and tobacco traditionally has been underreported in household surveys. Houthakker and Taylor noted a large discrepancy when analyzing 1960-61 expenditures for alcoholic beverages, which they said "...points to a substantial 'Puritan' element in the household data."<sup>11</sup> A similar element probably explains a tendency to underreport tobacco expenditures. However, a number of areas where underreporting exists in the Interview survey may be more responsive to

improved survey methodology.

Year-to-year changes in the ratios of CE aggregate expenditures to Personal Consumption Expenditures provide useful monitors of survey performance. For example, the ratios of CE to PCE for alcoholic beverages and housewares in the 1980-84 data are higher than they were for the 1972-73 data. More recently, components of spending for which the ratios increased over the 5-year period include household operations, telephone service, miscellaneous household equipment, and public transportation. Household operations, as defined for these comparisons, are limited to domestic and other household services, excluding expenditures for day care centers, babysitting, and care for invalid and elderly persons. In this area, there may be circularity between the two statistical programs because PCE uses expenditure survey estimates to establish values for some domestic services. A higher ratio of estimates for miscellaneous household equipment beginning in 1983 may be attributed, at least in part, to the addition of Interview survey questions pertaining to home computers and telephone equipment.

On the negative side, the ratio for food expenditures dropped 8 percentage points between 1981 and 1982, and that for food at home dropped even more, by 11 percentage points. The direction and magnitude of these changes were associated with the rewording of Interview survey questions

**Table 1. Estimated aggregate expenditures for selected categories of consumption from the CE Interview survey compared to Personal Consumption Expenditures (PCE), 1980-84**

Expenditure category	Interview survey aggregate expenditure (in billions)					Ratio of Interview survey aggregate to PCE				
	1980	1981	1982	1983	1984	1980	1981	1982	1983	1984
Food .....	\$253.7	\$266.2	\$256.9	\$274.1	\$293.2	0.85	0.83	0.75	0.76	0.75
Food at home .....	194.9	202.2	186.3	194.9	207.8	.91	.87	.76	.76	.75
Food away from home .....	58.8	64.0	70.6	79.3	85.5	.70	.72	.74	.76	.75
Alcoholic beverages .....	21.5	22.3	23.0	24.0	25.6	.47	.46	.46	.46	.48
Rent, fuel, and utilities <sup>1</sup> .....	141.1	162.5	180.4	193.2	218.1	.89	.91	.92	.91	.96
Telephone .....	25.9	29.3	31.2	35.5	39.3	.93	.94	.88	.94	.99
Household operations <sup>2</sup> .....	10.7	10.7	12.1	13.2	16.2	.68	.63	.71	.74	.79
Housefurnishings and equipment .....	55.1	55.5	56.9	65.3	74.3	.68	.64	.64	.67	.69
Household textiles .....	5.1	5.4	6.0	6.7	7.3	.51	.50	.53	.54	.55
Furniture .....	19.8	19.0	18.3	22.1	24.8	.95	.86	.85	.93	.93
Floor coverings .....	4.3	4.1	4.4	4.6	5.8	.63	.58	.62	.55	.61
Major and minor appliances .....	12.6	13.3	13.0	13.2	15.4	.77	.76	.73	.67	.71
Housewares .....	2.4	2.7	2.7	3.0	3.1	.26	.27	.26	.27	.25
Miscellaneous household equipment .....	10.8	11.0	12.4	15.8	17.9	.60	.56	.61	.72	.75
Apparel .....	69.9	77.4	79.4	90.8	100.5	.53	.53	.53	.55	.56
Transportation .....	222.0	232.9	235.8	274.3	300.1	.97	.93	.92	.97	.95
Private transportation <sup>3</sup> .....	207.5	215.8	219.6	256.8	278.2	1.00	.94	.94	.99	.96
Public transportation .....	14.6	17.0	16.2	17.5	21.9	.70	.76	.71	.75	.84
Entertainment .....	58.0	65.9	68.6	77.2	86.1	.65	.65	.63	.64	.65
Fees and admissions .....	17.9	20.3	20.8	24.8	28.3	.65	.63	.60	.66	.71
Radio, TV, and sound equipment .....	16.3	19.2	22.5	24.6	28.0	.65	.68	.70	.66	.66
Other entertainment .....	23.9	26.3	25.3	27.8	29.7	.64	.65	.60	.62	.59
Personal care services .....	11.4	12.4	13.2	14.8	16.9	1.06	1.09	1.12	1.06	1.18
Reading .....	10.7	11.5	12.1	13.6	15.1	.67	.67	.67	.71	.73
Tobacco .....	14.4	15.0	16.9	19.3	20.5	.69	.66	.69	.69	.68
Miscellaneous <sup>4</sup> .....	10.2	12.2	13.1	15.4	16.2	.42	.42	.39	.40	.38

<sup>1</sup> Includes rent for tenant-occupied dwelling units, lodging away from home and at school, and utility costs of homeowners and renters.

<sup>2</sup> CE amounts for babysitting, day care centers, care of invalid or elderly, and for household laundry and cleaning were deleted from comparison.

<sup>3</sup> PCE concept of dealer margin as the value of used vehicles was approximated in the CE. Excluded were amounts for vehicle insurance, finance charges, and license, registration, and

inspection fees.

<sup>4</sup> Includes bank service charges and box rental, legal and accounting fees, and funeral and burial expenses.

NOTE: CE survey aggregate expenditure for the total population for 1981 through 1983 are special constructions for this comparison. CE data were collected only for the urban population in those years.

on shopping and purchase patterns at grocery stores, convenience stores, and food specialty stores. (Detailed food expenditures are not collected in the Interview survey.)

### Diary survey food expenditures

The Diary survey is the primary source of detailed food expenditure estimates from the Consumer Expenditure Survey. For this analysis, the Diary estimates were compared with food expenditures from the National Accounts. Because the Dairy survey excludes expenditures while out of town overnight or longer, trip food expenditures from the Interview survey have been added to Diary food-away-from-home amounts for the comparison.

Total food expenditures tabulated from the Diary survey (and supplemented with Interview data for food on trips) were about 75 percent of PCE food expenditures. (See table 2.) Food-at-home expenditures in the Diary survey were low relative to PCE, and declined from 69 percent of PCE levels in 1980 to 63 percent in 1984. Diary survey and PCE expenditures for food away from home (including food on trips) were very close over the comparison period.

There appears to be substantial underreporting of food-at-home expenditures in the Diary survey. However, at least one source has suggested that PCE estimates for the same category are too high. Alexander C. Manchester and Richard A. King, who developed a new series of U.S. food expenditure estimates for the U.S. Department of Agriculture in the late 1970's, felt that census figures used as a basis for allocating food expenditures in PCE were questionable.<sup>12</sup> The Department of Agriculture estimates of food consumption at home for the years 1980-84 are about 20 percent lower than PCE estimates. The CE Diary survey figures are 82 percent of the Department of Agriculture estimates (excluding home production and donations).<sup>13</sup>

A comparison of CE and PCE detailed food expenditures also reveals wide disparities in the way expenditures are

allocated among the various food categories. The PCE food-at-home aggregate is allocated among detailed components based in part on data from the U.S. Department of Agriculture's marketing bill for domestically produced farm food products, to which are added amounts for imported foods and for fish and seafood. Compared to PCE estimates, Diary expenditures were particularly low for fish and seafood and for fruits and vegetables. However, they were higher than PCE for miscellaneous prepared food and much higher for nonalcoholic beverages.

To examine further the detailed food expenditures from the Diary survey, comparisons were made with data from studies conducted by trade publications, particularly the detailed reports prepared annually by *Supermarket Business*<sup>14</sup> and *Progressive Grocer*.<sup>15</sup>

*Supermarket Business* conducts a comprehensive annual survey of food manufacturers, packers, wholesalers, and retailers to construct a detailed picture of grocery store sales by product line. Total grocery store sales for the study are based on U.S. Bureau of the Census estimates, and include sales of specialty food stores.<sup>16</sup> Results of a similar study by *Progressive Grocer*, also available annually, but the universe, limited to stores with annual food sales of \$2 million or more, accounts for only 75 to 80 percent of grocery store food sales. The sales estimates by product line from *Supermarket Business* and from *Progressive Grocer* were matched to Diary food components as closely as possible for the comparisons presented in table 3.

Diary food expenditures more closely matched grocery store sales than did PCE estimates, both in weekly totals and in distribution of expenditures among several food-at-home categories. Total food sales of grocery stores as described in the *Supermarket Business* "Consumer Expenditure Study" were very close to total food-at-home expenditures from the Diary survey. Diary aggregate expenditures were substantially higher than the *Supermarket Business* sales estimates

Table 2. Estimates of aggregate expenditures for food-at-home categories, CE Diary survey compared to PCE, 1980-84

Food category	Diary survey aggregate expenditures (in billions)					Ratio of Diary survey aggregate to PCE				
	1980	1981	1982	1983	1984	1980	1981	1982	1983	1984
Total food .....	\$222.74	\$242.52	\$263.90	\$268.39	\$280.93	0.75	0.76	0.77	0.74	0.72
Food at home .....	146.10	158.40	166.56	166.57	173.06	.69	.68	.68	.64	.63
Cereals and cereal products .....	6.05	6.87	7.57	7.14	7.49	.85	.87	.98	.93	.92
Bakery products .....	12.63	13.48	15.07	14.60	15.94	.74	.73	.74	.73	.76
Meat .....	43.51	44.87	45.13	43.67	42.93	.69	.66	.63	.57	.51
Fish and seafood .....	4.17	4.63	4.78	5.27	5.85	.48	.49	.50	.51	.52
Eggs .....	2.76	3.15	3.23	3.03	3.17	.64	.69	.65	.59	.57
Fresh milk and cream .....	10.31	11.35	11.98	11.18	11.35	.70	.74	.70	.63	.61
Other dairy products .....	9.21	10.12	11.13	11.15	11.26	.74	.78	.77	.75	.71
Fresh fruits and vegetables .....	12.46	14.77	15.88	15.82	16.56	.47	.51	.52	.50	.48
Processed fruits and vegetables .....	9.04	10.03	10.65	10.68	11.48	.32	.33	.33	.32	.31
Sugar and other sweets .....	5.57	5.72	5.81	6.16	6.61	.64	.56	.55	.57	.59
Fats and oils .....	4.25	4.73	4.74	4.50	4.95	.68	.66	.63	.58	.60
Nonalcoholic beverages .....	13.42	13.93	14.23	14.90	15.92	2.15	1.92	1.89	1.92	1.98
Miscellaneous prepared foods .....	12.72	14.75	16.36	16.93	19.55	1.28	1.27	1.35	1.36	1.52
Food away from home <sup>1</sup> .....	76.64	84.12	97.34	103.36	107.87	.92	.94	1.02	.99	.95

<sup>1</sup> Includes expenditures for food away from home on trips collected in the Interview survey.

NOTE: See note, table 1.



**Table 3. Ratios of aggregate expenditures to store sales for food-at-home categories, Diary survey compared to alternative sources, 1980-84**

Food category	Diary survey compared with <i>Supermarket Business</i>					Diary survey compared with <i>Progressive Grocer</i> <sup>1</sup>				
	1980	1981	1982	1983	1984	1980	1981	1982	1983	1984
Total food at home .....	1.01	0.96	1.03	0.99	0.99	1.04	1.19	1.15	1.19	1.17
Cereals and cereal products .....	1.08	1.10	1.14	.99	.98	1.25	1.39	1.41	1.23	1.25
Bakery products .....	1.13	1.12	1.05	.95	.99	1.07	1.25	1.23	1.21	1.21
Meat .....	.98	.92	.99	.92	.89	1.16	1.27	1.15	1.17	1.11
Fish and seafood .....	1.07	1.05	1.05	1.10	1.17	1.54	1.74	1.72	2.08	2.30
Eggs .....	2.53	2.67	2.82	2.58	2.08	.96	1.28	1.16	1.53	1.55
Fresh milk and cream .....	1.85	1.81	1.93	1.82	1.83	1.85	2.05	1.92	2.01	1.96
Other dairy products .....	1.21	1.16	1.41	1.37	1.34	.95	.96	1.03	1.25	1.19
Fresh fruits and vegetables .....	.60	.64	.74	.72	.85	1.02	1.06	1.92	1.02	1.00
Processed fruits and vegetables .....	1.05	.99	.96	.93	.97	.80	.94	1.07	1.12	1.14
Sugar and other sweets .....	.97	1.04	1.02	1.04	1.08	1.38	1.53	1.56	1.74	1.75
Fats and oils .....	1.01	1.03	.88	.89	.86	1.09	1.34	1.29	1.21	1.24
Nonalcoholic beverages .....	1.06	1.09	1.02	1.01	1.05	1.12	1.28	1.12	1.18	1.15
Miscellaneous prepared foods .....	.99	1.02	.96	.93	.98	.64	.80	.80	.85	.89

<sup>1</sup> Universe represented in stores with food sales of \$2 million or more annually. *Progressive Grocer* assumed rights to data from *Chain Store Age* in 1982. See source note for further information.

SOURCE: BLS Consumer Expenditure Survey; *Supermarket Business* (September issue annually); *Chain Store Age* (July issue annually through 1982); and *Progressive Grocer* (July issue, 1983 and 1984).

NOTE: See note, table 1.

for eggs and for dairy products, but were lower for fresh fruits and vegetables. As expected, Diary expenditures for food at home were higher—by as much as 19 percent—than total food sales in the *Progressive Grocer* study. Expenditures from the Diary survey for fish and seafood, fresh milk and cream, and sugar and other sweets were especially high relative to the *Progressive Grocer* sales estimates, but were low relative to sales for miscellaneous prepared foods.

The very different results from the comparisons of CE food-at-home estimates with data from the three alternative sources illustrate the difficulties associated with assessing any biases. For example, while the fish and seafood category produced one of the smallest comparison ratios between the CE and PCE, it had a larger than average ratio for the *Supermarket Business* comparison and by far the largest ratio when data from *Progressive Grocer* were used. Conversely, miscellaneous prepared foods was one of two categories in which CE expenditures exceeded those for PCE, but it was the only category for which CE expenditures were consistently lower than the *Progressive Grocer* estimates.

### Summary

Interview survey expenditures for rent, fuel, and utilities, telephone service, furniture, transportation, and personal care services were comparable in level with Personal Consumption Expenditure estimates. However, for all other expenditure components studied, Interview survey estimates were lower. These findings were generally consistent over the 5 years for which the data were compared. Food expenditures as reported in the Diary survey were low relative to PCE, primarily due to lower food-at-home expenditures in the Diary survey. Substantial differences were also noted between the Diary survey and PCE in the allocation of food-at-home expenditures by food type. However, expenditure

totals and allocations by food type reported in the Diary survey were much more consistent with sales by food line reported in food industry publications.

Results obtained from these comparisons have been used to monitor the performance of the current Consumer Expenditure Survey since it was begun in 1980. The comparisons have helped to establish food at home and apparel as two categories that require fuller investigation. Two methodological studies have been conducted to examine the processes that might lead to response error in the Diary survey. The first of these used data from a supplemental survey administered to Diary Survey respondents and interviewers in the second quarter of 1984, at the conclusion of the second diary week. The supplement questionnaire was specifically designed to measure the attitudes and behaviors associated with keeping the diary.<sup>17</sup>

The other study, the Diary Operational Test, attempted to evaluate the influence which survey procedures have on response error. Field tests were conducted in 1985 to evaluate the effects of different Diary Formats. One format provided more explicit instructions concerning the commodities to be reported, and the other was a preprinted, product-specific diary. The study also provided a basis for testing for differences between the results obtained from the current practice of having the Diary and quarterly Interview surveys conducted by the same interviewer and results obtained when interviewers work only on the Diary survey. The results of this experiment have not yet been analyzed, but the findings could suggest redesign possibilities that would lead to better reporting of food-at-home expenditures.

For the Interview survey, plans are now underway to test the effect on the incidence of reporting of varying the length of the survey reference period, length of interview, style of survey instrument, and sequence or positioning of questionnaire parts. □

## — FOOTNOTES —

<sup>1</sup> A consumer unit comprises either: (1) all members of a particular household who are related by blood, marriage, adoption, or other legal arrangements; (2) a person living alone or sharing a household with others or living as a roomer in a private home or lodging house or in permanent living quarters in a hotel or motel, but who is financially independent; or (3) two or more persons living together who pool their income to make joint expenditure decisions. Financial independence is determined by the three major expense categories: housing, food, and other living expenses. To be considered financially independent, the respondent must provide at least two of the three major expense categories.

<sup>2</sup> Adriana R. Silberstein and Curtis A. Jacobs, "Symptoms of Repeated Interview Effects in the Consumer Expenditure Interview Survey," paper presented at the Symposium on Panel Surveys, American Statistical Association on Survey Research Methods, Nov. 19–22, 1986, Washington, DC.

<sup>3</sup> U.S. Department of Labor, *Consumer Expenditure Survey: Diary Survey, 1980–81*, Bulletin 2173 (Bureau of Labor Statistics, September 1983).

<sup>4</sup> A detailed description of the derivation of Personal Consumption Expenditures, as well as the other components of the National Income and Product Accounts, is found in *National Income: 1954 Edition, A Supplement to the Survey of Current Business* (Bureau of Economic Analysis, 1954).

<sup>5</sup> H.S. Houthakker and Lester D. Taylor, *Consumer Demand in the United States: Analysis and Projections*, 2d. ed. (Cambridge, MA, Harvard University Press, 1971).

<sup>6</sup> Robert B. Pearl, *Reevaluation of the 1972–73 U.S. Consumer Expenditure Survey: A Further Examination Based on Revised Estimates of Personal Consumption Expenditures*, (Bureau of the Census, July 1979) (Technical Paper, 46).

<sup>7</sup> The concept of homeowner costs in the Consumer Price Index is also based on rental equivalence. See R. Gillingham and W. Lane, "Changing the treatment of shelter costs for homeowners in the CPI," *Monthly Labor Review*, June 1982, pp. 9–14. Other CE components may also differ from CPI definitions.

<sup>8</sup> Complete documentation of the adjustments made for this article is available from BLS.

<sup>9</sup> Raphael Branch, "Comparing medical care expenditures of two diverse data sources," *Monthly Labor Review*, March 1987, pp. 15–18.

<sup>10</sup> The eligible population covered by the Consumer Expenditure Survey is the total civilian noninstitutional population of the United States. However, due to budget constraints in the fourth quarter of 1981, rural portions of the survey coverage were temporarily discontinued until 1984, when full coverage was again restored. For the fourth quarter of 1981 through 1983, it was necessary to translate expenditure results for the urban population into aggregate expenditures for the total population to compare results with data from other sources. The adjustment was made by assuming the same relationships of total to urban population and of total to urban mean expenditures as were found to prevail during the seven quarters of 1980–81, when the total population was covered in the survey. The rural population as defined for this exercise was about 17 percent of the total.

<sup>11</sup> Houthakker and Taylor, *Consumer Demand*, p. 252.

<sup>12</sup> Alden C. Manchester and Richard A. King, *U.S. Food Expenditures, 1954–78*, Agricultural Economic Report, 431 (U.S. Department of Agriculture, August 1979).

<sup>13</sup> *Food Consumption, Prices, and Expenditures, 1964–84*, Statistical Bulletin, 736 (U.S. Department of Agriculture, December 1985), table 93b.

<sup>14</sup> See, for example, Fieldmark Media, Inc., "38th Annual Consumer Expenditure Survey," *Supermarket Business*, September 1985.

<sup>15</sup> See, for example, Maclean Hunter Media, Inc., "1985 Supermarket Sales Manual," *Progressive Grocer*, July 1985.

<sup>16</sup> Includes meat, seafood, fruit, and vegetable markets, and confectionery, bakery, dairy, and other food stores.

<sup>17</sup> See, for example, Clyde Tucker, "An Analysis of the Dynamics in the CE Diary Survey," *Journal of the American Statistical Association*, 1986 Proceedings issue (forthcoming).



# Comparing medical care expenditures of two diverse U.S. data sources

*BLS Consumer Expenditure Survey and administrative data from the Health Care Financing Administration show similar expenditures for medical commodities and services*

E. RAPHAEL BRANCH

Most families in the United States spend some of their disposable income for medical care. The amount depends on the medical commodities and services obtained and also on the financing of these expenses. This article looks at the cost of health care to consumers, exclusive of financing by other parties—referred to here as direct payments for personal health care or out-of-pocket expenditures for medical care.

The share of family expenditures spent on medical care actually declined over the 1960–61 to 1982–83 period, despite rising prices and greater utilization of physicians and ambulatory services. However, during the period, there was an expansion in the availability of health insurance and an equal or greater increase in employer-provided health benefits. Also, Federal programs for health care provision and financing were introduced which affected medical care costs to households. The introduction of Medicare and Medicaid payments in 1966 and their expansion in 1972 and 1978 are examples of this kind of legislative initiative.<sup>1</sup> Such changes in the structure of health insurance coverage have affected the proportion of health care costs paid by consumers.

Consumer spending for medical care rose rapidly between the 1960's and the 1980's. However, the consumer share of total personal health care costs, which include payments by third parties, declined. In 1960, these consumer costs accounted for 55 percent of total personal health care costs; in

1984, they accounted for only 28 percent.<sup>2</sup> Third parties are private health insurers, Federal, State, and local governments, and philanthropic organizations. The items covered by the costs include all health commodities and professional services.

Data from the BLS Consumer Expenditure Survey show the effect of the structural changes in health care financing on the family budget. Medical care expenditures have been rising, but medical care has been accounting for a declining share of the total family budget. From 1960–61 to 1982–83, consumers' annual average expenditures for medical care rose almost 200 percent, but the rise in other living expenses was somewhat greater. As a proportion of total family expenditures, medical care expenditures declined from 6.1 percent to 4.6 percent. (See table 1.)

## Data sources

As part of the evaluation process, the BLS compares Consumer Expenditure Survey results with other relevant data. This article compares health care expenditures data from the Consumer Expenditure Survey (CE) with those from the National Health Accounts (NHA).

The CE and the NHA are constructed for different purposes and, hence, use different estimation methods. The CE focuses on family spending and is the major source for out-of-pocket data by demographic groups. The NHA focuses on national aggregate expenditures for all health care by categories and sources of financing. The estimates from both

E. Raphael Branch is an economist in the Office of Prices and Living Conditions, Bureau of Labor Statistics.

**Table 1. Average expenditures of all U.S. consumer units for medical care and percent change and distribution, Consumer Expenditure Survey, 1960-61 and 1982-83**

Expenditure category	Average expenditures		Percent change	Percent distribution	
	1960-61	1982-83		1960-61	1982-83
Total expenditures . . . . .	\$5,626	\$18,944	236.7	100.0	100.0
Medical care, total . . . . .	340	874	157.1	6.1	4.6
Medical care less insurance . . . . .	251	641	155.4	4.5	3.4
Medical insurance payments . . . . .	89	233	161.8	1.6	1.2
All other expenditures . . . . .	5,286	18,070	241.9	93.9	95.4

sources are subject to sampling and estimation errors.<sup>3</sup> Because of the differences in methodology between CE and NHA, we expect some differences in the resulting aggregates. The purpose of this analysis is to look at the extent and direction of the differences.

The BLS Consumer Expenditure Survey has been conducted annually since 1980 and at approximately 10-year intervals before then. It provides data that allow analysis of the changes in out-of-pocket costs over time. The principal objective of the survey is to collect data which provide a continuous flow of information on the buying habits of different types of consumer units.<sup>4</sup> The data are used in a wide variety of research by government, business, labor, and academic analysts, including the periodic revisions of the Consumer Price Index.

The CE is conducted by the Bureau of the Census for the BLS. It consists of two components: a quarterly Interview survey in which the expenditures of consumer units are obtained in five interviews conducted every 3 months; and a Diary, or recordkeeping, survey, completed by participating consumer units for two consecutive 1-week periods. Both components query an independent sample of 5,000 consumer units per reference period in areas which are representative of the total U.S. civilian population.<sup>5</sup> The Interview survey is a rotating panel survey designed to obtain data on the types of expenditures which respondents can recall for a period of 3 months or longer, including expenditures made on overnight trips. In general, these include relatively large expenditures, such as those for real property, automobiles, and major appliances, or expenditures which occur on a fairly regular basis, such as for rent, utilities, or medical care. The Diary survey is designed to obtain expenditures on small, frequently purchased items which are normally difficult for respondents to remember. It excludes expenditures incurred by members of the consumer unit while away from home overnight or longer.

Medical care expenditures and reimbursed amounts<sup>6</sup> are collected in the Interview survey. Out-of-pocket expenditures are computed by subtracting reimbursements by third parties from the total payments for an expenditure by the household.<sup>7</sup> Purchases of over-the-counter drugs, medical supplies, and miscellaneous items are collected in the Diary survey.

The National Health Accounts measure total aggregate health costs of the Nation. The NHA covers the Social Security population which includes inhabitants of U.S. territories, military personnel, and U.S. citizens outside the United States—populations not covered in the CE. They are developed by the Health Care Financing Administration, U.S. Department of Health and Human Services, to be consistent in concept with the gross national product (GNP). Total personal health care costs are measured primarily from administrative data. The sources of data include Personal Consumption Expenditures (PCE) from the National Income and Product Accounts of the Bureau of Economic Analysis, U.S. Department of Commerce, a sample of business receipts from the *Statistics of Income* published by the Internal Revenue Service, and data from the Annual Survey of Hospitals and the monthly National Hospital Panel Survey, both from the American Hospital Association. Patient payments are calculated as the residual of total health care costs less estimated total third-party payments, and conform, in concept, to the CE out-of-pocket costs.

### Comparing the data

Expenditures for selected medical care categories<sup>8</sup> from the two series are compared for the 1980-84 period. Because of lower population coverage in the CE, we expect its reported expenditures to be somewhat less than those of the NHA. However, we expect similarity in the direction of annual changes and in the proportion of money spent on health categories. CE medical care expenditure levels are generally below those of NHA, but the aggregate CE/NHA ratios for the selected items are fairly constant. Also, there is a similarity in the proportion of amounts spent for commodities and services.

Over the 5-year period, the CE/NHA relationship has been relatively constant for aggregate selected medical expenditures, improving for medical commodities, but declining for medical services. (See table 2.) However, a decline is noted for commodities in 1984 and this, along with the decline in services, results in some overall decline in the relationship between the sources in that year. However, it is difficult to judge the significance of such changes. Any conclusions as to trends will have to be based on data for longer periods.

Annual percent changes reflect differences in the levels of aggregate expenditures from the two sources. (See table 3.) However, while the changes differ more for component estimates, the difference in annual movement is similar over most of the period for the selected medical care total.

Between 1983 and 1984, expenditures for health rose 5 percent in the CE, and 10 percent in the NHA. Although the 1984 CE results are preliminary, a slowing of the increases is consistent with the drop in inpatient hospital care. It is also consistent with the rapid growth in the use of less costly medical service alternatives such as health maintenance organizations (HMO's) and ambulatory services.<sup>9</sup> Because of the volatility in the economics of the health industry, there



**Table 2. Aggregate and per capita expenditures of all U.S. consumer units for medical care from Consumer Expenditure Survey and National Health Accounts and CE/NHA ratios, 1980-84**

Expenditure category	Consumer Expenditure Survey					National Health Accounts <sup>1</sup>					CE/NHA ratios <sup>2</sup>				
	1980	1981	1982	1983	1984	1980	1981	1982	1983	1984	1980	1981	1982	1983	1984
<b>Aggregate expenditures (billions)</b>															
Selected medical care, total <sup>3</sup>	\$44.5	\$48.1	\$51.9	\$56.9	\$59.9	\$52.2	\$58.0	\$62.2	\$68.0	\$75.1	.85	.83	.83	.84	.80
Medical commodities	12.9	15.2	16.2	18.2	19.3	19.0	20.7	21.1	23.0	25.2	.68	.73	.77	.79	.77
Drugs and medical supplies	10.6	12.7	13.7	15.2	16.1	14.8	16.2	16.9	18.2	19.7	.71	.78	.81	.84	.82
Medical equipment and supplies	2.3	2.5	2.6	3.0	3.2	4.2	4.5	4.2	4.8	5.5	.56	.56	.61	.62	.59
Medical services	31.6	32.9	35.6	38.7	40.6	33.2	37.3	41.1	45.0	49.9	.95	.88	.87	.86	.81
Professional services	26.9	27.4	28.8	32.3	34.0	27.2	30.3	33.4	36.4	40.8	.99	.91	.86	.89	.83
Hospital care <sup>4</sup>	4.7	5.5	6.8	6.4	6.6	6.0	7.0	7.7	8.6	9.1	.78	.79	.89	.74	.73
<b>Per capita expenditures</b>															
Selected medical care, total <sup>3</sup>	\$199	\$215	\$226	\$242	\$253	\$221	\$243	\$258	\$280	\$305	.90	.88	.88	.87	.83
Medical commodities	58	67	70	77	82	81	87	87	95	102	.72	.78	.80	.82	.79
Drugs and medical supplies	48	56	59	64	68	63	68	70	75	80	.76	.83	.84	.86	.85
Medical equipment and supplies	10	11	11	13	14	18	19	17	20	22	.59	.59	.65	.65	.61
Medical services	141	148	156	165	171	140	156	171	185	203	1.00	.94	.92	.89	.84
Professional services	120	123	126	138	143	115	127	139	150	166	1.04	.96	.91	.92	.86
Hospital care <sup>4</sup>	21	25	30	27	28	25	29	32	35	37	.82	.84	.93	.77	.75

<sup>1</sup> Data are from the Health Care Financing Administration, U.S. Department of Health and Human Services.

<sup>2</sup> Ratios are based on unrounded data.

<sup>3</sup> Excludes nursing home care, medical equipment repairs, and health insurance.

<sup>4</sup> Excludes nonpatient revenues of community hospitals. The 1980 estimates are derived from both 1980 and 1981 data.

are factors leading to higher costs which may be balanced by others tending to lower costs. It will take several years to evaluate the impact of these changes.

The proportion of expenditures for medical categories has been fairly constant since 1980. (See table 4.) CE data show slightly more being spent on medical services, compared with NHA data, and slightly less on commodities. The estimates for 1984 are typical of the proportions spent over the 5-year period. In 1984, CE reported \$60 billion in out-of-pocket medical expenditures. Of this amount, 32 percent was spent on medical commodities and 68 percent on services. NHA data show similar percentages spent for medical commodities and services, but the out-of-pocket medical expenditures were higher, \$75 billion in 1984.

*Per capita spending.* The population coverage of the CE and NHA differs and affects the level of the estimates. The effect is removed when the data are compared on a per capita basis. (See table 2.) Although the pattern of differences is essentially the same as when measured with aggregates, these ratios, adjusted for population coverage, show that the estimates from the two sources are fairly close for the selected items total. The CE medical services estimates were approximately the same as those from the NHA in 1980, and have declined somewhat since.

### Data limitations

In addition to the basic difference in the sources (household survey versus a combination of survey data and administrative records), there are conceptual differences between CE and NHA that cannot be completely reconciled. However, adjustments can and have been made to make the comparison feasible.

Differences in the estimates are partly the result of differences in estimation methods. The CE is a household interview survey designed to provide comprehensive information about household expenditures and data for weighting the Consumer Price Index. Survey interviewers ask consumer units about expenditures for detailed medical care items. The responses are edited, tabulated, weighted by population estimates, and summed over consumer units, by item.<sup>10</sup>

In comparison, the NHA measures total health costs using administrative data adjusted for differences in concept, coverage, timing, and nonresponse. For example, its estimates for medical commodities are based on the PCE. To obtain patient payments for drugs and sundries, PCE estimates are adjusted by subtracting workers' compensation, medicare, and temporary disability program payments.<sup>11</sup> In addition, PCE estimates are subject to annual revision, and 5-year benchmark revisions are also made. Internal Revenue Service business income estimates, one of the sources on which

**Table 3. Annual percent change in medical care expenditures in the Consumer Expenditure Survey and National Health Accounts, 1981-84**

Expenditure category	Consumer Expenditure Survey				National Health Accounts <sup>1</sup>			
	1981	1982	1983	1984	1981	1982	1983	1984
Selected medical care, total <sup>2</sup>	8.1	7.8	9.7	5.3	11.1	7.2	9.3	10.4
Medical commodities	17.5	6.9	12.2	6.0	9.0	1.9	9.0	9.6
Medical services	4.3	8.2	8.5	5.0	12.4	10.2	9.5	10.9

<sup>1</sup> Excludes nonpatient revenues of community hospitals. Data are from the Health Care Financing Administration, U.S. Department of Health and Human Services.

<sup>2</sup> Excludes nursing home care, medical equipment repairs, and health insurance.

NOTE: Percent changes are derived from unrounded data.

**Table 4. Percent distribution of annual aggregate expenditures for medical care from Consumer Expenditure Survey and National Health Accounts, 1980-84**

Expenditure category	Consumer Expenditure Survey					National Health Accounts <sup>1</sup>				
	1980	1981	1982	1983	1984	1980	1981	1982	1983	1984
Selected medical care, total <sup>2</sup> .....	100	100	100	100	100	100	100	100	100	100
Medical commodities .....	29	31	31	32	32	36	36	34	34	33
Drugs and medical supplies .....	24	26	26	27	27	28	28	27	27	26
Medical equipment and supplies .....	5	5	5	5	5	8	8	7	7	7
Medical services .....	71	69	69	68	68	64	64	66	66	66
Professional services .....	61	57	56	57	57	52	52	54	53	54
Hospital care <sup>3</sup> .....	10	12	13	11	11	12	12	12	13	12

<sup>1</sup> Data are from the Health Care Financing Administration, U.S. Department of Health and Human Services.

<sup>3</sup> Excludes nonpatient revenues of community hospitals. The 1980 estimates are derived from both 1980 and 1981 data.

<sup>2</sup> Excludes nursing home care, medical equipment repairs, and health insurance.

NHA professional service estimates are based, are adjusted to include direct payments by consumers to health care deliverers which are not covered in the Internal Revenue Service data. Also, annual hospital survey data are adjusted by monthly survey data to estimate calendar-year amounts.<sup>12</sup>

Not only are the estimation methodologies of CE and NHA different, but as part of the procedures, the items are classified differently. In general, for this study, classification differences are reconciled (although not completely) by

grouping subcategories in CE to match more aggregated categories in NHA.

THIS REVIEW SHOWS general consistency and similarity between the CE and NHA data, giving us confidence in the CE estimates. As data from the continuing Consumer Expenditure Survey becomes available, we will evaluate the results; however, emphasis will be on analyzing expenditures by characteristics. □

—FOOTNOTES—

<sup>1</sup> Medicare and medicaid are Federal health insurance programs. Medicare, initially established in 1966 for the aged, was expanded in 1973 to include disabled beneficiaries under the Social Security and railroad retirement programs. It was again expanded in 1978 to include persons under 65 years of age who require dialysis or a kidney transplant for end-stage renal disease. Medicaid was established in 1966 to provide health insurance for certain low-income families.

<sup>2</sup> Katherine R. Levit, Helen Lazenby, Daniel R. Waldo, and Lawrence M. Davidoff, "National Health Expenditures, 1984," *Health Care Financing Review*, Fall 1985, p. 16.

<sup>3</sup> The Consumer Expenditure Survey, a sample survey, is subject to two types of errors. Sampling errors occur because the data are collected from a sample rather than the entire population. Nonsampling errors result from an inability or unwillingness of the respondents to provide correct information, differences in interviewer ability, mistakes in recording or coding, or other processing errors. Standard error tables are available from the Bureau of Labor Statistics. NHA estimates are subject to estimation, and sampling errors. While there are no statistical measures of error for the residual estimates, there is estimation error, and a residual is subject to error from both component estimates from which it is derived. For further discussion of NHA concepts and estimation, see Levit and others, "National Health," pp. 27-30. The NHA estimates are also subject to revision as new estimates become available from the source data and new methodologies are employed.

<sup>4</sup> A consumer unit consists of all members of a particular housing unit or other type of living quarters who are related by blood, marriage, or adoption, or some other legal arrangement, such as foster children. Consumer unit determination for unrelated persons is based on financial independence.

<sup>5</sup> The Consumer Expenditure Survey population includes the civilian noninstitutional population of the United States, as well as that portion of the institutional population living in the following group quarters: boarding house facilities for students and workers; staff units in hospitals and homes for the aged, infirmed, or needy; permanent living quarters in hotels and motels; and mobile home parks. Armed Forces personnel living outside military installations were included in the coverage while Armed Forces personnel living on post were excluded. Rural data are not available in the CE survey from 1981 through 1983 because the rural sample was discontinued during that period.

<sup>6</sup> Reimbursements are credited when received and do not necessarily refer to the period of the expenditure. However, on an annual basis, this time discrepancy is not considered to have much effect.

<sup>7</sup> Annual aggregate expenditures for CE medical care were derived for the total population. For years in which rural data were not collected, urban expenditures were adjusted by ratios of total U.S. and urban U.S. aggregates from the most recent period available.

<sup>8</sup> Health insurance is excluded from the comparisons because the out-of-pocket payments are not available from the National Health Accounts. Nursing home care is also excluded from the comparisons because the coverage in the two sources is not comparable.

<sup>9</sup> For further details, see Levit and others, "National Health," p. 4.

<sup>10</sup> "Consumer Expenditures and Income," *BLS Handbook of Methods*, Bulletin 2134-1 (Bureau of Labor Statistics, 1982).

<sup>11</sup> Levit and others, "National Health," p. 30.

<sup>12</sup> Levit and others, "National Health," p. 27.



# Early retirement as a labor force policy: an international overview

*In recent years, governments and firms have increasingly turned to early-out schemes to soak up excess labor supply; the projected aging of western populations threatens the viability of such schemes, which have the unfortunate side effect of masking macroeconomic failings*

BARRY ALAN MIRKIN

In grappling with the problems posed by high and persistent unemployment which continue to plague the countries of Western Europe and North America, an array of labor market policies have been implemented to lower or at least contain the ranks of the unemployed. Such policies aim at influencing the supply of or the demand for labor.<sup>1</sup>

Stimulating demand traditionally has been the main policy tool against joblessness. In recent years, however, there has been a noticeable trend away from demand expansion out of fear of rekindling the inflationary spiral. Instead, there has been a growing reliance on supply-oriented measures, such as restrictions on labor migration from abroad, repatriation of foreign guest workers, reduction of hours of work, work sharing arrangements, and increases in the legal working age and the number of years of mandatory schooling. The most frequently employed among such methods, however, have been policies to induce early retirement through various social security schemes.

These early retirement programs, many of which were initially formulated to achieve broad social goals rather

than labor market equilibrium, have taken several forms: (1) prerecession schemes, originally introduced within the framework of social policies to benefit older workers, which have been expanded or more aggressively pursued;<sup>2</sup> (2) other types of schemes, such as disability programs, into which economic and additional health criteria have been introduced;<sup>3</sup> and (3) specific recession-oriented measures to promote premature retirement which were established in response to chronic high rates of unemployment of the 1970's and early 1980's. In practice, however, it is often difficult to distinguish among these three categories.

Only incipient in the early 1970's, the trend toward broadening eligibility for retirement and disability programs as a means of alleviating unemployment gained momentum as unemployment remained resistant to other labor market policies. This gradual blurring of the boundaries between the retirement, disability compensation, and employment objectives of the measures has contributed to enormous strains on public and private pension systems, while the extent to which the schemes have alleviated unemployment remains controversial.

Whereas public policy in the United States has been modified in recent years to encourage the postponement of retirement, in Europe, early retirement schemes have tended to be more pervasive. Several factors help to explain these differing approaches to influencing labor market developments.

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Barry Alan Mirkin is an economic affairs officer with the United Nations Economic Commission for Europe, Geneva, Switzerland. This article is an earlier and somewhat expanded version of a study published in Economic Commission for Europe, *Economic Survey of Europe in 1985-1986* (New York, United Nations, 1986), pp. 96-109. The views expressed herein are those of the author and do not necessarily reflect those of the United Nations.

First, the governments of Western Europe have been under considerably more pressure than that of the United States to implement early retirement plans to alleviate high unemployment. This is a consequence of the stagnation in employment expansion in Western Europe as compared to the substantial employment generation that has taken place in the United States. One reflection of this divergence in the pattern of job creation is the unemployment rate. In 1985, the average annual unemployment rate for 13 countries of Western Europe was approximately 9.7 percent. This contrasts sharply with an unemployment rate of 7.0 percent experienced by the United States the same year.<sup>4</sup> A second factor can be attributed to differences in the pace of aging. Normally defined as the population age 60 and over, the aged in Western Europe made up 14.3 percent of the total population in 1950 and 19.2 percent in 1985, while in the United States, the aged represented 12.1 percent and 16.3 percent of the population, respectively. This difference in the extent of aging is expected to continue into the near future. By the year 2000, the aged are projected to be 21.1 percent of the population in Western Europe and 16.0 percent in the United States.<sup>5</sup>

This article presents a brief discussion of early retirement programs in general, followed by an inventory of specific measures implemented on a country-by-country basis. The impact of the schemes on the labor force participation of older workers is then examined. Selected schemes are analyzed in greater detail and provide the basis for conclusions concerning their use in curbing unemployment.

### The nature of early-out schemes

Early retirement strategies are widely used to cope with problems such as those posed by labor market rigidities, the introduction of new technologies, restructuring activities resulting in redundancies and overmanning, and job search difficulties among certain population groups. These schemes can be categorized by target group—that is, employed workers, unemployed workers, or disabled workers.

Early retirement for *employed workers* is often, though not always, pursued for the purpose of providing greater employment opportunities for young people, a group that has suffered from especially high rates of unemployment. Such schemes may encourage older workers nearing retirement age to cease labor market activity prematurely. An example is the Job Release Scheme, introduced in the United Kingdom in 1977, which made the retiree's receipt of a pension conditional on the hiring by his or her employer of an unemployed person, although not necessarily to fill the same position. In Denmark, the implementation in 1979 of a national program permitting early retirement attracted far more workers the first year than expected. The plan, however, does not stipulate that another person be recruited to fill the vacancy left by the retiree.

Early retirement for *unemployed workers* normally requires that a worker be registered as unemployed for a

specified period before becoming eligible for a pension. For example, in France, the Guarantee of Resources Agreement between the employers' federation and the labor unions provided a pension of approximately 70 percent of preretirement pay to redundant workers at age 60 if they agreed not to take other employment. Introduced in 1972, this plan was discontinued in 1984 when the normal retirement age was lowered from 65 to 60 years of age.

*Disability pensions* have been a standard feature of social security schemes in Western industrialized nations for several decades. Awarded to workers who have a physical or psychological disability which either precludes gainful employment or only allows employment at a reduced level, the payments were not explicitly designed to induce early retirement. Recently, however, they have taken on growing prominence as a means for early retirement as definitions of disability have become increasingly broad.

Exhibit 1 provides a summary of many of the schemes that have been devised to encourage the premature cessation of labor market activities. It indicates the diversity as well as the extent to which such plans have become firmly rooted in labor market policy. While disability pensions are not early retirement schemes per se, they have been included in the discussion because they have been manipulated to reduce labor supply and unemployment in a number of countries. Generally, early retirement pensions tend to be limited to groups of workers who meet specified qualifying conditions, such as full or partial disability, unemployment, long service, or employment in arduous or hazardous occupations. In addition, in several countries, those who meet minimum qualifying conditions and who are willing to accept an actuarially reduced benefit can elect early retirement.

Among the myriad types of schemes are those permitting partial or gradual retirement in France, the Federal Republic of Germany, Italy, Sweden, and the United Kingdom and a host of private plans, found in the United Kingdom and the United States. The schemes can operate at the national, industry, occupation, or firm level. The trend generally has been to add new early retirement options to encompass more workers. More recently, schemes based on agreements signed between the government and unions (France, the Federal Republic of Germany, and Italy), between industries and unions (France and the United States), as well as company-specific plans (the United States) have become more widespread. As exhibit 2 indicates, the availability of early retirement options is greatest in Austria, Belgium, France, the Federal Republic of Germany, Italy, and Sweden. At the other end of the spectrum are Canada, Norway,<sup>6</sup> and Switzerland, where only disability pensions exist.

