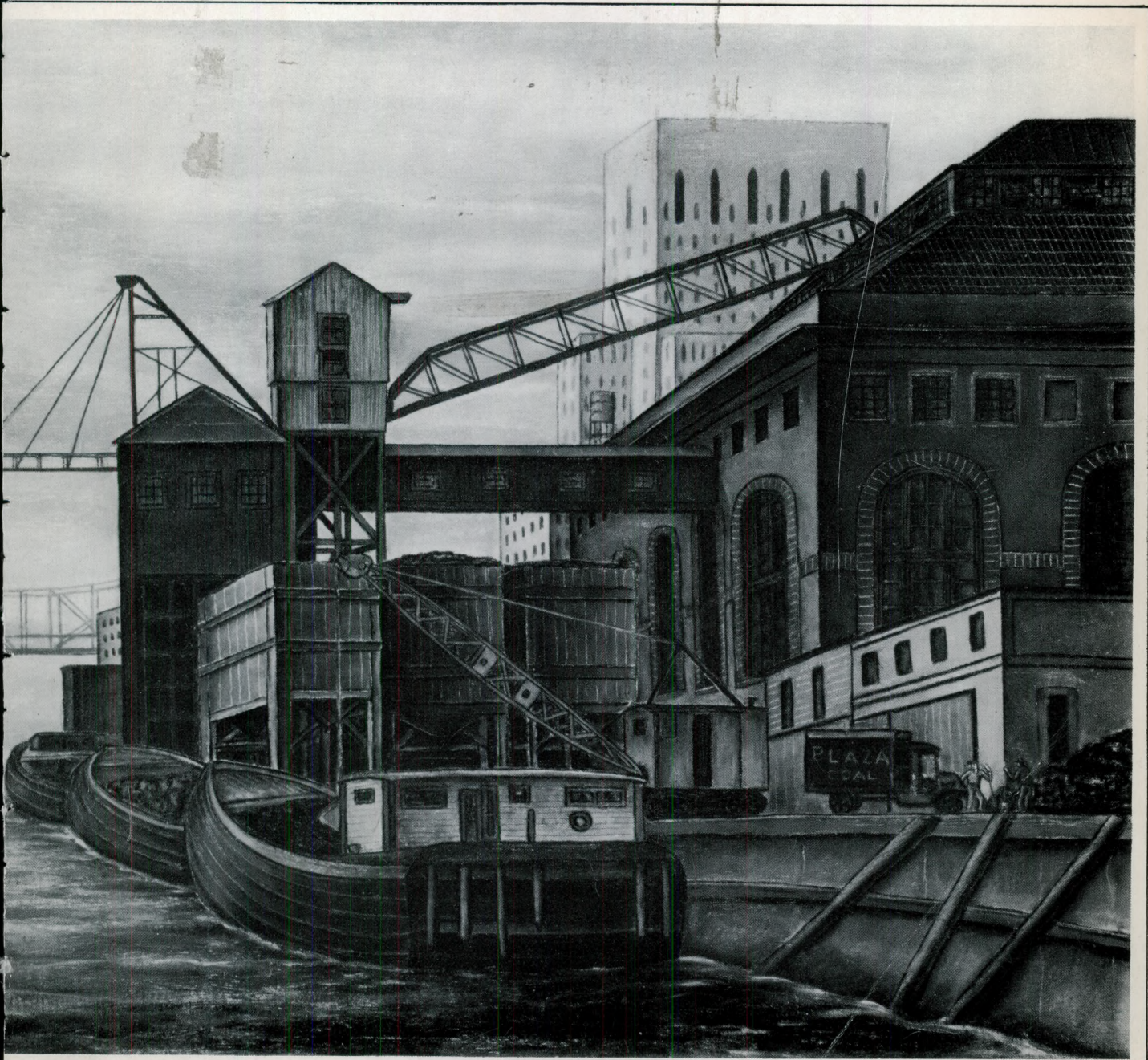# MONTHLY LABOR REVIEW

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In this issue:
Unemployment overseas.
Indexes for oil imports.

November cover:

"East River,"
a 1934 oil painting by Jara Valenta,
courtesy National Museum of American Art.

Cover design by Melvin Moxley,
Division of Audio-Visual Communication Services,
U.S. Department of Labor.

Labor Month In Review

EARNINGS GAP. Commissioner of Labor Statistics Janet L. Norwood was the opening witness at congressional hearings exploring pay differences between women and men. Here are excerpts from the commissioner's testimony.

In 1939, median earnings for women who worked year round, full time were 58 percent of the median earnings for men. Similar figures for 1981, the latest period for which earnings over an entire year are available, show women's earnings at 59 percent of the median for men. Over the long term, the ratio has remained relatively unchanged.

The Current Population Survey data on weekly earnings show a similar ratio. The most recent figures for the second quarter of this year show median weekly earnings for full-time wage and salary workers were $370 for men and $240 for women, or 65 percent of men's earnings. Comparable figures 10 years ago were $168 for men and $106 for women, a 63-percent ratio.

Educational influence. For women as well as men, more years of schooling usually translate to higher annual earnings. Median earnings for women college graduates who worked all year at full-time jobs were 45 percent more than for women whose formal education terminated with high school graduation, and 80 percent more than for those who had not completed high school. For men, the proportions were similar. However, at every level of educational achievement, women's median earnings continued to lag far behind men's earnings. On average, whether college graduates or high school dropouts, women earned about 60 cents for every dollar their male counterparts were paid. This 60-percent ratio in the national aggregate data shows a female-male wage gap of about 40 percent.

Human capital influence. A large body of ''human-capital'' research is available. Many of these studies focus on characteristics of individual workers such as age, years of schooling, labor force experience, and so forth. A review of this research by a recent National Academy of Sciences panel shows that in the studies reviewed, worker characteristics account for at most 44 percent of the female-male earnings gap.

These estimates are somewhat sensitive, of course, to the accuracy with which the characteristics are measured. In particular, years of labor force experience are usually approximated by calculating experience as the number of years since the completion of schooling. For persons with interruptions in their work experience—which includes more women than men— experience estimated in this way will be overstated. The measurement of this factor alone has been the subject of a number of studies (not all of which agree with each other) in the past 10 years.

Two BLS economists, Wesley Mellow and B. K. Atrostic, have found that, when a different measure more nearly approximating actual work experience is used while holding unchanged other characteristics, the estimated female-male wage gap is reduced by about 7 percentage points.

A fairly consistent finding from many studies of microdata is that the estimated female wage gap is reduced—but not eliminated—as more economic and demographic factors are introduced into the analysis. Another recent study by Mellow, for example, estimates the female-male wage gap at 27 percent when the following variables are held constant: area, occupation, industry, union, part-time status, and estimated labor force experience.

Occupational influence. In addition to the ''human capital'' that individual workers bring to their jobs, it is quite evident that earnings are highly correlated with the occupation and the industry in which a worker is employed. And we know that working women are far more concentrated in generally low-paying occupations in low-paying industries.

Recent CPS median earnings data (for the second quarter of 1982) show that in the female-intensive clerical field, women working full time earned $236 a week, compared with $337 for men. At 70 percent, the current ratio of women's to men's median earnings was practically the same as it was 10 years ago. But women clerical workers are far more likely to be in lower paying groups of the occupations, such as secretaries, typists, cashiers, and bookkeepers.

The same sort of pattern emerges when we look at both ends of the pay spectrum for men and women. A recent study by BLS demographer Nancy Rytina examines wage and salary earnings in 250 occupations. Seven of the twenty lowest paying occupational groups were the same for both men and women: farm laborers, food service workers, cashiers, waiters and waitresses, cooks, nurses' aides and orderlies, and bartenders. The female-male earnings ratios in these occupations ranged from 72 percent for waiters and waitresses to 92 percent for cashiers. With the exception of farm laborers and bartenders, all of these occupations were both female intensive and relatively low paying.

When we compare median earnings for the high-paying occupations which men and women hold in common, we find that median earnings of women are substantially less than for men.

The pay differences between men and women in [high-paying] occupations tend to be somewhat greater than among men and women in low-paying jobs. The median earnings ratios ranged from 64 percent for personnel and labor relations workers (the greatest difference) to 82 percent among operations and systems analysts (the smallest difference).

Commissioner Norwood's full testimony appears in BLS Report 673, *The Female-Male Earnings Gap: A Review of Employment and Earnings Issues.* Single copies are available without charge from BLS Inquiries and Correspondence Section, 441 G St. N.W. Washington, D.C. 20212. ☐

Labor force data from the CPS to undergo revision in January 1983

*BLS statistics in 1983 will include members
of the Armed Forces stationed in the U.S.
and will drop classification of workers
as 'blue collar' or 'white collar,'
substituting a new occupational system*

JOHN E. BREGGER

Beginning with data for January 1983, the Bureau of Labor Statistics will make changes in presentation, classification, and estimating procedures in labor force data derived from the Current Population Survey (CPS). This article reports on the nature of and reasons for the changes.

In any economic time series, there is an inevitable conflict between the need for maintaining a consistent data series for historical analysis and the need to introduce change to reflect new concepts and definitions or improvements in survey operations. It is the practice of the Bureau of Labor Statistics, whenever changes become necessary, to introduce them with full explanations, including the reasons for undertaking them and a description of their impact. Moreover, to the maximum extent possible, historical data are revised in order to maintain temporal consistency.

The CPS is one of the most valuable sources of economic time series data, having provided essentially consistent measures of the labor force status of the civilian population for more than 40 years. In addition to aggregate measures of economic performance, data collected and published monthly include a rich array of demographic, occupational, and industrial detail, allowing for many cross-classifications.[1] CPS changes have resulted from such events as the availability of data from the most recent decennial census; recommendations by commissions appointed to review the survey and its underlying concepts; and improvements in such areas as survey design, questionnaire content, and industry or occupational classification systems. The most recent change was the introduction of 1980 census population figures into estimation procedures.[2]

Several other changes in the CPS are also planned for the 1980's. Of major significance is a comprehensive redesign of the entire sample—a process that occurs after every decennial census—and a possible revision in the CPS questionnaire. In the more immediate future, there are four separate modifications that will become effective with January 1983 data. These are:

- Persons in the Armed Forces stationed in the United States will be included in the national labor force and employment totals and thus in the base for the overall unemployment rate.
- All occupational detail in the CPS will be coded according to the classification system developed for the 1980 decennial census, which evolved from the 1980 Standard Occupational Classification system (SOC).
- In terms of racial classification, data will be published for the "black" group instead of for the broader "black and other" category.
- Revised "first-stage ratio estimates" based on the 1980 Census of Population and Housing will be introduced into the estimation procedures.