As a consequence of the long-term trend in improving the conditions of workers and the implementation of broad socioeconomic goals, legislative modifications of pension schemes have generally expanded the population covered, increased benefits, lowered the entitlement age, and relaxed



Exhibit 1. Inventory of early retirement and disability schemes in Europe and North America, 1961-85

Country	Retirement age		Program	Conditions for eligibility	Amount of pension
	M-male	F-female			
	Normal	Early			
Austria	65 M 60 F	55 M 50 F	Early retirement for the unemployed (began 1961)	180 months of insurance (24 in previous 3 years) and unemployed 1 year for economic or structural reasons	30 percent of earnings in last 5 years
		60 M 55 F	Special retirement benefit (began 1961)	In certain sectors after 35 years of service; also for those engaged in physically demanding work (57 M, 52 F)	67 percent of earnings during previous year
			Disability	Loss of 50 percent of normal earnings capacity	67 percent of earnings during previous year or percent of full pension corresponding to percentage loss of earnings capacity
Belgium	65 M 60 F	55	Contractual early retirement for redundant older workers (began 1974)	Workers in private sector or temporary workers in public sector unemployed for at least 1 year; in certain cases, early retirement age is below 55	Unemployment benefit supplemented by allowance of 1,000 francs per month until normal retirement age
		60 M 55 F	Replacement of workers taking early retirement (1976-83)	Employer must replace the worker by a person under age 30 who must work for at least 1 year	Unemployment benefit supplemented by early retirement pension equal to one-half of the difference between the reference wage and the unemployment benefit
		60 M 55 F	Special early retirement benefit (1978-82)	Unemployed for at least 1 year	Person can choose between unemployment benefit plus 1,000 francs/month or old-age pension based on previous salary
		64 M	Pension for long-service or arduous occupations (began 1976)	Employed for 45 years with at least 185 days in each year or employed in arduous occupations for 5 of previous 15 years	Full pension
			Early retirement for border commuters	Frontier workers unemployed for at least 2 years	Unemployment benefit supplemented by allowance of 10 percent of previous net salary
		60 M 55 F	Early retirement (began 1983 to replace second Belgian scheme above)	Retiree must be replaced by another worker	Pension entitled to at normal retirement age
		55	Exceptions for the unemployed over age 55 (Royal decree of December 29, 1984)	Person must have been unemployed for 624 days during the previous 4 years	Unemployment benefit
	Disability	Loss of two-thirds of earnings capacity	If totally disabled, 100 percent of earnings; if partially disabled, percentage of full pension corresponding to degree of incapacity		

Exhibit 1. Continued—Inventory of early retirement and disability schemes in Europe and North America, 1961–85					
Country	Retirement age		Program	Conditions for eligibility	Amount of pension
	M-male	F-female			
	Normal	Early			
Canada	65		Disability	Prolonged incapacity for substantial gainful activity	If totally disabled, 75 percent to 90 percent of earnings depending on Province; if partially disabled, proportion of full pension corresponding to impairment
Denmark	67	60	Social Pensions Act of 1984: <sup>1</sup> Voluntary early retirement (began 1979)	Member of an unemployment insurance fund for at least 10 of the last 15 years or, in case of unemployment, satisfy conditions for daily cash benefits; part-time workers also eligible	For full-time workers, 70,000 kroner for first 2½ years, 56,000 kroner for next 2 years, and 42,000 kroner until normal retirement age
		18	Early retirement (began 1977)	Earnings capacity that is permanently reduced by at least 50 percent; for those aged 50 to 66, ill health or social circumstances	Old-age pension
			Disability	Earnings capacity that is permanently reduced by at least two-thirds	75 percent of average earnings if totally disabled; if 50-percent to 99-percent disabled, percentage of full pension proportionate to loss of earnings capacity
Finland	65	60	Unemployment Pension (began 1961)	Person who has received unemployment benefits or assistance for 200 days in previous 60 weeks and for whom authorities cannot find work; retirement age was temporarily reduced to 55 in 1983, increasing annually thereafter to 60 in 1988	Up to 80 percent of earnings
		63	Pension Support (1979–80)	Retiree is replaced by unemployed person under age 25	
		55	Special early retirement	Under certain circumstances, veterans or farmers who sell or transfer ownership of their farms	
			Disability	Unable to work because of permanent physical or mental disability	Up to 80 percent of earnings; if working ability reduced to 40 percent to 60 percent, one-half of full disability pension
France	65 (until 1983) 60 (from 1984) <sup>2</sup>	60	Special Contracts of the National Employment Fund (began 1962)	Workers made redundant for economic reasons	80 percent to 90 percent of previous salary
		60	Income guarantee -for redundant workers (1972–83) -for workers resigning (1977–83)		70 percent of salary in the previous 6 months
		60	Early retirement	Hazardous working conditions, manual workers, mothers with 3 or more children, prisoners of war, veterans	



Exhibit 1. Continued—Inventory of early retirement and disability schemes in Europe and North America, 1961–85

Country	Retirement age		Program	Conditions for eligibility	Amount of pension
	M-male	F-female			
	Normal	Early			
France— continued		55	Agreement for Social Protection in the Steel Industry (1977, 1979)	Workers in the steel industry which was in the process of restructuring	70 percent of previous gross salary; government contributes to costs, as does the EEC in some cases
		56	Contracts of the National Employment Fund (began 1980)	Workers made redundant for economic reasons	65 percent of net salary
		55	Solidarity Contracts (1982–88)	Youth or unemployed worker must be hired for 2 years; also possibility of partial retirement whereby worker receives one-half of previous salary	65 percent of salary
		55 (50 in certain cases)	General Agreement for the Protection of Workers in the Steel Industry undergoing restructuring (began 1984)	Workers whose jobs have been abolished	75 percent of former gross monthly salary and 20 percent of a year's wage until retirement age
			Disability	Disability of 50 percent	100 percent of earnings
Federal Republic of Germany	63–65	60	Early retirement (began 1957)	Women with at least 15 years of contributions	Full pension
		60	Early retirement for unemployment	15 years of contributions and unemployed for at least 52 weeks within the previous 18 months	Full pension
		63	Early retirement for long service (began 1973)	35 years of contributions	Full pension
		59	Social Plan (began 1979) by some major steel producers such as Thyssen Co. <sup>3</sup>	None	Unemployment compensation plus a supplement from the company until age 60, then normal early retirement benefits
			Automobile Industry (Opel, Daimler-Benz, Volkswagen)	Varies according to company	Varies according to company
			Program for individual sectors:		
		60	Metal industry (began 1981)	None	90 percent of previous net salary
		58	Chemical industry (began 1982)	None	75 percent of previous net salary
58	Collective agreements (1984–88)	Vacancy must be filled by person outside the firm and no company required to grant pension to more than 5 percent of employees; conditions among agreements differ; partial early retirement also possible	At least 65 percent of previous salary; under certain conditions, government pays 35 percent of pension		
		Disability	Totally unable to work or earn sufficient salary; person must have worked for at least 3 years in previous 5-year period; partial disability available if ability to earn in relation to healthy person with same qualifications is reduced by one-half because of medical reasons	Full pension; if partial disability, two-thirds of full pension or if earnings loss of 20 percent to 49 percent, pension corresponds to this loss	

Exhibit 1. Continued—Inventory of early retirement and disability schemes in Europe and North America, 1961–85

Country	Retirement age		Program	Conditions for eligibility	Amount of pension
	M-male	F-female			
	Normal	Early			
Greece	65 M 60 F	60 M 55 F or 62 M 57 F	Early retirement	Arduous work or 10,000 days of insured work	Full pension
Italy	60 M 55 F	55 M 50 F  58 M 53 W	Early retirement (began 1979)	Unemployed due to economic crisis or industrial reorganization and member of pension scheme for at least 15 years	Not available
			Early retirement	35 years of contribution	Not available
			Solidarity contracts (began 1984)	Company has not dismissed any workers in the previous year and signs a collective agreement to increase employment accordingly; worker reduces working time by 50 percent	Normal pension
			Disability (began 1965)	Total inability to work	If totally disabled, 100 percent of earnings in previous year; if 61-percent to 79-percent disabled, pension proportionate to percentage of incapacity; if 11-percent to 60-percent disabled, pension is 50 percent to 60 percent of percentage of incapacity
Netherlands	65	60  62	Unemployment Benefits Act (wvw)	Workers unemployed for preceding $2\frac{1}{2}$ years	Unemployment benefit
			Early retirement, collective agreements in specific sectors <sup>4</sup> (VUT, began 1977)	10 years of employment	80 percent to 85 percent of final salary
			Disability Security Act (WAO, began 1967)	Employees with a disability of at least 15 percent and unemployed for at least 1 year	Between 50 percent and 90 percent of previous salary, depending on degree of disability
			General Disability Act (AAW, began 1976)	Employees and non-employees with an income of at least 4,447 guilders in year preceding disability	Can not exceed net statutory wage
Norway	67	18	Disability (began 1971)	Working capacity reduced by at least 50 percent due to physical or mental impairment; account is also taken of likelihood of finding employment	Up to 100 percent of base amount (22,800 kroner in 1983); if partial disability, pension proportional to loss of earning capacity
Portugal	65 M 62 F	60  55	Early retirement for the unemployed	Unemployed for 720 days	Not available
			Early retirement for workers in physically demanding occupations	Miners, fishermen, longshoremen, and sailors	Not available
			Disability	Loss of two-thirds of earnings capacity	The higher of two-thirds of minimum wage or one-half of earnings; if disability 30 percent or more, percentage of full pension corresponding to degree of disability



Exhibit 1. Continued—Inventory of early retirement and disability schemes in Europe and North America, 1961–85

Country	Retirement age		Program	Conditions for eligibility	Amount of pension
	M-male	F-female			
	Normal	Early			
Spain	65	64	Early retirement	Employer must replace retiree with youth seeking first job; the normal retirement age is lower than 65 for those doing difficult, dangerous, or unhealthy work	Minimum of 21,000 pesetas per month
			Disability	100-percent reduction of capacity to work in own trade or profession; for partial pension, 33-percent reduction in work capacity	100 percent of actual earnings with minimum of 23,565 pesetas per month
Sweden	65	60	Actuarially reduced pension (began 1963)		Pension reduced by 0.6 percent per month for each month prior to age 65
			Early retirement (began 1972)	Unemployment benefit has been paid for maximum period or labor market assistance has been paid for 450 days and opportunity to earn a salary is permanently reduced by one-half	Full pension
			Collective agreement with large firms and some industries (began 1975)		70 percent of salary
			Flexible retirement with part-time employment (began 1976)	Employed 5 out of the last 12 months; worker must transfer from full- to part-time work and work at least 17 hours a week	50 percent of salary lost due to part-time employment
			Disability (began 1970)	Working capacity reduced by one-half due to physical or mental impairment or on grounds of redundancy (special medical examination not required); partial disability available on grounds of premature aging or mental incapacity	Full pension
Switzerland	65 M 62 F		Disability (began 1960)	Earnings capacity must be reduced by at least two-thirds or 360 days of total incapacity for work followed by at least 50-percent loss of earning capacity	Same as old-age pension plus supplement to guarantee a minimum subsistence level
United Kingdom	65 M 60 F	62–64 M 59 F	Job Release Scheme <sup>5</sup> (began 1977)	Employer must replace retiree with someone from unemployment register; can be indirectly replaced by promotion or transfer; early retirement age for men also depends on marital status and income of spouse; lowered to age 60 for the disabled	£50–71 a week depending on marital status and degree of disability
			Early Retirement Pension (began 1981)	Men unemployed for at least 1 year	Long-term supplementary unemployment benefit
		62–64 M 59 F	Part-time Job Release Scheme (began 1983)	Worker must shift to part-time work and unemployed person recruited for other one-half of job; from May 1985, employers recruiting unemployed replacement workers that meet certain conditions receive grant of up to £840	£29–41 a week depending on marital status, with supplement of £4
			Disability	100-percent disabled	Up to £54 a week plus unemployment supplement of £31 a week; if 20-percent to 90-percent disabled, £11–48 a week

Exhibit 1. Continued—Inventory of early retirement and disability schemes in Europe and North America, 1961–85

Country	Retirement age		Program	Conditions for eligibility	Amount of pension
	M-male	F-female			
	Normal	Early			
United States	65 <sup>6</sup>	62	Early Retirement Option (began 1956 for women, 1961 for men)		Benefits reduced 5/9 of 1 percent for each month prior to normal age <sup>7</sup>
		55 <sup>8</sup>	Private pension plans	Depends on plan	Depends on plan
			Public employee plans	Depends on plan	Depends on plan
			Basic steel collective agreements <sup>9</sup>	Employees whose service is interrupted by a plant or department shutdown	Varies
			Early retirement in individual firms (for example, Dupont, Caterpillar Tractor, began 1985)	Varies with firm	Varies with firm
Disability Insurance Program	Person is unable to work due to physical or medical impairment expected to last at least 1 year or result in death	Varies			
Commission of the European Communities		55	Social <i>volet</i> , 1981 <sup>10</sup>	Workers in steel companies undergoing restructuring; retirement age is 50 in special cases	Given for up to 3 years

<sup>1</sup> In 1984, the Danish Parliament passed Act No. 217 which codified into a single act all the previous schemes.

<sup>2</sup> Incentive of 5 percent a year for delaying retirement has been eliminated.

<sup>3</sup> Under the reorganization plan adopted in the Saar in 1977, the early retirement age was set at 55.

<sup>4</sup> In 1979, it was extended to include public sector workers.

<sup>5</sup> Originally applicable only in Assisted Areas, it was extended to rest of country.

<sup>6</sup> In 1983, eligibility age for full retirement benefits was raised from 65 to 67,

to be gradually phased in between 2002 and 2027.

<sup>7</sup> In 1983, the early retirement reduction in benefits claimed at age 62 was raised from 20 percent to 30 percent, to be phased in gradually between 2002 and 2027.

<sup>8</sup> Most common minimum age.

<sup>9</sup> For example, Pension Agreement Between the United States Steel Corporation and the United Steelworkers of America, July 31, 1980.

<sup>10</sup> Matching contribution from member state.

SOURCES: See Economic Commission for Europe, *Economic Survey of Europe in 1985–1986* (New York, United Nations, 1986), p. 109.

eligibility requirements. However, since the early 1970's, a number of strategies have been implemented based upon short-run cyclical considerations, rather than on long-term perspectives. As unfavorable developments in the world economy beginning in the late 1960's generally raised unemployment levels and reduced the ability of economically vulnerable groups, including the aged and the disabled, to find and retain suitable employment, pressures mounted for additional initiatives. The result was a series of new plans combined with a relaxation and reinterpretation of existing laws. By 1975, for example, Italy had adopted provisions for early retirement with full benefits for long service, while Belgium, Finland, France, and Sweden permitted early retirement for reasons of involuntary unemployment, and in Austria and the Federal Republic of Germany either condition was sufficient.

In recent years, governments have shied away from lowering statutory retirement ages, preferring instead to rely on early retirement schemes. One possible explanation for this preference is the intended temporary character of these schemes, while modifying the statutory retirement age im-

plies a permanent change. Such strategies permit a review and adjustment of early retirement schemes in the light of changing employment conditions and minimize the possibility of early retirement being enshrined as a right.

As already noted, other developments have involved disability pensions. In the Federal Republic of Germany, Finland, and the Netherlands, a series of changes in the definition of disability in the 1960's and 1970's provoked a substantial jump in the awarding of benefits on these grounds. In Germany, the Federal Social Court issued rulings in 1969 and 1976 requiring pension institutions to place greater emphasis on whether an appropriate job existed in adequate numbers before reaching an unfavorable disability determination. In 1973, legislation in Finland eased the statutory disability definition to permit a person's overall social situation to be taken into account. That same year, the Netherlands also broadened the definition of disability in the light of prevailing labor market conditions by taking into consideration the likelihood of the disabled finding suitable employment. In Sweden, disability pensions can be awarded on the grounds of redundancy without a medical



examination of the applicant, and in Norway, the employment situation is one of the factors used in determining the degree of disability. In addition, Norway and Sweden permit early retirement on grounds of "premature aging." Consequently, in a number of countries many awards for total disability have been granted to those only partially incapacitated but for whom no suitable job was available.

### The nature of the retirement decision

A multitude of factors, alone or in conjunction, influence a worker's decision to withdraw prematurely from the labor force. These factors include the difference between post- and pre-retirement income, the unemployment rate, the extent of social security benefits and availability of private pension plans, the tax structure, and the inflation rate. Other factors, while not economic (and more difficult to quantify), are no less important in the decision to opt for early retirement. These are job satisfaction, stress, ill health or disability, the desire for leisure, marital status, and the presence of dependents.

By encouraging workers to retire prematurely, the schemes described above have contributed to one of the most prominent labor market developments since the early 1960's, namely the unprecedented drop in the participation rates of older men.<sup>7</sup> Since 1960 (and particularly after 1970), participation rates have fallen precipitously among men aged 60 to 64, while declining less sharply, but in most cases still substantially, for those aged 55 to 59. This despite modest increases in life expectancy at older ages, improvements in health conditions and levels of educational attainment, and a long-term trend towards higher levels of inflation, all of which would provide a stimulus for labor market activity.

Table 1 presents comparative data on the labor force

participation rates of older workers for selected years. For 11 countries of Western Europe and North America, the unweighted average of activity rates for men aged 60 to 64 fell from 60.6 percent in 1975 to 44.0 percent by around 1984. Within the relatively brief 14-year span between 1970 and 1984, labor market activity rates of such men plummeted by more than 2.5 percentage points annually in Belgium, Denmark, France, Germany, and the Netherlands; fell to a lesser extent in Austria, Finland, and the United Kingdom (between 1.5 and 2.5 percentage points a year); and declined more modestly in Italy, Sweden, and the United States (less than 1.5 points a year). An average decline of 2.8 points took place in France, despite pension rates which are very progressive between the ages of 60 and 65 and which thus would discourage early retirement.<sup>8</sup>

Falling participation has also characterized men aged 55 to 59 in 9 of the 10 countries for which data are available. However, in all of those countries, the decline was considerably less steep than for men in the subsequent 5-year age group. This is not surprising given the fact that, for the majority of early retirement schemes, eligibility is limited to workers aged 60 to 64. For all countries, the average unweighted activity rate of men 55 to 59 declined from 83.2 percent to 77.2 percent between 1975 and 1984.

Generalizations concerning the pace of changes in participation rates are difficult. Since 1980, the rate of decline in male participation for those aged 60 to 64 has tapered off in six countries (Belgium, Denmark, Finland, Germany, Sweden, and the United States), and it is likely that a lower limit is being approached in these countries. In France, the Netherlands, and the United Kingdom, the declines in participation rates have accelerated since 1980.

Trends in women's participation rates display a greater degree of divergence than those for men. Between 1970 and

Exhibit 2. Availability of early retirement options in 14 countries, 1985

Country	Early retirement option					
	Disability	Unemployment	Reduced benefit	Long service	Arduous occupations	Partial retirement
Austria .....	X	X	—	X	X	—
Belgium .....	X	X	—	X	X	—
Denmark .....	X	X	—	—	—	—
Finland .....	X	X	—	—	—	—
France .....	X	X	X	—	X	X
Federal Republic of Germany .....	X	X	—	X	—	X
Italy .....	X	X	—	X	—	X
Netherlands .....	X	X	—	—	—	—
Norway .....	X	—	—	—	—	—
Sweden .....	X	X	X	—	—	X
Switzerland .....	X	—	—	—	—	—
United Kingdom .....	X	X	—	—	—	X
Canada .....	X	—	—	—	—	—
United States .....	X	—	X	—	—	—

Table 1. Labor force participation rates of older workers by age and sex, selected years, 1970-84

Country and sex	55-59 years					60-64 years					65 years and over				
	1970	1975	1980	1984	Average annual change	1970	1975	1980	1984	Average annual change	1970	1975	1980	1984	Average annual change
<b>Men</b>															
Austria	-	-	-	175.1	-	47.7	37.1	27.5	121.5	-2.0	-	-	25.9	126.7	0.3
Belgium	-	82.2	374.0	470.5	-2.0	-	58.3	340.1	434.1	-4.0	-	212.4	238.8	246.2	-1.0
Denmark	-	584.5	81.8	687.8	0.5	-	574.5	59.7	656.9	-2.9	-	2547.0	236.0	634.5	-2.1
Finland	76.6	71.3	67.6	70.0	-0.5	65.0	52.8	43.0	43.0	-1.6	19.0	10.4	17.0	12.0	-0.5
France	-	83.3	80.9	68.1	-1.7	-	56.7	47.6	31.1	-2.8	-	222.7	214.3	211.0	-1.3
Germany	89.2	85.7	82.3	80.1	-0.7	74.7	58.3	44.2	35.2	-2.8	230.6	11.0	7.4	29.4	-1.5
Italy	81.0	77.8	74.8	173.3	-0.6	48.2	42.4	39.6	136.8	-0.9	12.9	10.4	12.6	116.3	0.3
Netherlands	786.9	80.3	74.2	472.6	-1.4	773.9	64.9	50.1	443.7	-3.0	711.4	8.0	4.8	44.1	-0.7
Sweden	790.9	89.7	87.7	687.2	-0.3	778.1	74.0	69.0	668.4	-0.9	728.9	19.9	14.2	11.1	-1.6
United Kingdom <sup>8</sup>	793.1	93.0	90.1	82.0	-0.8	782.9	82.3	71.2	56.7	-2.0	2730.4	225.9	216.6	213.5	-1.3
Canada	-	-	-	-	-	-	-	-	-	-	24.3	18.5	14.7	12.6	-3.2
United States	89.5	84.4	81.9	80.2	-0.7	75.0	65.7	61.0	56.1	-1.4	26.8	21.7	19.1	16.3	-0.8
Average	86.7	83.2	79.5	77.2	-0.8	68.2	60.6	50.3	44.0	-2.2	23.0	18.9	14.3	12.8	-1.3
<b>Women</b>															
Austria	-	-	-	125.9	-	-	-	8.8	17.6	-0.4	-	-	22.7	124.0	0.4
Belgium	-	21.3	319.1	417.2	-0.7	-	7.8	36.4	45.8	-0.3	-	22.5	231.7	242.5	0.0
Denmark	-	547.6	52.0	658.5	1.8	-	531.2	28.9	630.4	-0.1	-	12.1	212.7	613.1	0.2
Finland	56.1	56.4	57.0	66.0	0.7	35.9	32.5	27.4	38.0	0.2	4.4	252.9	6.0	4.0	0.0
France	-	43.5	47.3	42.9	-0.1	-	29.8	27.3	19.0	-1.2	-	211.7	26.8	225.9	-0.6
Germany	37.2	38.4	38.7	40.2	0.2	22.5	16.4	13.0	11.8	-0.8	210.7	4.4	3.0	24.5	-0.4
Italy	18.2	17.3	21.4	120.8	0.2	10.6	8.5	11.0	110.5	0.0	2.6	2.1	3.5	14.3	0.1
Netherlands	717.7	17.9	18.2	420.2	0.3	711.9	10.7	9.8	49.9	-0.2	72.2	1.7	0.9	40.8	-0.1
Sweden	754.6	60.8	68.8	672.1	1.6	734.5	38.3	41.0	646.2	1.1	78.7	6.1	3.7	3.8	-0.4
United Kingdom <sup>8</sup>	750.9	52.4	53.6	51.1	0.0	728.8	28.6	22.4	21.2	-0.6	276.3	24.9	23.6	23.0	-0.3
Canada	-	-	-	-	-	-	-	-	-	-	-	-	4.3	4.7	-1.8
United States	49.0	47.9	48.6	49.8	0.1	36.1	33.3	33.3	33.4	-0.2	9.7	8.3	8.1	7.5	-0.2
Average	40.5	40.4	42.5	42.2	0.4	25.8	23.7	20.8	21.3	-0.2	6.4	5.7	4.8	4.8	-0.4

1 Data relate to 1983.

2 Data relate to persons age 65 to 69 years.

3 Data relate to 1979.

4 Data relate to 1981.

5 Data relate to 1976.

6 Data relate to 1982.

7 Data relate to 1971.

8 Data relate to Great Britain only.

NOTE: Dashes indicate data are not available.

Source: Mikrozensus 1983, Beiträge zur Österreichischen Statistik, Vienna, 1984; Statistisches Handbuch für die Republik Österreich, various issues, Österreichisches Statistisches Zentralamt; Eurostat, Labour Force Sample Surveys, various issues, Luxembourg; Arbeidsmarked, Danmarks Statistik, various issues, Copenhagen; Labour Reports, various issues, Ministry of Labour, Helsinki, Finland; Annuaire Statistique de la France, 1984, INSEE, Paris; Enquête Sur l'Emploi de 1984, les Collections de l'INSEE, D 105; Statistisches Jahrbuch, various issues, Statistisches Bundesamt, Wiesbaden; Annuario di Statistico del Lavoro, various issues, Istituto Centrale di Statistica, Rome; Netherlands, unpublished data provided by the Central Statistical Office, 1985; För Gammal För Arbete? Beträkande från äldrearbetskommittén, Stockholm, 1983; The Labour Force Surveys 1970-1980, Statistiska Meddelanden, AM 12 SM 8501, Stockholm; Arbetskraftsundersökningarna 1984, Statistiska Meddelanden, Am 12 SM 8501; Employment Gazette, July 1985, Department of Employment, London; The Labour Force, various issues, Statistics Canada, Ottawa; Employment and Earnings, various issues, Department of Labor, Washington DC.

1984, women aged 60 to 64 reduced their rates by more than 0.5 point a year in three of the countries studied, while in six countries the activity rate changed little (between -0.3 and +0.2 point on an average annual basis). Sweden was exceptional in that a significant increase took place (1.1 percentage points a year). For women aged 55 to 59, participation rates declined only in Belgium and France. Generally, the male-female ratio of early pensioners for Western Europe as a whole has been approximately 3 to 1, whereas the ratio of men to women in the labor force has been around 1.6 in recent years. One conclusion to be drawn from the data is that older women, particularly those not married, display a stronger labor force attachment than their male counterparts. Among the possible reasons for this phenomenon is that the shorter time women spend in the labor force and lower wages of female workers result in smaller lifetime earnings upon which pension benefits are based. In addition, early retirement programs have been concentrated in the industrial

sector, and particularly manufacturing. It is in this sector that men predominate to a greater degree than in the total labor force.

### Program characteristics and costs

Despite the extensive number and coverage of early retirement schemes, data do not exist in sufficient detail to permit the scope and effects of the schemes to be quantified. One difficulty is the fact that several different funds in a single country may dispense pensions, with no agency collecting data on a national basis. (In France, for example, there are currently more than 100 different pension funds.) Thus, information on numbers of early retirees, their previous occupational and industrial characteristics, and the costs incurred for early-out programs is for the most part not published regularly, if at all. In the United States, the existence of a vast array of private pension schemes (about 500,000) operating independently of the Social Security



system makes data collection virtually impossible.<sup>9</sup> In recent years, a number of U.S. companies have offered "golden handshakes," or early retirement, to employees as a means of thinning out their work forces, but data on such programs are, of course, not reported to Social Security authorities.<sup>10</sup> Table 2 provides some estimates of the size of the various programs, which, if aggregated, indicate that in Western Europe and North America there were more than 5 million recipients of early retirement pensions and at least 11 million recipients of disability pensions in 1984. To the extent that private pension plans are operating, these numbers are understated. To gauge the relative size of such programs, the numbers of disabled as a proportion of the total labor force and of early retirees as a proportion of the appropriate age group have also been calculated.

Many of the legislative and policy changes of recent years are reflected in the data. The number of disability pensions in force as a percentage of the labor force increased from 6.4 percent to 8.7 percent in the Federal Republic of Germany between 1975 and 1984, went from 7.9 percent to 9.4 percent in Finland between 1970 and 1983, and almost tripled, from 4.4 percent to 12.2 percent, in the Netherlands between 1970 and 1984. For many years of the study period, the number of disability pensions awarded to men in the Federal Republic of Germany exceeded the number of retirement pensions. During the 1970's, the proportion of traditional pensions fell from 40 percent to 10 percent of the total as a consequence of the high takeup of early retirement and disability schemes. Another contributing factor in the flourishing of disability pensions in a number of countries is a replacement ratio (benefits as a proportion of previous earnings) for disability payments that often is higher than that for unemployment payments. In some cases, the pension exceeds predisability income. The rapid growth in the United States disability program, however, is surprising, as the criteria for disability have remained quite stringent and the program is not intended to pay benefits to either healthy unemployed workers or to those with only marginal impairments. Nevertheless, the number receiving disability benefits in that country rose sharply between 1970 and 1980.<sup>11</sup>

One basic distinction among national disability systems has been the minimum reduction of work capacity required for eligibility. In the Netherlands, a reduction of only 15 percent is necessary, while in many countries, it is between 50 percent and 66 percent. The United Kingdom and the United States are at the other end of the spectrum, demanding that the recipient be totally incapable of work. It is interesting to note that in the Netherlands and in Sweden (where only a 50-percent reduction in work capacity is required), more than 85 percent of the beneficiaries were receiving the full benefit in 1978. This contrasts sharply with systems that base disability ratings on a medical scale and under which only a minority of beneficiaries receive the maximum benefit.

Lack of data severely restricts cross-national comparisons

and makes it difficult to discern any clear patterns. This is certainly the case if attempting to generalize about the relationship between early retirement and declining activity rates among older men. Of those countries with either a large proportion of early retirees—Denmark, Finland, Germany, and the United States, with more than 15 percent of the appropriate age—or a large proportion of disability pensioners—Italy, the Netherlands, and Norway, with more than 10 percent of the labor force—only in Denmark, the Federal Republic of Germany, and the Netherlands has there been a substantial fall in the labor force participation of men aged 60 to 64.

Looking at the countries with the most significant declines in participation rates (for example, Belgium, Denmark, and the Netherlands), one might conclude that the decline is a function of more favorable pension characteristics (such as higher earnings replacement ratios and lower thresholds of eligibility) than those in countries such as the United States which display much smaller declines in participation rates and less generous benefits. While this may hold true to a certain extent, it should also be borne in mind that not negligible declines also have taken place in the United States. Although Social Security policy in that country was not altered to foster early retirement over the study period, and in fact was modified to encourage the postponement of retirement, the proportion of men aged 62 to 64 who were out of the labor force rose from 31 percent to 52 percent between 1970 and 1983.<sup>12</sup> In the United States, the response to mounting unemployment has been to continue the historical approach of temporarily extending the duration of unemployment benefits. Given the lower unemployment benefits and shorter eligibility period as compared with most of the European countries, the United States figures suggest that a "discouraged worker" effect might be operating, whereby older workers unable to find employment are dropping out of the labor force in order to collect actuarially reduced pension benefits at an earlier age.<sup>13</sup> A negative relationship between rising unemployment and older male participation is suggested by the data for Belgium, Denmark, and the Netherlands, countries that have concomitantly experienced substantial increases in unemployment and large outflows of 60- to 64-year-old men from the labor force. This contrasts with low unemployment countries such as Austria, Finland, and Sweden, where declines in the participation rates of men in the same age bracket have been of a much more modest nature.

It can be also noted that, by around 1980, a stabilization or tapering off occurred in the growth of disability pensions in some countries—Denmark, Finland, the Netherlands, and the United States—which has been offset to some extent by an acceleration in the number of workers opting for early retirement.<sup>14</sup> One might thus speculate that, provided with a choice, workers are showing a growing preference for early retirement pensions as opposed to disability pensions. This may also be a reaction to various caps on government

expenditures which resulted in the application of stricter criteria in the awarding of disability pensions. The lax interpretation of disability criteria which prevailed in the 1970's helped foster a situation whereby in some countries, such as Italy, the Netherlands, and Norway, the ratio of labor force participants to disability pensioners had fallen to approximately 8 to 1 by the early 1980's.<sup>15</sup>

An examination of the available data on early retirees classified by industry of previous employment reveals that early retirement is concentrated in those sectors where employment contractions have been most pronounced, such as textiles and clothing, engineering, metal industries, and construction. In Belgium, France, the Federal Republic of Germany, and the United Kingdom, participants tend to be a very atypical sample of the labor force, with unskilled and semiskilled manual workers being overly represented among early retirees and professionals and managers under-

represented. The population of disability pensioners in Sweden also exhibits such a bias, heavily weighted towards unskilled workers in declining industries.

### Evaluating early retirement schemes

How effective a weapon is the promotion of early retirement in combating unemployment? Given both the popularity and enormous costs associated with early retirement schemes, the dearth of studies evaluating estimated versus real costs of the plans is surprising. One method often used to assess public expenditures, cost-benefit analysis, can serve as the basis for evaluations of early retirement schemes. However, the problems that arise with this technique are formidable and involve, firstly, the numerous factors that must be taken into consideration, and secondly, the values to impute to the factors. Leaving aside the question of imputed values, a cost-benefit taxonomy displaying

**Table 2. Number of beneficiaries of selected retirement and disability pensions, 12 countries, selected years, 1970-85**  
[Numbers in thousands]

Country	Plan type	1970	1975	1980	1981	1982	1983	1984	1985
Austria	Long-service/unemployment	-	52	64	73	86	-	-	-
	Percent of population 55-64	-	27.3	8.7	9.6	10.9	-	-	-
Belgium	Early retirement <sup>1</sup>	-	333	81	99	117	129	-	-
	Percent of population 55-64	-	33.5	8.1	9.7	11.1	11.5	-	-
Denmark	Voluntary early retirement	-	-	53	63	70	76	-	-
	Percent of population 60-69	-	-	10.5	12.4	13.8	15.1	-	-
Finland	Disability	112	149	152	151	152	141	-	-
	Percent of labor force	4.7	6.0	5.7	5.7	5.7	5.3	-	-
	Unemployment	1	13	17	23	33	35	-	-
	Percent of population 60-64	0.4	5.6	8.1	10.7	14.9	15.5	-	-
France	Special early retirement	-	-	-	-	45	-	-	-
	Percent of population 55-64	-	-	-	-	9.2	-	-	-
	Disability	172	249	243	240	236	238	-	-
	Percent of labor force	7.9	11.0	10.0	9.7	9.3	9.4	-	-
Federal Republic of Germany	Early retirement <sup>3</sup>	13	84	215	330	488	696	675	4634
	Percent of population 55-64	0.5	2.0	4.5	6.5	9.1	12.4	11.7	-
Italy	Early retirement	-	1,089	1,407	1,503	1,613	1,718	1,822	-
	Percent of population 55-64	-	18.3	23.8	24.6	25.2	25.6	27.6	-
	Disability <sup>5</sup>	-	1,715	2,025	2,129	2,252	2,357	2,373	-
Netherlands	Percent of labor force	-	6.4	7.5	7.8	8.2	8.6	8.7	-
	Disability	-	-	-	-	-	3,139	3,046	-
Norway	Percent of labor force	-	-	-	-	-	13.5	13.0	-
	Early retirement	-	-	20	-	-	-	-	-
Sweden	Percent of population 60-64	-	-	3.4	-	-	-	-	-
	Disability Security/General	215	349	661	689	711	728	4741	757
	Percent of labor force	4.4	6.9	12.0	12.2	12.2	12.3	12.2	-
United Kingdom	Disability <sup>6</sup>	-	-	192	191	197	204	219	-
	Percent of labor force	-	-	9.7	9.7	9.9	10.1	10.8	-
United States	Flexible (partial) retirement	-	715	67	63	61	54	-	-
	Percent of population 60-64	-	3.1	14.3	13.0	12.4	11.0	-	-
	Disability	212	289	293	302	309	314	-	-
United Kingdom	Percent of labor force	5.4	7.0	6.8	7.0	7.1	7.2	-	-
	Job release scheme	-	810	866	858	867	995	1086	1054
	Percent of population 60-64	-	0.4	2.6	2.2	2.5	3.4	-	-
	Early retirement	-	-	-	27	-	-	-	-
United States	Percent of population 60-64	-	-	-	1.0	-	-	-	-
	Early retirement <sup>11</sup>	1,225	1,723	2,017	2,115	2,213	2,321	2,407	102,453
	Percent of population 60-64	14.1	18.3	19.9	20.4	20.9	21.6	23.2	-
	Disability Insurance Program <sup>12</sup>	2,665	4,352	4,682	4,456	3,973	3,813	3,822	103,857
United States	Percent of labor force	3.1	4.5	4.3	4.1	3.5	3.4	3.3	3.3

<sup>1</sup> Includes contractual, statutory, and special schemes.

<sup>2</sup> Data relate to 1977.

<sup>3</sup> Data relate to December 31.

<sup>4</sup> Data relate to July 31.

<sup>5</sup> Includes occupation and employee disability pensions.

<sup>6</sup> National insurance.

<sup>7</sup> Data relate to 1976.

<sup>8</sup> Data relate to April.

<sup>9</sup> Data relate to September.

<sup>10</sup> Data relate to March.

<sup>11</sup> Retired workers aged 62 to 64 receiving Social Security benefits.

<sup>12</sup> December of each year. Includes dependents and relates only to payments under Social Security.

NOTE: Dash indicates data not available.

SOURCE: See Economic Commission for Europe, *Economic Survey of Europe in 1985-1986* (New York, United Nations, 1986), p. 109.



**Exhibit 3. Benefits and costs of early retirement schemes to the program participant, employer, and government**

Party	Benefits	Costs
Program participant:		
Retiree	<ul style="list-style-type: none"> <li>● Value of pension</li> <li>● Value of leisure</li> <li>● Social and psychological benefits of not being unemployed<sup>1</sup></li> </ul>	<ul style="list-style-type: none"> <li>● Value of salary forgone</li> <li>● Value of unemployment benefit foregone<sup>1</sup></li> </ul>
Worker replacing retiree <sup>2</sup>	<ul style="list-style-type: none"> <li>● Value of salary</li> <li>● Value of training and experience</li> <li>● Social and psychological benefits of not being unemployed</li> </ul>	<ul style="list-style-type: none"> <li>● Value of unemployment benefit foregone</li> </ul>
Employer	<ul style="list-style-type: none"> <li>● Younger age structure of the work force</li> <li>● Value of lower salary expenditures</li> </ul>	<ul style="list-style-type: none"> <li>● Loss of experienced worker</li> </ul>
Government	<ul style="list-style-type: none"> <li>● Reduction in expenditures for unemployment benefits and other income transfer programs</li> <li>● Increase in social security contributions<sup>2</sup></li> <li>● Increase in income taxes<sup>2</sup></li> </ul>	<ul style="list-style-type: none"> <li>● Expenditures on early retirement schemes</li> <li>● Decrease in social security contributions<sup>3</sup></li> <li>● Decrease in income taxes<sup>3</sup></li> </ul>

<sup>1</sup> Assumes retiree would have been unemployed in the absence of scheme.      <sup>3</sup> For schemes in which retiree is not replaced with another worker.  
<sup>2</sup> For schemes which require that retiree be replaced with another worker.

the gains and losses associated with early retirement schemes for participants, employers, and governments is shown in exhibit 3. Even if based on variables that are only roughly approximated, such an accounting framework can highlight the equity considerations involved, as well as focus on economic efficiency. Although not appearing in the exhibit, another cost to be factored in is that of dead-weight, namely payments to persons who would have retired anyway. Depending on whether the retiree is replaced or not, the exhibit would have to be modified accordingly.

This raises the issue of the extent to which retirees are replaced with other workers. As few countries have monitored schemes in progress or have incorporated an evaluation component into them, estimating the overall impact on employment is hazardous. Based on various published studies, table 3 provides, for selected schemes, estimates of the proportion of early retirees that have been replaced with other workers. Apparent is the range of replacement rates, which vary from a low of 25 percent in the Netherlands to 95 percent in France, where replacement of the retired worker is mandatory. However, in Belgium, where replacement is also obligatory, the rate is only 67 percent, despite fines which can be levied against offending employers. This is one indication of the difficulty involved in monitoring compliance with the schemes. Viewed in this way, alleviating unemployment by means of early retirement is much more costly in the Netherlands, where only 1 out of 4 early retirees is replaced, than in France where, under solidarity contracts, virtually all jobs vacated by early pensioners have been filled.<sup>16</sup> However, even in those countries where the

replacement of retirees is mandated (Belgium and France), no studies have followed the employment of newly recruited workers beyond the obligatory employment period, which is normally 6 months to a year.

Another possible avenue of analysis would be to compare early retirement costs to alternative employment policies such as unemployment benefits. Table 4 compares the two policy options in terms of replacement ratios, that is, the ratio of the pension or unemployment benefit to the previous salary. With the exceptions of France, where unemployment payments are substantially higher than those for early retirement,<sup>17</sup> and the Netherlands, where unemployment benefits are only slightly higher, early retirement payments have been equal to or have exceeded unemployment benefits in the countries for which data are available. Thus, the strong preference shown by workers for early retirement is not surprising. Furthermore, early retirement schemes are paid until the normal retirement age is reached, while entitlement to unemployment benefits usually lasts for a maximum of 2 years.

### Conclusions

Even if early retirement schemes fail to boost the overall level of employment or satisfy criteria of economic efficiency, they may still be judged beneficial if employment is redistributed in favor of groups that suffer from disproportionately high rates of unemployment. On the other hand, if workers who are already unemployed are merely redefined as early retirees, nothing has been accomplished to meet the aspirations of these workers who wish to continue working.

In fact, the very existence of early-out schemes may remove any reluctance employers have in declaring workers redundant. This then becomes a rather expensive method of disguising unemployment.

The enormous potential outflow of older workers from the labor force as a consequence of demographic aging, further reinforced by incentives to retire early, would put serious pressures on national economies through its impact on national pension schemes. Part of the strain can be traced to imposing upon pensions a function for which they were never designed, that is, a mechanism for narrowing the gap between the supply of, and demand for, labor.<sup>18</sup>

By fostering early retirement as an ad hoc method of lowering unemployment, the danger exists of institutionalizing a short-term policy response. Given the anticipated drain on pension systems due to the growing propensity for early retirement and to population aging, the ongoing viability of early-out schemes will require that a growing share of national income be devoted to the support of older dependents.<sup>19</sup> This will have significant ramifications for macroeconomic policies, public support programs, and tax measures. Dissipating the strain on pension schemes could take

**Table 4. Comparison of early retirement and unemployment benefits, selected countries**

Country	Early retirement benefit <sup>1</sup>	Unemployment benefit <sup>2</sup>
Belgium .....	67	67
Denmark .....	92	92
Finland .....	80	44
France .....	65-75	90
Germany .....	377	68
Netherlands .....	80-85	89
Sweden .....	85-90	82

<sup>1</sup> Percent of previous salary.

<sup>2</sup> Rate of disposable income replacement of an unemployed "typical worker" (married worker with three dependents in 1982).

<sup>3</sup> Based on monthly net salary of 2,214 DM.

SOURCES: Exhibit 1; and Economic Commission for Europe, *Economic Bulletin for Europe*, vol. 85, no. 3, (New York, Pergamon Press for the United Nations, September 1983), p. 292.

the form of increasing employment, boosting productivity, raising employee and employer contributions, or some combination of the three options. Because the first two options are a function of macroeconomic developments, they are extremely difficult to implement.

The third possibility, being an administrative decision, would be relatively simple to undertake, although it could have serious and unintended repercussions. Burdening employers and employees with additional payroll taxes could be counterproductive as it may shrink the demand for labor. Furthermore, it may also stimulate even more retirement and promote a shadow, or underground, economy in which workers evade the payment of taxes.<sup>20</sup> (Yet, for early retirement options to be attractive, they should not be based on actuarially discounted pensions.)

Another factor to be taken into consideration if devoting a larger slice of national product to the elderly is the possible backlash against a redistribution of wealth if it is perceived as being at the expense of other population segments, such as children. In the United States, the sheltering of the Social Security program from budget cuts has been viewed by some as contributing to the substantial reductions in national programs benefiting children.<sup>21</sup>

From a long-term perspective, the advisability of encouraging premature retirement seems highly questionable. Given falling birth rates and subsequent future contractions in the working-age population, labor force growth will come to a virtual standstill in developed countries by the turn of the century. In addition, the ratio of pensioners to wage earners contributing to social security programs will rise. A more appropriate future policy would thus appear to call for gradually raising the mandatory age of retirement, while eliminating the incentives to early retirement. □

**Table 3. Replacement rates of early retirement schemes**

Country and scheme	Percent of retirees replaced
Belgium: Early retirement pension .....	67
Denmark: Early retirement scheme .....	70-75
Finland: Early retirement for veterans .....	45
France: Solidarity contracts .....	95
Germany: Early retirement for long service .....	60
Netherlands: Early retirement .....	25
Sweden: Partial pension .....	50
United Kingdom: Job release scheme .....	70-75

SOURCES: *Social Security, Unemployment and Premature Retirement*, Studies and Research, No. 22, International Social Security Administration, Geneva, 1985, pp. 37, 47; *Efficiency of Labor Market and Employment Policy Measures*, Study No. 82/6, p. 131, Commission of the European Communities, Brussels, 1982; M. Frossard, "Crise et cessations anticipées d'activité: une comparaison internationale," *Travail et Emploi*, Ministère des affaires sociales et de la solidarité nationale, April-June 1983, No. 16, Paris, p. 24; *Monthly Labor Review*, October 1985, Department of Labor, Washington DC., p. 40; D. Metcalf, *Alternatives to Unemployment*, *Special Employment Measures in Britain*, Policy Studies Institute, London, 1982; R. Layard, *Unemployment in Britain, Causes and Cures*, Centre for Labour Economics Discussion Paper No. 87, London School of Economics, 1981.

FOOTNOTES

<sup>1</sup> Wage subsidy schemes, a measure designed to boost the demand for labor, were discussed in Economic Commission for Europe, *Economic Survey of Europe in 1983* (New York, United Nations, 1984), pp. 38-54.

<sup>2</sup> For example, under the Social Security system, retirement with actuarially reduced benefits prior to age 65 was initially made available to women

in 1956 and in 1961 to men. With the United States in the midst of a recession in 1961 and suffering from almost 7-percent unemployment, it was recognized that unemployed older workers would encounter enormous difficulties in finding jobs.

<sup>3</sup> It should be noted that the expansion of disability programs was also



partly a consequence of the changing definition of good health; thus, eligibility criteria for disability have been loosened not only for employment reasons.

<sup>4</sup> Economic Commission for Europe, *Economic Survey of Europe in 1985-86* (New York, United Nations, 1986), p. 45.

<sup>5</sup> *World Population Prospects: Estimates and Projections as Assessed in 1984* (New York, United Nations, 1986).

<sup>6</sup> In Norway, schemes have been implemented to encourage the continuation of work beyond the normal pensionable age of 67. Given the extremely low levels of unemployment in that country, the government has not found it necessary to foster premature retirement. (Over the 1980-85 period, the unemployment rate in Norway never exceeded 3.3 percent).

<sup>7</sup> A substantial amount of research exists concerning the contribution of early retirement schemes to falling male participation. See, for example, Virginia Reno and Daniel Price, "Relationship Between the Retirement, Disability and Unemployment Insurance Programs: The U.S. Experience," *Social Security Bulletin*, May 1985; *Social Security, Unemployment and Premature Retirement*, Studies and Research No. 22 (Geneva, International Social Security Association, 1985); and "Bilan de L'Emploi, 1984," *Dossiers Statistiques du Travail et de l'Emploi* (Paris), September 1985, No. 12-13.

<sup>8</sup> In France, the lowering of the normal retirement age in 1984 from 65 to 60 does not appear to have had any noticeable impact yet on the trend in male participation. The activity rate for men 60-64 was 2.5 percentage points lower in 1984 than in 1983, which is in keeping with the downward movement that has been observed in the last few years. It had been predicted that a decline in the retirement age would result in 350,000 additional retirees. See Roland Cuvillier, *The Reduction of Working Time* (Geneva, International Labor Office, 1984), p. 63.

<sup>9</sup> A 1979 survey of private pension plan coverage in the United States found that about 50 percent of all men and 31 percent of all women who were employed in private industry were covered by private pension plans. Gayle Rogers, *Pension Coverage and Vesting Among Private Wage and Salary Workers, 1979: Preliminary Estimates from the 1979 Survey of Pension Plan Coverage*, Working Paper No. 16 (Washington, Office of Research and Statistics, Social Security Administration, 1980).

<sup>10</sup> In the United States, the prevalence of early retirement options in pension plans of medium and large sized firms was confirmed in a study by the Bureau of Labor Statistics which estimated that 58 percent of workers were included in plans that permitted early retirement. See *Employee Benefits in Medium and Large Firms*, Bulletin 2176 (Bureau of Labor Statistics, August 1983).

<sup>11</sup> A recent study concerning the United States concluded that the increasing relative generosity or leniency of disability programs has had a small but statistically significant impact on the work choice of older persons. Older low-wage earners with health problems are identified as those most responsive to changes in program benefits. See Robert Haveman and Barbara Wolfe, "Disability Transfers and Early Retirement: A Causal Relationship?" *Journal of Public Economics*, vol. 24, 1984, pp. 47-64.

<sup>12</sup> Based on a detailed analysis of longitudinal data, a recent study concluded that the accelerating decline in labor force participation of older men between 1969 and 1973 in the United States can be explained by the substantial increase in real Social Security benefits that took place in that period. See Michael Hurd and Michael Boskin, "The Effect of Social Security on Retirement in the Early 1970's," *Quarterly Journal of Economics*, November 1984, pp. 767-90.

<sup>13</sup> Despite the accumulation of a considerable body of research, a comprehensive understanding of the interrelations associated with cyclical labor market behavior does not yet exist. The relationship between changes in labor force participation and unemployment in terms of added workers and discouraged workers continues to invoke controversy. If, during recessions, job hunters become discouraged and withdraw from the labor force, measured unemployment would be artificially deflated. On the other hand, if people enter the labor market looking for jobs (added worker effect), possibly due to an out-of-work spouse, recorded unemployment will be higher. An analysis of monthly employment-status transition probabilities for the United States for the years 1968-84 has led one researcher to suggest that, during recessions, the likelihood of an unemployed person

dropping out of the labor force decreases while the probability of someone outside the labor force entering the labor force increases. This casts doubt on the widely held discouraged worker effect which would predict just the opposite pattern. See Michael Keeley, "Cyclical Unemployment and Employment Effects of Labor Force Entry and Exit," *Economic Review*, Federal Reserve Bank of San Francisco, Summer 1984, pp. 3-22.

<sup>14</sup> In a number of studies carried out in the late 1970's, it was shown that for the Nordic countries, regional variations in disability density could be explained by the regional unemployment rate, while in the United States, the increase in the number of disability benefit applications was linked to the unemployment rate. See P. Siren, "Taloudellisen tilanteen ja tyokyvyttömyyden valiset susheet," *Työkyvyttömyystutkimuksen tehtävät ja mahdollisuudet* ["The Economic Situation and Disability," *Purpose and Possibility of the Study on Disability*] (Helsinki, Social Insurance Institution, 1979); and Mordechai Lando, Malcolm Coate, and Ruth Kraus, "Disability Benefit Applications and the Economy," *Social Security Bulletin*, October 1979.

<sup>15</sup> In view of the unremitting climb in disability payments, the government of the Netherlands imposed more restrictive criteria for the determination of disability and instituted a number of budgetary cutbacks for the pension system in 1984. The same year, in Italy, legislation came into effect which eliminated linking disability to the state of the labor market. The new act refers only to a reduction in work capacity based on an assessment of the physical and mental condition of the applicant. Likewise, in 1984, the U.S. Congress passed legislation completely overhauling the disability program. At present, a review of all those on the Social Security disability rolls is being carried out. The new rules provide that individuals can only continue receiving disability benefits if there has been no medical improvement in their ability to work since the last evaluation. In a previous review process in 1981, 100,000 people lost their disability benefits.

<sup>16</sup> Assuming 15-percent nonreplacement and 10-percent deadweight, it was estimated that under the Job Release Scheme in the United Kingdom, the net exchequer cost of removing one person from the unemployment register was 676 pounds in 1978. This was considered to be one-third the cost associated with a general reduction in retirement age. See David Metcalf, *Alternatives to Unemployment: Special Employment Measures in Britain*, no. 610 (London, Policy Studies Institute, 1982), p. 48.

<sup>17</sup> Despite smaller early retirement payments relative to unemployment benefits in France, in 1983 the government spent 43 billion francs on early retirement as compared with 41 billion francs for unemployment benefits.

<sup>18</sup> In the United States, the possibility of early retirement has been viewed less as a method to regulate the supply of labor and more as a means of providing a greater choice between work and leisure. Under the Social Security Amendments enacted in 1983, the eligibility age for full retirement benefits was raised from 65 to 67, to be gradually phased in between the years 2002 and 2027. In addition, the early retirement reduction in benefits claimed at age 62 was increased from 20 percent to 30 percent, while the benefit increment for delayed receipt of retirement benefits was augmented from 3 percent to 8 percent a year. These modifications were motivated by the urgent need to rescue the Social Security system from the brink of bankruptcy.

<sup>19</sup> A series of calculations carried out for nine countries of Western Europe and North America indicated that lowering the age of retirement from 60 to 55 in 1990 would require that an additional 1.5 percent to 3.4 percent of gross domestic product be devoted to pension expenditures. See Economic Commission for Europe, *Economic Bulletin for Europe*, vol. 85, no. 3 (New York, Pergamon Press for the United Nations, September 1983), p. 314.

<sup>20</sup> Econometric studies have shown that taxes imposed on wages have a statistically significant and quantitatively important impact on the probability of retirement. This raises the spectre of a self-reinforcing trend towards early retirement, spawning even greater levels of nonparticipation on the part of those workers unwilling to shoulder the burden of additional taxes. See, for example, Harvey Rosen, "What is Labor Supply and Do Taxes Affect It?" *American Economic Review*, May 1980, pp. 171-76.

<sup>21</sup> See S. Preston, "Children and the Elderly: Divergent Paths for America's Dependents," *Demography*, November 1984, pp. 435-57; and "Creating a New Class Among Young, Poor," *The International Herald Tribune*, Oct. 29, 1985, p. 1.

# The Great Migration of Afro-Americans, 1915–40

*Between the World Wars,  
more than 1 million black Americans  
left the South to seek opportunity  
and fuller citizenship in the North*

SPENCER R. CREW

The “Great Migration” of Afro-Americans from largely rural areas of the southern United States to northern cities during and after World War I altered the economic, social, and political fabric of American society. It made the regional problems of race and sociopolitical equality national issues and gave Afro-Americans a role in the election of northern political leaders, in contrast to the absence of a political role in the South. It helped to spawn a generation of black leaders who struggled for the full citizenship rights of Afro-Americans. Because the hundreds of thousands of people who participated in the migration tended to settle in northern urban areas, the effects of the population change were greatly magnified.

The momentousness of the migration as an event does not alter the fact that the migrants were ordinary people. Like colonial settlers or western pioneers of an earlier day, they were not looking to change the world, only their own status. A mixture of farmers, domestic servants, day laborers, and industrial workers, they came from all parts of the South, hoping for a chance to improve their own station or at least that of their children. When the outbreak of World War I drastically changed the job structure of northern urban areas, moving to these cities offered a fresh start and new opportunities for this massive wave of migrants.

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Spencer R. Crew is an historian at the National Museum of American History, Smithsonian Institution, and curator of the exhibition, “Field to Factory: Afro-American Migration, 1915–1940.”

## War trigger

Without the increase in job opportunities caused by World War I, the Great Migration might never have occurred. The fighting in Europe dramatically increased the demands on companies in the United States to produce munitions and other goods to support the war effort. At the same time, the labor pool these companies normally depended upon—immigrants and native-born Americans—was dwindling. The draft siphoned off many of these men, while the turmoil in Europe disrupted the flow of immigrants from that area. Desperately in need of additional workers, northern businesses looked southward for new sources of labor. Because Afro-Americans made up a large portion of the unskilled work force in the South and because of social conditions there, they became the targets of aggressive recruitment campaigns. Northern companies offered well-paying jobs, free transportation, and low-cost housing as inducements to Afro-Americans to move North. They also sent labor recruiters into the South who received a fee for every recruit they provided for the company they represented.

## Local prod

Socioeconomic and political conditions in the South made Afro-Americans likely candidates for migration. After the end of post-Civil War Reconstruction, the Nation’s legislators and the Supreme Court had turned their backs on black

Americans and left determination of their citizenship rights to local jurisdictions. In the South, this abdication of authority resulted in the creation of a two-tiered system of citizenship with one set of rules for whites and a more restrictive set for Afro-Americans. In this system of "Jim Crow" laws, black Americans, under penalty of imprisonment or possibly death, were forced to use special sections when they rode on public transportation, ate in restaurants, or attended theaters. Southern statutes also excluded them from voting through such manipulations of the law as grandfather clauses, poll taxes, or literacy tests which prevented the majority of Afro-Americans from voting while allowing their white counterparts access to the ballot.

Oppressive as the political situation was, the economic situation was even more oppressive in that it locked tenant farmers ("sharecroppers") into an ever-tightening cycle of debt. While the majority of black Americans in the South resided in rural areas, they did not own the land they worked. Most often they rented it from large landowners or worked as farm laborers. Bad crop years, boll weevil attacks, floods, or low crop prices often destroyed profit margins and left sharecroppers in debt to the landlord. In order to avoid imprisonment, they agreed to work additional years in hopes of paying off their debts. Unfortunately, profits rarely were large enough to wipe out their obligations and Afro-Americans found themselves bound to the landlord who owned their land or controlled the local store where they purchased goods on credit. Migrating offered a chance to escape the oppressiveness of the South and begin anew.

### **Problems of leave-taking**

Leaving, however, was not a simple matter for black Americans. It should be remembered that Afro-Americans had strong ties to the South and migrating meant severing lifelong friendships and strong family bonds. Migrants rarely left in large groups. Sometimes, members of families might leave together, but more often individuals left alone. They usually departed with the expectation that they would return or would send for loved ones, but migrating always involved leaving behind loved ones for an uncertain future. If aged parents or a spouse and children had to remain behind, the decision to move became even more complicated.

Migrating North also meant leaving familiar surroundings and community institutions which provided support in times of need. Church activities, social clubs, and fraternal organizations were part of a vibrant Afro-American community in the South which provided a buffer from the indignities faced in the outside community. For many Afro-Americans, this private community offered enough support to make their lives tolerable despite hardships. While hundreds of thousands of Afro-Americans chose to leave the South, many more remained behind or returned home after visiting northern cities.

Once a decision to depart was made, leaving was often a

complicated process. Southern officials tried to slow the tide of migration by arresting or detaining Afro-Americans who tried to leave. Local police regularly searched departing trains for people they thought might be heading North. To escape police scrutiny, many migrants had to steal away late at night or devise elaborate plans to get away safely. These subterfuges forced the migrants either to sell their property and belongings secretly or to take with them only what they could carry. Most migrants were working people who did not possess great wealth and leaving under these circumstances hurt them financially. Items left behind or given away brought in no money and buyers rarely gave full value for items they knew the owner had to sell. Many migrants, therefore, did not have enough money with them to tide them over for long periods of time once they reached the North. Consequently, finding a job became a high priority as soon as they arrived.

### **Northern lure**

One of the key factors influencing the individuals who did leave was the letters and visits they received from friends and relatives who had already moved North. Prior to World War I, Afro-Americans had moved North in small numbers but their economic opportunities had been severely limited. When the war changed the job markets, earlier migrants wrote letters home, urging others to come North. Also, when they traveled South to visit family on special occasions, they reinforced their letters with personal accounts of their own successes and the advantage of living outside the South. These letters and visits must have whet the appetites of Afro-American Southerners already discontent with their lot and determined to do something about it. Many oral interviews with and reminiscences of migrants include passages describing how they decided to leave after hearing about opportunities in the North from relatives or friends who had lived or worked there. Having someone to live with or a clear idea of where jobs were located undoubtedly removed some of the uncertainty of leaving.

While job opportunities were readily available in most cities, these jobs were at the lower end of the occupational ladder. Northern labor unions generally did not accept Afro-Americans as members and often threatened to strike companies where nonunion workers performed union jobs. Even when Afro-American workers acquired better paying jobs during the war, many of them had to relinquish these jobs once the war ended.

### **Types of jobs**

Afro-Americans typically wound up in dirty, backbreaking, unskilled, and low-paying occupations. These were the least desirable jobs in most industries, but the ones employers felt best suited their black workers. On average, more than eight of every ten Afro-American men worked as unskilled laborers in foundries, in the building trades, in meat-packing companies, on the railroads, or as servants, porters,



janitors, cooks, and cleaners. Only a relatively few obtained work in semiskilled or skilled occupations.

Occupational choices for black women were even more limited because few of them, in concordance with women in general, had access to industrial jobs. While some women found employment in the garment industry, packing houses, and steam laundries, the majority of Afro-American women worked as domestic servants or in service-related occupations. While none of these jobs paid high wages, they paid more than Afro-Americans could obtain for similar work in the South.

However, the cost of living in the North was higher than in the South. Funneled into certain areas in most northern cities, Afro-Americans have paid nearly twice as much as their white counterparts for equivalent housing. Higher rents made it harder for them to make housing payments and encouraged migrants to take in boarders or other family members to help meet expenses. While the extra income eased financial problems, it resulted in overcrowded living conditions, little privacy, and poor sanitation. With the additional financial burden of having to pay higher prices in neighborhood stores for food, clothing, and other necessities, settling in the North was a mixed experience for many migrants. Though they earned better wages in the North, much of the increased income was offset by higher living expenses.

### More than economics

Economic gain was not the sole reason migrants came North. Better educational opportunities and greater personal freedom were also motivating factors. Up to the time of the migration, Afro-American children rarely advanced past the sixth grade in the South. "Black" schools received very little money from southern legislatures, especially at the secondary level, and landlords placed pressure on parents to put their children to work rather than have them further their education. Under these circumstances, only a relatively few children were able to receive a high school or college education. In contrast, northern States allocated more money for education and had compulsory attendance requirements that forced students to stay in school longer. Moving North gave

migrants and their children access to better educational opportunities and a chance for a brighter future.

Another variable that made northern life attractive was the sense of personal freedom migrants felt after leaving the South. Northern cities were busy and impersonal; they offered greater anonymity than Afro-Americans had experienced in southern rural communities. Once they reached the North, migrants did not have to show deference to each white person they passed on the street. They could move about the city without the fear that the wrong word or tone or action might result in arrest or a more severe or even violent white response. These new social and political circumstances lifted a heavy burden from the migrants, many of whom had previously lived in a state of constant fear for their lives and those of their loved ones.

THE WORLD THEN, which migrants found in northern cities did not always correspond with their expectations. Despite the encouragements of newspapers like the *Chicago Defender*, migrants were not always welcomed by residents of the northern cities. Both black and white urban residents worried about the impact of so many new people and, on occasion, they sought to discourage migrants from coming. Although not as virulent as it was in the South, racial discrimination also existed in northern cities. And while work was available, it usually was at the bottom of the pay scale and the occupational pecking order. Housing options and higher prices presented additional adjustment problems for the migrants. As a consequence, moving North was not a panacea for the many troubles migrants faced in the South. Northern urban areas presented their own set of problems and adjustments for migrants once they reached their new destinations.

Despite these difficulties, Afro-Americans continued to migrate North and to stay. With the many adjustments migrants faced, strange environments, new neighbors, and different ways of behaving and dressing, most found northern cities more engaging than the places they left behind. Though many migrants returned South regularly and referred to it as "home," they did not remain. The South appeared to hold their hearts, but the North held their futures. □

# Foreign Labor Developments



## Italian labor relations: a system in transition

TIZIANO TREU

The mid-1970's marked a turning point in Italy's industrial relations system. At that time, the system appeared to be a case of pluralism, recognized and supported by the statute of workers' rights (Act 300/1970). The main aspects and institutions of industrial relations remained outside the legal regulation. In fact, trade unions and employers' associations exercised joint power. Trade unions reasoned that the registration procedure prescribed by article 39 of the Constitution could lead to more state interference in internal union affairs than the Constitution intended. There were no specific legal provisions concerning the procedure, scope, unit, or content of bargaining or the conduct expected of the parties to negotiations. Collective agreements were treated as contracts, binding only on the parties, although the courts indirectly extended collective wage rates to employees and employers who were not parties to the negotiations. In addition, no statutory regulation on work stoppages based on provisions of article 40 was passed, and the task of imposing limits on industrial conflict was again left to the courts.

The statute of workers' rights (Act 300/1970), which is still the fundamental source of law governing collective labor relations, marked a change of attitude towards organized labor, both regarding the constitutional approach of article 39 of the Constitution and the actual "abstentionism" of the 1950's and 1960's. The act intervenes not to regulate unions at the *national* level but to promote their presence and action at the plant level. The focus of the act is no longer on the recognition of unions and the extension of collective agreements, but on the basic rights granted to the most representative unions and workers for the promotion of union activity and collective bargaining in the workplace (usually enterprises with 15 employees or more). The most representative unions and union representatives were granted the time and the right to hold meetings on company prem-

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Tiziano Treu is full professor of labor law at the University of Pavia (Italy) and president of the Italian Industrial Relations Association.

ises, employee time off for union activities, checkoffs, and special protection against discrimination.

Legislative support, a favorable labor market, and political conditions of the late 1960's contributed to the development of unionization<sup>1</sup> (from its lowest level of 22 percent in the mid-1960's to more than 50 percent in the mid-1970's) and collective bargaining. Individual labor law favored this approach, with minimum legal conditions providing a safety net for marginal employees, and nationwide and enterprisewide collective bargaining regulating wages and working conditions for the majority of employees. It is estimated that in the mid-1970's, more than 75 percent of factory employees were covered by collective agreements. Some features of individual labor law are more effective in supporting collective action. These include the protection of employees against discrimination and unfair dismissal contained in the statute of workers' rights; restrictions imposed by the act on employers' directive and disciplinary powers; and Social Security legislation which provides more than 80 percent of the wages lost by employees who are laid off or employed on a short-term basis because of production difficulties or restructuring in the enterprise. Social Security legislation departs from that of the 1950's and 1960's and responds to the new problems of an industrial system which faces difficulties and changes.

The pressure for change came in the mid-1970's during the serious economic crisis and consequent technological transformation which affected the socioeconomic system of most developed countries.

Italian industrial relations were built on the assumption that the economic system was capable of continuous and predictable growth within a relatively stable organization and technology. Collective bargaining, like unionization, was expected to expand much in the same way. Some scholars assumed that a stable environment would bring about stability and convergence in labor-management relations practices.

In the late 1970's, a series of events called these assumptions into question: (1) the general slowdown of economic growth; (2) the growing uncertainty of domestic and international markets' (3) the rapid technological innovations requiring or allowing changes in production or organization which might undermine collective bargaining; (4) the

changing nature of labor (white-collar and service employees) which is less inclined to accept traditional forms of unionization and easier to organize; and (5) the growing initiative of management in industrial relations and personnel practices.

Difficulties in the Italian system were heightened by the structural weakness of industry and fragmentation of the economy and the inefficiency of public administration. Political tensions and polarization among the two major political parties (Christian Democrats and Communists) diminished the effectiveness and stabilizing capacity of state intervention in industrial relations and also undermined the internal cohesiveness of trade unions, thereby contributing to further reducing their bargaining power.

Signs of changed attitudes and strategies first emerged at the macro level of industrial relations. Participants acknowledged that the crucial problems of the period—recovery of the economy and international competitiveness, control of inflation (more than 20 percent in 1977 and again in 1982) and a reduction in unemployment—could not be solved without a more consensual, less conflictual attitude.

The adjustment process was long and difficult and culminated in three major trilateral agreements in 1977, 1983, and 1984 between the top organizations of the social partners and the government.

The underlying pattern was similar to that of other countries, even as early as the 1960's and 1970's, commonly referred to as "concertation" or neocorporatism in industrial relations. The terms of the economic and political tradeoff between the parties varied in the three agreements, but all implied a clear shift away from traditional economic and acquisitive collective bargaining. The trade unions accepted a slowdown of economic gains—mainly wage indexation (–18 percent in 1983 and –30 percent in 1984), which stopped or slightly reversed real wage growth—and committed themselves to greater labor flexibility and control over decentralized bargaining and conflict. In exchange, the government granted tax benefits, particularly for low-paid workers, and made the following commitments: to control public expenditures and administer prices consistent with curbing inflation;<sup>2</sup> to enact a series of measures to promote employment and to favor union participation in labor market policies and, with the employers' consent, the union's role in controlling industrial restructuring and innovation processes; to promote workers' participation in capital formation through a solidarity fund (financed by 0.5 percent of wages controlled by the unions). A reduction of working time was agreed upon with the employers as a means of combatting growing unemployment. This latter directive has been implemented unevenly, depending on the sector (usually 40 hours yearly on an average 40-hour workweek).

These experiences of broad trilateral agreement and social neocorporatism have proved only partly successful. Scholars have indicated that the Italian system lacks elements which account for the success and stability of neocorpor-

atism: a united labor movement linked to a political labor government, a strong tradition of centralization in industrial relations, and an efficient government capable of implementing the difficult long-term promises of the political tradeoff. Some functional equivalents of these elements have been operating in Italy: unity of action among the three major confederations, growing political and ideological control by the central confederation over the rank and file and middle-level union officers in order to respect social commitments, and a coalition government inclined to decide labor matters jointly with the Communists or with Communist consent only.

The effectiveness of these factors has proved precarious, and political tensions exist between the Communists and the coalition government. In fact, the agreements of 1977 and 1983 were unanimously supported by the trade unions, whereas the 1984 round ended in disagreement and the most serious split within the labor movement since the 1950's. The Communist-dominated confederation (CGIL) withdrew from the negotiations and opposed the decree which the government issued to implement some points of the agreement (mainly the slowing down of indexation) reached with the other two unions (CISL and UIL) and the employers' association.

The government-issued decree represents a step towards direct legal intervention in crucial bargaining matters, and an exceptional alteration of the unwritten rule that any major legislation in labor matters needs the largely unanimous consent of the trade union movement (including the Communist sector). This rule has been in effect since the 1950's (no major labor law has been passed in the face of Communist opposition) and had made up for the exclusion of the Communist Party from national government.<sup>3</sup> The arrangement was an imperfect functional equivalent of the prolabor government usually held to be necessary for corporatism to work, and it presupposed a tacit division of roles with the Christian Democrats running the state (together with minor allied parties) and the Communists having a veto or power of codecision on labor matters (and sharing in local government).

As with many other major directives of Italian industrial relations, it remains to be seen just how exceptional this decision by decree will be. In mid-1985, top negotiations resumed between the three major confederations (United) and the central employer associations; this led to another agreement further sectoring and stabilizing the escalator clause first for the public sector, then extended to the private sector. The agreement represents a continuation, although partial, of the policy of "concertation" adopted in the past years. □

—FOOTNOTES—

<sup>1</sup> Organized labor in Italy is traditionally divided into three major confederations based on ideological and political lines: the CGIL, majority Com-



munists, minority socialists: 4,570,000 members in 1983; the CISL, traditionally grouping Catholic workers and linked to the Christian Democratic party in recent years, with a growing number of politically noncommitted workers (3,005,000 members); and the UIL-socialists, minority social democrats, and republicans (1,300,000 members).

<sup>2</sup> That is, within the maximum inflation targets (set in the 1983 agreement) of 13 percent in 1983, 10 percent in 1984, and 7 percent in 1985.

<sup>3</sup> Indeed, this is the major argument used by scholars and courts claiming that these decrees are unconstitutional in that they militate against the principle of trade unions' freedom of negotiation by substantially altering the functioning of a previously negotiated system of indexation without the full consent of the parties involved. Those who defend the constitutionality of the decree point out that under Decision 142 of 1980, the court should reject these objections. They maintain that while union consent is a condition of effectiveness, it does not constitute a necessary or sufficient condition of legitimacy.

## How are Japanese unions responding to microelectronics-based automation?

WILLIAM EARLE KLAY

Japan, a world leader in the development and production of electronics technology, is now attempting to transform itself into an "information society"—one in which virtually all social institutions fully utilize, and are profoundly affected by, computer-based technology.<sup>1</sup> Not surprisingly, the growing impact of microelectronics-based automation is causing widespread concern among Japanese unions. Rather than dealing piecemeal with the many effects of the new programmable automation technology, they are developing multiple, integrated strategies which include an increased emphasis upon contractual protections and a desire to assume a role of international leadership.

Japanese unions do not oppose the introduction of the technology, but they are greatly concerned about the possible adverse effects that microelectronics could have on workers. Of the 554 unions surveyed by the Japan Institute of Labor, 53.6 percent of the unions said they were "in favor as a rule" toward the adoption of the technology while only 2 percent were "opposed as a rule," and 36.6 percent said it was "unavoidable." More than half of the unions said that they had already conducted some sort of negotiations about microelectronics technology issues, and most union leaders expected the technology to spread rapidly. Anticipating the automation of offices as well as factories, the unions said that the "growth of surplus labor" would be the greatest problem in both the manufacturing and clerical sectors.<sup>2</sup>

In Japan, there are four major nationwide organizations of labor unions, commonly known as national centers. These are: Sohyo (General Council of Trade Unions of Japan), Domei (Japanese Confederation of Labor), Churitsuroren (National Federation of Independent Unions of Japan), and

Shinsanbetsu (Federation of Independent Unions of Japan). All four national centers have adopted written guidelines related to microelectronics-based technology, with those of Domei, Sohyo, and Churitsuroren being particularly broad in scope.<sup>3</sup>

These guidelines generally promote a continuation of the policies established in the landmark written agreement of March 1, 1983, between the Nissan Motor Workers' Union and the Nissan Motor Co., previously cited in the *Review*.<sup>4</sup> The provisions of that agreement included a commitment to consultations between union and management in advance of introducing new technologies into the workplace; job and wage protection through the renouncement of layoffs, dismissals, or downgrading of positions; an employer commitment to provide necessary training and education; and protections for safety and health. It is now evident, however, that many Japanese union leaders consider that agreement to be only a beginning.

Domei, the national center with the largest number of private sector workers, has agreed upon specific action guidelines to be implemented or negotiated at each enterprise, industrial, subnational, national, and international level. While stressing the importance of predecision joint consultations and consensus building at all levels, Domei calls for the negotiation of a labor-management agreement on technological innovation in each enterprise. All of its action guidelines are based upon five "basic principles:"

- "Progress of Human Society and Acknowledgment of Welfare." The intent of this principle is to assure that the new technology serves social and economic progress, and that it promotes general welfare for all of society.
- "Establishment of Principle of Assessment." The principle of assessment is that the impact of technology on the worker is to be assessed *prior* to the introduction of microelectronic equipment into the workplace, and that necessary policies to ease the transition are to be decided in advance.
- "Securing Social Equity." Domei is concerned that the benefits of microelectronics-based technology might not be fully shared with workers and that the technology might "widen the gaps among workers, industries, and regions," not merely within Japan, but among nations as well. It is, therefore, "essential to establish a rule of distributing the fruits of technological innovation equitably."
- "Improvement in Worker's Participation and Labour-Management Consultation." Arguing that the new technology deeply affects not only the employment relationship, but all of society, Domei says it is essential to the building of "a public consensus" that labor-management consultation on these issues become a universal practice and that worker representation be included in setting the directions for national science and technology policy.
- "Establishment of International Cooperation." Realizing that Japan's economic success is causing stress among its

William Earle Klay is an associate professor in the Department of Public Administration, Florida State University.

major industrial competitors, Domei is concerned that "the advancement of the ME [microelectronics] revolution" might isolate Japan from the rest of the world. Therefore, ". . . it is vital that Japan, where ME [microelectronic] equipment is being introduced more rapidly than anywhere else, should take the initiative for establishing international cooperation."

Domei calls for the establishment of a new national quadripartite organization, including labor and public interest representation as well as government and management, to set the basic directions for Japan's science and technology policy. It also plans to promote the adoption of international fair labor standards which would, Domei hopes, be based upon principles such as the ones it has adopted. At the national level, Domei calls for a major research institute devoted solely to the prior assessment of problems associated with the implementation of microelectronics-based technology.

At the enterprise level, Domei intends to negotiate compulsory prior consultation beginning with the planning and designing stages. Specific objectives include increased incomes and shorter working hours, employment stability, and employer provided training opportunities through an inhouse "lifelong vocational training system." Particular emphasis is placed upon the protection of opportunities for women and older workers.

Even though it is not a common practice for Japanese employers to impose layoffs, unions are clearly concerned that the new technology might cause this to eventually happen. Denki Roren, the Japanese Federation of Electrical Machine Workers' Unions, has developed guidelines and a model agreement covering the introduction of microelectronic systems. It states, "Where there would be a direct impact on employment through personnel reductions, the union should express opposition to the entire concept of microelectronic technology and prevent the company from implementing its plans."<sup>5</sup>

All of the national centers are concerned about the protection of safety and health and the stresses associated with working long hours at video display terminals, as well as with robots, which have caused fatal accidents on rare occasions. The survey of the Japan Institute of Labor, mentioned above, revealed that microelectronics-related safety and hygiene issues have invoked intensified negotiations. Unions are concerned that the introduction of machine-regulated working conditions would be especially stressful to workers.

In this regard, Sohyo's guidelines are the most stringent. This national center, with by far the largest number of public employees in its ranks, fears that unrestricted use of microelectronics technology could cause increased authoritarianism and invasions of privacy. Sohyo recognizes that management has a need to gather information to monitor the overall speed and status of work that is being performed but, at the same time, Sohyo wants to prevent such computer-

generated information from being used in personnel decisions about the performance and pay of any individual employee. Its guidelines, therefore, call for the prohibition of management's use of computer monitoring to oversee and evaluate the performance of individual workers. It also rejects the practice of pay differentials based on individual differences in ability to work at a computer. Sohyo's policy is that any use of computer-generated data about an individual requires prior approval of the individual and the labor union.

From an international perspective, the most problematic aspect of microelectronics technology is its potential to replace labor. Japanese unions recognize that this potential, one that might be realized sooner in Japan than in any other country, could jeopardize employment opportunities in that country. At the same time, they realize that rapid adoption of the technology in Japan could undermine the economies and employment of other nations, especially in less developed countries where labor intensiveness is an important element of international competitiveness. To avert unemployment in Japan, they are actively promoting economic expansion, especially through labor-management cooperation, to assure a flexible and motivated work force. Domei's guidelines, for example, call for the achievement of sustained real growth of 5 percent in the Japanese economy. Whether Japanese unions can successfully follow a dual policy of averting domestic unemployment through the promotion of economic expansion and, at the same time, promote the international adoption of labor standards to avert such unemployment in other countries, remains to be seen. □

—FOOTNOTES—

<sup>1</sup> See Report of the General Policy Committee of the Social Policy Council, *The Information Society and Human Life* (Tokyo, Social Policy Bureau, Economic Planning Agency of the Japanese Government, March 31, 1983); also, Yonenji Masuda, *The Information Society as Post-Industrial Society* (Tokyo, Institute for the Information Society, 1980), printed in the United States by the World Future Society, Bethesda, MD.

<sup>2</sup> *Microelectronics and the Response of Labor Unions* (Tokyo, Japan Institute of Labor, March 1984), tables 9 and 26.

<sup>3</sup> "Sohyo's Guidelines in the Interest of Regulating VDT Labor," *Inochi [Life]* (Tokyo, Sohyo, July 1985) (in Japanese); "Harmony Between New Technology and Mankind—Domei's Position to ME Revolution" (Tokyo, Domei, January 1985); "Employment Questions Accompanying ME Based Transformation: Towards Symmetry (A Proposal)" (Tokyo, Churitsuroren, September 1983) (in Japanese); "VDT Guidelines," *Activity Policies for 1985-86* (Tokyo, Shinsanbetsu, adopted at 35th Regular National Convention, July 1984) (in Japanese).

<sup>4</sup> Steven Deutsch, "International experiences with technological change," *Monthly Labor Review*, March 1986, p. 39.

<sup>5</sup> Denki Roren, "Guidelines for Securing Employment and Achieving Humane Working Conditions in the Microelectronics Era" (Tokyo, Japanese Federation of Electrical Machine Workers' Unions, 1985), p. 15. The use of such emphatic language is a signal to management that union leaders' concerns must be viewed seriously, for it implies the ultimate sanction of a work stoppage, something which both sides usually strive hard to avoid.

# Major Agreements Expiring Next Month



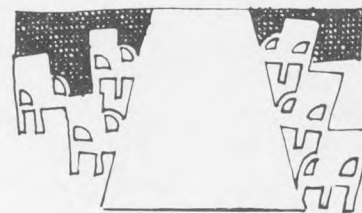
This list of selected collective bargaining agreements expiring in April is based on information collected by the Bureau's Office of Wages and Industrial Relations. The list includes agreements covering 1,000 workers or more. Private industry is arranged in order of Standard Industrial Classification.

Industry or activity	Employer and location	Labor organization <sup>1</sup>	Number of workers	
<b>Private</b>				
Construction	Associated General Contractors (Hartford, CT)	Laborers	5,000	
	Associated General Contractors (Columbus, OH)	Laborers	1,700	
	Associated General Contractors (Dayton, OH)	Laborers	1,000	
	Associated General Contractors (Denver, CO)	Carpenters	4,150	
	Associated General Contractors of Colorado (Colorado)	Carpenters	1,500	
	Associated General Contractors, Building Chapter (Colorado)	Laborers	3,100	
	Associated General Contractors (Marquette, MI)	Carpenters	1,000	
	Associated General Contractors and one other (Connecticut)	Operating Engineers	3,000	
	Associated General Contractors (Colorado)	Iron Workers	1,050	
	Associated Contractors of Essex County (New Jersey)	Carpenters	1,850	
	Building Contractors Association (New Jersey)	Laborers	12,500	
	Building Contractors Association (New Jersey)	Carpenters	14,000	
	Building Contractors of Southern New Jersey (New Jersey)	Carpenters	2,200	
	Construction Employers Association (Cleveland, OH)	Carpenters	4,000	
	Construction Contractors Association (Cleveland, OH)	Painters	1,250	
	Independent Contractors (Colorado)	Operating Engineers	2,500	
	Mason Contractors Association (Cleveland, OH)	Bricklayers	1,200	
	Minneapolis/St. Paul Building Contractors (Minnesota)	Plumbers	1,350	
	National Electrical Contractors Association, Inc. (Washington, DC)	Electrical Workers (IBEW)	2,200	
	National Electrical Contractors Association, Inc. Nassau-Suffolk Chapter (New York)	Electrical Workers (IBEW)	1,400	
	National Electrical Contractors Association, Inc. (Minneapolis, MN)	Electrical Workers (IBEW)	1,700	
	North Texas Contractors Association (Texas)	Laborers	2,000	
	North Texas Contractors Association (Texas)	Carpenters	1,500	
	Pipe Line Contractors Association (Interstate)	Plumbers	5,000	
	Twin Cities Piping Industry Association (Minneapolis-St. Paul, MN)	Plumbers	1,450	
	Food products	Nestle Co., Inc. (Fulton, NY)	Retail, Wholesale Department Store	1,000
		Gentry-Foremost and two others (Salinas, CA)	Teamsters (Ind.)	1,400
	Paper	Consolidated Papers, Inc., Consoweld Corp. (Wisconsin)	Paperworkers	2,600
		Boise Cascade Co. (International Falls, MN)	Woodworkers	1,300
	Leather	New York Industrial Council of the National Handbag Association (New York)	Leather Goods, Plastic and Novelty Workers	4,000
	Stone, clay, and glass products	Glass Container Industrial Relations Council (Interstate)	Flint Glass Workers	3,500
		Owens-Illinois, Inc. (Interstate)	Glass, Pottery, Plastics and Allied Workers	7,000
		Lone Star Industries Inc. (Interstate)	Boilermakers	1,200
	Diamond Bathurst (Interstate)	Glass, Pottery, Plastics and Allied Workers	7,000	
Primary metals	Mueller Brass Co. (Port Huron, MI)	Auto Workers	1,000	
Machinery	Cummins Engine Co. (Columbus, IN)	Diesel Workers' Union (Ind.)	5,500	
Electrical products	Zenith Radio Corp., Rauland Division (Melrose Park, IL)	Electrical Workers (IBEW)	1,550	
	Public Service Electric and Gas Co. (New Jersey)	Electrical Workers (IBEW)	4,450	
Utilities	Public Service Electric and Gas Co. (New Jersey)	Plumbers	1,450	
	Public Service Electric and Gas Co. (New Jersey)	Utility Co-Workers Association (Ind.)	1,400	
Wholesale trade	Arizona Public Service Co. (Arizona)	Electrical Workers (IBEW)	2,800	
	Greater New York Association of Meat and Poultry Dealers (New York, NY)	Food and Commercial Workers	2,100	
Retail trade	Shoprite, Pathmark, Grand Union, Foodtown, and others (Interstate)	Food and Commercial Workers	21,000	
	Kroger (Dallas-Ft. Worth, TX)	Food and Commercial Workers	5,000	
	Colonial Stores Inc. (South Carolina, North Carolina)	Food and Commercial Workers	1,500	
Hotels	Nevada Resort Association (Las Vegas, NV)	Operating Engineers; Teamsters (Ind.)	3,500	
<b>Public</b>				
Social services	Ohio: Cuyahoga County welfare department	State, County and Municipal Employees	1,000	

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



# Developments in Industrial Relations



## TWA pilots extend current contract

At Trans World Airlines (TWA), 3,000 pilots agreed to extend their current agreement by 3 years, to January 1992. During the agreement term, they will receive three 5-percent pay increases, nearly restoring pay to the same level as in 1985 when the pilots took a 22-percent cut, which was partly offset by profit-sharing and stock plans that will be continued during the extension period. They had agreed to the cut to help financier Carl C. Icahn's efforts to thwart a purchase bid by Frank Lorenzo, head of nonunion Texas Air Corp. The pilots are represented by the Air Line Pilots Association.

In January 1989, the pilots' pay would have automatically reverted to the 1985 level if they had not agreed to the extension. In return for the extension, Icahn agreed that any sales of assets will not exceed operating losses. Under the 1985 accord, Icahn had the right to sell unlimited assets if the carrier lost money. The extension accord also includes additional job protection for pilots affected by sales of assets.

Other provisions include full restoration of a cut in paid vacation negotiated in 1985, and an increase to 2 years (from 1 year) in the period during which pilots are prohibited from bidding for work on different equipment.

Meanwhile, members of the Machinists union, who had accepted cuts similar to Air Line Pilots Association members in 1985, were continuing to resist TWA's requests for negotiations on an extension agreement.

In a related development, TWA pilots voted to merge seniority lists with 425 Air Line Pilots Association members at Ozark Airlines, which was acquired by TWA in 1986. According to a union official, the Ozark pilots were expected to approve the merger of seniority lists, even though coverage by the TWA contract will result in a 25-percent pay cut for them.

The Independent Federation of Flight Attendants, which lost a strike against TWA (see *Monthly Labor Review* July 1986, p. 48) but still represents the 4,000 strikers and replacements, was seeking National Mediation Board recogni-

tion as sole bargaining representative for all TWA attendants, while the Association of Flight Attendants, which represented the 700 Ozark attendants, was petitioning the Board to hold a representation election for all TWA attendants.

Elsewhere in the industry, 650 pilots employed by the Flying Tiger Line cargo unit of Tiger International Inc. agreed to a 3½-year contract calling for a 25-percent pay cut. Prior to the settlement, the pilots' pay had averaged \$117,000 a year. The parties also established a two-tier pay system under which new employees will be paid less than those already on the payroll. The unit, which reported a \$55.5 million loss during the latest 9-month period, has been hurt by a recent increase in trans-Pacific cargo flights by other carriers.

In return for these changes and cuts in supplemental pensions and other benefits, the pilots will share in the unit's profits and were allotted a seat on the unit's 11-member board of directors.

## Kroger workers forgo bonus plan to save jobs

Employees of 40 Kroger Co. stores in Southwestern Virginia and Tennessee accepted a wage cut, averting the planned closing of 13 of the stores. In proposing the closing, Kroger had called for a wage freeze and a new bonus system at the stores that would have remained open, but the members of United Food and Commercial Workers (UFCW) Local 278 chose to forgo the bonus plan and take the pay cut to save the jobs at the stores scheduled to close.

The pay cut was \$1 an hour for top-rated grocery clerks, who formerly earned \$9.71, and 90 cents for meat department heads (formerly \$11.43 to \$11.74) and top-rated meatcutters (formerly \$10.74). The cut will be partly restored when the 3,200 employees receive a 25-cent-an-hour pay increase in November 1987 and a 37-cent increase in November 1988.

Another cost-reducing provision of the 34-month contract was elimination of various job classifications in the meat department, resulting in only a few groupings: full-time or part-time employees and department heads.

Kroger also offered meatcutters inducements to quit their jobs by December 27, 1986: \$12,000 for those with more than 12 years' service and \$10,000 for others. Similarly, all clerks at top pay rates (attained after 3 years' service) were offered a \$10,000 departure payment.

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

Elsewhere, Kroger negotiated a pay cut with the UFCW for 2,500 employees of 28 stores in the Dayton, OH, area. The 36-cent-an-hour cut, to be accomplished in three 12-cent stages during the second half of the 3-year contract, applies only to top-rated clerks and meatcutters. Pay was frozen for all other employees. Prior to the settlement, top-rated clerks earned \$10.14 in Dayton stores and \$9.69 for nearby rural areas. For top-rated meatcutters, the respective rates were \$11.90 and \$11.40.

Other terms included the elimination of four paid personal days off, leaving clerks with two such days and meatcutters with three, in addition to six regular paid holidays.

Kroger said that the cost-reducing terms, were needed to aid the company in competing with discount stores and nonunion stores.

Elsewhere in the industry, Jewel Food Stores and the UFCW negotiated a new contract that equalized pay rates for company employees in Northwest Indiana with those for its employees in the Chicago area. The 700 employees in Indiana had been receiving \$1.25 an hour less than the 16,300 Chicago employees.

Other terms for the food clerks included a 35-cent increase in their \$10.90 hourly rate, followed by a 15-cent increase in October 1987, and a 25-cent increase in October 1988. General merchandise clerks received 35-, 20-, and 20-cent increases on the corresponding dates, bringing their rate to \$9.75.

### **Compensation increases for realty service workers**

In New York City, janitorial and other service employees of about 1,000 commercial buildings were covered by a settlement between the Realty Advisory Board of Labor Relations and Local 32B-32J of the Service Employees. The union said the terms were expected to be extended to "virtually all" of the major commercial buildings in the city, bringing the total number of covered employees to 30,000.

The 3-year contract provides for annual wage increases totaling \$62 a week, raising the average weekly rate to \$471, according to the union. Other provisions included three annual \$25 a month increases in pensions for future retirees, bringing the benefit to \$500 for workers retiring at age 65 with 25 years of service; a \$3 a week employer payment into an annuity fund beginning in the third year; doubling of major medical insurance coverage, to \$1 million; a \$2,500 increase in life insurance, to \$20,000; increased dental and surgical benefits; and adoption of optical coverage for family members.

### **Hawaiian nurses settle, avert strike**

A scheduled strike by nearly 1,800 registered nurses was averted when the Hawaii Nurses Association and five Honolulu hospitals agreed on 3-year contracts. The reported 19-percent increase in compensation included wage increases of 85 cents an hour in the first year and 50 cents each

in the second and third years. A union official said that the prior average wage rate was \$12.425. The "charge nurse" differential was increased to 60 cents an hour, from 40, and the night shift differential was increased to 85 cents an hour, from 75.

Benefit changes included pension improvements, bringing the monthly benefit to \$550 for nurses retiring after 30 years' service; an increase in the hospitals' financing of medical and dental insurance that apparently obviates the need for employee contributions during the contract term; a tuition reimbursement plan, financed by annual employer payments of \$15,000 (\$25,000 at Queen's Medical Center); increased educational leave; and a requirement that nurses working two weekends in a row be paid time and one-half for the second weekend.

The parties also agreed to include some 150 "flying nurses" in the bargaining unit. These nurses fly in from the U.S. mainland for temporary assignments to ease a shortage in Hawaii.

In addition to Queens, the hospitals covered by the settlement were St. Francis Hospital, Kapiolani Women's and Children's Medical Center, Kaiser Foundation Hospital, and Kuakini Medical Center.

### **Parts workers pay guaranteed if plant closes**

In the automotive parts industry, Dana Corp. and the Auto Workers negotiated a 3-year contract that provided for lower than usual wage gains in return for improved income guarantees for workers affected by plant closings. At the beginning of the respective contract years, the 2,500 covered employees will receive lump-sum payments equal to 2, 2.25, and 2.25 percent of earnings during the preceding 12 months. They will also continue to receive automatic quarterly cost-of-living pay adjustments. Under the prior 3-year contract, employees received 3-percent specified wage increases at the beginning of each contract year.

The improvements in job security included increased company financing of Supplemental Unemployment Benefits and a new \$4 million fund to guarantee 1 year of pay continuation for workers losing their jobs because of plant closings.

Other terms included retirement inducements of up to \$10,000 and improved pension and insurance benefits. The contract covers plants in Ohio, Pennsylvania, Michigan, Illinois, and Indiana.

### **High court rulings affect pregnant workers**

In a 6 to 3 decision, the Supreme Court upheld a California law requiring employers to provide unpaid pregnancy leave to employees. Writing for the majority, Justice Thurgood Marshall rejected arguments by business representatives and the Reagan Administration that the California law violated provisions of the Federal Pregnancy Disability Act of 1978 requiring that pregnant employees be treated the

same as, but not better than, workers with other disabilities. According to the rejected arguments, it is discriminatory to require employers to provide leave for a pregnant employee when they are not required to provide leave for an employee with an injury or other disability.

Justice Marshall said the intent of the 1978 act was not to limit benefits for pregnant women. Rather, he said, it was only "a floor beneath which pregnancy disability benefits may not drop—not a ceiling above which they may not rise." Continuing, Justice Marshall said that while there was no intent to require States to give preferential treatment to pregnant employees, there also was no congressional intent to prohibit preferential treatment.

Despite this permissive aspect of the Federal Act, Justice Marshall said the California law was narrowly drawn because it covers only the period of actual physical disability due to pregnancy or related medical conditions and does not require employers to pay employees during the leave period. Thus, Justice Marshall concluded, the "only benefit pregnant workers derive" from the law is a general right to reinstatement.

In the minority opinion, Justice Byron R. White, writing for Chief Justice William H. Rehnquist and Justice Lewis F. Powell, said that the California law was in "square conflict" with the Pregnancy Disability Act because it required "every employer to have a disability leave policy for pregnancy even if it has none for any other disability." In their opinion, this preferential treatment is "contrary to the mandate" of the Federal law.

The case, *California Federal Savings and Loan Association v. Guerra*, arose when Lillian Garland lost her receptionist job at the firm after taking 3 months' pregnancy leave. When State officials charged California Federal with violating the State law, the firm sued to have the law declared invalid.

In a related case, the Court held that Federal law permits States to deny unemployment benefits to women who give up their jobs because of pregnancy. The case, *Wimberly v. Labor and Industrial Relations Commission of Missouri*, arose when Linda Wimberly, a cashier at a store in Kansas City, took a leave of absence in 1980 to have a baby. She asked to return a few months later, but was told that there were no jobs. Missouri officials then rejected her request for unemployment compensation, citing provisions of State law permitting benefit payments only for job losses resulting from work-related disabilities or an employer's decision to lay off workers.

In the 8-0 decision, written by Justice Sandra Day O'Connor, the Court held that the Federal Unemployment

Tax Act of 1976 requires that pregnant employees not be treated less favorably than fellow employees with other disabilities, but also does not require that they be treated more favorably than fellow employees. Justice O'Connor said that, under Missouri law, "all persons who leave work for reasons not causally connected to the work or the employers are disqualified from receiving benefits." Continuing, Justice O'Connor wrote, "to apply this law . . . all that is relevant is that she stopped work for a reason" that was not work related. Justice Harry Blackmun did not participate in the case.

Only Vermont, Minnesota, North Dakota, and the District of Columbia have unemployment compensation laws as restrictive as those in Missouri. In most other States, women who cannot regain their jobs after pregnancy leave, then become eligible for unemployment benefits.

### **Court rules on accommodating religious holidays**

The Supreme Court held that Federal law gives employers latitude in accommodating the religious beliefs of workers by changing work schedules and leave policies. Writing for the 8-member majority, Chief Justice William Rehnquist said that an employer must make a "reasonable" effort to accommodate a worker's religious beliefs but need not accept the worker's suggestions on how to attain the accommodations.

The case arose when an Ansonia, CT, teacher requested permission to use three annual paid personal business days for religious holidays, although the labor contract specifically prohibited such use. The school maintained it had fulfilled its contractual obligation by giving the teacher three unpaid days off. (The employee's three other annual religious holidays were covered by a provision giving all employees three paid days off for unspecified holidays of their choice.)

In the suit, the teacher claimed that the school system had violated Title VII of the Civil Rights Act of 1964 which prohibits discrimination in employment on the basis of race, sex, or religion.

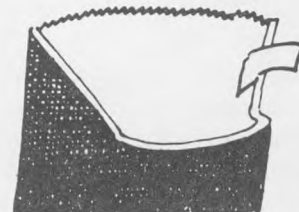
In overruling the Federal court of appeals, the Supreme Court held that the lower court should have considered whether the school officials' decision was reasonable, rather than finding that the teacher's suggestion was valid because it did not impose "undue hardship" on the school system. In the majority opinion, the Justices said that the officials' decision was, in fact, reasonable.

Justices Thurgood Marshall and John Paul Stevens dissented, in part, from the majority. □



# Book Reviews

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## Listen up, America!

*Trade Talks: America Better Listen!* By C. Michael Aho and Jonathan David Aronson. New York, Council on Foreign Relations, 1985. 178 pp. \$8.95, paper.

The morning papers in late September 1986 carried stories that identified five issues that the U.S. Trade Representative thought so important he would walk away from the talks if they were not on the table. These issues—agriculture, services, intellectual property, foreign investment, and dispute settlement—provide much of the focus of C. Michael Aho and Jonathan David Aronson's analysis. In general, this book demonstrates a high level of awareness of the issues, the processes of international negotiation, and the intricacies of foreign economic policymaking.

After setting the admittedly challenging economic and political context for the latest series of trade negotiations, Aho and Aronson set ambitious goals for them in terms of higher economic growth and greater discipline. The second part of the book analyzes the national goals and constraints of the three major blocs in the negotiations—the United States, other industrial countries, and the developing countries. The concluding section outlines the authors' view on negotiating strategy. The sections are of uniformly high quality; the chapters on goals, constraints, and internal policymaking of the major actors will be of value to anyone with a general interest in foreign trade policy.

The successful pursuit of accessibility and generality inevitably left gaps which various specialists will clamor to fill. For example, because the focus of *Trade Talks* is indeed trade talks, the discussion of labor adjustment measures was perfunctory, and perhaps not in tune with the most current thinking. Aho and Aronson concentrate their analysis on the functioning of the Trade Adjustment Assistance Act and measures to stretch out the timeframes for adjustment in selected basic industrial sectors. By comparison, a task force set up by the U.S. Secretary of Labor on economic adjustment and worker dislocation is examining policies that apply to displaced workers from all sectors of the economy, with a view toward compressing the timeframe in which an individual can make a satisfactory adjustment to economic change. One result of this approach may be to lower the profile of adjustment policy as a constraint on trade negoti-

ations. Aho and Aronson state the problem faced by adjustment policy very succinctly: "Trade does create new jobs—probably more than it destroys—but they are entirely different jobs, requiring entirely different skills." However, they seem not to have looked closely at measures that are currently being considered to promote a more flexible, mobile, and skilled labor force.

Other, less important, misconceptions have been allowed to pass into the book. Because there is little space in a general work for detailed analysis of each and every issue, current clichés about the economy are often accepted at face value. In one case, the authors blandly assert that the pace of economic change is accelerating. This is one of the most unexamined propositions in circulation today. The scant statistical data that can be found to examine the hypothesis more closely turn out to contain a mass of contradictions. One particularly vivid example of the contrariness of the data is a table appearing in a recent business strategy textbook that indicates that the number of new products developed by a sample of 44 large firms actually *fell* from 133 in 1961–65 to 75 in 1971–75. At the same time, however, the percentage of those new products being produced in foreign markets within 1 year of U.S. introduction rose from 24 to 39 percent.

The authors also seem to tacitly accept the notion of a "declining industrial base" or the "deindustrialization" of the U.S. economy. Most of the evidence in favor of such an hypothesis is based on the kind of manufacturing employment data referenced briefly in the chapter, "Setting the Context." It is true that in the medium term, factory employment has fallen; however, it takes only the simplest look at the data on growing manufacturing capacity or the continuing uptrend in actual production to cast serious doubt on the notions of "declining base" or "deindustrialization." It is a shame that in a book very likely to be read by the generalist policymaker, the authors could not find the space to outline more clearly ongoing debates about contextual assumptions.

Aho and Aronson present some very interesting proposals for advancing international trade agreements. They make some very good points: Admit that trade, investment, migration, the international monetary system and so on are intimately related but that trying to put them all on one table at one time will lead to a hopeless snarl. The authors then advocate disaggregating the trade bargain. Another possibil-

ity that is not presented would be to disaggregate the negotiations themselves. The General Agreement on Tariffs and Trade (GATT) could be retained as the framework for the issues concerning trade in industrial goods. The residuum of tariffs, nontariff barriers, and dispute resolution would be at the core of that round of talks. At the same time, new general arrangements could come into being where the trade-in-goods model has proved troublesome: for trade in services (including intellectual property), GATS; for trade in agriculture and commodities, GATAC; and so on. At the completion of the negotiations of these general arrangements, preparations could begin for a technical round to coordinate the agreements. In the longer term, the administration of the separate arrangements might, by further negotiation, be consolidated into a single, broad, international trade organization, thus bringing the vision of the postwar Bretton Woods treaty-makers full circle.

—RICHARD M. DEVENS, JR.  
Division of Labor Force Statistics  
Bureau of Labor Statistics

## Checks and balances

*Energy Conservation: Successes and Failures.* Edited by John C. Sawhill and Richard Cotton. Washington, The Brookings Institution, 1986. 270 pp. \$28.95, cloth; \$10.95, paper.