These changes affect the data in different ways. The first and third relate to data presentation, the second is

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one of classification, and the last one updates the estimating procedures. The nature and potential impact of these changes are discussed below.

Resident Armed Forces

Over a 14-month period during 1978–79, a presidentially appointed, congressionally mandated panel of experts convened to examine "procedures, concepts, and methodology involved in employment and unemployment statistics and suggesting ways and means of improving them."[3] Known as the National Commission on Employment and Unemployment Statistics, this nine-member panel made many recommendations for improving the Nation's labor force statistics (in its final report, *Counting the Labor Force*).[4] One of these recommendations was to treat members of the Armed Forces stationed in the United States as "employed" in national statistics, because joining the military was (and still is) voluntary and thus represents a viable job market alternative.[5] This recommendation was subsequently accepted by Secretary of Labor Raymond Donovan in his final report on the Commission's recommendations.[6]

At present, there are nearly 1.7 million persons in the Armed Forces stationed in the United States, out of a total of 2.2 million. In keeping with the Commission's recommendation, effective with January 1983 data, they will be included in the totals for labor force and employment and thus affect the calculation of the overall unemployment rate as well. Also, separate data for all men and women 16 years and over will include the resident Armed Forces counts. Data for all other worker groups, such as for specific age-sex groups and racial detail, will continue to be on a civilian basis only, because, although data for the resident Armed Forces total and for both sexes are available from the Department of Defense as far back as 1950, there is considerably less information available for individual age groups and by race. Consistency over time will be maintained through revision of historical totals back to 1950 and otherwise by sustaining all civilian data series.

In addition to increasing the magnitudes of the labor force and total employment, the addition of the resident Armed Forces will also reduce the overall unemployment rate—contrasted with the civilian labor force-based measure—although by only one- or two-tenths of a percentage point. For example, the 1981 annual average unemployment rate will be 7.5 percent, compared with the civilian-based 7.6 rate. The total rate for men will be reduced by one- to three-tenths of a point, depending on rounding, whereas the women's rate typically will be unaffected.

New occupational classifications

In 1977, following a lengthy period of careful examination by many experts in the field of occupational classification, the first edition of a standardized classification system of occupations was introduced.[7] Whereas such a system has long existed for industries, this was the first for occupations. Among other things, the Standard Occupational Classification (SOC) was "designed for use in statistical analysis and presentation about occupations,"[8] and it also served to reconcile heretofore diverse classification systems, such as the Census system and Dictionary of Occupational Titles. The SOC was revised somewhat in 1980, to take into account the comments of users resulting from the issuance of the 1977 manual and to "assure that the Bureau of the Census could incorporate the changes as part of its tabulation program for the 1980 census."[9] The Census Bureau adapted the SOC for use in the 1980 census. This SOC-Census hybrid represents a comprehensive revamping of the occupational classification system used for prior censuses as well as that currently in the CPS, in that much of the nomenclature and recognizable groupings have been completely revised.

Because of the conversion of occupational classification for the 1980 census, it was clear that the revised classification had to be introduced into the CPS as soon as possible, and January 1983 has been chosen as the effective date. The change will be dramatic. Such commonly used identifiers as white-collar and blue-collar and professional and technical, craftworkers, and operatives will disappear. Moreover, so many classification changes will occur that reconstruction of these groupings will be equally impossible. Thus, there will be no long-term consistent time series for large occupational groupings, and seasonal adjustment cannot be undertaken for several years.

Exhibit 1 presents old and new occupational titles at the broadest and second broadest aggregations.[10] Based on the groupings shown, one might conclude that SOC titles could be combined so as to retain the white-collar and blue-collar categories; but this is not being done for a variety of reasons. For one, although not specifically stated, the framers of the SOC had explicitly intended to finally purge these titles because of the favorable impression given by "white-collar" versus the more pejorative notion of "blue-collar." In reality, some parts of the old clerical and sales occupations were considerably below both of the other white-collar as well as some blue-collar groups—in terms of earnings or prestige. Another misleading aspect of both white- and blue-collar categories in the present census classification system is the unevenness and largely misunderstood aspects of each; among other things, they are incorrectly assumed by many to exhaust occupational coverage (there are also the service and farm groupings). Finally, while it might appear that the first two categories in the "broad grouping" of the modified SOC correspond to white-collar and the fourth and fifth to blue-collar, the specific

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> **Exhibit 1. A comparison of 1980 decennial census occupational nomenclature to be used in 1983 with the 1970 census system**
>
> *Broadest groupings*
>
> | New | Pre-1983 |
> |-----|----------|
> | Managerial and professional specialty | White-collar |
> | Technical, sales, and administrative support | Blue-collar |
> | Service | Service |
> | Precision production, craft, and repair | Farm |
> | Operators, fabricators, and laborers | |
> | Farming, forestry, and fishing | |
>
> *Major occupational groups*
>
> | New | Pre-1983 |
> |-----|----------|
> | Executive, administrative, and managerial | Professional and technical |
> | Professional specialty | Managers and administrators, except farm |
> | Technicians and related support | Sales |
> | Sales | Clerical |
> | Administrative support, including clerical | Craft and kindred |
> | Private household | Operatives, except transport |
> | Protective service | Transport equipment operatives |
> | Service, except private household and protective service | Nonfarm laborers |
> | Precision production, craft, and repair | Private household |
> | Machine operators, assemblers, and inspectors | Other service workers |
> | Transportation and material moving | Farmers and farm managers |
> | Handlers, equipment cleaners, helpers and laborers | Farm laborers and supervisors |
> | Farming, forestry, and fishing | |

content of the various component occupations have been changed so that the data would not match.

In an effort to mitigate the inescapable problems that will ensue from introducing a totally new occupational classification system into the CPS, the Census Bureau is coding 20 percent of the monthly records for 1982 on the new system. This will permit a limited crosswalk between the two systems through a matrix of the broad groupings shown in exhibit 1. The more desirable matrix of the present 428 three-digit occupations with the comparable grouping of 503 in the SOC-Census hybrid will not be operationally feasible.

BLS will initiate publication of the new occupational data in *The Employment Situation* press release for January 1983 and in the February 1983 issue of *Employment and Earnings*; the latter is also expected to contain a rundown on some of the impacts on CPS occupational data. Whereas comparison of data with the past, to include a continuation of trends, will not be possible, it is felt that the vast improvements brought about through the availability of a universal classification system will greatly outweigh these problems as time goes by.

Conversion to black only data

Traditionally, racial data have been presented for two groups, "white" and "black and other" (formerly termed "nonwhite"). Historically, blacks have predominated the latter category—more than 92 percent of the black and other population in the 1960 census and 89 percent in 1970—such that the "black and other" group was deemed to portray adequately the situation among blacks. But in recent years the population of the "other" group—mostly Asian and Pacific Islanders, American Indians, and Alaskan natives—has been expanding at a greater pace, and, by the 1980 census, the black proportion of the "nonwhite" population had dropped to 85 percent. Moreover, labor market and other characteristics vary considerably by race. For example, in 1981, the annual average unemployment rate for blacks was 15.6 percent, compared with 14.2 percent for black and other; the other races rate was significantly lower.

In view of the lower proportion of blacks within the black and other population, which has resulted in a situation whereby the larger group is now less representative of the status for blacks, it is fitting that the presentation of these statistics be converted to black (only). This has already been accomplished on a limited basis, with the publication of the major employment status categories by age and sex for blacks in *The Employment Situation* press release in 1982. Beginning in 1983, there will be a more comprehensive conversion, as all published tables containing racial data will show "black" instead of "black and other" statistics. The other races classification is too small—and is not controlled to independent population weights in the estimation process—to meet reliability standards for publication. (Data for the group can be ascertained through subtraction.) Data for blacks are available back to 1972 and can be provided to interested users upon request. At the same time, BLS will retain the capacity to produce data for the "black and other" group.

Revision of first-stage ratio estimator

Information from the decennial population censuses figure prominently in the CPS design and estimating procedures. To begin with, the censuses form the basis for the sample design and selection for the ensuing 10 years after the census materials become available. Moreover, the population estimates carried forward from the censuses are used as weights to which the sample estimates are "blown up" to represent the Nation. As indicated earlier, the weights based on the 1980 census population figures were introduced into the CPS effective

with January 1982 data; technically, this weighting occurs in what is known as the "second-stage ratio estimate" and is done for each of 64 age-sex-race groups making up the population 16 years of age and over. There is also a "first-stage ratio estimate," which has continued to be based on the 1970 census. Effective with data for January 1983, data from the 1980 census will be used in the development of first-stage ratio estimates as well.[11]

The first-stage adjustment concerns that portion of the 629 sample areas that have been chosen to represent other areas not in the sample—the remainder represent themselves. These "nonself-representing" areas are adjusted so as to correct for differences existing at the time of the most recent census between the distribution by race and residence of the population in these areas and the known race-residence distribution in the portions of the census region or State represented by these areas. The procedure is applied at two geographic levels: by region—Northeast, North Central, South, and West—and for each of the 46 States that contain nonsample areas. The regional adjustment is performed by metropolitan-nonmetropolitan residence and race, while the State adjustment is done by urban-rural status and race. The introduction of the 1980 census information for regions and States could well produce a "bump" (break in series) in some of the estimates. The nature and extent of any discontinuity will not be

known until the time of the introduction of the revised first-stage factors but will clearly be quite small vis-a-vis the effect of the 1980 census-based second-stage factors.[12] Indeed, it is possible that the effects will be limited to internal estimations, such as farm-nonfarm and metropolitan-nonmetropolitan data, while not affecting broader totals. Again, any impacts will be described in a special article devoted to the changes being introduced into the January 1983 CPS, that will appear in the February 1983 issue of *Employment and Earnings*.