Have American energy conservation efforts since 1973 been successful? In terms of overall reductions in energy use per dollar of the gross national product, the answer is yes. Have government programs played a strong role in this success? While this book does not give a definitive answer to this question, it does present sufficient evidence to show that information is not yet available.

There are some well-known reasons for doubting that purely private sector decisions on energy issues will always lead to desirable results for society. The authors consider the arguments for a public sector role in long-term research and development, in dealing with national security type externalities, and in the provision of information to consumers of energy. In general, the authors conclude that government activity is needed to assist the private sector markets in achieving greater efficiency. A chapter on the financial barriers to conservation surveys the arguments of imperfections in the financial capital markets, and generally argues that these markets have worked reasonably well.

The book does not offer much comfort to those who prefer allocation of resources by governmental decisions. Several of the essays discuss cases of poor public sector performances in choosing and implementing policies and making decisions, in failing to perform followup studies to evaluate programs and policies properly, and in terms of the absence of strong financial incentives for cost efficiency.

There are chapters on Federal, State, and local government roles, and also one on electric utilities. There appears to be no easy way for governments to correct for the flaws and failings of the private sector's energy conservation decisions.

Private sector performance has also been uneven. For example, in a chapter on industrial conservation, the authors note that the cement industry has outperformed the steel industry in energy savings, although both industries have suffered from well-known problems in the last 12 years.

I particularly appreciate The Brookings Institution's practice of including commentaries on the essays by other experts, usually with different perspectives. The perspectives in this volume include a broad cross section of opinion. The volume provides some useful information for those government employees who desire to promote conservation as well as intelligent commentary on the pressures that affect resource allocation in public organizations. This is an interesting volume on political economy.

—EDWARD A. SCHROEDER IV  
School of Administrative Science  
The University of Alabama in Huntsville

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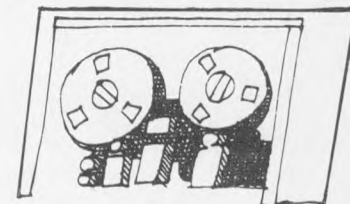
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### A note on communications

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

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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
Productivity and costs:							
Nonfarm business and manufacturing .....			April 27	1st quarter			2; 42-44
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Employment situation .....	March 6	February	April 3	March	May 8	April	1; 4-21
Producer Price Index .....	March 13	February	April 10	March	May 15	April	2; 33-35
Consumer Price Index .....	March 27	February	April 24	March	May 22	April	2; 30-32
Real earnings .....	March 27	February	April 24	March	May 22	April	14-17
Major collective bargaining settlements .....			April 27	1st quarter			3; 25-28
Employment Cost Index .....			April 28	1st quarter			1-3; 22-24
U.S. Import and Export Price Indexes .....			April 30	1st quarter			36-41



## NOTES ON CURRENT LABOR STATISTICS

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

### General notes

The following notes apply to several tables in this section:

**Seasonal adjustment.** Certain monthly and quarterly data are adjusted to eliminate the effect on the data of such factors as climatic conditions, industry production schedules, opening and closing of schools, holiday buying periods, and vacation practices, which might prevent short-term evaluation of the statistical series. Tables containing data that have been adjusted are identified as "seasonally adjusted." (All other data are not seasonally adjusted.) Seasonal effects are estimated on the basis of past experience. When new seasonal factors are computed each year, revisions may affect seasonally adjusted data for several preceding years. (Seasonally adjusted data appear in tables 1-3, 4-10, 13, 14, 17, and 18.) Beginning in January 1980, the BLS introduced two major modifications in the seasonal adjustment methodology for labor force data. First, the data are seasonally adjusted with a procedure called X-11 ARIMA, which was developed at Statistics Canada as an extension of the standard X-11 method previously used by BLS. A detailed description of the procedure appears in *The X-11 ARIMA Seasonal Adjustment Method* by Estela Bee Dagum (Statistics Canada, Catalogue No. 12-564E, February 1980). The second change is that seasonal factors are calculated for use during the first 6 months of the year, rather than for the entire year, and then are calculated at midyear for the July-December period. However, revisions of historical data continue to be made only at the end of each calendar year.

Seasonally adjusted labor force data in tables 1 and 4-10 were revised in the February 1987 issue of the *Review*, to reflect experience through 1986.

Annual revisions of the seasonally adjusted payroll data shown in tables 13, 14, and 18 were made in the July 1986 *Review* using the X-11 ARIMA seasonal adjustment methodology. New seasonal factors for productivity data in table 42 are usually introduced in the September issue. Seasonally adjusted indexes and percent changes from month to month and from quarter to quarter are published for numerous Consumer and Producer Price Index series. However, seasonally adjusted indexes are not published for the U.S. average All Items CPI. Only seasonally adjusted percent changes are available for this series.

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

### Additional information

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

### Symbols

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

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

n.e.c. = not elsewhere classified.

n.e.s. = not elsewhere specified.

## COMPARATIVE INDICATORS (Tables 1-3)

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

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

bargaining status, is chosen from a variety of BLS compensation and wage measures because it provides a comprehensive measure of employer costs for hiring labor, not just outlays for wages, and it is not affected by employment shifts among occupations and industries.

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

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

#### Notes on the data

Definitions of each series and notes on the data are contained in later

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

## EMPLOYMENT DATA

(Tables 1; 4-21)

### Household survey data

#### Description of the series

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

#### Definitions

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

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

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

#### Notes on the data

From time to time, and especially after a decennial census, adjustments are made in the Current Population Survey figures to correct for estimating errors during the preceding years. These adjustments affect the comparability of historical data. A description of these adjustments and their effect on

the various data series appear in the Explanatory Notes of *Employment and Earnings*.

Data in tables 4-10 are seasonally adjusted, based on the seasonal experience through December 1986.

#### Additional sources of information

For detailed explanations of the data, see *BLS Handbook of Methods*, Bulletin 2134-1 (Bureau of Labor Statistics, 1982), chapter 1, and for additional data, *Handbook of Labor Statistics*, Bulletin 2217 (Bureau of Labor Statistics, 1985). A detailed description of the Current Population Survey as well as additional data are available in the monthly Bureau of Labor Statistics periodical, *Employment and Earnings*. Historical data from 1948 to 1981 are available in *Labor Force Statistics Derived from the Current Population Survey: A Databook*, Vols. I and II, Bulletin 2096 (Bureau of Labor Statistics, 1982).

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

### Establishment survey data

#### Description of the series

EMPLOYMENT, HOURS, AND EARNINGS DATA in this section are compiled from payroll records reported monthly on a voluntary basis to the Bureau of Labor Statistics and its cooperating State agencies by more than 250,000 establishments representing all industries except agriculture. In most industries, the sampling probabilities are based on the size of the establishment; most large establishments are therefore in the sample. (An establishment is not necessarily a firm; it may be a branch plant, for example, or warehouse.) Self-employed persons and others not on a regular civilian payroll are outside the scope of the survey because they are excluded from establishment records. This largely accounts for the difference in employment figures between the household and establishment surveys.

#### Definitions

An **establishment** is an economic unit which produces goods or services (such as a factory or store) at a single location and is engaged in one type of economic activity.

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

**Production workers** in manufacturing include working supervisors and all nonsupervisory workers closely associated with production operations. Those workers mentioned in tables 12-17 include production workers in manufacturing and mining; construction workers in construction; and non-supervisory workers in the following industries: transportation and public utilities; wholesale and retail trade; finance, insurance, and real estate; and

services. These groups account for about four-fifths of the total employment on private nonagricultural payrolls.

**Earnings** are the payments production or nonsupervisory workers receive during the survey period, including premium pay for overtime or late-shift work but excluding irregular bonuses and other special payments.

**Real earnings** are earnings adjusted to reflect the effects of changes in consumer prices. The deflator for this series is derived from the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W). The **Hourly Earnings Index** is calculated from average hourly earnings data adjusted to exclude the effects of two types of changes that are unrelated to underlying wage-rate developments: fluctuations in overtime premiums in manufacturing (the only sector for which overtime data are available) and the effects of changes and seasonal factors in the proportion of workers in high-wage and low-wage industries.

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

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

#### Notes on the data

Establishment data collected by the Bureau of Labor Statistics are periodically adjusted to comprehensive counts of employment (called "benchmarks"). The latest complete adjustment was made with the release of May 1986 data, published in the July 1986 issue of the *Review*. Consequently, data published in the *Review* prior to that issue are not necessarily comparable to current data. Unadjusted data have been revised back to April 1984; seasonally adjusted data have been revised back to January 1981. These revisions were published in the *Supplement to Employment and Earnings* (Bureau of Labor Statistics, 1986). Unadjusted data from April 1985 forward, and seasonally adjusted data from January 1982 forward are subject to revision in future benchmarks.

In the establishment survey, estimates for the 2 most recent months are based on incomplete returns and are published as preliminary in the tables (13 to 16 in the *Review*). When all returns have been received, the estimates are revised and published as final in the third month of their appearance. Thus, August data are published as preliminary in October and November and as final in December. For the same reason, quarterly establishment data (table 1) are preliminary for the first 2 months of publication and final in the third month. Thus, second-quarter data are published as preliminary in August and September and as final in October.

## COMPENSATION AND WAGE DATA

(Tables 1-3; 22-29)

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

### Employment Cost Index

#### Description of the series

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

#### Additional sources of information

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

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

### Unemployment data by State

#### Description of the series

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

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

#### Notes on the data

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

#### Additional sources of information

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

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

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

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



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

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

### Definitions

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

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

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

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

### Notes on the data

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

### Additional sources of information

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

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

## Collective bargaining settlements

### Description of the series

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

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

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

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

### Definitions

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

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

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

### Notes on the data

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

### Additional sources of information

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

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

## Work stoppages

### Description of the series

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

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

### Definitions

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

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

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

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

### Notes on the data

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

### Additional sources of information

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

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

## Other compensation data

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

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

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

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

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

## PRICE DATA

(Tables 2; 30-41)

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

## Consumer Price Indexes

### Description of the series

The **Consumer Price Index (CPI)** is a measure of the average change in the prices paid by urban consumers for a fixed market basket of goods and services. The CPI is calculated monthly for two population groups, one consisting only of urban households whose primary source of income is derived from the employment of wage earners and clerical workers, and the other consisting of all urban households. The wage earner index (CPI-W) is a continuation of the historic index that was introduced well over a half-century ago for use in wage negotiations. As new uses were developed for the CPI in recent years, the need for a broader and more representative index became apparent. The all urban consumer index (CPI-U), introduced in 1978, is representative of the 1982-84 buying habits of about 80 percent of the noninstitutional population of the United States at that time, compared with 32 percent represented in the CPI-W. In addition to wage earners

and clerical workers, the CPI-U covers professional, managerial, and technical workers, the self-employed, short-term workers, the unemployed, retirees, and others not in the labor force.

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

Data collected from more than 21,000 retail establishments and 60,000 housing units in 91 urban areas across the country are used to develop the "U.S. city average." Separate estimates for 27 major urban centers are presented in table 31. The areas listed are as indicated in footnote 1 to the table. The area indexes measure only the average change in prices for each area since the base period, and do not indicate differences in the level of prices among cities.

### Notes on the data

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

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

### Additional sources of information

For a discussion of the general method for computing the CPI, see *BLS Handbook of Methods, Volume II, The Consumer Price Index*, Bulletin 2134-2 (Bureau of Labor Statistics, 1984). The recent change in the measurement of homeownership costs is discussed in Robert Gillingham and Walter Lane, "Changing the treatment of shelter costs for homeowners in the CPI," *Monthly Labor Review*, June 1982, pp. 9-14. An overview of the recently introduced revised CPI, reflecting 1982-84 expenditure patterns, is contained in *The Consumer Price Index: 1987 Revision*, Report 736 (Bureau of Labor Statistics, 1987).

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

## Producer Price Indexes

### Description of the series

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

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

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

### Notes on the data

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

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

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

### Additional sources of information

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

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

## International Price Indexes

### Description of the series

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

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

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

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

### Notes on the data

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



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

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

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

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

#### Additional sources of information

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

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

## PRODUCTIVITY DATA (Tables 2; 42-47)

### U. S. productivity and related data

#### Description of the series

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

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

#### Definitions

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

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

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

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

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

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

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

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

#### Notes on the data

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

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

#### Additional sources of information

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

## INTERNATIONAL COMPARISONS (Tables 45-47)

### Labor force and unemployment

#### Description of the series

Tables 45 and 46 present comparative measures of the labor force, employment, and unemployment—approximating U.S. concepts—for the United States, Canada, Australia, Japan, and six 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 DATA: Household Survey Data.

#### Notes on the data

The adjusted statistics have been adapted to the age at which compulsory schooling ends in each country, rather than to the U.S. standard of 16 years of age and over. Therefore, the adjusted statistics relate to the population age 16 and over in France, Sweden, and from 1973 onward, Great Britain; 15 and over in Canada, Australia, Japan, Germany, the Netherlands, and prior to 1973, Great Britain; and 14 and over in Italy. The institutional population is included in the denominator of the labor force participation rates and employment-population ratios for Japan and Germany; it is excluded for the United States and the other countries.

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

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

#### Additional sources of information

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

### Manufacturing productivity and labor costs

#### Description of the series

Table 47 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.

#### Definitions

**Output** is constant value output (value added), generally taken from the national accounts of each country. While the national accounting methods for measuring real output differ considerably among the 12 countries, 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 all employed persons including the self-employed in the United States and Canada; to all wage and salary employees in the other countries. The U.S. hours measure is hours paid; the hours measures for the other countries are 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 adjusted 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 cost. 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. 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

For most of the countries, the measures refer to total manufacturing as defined by the International Standard Industrial Classification. However, the measures for France (beginning 1959), Italy (beginning 1970), and the United Kingdom (beginning 1976), refer to manufacturing and mining less energy-related products and the figures for the Netherlands exclude petroleum refining from 1969 to 1976. For all countries, manufacturing includes the activities of government enterprises.

The figures for one or more recent years are generally based on current indicators of manufacturing output, employment, hours, and hourly compensation and are considered preliminary until the national accounts and other statistics used for the long-term measures become available.

#### Additional sources of information

For additional information, see the *BLS Handbook of Methods*, Bulletin 2134-1 (Bureau of Labor Statistics, 1982), chapter 16 and periodic *Monthly Labor Review* articles. Historical data are provided in the Bureau's *Handbook of Labor Statistics*, Bulletin 2217, 1985. The statistics are issued twice per year—in a news release (generally in May) and in a *Monthly Labor Review* article (generally in December).

## OCCUPATIONAL INJURY AND ILLNESS DATA

(Table 48)

### Description of the series

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

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

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

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

### Definitions

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

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

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

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

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

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

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

ployee worked at a permanent job less than full time; or (3) the employee worked at a permanently assigned job but could not perform all duties normally connected with it.

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

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

### Notes on the data

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

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

Comparable data for individual States are available from the BLS Office of Occupational Safety and Health Statistics.

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

### Additional sources of information

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

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



## 1. Labor market indicators

Selected indicators	1985	1986	1985				1986			
			I	II	III	IV	I	II	III	IV
<b>Employment data</b>										
Employment status of the civilian noninstitutionalized population (household survey) <sup>1</sup>										
Labor force participation rate .....	64.8	65.3	64.8	64.7	64.7	64.9	65.1	65.2	65.3	65.4
Employment-population ratio .....	60.1	60.7	60.1	60.0	60.1	60.3	60.5	60.6	60.8	60.9
Unemployment rate .....	7.2	7.0	7.3	7.2	7.2	7.1	7.1	7.1	6.9	6.9
Men .....	7.0	6.9	7.1	7.0	7.0	6.9	6.9	7.0	6.9	6.9
16 to 24 years .....	14.1	13.7	14.2	14.0	14.0	14.2	13.5	14.2	13.7	13.4
25 years and over .....	5.3	5.4	5.4	5.3	5.3	5.2	5.3	5.3	5.4	5.4
Women .....	7.4	7.1	7.5	7.5	7.4	7.3	7.3	7.2	6.9	6.8
16 to 24 years .....	13.0	12.8	13.1	12.9	12.9	13.1	13.1	13.1	12.6	12.5
25 years and over .....	5.9	5.5	6.0	6.0	5.9	5.6	5.7	5.7	5.4	5.3
Unemployment rate, 15 weeks and over .....	2.0	1.9	2.1	2.0	2.0	1.9	1.9	1.9	1.9	1.8
Employment, nonagricultural (payroll data), in thousands: <sup>1</sup>										
Total .....	97,614	100,165	96,581	97,295	97,897	98,668	99,403	99,848	100,316	101,062
Private sector .....	81,199	83,430	80,341	80,958	81,414	82,069	82,731	83,144	83,650	84,167
Goods-producing .....	24,930	24,938	24,970	24,947	24,866	24,937	25,028	24,952	24,872	24,892
Manufacturing .....	19,314	19,186	19,439	19,323	19,241	19,261	19,284	19,194	19,116	19,152
Service-producing .....	72,684	75,227	71,611	72,347	73,031	73,731	74,375	74,896	75,444	76,170
Average hours:										
Private sector .....	34.9	34.8	35.0	34.9	34.9	34.9	34.9	34.8	34.7	34.7
Manufacturing .....	40.5	40.7	40.4	40.4	40.6	40.8	40.7	40.7	40.7	40.8
Overtime .....	3.3	3.4	3.3	3.2	3.3	3.5	3.4	3.4	3.5	3.5
<b>Employment Cost Index</b>										
Percent change in the ECI, compensation:										
All workers (excluding farm, household, and Federal workers) .....	4.3	3.6	1.3	.7	1.6	.6	1.1	.7	1.1	.6
Private industry workers .....	3.9	3.2	1.2	.8	1.3	.6	1.1	.8	.7	.6
Goods-producing <sup>2</sup> .....	3.4	3.1	1.5	.7	.6	.6	1.1	.9	.6	.5
Service-producing <sup>2</sup> .....	4.4	3.2	1.0	1.0	1.8	.5	1.1	.6	.8	.6
State and local government workers .....	5.7	5.2	1.2	.2	3.4	.7	1.0	.6	2.8	.8
Workers by bargaining status (private industry):										
Union .....	2.6	2.1	.7	.6	.8	.5	1.0	.2	.5	.3
Nonunion .....	4.6	3.6	1.6	1.0	1.4	.6	1.2	.9	.8	.7

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

<sup>2</sup> 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	1985	1986	1985				1986				
			I	II	III	IV	I	II	III	IV	
			<b>Compensation data<sup>1, 2</sup></b>								
Employment Cost Index--compensation (wages, salaries, benefits):											
Civilian nonfarm .....	4.3	3.6	1.3	0.7	1.6	0.6	1.1	0.7	1.1	0.6	
Private nonfarm .....	3.9	3.2	1.2	.8	1.3	.6	1.1	.8	.7	.6	
Employment Cost Index--wages and salaries											
Civilian nonfarm .....	4.4	3.5	1.2	.9	1.7	.6	1.0	.8	1.1	.6	
Private nonfarm .....	4.1	3.1	1.2	1.1	1.3	.6	1.0	.9	.7	.5	
<b>Price data<sup>1</sup></b>											
Consumer Price Index (All urban consumers): All items .....	3.8	1.1	1.0	1.1	.7	.9	-.4	.6	.7	.3	
Producer Price Index:											
Finished goods .....	1.8	-2.5	.0	.7	-1.4	2.5	-3.1	.5	-.7	.9	
Finished consumer goods .....	1.5	-3.8	-.3	.7	-1.4	2.5	-4.1	.4	-.7	.6	
Capital equipment .....	2.7	2.1	1.3	.4	-1.4	2.5	.2	.6	-.7	2.0	
Intermediate materials, supplies, components .....	-.3	-4.4	-.4	.2	-.5	.4	-2.9	-.9	-.2	-.4	
Crude materials .....	-5.6	-9.7	-3.1	-2.1	-4.5	4.3	-7.6	-1.5	-.5	-.2	
<b>Productivity data<sup>3</sup></b>											
Output per hour of all persons:											
Business sector .....	1.0	.7	.9	2.7	3.4	-3.2	3.3	.5	-.4	-2.3	
Nonfarm business sector .....	.5	.7	.3	1.8	2.2	-3.5	4.3	.5	-.3	-1.7	
Nonfinancial corporations <sup>4</sup> .....	1.2	-	.8	2.2	4.9	-2.8	-5	-.3	.2	-	

<sup>1</sup> Annual changes are December-to-December change. Quarterly changes are calculated using the last month of each quarter. Compensation and price data are not seasonally adjusted and the price data are not compounded.

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

<sup>3</sup> 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.

<sup>4</sup> Output per hour of all employees.

- Data not available.

## 3. Alternative measures of wage and compensation changes

Components	Quarterly average						Four quarters ended--					
	1985		1986				1985		1986			
	III	IV	I	II	III	IV	III	IV	I	II	III	IV
<b>Average hourly compensation:<sup>1</sup></b>												
All persons, business sector .....	4.4	3.8	2.5	2.8	2.9	2.4	4.4	4.4	3.9	3.4	3.0	2.7
All employees, nonfarm business sector .....	3.2	3.7	3.1	2.3	2.3	3.1	4.0	3.9	3.6	3.1	2.8	2.7
<b>Employment Cost Index--compensation:</b>												
Civilian nonfarm <sup>2</sup> .....	1.6	.6	1.1	.7	1.1	.6	4.9	4.3	4.1	4.0	3.6	3.6
Private nonfarm .....	1.3	.6	1.1	.8	.7	.6	4.7	3.9	3.8	3.8	3.2	3.2
Union .....	.8	.5	1.0	.2	.5	.3	3.2	2.6	2.9	2.5	2.3	2.1
Nonunion .....	1.4	.6	1.2	.9	.8	.7	5.4	4.6	4.2	4.2	3.5	3.6
State and local governments .....	3.4	.7	1.0	.6	2.8	.8	6.0	5.7	5.5	5.8	5.2	5.2
Employment Cost Index--wages and salaries:												
Civilian nonfarm <sup>2</sup> .....	1.7	.6	1.0	.8	1.1	.6	5.0	4.4	4.2	4.1	3.5	3.5
Private nonfarm .....	1.3	.6	1.0	.9	.7	.5	4.8	4.1	3.9	3.7	3.1	3.1
Union .....	.9	.5	.7	.4	.6	.2	3.6	3.1	3.2	2.5	2.3	2.0
Nonunion .....	1.5	.6	1.1	.9	.7	.7	5.4	4.6	4.3	4.1	3.4	3.5
State and local governments .....	3.5	.8	1.0	.4	3.2	.7	5.6	5.6	5.5	5.7	5.4	5.4
Total effective wage adjustments <sup>3</sup> .....	1.2	.5	.6	.7	.5	.5	3.5	3.3	3.1	2.9	2.3	2.3
From current settlements .....	.2	.1	(*)	.2	.1	.2	.9	.7	.6	.5	.5	.5
From prior settlements .....	.5	.2	.4	.6	.5	.2	1.8	1.8	1.7	1.8	1.6	1.7
From cost-of-living provision .....	.4	.1	.2	(*)	(*)	.1	.8	.7	.8	.7	.2	.2
<b>Negotiated wage adjustments from settlements:<sup>3</sup></b>												
First-year adjustments .....	2.0	2.1	.8	1.3	.8	2.0	2.4	2.3	2.0	1.6	1.2	1.2
Annual rate over life of contract .....	3.1	1.9	1.5	2.0	1.5	2.1	2.5	2.7	2.5	2.2	1.7	1.8
<b>Negotiated wage and benefit adjustments from settlements:<sup>5</sup></b>												
First-year adjustment .....	2.0	2.0	.6	.7	.7	2.7	3.1	2.6	2.3	1.4	.9	1.1
Annual rate over life of contract .....	3.0	1.4	1.2	1.6	1.2	2.4	2.7	2.7	2.5	2.0	1.4	1.6

<sup>1</sup> Seasonally adjusted.

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

<sup>3</sup> Limited to major collective bargaining units of 1,000 workers or more. The most recent data are preliminary.

<sup>4</sup> Data round to zero.

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

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

(Numbers in thousands)

Employment status	Annual average		1986												1987
	1985	1986	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.
<b>TOTAL</b>															
Noninstitutional population <sup>1, 2</sup> .....	179,912	182,293	181,361	181,512	181,678	181,843	181,998	182,183	182,354	182,525	182,713	182,935	183,114	183,297	183,575
Labor force <sup>2</sup> .....	117,167	119,540	118,485	118,733	118,880	118,987	119,274	119,685	119,789	119,821	119,988	120,163	120,426	120,336	120,782
Participation rate <sup>3</sup> .....	65.1	65.6	65.3	65.4	65.4	65.4	65.5	65.7	65.7	65.6	65.7	65.7	65.8	65.7	65.8
Total employed <sup>2</sup> .....	108,856	111,303	110,583	110,248	110,500	110,664	110,852	111,293	111,559	111,764	111,703	111,941	112,183	112,387	112,759
Employment-population ratio <sup>4</sup> .....	60.5	61.1	61.0	60.7	60.8	60.9	60.9	61.1	61.2	61.2	61.1	61.2	61.3	61.3	61.4
Resident Armed Forces <sup>1</sup> .....	1,706	1,706	1,691	1,691	1,693	1,695	1,687	1,680	1,672	1,697	1,716	1,749	1,751	1,750	1,748
Civilian employed .....	107,150	109,597	108,892	108,557	108,807	108,969	109,165	109,613	109,887	110,067	109,987	110,192	110,432	110,637	111,011
Agriculture .....	3,179	3,163	3,280	3,105	3,252	3,199	3,151	3,164	3,124	3,057	3,142	3,162	3,215	3,161	3,145
Nonagricultural industries .....	103,971	106,434	105,612	105,452	105,555	105,770	106,014	106,449	106,763	107,010	106,845	107,030	107,217	107,476	107,866
Unemployed .....	8,312	8,237	7,902	8,485	8,380	8,323	8,422	8,392	8,230	8,057	8,285	8,222	8,243	7,949	8,023
Unemployment rate <sup>5</sup> .....	7.1	6.9	6.7	7.1	7.0	7.0	7.1	7.0	6.9	6.7	6.9	6.8	6.8	6.6	6.6
Not in labor force .....	62,744	62,752	62,876	62,779	62,798	62,856	62,724	62,498	62,565	62,704	62,725	62,772	62,688	62,961	62,793
<b>Men, 16 years and over</b>															
Noninstitutional population <sup>1, 2</sup> .....	86,025	87,349	86,882	86,954	87,035	87,120	87,195	87,288	87,373	87,460	87,556	87,682	87,773	87,868	88,020
Labor force <sup>2</sup> .....	65,967	66,973	66,666	66,737	66,793	66,770	66,854	66,937	66,968	66,911	67,128	67,130	67,407	67,425	67,672
Participation rate <sup>3</sup> .....	76.7	76.7	76.7	76.7	76.7	76.6	76.7	76.7	76.6	76.5	76.7	76.6	76.8	76.7	76.9
Total employed <sup>2</sup> .....	61,447	62,443	62,392	62,142	62,221	62,253	62,201	62,318	62,402	62,483	62,528	62,565	62,833	62,986	63,187
Employment-population ratio <sup>4</sup> .....	71.4	71.5	71.8	71.5	71.5	71.5	71.3	71.4	71.4	71.4	71.4	71.4	71.6	71.7	71.8
Resident Armed Forces <sup>1</sup> .....	1,556	1,551	1,539	1,539	1,540	1,541	1,533	1,525	1,518	1,541	1,560	1,590	1,592	1,593	1,591
Civilian employed .....	59,891	60,892	60,853	60,603	60,681	60,712	60,668	60,793	60,884	60,942	60,968	60,975	61,241	61,393	61,596
Unemployed .....	4,521	4,530	4,274	4,595	4,572	4,517	4,653	4,619	4,566	4,428	4,600	4,565	4,574	4,439	4,484
Unemployment rate <sup>5</sup> .....	6.9	6.8	6.4	6.9	6.8	6.8	7.0	6.9	6.8	6.6	6.9	6.8	6.8	6.6	6.6
<b>Women, 16 years and over</b>															
Noninstitutional population <sup>1, 2</sup> .....	93,886	94,944	94,479	94,558	94,643	94,723	94,803	94,895	94,981	95,065	95,156	95,253	95,341	95,429	95,556
Labor force <sup>2</sup> .....	51,200	52,568	51,819	51,996	52,087	52,217	52,420	52,748	52,821	52,910	52,860	53,033	53,019	52,911	53,110
Participation rate <sup>3</sup> .....	54.5	55.4	54.8	55.0	55.0	55.1	55.3	55.6	55.6	55.7	55.6	55.7	55.6	55.4	55.6
Total employed <sup>2</sup> .....	47,409	48,861	48,191	48,106	48,279	48,411	48,651	48,975	49,157	49,281	49,175	49,376	49,350	49,401	49,572
Employment-population ratio <sup>4</sup> .....	50.5	51.5	51.0	50.9	51.0	51.1	51.3	51.6	51.8	51.8	51.7	51.8	51.8	51.8	51.9
Resident Armed Forces <sup>1</sup> .....	150	155	152	152	153	154	154	155	154	156	156	159	159	157	157
Civilian employed .....	47,259	48,706	48,039	47,954	48,126	48,257	48,497	48,820	49,003	49,125	49,019	49,217	49,191	49,244	49,415
Unemployed .....	3,791	3,707	3,628	3,890	3,808	3,806	3,769	3,773	3,664	3,629	3,685	3,657	3,669	3,510	3,538
Unemployment rate <sup>5</sup> .....	7.4	7.1	7.0	7.5	7.3	7.3	7.2	7.2	6.9	6.9	7.0	6.9	6.9	6.6	6.7

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

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

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

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

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



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

(Numbers in thousands)

Employment status	Annual average		1986												1987
	1985	1986	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.
<b>TOTAL</b>															
Civilian noninstitutional population <sup>1</sup> .....	178,206	180,587	179,670	179,821	179,985	180,148	180,311	180,503	180,682	180,828	180,997	181,186	181,363	181,547	181,827
Civilian labor force .....	115,461	117,834	116,794	117,042	117,187	117,292	117,587	118,005	118,117	118,124	118,272	118,414	118,675	118,586	119,034
Participation rate .....	64.8	65.3	65.0	65.1	65.1	65.1	65.2	65.4	65.4	65.3	65.3	65.4	65.4	65.3	65.5
Employed .....	107,150	109,597	108,892	108,557	108,807	108,969	109,165	109,613	109,887	110,067	109,987	110,192	110,432	110,637	111,011
Employment-population ratio <sup>2</sup> .....	60.1	60.7	60.6	60.4	60.5	60.5	60.5	60.7	60.8	60.9	60.8	60.8	60.9	60.9	61.1
Unemployed .....	8,312	8,237	7,902	8,485	8,380	8,323	8,422	8,392	8,230	8,057	8,285	8,222	8,243	7,949	8,023
Unemployment rate .....	7.2	7.0	6.8	7.2	7.2	7.1	7.2	7.1	7.0	6.8	7.0	6.9	6.9	6.7	6.7
Not in labor force .....	62,744	62,752	62,876	62,779	62,798	62,856	62,724	62,498	62,565	62,704	62,725	62,772	62,688	62,961	62,793
<b>Men, 20 years and over</b>															
Civilian noninstitutional population <sup>1</sup> .....	77,195	78,523	78,101	78,171	78,236	78,309	78,387	78,484	78,586	78,634	78,722	78,802	78,874	78,973	79,132
Civilian labor force .....	60,277	61,320	61,143	61,092	61,177	61,080	61,158	61,330	61,355	61,219	61,412	61,409	61,703	61,826	61,948
Participation rate .....	78.1	78.1	78.3	78.2	78.2	78.0	78.0	78.1	78.1	77.9	78.0	77.9	78.2	78.3	78.3
Employed .....	56,562	57,569	57,599	57,296	57,388	57,392	57,338	57,522	57,544	57,585	57,607	57,595	57,883	58,101	58,227
Employment-population ratio <sup>2</sup> .....	73.3	73.3	73.7	73.3	73.4	73.3	73.1	73.3	73.2	73.2	73.2	73.1	73.4	73.6	73.6
Agriculture .....	2,278	2,292	2,340	2,261	2,389	2,319	2,279	2,309	2,275	2,185	2,286	2,297	2,303	2,289	2,254
Nonagricultural industries .....	54,284	55,277	55,259	55,035	54,999	55,073	55,059	55,213	55,269	55,400	55,321	55,298	55,580	55,812	55,974
Unemployed .....	3,715	3,751	3,544	3,796	3,789	3,688	3,820	3,808	3,811	3,634	3,805	3,814	3,820	3,725	3,720
Unemployment rate .....	6.2	6.1	5.8	6.2	6.2	6.0	6.2	6.2	6.2	5.9	6.2	6.2	6.2	6.0	6.0
<b>Women, 20 years and over</b>															
Civilian noninstitutional population <sup>1</sup> .....	86,506	87,567	87,112	87,185	87,263	87,355	87,444	87,547	87,629	87,689	87,779	87,856	87,933	88,016	88,150
Civilian labor force .....	47,283	48,589	47,897	48,009	48,065	48,181	48,433	48,739	48,879	48,950	48,920	49,014	49,043	48,923	49,161
Participation rate .....	54.7	55.5	55.0	55.1	55.1	55.2	55.4	55.7	55.8	55.8	55.7	55.8	55.8	55.6	55.8
Employed .....	44,154	45,556	44,952	44,820	44,934	45,094	45,335	45,657	45,869	45,956	45,905	46,020	46,067	46,058	46,261
Employment-population ratio <sup>2</sup> .....	51.0	52.0	51.6	51.4	51.5	51.6	51.8	52.2	52.3	52.4	52.3	52.4	52.4	52.3	52.5
Agriculture .....	596	614	677	591	589	585	604	583	607	622	614	612	675	621	628
Nonagricultural industries .....	43,558	44,943	44,275	44,229	44,345	44,509	44,731	45,074	45,262	45,334	45,291	45,408	45,392	45,437	45,633
Unemployed .....	3,129	3,032	2,945	3,189	3,131	3,087	3,098	3,082	3,010	2,994	3,015	2,994	2,976	2,865	2,900
Unemployment rate .....	6.6	6.2	6.1	6.6	6.5	6.4	6.4	6.3	6.2	6.1	6.2	6.1	6.1	5.9	5.9
<b>Both sexes, 16 to 19 years</b>															
Civilian noninstitutional population <sup>1</sup> .....	14,506	14,496	14,458	14,465	14,485	14,484	14,480	14,472	14,467	14,505	14,496	14,527	14,557	14,558	14,545
Civilian labor force .....	7,901	7,926	7,754	7,941	7,945	8,031	7,996	7,936	7,883	7,955	7,940	7,991	7,929	7,837	7,926
Participation rate .....	54.5	54.7	53.6	54.9	54.9	55.4	55.2	54.8	54.5	54.8	54.8	55.0	54.5	53.8	54.5
Employed .....	6,434	6,472	6,341	6,441	6,485	6,483	6,492	6,434	6,474	6,526	6,475	6,577	6,482	6,478	6,524
Employment-population ratio <sup>2</sup> .....	44.4	44.6	43.9	44.5	44.8	44.8	44.8	44.5	44.8	45.0	44.7	45.3	44.5	44.5	44.9
Agriculture .....	305	258	263	253	274	295	268	272	242	250	242	253	237	251	264
Nonagricultural industries .....	6,129	6,215	6,078	6,188	6,211	6,188	6,224	6,162	6,232	6,276	6,233	6,324	6,245	6,227	6,260
Unemployed .....	1,468	1,454	1,413	1,500	1,460	1,548	1,504	1,502	1,409	1,429	1,465	1,414	1,447	1,359	1,402
Unemployment rate .....	18.6	18.3	18.2	18.9	18.4	19.3	18.8	18.9	17.9	18.0	18.5	17.7	18.2	17.3	17.7
<b>White</b>															
Civilian noninstitutional population <sup>1</sup> .....	153,679	155,432	154,784	154,889	155,005	155,122	155,236	155,376	155,502	155,604	155,723	155,856	155,979	156,111	156,313
Civilian labor force .....	99,926	101,801	100,993	101,178	101,208	101,237	101,531	101,946	102,015	102,122	102,158	102,297	102,455	102,503	102,746
Participation rate .....	65.0	65.5	65.2	65.3	65.3	65.3	65.4	65.6	65.6	65.6	65.6	65.6	65.7	65.7	65.7
Employed .....	93,736	95,660	95,099	94,780	94,955	95,095	95,283	95,720	95,861	96,177	96,000	96,147	96,281	96,533	96,717
Employment-population ratio <sup>2</sup> .....	61.0	61.5	61.4	61.2	61.3	61.3	61.4	61.6	61.6	61.8	61.6	61.7	61.7	61.8	61.9
Unemployed .....	6,191	6,140	5,894	6,398	6,253	6,142	6,248	6,226	6,154	5,945	6,158	6,150	6,174	5,970	6,029
Unemployment rate .....	6.2	6.0	5.8	6.3	6.2	6.1	6.2	6.1	6.0	5.8	6.0	6.0	6.0	5.8	5.9
<b>Black</b>															
Civilian noninstitutional population <sup>1</sup> .....	19,664	19,989	19,837	19,863	19,889	19,916	19,943	19,974	20,002	20,028	20,056	20,089	20,120	20,152	20,187
Civilian labor force .....	12,364	12,654	12,561	12,572	12,634	12,687	12,721	12,712	12,611	12,553	12,652	12,720	12,719	12,707	12,831
Participation rate .....	62.9	63.3	63.3	63.3	63.5	63.7	63.8	63.6	63.0	62.7	63.1	63.3	63.2	63.1	63.6
Employed .....	10,501	10,814	10,723	10,704	10,770	10,809	10,839	10,818	10,822	10,716	10,799	10,895	10,910	10,968	10,997
Employment-population ratio <sup>2</sup> .....	53.4	54.1	54.1	53.9	54.2	54.3	54.3	54.2	54.1	53.5	53.8	54.2	54.2	54.4	54.5
Unemployed .....	1,864	1,840	1,838	1,868	1,864	1,878	1,882	1,894	1,789	1,837	1,853	1,825	1,809	1,739	1,833
Unemployment rate .....	15.1	14.5	14.6	14.9	14.8	14.8	14.8	14.9	14.2	14.6	14.6	14.3	14.2	13.7	14.3

See footnotes at end of table.

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

(Numbers in thousands)

Employment status	Annual average		1986												1987
	1985	1986	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.
<b>Hispanic origin</b>															
Civilian noninstitutional population <sup>1</sup> .....	11,915	12,344	12,148	12,184	12,219	12,255	12,290	12,326	12,362	12,397	12,432	12,469	12,505	12,540	12,653
Civilian labor force .....	7,698	8,076	7,796	7,922	7,926	7,969	8,006	8,085	8,121	8,130	8,179	8,200	8,226	8,320	8,431
Participation rate .....	64.6	65.4	64.2	65.0	64.9	65.0	65.1	65.6	65.7	65.6	65.8	65.8	65.8	66.3	66.6
Employed .....	6,888	7,219	6,994	6,991	7,095	7,129	7,136	7,224	7,269	7,248	7,286	7,345	7,437	7,446	7,538
Employment-population ratio <sup>2</sup> .....	57.8	58.5	57.6	57.4	58.1	58.2	58.1	58.6	58.8	58.5	58.6	58.9	59.5	59.4	59.6
Unemployed .....	811	857	802	931	831	840	870	861	852	882	893	855	789	874	893
Unemployment rate .....	10.5	10.6	10.3	11.8	10.5	10.5	10.9	10.6	10.5	10.8	10.9	10.4	9.6	10.5	10.6

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

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

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

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

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

(In thousands)

Selected categories	Annual average		1986												1987
	1985	1986	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.
<b>CHARACTERISTIC</b>															
Civilian employed, 16 years and over .....	107,150	109,597	108,892	108,557	108,807	108,969	109,165	109,613	109,887	110,067	109,987	110,192	110,432	110,637	111,011
Men .....	59,891	60,892	60,853	60,603	60,681	60,712	60,668	60,793	60,884	60,942	60,968	60,975	61,241	61,393	61,596
Women .....	47,259	48,706	48,039	47,954	48,126	48,257	48,497	48,820	49,003	49,125	49,019	49,217	49,191	49,244	49,415
Married men, spouse present ..	39,248	39,658	39,558	39,363	39,396	39,504	39,582	39,613	39,634	39,735	39,691	39,780	39,952	40,093	40,102
Married women, spouse present .....	26,336	27,144	26,820	26,695	26,761	26,889	27,016	27,354	27,474	27,388	27,249	27,323	27,333	27,400	27,525
Women who maintain families ..	5,597	5,837	5,703	5,723	5,754	5,799	5,734	5,719	5,812	5,832	5,926	6,016	6,041	6,005	5,985
<b>MAJOR INDUSTRY AND CLASS OF WORKER</b>															
<b>Agriculture:</b>															
Wage and salary workers .....	1,535	1,547	1,642	1,512	1,655	1,539	1,489	1,508	1,504	1,509	1,521	1,562	1,582	1,621	1,650
Self-employed workers .....	1,458	1,447	1,482	1,444	1,450	1,467	1,472	1,492	1,434	1,387	1,460	1,451	1,425	1,400	1,370
Unpaid family workers .....	185	169	165	158	169	173	177	163	171	174	159	164	198	152	136
<b>Nonagricultural industries:</b>															
Wage and salary workers .....	95,871	98,299	97,752	97,500	97,661	97,858	98,047	98,314	98,312	98,586	98,692	98,846	98,869	99,164	99,550
Government .....	16,031	16,342	16,333	16,155	16,160	16,231	16,333	16,377	16,582	16,446	16,333	16,264	16,457	16,443	16,412
Private industries .....	79,841	81,957	81,419	81,345	81,501	81,627	81,714	81,937	81,730	82,140	82,359	82,582	82,412	82,721	83,138
Private households .....	1,249	1,235	1,245	1,208	1,227	1,309	1,261	1,267	1,241	1,247	1,229	1,216	1,183	1,189	1,269
Other .....	78,592	80,722	80,174	80,137	80,274	80,318	80,453	80,670	80,489	80,893	81,130	81,366	81,229	81,532	81,869
Self-employed workers .....	7,811	7,881	7,693	7,711	7,713	7,834	7,793	7,832	8,019	7,956	7,939	7,993	8,179	8,056	8,192
Unpaid family workers .....	289	255	271	261	243	251	235	236	258	271	275	265	252	239	246
<b>PERSONS AT WORK PART TIME<sup>1</sup></b>															
<b>All industries:</b>															
Part time for economic reasons ..	5,590	5,588	5,551	5,446	5,548	5,853	5,825	5,538	5,442	5,471	5,544	5,740	5,563	5,596	5,505
Slack work .....	2,430	2,456	2,377	2,385	2,352	2,534	2,605	2,437	2,473	2,417	2,472	2,481	2,510	2,444	2,473
Could only find part-time work ..	2,819	2,800	2,870	2,724	2,908	2,922	2,843	2,813	2,661	2,741	2,772	2,826	2,714	2,867	2,695
Voluntary part time .....	13,489	13,935	13,877	13,800	13,778	13,900	13,853	14,142	13,967	13,981	13,922	14,178	14,021	13,877	14,170
<b>Nonagricultural industries:</b>															
Part time for economic reasons ..	5,334	5,345	5,297	5,214	5,295	5,567	5,569	5,322	5,222	5,269	5,303	5,450	5,319	5,342	5,201
Slack work .....	2,273	2,305	2,231	2,242	2,160	2,362	2,485	2,307	2,317	2,283	2,314	2,314	2,366	2,286	2,281
Could only find part-time work ..	2,730	2,719	2,770	2,669	2,819	2,806	2,749	2,727	2,609	2,678	2,710	2,739	2,626	2,765	2,599
Voluntary part time .....	13,038	13,502	13,386	13,354	13,351	13,528	13,412	13,613	13,578	13,606	13,520	13,736	13,567	13,455	13,750

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

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

(Unemployment rates)

Selected categories	Annual average		1986												1987
	1985	1986	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.
<b>CHARACTERISTIC</b>															
Total, all civilian workers .....	7.2	7.0	6.8	7.2	7.2	7.1	7.2	7.1	7.0	6.8	7.0	6.9	6.9	6.7	6.7
Both sexes, 16 to 19 years .....	18.6	18.3	18.2	18.9	18.4	19.3	18.8	18.9	17.9	18.0	18.5	17.7	18.2	17.3	17.7
Men, 20 years and over .....	6.2	6.1	5.8	6.2	6.2	6.0	6.2	6.2	6.2	5.9	6.2	6.2	6.2	6.0	6.0
Women, 20 years and over .....	6.6	6.2	6.1	6.6	6.5	6.4	6.4	6.3	6.2	6.1	6.2	6.1	6.1	5.9	5.9
White, total .....	6.2	6.0	5.8	6.3	6.2	6.1	6.2	6.1	6.0	5.8	6.0	6.0	6.0	5.8	5.9
Both sexes, 16 to 19 years .....	15.7	15.6	15.1	16.0	15.0	16.3	15.9	15.9	15.2	15.4	15.9	15.4	16.0	15.1	15.0
Men, 16 to 19 years .....	16.5	16.3	15.0	16.6	15.9	17.1	17.0	17.1	15.6	16.6	16.6	15.7	16.3	15.5	16.1
Women, 16 to 19 years .....	14.8	14.9	15.1	15.4	14.1	15.4	14.7	14.6	14.2	15.1	15.2	15.7	14.6	13.8	
Men, 20 years and over .....	5.4	5.3	5.0	5.4	5.4	5.2	5.4	5.4	5.4	5.1	5.4	5.4	5.4	5.3	5.3
Women, 20 years and over .....	5.7	5.4	5.4	5.9	5.7	5.5	5.5	5.4	5.3	5.2	5.3	5.2	5.2	5.0	5.1
Black, total .....	15.1	14.5	14.6	14.9	14.8	14.8	14.8	14.9	14.2	14.6	14.6	14.3	14.2	13.7	14.3
Both sexes, 16 to 19 years .....	40.2	39.3	41.5	40.0	42.4	41.9	40.5	39.5	38.0	40.3	38.4	35.8	36.0	36.5	39.5
Men, 16 to 19 years .....	41.0	39.3	41.1	39.5	42.6	41.2	40.5	39.7	40.5	38.8	38.6	37.8	35.0	36.1	36.5
Women, 16 to 19 years .....	39.2	39.2	41.9	40.7	42.2	42.7	40.5	39.4	35.0	41.9	38.3	33.8	37.0	36.9	43.2
Men, 20 years and over .....	13.2	12.9	12.9	13.3	12.8	12.8	12.9	13.3	12.9	13.2	13.4	13.1	12.9	11.8	12.2
Women, 20 years and over .....	13.1	12.4	12.2	12.5	12.3	12.5	12.7	12.7	12.1	12.5	12.4	12.4	12.5	12.3	12.8
Hispanic origin, total .....	10.5	10.6	10.3	11.8	10.5	10.5	10.9	10.6	10.5	10.8	10.9	10.4	9.6	10.5	10.6
Married men, spouse present .....	4.3	4.4	4.3	4.5	4.5	4.2	4.4	4.5	4.4	4.2	4.3	4.6	4.5	4.3	4.2
Married women, spouse present .....	5.6	5.2	5.1	5.5	5.5	5.3	5.3	5.2	5.2	5.1	5.1	5.0	5.0	4.8	4.8
Women who maintain families .....	10.4	9.8	9.9	9.9	10.1	9.5	10.1	10.0	9.5	10.1	9.8	8.9	9.7	9.8	9.8
Full-time workers .....	6.8	6.6	6.5	6.9	6.8	6.7	6.9	6.7	6.6	6.4	6.6	6.6	6.6	6.3	6.4
Part-time workers .....	9.3	9.1	8.7	9.3	9.1	9.4	9.1	9.1	9.2	9.3	9.3	9.2	9.1	8.8	9.0
Unemployed 15 weeks and over .....	2.0	1.9	1.8	2.0	1.9	1.8	1.9	1.9	1.9	1.9	2.0	1.8	1.9	1.8	1.8
Labor force time lost <sup>1</sup> .....	8.1	7.9	7.7	8.1	8.1	8.1	8.2	8.1	7.8	7.7	7.9	7.8	7.7	7.6	7.6
<b>INDUSTRY</b>															
Nonagricultural private wage and salary workers ....	7.2	7.0	6.8	7.2	7.1	7.1	7.2	7.1	7.1	6.9	7.0	7.0	7.0	6.8	6.7
Mining .....	9.5	13.5	10.7	9.5	10.5	12.4	13.6	17.3	16.6	16.6	13.9	14.5	14.5	14.1	14.0
Construction .....	13.1	13.1	12.8	13.0	13.0	12.3	13.0	12.4	13.0	12.4	12.9	13.8	15.1	13.7	12.2
Manufacturing .....	7.7	7.1	7.1	7.3	7.2	6.9	7.4	7.2	6.9	6.9	7.0	7.3	7.1	6.9	6.8
Durable goods .....	7.6	6.9	7.0	7.4	6.9	6.9	7.3	7.0	6.7	6.8	6.5	7.2	6.6	6.4	6.8
Nondurable goods .....	7.8	7.4	7.2	7.1	7.6	6.9	7.5	7.5	7.2	6.9	7.7	7.3	7.9	7.7	6.8
Transportation and public utilities .....	5.1	5.1	4.5	5.3	5.8	5.5	5.3	5.4	5.5	4.8	4.7	5.2	4.4	4.6	4.8
Wholesale and retail trade .....	7.6	7.6	7.3	7.8	7.7	7.9	7.9	7.7	7.8	7.5	7.6	7.4	7.2	7.2	7.5
Finance and service industries .....	5.6	5.5	5.3	5.9	5.6	5.8	5.5	5.5	5.7	5.6	5.6	5.4	5.4	5.1	5.2
Government workers .....	3.9	3.6	3.5	3.8	3.9	3.6	3.6	3.6	3.3	3.3	3.5	3.7	3.6	3.3	3.6
Agricultural wage and salary workers .....	13.2	12.5	11.5	13.8	12.1	13.4	15.3	13.2	11.4	13.3	12.9	11.9	10.1	11.5	11.6