IN SUMMARY, there will be four distinctly separate changes introduced into the 1983 CPS that will affect the data. One change—adding the resident Armed Forces to the statistics—was recommended by the National Commission on Employment and Unemployment Statistics, which also acknowledged the necessity for the second change discussed—the revision of all occupational data based on the Standard Occupational Classification system.[13] The third change—publishing data for "black" instead of "black and other" workers—relates to data presentation rather than revision but is very important in terms of usage. The final change—revising the first-stage ratio estimates—is technical and results from the availability of information from the 1980 decennial census. All changes are made so as to improve either the basic data or enhance our use and understanding of the data. □

---FOOTNOTES---

[1] The primary compendium of monthly, quarterly, and annual data is the BLS publication *Employment and Earnings*. The explanatory notes section in the back of each issue describes the survey and nature of the data collected.

[2] See Kenneth D. Buckley, Jennifer Marks, and Ronald J. Statt, "Revisions in the Current Population Survey Beginning in January 1982," *Employment and Earnings*, February 1982, pp. 7–15, and Deborah Pisetzner Klein, "Labor force data: the impact of the 1980 census," *Monthly Labor Review*, July 1982, pp. 39–43.

[3] See Section 13, Public Law 94–444, 94th Cong., H.R. 12987, Oct. 1, 1976, reprinted in John E. Bregger, "Establishment of a new Employment Statistics Review Commission," *Monthly Labor Review*, March 1977, pp. 14–20.

[4] National Commission on Employment and Unemployment Statistics, *Counting the Labor Force* (Washington, D.C., U.S. Government Printing Office, Labor Day 1979).

[5] *Counting*, pp. 49–51. The resident Armed Forces was recommended over the more commonly used figures for the Armed Forces total in order to maintain consistency with the civilian employed, which excludes U.S. residents with jobs in foreign countries.

[6] See *Final Report of the Secretary of Labor on the Recommendations of the National Commission on Employment and Unemployment Statistics*, transmitted to the Congress in October 1981.

[7] U.S. Department of Commerce, Office of Federal Statistical Policy and Standards, *Standard Occupational Classification Manual*, 1977 (Washington, D.C., U.S. Government Printing Office).

[8] *Classification Manual*, 1977, p. 3.

[9] U.S. Department of Commerce, Office of Federal Statistical Policy and Standards, *Standard Occupational Classification Manual*, 1980 (Washington, D.C., U.S. Government Printing Office).

[10] *Classification Manual*, 1980, p. 10. It should be emphasized that the SOC manual does not itself provide either the 6- or 13-group dichotomies, though a variant of the 6-group is suggested. Indeed, the smallest breakdown presented has 20 civilian categories (see pp. 18–30 in the manual), many of which were formerly in the "professional and technical" category. These groupings were chosen by the BLS and Census Bureau for purposes of clarity in instances where it is not possible or desirable to present data at more detailed levels.

[11] The ratio estimation procedures, as developed based on the 1970 census, are described in U.S. Department of Commerce, Bureau of the Census, Technical Paper 40, *The Current Population Survey—Design and Methodology* (Washington, D.C., U.S. Government Printing Office, 1978), pp. 58–61.

[12] Buckley and others, *Revisions*, and Klein, *Labor force data*.

[13] National Commission on Employment and Unemployment Statistics, *Counting*, pp. 113–14.

Better measures of service employment goal of Bureau survey redesign

The volatility and small size of companies,
coupled with nontraditional payroll practices,
complicate efforts to develop more reliable data
on employment, earnings, and hours of work

THOMAS J. PLEWES

The problem of measuring economic activity in the growing service-producing sector of the economy has posed an acute and continuing challenge to those agencies responsible for providing economic data. The service sector is characterized by diverse activities loosely aggregated under the service-producing classification; by a large number of preponderantly small companies that enter and exit the market with some frequency; and, consequently, by a unique set of problems associated with identification, classification, collection, and estimation of economic information.

This article focuses on the challenges in measuring employment, hours, and earnings in this large and dynamic sector of the economy. First, historical trends in the composition of the industrial employment base are discussed to illustrate both the strong growth of this sector and the reason for concern over the adequacy of measurements. A description of the Bureau of Labor

Statistics' primary sources of current data on employment, hours, and earnings, and their importance in tracking economic developments, sets the stage for exploring, in more detail, the sources of measurement problems. Some problems stem from the nature of employment practices, from the conduct of the surveys, and from employer recordkeeping procedures; others relate to the relative instability of the small establishments that characterize the sector. The final section outlines initiatives which have been undertaken by the Bureau to redesign the Current Employment Statistics Survey, the major source of employment and earnings measures by industry, to ensure that firms in the service sector are appropriately represented by the survey, and that survey operations are tailored to the special needs of service-sector employers in order to gain their cooperation in the survey.

Why the interest in service employment

In the United States, as in other industrialized nations, the long-term shift from an agricultural, to a goods-producing, to a service-producing economic base has emerged. The strength and pervasiveness of this trend, which has particularly accelerated over the last two decades, has been extensively documented else-

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where.[1] Nonetheless, some of the highlights of this evolution are quite significant and worth stressing:

- Since 1920, the service-producing share of nonagricultural employment has gone from 53 percent to 72 percent. Two divisions showed significant growth— the service industries and government. (See table 1.)
- This evolutionary shift in the industrial complexion accelerated during the Great Depression, dampened as the Nation turned to hard-goods production during World War II, but has resumed a steady pace since the mid-1940's.
- Over the past two decades, some 86 percent of job growth in the economy has occurred in the service-producing sector. By mid-1982, this sector provided 74 percent of all jobs, up from 62 percent in 1960.
- During recessionary periods, the service-producing sector has shown remarkable resilience while the goods sector has borne the brunt of the economic declines. This relative immunity from downturn has also been evidenced in the most recent recessionary period.[2]
- The shift from a goods to a service economy represents changes in the U.S. economy of historic proportions. It has been influenced by such factors as the increase in demand for consumer services previously produced outside the measured market economy, the increase in the demand for leisure goods, shifts from internal to external sources for business services (such as marketing, accounting, and the like), and the changing nature of international trade. In turn, the shift has had a pronounced influence on the character of the labor force, particularly in opening opportunities for women. Over the past two decades, women's share of service-producing employment has expanded from 40 to 50 percent, accounting for 65 percent of the employment expansion in the sector.

Review of data sources

The Bureau of Labor Statistics maintains three primary sources of data on employment, hours, and earnings in the service sector. Each has its own strengths and weaknesses.

The establishment survey. The Current Employment Statistics Survey, commonly referred to as the establishment survey, collects payroll data from nonagricultural employers for the pay period including the 12th of each month. The survey, conducted by mail, obtains summary data on total numbers of employees, including women workers and production or nonsupervisory workers. In addition, summary data on the payroll and hours (paid for) of production or nonsupervisory workers are collected in order to compute average hourly earnings, and average weekly hours and earnings. Overtime hours data are collected for production workers in manufac-

Table 1. Employment composition of goods- and service-producing sectors, 1920 and 1981

[Numbers in thousands]

Divisions	1981 employment	Percent distribution	
		1920	1981
Nonfarm economy	91,543	100.0	100.0
Goods-producing sector	25,672	46.7	28.0
Mining	1,104	4.5	1.2
Construction	4,307	3.2	4.7
Manufacturing	20,261	39.0	22.1
Service-producing sector	65,871	53.3	72.0
Transportation and public utilities	5,151	14.6	5.6
Trade	20,738	16.3	22.7
Wholesale	5,343	—	5.8
Retail	15,395	—	16.8
Finance, insurance, and real estate	5,331	4.3	5.8
Services	18,598	8.6	20.3
Government	16,054	9.5	17.6
Federal	2,772	—	3.0
State and local	13,282	—	14.5

turing. Employer participation in the survey is voluntary.

The establishment survey is conducted as a cooperative Federal-State program with State Employment Security Agencies collecting most of the data. The employer's microdata can thus be used by the States to prepare local estimates (currently available for 50 States and more than 200 Standard Metropolitan Statistical Areas) and, at the same time, by the Bureau of Labor Statistics to prepare national estimates. Duplication of data collection at the Federal and local levels is avoided through this cooperative arrangement.

The establishment survey is the largest monthly survey in the field of economic statistics, with an active sample of 180,000 establishments reporting data covering about 35 percent of total nonagricultural employment in the United States. Data are published for more than 500 separate industries at the national level, and in varying degrees of industry detail at the State and Standard Metropolitan Statistical Area levels. The survey provides monthly measures of total employment and numbers of women and nonsupervisory workers for 155 service-producing industries at the national level. This represents 30 percent of the 567 service-producing industries designated in the U.S. Office of Management and Budget's 1972 Standard Industrial Classification System. Estimates of average weekly earnings, average weekly hours, and average hourly earnings are produced for nonsupervisory workers in most of these industries.

The data collected in the Bureau's monthly survey of employment, hours, and earnings have served as a primary source for tracking the growth of the service-producing sector. Thus, in and of themselves, these data are called upon to portray trends with accuracy and timeliness as a basis for economic decisionmaking. However, the data have critical secondary uses which also fuel the demand for reliable reporting and accurate

measurement of employment, hours, and earnings in the service sector.

Within the Bureau, for example, the data have the following major uses:

- *In productivity measurement*: Monthly total hours by industry detail and production-worker employment data are key inputs to productivity measurement and the quarterly productivity estimates. The annual employment and hours data for detailed industries are used for developing labor inputs for measures of output per employee hour.
- *In occupational employment projections*: National employment data by industry detail are projected forward and occupational staffing patterns of the industries are applied to those projected industry levels to produce projected occupational patterns.
- *In economic growth studies*: A key input into the BLS economic growth model is annual employment data by detailed industry.
- *In development of subnational unemployment statistics*: The monthly employment data are used both by the BLS and the State agencies as the source of employment data for those subnational areas for which the household survey, discussed below, fails to provide reliable estimates. Currently, the unemployment rates for 40 States and about 200 areas are computed using these survey results as a key input.
- *In occupational health and safety statistics*: Detailed annual industry employment levels are used for computing total injury rates, with actual injury experience based on an annual survey and administrative records.

Other Federal agencies also use the service sector data extensively:

- *In personal income and gross national product estimation*: The U.S. Department of Commerce's Bureau of Economic Analysis uses the monthly employment and earnings series as a key input for estimating the wage component of these economic measures.
- *In management of trade policy*: Detailed industry employment trends are used to determine job loss associated with increased imports.

In addition to these critical, continuing government uses of the data, the private and public sectors also rely on the survey results for: marketing studies; economic research and planning; government funding and policy analysis; regional analysis; industry studies; plant location planning; wage negotiations; and adjustment of labor costs in escalation of long-term contracts.

The Current Population Survey. This monthly survey collects data on employment status directly from individuals in households and provides information on the demographic, occupational, and other characteristics of the employed, the unemployed, and persons not in the labor force. The household survey is conducted by the Bureau of the Census each month for BLS, providing data for the Nation and the 10 largest States.

Each month, 60,000 housing units are eligible for interview, by personal visit or by telephone. Information is gathered on the personal characteristics of all members of the household 16 years of age and over and on their labor force status during the survey week (week including the 12th of the month). This makes possible detailed tabulation and publication of labor force data by demographic characteristics.

The results of the establishment and household surveys are published and analyzed together each month, 3 weeks after the survey reference week. Estimates from both surveys generally show the same trends in employment. By publishing the results of both surveys together, the current analysis of the Nation's employment situation is greatly enhanced, with the household survey providing demographic detail and the establishment survey providing industry detail.

Each month, the household survey provides employment, unemployment, and labor force data for nine service-producing industries. The emphasis of the monthly data is to provide the basic types of estimates on labor force status by an extensive array of demographic characteristics. On an annual basis, employment data from the household survey are published for 116 service-producing industries along with the percentages of employed women and members of racial minorities.

Administrative establishment files. Unemployment insurance (UI) laws administered by State Employment Security Agencies cover almost every employer unit. The States require each unit (establishment) to provide a quarterly report on employment and wages of its work force and to pay a tax into the unemployment trust fund. As a byproduct of this administrative reporting system, and the Federal-State cooperative relationship, BLS obtains from each State a virtual census of establishments, and their employment and wages, on a quarterly basis. By assigning industry and location (county) codes to each establishment's record, the employment and wage data can be summarized by size-of-employment class, within industry and county, and through successive aggregations, to Standard Metropolitan Statistical Area, State, regional, and national totals.

What these data lack in timeliness, they make up for in comprehensiveness. Because of the large number of UI reporting units (4.5 million), coupled with the lag in the required payment of taxes, and associated data entry, correction, and tabulation workloads, the UI data are generally not available in summary form until 6 to 9

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months after the end of each quarter. Nevertheless, because of the comprehensive nature of the data and the potential for dissaggregation to complete industry and county detail, this data base is extremely important. It serves as the foundation of the establishment survey—first, as the sample frame from which States solicit survey respondents and second, as a benchmark to adjust national and subnational employment levels annually.

Because the UI data represent nearly a universe of wage and salary workers in nonagricultural industries, employment (for each month of the quarter), number of reporting units, and total quarterly wages can be tabulated for each quarter and presented in complete industry detail (567 industries in the service-producing sector) at all levels of geographic aggregation from the county (3,100) level up to national totals. The industry statistics can be tabulated by size of firm and type of ownership (private, and Federal, State, and local government) as well. The only limit to disaggregation of the UI data base is the requirement that confidentiality be provided for any reporting unit. Therefore, publication rules to prevent disclosure are rigorously adhered to.

While the focus of the analysis in this article is primarily on measures of employment, hours, and earnings on a current basis in industry detail, it is the availability of the UI administrative record of all employing units in the Nation—tracking their birth, growth, and demise—that provides us with the information to both design the Current Employment Statistics Survey and to adjust that design as the nature of the economy changes. Very little nonagricultural wage and salary employment escapes coverage under the UI laws. Of almost equal importance, the UI reporting system is able to identify establishment deaths and purge the appropriate records from the files on a timely basis.

Measurement problems

The unique measurement problems of the service-producing sector stem both from the nature of the establishments and from the types of survey operations used to gather data in the Current Employment Statistics program. As previously indicated, the industry statistics on employment, hours, and earnings are gathered monthly on a voluntary basis, using a mail questionnaire to obtain data from establishment payroll records.

Sampling difficulties. For a variety of reasons, the one characteristic of an establishment that appears to be most telling of its likelihood to voluntarily respond in a government survey is its size, in terms of the number of employees on the payroll. As a consequence, experience has shown that it is more difficult to implement optimal sample designs, which require certain response rates, in those industries which are characterized by small firms. Small firms predominate in many of the industry divi-

sions in the service sector, as shown by the distribution of the survey's sample by size of establishment and sample coverage by industry division in table 2. With the exception of government, portions of transportation and public utilities, and a few individual service industry groupings, such as banks and hospitals, the sample in the service sector falls short of representation in the smallest size categories.

Historically, this has been more of a problem in the service-producing sector than in the goods-producing sector. The reasons are shown in table 3, which arrays total employment by size class for these sectors. Using 250 employees as a cutoff point to distinguish between small and large employers, employment in the goods-producing sector was split 49 to 51 percent in 1980. In the service-producing industries, the split between small and large was 70 to 30 percent, reflecting the greater proponderance of small employers. Data from the UI administrative data base, shown in table 4, provides further evidence of the concentration of employment in the smaller firm classes in selected service industries.

Employment practices. The establishment survey of employment, hours, and earnings currently is designed to portray the level of and change in activity in establishments which have fairly traditional employment practices. The assumptions incorporated into the survey design and estimation procedures include a relatively stable work force that expands or contracts with the pace of economic activity in the short term, and with technological innovations in the long term; a normal pattern of regular hours and overtime payment that expands or contracts in the short term with the level of economic activity; and a standard work force composition which assumes that the worker has some permanent attachment to the employing establishment.

Analysis of the employment practices of service industries indicates a number of departures from traditional employment practices. For example, statistics on labor turnover rates by industry indicate that turnover is highest among those industries that are characterized by a preponderance of small firms with relatively large numbers of easy entry, low-skill occupations. According to a 1980 study by Malcolm Cohen and Arthur Schwartz, the service-producing industries with the highest labor turnover rates were: automotive dealers and service stations; automotive repair, services, and garages; water transportation; real estate; business services; motion pictures; hotels and other lodging places; amusement and recreation services; and eating and drinking places.[3] These industries rank among the lowest in terms of average earnings, which is consistent with their high proportions of low-skill jobs.

Average weekly hours have generally been declining for these industries for many years, and are very low

relative to those in most other industries. This largely reflects a growing practice of part-time employment in these industries. Data from the household survey, shown in table 5, provide direct evidence of the dramatic growth in part-time employment in many of the service-producing industry divisions relative to the goods-producing divisions. (In the household survey, a person is counted as part time if he or she normally works less than 35 hours.) The proportion of part-time workers in the goods-producing industries has hardly changed over time, averaging a low 4.5 percent in 1981. In contrast, the proportion of part-time workers has increased for almost all of the service-producing industries, and averaged 20.7 percent in 1981. The highest rates are in retail trade (36.0 percent), personal services (27.2 percent), entertainment and recreation services (35.0 percent), and medical, except hospital, services (26.1 percent).

Generally, the characteristics of high labor turnover, low earnings, low skill requirements, and high proportions of part-time workers seem to depict a rather loose or casual bond between the employer and employee in the service sector. This loose bond, in turn, contributes to deviations from traditional payroll practices which are assumed in survey definitions, and undoubtedly

Table 2. Distribution of the Current Employment Statistics sample by employment size of establishment, and sample coverage by division, March 1980

[Employment in thousands]