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



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

(Civilian workers)

Sex and age	Annual average		1986												1987
	1985	1986	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.
	Total, 16 years and over	7.2	7.0	6.8	7.2	7.2	7.1	7.2	7.1	7.0	6.8	7.0	6.9	6.9	6.7
16 to 24 years	13.6	13.3	13.1	13.6	13.3	13.7	13.8	13.5	13.2	12.9	13.6	13.0	12.9	12.9	13.1
16 to 19 years	18.6	18.3	18.2	18.9	18.4	19.3	18.8	18.9	17.9	18.0	18.5	17.7	18.2	17.3	17.7
16 to 17 years	21.0	20.2	21.0	21.6	19.8	20.8	20.8	20.7	19.8	19.8	20.0	19.3	20.6	18.8	20.1
18 to 19 years	17.0	17.0	16.6	17.1	17.2	18.4	17.4	17.5	16.2	16.8	17.2	16.5	16.7	16.3	16.2
20 to 24 years	11.1	10.7	10.5	10.9	10.7	10.8	11.2	10.7	10.8	10.3	11.1	10.5	10.2	10.7	10.7
25 years and over	5.6	5.4	5.2	5.6	5.6	5.4	5.5	5.5	5.4	5.4	5.4	5.5	5.5	5.2	5.2
25 to 54 years	5.8	5.7	5.5	5.9	5.9	5.7	5.9	5.9	5.7	5.7	5.6	5.7	5.8	5.5	5.6
55 years and over	4.1	3.9	3.9	4.3	4.2	3.9	3.7	3.8	3.8	3.7	4.0	4.1	3.8	3.5	3.2
Men, 16 years and over	7.0	6.9	6.6	7.0	7.0	6.9	7.1	7.1	7.0	6.8	7.0	7.0	6.9	6.7	6.8
16 to 24 years	14.1	13.7	13.1	13.6	13.7	14.2	14.5	13.9	13.6	13.3	14.3	13.2	13.4	13.4	13.4
16 to 19 years	19.5	19.0	18.3	19.5	19.2	20.0	20.0	19.9	18.4	19.1	19.1	19.1	18.2	18.3	17.8
16 to 17 years	21.9	20.8	21.3	22.9	20.5	21.1	21.3	20.0	20.3	20.9	21.0	19.8	21.3	19.1	21.4
18 to 19 years	17.9	17.7	16.8	17.2	18.3	19.2	19.1	19.4	16.7	18.0	17.5	17.0	16.2	17.0	16.9
20 to 24 years	11.4	11.0	10.5	10.8	11.0	11.3	11.7	10.9	11.1	10.3	11.9	10.7	10.9	11.3	10.7
25 years and over	5.3	5.4	5.1	5.5	5.4	5.2	5.4	5.4	5.4	5.3	5.4	5.5	5.5	5.2	5.4
25 to 54 years	5.6	5.6	5.4	5.7	5.7	5.5	5.7	5.7	5.7	5.6	5.5	5.7	5.7	5.5	5.7
55 years and over	4.1	4.1	3.9	4.3	4.1	4.0	3.9	4.1	4.0	4.1	4.2	4.4	4.1	4.0	3.5
Women, 16 years and over	7.4	7.1	7.0	7.5	7.3	7.3	7.2	7.2	7.0	6.9	7.0	6.9	6.9	6.7	6.7
16 to 24 years	13.0	12.8	13.1	13.5	12.8	13.1	13.1	13.0	12.7	12.4	12.8	12.7	12.4	12.4	12.7
16 to 19 years	17.6	17.6	18.1	18.3	17.5	18.5	17.5	17.9	17.3	16.7	17.7	17.2	18.2	16.8	16.8
16 to 17 years	20.0	19.6	20.6	20.1	19.0	20.4	20.3	21.4	19.2	18.7	18.8	18.6	19.8	18.4	18.7
18 to 19 years	16.0	16.3	16.4	17.1	16.2	17.6	15.5	15.6	15.6	15.4	16.9	16.0	17.2	15.7	15.3
20 to 24 years	10.7	10.3	10.6	11.0	10.3	10.2	10.8	10.4	10.4	10.2	10.2	10.3	9.4	10.0	10.6
25 years and over	5.9	5.5	5.4	5.8	5.8	5.7	5.6	5.6	5.4	5.4	5.5	5.4	5.5	5.2	5.1
25 to 54 years	6.2	5.9	5.6	6.1	6.1	6.0	6.0	6.0	5.8	5.8	5.8	5.8	5.7	5.8	5.5
55 years and over	4.1	3.6	3.9	4.3	4.3	3.8	3.5	3.3	3.6	3.3	3.6	3.6	3.4	2.9	2.7

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

(Numbers in thousands)

Reason for unemployment	Annual average		1986												1987
	1985	1986	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.
	Job losers	4,139	4,033	3,802	4,147	4,210	4,035	4,214	4,272	4,063	3,824	4,044	3,984	3,947	3,890
On layoff	1,157	1,090	1,143	1,136	1,144	1,057	1,118	1,074	1,078	1,017	1,029	1,072	1,073	1,078	1,118
Other job losers	2,982	2,943	2,659	3,011	3,066	2,978	3,096	3,198	2,985	2,807	3,015	2,912	2,874	2,812	2,854
Job leavers	877	1,015	977	985	989	1,071	979	1,009	1,025	990	1,041	1,027	1,056	1,036	891
Reentrants	2,256	2,160	2,083	2,263	2,196	2,188	2,200	2,107	2,205	2,199	2,145	2,190	2,119	2,019	2,054
New entrants	1,039	1,029	1,029	1,073	1,006	1,048	1,046	1,050	989	1,014	1,038	972	1,076	1,015	1,084
<b>PERCENT OF UNEMPLOYED</b>															
Job losers	49.8	48.9	48.2	49.0	50.1	48.4	49.9	50.6	49.1	47.6	48.9	48.7	48.1	48.9	49.6
On layoff	13.9	13.2	14.5	13.4	13.6	12.7	13.2	12.7	13.0	12.7	12.4	13.1	13.1	13.5	14.0
Other job losers	35.9	35.7	33.7	35.6	36.5	35.7	36.7	37.9	36.0	35.0	36.5	35.6	35.1	35.3	35.7
Job leavers	10.6	12.3	12.4	11.6	11.8	12.8	11.6	12.0	12.4	12.3	12.6	12.6	12.9	13.0	11.1
Reentrants	27.1	26.2	26.4	26.7	26.1	26.2	26.1	25.0	26.6	27.4	25.9	26.8	25.8	25.4	25.7
New entrants	12.5	12.5	13.0	12.7	12.0	12.6	12.4	12.4	11.9	12.6	12.6	11.9	13.1	12.8	13.6
<b>PERCENT OF CIVILIAN LABOR FORCE</b>															
Job losers	3.6	3.4	3.3	3.5	3.6	3.4	3.6	3.6	3.4	3.2	3.4	3.4	3.3	3.3	3.3
Job leavers	.8	.9	.8	.8	.8	.9	.8	.9	.9	.8	.9	.9	.9	.9	.7
Reentrants	2.0	1.8	1.8	1.9	1.9	1.9	1.9	1.8	1.9	1.9	1.8	1.8	1.8	1.7	1.7
New entrants	.9	.9	.9	.9	.9	.9	.9	.9	.8	.9	.9	.8	.9	.9	.9

10. Duration of unemployment, monthly data seasonally adjusted

(Numbers in thousands)

Weeks of unemployment	Annual average		1986												1987
	1985	1986	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	Jan.
	Less than 5 weeks	3,498	3,448	3,373	3,534	3,536	3,565	3,610	3,415	3,399	3,436	3,415	3,418	3,382	3,355
5 to 14 weeks	2,509	2,557	2,505	2,615	2,625	2,650	2,671	2,650	2,521	2,407	2,524	2,563	2,613	2,389	2,530
15 weeks and over	2,305	2,232	2,117	2,332	2,243	2,130	2,232	2,299	2,250	2,272	2,373	2,168	2,217	2,171	2,200
15 to 26 weeks	1,025	1,045	1,003	1,142	1,078	982	1,065	1,038	1,058	1,068	1,110	950	1,045	1,023	1,022
27 weeks and over	1,280	1,187	1,114	1,190	1,165	1,148	1,167	1,261	1,192	1,204	1,263	1,218	1,172	1,148	1,178
Mean duration in weeks	15.6	15.0	15.0	15.2	14.6	14.7	14.8	15.2	15.1	15.6	15.5	15.2	14.8	15.0	15.0
Median duration in weeks	6.8	6.9	6.8	6.9	6.8	6.6	6.8	7.2	7.1	7.1	7.1	7.0	7.0	7.1	7.0

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

State	Dec. 1985	Dec. 1986	State	Dec. 1985	Dec. 1986
Alabama .....	8.3	9.5	Montana .....	8.2	8.4
Alaska .....	10.2	11.0	Nebraska .....	6.0	5.4
Arizona .....	6.1	7.1	Nevada .....	8.6	5.9
Arkansas .....	8.7	8.7	New Hampshire .....	3.0	2.5
California .....	6.3	6.3	New Jersey .....	5.4	3.9
Colorado .....	6.2	8.0	New Mexico .....	8.7	9.3
Connecticut .....	4.6	3.5	New York .....	5.9	5.4
Delaware .....	4.6	3.1	North Carolina .....	4.2	4.8
District of Columbia .....	8.0	7.9	North Dakota .....	6.4	6.1
Florida .....	5.6	4.6	Ohio .....	8.5	7.9
Georgia .....	6.2	5.7	Oklahoma .....	7.1	7.6
Hawaii .....	5.1	4.1	Oregon .....	8.9	7.1
Idaho .....	7.8	9.1	Pennsylvania .....	7.3	4.7
Illinois .....	8.3	7.0	Rhode Island .....	4.5	4.0
Indiana .....	7.8	6.2	South Carolina .....	6.4	5.6
Iowa .....	8.1	6.3	South Dakota .....	6.0	5.2
Kansas .....	5.1	5.6	Tennessee .....	7.8	7.8
Kentucky .....	9.5	8.7	Texas .....	6.3	8.7
Louisiana .....	11.3	13.7	Utah .....	5.9	6.5
Maine .....	4.9	4.6	Vermont .....	4.6	4.4
Maryland .....	4.4	4.7	Virginia .....	5.3	4.9
Massachusetts .....	3.9	3.1	Washington .....	8.3	8.3
Michigan .....	7.6	7.6	West Virginia .....	12.5	12.1
Minnesota .....	814.8	832.5	Wisconsin .....	7.4	7.1
Mississippi .....	9.4	11.7	Wyoming .....	8.0	9.0
Missouri .....	6.6	6.0			

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

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

(In thousands)

State	Dec. 1985	Nov. 1986	Dec. 1986 <sup>P</sup>	State	Dec. 1985	Nov. 1986	Dec. 1986 <sup>P</sup>
Alabama .....	1,449.5	1,473.0	1,474.0	Nebraska .....	648.9	670.5	665.4
Alaska .....	221.8	213.6	210.3	Nevada .....	453.1	474.9	475.0
Arizona .....	1,323.8	1,376.2	1,379.7	New Hampshire .....	482.8	496.8	499.6
Arkansas .....	814.8	833.7	832.5	New Jersey .....	3,471.9	3,582.3	3,586.4
California .....	11,259.1	11,478.9	11,526.0	New Mexico .....	526.9	527.1	528.4
Colorado .....	1,440.6	1,448.0	1,448.8	New York .....	7,909.8	8,056.6	8,074.3
Connecticut .....	1,601.2	1,646.1	1,654.3	North Carolina .....	2,706.7	2,781.3	2,785.4
Delaware .....	300.2	307.8	310.4	North Dakota .....	251.2	251.6	250.9
District of Columbia .....	639.2	645.1	647.0	Ohio .....	4,483.7	4,602.2	4,605.7
Florida .....	4,542.4	4,685.2	4,737.9	Oklahoma .....	1,177.1	1,158.8	1,162.4
Georgia .....	2,638.9	2,735.3	2,746.5	Oregon .....	1,047.1	1,077.4	1,072.8
Hawaii .....	430.2	437.0	441.0	Pennsylvania .....	4,824.9	4,894.3	4,888.0
Idaho .....	343.0	339.8	336.6	Rhode Island .....	431.4	437.9	438.2
Illinois .....	4,794.4	4,876.1	4,872.5	South Carolina .....	1,317.5	1,353.9	1,357.9
Indiana .....	2,220.6	2,307.0	2,307.3	South Dakota .....	247.1	254.1	251.5
Iowa .....	1,078.3	1,081.8	1,075.5	Tennessee .....	1,900.9	1,981.8	1,991.5
Kansas .....	978.3	1,010.9	1,001.0	Texas .....	6,766.7	6,687.2	6,694.9
Kentucky .....	1,271.7	1,302.3	1,304.0	Utah .....	638.1	644.8	645.5
Louisiana .....	1,600.4	1,518.4	1,512.2	Vermont .....	232.2	238.4	241.5
Maine .....	465.8	486.8	486.7	Virginia .....	2,532.1	2,620.2	2,626.5
Maryland .....	1,935.8	1,961.6	1,968.0	Washington .....	1,735.8	1,784.3	1,779.7
Massachusetts .....	2,985.9	3,010.5	3,028.6	West Virginia .....	600.9	601.0	600.6
Michigan .....	3,588.7	3,644.4	3,635.1	Wisconsin .....	2,001.0	2,049.6	2,041.3
Minnesota .....	1,885.2	1,925.8	1,916.4	Wyoming .....	201.9	194.2	191.8
Mississippi .....	857.5	859.7	859.8	Puerto Rico .....	702.8	716.5	727.1
Missouri .....	2,131.5	2,177.6	2,168.3	Virgin Islands .....	36.8	37.1	37.3
Montana .....	276.7	277.9	275.6				

<sup>P</sup> = preliminary

NOTE: Some data in this table may differ from data published elsewhere

because of the continual updating of the database.

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

(In thousands)

Industry	Annual average		1986												1987
	1985	1986	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec. <sup>P</sup>	Jan. <sup>P</sup>
<b>TOTAL</b> .....	97,614	100,165	99,296	99,429	99,484	99,783	99,918	99,843	100,105	100,283	100,560	100,826	101,068	101,293	101,741
<b>PRIVATE SECTOR</b> .....	81,199	83,430	82,659	82,748	82,785	83,072	83,198	83,161	83,508	83,655	83,786	83,956	84,178	84,368	84,830
<b>GOODS-PRODUCING</b> .....	24,930	24,938	25,101	25,038	24,945	25,038	24,965	24,854	24,869	24,888	24,858	24,865	24,891	24,920	25,054
Mining .....	930	792	897	880	852	821	790	772	768	753	743	746	742	740	729
Oil and gas extraction .....	585	464	556	541	518	488	461	446	442	431	422	423	420	413	410
<b>Construction</b> .....	4,687	4,961	4,901	4,864	4,838	4,972	4,974	4,947	4,980	5,012	5,010	5,001	4,993	4,997	5,139
General building contractors .....	1,251	1,307	1,330	1,320	1,298	1,315	1,314	1,299	1,299	1,306	1,301	1,302	1,307	1,296	1,344
<b>Manufacturing</b> .....	19,314	19,186	19,303	19,294	19,255	19,245	19,201	19,135	19,121	19,123	19,105	19,118	19,156	19,183	19,186
Production workers .....	13,130	13,023	13,111	13,097	13,061	13,060	13,025	12,979	12,961	12,971	12,960	12,974	13,020	13,051	13,059
<b>Durable goods</b> .....	11,516	11,345	11,466	11,455	11,418	11,415	11,378	11,307	11,294	11,302	11,271	11,266	11,282	11,286	11,272
Production workers .....	7,660	7,495	7,595	7,579	7,545	7,547	7,519	7,462	7,441	7,458	7,438	7,435	7,452	7,463	7,451
Lumber and wood products .....	700	727	716	716	715	719	719	721	724	729	734	737	743	747	753
Furniture and fixtures .....	493	497	494	494	493	494	496	496	498	499	500	500	500	502	505
Stone, clay, and glass products .....	591	595	596	597	594	600	599	597	593	592	594	590	591	593	593
Primary metal industries .....	813	768	798	795	787	785	780	761	758	751	749	749	751	752	740
Blast furnaces and basic steel products .....	305	283	300	299	293	291	288	286	285	272	270	272	271	270	266
Fabricated metal products .....	1,468	1,439	1,455	1,452	1,450	1,451	1,447	1,440	1,428	1,429	1,433	1,429	1,427	1,431	1,428
Machinery, except electrical .....	2,182	2,082	2,137	2,127	2,118	2,111	2,100	2,089	2,079	2,072	2,044	2,039	2,036	2,030	2,033
Electrical and electronic equipment .....	2,207	2,169	2,182	2,181	2,177	2,177	2,175	2,143	2,169	2,168	2,162	2,167	2,166	2,165	2,161
Transportation equipment .....	1,971	1,984	1,996	1,998	1,989	1,986	1,972	1,974	1,969	1,985	1,979	1,979	1,993	1,986	1,976
Motor vehicles and equipment .....	876	842	867	864	858	854	839	839	824	839	834	824	837	828	820
Instruments and related products .....	723	717	724	725	726	723	721	717	713	713	713	713	710	710	710
Miscellaneous manufacturing industries .....	369	367	368	370	369	369	369	369	363	364	363	363	365	370	373
<b>Nondurable goods</b> .....	7,798	7,841	7,837	7,839	7,837	7,830	7,823	7,828	7,827	7,821	7,834	7,852	7,874	7,897	7,914
Production workers .....	5,470	5,528	5,516	5,518	5,516	5,513	5,506	5,517	5,520	5,513	5,522	5,539	5,568	5,588	5,608
Food and kindred products .....	1,608	1,641	1,623	1,631	1,632	1,633	1,640	1,648	1,645	1,642	1,644	1,644	1,654	1,657	1,669
Tobacco manufactures .....	65	61	64	63	63	63	62	62	62	59	60	59	61	60	59
Textile mill products .....	704	709	702	705	707	703	705	707	710	711	709	711	717	719	718
Apparel and other textile products .....	1,125	1,115	1,133	1,122	1,117	1,119	1,113	1,106	1,108	1,108	1,110	1,113	1,112	1,124	1,119
Paper and allied products .....	683	690	687	687	688	689	689	690	687	685	691	694	694	697	697
Printing and publishing .....	1,435	1,479	1,461	1,467	1,469	1,472	1,474	1,477	1,483	1,481	1,485	1,491	1,493	1,494	1,498
Chemicals and allied products .....	1,046	1,027	1,034	1,032	1,031	1,028	1,024	1,026	1,025	1,026	1,025	1,023	1,023	1,020	1,025
Petroleum and coal products .....	178	164	168	167	166	166	166	164	163	163	162	161	160	159	160
Rubber and misc. plastics products .....	790	801	802	803	804	800	796	797	792	794	797	805	809	814	817
Leather and leather products .....	166	155	163	162	160	157	154	151	152	152	151	151	151	153	152
<b>SERVICE-PRODUCING</b> .....	72,684	75,227	74,195	74,391	74,539	74,745	74,953	74,989	75,236	75,395	75,702	75,961	76,177	76,373	76,687
<b>Transportation and public utilities</b> .....	5,242	5,286	5,286	5,277	5,280	5,266	5,265	5,167	5,288	5,255	5,316	5,316	5,351	5,359	5,363
Transportation .....	3,006	3,068	3,056	3,048	3,053	3,040	3,037	3,035	3,057	3,063	3,088	3,094	3,117	3,124	3,129
Communication and public utilities .....	2,236	2,218	2,230	2,229	2,227	2,226	2,228	2,132	2,231	2,192	2,228	2,222	2,234	2,235	2,234
<b>Wholesale trade</b> .....	5,740	5,852	5,830	5,843	5,841	5,864	5,872	5,829	5,849	5,863	5,859	5,864	5,859	5,855	5,874
Durable goods .....	3,409	3,482	3,470	3,482	3,480	3,485	3,488	3,454	3,483	3,485	3,485	3,489	3,489	3,487	3,495
Nondurable goods .....	2,331	2,371	2,360	2,361	2,361	2,379	2,384	2,375	2,366	2,378	2,374	2,375	2,370	2,368	2,379
<b>Retail trade</b> .....	17,360	17,978	17,734	17,795	17,828	17,851	17,911	17,944	17,992	18,030	18,065	18,143	18,197	18,198	18,364
General merchandise stores .....	2,320	2,348	2,328	2,333	2,333	2,342	2,344	2,350	2,354	2,359	2,362	2,379	2,367	2,327	2,382
Food stores .....	2,779	2,932	2,880	2,891	2,901	2,910	2,917	2,932	2,938	2,951	2,952	2,963	2,968	2,978	3,006
Automotive dealers and service stations .....	1,892	1,954	1,929	1,938	1,939	1,940	1,944	1,945	1,950	1,962	1,970	1,973	1,977	1,984	1,994
Eating and drinking places .....	5,715	5,923	5,831	5,854	5,868	5,859	5,889	5,918	5,931	5,923	5,948	5,982	6,006	6,049	6,077
<b>Finance, insurance, and real estate</b> .....	5,953	6,304	6,123	6,157	6,184	6,228	6,261	6,295	6,334	6,364	6,388	6,409	6,429	6,469	6,491
Finance .....	2,979	3,159	3,066	3,082	3,095	3,120	3,137	3,159	3,176	3,192	3,202	3,212	3,220	3,236	3,241
Insurance .....	1,830	1,934	1,878	1,889	1,900	1,910	1,918	1,927	1,945	1,952	1,962	1,971	1,979	1,990	1,999
Real estate .....	1,144	1,211	1,179	1,186	1,189	1,198	1,206	1,209	1,213	1,220	1,224	1,226	1,230	1,243	1,251
<b>Services</b> .....	21,974	23,072	22,585	22,638	22,707	22,825	22,924	23,072	23,176	23,255	23,300	23,359	23,451	23,567	23,684
Business services .....	4,452	4,809	4,660	4,687	4,698	4,750	4,755	4,792	4,835	4,848	4,883	4,908	4,926	4,962	4,998
Health services .....	6,310	6,586	6,447	6,471	6,497	6,511	6,543	6,571	6,601	6,634	6,649	6,677	6,695	6,729	6,763
<b>Government</b> .....	16,415	16,735	16,637	16,681	16,699	16,711	16,720	16,682	16,597	16,628	16,774	16,870	16,890	16,925	16,911
Federal .....	2,875	2,900	2,918	2,918	2,923	2,914	2,899	2,875	2,866	2,875	2,901	2,896	2,899	2,911	2,912
State .....	3,848	3,937	3,916	3,924	3,927	3,938	3,936	3,927	3,921	3,919	3,932	3,959	3,965	3,978	3,976
Local .....	9,692	9,899	9,803	9,839	9,849	9,859	9,885	9,880	9,810	9,834	9,941	10,015	10,026	10,036	10,023

<sup>P</sup> = preliminary

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



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

Industry	Annual average		1986												1987
	1985	1986	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec. <sup>P</sup>	Jan. <sup>P</sup>
<b>PRIVATE SECTOR</b> .....	34.9	34.8	35.0	34.9	34.9	34.8	34.8	34.7	34.7	34.8	34.7	34.7	34.8	34.6	34.7
<b>CONSTRUCTION</b> .....	37.7	37.5	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>MANUFACTURING</b> .....	40.5	40.7	40.8	40.7	40.7	40.7	40.6	40.6	40.8	40.8	40.7	40.8	40.8	40.8	40.9
Overtime hours .....	3.3	3.4	3.5	3.4	3.4	3.4	3.4	3.3	3.4	3.5	3.5	3.5	3.5	3.5	3.6
<b>Durable goods</b> .....	41.2	41.3	41.5	41.4	41.4	41.3	41.2	41.2	41.1	41.4	41.4	41.3	41.4	41.3	41.5
Overtime hours .....	3.5	3.5	3.6	3.5	3.6	3.6	3.4	3.5	3.5	3.5	3.6	3.6	3.6	3.5	3.6
Lumber and wood products .....	39.9	40.2	40.4	40.0	40.2	40.3	40.3	39.9	40.1	40.2	40.1	40.3	40.7	40.3	40.5
Furniture and fixtures .....	39.4	39.6	40.0	39.7	39.4	39.1	39.4	39.4	39.4	39.9	40.0	39.8	39.6	39.6	40.3
Stone, clay, and glass products .....	41.9	42.2	42.7	41.9	41.9	42.4	42.3	42.2	42.2	42.5	42.5	42.3	41.9	42.1	42.4
Primary metal industries .....	41.5	41.9	41.9	42.1	41.9	41.3	41.7	41.6	41.3	41.9	42.0	42.3	42.4	42.5	42.7
Blast furnaces and basic steel products .....	41.1	41.6	41.7	41.8	41.7	40.5	41.5	41.1	41.2	41.5	41.6	42.3	42.5	42.7	42.4
Fabricated metal products .....	41.3	41.3	41.5	41.5	41.4	41.2	41.1	41.1	41.1	41.2	41.5	41.2	41.4	41.1	41.4
Machinery except electrical .....	41.5	41.6	41.6	41.6	41.6	41.8	41.8	41.7	41.4	41.7	41.7	41.6	41.7	41.6	42.0
Electrical and electronic equipment .....	40.6	41.0	41.0	40.9	41.0	41.1	41.0	41.0	41.1	41.2	41.2	40.9	41.0	40.9	40.8
Transportation equipment .....	42.6	42.4	42.8	42.7	42.7	42.1	41.9	42.2	42.1	42.6	42.6	42.1	42.3	42.0	42.4
Motor vehicles and equipment .....	43.5	42.6	43.6	43.4	43.3	41.9	41.8	42.4	42.4	42.8	42.7	42.1	42.6	42.3	42.9
Instruments and related products .....	41.0	41.1	41.1	41.2	41.3	41.3	40.9	41.0	40.8	41.0	40.7	41.1	41.2	41.3	41.4
Miscellaneous manufacturing .....	39.4	39.6	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>Nondurable goods</b> .....	39.6	39.9	39.9	39.7	39.8	39.9	39.9	39.8	39.8	40.0	39.9	39.9	40.1	40.1	40.2
Overtime hours .....	3.1	3.3	3.3	3.2	3.2	3.3	3.4	3.2	3.4	3.4	3.3	3.4	3.5	3.5	3.5
Food and kindred products .....	40.0	40.0	40.1	39.8	39.9	40.2	40.2	40.0	40.0	40.3	39.7	39.8	40.0	39.9	40.0
Tobacco manufactures .....	37.2	37.6	-	-	-	-	-	-	-	-	-	-	-	-	-
Textile mill products .....	39.7	41.2	40.8	40.6	40.7	41.3	41.1	40.8	40.9	41.4	41.6	41.5	41.5	42.0	41.8
Apparel and other textile products .....	36.4	36.7	36.7	36.3	36.5	36.9	36.5	36.5	36.6	36.5	36.7	36.7	36.9	37.0	37.0
Paper and allied products .....	43.1	43.3	43.6	43.5	43.5	43.0	43.2	43.1	43.2	43.5	43.0	43.0	43.2	43.2	43.6
Printing and publishing .....	37.8	38.0	38.0	38.0	38.0	38.0	38.0	37.8	37.9	38.0	38.0	38.0	38.1	38.0	38.1
Chemicals and allied products .....	41.9	42.0	41.9	41.8	41.9	41.9	42.0	41.9	41.9	42.1	42.0	42.2	42.5	42.4	42.6
Petroleum and coal products .....	43.0	43.7	43.5	43.7	43.8	43.6	43.4	44.0	43.5	44.3	43.4	43.7	43.8	43.8	43.8
Leather and leather products .....	37.2	36.9	-	-	-	-	-	-	-	-	-	-	-	-	-
<b>TRANSPORTATION AND PUBLIC UTILITIES</b> .....	39.5	39.2	39.4	39.5	39.6	39.2	39.2	39.1	39.2	39.1	38.9	39.1	39.3	39.0	38.5
<b>WHOLESALE TRADE</b> .....	38.4	38.4	38.5	38.4	38.5	38.5	38.4	38.3	38.3	38.4	38.2	38.4	38.3	38.3	38.3
<b>RETAIL TRADE</b> .....	29.4	29.2	29.3	29.3	29.3	29.2	29.2	29.1	29.2	29.2	29.2	29.1	29.3	28.9	28.9
<b>SERVICES</b> .....	32.5	32.5	32.6	32.6	32.5	32.5	32.5	32.4	32.4	32.4	32.3	32.4	32.5	32.4	32.3

- Data not available.  
P = preliminary

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

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

Industry	Annual average		1986												1987
	1985	1986	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec. <sup>P</sup>	Jan. <sup>P</sup>
<b>PRIVATE SECTOR</b> .....	\$8.57	\$8.75	\$8.72	\$8.74	\$8.73	\$8.72	\$8.72	\$8.71	\$8.69	\$8.70	\$8.81	\$8.81	\$8.85	\$8.83	\$8.88
Seasonally adjusted .....	-	-	8.68	8.71	8.73	8.72	8.73	8.74	8.73	8.77	8.76	8.80	8.84	8.82	8.83
<b>MINING</b> .....	11.98	12.45	12.24	12.32	12.35	12.43	12.44	12.50	12.46	12.51	12.52	12.51	12.57	12.61	12.65
<b>CONSTRUCTION</b> .....	12.31	12.42	12.34	12.35	12.22	12.29	12.33	12.31	12.31	12.39	12.54	12.62	12.59	12.71	12.57
<b>MANUFACTURING</b> .....	9.53	9.73	9.70	9.70	9.72	9.70	9.71	9.70	9.74	9.68	9.73	9.72	9.77	9.84	9.83
<b>Durable goods</b> .....	10.10	10.29	10.27	10.29	10.30	10.28	10.28	10.26	10.27	10.22	10.30	10.28	10.33	10.40	10.37
Lumber and wood products .....	8.22	8.37	8.30	8.36	8.33	8.32	8.37	8.43	8.36	8.40	8.42	8.37	8.39	8.34	8.26
Furniture and fixtures .....	7.17	7.44	7.36	7.31	7.35	7.36	7.39	7.46	7.44	7.46	7.52	7.50	7.52	7.59	7.56
Stone, clay, and glass products .....	9.84	10.05	9.96	9.94	9.93	10.00	10.04	10.04	10.06	10.07	10.11	10.10	10.13	10.17	10.18
Primary metal industries .....	11.68	11.93	11.81	11.96	11.99	12.00	12.02	11.94	12.06	11.85	11.92	11.84	11.87	11.94	11.90
Blast furnaces and basic steel products .....	13.34	13.83	13.48	13.81	13.80	13.82	13.86	13.88	14.08	13.83	13.93	13.78	13.78	13.88	13.84
Fabricated metal products .....	9.70	9.87	9.85	9.85	9.88	9.84	9.85	9.88	9.84	9.82	9.87	9.86	9.93	10.03	9.98
Machinery, except electrical .....	10.29	10.57	10.50	10.53	10.58	10.55	10.55	10.55	10.57	10.57	10.58	10.56	10.59	10.66	10.66
Electrical and electronic equipment .....	9.47	9.67	9.60	9.60	9.62	9.62	9.64	9.61	9.68	9.67	9.73	9.72	9.75	9.84	9.81
Transportation equipment .....	12.72	12.86	12.91	12.87	12.90	12.83	12.79	12.78	12.78	12.75	12.87	12.87	12.92	13.00	12.93
Motor vehicles and equipment .....	13.42	13.52	13.66	13.59	13.66	13.54	13.47	13.41	13.40	13.36	13.50	13.49	13.52	13.63	13.62
Instruments and related products .....	9.16	9.46	9.32	9.39	9.41	9.41	9.40	9.41	9.47	9.45	9.51	9.54	9.61	9.64	9.67
Miscellaneous manufacturing .....	7.30	7.56	7.48	7.50	7.51	7.50	7.54	7.54	7.59	7.52	7.59	7.60	7.65	7.72	7.74
<b>Nondurable goods</b> .....	8.71	8.93	8.86	8.86	8.88	8.88	8.90	8.91	8.99	8.93	8.96	8.95	9.00	9.05	9.07
Food and kindred products .....	8.57	8.74	8.72	8.71	8.74	8.75	8.78	8.74	8.75	8.65	8.65	8.68	8.79	8.89	8.92
Tobacco manufactures .....	11.94	12.77	11.89	12.38	12.76	12.84	13.38	13.68	13.48	13.44	12.21	12.10	12.62	12.90	13.06
Textile mill products .....	6.71	6.95	6.85	6.83	6.86	6.87	6.88	6.87	6.90	6.99	7.05	7.04	7.07	7.13	7.12
Apparel and other textile products .....	5.73	5.81	5.82	5.79	5.80	5.81	5.78	5.79	5.76	5.79	5.87	5.82	5.83	5.83	5.86
Paper and allied products .....	10.82	11.14	11.02	10.99	11.03	11.05	11.12	11.15	11.31	11.17	11.20	11.20	11.17	11.24	11.22
Printing and publishing .....	9.71	9.97	9.85	9.86	9.90	9.87	9.91	9.88	9.96	10.00	10.10	10.08	10.11	10.11	10.14
Chemicals and allied products .....	11.56	11.97	11.86	11.81	11.78	11.82	11.89	11.94	12.04	11.99	12.03	12.08	12.15	12.19	12.16
Petroleum and coal products .....	14.06	14.19	14.26	14.21	14.22	14.16	14.02	14.14	14.16	14.07	14.20	14.18	14.26	14.40	14.29
Rubber and miscellaneous plastics products .....	8.54	8.76	8.69	8.69	8.72	8.68	8.75	8.75	8.82	8.81	8.76	8.76	8.81	8.87	8.84
Leather and leather products .....	5.82	5.90	5.86	5.83	5.86	5.89	5.88	5.88	5.89	5.90	5.93	5.92	5.98	5.98	6.00
<b>TRANSPORTATION AND PUBLIC UTILITIES</b> .....	11.40	11.63	11.59	11.64	11.62	11.55	11.54	11.57	11.61	11.61	11.70	11.68	11.75	11.72	11.71
<b>WHOLESALE TRADE</b> .....	9.16	9.34	9.28	9.36	9.33	9.29	9.29	9.32	9.30	9.32	9.37	9.35	9.46	9.44	9.44
<b>RETAIL TRADE</b> .....	5.94	6.02	6.03	6.04	6.03	6.01	6.00	5.99	5.97	5.97	6.05	6.04	6.07	6.05	6.09
<b>FINANCE, INSURANCE, AND REAL ESTATE</b> .....	7.94	8.34	8.14	8.28	8.30	8.29	8.31	8.37	8.30	8.33	8.37	8.38	8.54	8.49	8.61
<b>SERVICES</b> .....	7.89	8.16	8.12	8.17	8.18	8.12	8.10	8.10	8.04	8.05	8.19	8.22	8.31	8.30	8.35

- Data not available.  
P = preliminary

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

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

Industry	Annual average		1986												1987
	1985	1986	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec. <sup>P</sup>	Jan. <sup>P</sup>
	<b>PRIVATE SECTOR</b>														
Current dollars .....	\$299.09	\$304.50	\$302.58	\$300.66	\$302.93	\$301.71	\$302.58	\$303.98	\$304.15	\$305.37	\$306.59	\$305.71	\$307.10	\$308.17	\$305.47
Seasonally adjusted .....	-	-	303.80	303.98	304.68	303.46	303.80	303.28	302.93	305.20	303.97	305.36	307.63	305.17	306.40
Constant (1977) dollars .....	170.42	170.88	169.32	168.82	171.05	170.94	170.85	170.78	170.97	171.36	171.28	170.69	171.28	171.78	-
<b>MINING</b> .....	519.93	526.64	543.46	522.37	522.41	522.06	519.99	525.00	518.34	529.17	529.60	527.92	522.91	534.66	535.10
<b>CONSTRUCTION</b> .....	464.09	465.75	459.05	434.72	444.81	462.10	467.31	465.32	471.47	475.78	482.79	479.56	459.54	469.00	470.12
<b>MANUFACTURING</b>															
Current dollars .....	385.97	396.01	394.79	390.91	395.60	392.85	394.23	395.76	391.55	393.98	398.93	396.58	400.57	409.34	401.06
Constant (1977) dollars .....	219.93	222.23	220.92	219.49	223.38	222.58	222.60	222.34	220.10	222.09	222.87	221.43	223.41	228.17	-
<b>Durable goods</b> .....	416.12	424.98	425.18	421.89	426.42	423.54	423.54	424.76	417.99	420.04	428.48	424.56	429.73	438.88	429.32
Lumber and wood products .....	327.98	336.47	329.51	328.55	333.20	334.46	338.99	342.26	334.40	341.04	342.69	338.99	338.12	336.94	328.75
Furniture and fixtures .....	282.50	294.62	289.98	284.36	288.12	286.30	288.21	294.67	287.93	298.40	303.81	303.00	300.80	310.43	300.13
Stone, clay, and glass products .....	412.30	424.11	414.34	403.56	412.10	425.00	428.71	429.71	427.55	432.00	435.74	431.27	424.45	427.14	420.43
Primary metal industries .....	484.72	499.87	493.66	503.52	504.78	499.20	501.23	499.09	495.67	491.78	501.83	496.10	503.29	513.42	506.94
Blast furnaces and basic steel products .....	548.27	575.33	556.72	578.64	576.84	569.38	576.58	577.41	582.91	569.80	579.49	571.87	580.14	592.68	579.90
Fabricated metal products .....	400.61	407.63	407.79	403.85	409.03	403.44	404.84	408.04	398.52	402.62	410.59	407.22	412.10	422.26	412.17
<b>Machinery, except electrical</b> .....	427.04	439.71	437.85	437.00	442.24	437.83	437.83	439.94	431.26	436.54	441.19	438.24	443.72	456.25	447.72
Electrical and electronic equipment .....	384.48	396.47	394.56	389.76	395.38	392.50	393.31	394.01	391.07	395.50	401.85	397.55	403.65	413.28	401.23
Transportation equipment .....	541.87	545.26	555.13	545.69	552.12	542.71	537.18	540.59	530.37	531.68	544.40	540.54	549.10	562.90	550.82
Motor vehicles and equipment .....	583.77	575.95	595.58	583.01	592.84	574.10	567.09	572.61	560.12	555.78	573.75	567.93	575.95	595.63	584.30
Instruments and related products .....	375.56	388.81	383.05	384.99	389.57	385.81	382.58	385.81	382.59	384.62	388.96	390.19	398.82	407.77	400.34
Miscellaneous manufacturing .....	287.62	299.38	297.70	294.75	299.65	297.75	297.08	298.58	294.49	294.78	300.56	302.48	307.53	311.12	306.50
<b>Nondurable goods</b> .....	344.92	356.31	352.63	347.31	352.54	351.65	354.22	355.51	356.00	358.09	360.19	358.00	362.70	368.34	362.80
Food and kindred products .....	342.80	349.60	347.93	339.69	344.36	346.50	352.08	350.47	350.00	352.06	349.46	347.20	353.36	360.05	355.02
Tobacco manufactures .....	444.17	480.15	448.25	453.11	478.50	469.94	504.43	523.94	483.93	486.53	470.09	473.11	484.61	488.91	488.44
Textile mill products .....	266.39	286.34	278.80	274.57	278.52	278.92	282.08	283.04	278.07	290.78	295.40	293.57	296.23	303.03	296.90
Apparel and other textile products .....	208.57	213.23	213.01	207.28	211.70	211.48	210.97	213.65	209.09	211.91	215.43	214.76	216.88	218.04	216.23
Paper and allied products .....	466.34	482.36	479.37	472.57	477.60	474.05	479.27	480.57	486.33	483.66	484.96	482.72	484.78	494.56	488.07
<b>Printing and publishing</b> .....	367.04	378.86	371.35	370.74	377.19	374.07	374.60	370.50	374.50	381.00	386.83	384.05	388.22	391.26	383.29
Chemicals and allied products .....	484.36	502.74	495.75	492.48	494.76	495.26	499.38	502.67	502.07	501.18	505.26	506.15	517.59	522.95	518.02
Petroleum and coal products .....	604.58	620.10	616.03	612.45	621.41	615.96	605.66	622.16	618.79	623.30	626.22	621.08	626.01	632.16	621.62
Rubber and miscellaneous plastics products .....	350.99	361.79	359.77	356.29	360.14	356.75	360.50	361.38	357.21	362.97	364.42	362.66	367.38	374.31	365.98
Leather and leather products .....	216.50	217.71	217.41	209.88	212.72	213.81	215.80	221.68	217.93	216.53	218.22	217.86	222.46	226.64	223.80
<b>TRANSPORTATION AND PUBLIC UTILITIES</b> .....	450.30	455.90	452.01	456.29	457.83	450.45	450.06	455.86	457.43	457.43	457.47	456.69	461.78	459.42	446.15
<b>WHOLESALE TRADE</b> .....	351.74	358.66	355.42	355.68	357.34	355.81	356.74	358.82	358.05	358.82	358.87	359.04	363.26	363.44	359.66
<b>RETAIL TRADE</b> .....	174.64	175.78	173.06	172.74	174.27	173.69	174.60	176.71	178.50	178.50	176.66	175.16	176.64	178.48	172.35
<b>FINANCE, INSURANCE, AND REAL ESTATE</b> .....	289.02	304.41	296.30	304.70	304.61	301.76	301.65	306.34	302.95	304.88	304.67	306.71	313.42	310.73	314.27
<b>SERVICES</b> .....	256.43	265.20	263.09	264.71	265.03	263.09	262.44	264.06	263.71	264.04	264.54	266.33	269.24	268.92	268.04

- Data not available.  
P = preliminary

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

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

Industry	Not seasonally adjusted				Seasonally adjusted					
	Jan. 1986	Nov. 1986	Dec. 1986 <sup>P</sup>	Jan. 1987 <sup>P</sup>	Jan. 1986	Sept. 1986	Oct. 1986	Nov. 1986	Dec. 1986 <sup>P</sup>	Jan. 1987 <sup>P</sup>
	<b>PRIVATE SECTOR (in current dollars)</b> .....	167.9	170.9	171.1	171.3	167.3	169.6	170.0	170.8	170.6
Mining <sup>1</sup> .....	180.9	182.4	182.3	183.0	-	-	-	-	-	-
Construction .....	150.0	153.4	154.4	152.6	149.7	151.2	152.6	154.0	153.9	152.3
Manufacturing .....	171.4	173.2	174.0	174.1	170.7	172.8	173.1	173.2	173.6	173.4
Transportation and public utilities .....	169.3	172.2	172.2	172.2	168.6	170.8	170.9	171.2	171.1	171.6
Wholesale trade <sup>1</sup> .....	171.1	174.5	174.0	174.1	-	-	-	-	-	-
Retail trade .....	157.3	159.0	158.8	159.2	157.0	159.1	159.1	159.3	159.3	158.9
Finance, insurance, and real estate <sup>1</sup> .....	175.8	183.9	182.6	184.9	-	-	-	-	-	-
Services .....	172.7	177.2	177.0	177.8	171.7	174.4	175.3	176.6	175.7	176.7
<b>PRIVATE SECTOR (in constant dollars)</b> .....	94.0	95.3	95.4	-	93.5	95.0	95.1	95.3	95.0	-

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

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



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

(In percent)

Time span and year	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
<b>Over 1-month span:</b>												
1985 .....	52.4	47.8	53.8	49.2	51.6	47.0	56.2	56.8	50.8	61.9	57.6	59.5
1986 .....	59.7	53.5	45.1	54.1	49.2	46.2	54.6	54.3	54.9	55.1	62.7	61.9
1987 .....	56.2	-	-	-	-	-	-	-	-	-	-	-
<b>Over 3-month span:</b>												
1985 .....	51.1	49.7	46.2	46.2	45.1	51.4	49.7	51.1	55.1	55.9	61.4	60.5
1986 .....	58.1	54.3	51.1	49.7	48.4	44.9	47.3	54.1	54.9	62.4	65.7	65.9
1987 .....	-	-	-	-	-	-	-	-	-	-	-	-
<b>Over 6-month span:</b>												
1985 .....	49.2	47.8	43.0	45.9	44.3	44.3	48.9	50.8	54.1	57.0	57.0	55.9
1986 .....	53.8	53.8	47.6	45.9	45.9	48.6	49.7	55.4	63.0	63.2	-	-
1987 .....	-	-	-	-	-	-	-	-	-	-	-	-
<b>Over 12-month span:</b>												
1985 .....	46.2	45.7	46.8	43.8	44.9	47.3	47.6	48.9	47.3	49.5	48.9	48.6
1986 .....	50.3	51.1	52.2	52.4	52.7	54.3	53.0	-	-	-	-	-
1987 .....	-	-	-	-	-	-	-	-	-	-	-	-

- Data not available.  
NOTE: Figures are the percent of industries with employment rising. (Half of the unchanged components are counted as rising.) Data are centered within the

spans. Data for the 2 most recent months shown in each span are preliminary. See the "Definitions" in this section. See "Notes on the data" for a description of the most recent benchmark revision.