Item	Total	Establishment employment size							
		Under 10	10 to 19	20 to 49	50 to 99	100 to 249	250 to 499	500 to 999	1000 and over
Total nonfarm economy[1]									
Universe:									
Establishments	4,529,799	3,400,161	514,257	356,138	131,762	80,161	26,421	12,378	8,521
Employment	89,718	10,323	7,103	11,054	9,250	12,392	9,306	8,677	21,613
Percent employment distribution	100.0	11.5	7.9	12.3	10.3	13.8	10.4	9.7	24.1
CES sample:									
Establishments	166,330	24,103	24,272	40,008	27,395	26,528	11,937	6,459	5,628
Employment	33,502	123	345	1,289	1,939	4,153	4,174	4,493	16,986
Percent employment distribution	100.0	.4	1.0	3.8	5.8	12.4	12.5	13.4	50.7
Percent sample coverage	37.3	1.2	4.9	11.7	21.0	33.5	44.9	51.8	78.6
Private sector[1]									
Universe:									
Establishments	4,350,562	3,303,179	491,885	332,805	118,763	68,369	20,823	9,015	5,723
Employment	73,185	10,000	6,787	10,296	8,310	10,488	7,281	6,262	13,761
Percent employment distribution	100.0	13.6	9.3	14.1	11.4	14.3	9.9	8.6	18.8
CES sample:									
Establishments	147,973	22,101	23,178	37,472	24,871	22,616	9,387	4,705	3,643
Employment	23,536	114	329	1,205	1,756	3,511	3,271	3,268	10,082
Percent employment distribution	100.0	.5	1.4	5.1	7.5	14.9	13.9	13.9	42.8
Percent sample coverage	32.2	1.1	4.8	11.7	21.1	33.5	44.9	52.2	73.3
Mining									
Universe:									
Establishments	31,388	19,531	4,629	4,020	1,505	1,060	325	193	125
Employment	990	58	64	123	103	164	113	132	233
Percent employment distribution	100.0	5.9	6.5	12.4	10.4	16.6	11.4	13.3	23.5
CES sample:									
Establishments	2,123	308	346	505	310	322	167	92	73
Employment	369	2	5	16	21	51	58	63	153
Percent employment distribution	100.0	.5	1.4	4.3	5.7	13.8	15.7	17.1	41.5
Percent sample coverage	37.3	3.4	7.8	13.0	20.4	31.1	51.3	47.7	65.7
Construction									
Universe:									
Establishments	527,892	440,087	48,148	27,890	7,663	3,181	663	170	90
Employment	4,087	1,063	644	829	519	468	225	116	223
Percent employment distribution	100.0	26.0	15.8	20.3	12.7	11.5	5.5	2.8	5.4
CES sample:									
Establishments	16,101	4,307	3,558	4,687	2,112	1,114	222	71	30
Employment	739	20	50	147	146	164	78	48	86
Percent employment distribution	100.0	2.7	6.8	19.9	19.7	22.2	10.6	6.5	11.6
Percent sample coverage	18.1	1.9	7.8	17.7	28.1	35.0	34.7	41.4	38.6
Manufacturing									
Universe:									
Establishments	322,994	158,164	54,585	54,842	27,491	22,480	8,928	3,979	2,525
Employment	20,722	576	752	1,712	1,920	3,490	3,104	2,725	6,443
Percent employment distribution	100.0	2.7	3.6	8.3	9.3	16.8	15.0	13.2	31.1
CES sample:									
Establishments	44,205	2,410	3,764	9,272	8,645	10,585	5,122	2,563	1,844
Employment	11,175	13	55	309	620	1,684	1,792	1,772	4,930
Percent employment distribution	100.0	.1	.5	2.8	5.5	15.1	16.0	15.9	44.1
Percent sample coverage	53.9	2.3	7.3	18.0	32.3	48.3	57.7	65.0	76.5

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Table 2. Continued—Distribution of the Current Employment Statistics sample by employment size of establishment, and sample coverage by division, March 1980

[Employment in thousands]

Item	Total	Establishment employment size							
		Under 10	10 to 19	20 to 49	50 to 99	100 to 249	250 to 499	500 to 999	1000 and over
Transportation[1]									
Universe:									
Establishments	171,646	118,449	22,892	17,525	6,588	3,945	1,196	562	489
Employment	4,592	355	312	531	453	602	416	387	1,536
Percent employment distribution	100.0	7.7	6.8	11.6	9.9	13.1	9.1	8.4	33.4
CES sample:									
Establishments	7,611	884	1,046	1,966	1,375	1,179	473	284	404
Employment	2,623	5	15	64	97	183	166	198	1,895
Percent employment distribution	100.0	.2	.6	2.4	3.7	7.0	6.3	7.5	72.2
Percent sample coverage	57.1	1.4	4.8	12.1	21.4	30.4	39.9	51.2	123.4[2]
Trade									
Universe:									
Establishments	1,553,714	1,143,202	210,164	136,434	40,685	16,951	3,917	1,565	796
Employment	20,068	3,733	2,827	4,104	2,746	2,490	1,332	1,054	1,782
Percent employment distribution	100.0	18.6	14.1	20.4	13.7	12.4	6.6	5.3	8.9
CES sample:									
Establishment	41,147	7,630	8,872	12,463	6,091	3,996	1,246	494	355
Employment	3,288	42	125	392	421	596	428	338	946
Percent employment distribution	100.0	1.3	3.8	11.9	12.8	18.1	13.0	10.3	28.8
Percent sample coverage	16.4	1.1	4.4	9.6	15.3	23.9	32.1	32.1	53.1
Finance									
Universe:									
Establishments	387,292	319,337	30,111	22,226	8,380	4,858	1,412	590	378
Employment	5,090	808	413	691	590	748	498	417	925
Percent employment distribution	100.0	15.9	8.1	13.6	11.6	14.7	9.8	8.2	18.1
CES sample:									
Establishments	11,241	1,671	1,499	2,699	2,102	1,874	715	396	285
Employment	1,826	8	21	89	150	290	247	281	740
Percent employment distribution	100.0	.4	1.2	4.9	8.2	15.9	13.5	15.4	40.5
Percent sample coverage	35.9	1.0	5.1	12.9	25.4	38.8	49.6	67.4	80.0
Services									
Universe:									
Establishments	1,345,636	1,104,409	121,356	69,868	26,451	15,894	4,382	1,956	1,320
Employment	17,636	3,407	1,775	2,306	1,979	2,526	1,593	1,431	2,619
Percent employment distribution	100.0	19.3	10.1	13.1	11.2	14.3	9.0	8.1	14.9
CES sample:									
Establishments	25,545	4,891	4,093	5,880	4,236	3,546	1,442	805	652
Employment	2,516	24	58	188	301	543	502	568	1,332
Percent employment distribution	100.0	.7	1.6	5.3	8.6	15.4	14.3	16.2	37.9
Percent sample coverage	19.9	.7	3.3	8.2	15.2	21.5	31.5	39.7	50.9
Government									
Universe:									
Establishments	179,237	96,982	22,372	23,333	12,999	11,792	5,598	3,363	2,798
Employment	16,533	323	316	758	940	1,904	2,025	2,415	7,852
Percent employment distribution	100.0	2.0	1.9	4.6	5.7	11.5	12.2	14.6	47.5
CES sample:									
Establishments	18,357	2,002	1,094	2,536	2,524	3,912	2,550	1,754	1,985
Employment	9,966	9	16	84	183	642	903	1,225	6,904
Percent employment distribution	100.0	.1	.2	.8	1.8	6.4	9.1	12.3	69.3
Percent sample coverage	60.3	2.8	5.1	11.1	19.5	33.7	44.6	50.7	87.9

[1] Excludes railroads.
[2] Sample total in large size class includes combined units of telephone companies reporting to BLS under special arrangements.

NOTE: Because of rounding, sums of individual items may not equal totals. Data are classified according to the U.S. Office of Management and Budget's 1972 Standard Industrial Classification system.

adds to the difficulties that employers have in reporting in government surveys.

Data collection problems. In the final analysis, the kind of data that might be obtained in a survey operation is constrained by the amount of information that the respondent has at ready access. This is certainly the case with the establishment survey of employment, hours, and earnings, which has historically been keyed to the type of information readily available from the payroll records of responding firms. The experience of the Bureau and the cooperating State agencies is that establishments will report, under our strict pledges of confidentiality, information that would normally be considered privileged and proprietary, but only if it is conveniently and readily accessible. If the information request goes much beyond the normal recordkeeping practices of the firm, both overall response rates and responses to particular data items will suffer.

As a part of an overall review of the establishment

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payroll survey, BLS conducted two interview surveys with employers during 1981. The first sought to determine what data elements are readily available from employer payroll records on a monthly basis, while the second concerned itself with the reasons why employers are unable or reluctant to provide the requested data.

The majority of respondents indicated that the information requested each month was readily available. However, the proportion of manufacturing respondents who had easy access to such records was higher than the proportion of service respondents. This shows up in a rather significant difference between the service and manufacturing employers regarding their willingness to cooperate with the survey. For example, 45 percent of service-industry employers cited lack of time or resources to complete the BLS 790 survey form, compared with 19 percent of manufacturing employers.

The BLS 790 questionnaire requests a count of nonsupervisory workers, together with their payroll and paid hours. The interviews revealed that 31 percent of the service-industry employers who are reporting monthly information to BLS do not differentiate between supervisory and nonsupervisory workers in their payroll records. Because many of these establishments are small, the respondents are able and willing to make the necessary adjustments for BLS. However, 64 percent of employers who refused to cooperate in the survey claimed that they maintain only one payroll figure for all their employees and are unable to provide the requested nonsupervisory breakouts.

Another problem encountered in the interviews was that a significant proportion—19 percent—of service industry employers use an outside accounting service for preparing payrolls and payroll summaries, while only 5 percent of manufacturing employers do so. The accounting services generally handle only mandatory government reports for their clients, and this would have a negative impact on responses to a voluntary questionnaire like the BLS 790.

Table 3. Distribution of employment by establishment size class, and sector, 1980

[Employment in thousands]

Size class	Private nonfarm sector		Goods-producing sector		Service-producing sector	
	Employment	Percent of total	Employment	Percent of total	Employment	Percent of total
Total . .	72,249.8	100	26,041.6	100	46,208.2	100
0–3	3,278.9	5	515.2	2	2,763.7	6
4–9	6,493.7	9	1,190.7	5	5,303.0	12
10–19 . .	6,604.7	9	1,469.4	6	5,135.3	11
20–49 . .	10,100.8	14	2,687.4	10	7,413.4	16
50–99 . .	8,196.1	11	2,571.6	10	5,624.5	12
100–249	10,392.2	14	4,172.1	16	6,220.1	13
250–499	7,225.4	10	3,483.6	13	3,741.8	8
500–999	6,234.3	9	2,999.0	11	3,235.3	2
1000+ .	13,723.7	19	6,952.6	27	6,771.1	15

NOTE: Based on coverage under State Unemployment Insurance Laws. Excludes railroads, some nonprofit institutions, and commission insurance salesworkers.

Table 4. Selected service industries with large concentrations of small establishments, 1980

Industry	Total employment	Percentage of employment in firms with—			
		Under 10 workers	10 to 49 workers	50 to 249 workers	More than 250 workers
Gasoline service stations	554,000	53	29	14	4
Eating and drinking places	4,481,000	14	42	28	16
Real estate agents	344,000	40	30	24	6
Laundry, cleaning, and garment services	356,000	28	36	30	6
Beauty shops	284,000	64	27	7	2
Automotive repair shops	351,000	62	33	4	1
Offices of physicians	739,000	56	31	9	4
Offices of dentists	336,000	80	18	1	1

In sum, many of the reservations voiced by respondents to the interview surveys related to the fact that small establishments, already burdened with mandatory government reporting, simply are unable or unwilling to add to their paperwork by filling out voluntary survey forms. Some large service-industry employers which might otherwise be willing to cooperate—such as hospitals or schools—frequently do not maintain records according to BLS definitions, and thus are unable to report the requested information.