19. Annual data: Employment status of the noninstitutional population

(Numbers in thousands)

Employment status	1978	1979	1980	1981	1982	1983	1984	1985	1986
Noninstitutional population .....	163,541	166,460	169,349	171,775	173,939	175,891	178,080	179,912	182,293
<b>Labor force:</b>									
Total (number) .....	103,882	106,559	108,544	110,315	111,872	113,226	115,241	117,167	119,540
Percent of population .....	63.5	64.0	64.1	64.2	64.3	64.4	64.7	65.1	65.6
<b>Employed:</b>									
Total (number) .....	97,679	100,421	100,907	102,042	101,194	102,510	106,702	108,856	111,303
Percent of population .....	59.7	60.3	59.6	59.4	58.2	58.3	59.9	60.5	61.1
Resident Armed Forces .....	1,631	1,597	1,604	1,645	1,668	1,676	1,697	1,706	1,706
Civilian .....									
Total .....	96,048	98,824	99,303	100,397	99,526	100,834	105,005	107,150	109,597
Agriculture .....	3,387	3,347	3,364	3,368	3,401	3,383	3,321	3,179	3,163
Nonagricultural industries .....	92,661	95,477	95,938	97,030	96,125	97,450	101,685	103,971	106,434
<b>Unemployed:</b>									
Total (number) .....	6,202	6,137	7,637	8,273	10,678	10,717	8,539	8,312	8,237
Percent of labor force .....	6.0	5.8	7.0	7.5	9.5	9.5	7.4	7.1	6.9
Not in labor force (number) .....	59,659	59,900	60,806	61,460	62,067	62,665	62,839	62,744	62,752

20. Annual data: Employment levels by industry

(Numbers in thousands)

Industry	1978	1979	1980	1981	1982	1983	1984	1985	1986
Total employment .....	86,697	89,823	90,406	91,156	89,566	90,200	94,496	97,614	100,165
Private sector .....	71,026	73,876	74,166	75,126	73,729	74,330	78,472	81,199	83,430
Goods-producing .....	25,585	26,461	25,658	25,497	23,813	23,334	24,727	24,930	24,938
Mining .....	851	958	1,027	1,139	1,128	952	966	930	792
Construction .....	4,229	4,463	4,346	4,188	3,905	3,948	4,383	4,687	4,961
Manufacturing .....	20,505	21,040	20,285	20,170	18,781	18,434	19,378	19,314	18,186
Service-producing .....	61,113	63,363	64,748	65,659	65,753	66,866	69,769	72,884	75,227
Transportation and public utilities .....	4,923	5,136	5,146	5,165	5,082	4,954	5,159	5,242	5,286
Wholesale trade .....	4,969	5,204	5,275	5,358	5,278	5,268	5,555	5,740	5,852
Retail trade .....	14,573	14,989	15,035	15,189	15,179	15,613	16,545	17,360	17,978
Finance, insurance, and real estate .....	4,724	4,975	5,160	5,298	5,341	5,468	5,689	5,953	6,304
Services .....	16,252	17,112	17,890	18,619	19,036	19,694	20,797	21,974	23,072
Government .....	15,672	15,947	16,241	16,031	15,837	15,869	16,024	16,415	16,735
Federal .....	2,753	2,773	2,866	2,772	2,739	2,774	2,807	2,875	2,900
State .....	3,474	3,541	3,610	3,640	3,640	3,662	3,734	3,848	3,937
Local .....	9,446	9,633	9,765	9,619	9,458	9,434	9,482	9,692	9,899

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

**21. Annual data: Average hours and earnings of production or nonsupervisory workers on nonagricultural payrolls, by industry**

Industry	1978	1979	1980	1981	1982	1983	1984	1985	1986
<b>Private sector</b>									
Average weekly hours .....	35.8	35.7	35.3	35.2	34.8	35.0	35.2	34.9	34.8
Average hourly earnings (in dollars) .....	5.69	6.16	6.66	7.25	7.68	8.02	8.32	8.57	8.75
Average weekly earnings (in dollars) .....	203.70	219.91	235.10	255.20	267.26	280.70	292.86	299.09	304.50
<b>Mining</b>									
Average weekly hours .....	43.4	43.0	43.3	43.7	42.7	42.5	43.3	43.4	42.3
Average hourly earnings (in dollars) .....	7.67	8.49	9.17	10.04	10.77	11.28	11.63	11.98	12.45
Average weekly earnings (in dollars) .....	332.88	365.07	397.06	438.75	459.88	479.40	503.58	519.93	526.64
<b>Construction</b>									
Average weekly hours .....	36.8	37.0	37.0	36.9	36.7	37.1	37.8	37.7	37.5
Average hourly earnings (in dollars) .....	8.66	9.27	9.94	10.82	11.63	11.94	12.13	12.31	12.42
Average weekly earnings (in dollars) .....	318.69	342.99	367.78	399.26	426.82	442.97	458.51	464.09	465.75
<b>Manufacturing</b>									
Average weekly hours .....	40.4	40.2	39.7	39.8	38.9	40.1	40.7	40.5	40.7
Average hourly earnings (in dollars) .....	6.17	6.70	7.27	7.99	8.49	8.83	9.19	9.53	9.73
Average weekly earnings (in dollars) .....	249.27	269.34	288.62	318.00	330.26	354.08	374.03	385.97	396.01
<b>Transportation and public utilities</b>									
Average weekly hours .....	40.0	39.9	39.6	39.4	39.0	39.0	39.4	39.5	39.2
Average hourly earnings (in dollars) .....	7.57	8.16	8.87	9.70	10.32	10.79	11.12	11.40	11.63
Average weekly earnings (in dollars) .....	302.80	325.58	351.25	382.18	402.48	420.81	438.13	450.30	455.90
<b>Wholesale trade</b>									
Average weekly hours .....	38.8	38.8	38.5	38.5	38.3	38.5	38.5	38.4	38.4
Average hourly earnings (in dollars) .....	5.88	6.39	6.96	7.56	8.09	8.55	8.89	9.16	9.34
Average weekly earnings (in dollars) .....	228.14	247.93	267.96	291.06	309.85	329.18	342.27	351.74	358.86
<b>Retail trade</b>									
Average weekly hours .....	31.0	30.6	30.2	30.1	29.9	29.8	29.8	29.4	29.2
Average hourly earnings (in dollars) .....	4.20	4.53	4.88	5.25	5.48	5.74	5.85	5.94	6.02
Average weekly earnings (in dollars) .....	130.20	138.62	147.38	158.03	163.85	171.05	174.33	174.64	175.78
<b>Finance, insurance, and real estate</b>									
Average weekly hours .....	36.4	36.2	36.2	36.3	36.2	36.2	36.5	36.4	36.5
Average hourly earnings (in dollars) .....	4.89	5.27	5.79	6.31	6.78	7.29	7.63	7.94	8.34
Average weekly earnings (in dollars) .....	178.00	190.77	209.60	229.05	245.44	263.90	278.50	289.02	304.41
<b>Services</b>									
Average weekly hours .....	32.8	32.7	32.6	32.6	32.6	32.7	32.6	32.5	32.5
Average hourly earnings (in dollars) .....	4.99	5.36	5.85	6.41	6.92	7.31	7.59	7.89	8.16
Average weekly earnings (in dollars) .....	163.67	175.27	190.71	208.97	225.59	239.04	247.43	256.43	265.20

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

(June 1981 = 100)

Series	1984		1985				1986				Percent change	
	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	3 months ended	12 months ended	
										Dec. 1986		
<b>Civilian workers<sup>2</sup></b> .....	123.9	125.5	126.4	128.4	129.2	130.6	131.5	133.0	133.8	0.6	3.6	
Workers, by occupational group:												
White-collar workers .....	125.5	127.3	128.3	130.7	131.6	133.1	134.2	136.0	136.9	.7	4.0	
Blue-collar workers .....	120.9	122.2	123.1	124.4	124.9	126.2	126.8	127.8	128.4	.5	2.8	
Service occupations .....	126.8	127.8	128.0	130.9	131.8	133.1	133.7	135.4	136.6	.9	3.6	
Workers, by industry division:												
Goods-producing .....	121.4	123.2	123.9	124.9	125.5	126.9	128.1	128.8	129.5	.5	3.2	
Manufacturing .....	122.0	123.9	124.6	125.5	126.0	127.7	128.7	129.3	130.1	.6	3.3	
Service-producing .....	125.5	126.9	127.9	130.7	131.5	132.9	133.7	135.6	136.5	.7	3.8	
Services .....	130.9	131.9	132.6	136.4	137.1	138.8	139.4	142.4	143.6	.8	4.7	
Health services .....	-	-	-	-	-	-	-	-	-	1.1	4.7	
Hospitals .....	-	-	-	-	-	-	-	-	-	1.1	-	
Public administration <sup>3</sup> .....	128.6	130.1	130.3	134.2	134.8	136.8	138.0	140.6	141.6	.7	5.0	
Nonmanufacturing .....	124.8	126.2	127.2	129.7	130.6	131.9	132.8	134.6	135.4	.6	3.7	
<b>Private industry workers</b> .....	122.7	124.2	125.2	126.8	127.5	128.9	129.9	130.8	131.6	.6	3.2	
Workers, by occupational group:												
White-collar workers .....	123.9	125.8	127.1	128.8	129.8	131.3	132.5	133.5	134.3	.6	3.5	
Professional specialty and technical occupations .....	-	-	-	-	-	-	-	-	-	.7	3.6	
Executive, administrative, and managerial occupations .....	-	-	-	-	-	-	-	-	-	.8	4.1	
Sales occupations .....	-	-	-	-	-	-	-	-	-	-.1	-	
Administrative support occupations, including clerical .....	-	-	-	-	-	-	-	-	-	.7	3.6	
Blue-collar workers .....	120.6	121.9	122.8	124.0	124.4	125.7	126.3	127.2	127.8	.5	2.7	
Precision production, craft, and repair occupation .....	-	-	-	-	-	-	-	-	-	.5	2.9	
Machine operators, assemblers, and inspectors .....	-	-	-	-	-	-	-	-	-	.6	2.7	
Transportation and material moving occupations .....	-	-	-	-	-	-	-	-	-	.3	2.7	
Handlers, equipment cleaners, helpers, and laborers .....	-	-	-	-	-	-	-	-	-	.6	2.1	
Service occupations .....	125.7	126.3	126.5	128.8	129.5	130.9	131.1	132.3	133.5	.9	3.1	
Workers, by industry division:												
Goods-producing .....	121.2	123.0	123.8	124.6	125.3	126.7	127.8	128.6	129.2	.5	3.1	
Construction .....	-	-	-	-	-	-	-	-	-	.2	2.8	
Manufacturing .....	122.0	123.9	124.6	125.5	126.0	127.7	128.7	129.3	130.1	.6	3.3	
Durables .....	-	-	-	-	-	-	-	-	-	.5	2.8	
Nondurables .....	-	-	-	-	-	-	-	-	-	.7	4.0	
Service-producing .....	123.9	125.2	126.4	128.7	129.4	130.8	131.6	132.7	133.5	.6	3.2	
Transportation and public utilities .....	-	-	-	-	-	-	-	-	-	.1	2.2	
Transportation .....	-	-	-	-	-	-	-	-	-	-.4	2.2	
Public utilities .....	-	-	-	-	-	-	-	-	-	.7	2.0	
Wholesale and retail trade .....	-	-	-	-	-	-	-	-	-	.5	2.6	
Wholesale trade .....	-	-	-	-	-	-	-	-	-	1.0	-	
Retail trade .....	-	-	-	-	-	-	-	-	-	.3	2.2	
Finance, insurance, and real estate .....	-	-	-	-	-	-	-	-	-	.8	3.1	
Service .....	-	-	-	-	-	-	-	-	-	1.0	4.3	
Health services .....	-	-	-	-	-	-	-	-	-	1.3	4.9	
Hospitals .....	-	-	-	-	-	-	-	-	-	1.2	-	
Nonmanufacturing .....	123.1	124.4	125.6	127.6	128.4	129.7	130.6	131.7	132.4	.5	3.1	
<b>State and local government workers</b> .....	130.1	131.7	132.0	136.5	137.5	138.9	139.7	143.6	144.7	.8	5.2	
Workers, by occupational group:												
White-collar workers .....	131.1	132.5	132.9	137.6	138.6	140.0	140.5	145.0	146.0	.7	5.3	
Blue-collar workers .....	125.9	128.1	128.5	131.9	132.7	134.7	136.3	138.5	139.5	.7	5.1	
Workers, by industry division:												
Services .....	131.3	132.8	133.2	137.9	139.1	140.4	140.8	145.5	146.6	.8	5.4	
Hospitals and other services <sup>4</sup> .....	129.2	131.1	131.5	134.1	135.2	136.8	137.9	139.4	141.1	1.2	4.4	
Health services .....	-	-	-	-	-	-	-	-	-	.7	4.1	
Schools .....	132.0	133.4	133.7	139.1	140.3	141.5	141.7	147.6	148.4	.5	5.8	
Elementary and secondary .....	133.5	134.4	134.6	140.9	142.0	143.0	143.2	149.4	150.3	.6	5.8	
Public administration <sup>3</sup> .....	128.6	130.1	130.3	134.2	134.8	136.8	138.0	140.6	141.6	.7	5.0	

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

<sup>2</sup> Consist of private industry workers (excluding farm and household workers) and State and local government (excluding Federal Government) workers.

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

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

- Data not available.



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

(June 1981 = 100)

Series	1984		1985			1986				Percent change	
	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	3 months ended	12 months ended
											Dec. 1986
<b>Civilian workers</b> <sup>1</sup> .....	121.7	123.1	124.2	126.3	127.0	128.3	129.3	130.7	131.5	0.6	3.5
Workers, by occupational group:											
White-collar workers .....	123.5	125.2	126.4	128.8	129.8	131.2	132.4	134.1	135.0	.7	4.0
Blue-collar workers .....	118.2	119.3	120.5	122.0	122.3	123.4	124.1	125.0	125.6	.5	2.7
Service occupations .....	124.3	124.8	125.3	128.0	128.6	129.8	130.0	131.7	132.8	.8	3.3
Workers, by industry division											
Goods-producing .....	118.8	120.3	121.5	122.5	123.1	124.4	125.6	126.3	127.0	.6	3.2
Manufacturing .....	119.5	121.0	122.3	123.2	123.8	125.3	126.5	127.2	127.9	.6	3.3
Service-producing .....	123.4	124.7	125.8	128.6	129.4	130.7	131.5	133.4	134.2	.6	3.7
Services .....	128.9	129.7	130.5	134.2	134.8	136.4	137.0	139.9	141.1	.9	4.7
Health services .....	-	-	-	-	-	-	-	-	-	1.2	4.8
Hospitals .....	-	-	-	-	-	-	-	-	-	1.2	-
Public administration <sup>2</sup> .....	125.7	127.0	127.2	131.4	132.0	133.8	134.6	137.5	138.1	.4	4.6
Nonmanufacturing .....	122.6	123.9	125.0	127.6	128.4	129.6	130.4	132.2	133.0	.6	3.6
<b>Private industry workers</b> .....	120.6	122.0	123.3	124.9	125.6	126.8	127.9	128.8	129.5	.5	3.1
Workers, by occupational group:											
White-collar workers .....	122.3	124.0	125.5	127.3	128.3	129.6	131.1	132.0	132.7	.5	3.4
Professional specialty and technical occupations .....	127.3	127.7	128.7	131.2	131.5	132.7	134.0	135.4	136.4	.7	3.7
Executive, administrative, and managerial occupations .....	122.2	123.8	126.5	127.7	128.4	130.5	132.1	132.4	133.5	.8	4.0
Sales occupations .....	111.6	116.3	117.4	119.3	122.5	122.4	124.3	125.2	124.9	-.2	2.0
Administrative support occupations, including clerical .....	122.9	124.7	125.6	127.1	127.9	129.6	130.8	131.7	132.7	.8	3.8
Blue-collar workers .....	118.0	119.1	120.3	121.7	122.0	123.1	123.7	124.5	125.1	.5	2.5
Precision production, craft, and repair occupations .....	119.4	120.8	122.0	123.7	123.8	125.3	125.7	126.7	127.4	.6	2.9
Machine operators, assemblers, and inspectors .....	117.9	118.9	120.1	121.1	121.6	122.6	123.6	124.1	124.9	.6	2.7
Transportation and material moving occupations .....	114.0	114.5	115.7	117.7	117.8	118.0	118.9	119.8	120.1	.3	2.0
Handlers, equipment cleaners, helpers, and laborers .....	115.9	116.7	118.5	118.6	119.8	120.0	120.3	120.9	121.4	.4	1.3
Service occupations .....	123.7	123.8	124.4	126.3	126.6	128.0	128.0	128.9	130.1	.9	2.8
Workers, by industry division:											
Goods-producing .....	118.7	120.2	121.4	122.3	122.9	124.2	125.4	126.1	126.8	.6	3.2
Construction .....	114.4	115.5	116.6	117.3	117.9	118.3	119.8	120.5	120.8	.2	2.5
Manufacturing .....	119.5	121.0	122.3	123.2	123.8	125.3	126.5	127.2	127.9	.6	3.3
Durables .....	119.1	120.6	122.0	122.7	123.4	124.8	125.8	126.4	127.2	.6	3.1
Nondurables .....	120.2	121.6	122.6	124.0	124.6	126.1	127.9	128.5	129.3	.6	3.8
Service-producing .....	122.1	123.4	124.8	127.0	127.8	129.0	129.9	130.9	131.6	.5	3.0
Transportation and public utilities .....	120.7	121.7	122.8	124.8	125.2	126.3	126.6	127.3	127.5	.2	1.8
Transportation .....	-	-	-	-	-	-	-	-	-	-.3	1.3
Public utilities .....	-	-	-	-	-	-	-	-	-	.7	2.5
Wholesale and retail trade .....	118.1	118.8	121.1	122.7	123.7	124.5	125.8	126.5	126.9	.3	2.6
Wholesale trade .....	122.9	123.7	126.8	127.7	128.3	129.7	131.2	131.8	133.1	1.0	3.7
Retail trade .....	116.2	116.9	118.9	120.8	121.9	122.5	123.7	124.4	124.5	.1	2.1
Finance, insurance, and real estate .....	115.8	122.0	121.7	124.1	126.5	126.6	128.0	129.0	130.0	.8	2.8
Services .....	129.5	129.9	131.0	133.9	134.1	136.2	136.9	138.2	139.5	.9	4.0
Health services .....	-	-	-	-	-	-	-	-	-	1.5	5.1
Hospitals .....	-	-	-	-	-	-	-	-	-	1.5	-
Nonmanufacturing .....	121.2	122.6	123.9	125.9	126.6	127.7	128.7	129.7	130.4	.5	3.0
<b>State and local government workers</b> .....	127.1	128.4	128.7	133.2	134.2	135.5	136.0	140.4	141.4	.7	5.4
Workers, by occupational group											
White-collar workers .....	128.0	129.3	129.6	134.3	135.3	136.6	137.0	141.8	142.8	.7	5.5
Blue-collar workers .....	122.5	124.2	124.5	127.9	128.4	130.4	131.9	134.5	135.1	.4	5.2
Workers, by industry division											
Services .....	128.1	129.4	129.7	134.5	135.6	136.8	137.1	142.1	143.3	.8	5.7
Hospitals and other services <sup>3</sup> .....	125.9	127.7	128.0	130.2	130.9	132.4	133.3	135.8	137.3	1.1	4.9
Health services .....	-	-	-	-	-	-	-	-	-	.5	4.1
Schools .....	128.7	129.9	130.2	135.8	137.0	138.0	138.2	144.1	145.1	.7	5.9
Elementary and secondary .....	130.2	130.8	131.1	137.5	138.5	139.4	139.4	145.7	146.4	.5	5.7
Public administration <sup>2</sup> .....	125.7	127.0	127.2	131.4	132.0	133.8	134.6	137.5	138.1	.4	4.6

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

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

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

- Data not available.

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

(June 1981 = 100)

Series	1984		1985				1986				Percent change	
	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	3 months ended	12 months ended	
											Dec. 1986	
<b>COMPENSATION</b>												
<b>Workers, by bargaining status<sup>1</sup></b>												
Union .....	123.9	124.8	125.5	126.5	127.1	128.4	128.7	129.4	129.8	0.3	2.1	
Goods-producing .....	122.9	123.6	123.9	124.6	125.2	126.4	126.7	127.3	127.5	.2	1.8	
Service-producing .....	125.6	126.7	128.0	129.5	130.2	131.6	131.9	132.8	133.4	.5	2.5	
Manufacturing .....	123.2	124.2	124.2	125.0	125.5	127.0	126.9	127.5	127.9	.3	1.9	
Nonmanufacturing .....	124.5	125.3	126.6	127.8	128.6	129.7	130.4	131.2	131.5	.2	2.3	
Nonunion .....	121.9	123.8	125.0	126.8	127.5	129.0	130.2	131.2	132.1	.7	3.6	
Goods-producing .....	119.6	122.4	123.5	124.4	125.1	126.7	128.2	129.1	130.0	.7	3.9	
Service-producing .....	123.3	124.7	125.8	128.3	129.0	130.4	131.4	132.5	133.4	.7	3.4	
Manufacturing .....	120.8	123.6	124.8	125.7	126.3	128.1	129.7	130.4	131.4	.8	4.0	
Nonmanufacturing .....	122.4	123.9	125.1	127.3	128.1	129.5	130.4	131.6	132.5	.7	3.4	
<b>Workers, by region<sup>1</sup></b>												
Northeast .....	123.8	125.1	126.4	128.8	129.9	131.6	133.3	134.2	135.2	.7	4.1	
South .....	122.2	124.2	125.2	126.5	127.2	128.7	129.6	130.7	131.4	.5	3.3	
Midwest (formerly North Central) .....	120.8	122.0	122.7	124.2	124.6	125.9	126.2	127.3	128.1	.6	2.8	
West .....	124.9	126.8	127.9	129.1	129.8	130.8	131.6	132.1	132.8	.5	2.3	
<b>Workers, by area size<sup>1</sup></b>												
Metropolitan areas .....	123.2	124.7	125.7	127.3	128.1	129.5	130.5	131.4	132.2	.6	3.2	
Other areas .....	119.8	121.4	122.5	123.9	123.9	125.5	126.4	127.2	127.9	.6	3.2	
<b>WAGES AND SALARIES</b>												
<b>Workers, by bargaining status<sup>1</sup></b>												
Union .....	120.9	121.7	123.0	124.1	124.7	125.6	126.1	126.9	127.2	.2	2.0	
Goods-producing .....	119.3	120.0	121.3	122.2	122.7	123.4	124.1	124.5	124.8	.2	1.7	
Service-producing .....	123.5	124.2	125.7	127.1	127.8	129.0	129.3	130.5	130.9	.3	2.4	
Manufacturing .....	119.5	120.4	121.7	122.8	123.3	124.2	124.6	125.0	125.5	.4	1.8	
Nonmanufacturing .....	122.1	122.8	124.1	125.3	125.9	126.9	127.4	128.5	128.7	.2	2.2	
Nonunion .....	120.4	122.1	123.4	125.2	125.9	127.3	128.5	129.4	130.3	.7	3.5	
Goods-producing .....	118.1	120.2	121.4	122.3	123.0	124.5	126.1	127.0	127.8	.6	3.9	
Service-producing .....	121.6	123.1	124.4	126.9	127.7	128.9	129.9	130.8	131.7	.7	3.1	
Manufacturing .....	119.5	121.5	122.8	123.7	124.4	126.1	127.7	128.5	129.5	.8	4.1	
Nonmanufacturing .....	120.7	122.3	123.6	125.9	126.6	127.8	128.9	129.8	130.6	.6	3.2	
<b>Workers, by region<sup>1</sup></b>												
Northeast .....	121.9	123.0	124.6	126.8	128.1	129.2	131.3	132.3	133.1	.6	3.9	
South .....	120.2	122.3	123.4	124.8	125.4	126.8	127.8	128.8	129.4	.5	3.2	
Midwest (formerly North Central) .....	118.7	119.6	121.1	122.5	122.9	124.2	124.4	125.3	126.2	.7	2.7	
West .....	122.5	124.0	125.1	126.6	127.1	128.1	128.9	129.3	130.1	.6	2.4	
<b>Workers, by area size<sup>1</sup></b>												
Metropolitan areas .....	121.0	122.4	123.8	125.5	126.3	127.4	128.5	129.4	130.2	.6	3.1	
Other areas .....	118.3	119.6	120.6	121.9	122.0	123.6	124.5	125.0	125.6	.5	3.0	

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

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

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

Measure	Annual average		Quarterly average							
	1984	1985	1984	1985				1986		
			IV	I	II	III	IV	IP	IIP	IIIP
<b>Specified adjustments:</b>										
Total compensation <sup>1</sup> adjustments, <sup>2</sup> settlements covering 5,000 workers or more:										
First year of contract .....	3.6	2.6	3.7	3.6	3.5	2.0	2.0	0.6	0.7	0.7
Annual rate over life of contract .....	2.8	2.7	2.0	2.7	3.4	3.0	1.4	1.2	1.6	1.2
Wage adjustments, settlements covering 1,000 workers or more:										
First year of contract .....	2.4	2.3	2.3	3.3	2.5	2.0	2.1	.8	1.3	.8
Annual rate over life of contract .....	2.4	2.7	1.5	3.2	2.8	3.1	1.9	1.5	2.0	1.5
<b>Effective adjustments:</b>										
Total effective wage adjustment <sup>3</sup> .....										
From settlements reached in period .....	.8	.7	.3	.1	.2	.2	.1	.0	.2	.1
Deferred from settlements reached in earlier periods .....	2.0	1.8	.2	.6	.5	.5	.2	.4	.6	.5
From cost-of-living-adjustments clauses .....	.9	.7	.2	.1	.1	.4	.1	.2	.0	.0

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

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

compensation or wages.

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

P = preliminary.

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

Measure	Average for four quarters ending--								
	1984	1985				1986			
	IV	I	II	III	IV	IP	IIP	IIIP	
Specified total compensation adjustments, settlements covering 5,000 workers or more, all industries:									
First year of contract .....	3.6	3.4	3.4	3.1	2.6	2.3	1.4	0.9	
Annual rate over life of contract .....	2.8	2.6	2.7	2.7	2.7	2.5	2.0	1.4	
Specified wage adjustments, settlements covering 1,000 workers or more:									
All industries									
First year of contract .....	2.4	2.4	2.4	2.4	2.3	2.0	1.6	1.2	
Contracts with COLA clauses .....	2.9	2.5	2.3	1.9	1.6	1.6	1.8	2.2	
Contracts without COLA clauses .....	2.1	2.4	2.4	2.7	2.7	2.2	1.5	.8	
Annual rate over life of contract .....	2.4	2.3	2.4	2.5	2.7	2.5	2.2	1.7	
Contracts with COLA clauses .....	1.8	1.3	1.5	1.8	2.5	2.5	2.5	2.0	
Contracts without COLA clauses .....	2.7	2.8	2.8	3.0	2.8	2.5	2.1	1.6	
Manufacturing									
First year of contract .....	2.3	2.1	2.0	1.5	.8	.8	.1	-.1	
Contracts with COLA clauses .....	2.1	2.0	1.9	1.5	.8	.8	.7	1.1	
Contracts without COLA clauses .....	2.9	2.5	2.2	1.5	.9	.9	-.4	-2.0	
Annual rate over life of contract .....	1.5	1.4	1.5	1.6	1.8	1.8	1.4	.3	
Contracts with COLA clauses .....	1.0	.9	1.0	1.4	2.1	2.1	2.0	1.1	
Contracts without COLA clauses .....	3.3	3.2	3.0	2.4	1.6	1.5	.9	-.1	
Nonmanufacturing									
First year of contract .....	2.5	2.6	2.7	3.2	3.3	2.8	2.6	2.1	
Contracts with COLA clauses .....	5.5	5.1	4.3	4.0	3.6	3.5	3.4	2.7	
Contracts without COLA clauses .....	2.0	2.4	2.5	3.0	3.3	2.7	2.4	1.9	
Annual rate over life of contract .....	2.9	2.8	2.9	3.3	3.3	3.0	2.8	2.3	
Contracts with COLA clauses .....	4.8	4.0	3.8	3.9	3.6	3.6	3.3	2.5	
Contracts without COLA clauses .....	2.6	2.7	2.8	3.2	3.3	2.8	2.6	2.2	
Construction									
First year of contract .....	.5	.9	1.1	1.0	1.5	1.6	2.3	2.3	
Contracts with COLA clauses .....	4.0	4.6	9.2	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	1.1	1.4	
Contracts without COLA clauses .....	.4	.8	1.0	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	2.4	2.4	
Annual rate over life of contract .....	1.0	1.4	1.7	1.7	2.1	2.2	2.5	2.6	
Contracts with COLA clauses .....	1.4	1.7	4.6	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	1.2	1.6	
Contracts without COLA clauses .....	1.0	1.4	1.7	( <sup>1</sup> )	( <sup>1</sup> )	( <sup>1</sup> )	2.6	2.6	

<sup>1</sup> Data do not meet publication standards.

P = preliminary.



**27. Average effective wage adjustments, private industry collective bargaining situations covering 1,000 workers or more during 4-quarter periods (in percent)**

Effective wage adjustment	Average for four quarters ending--						
	1985				1986		
	I	II	III	IV	I <sup>P</sup>	II <sup>P</sup>	III <sup>P</sup>
<b>For all workers:<sup>1</sup></b>							
Total .....	3.6	3.5	3.5	3.3	3.1	2.9	2.3
From settlements reached in period .....	.7	.9	.9	.7	.6	.5	.5
Deferred from settlements reached in earlier period .....	2.2	1.9	1.8	1.8	1.7	1.8	1.6
From cost-of-living-adjustments clauses .....	.7	.7	.8	.7	.8	.7	.2
<b>For workers receiving changes:</b>							
Total .....	4.5	4.2	4.3	4.1	4.0	3.8	3.1
From settlements reached in period .....	2.9	2.9	2.8	3.4	2.9	2.5	1.7
Deferred from settlements reached in earlier period .....	4.2	3.9	3.7	3.7	3.5	3.4	3.8
From cost-of-living-adjustments clauses .....	2.3	2.3	2.8	2.2	2.5	2.0	1.0

<sup>1</sup> Because of rounding, total may not equal sum of parts.

<sup>P</sup> = preliminary.

**28. Specified compensation and wage adjustments from contract settlements, and effective wage adjustments, State and local government collective bargaining situations covering 1,000 workers or more (in percent)**

Measure	Annual average		First 6 months 1986 <sup>P</sup>
	1984	1985	
<b>Specified adjustments:</b>			
Total compensation <sup>1</sup> adjustments, <sup>2</sup> settlements covering 5,000 workers or more:			
First year of contract .....	5.2	4.2	6.7
Annual rate over life of contract .....	5.4	5.1	6.4
<b>Wage adjustments, settlements covering 1,000 workers or more:</b>			
First year of contract .....	4.8	4.6	6.1
Annual rate over life of contract .....	5.1	5.4	6.0
<b>Effective adjustments:</b>			
Total effective wage adjustment <sup>3</sup> .....	5.0	5.7	1.8
From settlements reached in period .....	1.9	4.1	.6
Deferred from settlements reached in earlier periods .....	3.1	1.6	1.2
From cost-of-living-adjustment clauses .....	( <sup>4</sup> )	( <sup>4</sup> )	( <sup>4</sup> )

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

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

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

<sup>4</sup> Less than 0.05 percent.

<sup>P</sup> = preliminary.

**29. Work stoppages involving 1,000 workers or more**

Measure	Annual totals		1985	1986											
	1985	1986	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July <sup>P</sup>	Aug. <sup>P</sup>	Sept. <sup>P</sup>	Oct. <sup>P</sup>	Nov. <sup>P</sup>	Dec. <sup>P</sup>
<b>Number of stoppages:</b>															
Beginning in period .....	54	-	2	4	3	2	4	6	11	13	10	7	5	2	1
In effect during period .....	61	-	9	7	7	8	8	10	15	22	22	17	17	9	6
<b>Workers involved:</b>															
Beginning in period (in thousands) .....	323.9	-	8.2	7.6	24.0	11.2	6.1	28.6	198.0	46.7	113.3	37.9	44.3	8.7	2.7
In effect during period (in thousands) .....	584.1	-	38.0	12.0	28.4	38.6	17.6	41.2	205.9	66.3	144.8	85.2	107.7	67.1	37.1
<b>Days idle:</b>															
Number (in thousands) .....	7,079.0	-	661.9	170.0	309.5	367.5	297.3	303.6	3,684.3	894.5	1,612.1	1,208.5	1,411.9	941.4	668.6
Percent of estimated working time <sup>1</sup> .....	.03	-	.03	.01	.02	.02	.02	.02	.17	.04	.07	.06	.06	.04	.04

<sup>1</sup> Agricultural and government employees are included in the total employed and total working time; private household, forestry, and fishery employees are excluded. An explanation of the measurement of idleness as a percentage of the total time worked is found in "Total economy' measure of strike idleness," *Monthly Labor Review*, October

1968, pp. 54-56.

- Data not available.

<sup>P</sup> = preliminary

**30. Consumer Price Index for All Urban Consumers: U.S. city average, by expenditure category and commodity or service group; and CPI for Urban Wage Earners and Clerical Workers, all items**

(1967=100, unless otherwise indicated)

Series	Annual average		1985					1986											
	1985	1986	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.				
			1985	1986	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.		
<b>CONSUMER PRICE INDEX FOR ALL URBAN CONSUMERS:</b>																			
All items .....	322.2	328.4	327.4	328.4	327.5	326.0	325.3	326.3	327.9	328.0	328.6	330.2	330.5	330.8	331.1				
All items (1957-59=100) .....	374.7	381.9	380.8	381.9	380.8	379.1	378.3	379.5	381.4	381.4	382.1	384.1	384.4	384.7	385.1				
<b>Food and beverages .....</b>	<b>302.0</b>	<b>311.8</b>	<b>305.6</b>	<b>307.9</b>	<b>307.7</b>	<b>307.8</b>	<b>308.5</b>	<b>309.4</b>	<b>309.5</b>	<b>312.2</b>	<b>314.6</b>	<b>315.1</b>	<b>315.6</b>	<b>316.4</b>	<b>317.0</b>				
<b>Food .....</b>	<b>309.8</b>	<b>319.7</b>	<b>313.2</b>	<b>315.6</b>	<b>315.3</b>	<b>315.4</b>	<b>316.1</b>	<b>317.0</b>	<b>317.1</b>	<b>320.1</b>	<b>322.7</b>	<b>323.2</b>	<b>323.7</b>	<b>324.6</b>	<b>325.2</b>				
<b>Food at home .....</b>	<b>296.8</b>	<b>305.3</b>	<b>299.3</b>	<b>302.5</b>	<b>301.5</b>	<b>301.2</b>	<b>301.5</b>	<b>302.1</b>	<b>301.6</b>	<b>305.5</b>	<b>308.9</b>	<b>309.0</b>	<b>309.5</b>	<b>309.9</b>	<b>310.2</b>				
Cereals and bakery products .....	317.0	325.8	321.9	322.0	322.5	322.7	322.5	323.8	326.1	326.3	328.2	328.5	328.4	328.5	329.5				
Meats, poultry, fish, and eggs .....	263.4	275.1	269.9	271.5	268.4	267.7	264.2	263.4	265.1	274.9	283.0	284.7	284.9	286.3	287.3				
Dairy products .....	258.0	258.4	256.9	257.2	257.3	256.8	256.8	257.1	257.2	258.4	258.3	258.5	260.0	261.2	262.2				
Fruits and vegetables .....	325.7	328.7	323.9	334.4	320.7	319.2	329.5	336.5	327.8	330.3	332.1	329.1	328.6	327.8	328.5				
Other foods at home .....	361.1	373.6	361.3	365.7	375.1	375.7	374.6	374.6	374.1	373.7	374.0	373.7	374.4	373.9	372.2				
Sugar and sweets .....	398.8	411.1	402.2	405.1	408.6	408.4	411.4	411.2	411.5	412.4	413.1	413.7	413.4	412.4	411.8				
Fats and oils .....	294.4	287.8	290.3	292.1	291.4	290.2	288.5	287.2	287.0	287.3	287.8	285.6	284.6	285.4	286.0				
Nonalcoholic beverages .....	451.7	448.2	448.8	459.7	485.3	488.0	487.4	481.9	480.0	478.3	476.9	475.7	477.5	476.9	470.2				
Other prepared foods .....	294.2	301.9	297.3	298.0	299.5	299.3	300.2	301.4	301.7	301.8	303.2	303.8	304.7	303.9	305.2				
Food away from home .....	346.6	360.1	352.1	353.1	354.2	355.5	357.0	358.8	360.2	360.8	361.8	363.3	364.0	365.8	367.1				
Alcoholic beverages .....	229.5	239.7	236.2	237.5	238.3	238.8	239.5	239.4	240.1	240.4	240.1	240.4	240.6	240.5	240.8				
<b>Housing .....</b>	<b>349.9</b>	<b>360.2</b>	<b>355.8</b>	<b>356.8</b>	<b>356.5</b>	<b>357.0</b>	<b>358.0</b>	<b>358.5</b>	<b>361.2</b>	<b>361.5</b>	<b>362.4</b>	<b>363.7</b>	<b>363.0</b>	<b>361.7</b>	<b>362.1</b>				
<b>Shelter .....</b>	<b>382.0</b>	<b>402.9</b>	<b>392.3</b>	<b>393.8</b>	<b>394.8</b>	<b>397.0</b>	<b>400.1</b>	<b>400.9</b>	<b>401.6</b>	<b>403.5</b>	<b>405.2</b>	<b>407.6</b>	<b>409.5</b>	<b>410.2</b>	<b>410.4</b>				
Renters' costs (12/82=100) .....	115.4	121.9	118.3	118.8	119.0	119.6	120.9	121.1	121.6	122.5	122.9	123.6	124.0	124.3	124.2				
Rent, residential .....	264.6	280.0	272.4	273.4	273.7	275.0	277.9	278.4	279.4	281.2	281.7	283.2	284.6	285.6	286.0				
Other renters' costs .....	398.4	416.2	398.1	401.1	404.1	405.5	410.8	411.3	415.2	420.1	425.7	429.1	427.3	425.5	418.2				
Homeowners' costs (12/82=100) .....	113.1	119.4	116.3	116.7	117.0	117.9	118.7	118.9	119.0	119.4	119.9	120.7	121.3	121.5	121.6				
Owners' equivalent rent (12/82=100) .....	113.2	119.4	116.3	116.7	117.0	117.9	118.7	118.9	119.0	119.4	119.9	120.7	121.3	121.5	121.6				
Household insurance (12/82=100) .....	112.4	119.2	115.0	115.7	117.4	118.0	118.3	118.8	118.9	119.9	119.9	120.2	120.6	121.1	121.6				
Maintenance and repairs .....	368.9	373.8	373.7	379.1	379.6	367.5	367.6	367.1	366.6	369.2	376.4	376.2	379.0	377.1	380.0				
Maintenance and repair services .....	421.1	430.9	426.2	432.6	432.8	422.4	424.6	425.5	427.4	430.1	434.2	437.0	437.5	433.7	433.1				
Maintenance and repair commodities .....	269.6	269.7	273.3	277.1	277.8	266.1	264.5	262.9	260.7	262.7	271.3	268.7	273.0	272.9	278.3				
Fuel and other utilities .....	393.6	384.7	393.3	394.6	390.0	385.5	381.8	382.5	393.8	389.4	389.5	388.3	379.1	371.1	371.0				
Fuels .....	488.1	463.1	483.6	484.7	476.3	467.6	459.6	460.6	477.0	469.2	469.0	467.2	450.3	438.8	431.1				
Fuel oil, coal, and bottled gas .....	619.5	501.5	657.3	650.3	591.2	549.9	518.3	496.8	486.6	459.4	447.3	453.5	451.9	452.0	460.6				
Gas (piped) and electricity .....	452.7	446.7	439.9	442.6	444.5	442.3	439.2	444.6	466.0	462.3	464.5	461.1	441.4	426.7	425.3				
Other utilities and public services .....	240.7	253.1	245.8	247.3	247.9	249.0	251.3	251.5	255.2	255.6	255.9	255.6	257.1	255.4	254.9				
Household furnishings and operations .....	247.2	250.4	248.8	248.8	249.0	249.8	249.6	249.9	250.2	250.5	250.5	251.5	251.6	251.2	252.4				
Household furnishings .....	200.1	201.1	200.1	199.8	199.7	201.0	200.4	200.8	200.8	201.2	200.9	202.2	202.2	201.4	202.5				
Housekeeping supplies .....	313.6	319.5	317.7	318.3	318.6	317.9	318.5	318.3	319.6	319.5	319.8	320.1	319.8	320.4	322.9				
Housekeeping services .....	338.9	346.6	343.2	343.9	344.5	345.1	345.4	345.8	346.1	346.6	347.4	347.8	348.5	348.5	349.3				
<b>Apparel and upkeep .....</b>	<b>206.0</b>	<b>207.8</b>	<b>209.0</b>	<b>205.0</b>	<b>204.1</b>	<b>206.3</b>	<b>207.3</b>	<b>206.4</b>	<b>204.5</b>	<b>203.2</b>	<b>207.0</b>	<b>212.1</b>	<b>213.2</b>	<b>213.1</b>	<b>210.9</b>				
<b>Apparel commodities .....</b>	<b>191.6</b>	<b>192.0</b>	<b>194.2</b>	<b>189.5</b>	<b>188.5</b>	<b>190.8</b>	<b>191.7</b>	<b>190.7</b>	<b>188.4</b>	<b>187.0</b>	<b>191.2</b>	<b>196.6</b>	<b>197.6</b>	<b>197.4</b>	<b>194.9</b>				
Men's and boys' apparel .....	197.9	200.0	202.0	198.6	196.8	198.3	199.7	200.2	198.1	195.8	197.8	203.2	204.3	205.3	202.3				
Women's and girls' apparel .....	169.5	168.0	172.6	164.4	163.4	167.6	168.0	164.9	161.3	159.8	167.2	175.7	176.4	175.0	171.7				
Infants' and toddlers' apparel .....	299.7	312.7	304.1	313.9	311.6	313.1	316.6	318.5	319.7	307.5	310.6	309.7	312.0	307.0	312.7				
Footwear .....	212.1	211.2	213.1	209.1	207.9	210.1	211.4	211.5	210.0	209.1	209.6	212.0	215.1	215.1	214.0				
Other apparel commodities .....	215.5	217.9	214.6	215.5	216.1	214.6	215.3	215.4	215.8	218.1	221.6	221.0	219.8	221.1	220.0				
<b>Apparel services .....</b>	<b>320.9</b>	<b>334.6</b>	<b>326.9</b>	<b>329.8</b>	<b>330.7</b>	<b>331.5</b>	<b>332.9</b>	<b>333.6</b>	<b>334.3</b>	<b>334.6</b>	<b>334.7</b>	<b>336.7</b>	<b>338.3</b>	<b>339.0</b>	<b>339.5</b>				
<b>Transportation .....</b>	<b>319.9</b>	<b>307.5</b>	<b>324.0</b>	<b>323.9</b>	<b>319.2</b>	<b>309.6</b>	<b>303.3</b>	<b>305.7</b>	<b>308.6</b>	<b>304.7</b>	<b>301.3</b>	<b>302.2</b>	<b>302.6</b>	<b>304.3</b>	<b>304.8</b>				
<b>Private transportation .....</b>	<b>314.2</b>	<b>299.5</b>	<b>317.8</b>	<b>317.3</b>	<b>312.2</b>	<b>302.1</b>	<b>295.3</b>	<b>297.8</b>	<b>300.8</b>	<b>296.5</b>	<b>292.8</b>	<b>293.7</b>	<b>294.1</b>	<b>295.8</b>	<b>295.9</b>				
New vehicles .....	214.9	224.1	219.2	219.7	220.2	220.1	221.0	222.8	224.0	224.5	224.2	224.2	230.2	231.7					
New cars .....	215.2	224.4	219.4	219.9	220.4	220.3	221.2	223.0	224.2	224.7	224.5	227.1	230.7	232.2					
Used cars .....	379.7	363.2	375.6	374.1	370.7	367.2	364.8	363.6	362.5	360.3	358.0	359.5	360.6	361.0	356.6				
Motor fuel .....	373.8	292.1	377.5	373.3	351.5	308.5	279.5	289.3	299.4	280.2	265.9	271.1	263.2	260.9	261.9				
Gasoline .....	373.3	291.4	376.8	372.5	350.8	307.7	278.6	288.7	299.1	279.8	265.3	270.6	262.6	260.2	261.2				
Maintenance and repair .....	351.4	363.1	357.5	357.9	358.9	359.3	360.6	361.3	362.1	363.4	364.3	365.0	365.7	368.4	370.7				
Other private transportation .....	287.6	303.9	295.2	297.7	299.2	301.5	301.6	301.3	303.0	304.5	304.5	303.3	307.6	311.6	312.0				
Other private transportation commodities .....	202.6	206.0	202.1	203.4	202.9	203.6	202.2	202.4	201.5	201.6	201.8	200.3	198.9	200.0	200.4				
Other private transportation services .....	312.8	333.9	322.7	325.5	327.6	330.3	330.9	330.4	332.8	334.6	334.6	332.3	339.3	344.1	344.5				
Public transportation .....	402.8	426.4	412.9	419.6	422.2	421.2	422.2	423.7	425.4	428.0	428.0	428.5	428.7	431.7	437.5				
<b>Medical care .....</b>	<b>403.1</b>	<b>433.5</b>	<b>414.7</b>	<b>418.2</b>	<b>422.3</b>	<b>425.8</b>	<b>428.0</b>	<b>429.7</b>	<b>432.0</b>	<b>434.8</b>	<b>437.5</b>	<b>439.7</b>	<b>442.3</b>	<b>444.6</b>	<b>446.8</b>				
<b>Medical care commodities .....</b>	<b>256.7</b>	<b>273.6</b>	<b>262.9</b>	<b>264.5</b>	<b>267.4</b>	<b>269.4</b>	<b>272.3</b>	<b>273.3</b>	<b>273.3</b>	<b>275.4</b>	<b>276.0</b>	<b>276.7</b>	<b>277.5</b>	<b>278.2</b>	<b>280.8</b>				
<b>Medical care services .....</b>	<b>435.1</b>	<b>468.6</b>	<b>448.0</b>	<b>451.9</b>	<b>456.2</b>	<b>460.1</b>	<b>462.3</b>	<b>464.2</b>	<b>466.8</b>	<b>469.8</b>	<b>473.0</b>	<b>475.7</b>	<b>478.8</b>	<b>481.5</b>	<b>483.4</b>				
Professional services .....	367.3	390.9	377.1	378.9	381.6	385.0	386.9	388.3	390.3	391.7	393.3	391.1	398.0						

## 30. Continued— Consumer Price Index for All Urban Consumers: U.S. city average, by expenditure category and commodity or service group; and CPI for Urban Wage Earners and Clerical Workers, all items

(1967=100, unless otherwise indicated)