New business formations. In the establishment survey, the direct measurement of employment growth due to new business formations is exceedingly difficult. The lead time necessary to prepare the universe listing of establishments from which to select new sample respondents practically assures that any new business establishment will be several months old before it has a chance of being in the sample. In most instances, the new business will have completed its initial hiring before it becomes a sample member. Once the new establishment is a sample member and has reported for 2 consecutive months, its month-to-month employment change will contribute to the calculation of the "link relative" that is applied to the previous month's employment estimate to derive the current month's estimate. The problem is that the initial hiring that occurred before the new business became a sample member is never reflected in the "link relative" calculation.

The inability to properly measure employment growth from business births creates a downward bias in the employment estimates, which accumulates each successive month after the most recent benchmark to employment levels from the UI administrative data base. The extent of the bias is directly proportional to the contribution of business births to the employment in a given industry.

In industries characterized by large employers, new entries are very rare and therefore contribute little if

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Table 5. Percentage of part-time workers[1] by industry, selected years

Industry	1962	1972	1981
Total goods producing	4.4	2.1	4.5
Mining	3.6	1.4	2.3
Construction	5.8	5.2	7.1
Manufacturing	4.1	1.4	4.0
Total service producing	14.3	17.2	20.7
Transportation and public utilities	4.6	6.6	8.0
Trade	19.7	23.2	30.1
Wholesale	6.6	6.5	6.7
Retail	23.2	27.3	36.0
Finance, insurance, and real estate	9.3	9.1	11.0
Miscellaneous services	17.3	19.9	22.0
Business and repair	11.7	14.9	16.7
Personal	18.6	26.7	27.2
Entertainment and recreation	34.7	36.8	35.0
Medical, except hospital	([2])	19.4	26.1
Hospitals	([2])	14.7	16.2
Welfare and religious	([2])	22.0	26.1
Education	18.4	22.1	24.8
Other professional	15.4	12.7	14.0
Forestry and fisheries	4.9	5.9	8.9
Public administration	5.1	6.2	6.6

[1] Voluntary part-time workers, plus workers on part time for economic reasons who usually work part time.
[2] Data not available.

anything to employment trends. Many of the service-producing industries, however, are characterized by small employers, with large numbers of business births and deaths. While the deaths are measured by the establishment survey, the births are not, and an adjustment to the sample trend must be made each month to correct for the bias. These "birth bias" adjustment factors may account for a large part of the estimated long-term employment growth of many of the service-producing industries.

The calculation of birth bias adjustment factors is straightforward. For each of the most recent 3 years, the employment estimate derived from the sample link relatives (with no bias adjustment) is compared to the benchmark level. An adjustment factor is then calculated so that its application each month thereafter will cumulatively add to the average amount that the three previous benchmarks were underestimated. For example, if the sample-derived employment estimate for an industry was lower than the employment benchmarks by 1.6, 0.8, and 1.2 percentage points for the most recent 3 years, the average downward bias is 1.2 percent. A factor of 1.0010 will then be applied to the link relative for each of the next 12 months so as to adjust by 1.2 percent over the year.

Because of the availability of annual benchmark employment levels, it is possible to measure the extent of the bias for each industry over time. We have observed that the contribution of the bias can change at different stages of the business cycle. The bias also has seasonal swings in certain industries, and can be sensitive to

shocks to the economy, such as the 1973–74 oil embargo and the abnormally high interest rates of recent years. However, despite an ability to identify bias, the Bureau has not been able to develop procedures to fine-tune the bias adjustments on a current basis except in the construction division, which behaves with somewhat more predictability over the business cycle.

Redesigning the establishment survey

A review of the published output of the establishment survey as it is currently designed and operating puts into perspective the structural problem with the survey. As indicated in table 6, only 30.4 percent of the published industries are service producing, although 72.0 percent of the Nation's jobs are in these industries. A large part of this disparity arises because the Standard Industrial Classification system provides for more detail on goods-producing industries than on service-producing.

In addition to the problem of the coding structure, however, the establishment survey has been unable to produce data of publishable quality for much of the service-producing area because of the difficulty in obtaining employer responses and maintaining regular month-to-month reporting for a sufficiently large and representative sample in many of the component industries. The Bureau of Labor Statistics is now launching a major redesign of the survey which will deal directly with the problems that have prevented us from providing more reliable employment, hours, and earnings data for specific service-producing industries.

The sample frame. Because the UI administrative data base is unique in providing universal coverage of employers, we plan to continue and strengthen the link between the establishment survey and the administrative

Table 6. Distribution of industries by sector, according to SIC coding structure and as published by BLS

Divisions	1972 SIC structure		Published by BLS		
	Number of industries	Percent distribution	Number of industries	Percent distribution	Percent published
Total nonagriculture	1230	100.0	510	100.0	41.5
Goods producing	663	53.9	353	69.2	53.2
Mining	58	4.7	13	2.5	22.4
Construction	36	2.9	15	2.9	41.7
Manufacturing	569	46.3	324	63.5	56.9
Service producing	567	46.1	155	30.4	27.3
Transportation and public utilities	98	8.0	24	4.7	24.5
Wholesale trade	80	6.5	20	3.9	25.0
Retail trade	82	6.7	33	6.5	40.2
Finance, insurance, and real estate	95	7.7	19	3.7	20.0
Services	174	14.1	35	6.9	20.1
Government	38	3.1	23	4.5	60.5

data base. Initially, for example, testing of alternative sample designs will be done by retrospective cross tabulation of employer data from the UI files. In this manner, we can evaluate the representativeness of various designs for estimating employment and wages by industry without having to collect additional data.

We also plan to review carefully the completeness of the UI data base by comparisons with other listings of employers, such as the Census Bureau's Standard Statistical Establishment List and the files maintained by Dun and Bradstreet as part of its credit rating operations. And, particularly because of the volatile nature of many of the small establishments in the service sector, we want to review and document the procedures used by the State Employment Security Agencies for processing establishment births and deaths.

Bias adjustment. As part of the redesign effort, we will attempt to reduce the amount of bias adjustment for establishment births required in the employment estimates. This will be accomplished through additional stratification of the estimating cell structure. In addition, we will be reviewing potential sources of new-firm data and testing the use of such information in our estimation system. We know that new business formations and their impact on current employment trends vary significantly during a business cycle for many industries. Further work will be done to document this and to arrive at an appropriate means of varying the bias adjustment factors on a current basis according to the stage of the cycle.

Examination of seasonality. Seasonal adjustment of the establishment data is performed annually using the X-11 ARIMA model. The model options for projecting the data series 1 year ahead were used for the first time in 1981. Each year, the seasonal adjustment is updated at the time the establishment series are adjusted to new benchmark levels, usually in July.

Additional research will be undertaken as part of the redesign to test various X-11 options for making better seasonal adjustments for industries that are periodically affected by strikes, product model changeover, holidays, and so forth. We will also try to determine whether the seasonal adjustment should be updated every 6 months rather than annually.

Data collection techniques. Because we know that our traditional method of solicitation and collection of data by mail does not provide sufficient sample representation in many of the service-producing industries, we will be experimenting with other means of obtaining employer cooperation and collecting monthly data. Our goal is to arrive at the least costly mix of mail, telephone, and personal visit to satisfy our sample design.

Estimation process. In recent years, research by David Birch of the Massachusetts Institute of Technology and others has indicated that it is the small, young, volatile service-producing firms that are responsible for nearly all of the net creation of new employment opportunities.[4] Unfortunately, these are the firms which are least likely to be adequately represented in the establishment survey as now designed. We plan to test additional size and regional stratification of our sample to improve our employment estimates for industries with large proportions of such firms; heretofore, extensions of the sample stratification system were generally intended to improve estimates of hours and earnings, rather than employment.

Hours and earnings estimation. Because of the changing mix of full- and part-time workers in many service-producing industries, coupled with problems in defining a "nonsupervisory worker," we plan to test several alternative hours and earnings measures. We hope to demonstrate an ability to collect an "all-employee" earnings measure that can be benchmarked annually to the wage data from the UI administrative data base. To obtain better and more meaningful hours measures, we will try to collect information separately for "permanent," versus "all other," employees. The relationship between hours worked and hours paid, which is especially important for the construction of the Bureau's productivity measures, will also be studied.[5]

IN VIEW OF BOTH the increasing importance of the service-producing sector and the shortcomings in the current statistical measurement system, improvement in the data for this sector takes on a very high priority in the Bureau's plans for survey modernization. Such improvement, however, constitutes a formidable challenge, given the preponderance of hard-to-measure smaller establishments and the attendant reporting difficulties.

The path to improvement is threefold: a fine-tuning of the data collection process to ease the response burden and extend coverage; a reconsideration of the sample design in order to better focus survey coverage; and a review and extension of procedures for generating estimates based on the survey responses. The initial research on improving data collection is complete, while development of sample design and estimating procedures continues. Over the next 3 years, as resources permit, the findings of the initial research will be evaluated and, if cost-effective, will be integrated into the survey operations. □

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—— *FOOTNOTES* ——

[1] Among the several sources that extensively document the shift from goods- to service-producing are: Victor R. Fuchs, *The Service Economy* (New York, National Bureau of Economic Research, 1968); Harley L. Browning and Joachim Singelman, *The Emergence of a Service Society: Demographic and Sociological Aspects of the Sectoral Transformation of the Labor Force in the U.S.A.* (Population Research Center, University of Texas at Austin, 1975); Thomas M. Stanback, Jr., *Understanding the Service Economy: Employment, Productivity, Location* (Baltimore, Johns Hopkins University Press, 1979); Eli Ginsberg and George J. Vojta, "The Service Sector in the U.S. Economy," *Scientific American*, March 1981, pp. 48–55; and Michael A. Urquhart, "The services industry: is it recession proof?" *Monthly Labor Review*, October 1981, pp. 12–18.