Series	Annual average		1985				1986									
	1985	1986	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.	
	All items .....	322.2	328.4	327.4	328.4	327.5	326.0	325.3	326.3	327.9	328.0	328.6	330.2	330.5	330.8	331.1
Commodities .....	286.7	283.9	289.9	290.1	287.4	283.7	281.2	282.1	282.8	281.9	281.9	283.5	283.6	284.0	284.2	
Food and beverages .....	302.0	311.8	305.6	307.9	307.7	307.8	308.5	309.4	309.5	312.2	314.6	315.1	315.6	316.4	317.0	
Commodities less food and beverages .....	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Nondurables less food and beverages .....	282.1	265.2	286.8	284.9	278.6	268.9	262.0	263.3	264.7	259.8	258.1	261.5	260.4	260.0	260.0	
Apparel commodities .....	191.6	192.0	194.2	189.5	188.5	190.8	191.7	190.7	188.4	187.0	191.2	196.6	197.6	197.4	194.9	
Nondurables less food, beverages, and apparel .....	333.3	307.3	339.1	338.7	329.5	313.6	302.6	305.2	308.4	301.7	296.9	299.5	297.2	296.7	298.0	
Durables .....	270.7	270.2	271.4	271.4	270.5	269.7	269.2	269.6	269.9	269.6	269.0	269.3	270.5	271.8	271.7	
Services .....	381.5	400.5	389.5	391.7	393.3	394.9	396.8	397.9	401.0	402.3	403.7	405.5	406.1	406.1	406.6	
Rent of shelter (12/82=100) .....	113.9	120.2	117.0	117.4	117.7	118.5	119.4	119.7	119.9	120.5	120.9	121.7	122.2	122.4	122.5	
Household services less rent of shelter (12/82=100) .....	111.2	112.8	110.8	111.4	111.8	111.6	111.6	112.3	115.2	114.9	115.3	114.9	112.9	111.0	110.8	
Transportation services .....	337.0	356.3	346.1	349.0	351.0	352.4	353.2	353.4	355.3	357.1	357.3	356.2	360.5	364.4	366.2	
Medical care services .....	435.1	468.6	448.0	451.9	456.2	460.1	462.3	464.2	466.8	469.8	473.0	475.7	478.8	481.5	483.4	
Other services .....	314.1	331.8	322.9	324.8	326.1	326.6	327.6	328.2	329.2	330.1	330.8	337.9	339.5	340.3	340.8	
Special indexes:																
All items less food .....	323.3	328.6	328.9	329.5	328.5	326.6	325.7	326.7	328.6	328.0	328.1	330.0	330.2	330.4	330.6	
All items less shelter .....	303.9	306.7	307.9	308.8	307.4	305.2	303.6	304.7	306.5	306.1	306.4	307.9	307.8	308.0	308.3	
All items less homeowners' costs .....	109.7	111.2	111.3	111.6	111.2	110.5	110.1	110.4	111.1	111.0	111.2	111.7	111.8	111.9		
All items less medical care .....	317.7	322.6	322.6	323.4	322.2	320.5	319.7	320.6	322.2	322.1	322.6	324.4	324.4	324.8	324.8	
Commodities less food .....	272.5	263.4	275.7	274.7	270.9	265.2	261.2	262.1	263.0	260.2	259.0	261.1	260.9	261.2	261.2	
Nondurables less food .....	277.2	262.2	282.0	280.4	274.5	265.6	259.2	260.5	261.8	257.3	255.6	258.9	257.8	257.5	257.5	
Nondurables less food and apparel .....	319.2	297.1	325.1	324.9	316.8	302.7	292.9	295.2	298.1	292.2	287.9	290.2	288.1	287.7	288.9	
Nondurables .....	293.2	289.6	297.4	297.7	294.3	289.5	286.3	287.4	288.2	287.1	287.4	289.4	289.0	289.2	289.5	
Services less rent of shelter .....	113.5	118.7	115.4	116.2	116.8	117.1	117.4	117.8	119.2	119.5	119.8	120.2	120.1	120.0	120.2	
Services less medical care .....	373.3	390.6	380.8	382.7	384.0	385.4	387.2	388.3	391.3	392.5	393.6	395.4	395.7	395.4	395.8	
Energy .....	426.5	370.3	426.5	424.7	408.9	381.3	361.8	367.6	380.6	366.5	358.6	360.6	348.6	341.7	342.4	
All items less energy .....	314.8	327.0	320.5	321.8	322.3	323.3	324.4	325.0	325.5	326.9	328.3	330.0	331.4	332.3	332.6	
All items less food and energy .....	314.4	327.1	320.7	321.6	322.3	323.6	324.8	325.3	325.9	327.9	329.3	329.9	331.6	332.5	332.8	
Commodities less food and energy .....	259.7	263.2	262.2	261.8	261.6	262.0	262.1	262.2	262.0	262.0	262.9	264.5	265.5	266.1	265.8	
Energy commodities .....	409.9	322.4	417.9	413.2	386.5	343.0	313.3	319.3	327.1	306.6	292.4	297.7	290.6	288.5	290.5	
Services less energy .....	375.9	397.1	385.8	387.9	389.4	391.5	393.8	394.5	395.9	397.7	399.0	401.4	403.7	405.0	405.7	
Purchasing power of the consumer dollar:																
1967=\$1.00 .....	31.0	30.5	30.5	30.5	30.5	30.7	30.7	30.6	30.5	30.5	30.4	30.3	30.3	30.2	30.2	
1957-59=\$1.00 .....	26.7	26.2	26.3	26.2	26.3	26.4	26.4	26.4	26.2	26.2	26.0	26.0	26.0	26.0	26.0	
<b>CONSUMER PRICE INDEX FOR URBAN WAGE EARNERS AND CLERICAL WORKERS:</b>																
All items .....	318.5	323.4	323.4	324.3	323.2	321.4	320.4	321.4	323.0	322.9	323.4	324.9	325.0	325.4	325.7	
All items (1957-59=100) .....	370.4	376.1	376.1	377.1	375.8	373.7	372.6	373.7	375.6	375.5	376.1	377.8	378.0	378.4	378.8	
Food and beverages .....	301.8	311.6	305.4	307.7	307.5	307.6	308.3	309.0	309.3	312.0	314.5	315.0	315.4	316.2	316.8	
Food .....	309.3	319.2	312.8	315.1	314.9	315.0	315.6	316.4	316.6	319.5	322.3	322.8	323.3	324.2	324.8	
Food at home .....	295.3	303.7	297.9	300.9	300.1	299.7	299.9	300.4	300.0	303.9	307.3	307.5	307.9	308.4	308.7	
Cereals and bakery products .....	315.4	324.2	320.4	320.4	320.9	321.1	320.9	322.1	324.5	324.6	326.7	326.8	326.8	327.0	328.0	
Meats, poultry, fish, and eggs .....	262.7	274.4	269.2	270.7	267.7	267.2	263.5	262.6	264.2	274.0	282.2	284.0	284.4	285.8	286.6	
Dairy products .....	256.9	257.1	255.7	256.0	256.0	255.5	255.8	255.9	255.9	257.0	256.9	257.1	258.6	259.9	260.9	
Fruits and vegetables .....	320.3	323.8	319.3	329.7	316.0	314.6	325.0	331.6	323.5	325.6	327.2	324.2	322.9	322.2	323.4	
Other foods at home .....	361.5	373.5	361.6	366.1	375.2	375.6	376.0	374.3	373.9	373.4	373.9	373.5	374.4	373.9	372.2	
Sugar and sweets .....	398.3	410.5	401.8	404.7	408.1	407.8	410.9	410.6	410.9	411.9	412.6	413.0	412.8	411.9	411.2	
Fats and oils .....	293.9	287.2	289.6	291.6	290.8	289.7	287.8	286.6	286.4	286.6	287.1	285.1	284.1	284.5	285.5	
Nonalcoholic beverages .....	453.2	478.1	450.4	461.0	485.5	487.4	487.0	481.2	479.5	477.6	476.9	475.5	477.7	477.1	470.3	
Other prepared foods .....	295.7	303.2	298.7	299.4	300.9	300.7	301.6	302.7	303.0	303.1	304.5	305.2	305.9	305.3	306.6	
Food away from home .....	349.7	363.4	355.2	356.2	357.3	358.6	360.2	362.0	363.5	364.2	365.2	366.6	367.3	369.2	370.5	
Alcoholic beverages .....	232.6	242.5	239.1	240.1	240.9	241.4	242.3	242.2	242.9	243.4	243.0	243.4	243.5	243.4	243.9	
Housing .....	343.3	353.2	349.1	350.1	349.7	350.1	351.1	351.6	354.3	354.5	355.4	356.6	355.6	354.3	354.8	
Shelter .....	370.4	390.7	380.4	381.8	382.9	385.0	388.1	388.8	389.4	391.5	392.9	395.2	397.1	397.8	398.1	
Renters' costs (12/84=100) .....	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	
Rent, residential .....	263.7	279.1	271.5	272.5	272.8	274.1	277.0	277.5	278.5	280.3	280.8	282.2	283.6	284.6	285.1	
Other renters' costs .....	397.9	416.0	397.5	400.8	403.5	405.4	411.6	411.3	415.5	420.4	426.1	428.9	426.7	424.8	417.3	
Homeowners' costs (12/84=100) .....	103.1	108.8	105.9	106.3	106.6	107.4	108.1	108.3	108.4	108.8	109.3	110.0	110.5	110.7	110.8	
Owners' equivalent rent (12/84=100) .....	103.0	108.8	105.9	106.3	106.6	107.3	108.1	108.3	108.4	108.8	109.2	110.0	110.5	110.7	110.8	
Household insurance (12/84=100) .....	103.2	109.4	105.7	106.3	107.8	108.2	108.5	109.0	109.1	110.1	110.1	110.4	110.8	111.3	111.7	
Maintenance and repairs .....	364.1	369.4	368.5	373.2	374.0	364.7	364.6	363.8	363.2	366.7	371.5	370.6	373.1	372.4	374.6	
Maintenance and repair services .....	415.0	425.3	420.1	426.2	426.5	416.6	419.2	420.0	422.6	425.2	428.6	430.7	431.1	428.2	428.1	
Maintenance and repair commodities .....	261.1	262.5	264.2	267.2	268.1	261.1	259.4	258.0	255.7	259.0	263.5	261.1	264.3	265.0	268.0	
Fuel and other utilities .....	394.7	385.4	394.3	395.6	390.9	386.3	382.6	383.0	394.9	390.3	390.6	389.1	379.3	371.3	371.1	
Fuels .....	487.5	462.7	483.1	484.1	475.7	467.1	459.1	459.7	477.3	469.1	469.3	467.1	449.2	437.1	437.3	
Fuel oil, coal, and bottled gas .....	622.0	504.5	659.9	652.7	593.6	552.8	521.5	499.9	489.9	462.9	450.7	456.6	454.8	455.0	463.5	
Gas (piped) and electricity .....	451.6	445.6	438.8	441.4	443.2	441.2	438.0	443.0	465.7	461.4	464.1	460.3	439.6	425.3	423.8	
Other utilities and public services .....	241.6	253.8	246.7	248.3	248.8	249.9	252.1	252.2	255.8	256.3	256.2	256.2	257.8	255.8	255.3	
Household furnishings and operations .....	243.4	246.5	245.2	245.1	245.3	246.0	246.0	246.1	246.2							





31. Consumer Price Index: U.S. city average and available local area data: all items

(1967=100, unless otherwise indicated)

Area <sup>1</sup>	Pricing schedule <sup>2</sup>	Other index base	All Urban Consumers								Urban Wage Earners					
			1985		1986						1985		1986			
			Dec.	Jan.	Aug.	Sept.	Oct.	Nov.	Dec.	Dec.	Jan.	Aug.	Sept.	Oct.	Nov.	Dec.
U.S. city average .....		-	327.4	328.4	328.6	330.2	330.5	330.8	331.1	323.4	324.3	323.4	324.9	325.0	325.4	325.7
Chicago, Ill.-Northwestern																
Ind. ....	M	-	325.9	326.3	331.4	333.9	328.7	331.3	331.0	312.6	312.9	316.2	318.3	313.4	316.1	315.8
Detroit, Mich. ....	M	-	323.1	323.1	323.2	321.1	324.3	325.3	324.7	313.1	313.4	312.8	310.5	313.6	314.7	314.0
Los Angeles-Long Beach, Anaheim, Calif. ....	M	-	326.1	326.8	330.9	334.6	336.2	333.8	332.9	320.1	320.9	323.5	326.8	328.3	326.3	325.3
New York, N.Y.-Northeastern N.J. ....	M	-	320.8	323.1	325.9	326.6	327.8	327.5	329.1	313.5	315.8	317.2	317.5	318.7	318.6	320.1
Philadelphia, Pa.-N.J. ....	M	-	319.7	320.3	323.1	325.8	324.7	324.1	325.2	322.5	323.0	324.4	326.7	326.1	325.4	326.6
Anchorage, Alaska (10/67 = 100) .....	1	10/67	-	287.1	-	286.2	-	287.8	-	-	280.2	-	277.9	-	279.7	-
Baltimore, Md. ....	1	-	-	332.0	-	334.0	-	333.4	-	-	331.1	-	330.9	-	330.4	-
Boston, Mass. ....	1	-	-	327.1	-	328.2	-	329.3	-	-	324.5	-	325.2	-	325.9	-
Cincinnati, Ohio-Ky.-Ind. ....	1	-	-	333.2	-	333.0	-	335.5	-	-	326.0	-	324.7	-	327.6	-
Denver-Boulder, Colo. ....	1	-	-	364.4	-	362.9	-	361.2	-	-	359.1	-	357.2	-	355.2	355.3
Miami, Fla. (11/77 = 100) .....	1	11/77	-	174.6	-	174.3	-	175.8	-	-	175.7	-	174.5	-	176.1	-
Milwaukee, Wis. ....	1	-	-	333.9	-	332.9	-	330.7	-	-	353.0	-	351.7	-	349.4	-
Northeast, Pa. ....	1	-	-	311.6	-	311.3	-	313.5	-	-	310.6	-	310.2	-	311.9	-
Portland, Ore.-Wash. ....	1	-	-	321.3	-	318.0	-	318.0	-	-	311.0	-	306.3	-	306.1	-
St. Louis, Mo.-Ill. ....	1	-	-	322.4	-	325.7	-	323.8	-	-	319.1	-	320.7	-	319.0	-
San Diego, Calif. ....	1	-	-	381.9	-	385.9	-	387.5	-	-	344.7	-	347.4	-	349.0	-
Seattle-Everett, Wash. ....	1	-	-	327.0	-	326.3	-	325.9	-	-	313.5	-	312.3	-	311.7	-
Washington, D.C.-Md.-Va. ....	1	-	-	331.1	-	332.3	-	334.0	-	-	332.6	-	334.6	-	335.9	-
Alanta, Ga. ....	2	-	335.3	-	338.9	-	339.9	-	342.2	332.6	-	335.4	-	335.9	-	337.8
Buffalo, N.Y. ....	2	-	309.8	-	307.5	-	309.4	-	311.4	295.9	-	292.5	-	294.2	-	296.1
Cleveland, Ohio ....	2	-	348.8	-	352.7	-	352.1	-	351.8	327.5	-	329.9	-	329.3	-	328.9
Dallas-Ft. Worth, Tex. ....	2	-	344.5	-	346.2	-	345.9	-	342.8	338.3	-	339.1	-	338.5	-	335.0
Honolulu, Hawaii ....	2	-	298.5	-	301.5	-	302.2	-	305.4	305.8	-	308.3	-	308.8	-	312.7
Houston, Tex. ....	2	-	336.8	-	332.9	-	334.0	-	331.0	334.1	-	330.5	-	331.7	-	328.5
Kansas City, Mo.-Kansas	2	-	321.8	-	323.9	-	323.7	-	324.7	311.7	-	311.9	-	311.3	-	312.4
Minneapolis-St. Paul, Minn.-Wis. ....	2	-	340.4	-	340.3	-	340.9	-	342.4	336.0	-	334.5	-	334.6	-	335.9
Pittsburgh, Pa. ....	2	-	331.5	-	330.1	-	331.8	-	333.0	312.8	-	309.2	-	310.6	-	311.8
San Francisco-Oakland, Calif. ....	2	-	336.4	-	345.5	-	347.7	-	343.6	331.3	-	339.0	-	341.1	-	337.0
Region <sup>3</sup>																
Northeast .....	2	12/77	174.3	-	175.0	-	176.4	-	177.2	172.1	-	172.2	-	173.5	-	174.3
North Central .....	2	12/77	176.0	-	176.2	-	176.5	-	177.1	172.6	-	172.2	-	172.4	-	173.0
South .....	2	12/77	176.3	-	176.4	-	177.5	-	177.9	176.0	-	175.3	-	176.3	-	176.5
West .....	2	12/77	177.2	-	179.0	-	180.4	-	179.6	175.2	-	176.4	-	177.8	-	177.0
Population size class <sup>3</sup>																
A-1 .....	2	12/77	174.2	-	176.6	-	177.6	-	177.7	170.2	-	171.8	-	172.5	-	172.8
A-2 .....	2	12/77	178.4	-	179.1	-	179.9	-	180.0	175.4	-	175.3	-	176.0	-	176.1
B .....	2	12/77	177.2	-	176.6	-	178.3	-	178.7	174.6	-	173.5	-	175.1	-	175.5
C .....	2	12/77	174.9	-	175.0	-	175.9	-	176.5	175.3	-	174.8	-	175.7	-	176.2
D .....	2	12/77	174.7	-	173.8	-	174.5	-	175.4	176.0	-	174.5	-	175.1	-	175.9
Region/population size class cross classification <sup>3</sup>																
Class A:																
Northeast .....	2	12/77	171.2	-	173.1	-	174.2	-	174.7	167.7	-	168.8	-	169.7	-	170.3
North Central .....	2	12/77	179.4	-	180.7	-	180.3	-	181.0	174.5	-	175.0	-	174.5	-	175.3
South .....	2	12/77	176.5	-	176.7	-	177.6	-	177.9	176.5	-	176.1	-	176.9	-	177.0
West .....	2	11/77	179.3	-	182.0	-	184.2	-	182.6	175.0	-	176.9	-	179.0	-	177.5
Class B:																
Northeast .....	2	12/77	176.7	-	174.7	-	178.0	-	178.3	173.5	-	171.8	-	174.6	-	175.1
North Central .....	2	12/77	174.2	-	172.5	-	174.0	-	176.1	170.5	-	168.1	-	169.5	-	171.5
South .....	2	12/77	178.0	-	178.6	-	180.0	-	179.9	174.7	-	174.6	-	175.7	-	175.6
West .....	2	12/77	178.4	-	178.1	-	179.2	-	178.9	178.9	-	178.3	-	179.3	-	179.0

See footnotes at end of table.

### 31. Continued— Consumer Price Index: U.S. city average and available local area data: all items

(1967 = 100, unless otherwise indicated)

Area <sup>1</sup>	Pricing schedule <sup>2</sup>	Other index base	All Urban Consumers						Urban Wage Earners							
			1985	1986					1985	1986						
			Dec.	Jan.	Aug.	Sept.	Oct.	Nov.	Dec.	Dec.	Jan.	Aug.	Sept.	Oct.	Nov.	Dec.
Class C:																
Northeast .....	2	12/77	184.1	-	182.8	-	183.8	-	186.3	188.8	-	187.2	-	188.1	-	190.5
North Central .....	2	12/77	171.5	-	171.2	-	172.3	-	171.9	168.2	-	167.7	-	168.7	-	168.4
South .....	2	12/77	175.3	-	174.8	-	175.8	-	176.4	176.7	-	175.3	-	176.3	-	176.7
West .....	2	12/77	169.1	-	173.0	-	173.1	-	172.9	167.8	-	171.1	-	171.2	-	171.1
Class D:																
Northeast .....	2	12/77	178.1	-	176.8	-	178.1	-	179.8	177.7	-	176.2	-	177.2	-	178.9
North Central .....	2	12/77	172.6	-	171.4	-	171.7	-	171.6	174.2	-	172.4	-	172.7	-	172.7
South .....	2	12/77	174.5	-	174.3	-	175.4	-	176.6	176.1	-	175.0	-	175.9	-	177.0
West .....	2	12/77	176.2	-	174.9	-	175.3	-	176.3	177.7	-	176.3	-	176.7	-	177.6

<sup>1</sup> Area is generally the Standard Metropolitan Statistical Area (SMSA), exclusive of farms. L.A.-Long Beach, Anaheim, Calif. is a combination of two SMSA's, and N.Y., N.Y.-Northeastern N.J. and Chicago, Ill.-Northwestern Ind. are the more extensive Standard Consolidated Areas. Area definitions are those established by the Office of Management and Budget in 1973, except for Denver-Boulder, Colo. which does not include Douglas County. Definitions do not include revisions made since 1973.

<sup>2</sup> Foods, fuels, and several other items priced every month in all areas; most other goods and services priced as indicated.

M - Every month.

1 - January, March, May, July, September, and November.

2 - February, April, June, August, October, and December.

<sup>3</sup> Regions are defined as the four Census regions.

The population size classes are aggregations of areas which have urban population as defined:

A-1 - More than 4,000,000.

A-2 - 1,250,000 to 4,000,000.

B - 385,000 to 1,250,000

C - 75,000 to 385,000.

D - Less than 75,000.

Population size class A is the aggregation of population size classes A-1 and A-2.

- Data not available.

NOTE: Local area CPI indexes are byproducts of the national CPI program. Because each local index is a small subset of the national index, it has a smaller sample size and is, therefore, subject to substantially more sampling and other measurement error than the national index. As a result, local area indexes show greater volatility than the national index, although their long-term trends are quite similar. Therefore, the Bureau of Labor Statistics strongly urges users to consider adopting the national average CPI for use in escalator clauses.

The revised CPI data for January and February will appear in the April Review.

### 32. Annual data: Consumer Price Index all items and major groups

Series	1978	1979	1980	1981	1982	1983	1984	1985	1986
Consumer Price Index for All Urban Consumers:									
All items:									
Index .....	195.4	217.4	246.8	272.4	289.1	298.4	311.1	322.2	328.4
Percent change .....	7.7	11.3	13.5	10.4	6.1	3.2	4.3	3.6	1.9
Food and beverages:									
Index .....	206.3	228.5	248.0	267.3	278.2	284.4	295.1	302.0	311.8
Percent change .....	9.7	10.8	8.5	7.8	4.1	2.2	3.8	2.3	3.2
Housing:									
Index .....	202.8	227.6	263.3	293.5	314.7	323.1	336.5	349.9	360.2
Percent change .....	8.7	12.2	15.7	11.5	7.2	2.7	4.1	4.0	2.9
Apparel and upkeep:									
Index .....	159.6	166.6	178.4	186.9	191.8	196.5	200.2	206.0	207.8
Percent change .....	3.5	4.4	7.1	4.8	2.6	2.5	1.9	2.9	.9
Transportation:									
Index .....	185.5	212.0	249.7	280.0	291.5	298.4	311.7	319.9	307.5
Percent change .....	4.7	14.3	17.8	12.1	4.1	2.4	4.5	2.6	-3.9
Medical care:									
Index .....	219.4	239.7	265.9	294.5	328.7	357.3	379.5	403.1	433.5
Percent change .....	8.4	9.3	10.9	10.8	11.6	8.7	6.2	6.2	7.5
Entertainment:									
Index .....	176.6	188.5	205.3	221.4	235.8	246.0	255.1	265.0	274.1
Percent change .....	5.3	6.7	8.9	7.8	6.5	4.3	3.7	3.9	3.4
Other goods and services:									
Index .....	183.3	196.7	214.5	235.7	259.9	288.3	307.7	326.6	346.4
Percent change .....	6.4	7.3	9.0	9.9	10.3	10.9	6.7	6.1	6.1
Consumer Price Index for Urban Wage Earners and Clerical Workers:									
All items:									
Index .....	195.3	217.7	247.0	272.3	288.6	297.4	307.6	318.5	323.4
Percent change .....	7.6	11.5	13.5	10.2	6.0	3.0	3.4	3.5	1.5



## 33. Producer Price Indexes, by stage of processing

(1967 = 100)

Grouping	Annual average		1986											
	1985	1986	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
<b>Finished goods</b> .....	293.7	-	296.0	291.9	288.0	287.2	288.9	289.3	287.6	288.1	287.5	290.5	290.7	289.9
Finished consumer goods .....	291.8	-	293.8	288.4	283.4	281.9	284.1	284.5	282.3	283.0	282.7	284.9	285.0	284.2
Finished consumer goods .....	271.2	-	275.0	272.0	271.6	271.9	274.8	275.1	280.4	284.0	282.2	282.9	283.0	282.9
Finished consumer goods excluding foods .....	297.3	-	298.3	291.8	284.6	282.2	284.0	284.4	278.3	277.5	278.1	281.0	281.1	279.9
Nondurable goods less food .....	339.3	-	339.6	328.0	315.4	309.8	313.0	313.5	302.6	301.6	304.8	301.9	302.1	300.5
Durable goods .....	241.5	-	243.5	243.9	243.7	245.7	245.5	245.9	246.2	245.8	242.7	253.6	253.5	252.9
Capital equipment .....	300.5	-	303.9	304.3	304.3	305.6	305.7	306.1	306.4	306.2	304.2	310.1	310.5	310.1
<b>Intermediate materials, supplies, and components</b> .....	318.7	-	317.4	313.5	309.5	307.1	306.7	306.8	304.8	304.5	306.1	304.9	304.9	305.0
Materials and components for manufacturing .....	299.5	-	297.1	296.5	296.4	295.5	295.4	295.1	295.6	296.0	296.2	296.5	296.5	296.2
Materials for food manufacturing .....	258.8	-	252.8	249.2	246.7	244.8	248.7	247.9	251.7	255.5	254.3	253.2	253.2	253.0
Materials for nondurable manufacturing .....	285.9	-	283.8	282.4	282.5	279.3	278.2	277.8	277.7	277.1	277.3	277.7	278.1	277.9
Materials for durable manufacturing .....	320.2	-	313.4	313.1	313.6	313.7	313.2	312.9	313.0	313.6	314.5	315.4	315.0	313.8
Components for manufacturing .....	291.5	-	293.1	293.6	293.7	294.1	294.1	294.1	294.6	294.9	295.1	294.9	295.0	295.2
Materials and components for construction .....	315.2	-	316.2	316.5	317.0	318.3	318.3	317.8	317.9	317.6	317.9	317.3	317.6	317.0
Processed fuels and lubricants .....	548.9	-	540.8	500.8	453.4	428.5	424.2	426.7	401.1	395.0	409.1	395.1	393.2	396.2
Containers .....	311.2	-	311.2	310.9	312.3	312.8	313.6	314.0	314.6	316.2	317.8	318.4	319.6	319.7
Supplies .....	284.2	-	286.6	286.4	286.8	287.2	287.1	287.3	287.2	287.1	287.9	287.5	287.9	288.3
<b>Crude materials for further processing</b> ...	306.1	-	301.0	289.0	281.1	273.7	279.4	276.9	277.7	276.3	275.5	276.7	278.4	274.8
Foodstuffs and feedstuffs .....	235.0	-	231.7	227.2	224.4	220.3	229.9	227.1	234.4	238.1	231.9	233.7	235.9	232.8
Nonfood materials <sup>1</sup> .....	459.2	-	450.6	422.7	403.9	389.4	386.9	384.8	370.8	358.3	369.6	369.8	369.7	365.1
<b>Special groupings</b>														
Finished goods, excluding foods .....	299.0	-	300.7	296.3	291.2	289.9	291.2	291.6	287.4	286.8	286.6	290.5	290.7	289.7
Finished energy goods .....	720.9	-	700.9	629.3	554.1	517.2	534.1	536.4	461.6	456.2	477.2	454.9	452.9	446.8
Finished goods less energy .....	269.2	-	272.7	272.2	272.1	273.1	274.0	274.3	276.4	277.2	275.4	279.7	280.0	279.5
Finished consumer goods less energy .....	261.3	-	264.8	264.0	263.9	264.9	266.1	266.3	268.9	270.0	268.4	272.2	272.4	271.9
Finished goods less food and energy .....	268.7	-	272.1	272.5	272.5	273.9	274.0	274.3	275.0	274.8	273.1	278.8	279.1	278.5
Finished consumer goods less food and energy .....	252.1	-	255.5	256.0	256.0	257.3	257.5	257.7	258.7	258.4	256.9	262.4	262.7	262.0
Consumer nondurable goods less food and energy .....	246.2	-	250.5	251.1	251.2	252.0	252.3	252.5	253.9	253.8	253.6	254.4	254.9	254.2
Intermediate materials less foods and feeds .....	325.0	-	323.6	319.7	315.5	313.0	312.4	312.5	310.4	309.9	311.5	310.4	310.4	310.5
Intermediate foods and feeds .....	232.8	-	232.6	228.9	227.8	227.0	229.3	229.0	230.3	232.1	233.3	229.8	230.9	231.7
Intermediate energy goods .....	528.3	-	520.0	482.0	437.0	413.3	409.1	411.1	386.6	380.7	393.8	380.5	378.7	381.3
Intermediate goods less energy .....	304.0	-	303.4	303.0	303.3	303.1	303.0	302.9	303.3	303.5	304.0	303.9	304.2	304.0
Intermediate materials less foods and energy .....	305.2	-	304.3	304.2	304.5	304.3	304.0	303.8	304.1	304.2	304.7	304.9	305.1	304.8
Crude energy materials .....	748.1	-	732.8	662.9	614.5	577.0	570.6	563.9	528.8	520.4	544.1	539.2	535.3	519.5
Crude materials less energy .....	233.2	-	229.8	226.5	224.7	221.9	229.2	227.3	232.8	232.4	228.5	230.5	232.7	230.9
Crude nonfood materials less energy .....	249.7	-	245.8	246.5	247.9	249.1	249.3	250.1	250.0	235.9	239.2	242.3	244.5	246.9

<sup>1</sup> Crude nonfood materials except fuel.

- Data not available.

### 34. Producer Price indexes, by durability of product

(1967 = 100)

Grouping	Annual average		1986											
	1985	1986	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.	Oct.	Nov.	Dec.
Total durable goods .....	297.3	-	298.1	298.4	298.6	299.7	299.6	299.7	300.0	299.9	299.2	302.3	302.5	302.1
Total nondurable goods .....	317.2	-	316.8	308.4	300.7	296.0	297.9	297.7	294.5	294.2	295.6	294.2	294.6	294.0
Total manufactures .....	304.3	-	304.8	301.1	297.3	296.1	296.7	296.9	295.2	295.5	296.2	297.0	297.2	297.2
Durable .....	298.1	-	299.0	299.3	299.4	300.5	300.4	300.5	300.9	300.8	300.1	303.2	303.4	302.9
Nondurable .....	310.5	-	310.6	302.9	294.9	291.2	292.6	293.0	289.1	289.7	292.0	290.2	290.5	290.9
Total raw or slightly processed goods .....	327.9	-	326.0	316.3	310.3	303.0	306.2	304.2	303.2	300.4	299.2	298.8	299.9	296.3
Durable .....	252.2	-	248.2	251.2	252.4	253.1	252.1	251.2	249.6	252.0	253.2	252.0	254.3	254.7
Nondurable .....	332.4	-	330.6	320.2	313.6	305.8	309.3	307.2	306.2	303.0	301.7	301.4	302.4	298.4

- Data not available.

### 35. Annual data: Producer Price Indexes, by stage of processing

(1967 = 100)

Index	1977	1978	1979	1980	1981	1982	1983	1984	1985
<b>Finished goods:</b>									
Total .....	181.7	195.9	217.7	247.0	269.8	280.7	285.2	291.1	293.7
Consumer goods .....	180.7	194.9	217.9	248.9	271.3	281.0	284.6	290.3	291.8
Capital equipment .....	184.6	199.2	216.5	239.8	264.3	279.4	287.2	294.0	300.5
<b>Intermediate materials, supplies, and components:</b>									
Total .....	201.5	215.6	243.2	280.3	306.0	310.4	312.3	320.0	318.7
Materials and components for manufacturing .....	195.4	208.7	234.4	265.7	286.1	289.8	293.4	301.8	299.5
Materials and components for construction .....	203.4	224.7	247.4	268.3	287.6	293.7	301.8	310.3	315.2
Processed fuels and lubricants .....	282.5	295.3	364.8	503.0	595.4	591.7	564.8	566.2	548.9
Containers .....	188.3	202.8	226.8	254.5	276.1	285.6	286.6	302.3	311.2
Supplies .....	188.7	198.5	218.2	244.5	263.8	272.1	277.1	283.4	284.2
<b>Crude materials for further processing:</b>									
Total .....	209.2	234.4	274.3	304.6	329.0	319.5	323.6	330.8	306.1
Foodstuffs and feedstuffs .....	192.1	216.2	247.9	259.2	257.4	247.8	252.2	259.5	235.0
Nonfood materials except fuel .....	245.0	272.3	330.0	401.0	482.3	473.9	477.4	484.5	459.2
Fuel .....	372.1	426.8	507.6	615.0	751.2	886.1	931.5	931.3	909.6

## 36. U.S. export price indexes by Standard International Trade Classification

(June 1977=100, unless otherwise indicated)

Category	1974 SITC	1984				1985				1986		
		Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.
<b>ALL COMMODITIES (9/83=100)</b> .....		100.2	101.5	99.3	98.1	97.5	97.5	96.5	96.7	97.0	96.7	95.1
<b>Food (3/83=100)</b> .....	0	106.2	109.6	103.5	96.5	95.8	94.0	90.2	93.6	90.5	89.5	77.2
Meat (3/83=100) .....	01	108.9	108.7	105.6	104.4	103.9	104.7	106.1	112.2	111.5	114.7	122.0
Fish (3/83=100) .....	03	99.8	98.7	98.0	98.7	101.0	103.6	102.6	101.8	102.2	106.2	111.2
Grain and grain preparations (3/80=100) .....	04	102.7	107.4	101.2	92.9	92.4	90.3	82.6	87.1	82.1	79.1	59.0
Vegetables and fruit (3/83=100) .....	05	116.2	126.9	125.6	114.7	119.5	120.2	126.9	118.9	115.3	125.8	131.4
Feedstuffs for animals (3/83=100) .....	08	106.9	98.8	83.5	82.4	72.8	68.6	75.7	83.4	88.5	85.5	90.2
Misc. food products (3/83=100) .....	09	104.9	110.6	109.5	108.4	110.6	109.2	108.1	107.7	106.0	104.7	106.6
<b>Beverages and tobacco (6/83=100)</b> .....	1	101.6	101.9	102.8	101.3	99.9	100.1	99.7	98.6	95.6	96.5	96.3
Beverages (9/83=100) .....	11	102.3	102.9	103.3	103.7	104.0	105.3	101.8	100.9	101.9	103.0	102.2
Tobacco and tobacco products (6/83=100) .....	12	101.6	101.8	102.7	101.1	99.5	99.6	99.5	98.4	95.1	95.9	95.8
<b>Crude materials (6/83=100)</b> .....	2	112.5	118.3	105.2	101.4	97.5	96.8	93.3	92.5	95.8	95.6	92.3
Raw hides and skins (6/80=100) .....	21	145.6	154.7	153.7	133.6	121.0	126.2	129.0	139.9	138.9	148.9	138.0
Oilseeds and oleaginous fruit (9/77=100) .....	22	93.9	104.3	79.9	74.8	71.0	71.2	64.2	63.9	66.9	65.8	64.5
Crude rubber (including synthetic and reclaimed) (9/83=100) .....	23	103.3	106.0	104.1	104.0	106.4	106.3	107.1	106.0	106.0	106.1	105.3
Wood .....	24	131.1	129.4	123.8	125.4	128.7	125.7	124.5	128.1	128.7	128.7	129.7
Pulp and waste paper (6/83=100) .....	25	112.5	122.1	120.8	114.2	100.5	96.1	93.8	92.7	98.8	109.7	120.7
Textile fibers .....	26	120.5	125.6	109.4	106.7	102.4	105.8	103.6	97.7	101.6	98.6	74.7
Crude fertilizers and minerals .....	27	146.6	147.7	163.0	163.2	165.6	167.9	169.4	165.5	168.0	166.1	164.3
Metalliferous ores and metal scrap .....	28	100.2	98.5	93.2	92.4	89.2	82.0	80.1	78.7	83.4	80.5	84.6
<b>Mineral fuels</b> .....	3	99.1	99.7	99.7	99.7	100.1	99.2	97.6	96.6	91.9	86.7	85.7
<b>Animal and vegetable oils, fats, and waxes</b> .....	4	129.8	164.5	145.7	147.9	142.0	144.5	114.5	101.4	90.8	84.4	76.5
Fixed vegetable oils and fats (6/83=100) .....	42	133.2	176.4	159.0	156.7	152.9	164.8	128.8	108.7	95.4	95.3	80.8
<b>Chemicals (3/83=100)</b> .....	5	101.4	99.7	98.3	97.7	97.0	96.8	97.1	96.6	96.5	95.4	93.1
Organic chemicals (12/83=100) .....	51	100.2	101.0	97.4	94.7	93.8	96.5	97.1	95.4	93.5	89.3	88.0
Fertilizers, manufactured (3/83=100) .....	56	108.3	96.9	97.4	94.8	92.5	87.9	89.8	90.0	88.6	84.0	77.4
<b>Intermediate manufactured products (9/81=100)</b> .....	-	101.0	101.3	102.0	100.4	99.4	99.2	99.2	99.1	100.3	101.2	102.2
Leather and furskins (9/79=100) .....	6	83.5	81.2	80.8	79.0	82.5	79.2	75.9	78.5	77.8	82.5	84.2
Rubber manufactures .....	61	146.7	147.5	148.9	148.5	150.2	149.0	148.3	148.7	151.0	150.0	150.4
Paper and paperboard products (6/78=100) .....	62	150.2	154.7	160.0	159.5	155.0	151.6	149.6	148.2	152.2	158.7	165.3
Iron and steel (3/82=100) .....	64	95.9	96.1	96.8	96.5	95.5	95.3	95.9	98.2	98.4	99.4	100.2
Nonferrous metals (9/81=100) .....	-	94.2	92.9	90.4	82.5	79.7	79.6	79.8	78.2	80.2	79.1	79.4
Metal manufactures, n.e.s. (3/82=100) .....	-	103.1	104.5	105.1	105.0	105.4	105.2	105.4	104.4	105.3	105.5	105.6
<b>Machinery and transport equipment, excluding military and commercial aircraft (12/78=100)</b> .....	67	138.5	139.4	140.1	141.5	142.3	142.9	143.1	143.3	144.0	144.1	144.4
Power generating machinery and equipment (12/78=100) .....	68	158.4	156.9	160.6	167.5	165.3	167.4	167.1	167.5	169.1	169.2	169.5
Machinery specialized for particular industries (9/78=100) .....	69	152.3	152.8	153.7	153.4	155.0	155.7	156.0	156.2	155.5	154.7	155.0
Metalworking machinery (6/78=100) .....	7	150.8	151.2	151.7	151.9	153.4	155.1	156.3	158.4	159.0	158.9	160.4
General industrial machines and parts n.e.s. (9/78=100) .....	71	148.6	149.0	149.3	150.2	152.4	152.0	152.4	152.2	152.3	153.3	154.4
Office machines and automatic data processing equipment .....	72	101.4	101.5	99.8	101.4	100.9	100.0	99.9	99.4	99.9	99.2	98.8
Telecommunications, sound recording and reproducing equipment .....	73	133.0	132.3	134.4	134.3	133.3	133.3	134.1	134.5	136.5	137.0	137.8
Electrical machinery and equipment .....	74	110.2	112.6	113.8	114.6	114.9	116.1	115.3	113.8	115.1	114.2	114.2
Road vehicles and parts (3/80=100) .....	75	130.2	131.2	131.0	131.8	133.1	133.9	133.8	135.0	135.5	136.4	136.5
Other transport equipment, excl. military and commercial aviation .....	76	183.1	187.7	189.6	191.7	195.5	196.6	199.3	200.7	203.3	205.6	206.0
<b>Other manufactured articles</b> .....	77	100.6	100.4	100.7	99.3	99.5	100.4	100.3	100.3	102.6	103.4	104.1
Apparel (9/83=100) .....	78	101.9	102.1	103.9	103.4	104.7	104.7	105.0	105.3	-	-	-
Professional, scientific, and controlling instruments and apparatus .....	79	171.8	172.0	175.8	171.7	175.5	178.3	178.7	178.8	182.1	183.8	183.8
Photographic apparatus and supplies, optical goods, watches and clocks (12/77=100) .....	8	132.0	131.3	132.7	130.3	128.0	129.1	127.5	128.5	131.6	132.9	132.7
Miscellaneous manufactured articles, n.e.s. .....	84	98.5	97.9	95.2	94.1	92.4	93.1	93.1	92.4	95.6	95.6	97.6
<b>Gold, non-monetary (6/83=100)</b> .....	971	95.8	93.5	81.7	79.5	69.1	75.4	77.4	77.5	81.8	82.2	97.5

- Data not available.



### 37. U.S. import price indexes by Standard International Trade Classification

(June 1977=100, unless otherwise indicated)

Category	1974 SITC	1984	1985				1986			
		Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.
<b>ALL COMMODITIES (9/82=100)</b> .....		95.7	93.5	93.0	92.9	94.2	88.5	83.2	83.9	86.0
<b>Food (9/77=100)</b> .....	0	98.1	98.5	96.8	94.9	102.8	113.4	104.7	109.1	105.3
Meat .....	01	132.3	130.4	118.2	120.6	131.2	122.7	118.5	126.9	134.4
Dairy products and eggs (6/81=100) .....	02	98.4	98.3	97.9	99.1	100.5	106.7	107.1	109.4	111.5
Fish .....	03	133.9	132.9	129.4	129.7	132.7	139.3	144.8	149.6	157.1
Bakery goods, pasta products, grain and grain preparations (9/77=100) .....	04	132.8	131.8	132.3	136.3	141.9	146.9	149.2	154.0	155.3
Fruits and vegetables .....	05	117.2	127.1	129.4	120.2	131.3	119.4	119.4	127.1	125.5
Sugar, sugar preparations, and honey (3/82=100) .....	06	118.5	118.4	122.6	123.1	111.9	124.6	121.6	123.9	124.3
Coffee, tea, cocoa .....	07	58.4	57.0	56.0	54.4	64.6	85.9	69.2	71.8	61.0
<b>Beverages and tobacco</b> .....	1	156.5	156.2	157.1	158.0	162.1	163.2	165.5	165.8	168.0
Beverages .....	11	152.8	154.2	154.3	156.0	159.1	161.8	163.9	165.5	168.2
<b>Crude materials</b> .....	2	98.9	94.0	93.6	91.5	91.2	94.2	95.3	98.1	98.5
Crude rubber (inc. synthetic & reclaimed) (3/84=100) .....	23	83.8	77.6	76.4	68.9	73.2	78.8	75.5	76.9	78.5
Wood (9/81=100) .....	24	104.0	100.7	106.9	101.6	99.4	104.3	106.3	109.4	107.2
Pulp and waste paper (12/81=100) .....	25	93.2	84.0	80.4	76.8	75.8	74.9	79.9	86.0	92.8
Crude fertilizers and crude minerals (12/83=100) .....	27	98.6	100.3	101.7	102.7	102.1	101.5	100.0	100.4	100.2
Metalliferous ores and metal scrap (3/84=100) .....	28	95.6	90.4	87.6	89.5	90.1	94.5	95.6	98.2	95.4
Crude vegetable and animal materials, n.e.s. ....	29	106.4	104.3	104.9	102.5	102.5	103.6	104.4	104.8	104.7
<b>Fuels and related products (6/82=100)</b> .....	3	85.2	82.9	80.9	79.8	79.1	55.3	37.5	33.6	38.4
Petroleum and petroleum products (6/82=100) .....	33	85.2	83.8	81.6	80.3	80.1	54.7	36.1	32.1	37.9
<b>Fats and oils (9/83=100)</b> .....	4	114.9	89.9	76.7	57.6	50.6	41.4	39.3	35.5	51.6
Vegetable oils (9/83=100) .....	42	115.3	89.5	75.9	56.2	48.9	39.3	37.4	33.5	50.0
<b>Chemicals (9/82=100)</b> .....	5	97.1	95.7	94.9	94.5	94.2	94.6	93.3	93.4	93.2
Medicinal and pharmaceutical products (3/84=100) .....	54	94.6	91.6	95.1	95.3	96.7	102.9	104.9	110.0	110.1
Manufactured fertilizers (3/84=100) .....	56	92.9	94.2	82.0	80.8	78.5	79.2	79.7	77.4	79.7
Chemical materials and products, n.e.s. (9/84=100) .....	59	97.5	96.1	95.6	96.9	97.8	99.9	100.3	101.0	102.8
<b>Intermediate manufactured products (12/77=100)</b> .....	6	136.8	133.1	132.4	133.6	133.4	134.0	135.6	138.8	139.4
Leather and furskins .....	61	140.4	135.3	133.3	137.0	141.3	141.6	143.0	147.4	143.3
Rubber manufactures, n.e.s. ....	62	140.5	139.5	138.6	137.3	138.1	136.5	137.7	138.1	138.1
Cork and wood manufactures .....	63	126.1	121.3	121.2	123.4	124.0	130.8	134.3	137.4	142.7
Paper and paperboard products .....	64	157.5	157.6	157.2	157.8	156.5	157.1	157.1	157.5	164.8
Textiles .....	65	132.9	130.4	127.5	126.5	128.1	131.2	132.9	135.1	135.3
Nonmetallic mineral manufactures, n.e.s. ....	66	159.4	154.2	151.7	157.6	162.2	164.2	169.6	178.2	180.2
Iron and steel (9/78=100) .....	67	123.7	121.0	120.1	119.1	118.3	117.3	118.1	119.0	118.5
Nonferrous metals (12/81=100) .....	68	87.3	81.9	82.3	83.7	80.4	79.4	78.9	83.5	81.6
Metal manufactures, n.e.s. ....	69	119.3	117.4	117.8	119.5	121.6	124.4	127.8	129.1	129.1
<b>Machinery and transport equipment (6/81=100)</b> .....	7	102.9	101.6	102.6	103.5	107.2	111.5	115.3	118.1	120.1
Machinery specialized for particular industries (9/78=100) .....	72	98.0	96.2	97.0	101.4	104.9	112.1	115.4	120.1	121.1
Metalworking machinery (3/80=100) .....	73	89.9	86.3	90.5	94.2	98.1	105.0	107.7	110.7	115.7
General industrial machinery and parts, n.e.s. (6/81=100) .....	74	91.3	89.2	91.1	94.3	98.0	103.8	109.0	112.8	113.9
Office machines and automatic data processing equipment (3/80=100) .....	75	92.2	89.6	89.4	90.3	93.7	96.9	101.3	102.5	102.4
Telecommunications, sound recording and reproducing apparatus (3/80=100) .....	76	91.3	90.0	88.8	88.3	88.6	89.4	91.6	93.7	92.6
Electrical machinery and equipment (12/81=100) .....	77	86.4	82.1	83.9	81.4	83.1	84.5	87.5	89.5	92.0
Road vehicles and parts (6/81=100) .....	78	111.3	111.5	112.1	112.7	117.8	123.4	127.1	129.8	133.2
<b>Misc. manufactured articles (3/80=100)</b> .....	8	100.0	97.0	98.0	99.6	100.8	103.3	104.8	109.5	109.6
Plumbing, heating, and lighting fixtures (6/80=100) .....	81	111.6	113.9	114.1	117.8	115.0	120.1	123.5	125.5	125.5
Furniture and parts (6/80=100) .....	82	142.5	137.4	136.7	142.1	142.7	147.0	142.2	145.8	146.9
Clothing (9/77=100) .....	84	138.5	136.7	133.9	134.5	134.5	133.4	135.3	137.8	139.1
Footwear .....	85	142.5	137.4	136.7	142.1	142.7	147.0	142.2	145.8	146.9
Professional, scientific, and controlling instruments and apparatus (12/79=100) .....	87	92.9	89.2	92.3	98.8	102.4	106.4	112.5	118.3	119.1
Photographic apparatus and supplies, optical goods, watches, and clocks (3/80=100) .....	88	91.3	88.9	89.5	91.1	94.5	99.3	103.2	106.9	107.7
Misc. manufactured articles, n.e.s. (6/82=100) .....	89	96.3	91.2	95.2	96.4	97.9	102.1	103.4	112.3	111.0
<b>Gold, non-monetary (6/82=100)</b> .....	971	103.6	90.1	98.3	101.1	101.0	106.7	107.3	126.9	123.3

**38. U.S. export price indexes by end-use category**

(September 1983 = 100 unless otherwise indicated)

Category	Per-centage of 1980 trade value	1984	1985				1986			
		Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.
Foods, feeds, and beverages .....	16.294	83.0	81.5	80.9	76.2	77.5	75.5	74.7	66.0	68.4
Raw materials .....	30.696	99.1	97.6	97.2	96.5	95.9	96.0	94.9	93.3	94.8
Raw materials, nondurable .....	21.327	101.4	99.6	99.5	98.7	97.9	97.5	96.1	93.7	95.4
Raw materials, durable .....	9.368	93.3	92.6	91.6	91.1	91.0	92.5	91.9	92.5	93.2
Capital goods (12/82=100) .....	30.186	105.6	106.2	106.6	106.6	106.6	107.4	107.5	107.7	108.3
Automotive vehicles, parts and engines (12/82=100) .....	7.483	105.7	106.7	108.0	108.1	109.2	109.5	110.4	110.8	111.8
Consumer goods .....	7.467	100.8	100.9	101.1	101.9	101.4	103.7	104.5	104.5	105.7
Durables .....	3.965	99.3	99.1	99.2	100.4	99.5	101.8	101.8	102.1	102.7
Nondurables .....	3.501	102.3	102.7	103.0	103.3	103.3	105.5	107.2	106.9	108.5

**39. U.S. Import price indexes by end-use category**

(December 1982=100)

Category	Per-centage of 1980 trade value	1984	1985				1986			
		Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.
Foods, feeds, and beverages .....	7.477	101.8	102.1	100.4	99.0	106.0	115.8	108.2	112.3	109.2
Petroleum and petroleum products, excl. natural gas .....	31.108	85.7	84.4	82.1	80.9	80.5	55.4	36.8	32.6	38.3
Raw materials, excluding petroleum .....	19.205	101.1	96.3	95.8	95.4	93.9	94.5	94.0	95.3	94.9
Raw materials, nondurable .....	9.391	100.7	95.0	93.9	93.5	91.8	91.1	89.7	89.5	89.7
Raw materials, durable .....	9.814	101.8	97.7	97.8	97.4	96.2	98.1	98.7	101.4	100.3
Capital goods .....	13.164	97.8	94.8	96.3	97.6	100.0	102.8	106.7	109.4	110.8
Automotive vehicles, parts and engines .....	11.750	105.2	105.4	105.9	106.4	111.4	115.6	119.0	121.0	123.5
Consumer goods .....	14.250	101.1	99.5	99.4	101.0	102.4	104.5	106.5	110.1	110.6
Durable .....	5.507	98.5	97.0	97.0	98.9	100.7	103.4	106.5	111.2	111.7
Nondurable .....	8.743	104.6	103.0	102.5	103.9	104.7	106.0	106.6	108.6	109.2

**40. U.S. export price indexes by Standard Industrial Classification <sup>1</sup>**

Industry group	1984	1985				1986			
	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.
Manufacturing:									
Food and kindred products (6/83=100) .....	103.3	99.5	99.5	96.7	98.1	97.0	95.0	95.2	97.6
Lumber and wood products, except furniture (6/83=100) .....	97.9	99.9	99.5	98.3	101.2	101.5	101.2	102.1	105.7
Furniture and fixtures (9/83=100) .....	104.9	105.2	106.5	107.1	108.4	109.2	109.7	110.1	110.4
Paper and allied products (3/81=100) .....	103.6	97.1	94.7	93.2	92.1	95.7	101.5	106.1	108.7
Chemicals and allied products (12/84=100) .....	100.7	100.3	99.6	99.7	99.2	98.9	98.3	96.2	95.9
Petroleum and coal products (12/83=100) .....	100.4	101.3	102.7	102.0	99.1	93.5	83.1	83.1	82.2
Primary metal products (3/82=100) .....	90.4	87.9	87.5	88.1	87.9	89.8	89.8	90.7	89.9
Machinery, except electrical (9/78=100) .....	139.9	140.4	140.5	140.6	140.5	140.6	140.3	140.5	140.7
Electrical machinery (12/80=100) .....	111.1	111.3	112.4	111.9	111.2	112.6	112.3	112.6	113.7
Transportation equipment (12/78=100) .....	158.8	160.4	161.8	162.6	164.1	165.1	167.1	167.4	169.4
Scientific instruments; optical goods; clocks (6/77=100) .....	153.0	154.9	156.6	156.2	156.7	159.7	161.2	161.5	162.3

<sup>1</sup> SIC - based classification.

#### 41. U.S. Import price indexes by Standard Industrial Classification <sup>1</sup>

Industry group	1984	1985				1986				
	Dec.	Mar.	June	Sept.	Dec.	Mar.	June	Sept.	Dec.	
<b>Manufacturing:</b>										
Food and kindred products (6/77=100) .....	122.6	118.8	115.0	114.2	115.1	117.7	115.6	118.0	122.4	108.0
Textile mill products (9/82=100) .....	104.7	102.8	101.0	100.4	101.8	104.7	106.4	107.1	108.0	139.3
Apparel and related products (6/77=100) .....	138.2	135.6	133.0	133.9	134.4	133.4	135.1	137.8	139.3	127.9
Lumber and wood products, except furniture (6/77=100) .....	120.0	116.3	120.6	117.5	115.8	122.1	124.8	127.9	127.9	105.6
Furniture and fixtures (6/80=100) .....	95.6	93.9	96.1	97.7	98.2	101.2	103.5	105.4	105.6	150.3
Paper and allied products (6/77=100) .....	145.5	141.5	139.8	138.7	137.4	137.6	139.4	142.2	150.3	102.4
Chemicals and allied products (9/82=100) .....	98.2	95.3	93.9	93.3	95.8	98.6	102.1	103.8	102.4	101.9
Rubber and miscellaneous plastic products (12/80=100) .....	98.0	96.9	96.7	96.6	97.5	100.9	100.6	101.9	102.1	148.7
Leather and leather products .....	144.2	139.1	138.9	142.3	144.0	145.8	144.6	147.7	148.7	84.0
Primary metal products (6/81=100) .....	87.8	84.1	84.1	84.3	82.6	82.0	82.4	84.9	84.0	111.1
Fabricated metal products (12/84=100) .....	100.0	99.0	99.1	101.0	102.6	104.9	108.5	110.3	111.1	114.2
Machinery, except electrical (3/80=100) .....	94.1	91.8	93.4	96.6	100.0	105.5	109.0	112.5	114.2	103.6
Electrical machinery (9/84=100) .....	98.6	95.1	95.8	94.5	95.8	97.0	100.2	102.6	103.6	133.2
Transportation equipment (6/81=100) .....	112.9	113.1	114.2	114.8	119.6	123.9	128.0	130.4	133.2	114.0
Scientific instruments; optical goods; clocks (12/79=100) .....	93.2	90.7	91.7	94.6	98.8	103.9	109.1	113.8	114.0	108.1
Miscellaneous manufactured commodities (9/82=100) .....	96.4	95.1	95.1	96.6	98.7	99.9	101.7	106.9	108.1	

<sup>1</sup> SIC - based classification.

#### 42. Indexes of productivity, hourly compensation, and unit costs, quarterly data seasonally adjusted

(1977=100)

Item	Annual average	Quarterly Indexes										
		1985	1984			1985				1986		
			II	III	IV	I	II	III	IV	I	II	III
<b>Business:</b>												
Output per hour of all persons .....	106.4	105.6	105.5	105.5	105.7	106.4	107.3	106.4	107.3	107.4	107.3	
Compensation per hour .....	175.3	167.1	169.0	170.6	172.3	174.5	176.4	178.0	179.1	180.4	181.7	
Real compensation per hour .....	98.8	97.9	98.1	98.2	98.4	98.6	99.0	99.0	99.2	100.2	100.4	
Unit labor costs .....	164.8	158.3	160.2	161.7	163.1	164.0	164.4	167.3	167.0	168.0	169.3	
Unit nonlabor payments .....	159.7	156.7	157.0	157.7	158.3	160.0	161.4	159.6	162.2	161.9	163.4	
Implicit price deflator .....	163.0	157.7	159.0	160.3	161.4	162.6	163.4	164.6	165.3	165.8	167.2	
<b>Nonfarm business:</b>												
Output per hour of all persons .....	104.8	104.6	104.4	104.3	104.4	104.9	105.4	104.5	105.6	105.7	105.7	
Compensation per hour .....	174.6	166.9	168.7	170.4	172.1	174.0	175.4	177.0	178.3	179.3	180.4	
Real compensation per hour .....	98.4	97.8	97.9	98.1	98.3	98.3	98.5	98.4	98.8	99.7	99.6	
Unit labor costs .....	166.7	159.5	161.5	163.3	164.8	165.9	166.3	169.3	168.8	169.6	170.7	
Unit nonlabor payments .....	160.6	156.4	157.2	157.9	158.9	160.8	163.0	160.3	163.9	163.7	165.9	
Implicit price deflator .....	164.6	158.4	160.0	161.4	162.7	164.1	165.2	166.2	167.1	167.5	169.0	
<b>Nonfinancial corporations:</b>												
Output per hour of all employees .....	106.8	105.9	105.5	105.8	106.0	106.5	107.8	107.0	106.9	106.8	106.9	
Compensation per hour .....	172.3	164.8	166.6	168.3	169.9	171.6	173.1	174.5	175.4	176.1	176.8	
Real compensation per hour .....	97.0	96.5	96.7	96.9	97.0	96.9	97.2	97.0	97.1	97.8	97.7	
Total unit costs .....	165.8	160.1	162.6	163.8	164.9	165.8	165.0	167.2	168.3	168.6	169.8	
Unit labor costs .....	161.2	155.7	157.9	159.1	160.3	161.1	160.5	163.0	164.0	164.8	165.4	
Unit nonlabor costs .....	179.1	173.1	176.4	177.5	178.5	179.8	178.3	179.8	181.1	179.9	182.6	
Unit profits .....	133.1	138.5	130.3	130.5	129.3	130.2	141.7	131.2	131.7	132.3	135.8	
Unit nonlabor payments .....	163.0	161.0	160.3	161.0	161.3	162.5	165.5	162.8	163.8	163.2	166.2	
Implicit price deflator .....	161.8	157.5	158.7	159.8	160.6	161.6	162.2	162.9	164.0	164.3	165.7	
<b>Manufacturing:</b>												
Output per hour of all persons .....	121.7	115.7	117.8	118.2	119.3	121.7	123.0	122.9	123.7	124.7	125.8	
Compensation per hour .....	176.7	166.8	169.1	171.5	173.8	175.6	178.1	179.3	180.2	181.4	182.5	
Real compensation per hour .....	99.5	97.7	98.1	98.7	99.2	99.2	100.0	99.7	99.8	100.8	100.8	
Unit labor costs .....	145.1	144.2	143.5	145.1	145.7	144.3	144.8	145.8	145.7	145.5	145.1	



**43. Annual indexes of multifactor productivity and related measures, selected years**

(1977=100)

Item	1960	1970	1973	1974	1976	1978	1979	1980	1981	1982	1983	1984
<b>Private business</b>												
Productivity:												
Output per hour of all persons .....	67.3	88.4	95.9	93.8	98.4	100.8	99.5	99.2	100.6	100.3	103.0	105.4
Output per unit of capital services .....	102.4	102.0	105.3	98.8	97.2	102.0	99.8	94.2	92.4	86.6	88.3	92.4
Multifactor productivity .....	78.2	92.9	99.1	95.6	98.0	101.2	99.7	97.4	97.7	95.2	97.6	100.6
Output .....	55.3	80.2	93.0	91.2	94.5	105.8	107.9	106.6	108.9	105.4	109.9	118.9
Inputs:												
Hours of all persons .....	82.2	90.8	96.9	97.2	96.1	105.0	108.4	107.5	108.2	105.2	106.7	112.8
Capital services .....	54.0	78.7	88.3	92.4	97.2	103.8	108.0	113.1	117.8	121.7	124.4	128.7
Combined units of labor and capital input .....	70.7	86.3	93.8	95.5	96.5	104.5	108.2	109.4	111.5	110.7	112.6	118.1
Capital per hour of all persons .....	65.7	86.7	91.1	95.0	101.2	98.8	99.7	105.3	108.8	115.7	116.7	114.1
<b>Private nonfarm business</b>												
Productivity:												
Output per hour of all persons .....	70.7	89.2	96.4	94.3	98.5	100.8	99.2	98.7	99.6	99.1	102.4	104.3
Output per unit of capital services .....	103.7	102.8	106.0	99.2	97.3	101.9	99.0	93.4	91.1	85.1	87.3	90.9
Multifactor productivity .....	80.9	93.7	99.6	96.0	98.1	101.2	99.1	96.9	96.7	94.1	97.0	99.6
Output .....	54.4	79.9	92.9	91.1	94.4	106.0	107.9	106.6	108.4	104.8	110.0	118.9
Inputs:												
Hours of all persons .....	77.0	89.6	96.3	96.6	95.8	105.1	108.8	108.0	108.8	105.7	107.4	114.0
Capital services .....	52.5	77.7	87.6	91.9	97.0	104.0	109.0	114.1	119.0	123.2	126.1	130.8
Combined units of labor and capital input .....	67.3	85.3	93.3	95.0	96.2	104.7	108.9	110.0	112.2	111.4	113.5	119.4
Capital per hour of all persons .....	68.2	86.8	91.0	95.1	101.3	98.9	100.1	105.6	109.4	116.5	117.4	114.7
<b>Manufacturing</b>												
Productivity:												
Output per hour of all persons .....	62.2	80.8	93.4	90.6	97.1	101.5	101.4	101.4	103.6	105.9	112.0	116.6
Output per unit of capital services .....	102.5	98.6	111.4	101.2	96.2	102.1	99.7	91.2	89.2	81.8	86.9	94.4
Multifactor productivity .....	71.9	85.2	97.9	93.3	96.8	101.7	101.0	98.7	99.8	99.2	105.1	110.7
Output .....	52.5	78.6	96.3	91.7	93.1	106.0	108.1	103.2	104.8	98.4	104.7	116.0
Inputs:												
Hours of all persons .....	84.4	97.3	103.1	101.2	95.9	104.4	106.5	101.7	101.1	92.9	93.5	99.5
Capital services .....	51.2	79.7	86.4	90.6	96.7	103.7	108.4	113.1	117.5	120.3	120.6	122.9
Combined units of labor and capital inputs .....	73.0	92.2	98.4	98.3	96.1	104.2	107.0	104.5	105.0	99.2	99.7	104.8
Capital per hour of all persons .....	60.7	82.0	83.8	89.5	100.9	99.4	101.7	111.2	116.2	129.4	129.0	123.6

**44. Annual indexes of productivity, hourly compensation, unit costs, and prices, selected years**

(1977=100)

Item	1960	1970	1973	1974	1976	1978	1979	1980	1981	1982	1983	1984	1985
<b>Business:</b>													
Output per hour of all persons .....	67.6	88.4	95.9	93.9	98.3	100.8	99.6	99.3	100.7	100.3	103.0	105.3	106.4
Compensation per hour .....	33.6	57.8	70.9	77.6	92.8	108.5	119.1	131.5	143.7	154.9	161.5	168.1	175.3
Real compensation per hour .....	68.9	90.2	96.7	95.4	98.7	100.8	99.4	96.7	95.7	97.3	98.2	98.1	98.8
Unit labor costs .....	49.7	65.4	73.9	82.7	94.3	107.6	119.5	132.5	142.7	154.5	156.8	159.7	164.8
Unit nonlabor payments .....	46.4	59.4	72.5	76.4	93.3	106.7	112.5	118.7	134.6	136.6	146.3	156.3	159.7
Implicit price deflator .....	48.5	63.2	73.4	80.5	94.0	107.3	117.0	127.6	139.8	148.1	153.0	158.5	163.0
<b>Nonfarm business:</b>													
Output per hour of all persons .....	71.0	89.3	96.4	94.3	98.5	100.8	99.3	98.8	99.8	99.2	102.4	104.3	104.8
Compensation per hour .....	35.3	58.2	71.2	78.0	92.8	108.6	118.9	131.3	143.6	154.8	161.5	167.9	174.6
Real compensation per hour .....	72.3	90.8	97.1	95.9	98.8	100.9	99.2	96.6	95.7	97.2	98.2	98.0	98.4
Unit labor costs .....	49.7	65.2	73.9	82.7	94.3	107.7	119.7	132.9	144.0	156.0	157.7	161.0	166.7
Unit nonlabor payments .....	46.3	60.0	69.3	74.0	93.0	105.6	110.5	118.5	133.5	136.5	148.1	156.1	160.6
Implicit price deflator .....	48.5	63.4	72.3	79.7	93.8	107.0	116.5	127.8	140.3	149.2	154.3	159.3	164.6
<b>Nonfinancial corporations:</b>													
Output per hour of all employees .....	73.4	91.1	97.5	94.6	98.4	100.6	99.8	99.1	99.6	100.4	103.5	105.6	106.8
Compensation per hour .....	36.9	59.2	71.6	78.2	92.9	108.4	118.7	131.1	143.3	154.3	159.9	165.9	172.3
Real compensation per hour .....	75.5	92.4	97.6	96.1	98.9	100.7	99.1	96.4	95.5	96.9	97.3	96.8	97.0
Unit labor costs .....	50.2	65.0	73.4	82.6	94.3	107.8	119.0	132.3	143.8	153.8	154.5	157.0	161.2
Unit nonlabor payments .....	51.5	60.1	68.9	73.1	93.8	104.4	108.4	118.6	137.8	142.1	152.1	160.1	163.0
Implicit price deflator .....	50.7	63.3	71.9	79.4	94.2	106.6	115.4	127.6	141.7	149.8	153.7	158.1	161.8
<b>Manufacturing:</b>													
Output per hour of all persons .....	62.2	80.8	93.4	90.6	97.1	101.5	101.4	101.4	103.6	105.9	112.0	116.6	121.7
Compensation per hour .....	36.5	57.4	68.8	76.2	92.1	108.2	118.6	132.4	145.2	157.5	162.4	168.2	176.7
Real compensation per hour .....	74.8	89.5	93.8	93.6	98.1	100.5	99.1	97.4	96.7	98.9	98.8	98.1	99.5
Unit labor costs .....	58.7	71.0	73.7	84.1	94.9	106.6	117.0	130.6	140.1	148.7	145.0	144.2	145.1
Unit nonlabor payments .....	60.0	64.1	70.7	67.7	93.5	101.9	98.9	97.8	111.8	114.0	128.5	136.9	134.4
Implicit price deflator .....	59.1	69.0	72.8	79.3	94.5	105.2	111.7	121.0	131.8	138.6	140.2	142.1	142.0

45. Unemployment rates in nine countries, quarterly data seasonally adjusted

Country	Annual average		1985			1986			
	1985	1986	II	III	IV	I	II	III	IV
<b>Total labor force basis</b>									
United States .....	7.1	6.9	7.1	7.1	7.0	7.0	7.0	6.8	6.8
Canada .....	10.4	-	10.5	10.2	10.1	9.7	9.5	9.6	-
Australia .....	8.2	-	8.4	8.1	7.8	7.9	-	-	-
Japan .....	2.6	-	2.5	2.6	2.9	2.6	2.8	-	-
France .....	10.1	-	10.1	10.2	9.9	10.0	10.3	10.4	-
Germany .....	7.7	-	7.8	7.7	7.7	7.6	7.5	7.3	-
Great Britain .....	13.0	-	13.0	13.2	12.8	13.0	13.1	-	-
Italy <sup>1, 2</sup> .....	5.9	-	5.7	5.9	6.2	6.2	6.3	6.0	-
Sweden .....	2.8	-	2.9	2.7	2.7	2.8	2.6	2.6	-
<b>Civilian labor force basis</b>									
United States .....	7.2	7.0	7.2	7.2	7.1	7.1	7.1	6.9	6.9
Canada .....	10.5	-	10.6	10.2	10.1	9.7	9.6	9.7	-
Australia .....	8.3	-	8.5	8.2	7.9	8.0	-	-	-
Japan .....	2.6	-	2.6	2.7	2.9	2.7	2.8	-	-
France .....	10.4	-	10.4	10.4	10.1	10.2	10.5	10.7	-
Germany .....	7.9	-	7.9	7.9	7.8	7.8	7.6	7.5	-
Great Britain .....	13.1	-	13.2	13.4	13.0	13.1	13.3	-	-
Italy .....	6.0	-	5.8	6.0	6.3	6.3	6.5	6.1	-
Sweden .....	2.8	-	2.9	2.8	2.7	2.8	2.6	2.6	-

<sup>1</sup> Quarterly rates are for the first month of the quarter.

<sup>2</sup> Major changes in the Italian labor force survey, introduced in 1977, resulted in a large increase in persons enumerated as unemployed. However, many persons reported that they had not actively sought work in the past 30 days, and they have been provisionally excluded for comparability with U.S. concepts. Inclusion of such persons would more

than double the Italian unemployment rate shown.

- Data not available.

NOTE: Quarterly figures for France, Germany, and Great Britain are calculated by applying annual adjustment factors to current published data and therefore should be viewed as less precise indicators of unemployment under U.S. concepts than the annual figures.

## 46. Annual data: Employment status of the civilian working-age population, 10 countries

(Numbers in thousands)

Employment status and country	1977	1978	1979	1980	1981	1982	1983	1984	1985
<b>Labor force</b>									
United States .....	99,009	102,251	104,962	106,940	108,670	110,204	111,550	113,544	115,461
Canada .....	10,500	10,895	11,231	11,573	11,904	11,958	12,183	12,399	12,639
Australia .....	6,358	6,443	6,519	6,693	6,810	6,910	6,997	7,133	7,272
Japan .....	53,820	54,610	55,210	55,740	56,320	56,980	58,110	58,480	58,820
France .....	22,300	22,470	22,670	22,790	22,930	23,150	23,130	23,290	23,330
Germany .....	25,870	26,000	26,250	26,520	26,650	26,710	26,740	26,880	27,090
Great Britain .....	25,430	25,620	25,710	25,870	25,870	25,880	26,010	26,530	26,960
Italy .....	20,530	20,630	20,910	21,210	21,410	21,450	21,610	21,680	21,800
Netherlands .....	4,950	5,010	5,100	5,290	5,500	5,560	5,720	5,740	5,690
Sweden .....	4,168	4,203	4,262	4,312	4,326	4,350	4,369	4,385	4,418
<b>Participation rate</b>									
United States .....	62.3	63.2	63.7	63.8	63.9	64.0	64.0	64.4	64.8
Canada .....	61.6	62.7	63.4	64.1	64.8	64.1	64.4	64.8	65.2
Australia .....	62.7	62.0	61.7	62.2	62.0	61.8	61.5	61.5	61.8
Japan .....	62.5	62.8	62.7	62.6	62.6	62.7	63.1	62.7	62.3
France .....	57.6	57.5	57.5	57.2	57.1	57.1	56.6	56.6	56.4
Germany .....	53.4	53.3	53.3	53.2	52.9	52.7	52.5	52.6	53.2
Great Britain .....	63.2	63.3	63.2	63.2	62.2	61.9	61.9	62.7	63.6
Italy .....	48.0	47.7	47.8	48.0	48.0	47.4	47.2	47.3	47.2
Netherlands .....	49.0	48.8	49.0	50.0	51.3	51.2	52.1	52.0	51.2
Sweden .....	65.9	66.1	66.6	67.0	66.8	66.8	66.7	66.8	67.2
<b>Employed</b>									
United States .....	92,017	96,048	98,824	99,303	100,397	99,526	100,834	105,005	107,150
Canada .....	9,651	9,987	10,395	10,708	11,006	10,644	10,734	11,000	11,311
Australia .....	6,000	6,038	6,111	6,284	6,416	6,415	6,300	6,490	6,670
Japan .....	52,720	53,370	54,040	54,600	55,060	55,620	56,550	56,870	57,260
France .....	21,180	21,260	21,300	21,320	21,200	21,230	21,170	20,980	20,910
Germany .....	24,970	25,130	25,470	25,750	25,560	25,130	24,750	24,790	24,960
Great Britain .....	23,840	24,040	24,360	24,100	23,190	22,820	22,680	23,100	23,420
Italy .....	19,800	19,870	20,100	20,380	20,480	20,430	20,470	20,390	20,490
Netherlands .....	4,700	4,750	4,830	4,960	4,990	4,930	4,890	4,880	4,890
Sweden .....	4,093	4,109	4,174	4,226	4,218	4,213	4,218	4,249	4,293
<b>Employment-population ratio</b>									
United States .....	57.9	59.3	59.9	59.2	59.0	57.8	57.9	59.5	60.1
Canada .....	56.6	57.5	58.7	59.3	59.9	57.0	56.7	57.4	58.4
Australia .....	59.2	58.1	57.9	58.4	58.4	57.3	55.4	56.0	56.6
Japan .....	61.2	61.3	61.4	61.3	61.2	61.2	61.4	61.0	60.6
France .....	54.7	54.4	54.0	53.5	52.8	52.3	51.8	51.0	50.5
Germany .....	51.6	51.5	51.7	51.7	50.8	49.6	48.6	48.5	49.0
Great Britain .....	59.3	59.4	59.8	58.9	55.8	54.6	54.0	54.6	55.2
Italy .....	46.3	45.9	45.9	46.1	45.9	45.2	44.7	44.5	44.4
Netherlands .....	46.5	46.3	46.4	46.9	46.5	45.4	44.5	44.2	44.0
Sweden .....	64.8	64.6	65.3	65.6	65.1	64.7	64.4	64.7	65.3
<b>Unemployed</b>									
United States .....	6,991	6,202	6,137	7,637	8,273	10,678	10,717	8,539	8,312
Canada .....	849	908	836	865	898	1,314	1,448	1,399	1,328
Australia .....	358	405	408	409	394	495	697	642	602
Japan .....	1,100	1,240	1,170	1,140	1,260	1,360	1,560	1,610	1,560
France .....	1,120	1,210	1,370	1,470	1,730	1,920	1,960	2,310	2,420
Germany .....	900	870	780	770	1,090	1,580	1,990	2,090	2,130
Great Britain .....	1,590	1,580	1,350	1,770	2,680	3,060	3,330	3,430	3,540
Italy .....	740	760	810	830	920	1,020	1,140	1,280	1,310
Netherlands .....	250	260	270	330	510	630	830	860	800
Sweden .....	75	94	88	86	108	137	151	136	125
<b>Unemployment rate</b>									
United States .....	7.1	6.1	5.8	7.1	7.6	9.7	9.6	7.5	7.2
Canada .....	8.1	8.3	7.4	7.5	7.5	11.0	11.9	11.3	10.5
Australia .....	5.6	6.3	6.3	6.1	5.8	7.2	10.0	9.0	8.3
Japan .....	2.0	2.3	2.1	2.0	2.2	2.4	2.7	2.8	2.6
France .....	5.0	5.4	6.0	6.4	7.5	8.3	8.5	9.9	10.4
Germany .....	3.5	3.4	3.0	2.9	4.1	5.9	7.4	7.8	7.9
Great Britain .....	6.3	6.2	5.3	6.8	10.4	11.8	12.8	12.9	13.1
Italy .....	3.6	3.7	3.9	3.9	4.3	4.8	5.3	5.9	6.0
Netherlands .....	5.0	5.2	5.3	6.2	9.3	11.3	14.5	15.0	14.1
Sweden .....	1.8	2.2	2.1	2.0	2.5	3.1	3.5	3.1	2.8



## 47. Annual indexes of productivity and related measures, 12 countries

(1977=100)

Item and country	1960	1970	1973	1975	1977	1978	1980	1981	1982	1983	1984	1985
<b>Output per hour</b>												
United States .....	62.2	80.8	93.4	92.9	100.0	101.5	101.4	103.6	105.9	112.9	118.5	121.8
Canada .....	50.3	76.8	91.3	91.0	100.0	101.4	101.9	104.0	101.0	107.6	111.5	115.1
Japan .....	23.2	64.8	83.1	87.7	100.0	108.0	122.7	127.2	135.0	142.3	152.2	159.9
Belgium .....	32.8	60.0	78.7	86.3	100.0	106.2	119.3	127.2	132.8	141.0	145.5	-
Denmark .....	37.2	65.5	83.2	94.6	100.0	101.5	112.3	114.2	114.6	117.3	118.3	118.4
France .....	36.4	69.6	82.2	88.5	100.0	105.7	112.0	116.4	123.5	129.3	135.0	140.2
Germany .....	40.3	71.2	84.0	90.1	100.0	103.1	108.6	111.0	112.6	119.0	124.7	131.9
Italy .....	36.5	72.7	90.9	91.1	100.0	103.0	116.9	121.0	123.4	126.6	135.0	139.1
Netherlands .....	32.4	64.3	81.5	86.2	100.0	106.4	113.9	116.9	119.4	126.1	139.3	-
Norway .....	54.6	81.7	94.6	96.8	100.0	101.8	109.3	109.7	112.6	119.2	122.3	125.0
Sweden .....	42.3	80.7	94.8	100.2	100.0	102.8	112.7	113.2	116.5	125.5	132.6	135.2
United Kingdom .....	53.8	77.6	92.9	94.3	100.0	101.5	101.2	107.9	112.7	121.2	126.2	129.7
<b>Output</b>												
United States .....	52.5	78.6	96.3	84.9	100.0	106.0	103.2	104.8	98.4	105.6	117.9	121.0
Canada .....	41.5	75.1	94.6	92.3	100.0	104.9	107.7	108.8	96.4	101.7	110.1	115.2
Japan .....	19.2	69.9	91.9	86.2	100.0	106.7	124.1	129.8	137.3	148.2	165.2	175.8
Belgium .....	41.7	78.1	95.8	92.1	100.0	101.6	107.2	105.9	109.1	110.7	112.8	-
Denmark .....	49.2	82.0	95.9	95.0	100.0	99.7	110.1	106.6	108.3	112.2	118.6	122.3
France .....	35.4	73.3	88.6	90.0	100.0	103.4	106.6	105.9	106.0	107.4	108.4	109.0
Germany .....	50.0	86.6	96.1	91.0	100.0	101.8	106.6	104.9	102.4	103.5	107.4	113.0
Italy .....	37.4	78.0	90.5	86.9	100.0	101.8	115.4	114.3	111.6	109.2	113.2	115.3
Netherlands .....	44.8	84.4	95.8	92.7	100.0	102.8	106.6	106.7	105.0	105.3	110.8	-
Norway .....	55.1	87.0	99.5	101.0	100.0	98.2	101.3	100.1	99.8	98.8	101.3	103.7
Sweden .....	52.6	92.5	100.3	106.1	100.0	97.3	104.0	100.6	100.1	105.2	112.4	114.6
United Kingdom .....	71.0	94.7	104.7	96.2	100.0	100.6	91.7	86.2	86.4	88.9	92.4	95.0
<b>Total hours</b>												
United States .....	84.4	97.3	103.1	91.4	100.0	104.4	101.7	101.1	92.9	93.5	99.5	99.3
Canada .....	82.6	97.7	103.6	101.4	100.0	103.4	105.7	104.6	95.4	94.6	98.7	100.1
Japan .....	82.7	107.9	110.7	98.2	100.0	98.8	101.2	102.0	101.7	104.2	108.5	110.0
Belgium .....	127.0	130.1	121.8	106.7	100.0	95.7	89.9	83.3	82.1	78.5	77.5	-
Denmark .....	132.4	125.1	115.2	100.4	100.0	98.3	98.1	93.4	94.5	95.7	100.2	103.3
France .....	97.2	105.3	107.8	101.7	100.0	97.8	95.2	91.0	85.9	83.0	80.3	77.8
Germany .....	123.8	121.7	114.4	101.0	100.0	98.7	98.1	94.6	91.0	87.0	86.2	85.7
Italy .....	102.3	107.4	99.6	95.4	100.0	98.8	98.7	94.5	90.4	86.2	83.9	82.9
Netherlands .....	138.4	131.2	117.6	107.6	100.0	96.6	93.6	91.2	88.0	83.5	79.5	-
Norway .....	101.0	106.4	105.1	104.3	100.0	96.5	92.6	91.3	88.6	82.9	82.8	83.0
Sweden .....	124.4	114.6	105.7	105.9	100.0	94.6	92.3	88.9	85.9	83.9	84.8	84.8
United Kingdom .....	131.9	122.1	112.7	102.1	100.0	99.1	90.7	79.9	76.7	73.3	73.2	73.3
<b>Compensation per hour</b>												
United States .....	36.5	57.3	68.8	85.1	100.0	108.2	132.4	145.2	157.5	163.2	169.1	176.6
Canada .....	27.1	46.5	59.2	78.2	100.0	106.7	130.6	151.5	167.1	179.3	182.1	191.4
Japan .....	8.9	33.9	55.1	84.2	100.0	106.6	120.7	129.8	136.6	140.7	144.8	148.3
Belgium .....	13.8	34.9	53.5	78.9	100.0	107.8	130.4	144.6	152.0	163.7	176.6	-
Denmark .....	12.6	36.3	56.1	81.0	100.0	110.2	135.9	149.6	162.9	174.3	183.9	195.5
France .....	15.1	36.6	52.3	76.7	100.0	113.5	147.5	170.3	200.8	226.2	246.5	262.7
Germany .....	18.8	48.0	67.5	84.5	100.0	107.8	125.6	134.5	141.0	148.4	155.3	164.7
Italy .....	8.3	26.1	43.7	70.2	100.0	114.5	160.2	197.1	237.3	276.4	303.0	334.0
Netherlands .....	12.5	39.0	60.5	82.2	100.0	108.4	123.6	129.1	137.5	144.7	152.8	-
Norway .....	15.8	37.9	54.5	77.2	100.0	110.0	128.0	142.8	156.0	173.5	188.3	205.2
Sweden .....	14.7	38.5	54.2	77.3	100.0	111.4	133.6	148.1	158.9	173.3	190.7	205.8
United Kingdom .....	14.8	30.8	44.8	74.7	100.0	116.7	165.8	188.9	206.4	222.4	237.2	257.0
<b>Unit labor costs: National currency basis:</b>												
United States .....	58.7	70.9	73.7	91.7	100.0	106.6	130.6	140.1	148.7	144.5	142.8	145.0
Canada .....	53.9	60.6	64.8	86.0	100.0	105.3	128.1	145.7	165.4	166.7	163.2	166.3
Japan .....	38.4	52.3	66.4	96.0	100.0	98.7	98.4	102.0	101.2	98.9	95.1	92.7
Belgium .....	42.0	58.1	68.0	91.5	100.0	101.5	109.3	113.6	114.4	116.1	121.4	-
Denmark .....	33.8	55.4	67.4	85.6	100.0	108.6	121.0	131.1	142.2	148.6	155.5	165.1
France .....	41.6	52.6	63.6	86.7	100.0	107.4	131.7	146.3	162.6	175.0	182.5	187.4
Germany .....	46.6	67.4	80.3	93.8	100.0	104.5	115.7	121.2	125.2	124.7	124.6	124.9
Italy .....	22.8	36.0	48.1	77.1	100.0	111.2	137.0	162.9	192.4	218.3	224.5	240.1
Netherlands .....	38.5	60.7	74.3	95.4	100.0	101.8	108.5	110.4	115.2	114.7	109.7	-
Norway .....	29.0	46.4	57.6	79.7	100.0	108.1	117.0	130.2	138.6	145.5	154.0	164.2
Sweden .....	34.8	47.7	57.2	77.1	100.0	108.4	118.6	130.9	136.3	138.1	143.8	152.2
United Kingdom .....	27.6	39.7	48.2	79.2	100.0	114.9	163.8	175.1	183.1	183.5	187.9	198.1
<b>Unit labor costs: U.S. dollar basis:</b>												
United States .....	58.7	70.9	73.7	91.7	100.0	106.6	130.6	140.1	148.7	144.5	142.8	145.0
Canada .....	59.0	61.7	68.8	89.8	100.0	98.1	116.4	129.1	142.3	143.7	133.9	129.4
Japan .....	28.5	39.1	65.6	86.7	100.0	126.8	116.8	123.8	108.8	111.5	107.2	104.2
Belgium .....	30.2	42.0	62.8	89.3	100.0	115.7	134.1	109.9	89.5	81.3	75.3	-
Denmark .....	29.5	44.4	67.2	89.6	100.0	118.4	129.0	110.3	102.3	97.5	90.1	93.5
France .....	41.7	46.8	70.4	99.5	100.0	117.3	153.4	132.2	121.5	112.9	102.7	102.6
Germany .....	25.9	42.9	70.4	88.7	100.0	121.0	147.9	124.9	119.7	113.4	101.6	98.6
Italy .....	32.5	50.6	73.1	104.3	100.0	115.6	141.4	126.3	125.4	126.8	112.8	111.1
Netherlands .....	25.1	41.2	65.6	92.8	100.0	115.7	134.2	108.9	105.8	98.6	83.9	-
Norway .....	21.7	34.5	53.4	81.4	100.0	109.7	126.2	120.6	114.2	106.1	100.4	101.7
Sweden .....	30.1	41.1	58.7	83.2	100.0	107.2	125.3	115.4	96.9	80.4	77.7	79.1
United Kingdom .....	44.4	54.4	67.7	100.8	100.0	126.3	218.3	203.1	183.5	159.4	143.9	147.3

- Data not available.

## 48. Occupational injury and illness incidence rates by industry, United States

Industry and type of case <sup>1</sup>	Incidence rates per 100 full-time workers <sup>2</sup>								
	1977	1978	1979	1980	1981	1982	1983	1984	1985
<b>PRIVATE SECTOR<sup>3</sup></b>									
Total cases .....	9.3	9.4	9.5	8.7	8.3	7.7	7.6	8.0	7.9
Lost workday cases .....	3.8	4.1	4.3	4.0	3.8	3.5	3.4	3.7	3.6
Lost workdays .....	61.6	63.5	67.7	65.2	61.7	58.7	58.5	63.4	64.9
<b>Agriculture, forestry, and fishing<sup>3</sup></b>									
Total cases .....	11.5	11.6	11.7	11.9	12.3	11.8	11.9	12.0	11.4
Lost workday cases .....	5.1	5.4	5.7	5.8	5.9	5.9	6.1	6.1	5.7
Lost workdays .....	81.1	80.7	83.7	82.7	82.8	86.0	90.8	90.7	91.3
<b>Mining</b>									
Total cases .....	10.9	11.5	11.4	11.2	11.6	10.5	8.4	9.7	8.4
Lost workday cases .....	6.0	6.4	6.8	6.5	6.2	5.4	4.5	5.3	4.8
Lost workdays .....	128.8	143.2	150.5	163.6	146.4	137.3	125.1	160.2	145.3
<b>Construction</b>									
Total cases .....	15.5	16.0	16.2	15.7	15.1	14.6	14.8	15.5	15.2
Lost workday cases .....	5.9	6.4	6.8	6.5	6.3	6.0	6.3	6.9	6.8
Lost workdays .....	111.5	109.4	120.4	117.0	113.1	115.7	118.2	128.1	128.9
<b>General building contractors:</b>									
Total cases .....	15.0	15.9	16.3	15.5	15.1	14.1	14.4	15.4	15.2
Lost workday cases .....	5.7	6.3	6.8	6.5	6.1	5.9	6.2	6.9	6.8
Lost workdays .....	100.2	105.3	111.2	113.0	107.1	112.0	113.0	121.3	120.4
<b>Heavy construction contractors:</b>									
Total cases .....	16.0	16.6	16.6	16.3	14.9	15.1	15.4	14.9	14.5
Lost workday cases .....	5.7	6.2	6.7	6.3	6.0	5.8	6.2	6.4	6.3
Lost workdays .....	116.7	110.9	123.1	117.6	106.0	113.1	122.4	131.7	127.3
<b>Special trade contractors:</b>									
Total cases .....	15.6	15.8	16.0	15.5	15.2	14.7	14.8	15.8	15.4
Lost workday cases .....	6.1	6.6	6.9	6.7	6.6	6.2	6.4	7.1	7.0
Lost workdays .....	115.5	111.0	124.3	118.9	119.3	118.6	119.0	130.1	133.3
<b>Manufacturing</b>									
Total cases .....	13.1	13.2	13.3	12.2	11.5	10.2	10.0	10.6	10.4
Lost workday cases .....	5.1	5.6	5.9	5.4	5.1	4.4	4.3	4.7	4.6
Lost workdays .....	82.3	84.9	90.2	86.7	82.0	75.0	73.5	77.9	80.2
<b>Durable goods</b>									
<b>Lumber and wood products:</b>									
Total cases .....	22.3	22.6	20.7	18.6	17.6	16.9	18.3	19.6	18.5
Lost workday cases .....	10.4	11.1	10.8	9.5	9.0	8.3	9.2	9.9	9.3
Lost workdays .....	178.0	178.8	175.9	171.8	158.4	153.3	163.5	172.0	171.4
<b>Furniture and fixtures:</b>									
Total cases .....	17.2	17.5	17.6	16.0	15.1	13.9	14.1	15.3	15.0
Lost workday cases .....	6.0	6.9	7.1	6.6	6.2	5.5	5.7	6.4	6.3
Lost workdays .....	92.0	95.9	99.6	97.6	91.9	85.6	83.0	101.5	100.4
<b>Stone, clay, and glass products:</b>									
Total cases .....	16.9	16.8	16.8	15.0	14.1	13.0	13.1	13.6	13.9
Lost workday cases .....	6.9	7.8	8.0	7.1	6.9	6.1	6.0	6.6	6.7
Lost workdays .....	120.4	126.3	133.7	128.1	122.2	112.2	112.0	120.8	127.8
<b>Primary metal industries:</b>									
Total cases .....	16.2	17.0	17.3	15.2	14.4	12.4	12.4	13.3	12.6
Lost workday cases .....	6.8	7.5	8.1	7.1	6.7	5.4	5.4	6.1	5.7
Lost workdays .....	119.4	123.6	134.7	128.3	121.3	101.6	103.4	115.3	113.8
<b>Fabricated metal products:</b>									
Total cases .....	19.1	19.3	19.9	18.5	17.5	15.3	15.1	16.1	16.3
Lost workday cases .....	7.2	8.0	8.7	8.0	7.5	6.4	6.1	6.7	6.9
Lost workdays .....	109.0	112.4	124.2	118.4	109.9	102.5	96.5	104.9	110.1
<b>Machinery, except electrical:</b>									
Total cases .....	14.0	14.4	14.7	13.7	12.9	10.7	9.8	10.7	10.8
Lost workday cases .....	4.7	5.4	5.9	5.5	5.1	4.2	3.6	4.1	4.2
Lost workdays .....	69.9	75.1	83.6	81.3	74.9	66.0	58.1	65.8	69.3
<b>Electric and electronic equipment:</b>									
Total cases .....	8.6	8.7	8.6	8.0	7.4	6.5	6.3	6.8	6.4
Lost workday cases .....	3.0	3.3	3.4	3.3	3.1	2.7	2.6	2.8	2.7
Lost workdays .....	46.7	50.3	51.9	51.8	48.4	42.2	41.4	45.0	45.7
<b>Transportation equipment:</b>									
Total cases .....	11.8	11.5	11.6	10.6	9.8	9.2	8.4	9.3	9.0
Lost workday cases .....	5.0	5.1	5.5	4.9	4.6	4.0	3.6	4.2	3.9
Lost workdays .....	79.3	78.0	85.9	82.4	78.1	72.2	64.5	68.8	71.6
<b>Instruments and related products:</b>									
Total cases .....	7.0	6.9	7.2	6.8	6.5	5.6	5.2	5.4	5.2
Lost workday cases .....	2.4	2.6	2.8	2.7	2.7	2.3	2.1	2.2	2.2
Lost workdays .....	37.4	37.0	40.0	41.8	39.2	37.0	35.6	37.5	37.9
<b>Miscellaneous manufacturing industries:</b>									
Total cases .....	11.5	11.8	11.7	10.9	10.7	9.9	9.9	10.5	9.7
Lost workday cases .....	4.0	4.5	4.7	4.4	4.4	4.1	4.0	4.3	4.2
Lost workdays .....	58.7	66.4	67.7	67.9	68.3	69.9	66.3	70.2	73.2

See footnotes at end of table.

48. Continued— Occupational injury and illness incidence rates by industry, United States

Industry and type of case <sup>1</sup>	Incidence rates per 100 full-time workers <sup>2</sup>								
	1977	1978	1979	1980	1981	1982	1983	1984	1985
<b>Nondurable goods</b>									
Food and kindred products:									
Total cases .....	19.5	19.4	19.9	18.7	17.8	16.7	16.5	16.7	16.7
Lost workday cases .....	8.5	8.9	9.5	9.0	8.6	8.0	7.9	8.1	8.1
Lost workdays .....	130.1	132.2	141.8	136.8	130.7	129.3	131.2	131.6	138.0
Tobacco manufacturing:									
Total cases .....	9.1	8.7	9.3	8.1	8.2	7.2	6.5	7.7	7.3
Lost workday cases .....	3.8	4.0	4.2	3.8	3.9	3.2	3.0	3.2	3.0
Lost workdays .....	66.7	58.6	64.8	45.8	56.8	44.6	42.8	51.7	51.7
Textile mill products:									
Total cases .....	10.2	10.2	9.7	9.1	8.8	7.6	7.4	8.0	7.5
Lost workday cases .....	2.9	3.4	3.4	3.3	3.2	2.8	2.8	3.0	3.0
Lost workdays .....	57.4	61.5	61.3	62.8	59.2	53.8	51.4	54.0	57.4
Apparel and other textile products:									
Total cases .....	6.7	6.5	6.5	6.4	6.3	6.0	6.4	6.7	6.7
Lost workday cases .....	2.0	2.2	2.2	2.2	2.2	2.1	2.4	2.5	2.6
Lost workdays .....	31.7	32.4	34.1	34.9	35.0	36.4	40.6	40.9	44.1
Paper and allied products:									
Total cases .....	13.6	13.5	13.5	12.7	11.6	10.6	10.0	10.4	10.2
Lost workday cases .....	5.0	5.7	6.0	5.8	5.4	4.9	4.5	4.7	4.7
Lost workdays .....	101.6	103.3	108.4	112.3	103.6	99.1	90.3	93.8	94.6
Printing and publishing:									
Total cases .....	6.8	7.0	7.1	6.9	6.7	6.6	6.6	6.5	6.3
Lost workday cases .....	2.7	2.9	3.1	3.1	3.0	2.8	2.9	2.9	2.9
Lost workdays .....	41.7	43.8	45.1	46.5	47.4	45.7	44.6	46.0	49.2
Chemicals and allied products:									
Total cases .....	8.0	7.8	7.7	6.8	6.6	5.7	5.5	5.3	5.1
Lost workday cases .....	3.1	3.3	3.5	3.1	3.0	2.5	2.5	2.4	2.3
Lost workdays .....	51.4	50.9	54.9	50.3	48.1	39.4	42.3	40.8	38.8
Petroleum and coal products:									
Total cases .....	8.1	7.9	7.7	7.2	6.7	5.3	5.5	5.1	5.1
Lost workday cases .....	3.3	3.4	3.6	3.5	2.9	2.5	2.4	2.4	2.4
Lost workdays .....	59.2	58.3	62.0	59.1	51.2	46.4	46.8	53.5	49.9
Rubber and miscellaneous plastics products:									
Total cases .....	16.8	17.1	17.1	15.5	14.6	12.7	13.0	13.6	13.4
Lost workday cases .....	7.6	8.1	8.2	7.4	7.2	6.0	6.2	6.4	6.3
Lost workdays .....	118.1	125.5	127.1	118.6	117.4	100.9	101.4	104.3	107.4
Leather and leather products:									
Total cases .....	11.5	11.7	11.5	11.7	11.5	9.9	10.0	10.5	10.3
Lost workday cases .....	4.4	4.7	4.9	5.0	5.1	4.5	4.4	4.7	4.6
Lost workdays .....	68.9	72.5	76.2	82.7	82.6	86.5	87.3	94.4	88.3
<b>Transportation and public utilities</b>									
Total cases .....	9.7	10.1	10.0	9.4	9.0	8.5	8.2	8.8	8.6
Lost workday cases .....	5.3	5.7	5.9	5.5	5.3	4.9	4.7	5.2	5.0
Lost workdays .....	95.9	102.3	107.0	104.5	100.6	96.7	94.9	105.1	107.1
<b>Wholesale and retail trade</b>									
Total cases .....	7.7	7.9	8.0	7.4	7.3	7.2	7.2	7.4	7.4
Lost workday cases .....	2.9	3.2	3.4	3.2	3.1	3.1	3.1	3.3	3.2
Lost workdays .....	44.0	44.9	49.0	48.7	45.3	45.5	47.8	50.5	50.7
Wholesale trade:									
Total cases .....	8.5	8.9	8.8	8.2	7.7	7.1	7.0	7.2	7.2
Lost workday cases .....	3.6	3.9	4.1	3.9	3.6	3.4	3.2	3.5	3.5
Lost workdays .....	52.5	57.5	59.1	58.2	54.7	52.1	50.6	55.5	59.8
Retail trade:									
Total cases .....	7.4	7.5	7.7	7.1	7.1	7.2	7.3	7.5	7.5
Lost workday cases .....	2.7	2.8	3.1	2.9	2.9	2.9	3.0	3.2	3.1
Lost workdays .....	40.5	39.7	44.7	44.5	41.1	42.6	46.7	48.4	47.0
<b>Finance, insurance, and real estate</b>									
Total cases .....	2.0	2.1	2.1	2.0	1.9	2.0	2.0	1.9	2.0
Lost workday cases .....	.8	.8	.9	.8	.8	.9	.9	.9	.9
Lost workdays .....	10.4	12.5	13.3	12.2	11.6	13.2	12.8	13.6	15.4
<b>Services</b>									
Total cases .....	5.5	5.5	5.5	5.2	5.0	4.9	5.1	5.2	5.4
Lost workday cases .....	2.2	2.4	2.5	2.3	2.3	2.3	2.4	2.5	2.6
Lost workdays .....	35.4	36.2	38.1	35.8	35.9	35.8	37.0	41.1	45.4

<sup>1</sup> Total cases include fatalities.

<sup>2</sup> The incidence rates represent the number of injuries and illnesses or lost workdays per 100 full-time workers and were calculated as:

$(N/EH) \times 200,000$ , where:

N = number of injuries and illnesses or lost workdays.

EH = total hours worked by all employees during calendar year.  
200,000 = base for 100 full-time equivalent workers (working 40 hours per week, 50 weeks per year.)

<sup>3</sup> Excludes farms with fewer than 11 employees since 1976.



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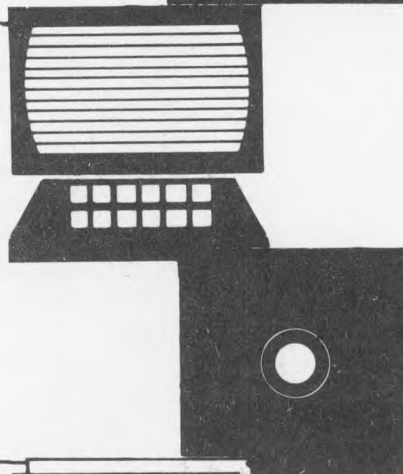


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## FIELD TO FACTORY: Afro-American Migration 1915-1940

Hundreds of thousands of Afro-Americans left the rural South between 1915 and 1940 in search of better lives in urban areas of the North. This movement, called the Great Migration, changed not only the lives of migrants but also the very structure of American society. It led to the emergence of large, predominantly black urban enclaves in the North. This phenomenon, which set the scene for modern life in most American cities, is now the subject of a major exhibition, "Field to Factory: Afro-

American Migration, 1915-1940" at the Smithsonian Institution's National Museum of American History in Washington, D.C. The exhibition will be on display through February 1988, after which it will travel to some 20 other locations.

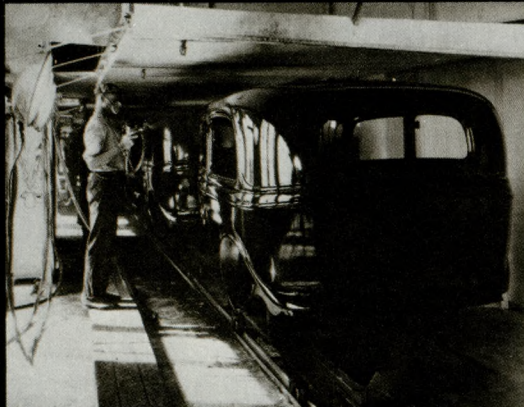
Three major sections of the exhibition treat life in the South, the journey north and the new Northern urban world. The photos on this page and on the cover are from the exhibition.



Segregated waiting room at Carolina Coach Company in Durham, North Carolina, May 1940. (Photo courtesy Library of Congress)



Hod carriers (brick-layers' assistants) at work. (Photo courtesy Temple University Libraries, Urban Archives Center)



Man spraying lacquer on Ford bodies, Briggs Body Company, Detroit, Michigan, 1933. (Photo courtesy Henry Ford Museum and Greenfield Village, Detroit, Michigan)



Woman in a sewing machine mill in the North. (Photo courtesy National Archives)



Man pouring hot metal into molds, Ford Motor Company, River Rouge Plant, Dearborn, Michigan, 1933. (Photo courtesy Henry Ford Museum and Greenfield Village, Dearborn, Michigan)



Women weighing wire coils and recording weights to establish wage rates at a northern furniture factory. (Photo courtesy National Archives)



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