[2] Marillyn A. Hewson and Michael A. Urquhart, "The Nation's employment situation worsens in the first half of 1982," *Monthly Labor Review*, August 1982, pp. 3–12.

[3] Malcolm S. Cohen and Arthur R. Schwartz, "U.S. labor turnover: analysis of a new measure," *Monthly Labor Review*, November 1980, pp. 9–13.

[4] A review of the work by David Birch and others appears in Richard Greene, "Tracking job growth in private industry," *Monthly Labor Review*, September 1982, pp. 3–9.

[5] For a more complete discussion of this issue, see Jerome A. Mark, "Measuring productivity in service industries," *Monthly Labor Review*, June 1982, pp. 3–8.

A note on communications

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

Unemployment and labor force trends in 10 industrial nations: an update

*Postwar joblessness reaches 13 percent
in Great Britain in the third quarter,
with West Germany, France, Canada,
and the United States also incurring
record high unemployment rates*

JOYANNA MOY

In the latter half of 1981 and the first 9 months of 1982, unemployment rates approximating U.S. concepts rose sharply in most of the 10 countries covered by the Bureau of Labor Statistics' series of comparative unemployment rates. Unemployment rates reached post-World War II highs in six of the industrial nations— the United States, Canada, France, West Germany, Great Britain, and the Netherlands. Italian unemployment, although at a comparatively moderate level of 4.7 percent after adjustment to U.S. concepts, was the highest since 1959. In addition, there were an equally large number of "discouraged workers" in Italy—persons who wanted jobs but had not actively sought work recently. Although Japanese and Swedish unemployment rates remained substantially lower, in the 2 to 3 percent range, both countries had higher rates than they normally experienced over the last 20 years. Australia was the only country where the jobless rate was down in 1981; it rose, however, in the first 9 months of 1982.

This article updates comparative unemployment rates through the third quarter 1982 and other related labor market statistics through 1981 for the 10 countries. The foreign unemployment and labor force data are adjusted to U.S. concepts. Some revisions of previously

published estimates are also presented; the revisions arise from incorporation of more recent survey results.[1]

Unemployment pushes higher

In 1981, the U.S. unemployment rate of 7.6 percent was surpassed by the rates in Great Britain, 11.3 percent, the Netherlands, 8.9 percent, and France, 7.7 percent, and was matched in Canada. (See table 1.) The Australian rate fell to 5.8 percent. Unemployment rates of 4.2 percent were recorded in Germany and Italy; Japanese and Swedish jobless rates were in the 2 percent range.

By the second quarter of 1982, rates had risen in all 10 countries. The U.S. jobless rate, which had remained stable for the first three quarters of 1981, surged in the fourth quarter and reached new highs of 9.5 percent in the second quarter and 9.9 percent in the third quarter. Nevertheless, the U.S. rate was still exceeded by the rates in Great Britain, Canada, and probably the Netherlands.[2] The British rate, which rose to about 13 percent in early 1982, was the highest ever recorded in the BLS series of comparative unemployment statistics.

West Germany's unemployment rate also rose sharply in the fourth quarter of 1981 and the first half of 1982, while France and Italy experienced more moderate increases. However, both German and French third quarter rates were postwar records, and the second-

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Table 1. Quarterly unemployment rates approximating U.S. concepts, seasonally adjusted, 1978–82

Period	United States	Canada	Australia	Japan	France[1]	West Germany[1]	Great Britain[1]	Italy[2]	Sweden
1978	6.1	8.4	6.3	2.3	5.4	3.4	6.3	3.7	2.2
I	6.3	8.4	6.5	2.2	4.8	3.5	6.5	3.6	2.2
II	6.0	8.5	6.3	2.3	5.3	3.5	6.4	3.6	2.3
III	6.0	8.4	6.2	2.3	5.7	3.4	6.2	3.6	2.4
IV	5.9	8.2	6.3	2.3	5.6	3.3	6.0	3.9	2.1
1979	5.8	7.5	6.2	2.1	6.1	3.0	5.7	3.9	2.1
I	5.9	7.9	6.4	2.1	5.8	3.2	5.9	3.8	2.2
II	5.7	7.6	6.3	2.1	6.2	3.0	5.6	3.9	2.2
III	5.8	7.1	6.2	2.1	6.3	2.9	5.7	3.9	2.0
IV	6.0	7.3	6.1	2.1	6.2	2.8	5.6	3.9	1.8
1980	7.1	7.5	6.1	2.0	6.5	3.0	7.3	3.9	2.0
I	6.3	7.5	6.1	1.9	6.2	2.8	5.8	4.0	1.8
II	7.3	7.7	6.3	2.0	6.5	2.8	6.5	4.0	2.0
III	7.6	7.5	6.1	2.1	6.5	2.9	7.4	3.9	1.9
IV	7.5	7.4	6.0	2.2	6.6	3.1	9.0	3.8	2.2
1981	7.6	7.6	5.8	2.2	7.7	4.2	11.3	4.2	2.5
I	7.4	7.3	5.8	2.2	7.0	3.6	10.3	3.9	2.2
II	7.4	7.2	5.5	2.4	7.7	3.9	11.1	4.4	2.2
III	7.4	7.6	5.8	2.2	7.9	4.4	11.5	4.1	2.5
IV	8.3	8.4	5.9	2.2	7.9	4.9	12.5	4.4	3.1
1982									
I	8.8	8.6	6.3	2.3	8.3	5.3	13.0	4.6	3.0
II	9.5	10.2	6.6	2.4	8.6	5.9	12.9	4.7	3.1
III	9.9	12.1	7.1	—	8.7	6.3	13.0	4.5	—

[1] Preliminary for West Germany from 1979 onward, and for France and Great Britain from 1981 onward.

[2] Quarterly data are for January, April, July, and October.

NOTE: Quarterly figures for France, West Germany, Italy, and Great Britain are calculated by applying annual adjustment factors to current published data and therefore should be viewed as only approximate indicators of unemployment under U.S. concepts. Published data for Australia, Canada, Japan, and Sweden require little or no adjustment.

quarter Italian rate was the highest in more than 20 years.

Japan's unemployment rate increased marginally to 2.4 percent in the second quarter, after remaining at about 2.2 percent for the previous three quarters. Sweden's unemployment rate rose from 2.2 percent in the first half of 1981 to 3.1 percent in the fourth quarter but remained at about 3.0 percent in the first half.

The current comparative unemployment situation is in marked contrast with the 1960's and early 1970's. In those years, unemployment rates in the United States and Canada were much higher than in Western Europe, Japan, and Australia. U.S. and Canadian rates averaged about 5 percent during that period, compared to 1 percent in Japan and Germany, 2 percent in Australia, France, and Sweden, and 3 percent in Great Britain and Italy.

Unemployment rates trended down in the second half of the 1960's in the United States, Canada, Japan, and Australia, while in the European countries they were up. In the early 1970's, unemployment rates were higher again in every country except Italy. In the United States, Canada, and Japan, however, they were still below the levels of the early 1960's. Subsequently, unemployment rates continued up in every country except Japan and Sweden.

Unemployment has risen more rapidly in most European countries and Australia than in the United States, Canada, and Japan since the 1973 oil embargo and the 1974–75 recession. By the early 1980's, West Germany's unemployment rate was more than 6 times as high as in

1960–74. French jobless rates increased more than fourfold by 1980–82, British rates more than tripled and Australian rates tripled. In the United States and Canada, 1980–82 unemployment rates were about 50 percent higher than in 1960–74. However, both countries had begun with relatively high rates in the earlier period. Japan's unemployment rate increased somewhat more, but remained well below 3 percent. The smallest increases in unemployment rates since 1960–74 occurred in Sweden and Italy. Italy's rates were the highest in Europe during the earlier period, however, and its recent rates exclude a large group of discouraged workers. Sweden, by contrast, now has the lowest unemployment rate among the European countries.

Employment shows broad decline

In the first half of 1982, employment rose over 1981 in only 2 of the 10 countries studied—by 0.6 percent in Japan and by 0.2 percent in Australia. Employment declined most sharply in Canada, 1.9 percent, and Great Britain, 1.7 percent. Employment fell by 1 percent or less in the United States, West Germany, Italy, and Sweden and probably in France and the Netherlands as well.

In 1981, employment had increased about 1 percent in the United States and Japan and 2 to 2.5 percent in Australia and Canada. Among the European countries, employment increased only in Italy, a marginal 0.5 percent; in the other countries, employment declined. The largest decline was 4 percent in Great Britain. (See table 2.)

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Employment growth was stronger in North America, Australia, and Japan than in Western Europe in earlier periods also. For all six European countries, annual average employment growth had been only 1 percent or less since 1960. In the 1960–73 period, the employment trend was negative only in one country, Italy; since 1973, the overall employment trend had been down in West Germany and Great Britain.

Employment maintenance programs. Special employment maintenance and training programs have had a significant impact on the 1981–82 employment levels in several European countries. For example, in June 1982, about 535,000 Britons were covered by various employment and training schemes. According to the British Department of Employment, the direct effect of these programs was to keep about 300,000 persons (1.1 percent of the labor force) off the June 1982 unemployment register.[3] In Sweden, although the number in training programs for labor market reasons declined in 1981, the total enrolled in the various public works and training programs actually exceeded the number of unemployed by 8 percent and accounted for 2.7 percent of the labor force (versus an unemployment rate of 2.5 percent).

In France, West Germany, Great Britain, and Italy, employment was supported by wide-reaching programs to subsidize employees placed on shorter hours for economic reasons. In France, an average of nearly 320,000 workers, equivalent to approximately 14.3 million work days, were covered in the first 10 months of 1981. The number of workers covered, 1.4 percent of the labor force, was up 130 percent from the first 10 months of 1980. In West Germany, the number of persons on short-time increased 150 percent in 1981 to nearly 350,000 workers, about 1.3 percent of the labor force. In Great Britain, the number covered by the Temporary Short-Term Working Compensation Scheme in 1981 ranged from a high of nearly one million in March to 190,000 in December. The average for the year, about 540,000, was 2.2 percent of the labor force. In the first half of 1982, the number receiving benefits declined further, to under 150,000 persons. In Italy, the number of hours subsidized by the Wage Supplement Fund rose 85 percent to 550 million hours in 1981. If the number of hours subsidized were spread among all employed persons, then approximately 27 hours per person were subsidized in 1981; or, assuming 1,800 hours worked per person, the equivalent of 1.4 percent of the labor force was subsidized.

Employment-population ratios. Although employment rose in 1981 in five of the countries, the employment-population ratio rose only in Canada. In the other four countries—the United States, Japan, Australia, and Italy—employment growth matched growth in the working age population, and employment ratios were virtually unchanged. The employment ratio fell sharply from 1980 in Great Britain, along with the 1-million decline in employment. Employment-population ratios also fell in France, West Germany, the Netherlands, and Sweden. (See table 2.) Sweden still had by far the highest employment ratio, 65 percent. By comparison, the 1981 ratios were around 60 percent in the United States, Canada, Japan, and Australia; 50 to 55 percent in France, West Germany, and Great Britain; and about 45 percent in the Netherlands and Italy.[4]

Labor force participation stable

With the exceptions of Canada and Great Britain, there was little or no change in 1981 in labor force participation rates—the proportion of the civilian working-age population in the labor force. In Canada, the participation rate rose to 64.7 percent in 1981 from 64.0 percent in 1980, the increase resulting entirely from continued growth in the female participation rate. In Great Britain, by contrast, the overall participation rate declined for the third consecutive year as both male and female participation continued to move downward. In most countries, changes in participation were characterized by secular downtrends for men and increases for women.

Labor force participation rates continued to be highest in Sweden, 67 percent, and lowest in Italy, 48 percent. In West Germany and the Netherlands, slightly more than 50 percent of the working age population were employed or looked for work in 1981, compared to 57 percent in France and 62 to 65 percent in the other five countries. (See table 2.)

Discouraged workers. Data on discouraged workers—persons who state a current desire for work but who are not actively seeking a job because they think they cannot find one—are available only for the United States, Canada, Sweden, and Italy. In the United States, the number of discouraged workers doubled from 1979 to 1.5 million (compared with around 10 million unemployed persons). The Canadian definition of discouraged workers is somewhat more restrictive than the U.S. definition.[5] Nevertheless, the number of discouraged workers, as in the United States, is currently equivalent to about 15 percent of the unemployed. In Sweden, the number of discouraged workers had been about half the number of unemployed since 1978.

In Italy, the number of persons not in the labor force who were classified, by Italian definitions, as discouraged jobseekers in 1981 was only about 80,000—equivalent to less than 10 percent of the number unemployed. In addition, however, approximately half the Italians who stated they were unemployed said they had not actively sought work within the last 30 days. These persons have been excluded from the unemployed by BLS, because U.S. concepts require active workseeking

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Table 2. Civilian labor force, employment, and unemployment approximating U.S. concepts, 10 countries, 1974–81

[Numbers in thousands]

Year	United States	Canada	Australia	Japan	France	West Germany	Great Britain	Italy	Netherlands	Sweden
Labor force										
1974	91,949	9,639	6,053	52,440	21,590	26,050	24,850	20,060	4,760	4,037
1975	93,775	9,974	6,169	52,530	21,620	25,640	25,150	20,270	4,830	4,123
1976	96,158	10,206	6,244	53,100	21,800	25,400	25,350	20,490	4,890	4,149
1977	99,009	10,498	6,358	53,820	22,130	25,360	25,510	20,530	4,950	4,168
1978	102,251	10,882	6,399	54,600	22,300	25,520	25,650	20,630	¹5,000	4,203
1979	104,962	11,207	6,480	55,210	22,500	¹25,780	25,550	20,910	¹5,100	4,262
1980	106,940	11,522	6,655	55,740	22,580	¹26,030	25,380	21,210	¹5,240	4,314
1981	108,670	11,830	6,771	56,320	¹22,710	¹26,190	¹25,310	¹21,360	¹5,390	4,326
Labor force participation rate²										
1974	61.3	60.5	63.0	63.0	57.2	54.4	62.6	47.9	48.2	64.9
1975	61.2	61.1	63.2	62.4	56.7	53.4	63.2	47.9	49.3	65.9
1976	61.6	61.1	62.7	62.3	56.7	52.8	63.4	48.2	49.1	66.0
1977	62.3	61.5	62.7	62.5	57.1	52.4	63.4	48.0	49.0	65.9
1978	63.2	62.6	62.0	62.8	57.1	52.3	63.4	47.7	¹48.8	66.1
1979	63.7	63.3	61.7	62.7	57.3	¹52.3	62.8	47.8	¹49.0	66.6
1980	63.8	64.0	62.2	62.6	57.1	¹52.5	62.0	48.0	¹49.5	67.1
1981	63.9	64.7	62.0	62.6	¹57.1	¹52.4	¹61.4	¹48.0	¹50.5	¹67.1
Employment										
1974	86,794	9,125	5,891	51,710	20,960	25,630	24,080	19,500	4,580	3,957
1975	85,846	9,284	5,866	51,530	20,710	24,750	24,000	19,620	4,580	4,056
1976	88,752	9,479	5,946	52,020	20,800	24,510	23,840	19,760	4,630	4,083
1977	92,017	9,648	6,000	52,720	21,040	24,460	23,890	19,790	4,700	4,093
1978	96,048	9,972	5,997	53,360	21,100	24,650	24,040	19,870	¹4,740	4,109
1979	98,824	10,369	6,075	54,040	21,120	¹25,000	24,100	20,100	¹4,830	4,174
1980	99,303	10,655	6,250	54,600	21,120	¹25,260	23,530	20,380	¹4,920	4,228
1981	100,397	10,933	6,380	55,060	¹20,970	¹25,100	¹22,440	¹20,460	¹4,910	4,218
Employment-population ratio³										
1974	57.8	57.3	61.3	62.2	55.5	53.5	60.7	46.6	46.3	63.6
1975	56.0	56.9	60.1	61.2	54.3	51.5	60.3	46.4	46.7	64.8
1976	56.8	56.7	59.7	61.1	54.1	50.9	59.6	46.5	46.5	64.9
1977	57.9	56.6	59.2	61.2	54.3	50.5	59.4	46.3	46.5	64.8
1978	59.3	57.4	58.1	61.3	54.1	50.5	59.4	45.9	¹46.2	64.6
1979	59.9	58.6	57.9	61.4	53.8	¹50.8	59.2	46.0	¹47.4	65.3
1980	59.2	59.2	58.4	61.3	53.4	¹50.9	57.4	46.1	¹46.5	65.8
1981	59.0	59.8	58.4	61.2	¹52.7	¹50.2	¹54.4	¹46.0	¹46.0	¹65.4
Unemployment										
1974	5,156	514	162	730	630	420	770	560	180	80
1975	7,929	690	302	1,000	910	890	1,150	650	250	67
1976	7,406	727	298	1,080	1,000	890	1,510	730	260	66
1977	6,991	850	358	1,100	1,090	900	1,620	740	250	75
1978	6,202	911	402	1,240	1,200	870	1,610	760	¹260	94
1979	6,137	838	405	1,170	1,380	¹780	1,450	810	¹270	88
1980	7,637	867	405	1,140	1,460	¹770	1,850	830	¹320	86
1981	8,273	898	390	1,260	¹1,760	¹1,090	¹2,870	¹900	¹480	108
Unemployment rate										
1974	5.6	5.3	2.7	1.4	2.9	1.6	3.1	2.8	3.8	2.0
1975	8.5	6.9	4.9	1.9	4.2	3.5	4.6	3.2	5.2	1.6
1976	7.7	7.1	4.8	2.0	4.6	3.5	6.0	3.6	5.4	1.6
1977	7.1	8.1	5.6	2.0	5.0	3.5	6.4	3.6	5.1	1.8
1978	6.1	8.4	6.3	2.3	5.4	3.4	6.3	3.7	¹5.2	2.2
1979	5.8	7.5	6.2	2.1	6.1	¹3.0	5.7	3.9	¹5.3	2.1
1980	7.1	7.5	6.1	2.0	6.5	¹3.0	7.3	3.9	¹6.1	2.0
1981	7.6	7.6	5.8	2.2	¹7.7	¹4.2	¹11.3	¹4.2	¹8.9	2.5
Unemployment rate (as published)⁴										
1974	5.6	5.3	2.7	1.4	2.8	2.6	2.6	⁵5.4	3.5	2.0
1975	8.5	6.9	4.9	1.9	4.2	4.7	4.1	⁵5.9	5.0	1.6
1976	7.7	7.1	4.8	2.0	4.6	4.6	5.6	⁵6.7	5.3	1.6
1977	7.1	8.1	5.6	2.0	4.9	4.5	6.1	7.2	5.1	1.8
1978	6.1	8.4	6.3	2.2	5.3	4.3	6.0	7.2	5.0	2.2
1979	5.8	7.5	6.2	2.1	6.1	3.8	5.6	7.7	5.0	2.1
1980	7.1	7.5	6.1	2.0	6.4	3.8	7.3	7.6	5.8	2.0
1981	7.6	7.6	5.8	2.2	¹7.5	5.5	11.3	8.4	9.0	2.5

¹ Preliminary estimate based on incomplete data.

² Civilian labor force as a percent of civilian working age population.

³ Civilian employment as a percent of civilian working age population.

⁴ Published and adjusted data for the United States, Canada, and Australia are identical. For France, unemployment as a percent of the civilian labor force; for Japan, Italy, and Sweden, unemployment as a percent of the civilian labor force plus career military personnel; for West Germany, Great Britain, and the Netherlands, registered unemployed as a percent of employed wage and salary workers plus the unemployed. With the exception of France, which does not publish an unemployment rate, these are the usually published unemployment rates for each country.

⁵ Italian Central Institute of Statistics estimate made for comparability with the revised labor force survey, introduced in 1977.

NOTE: Data for the United States relate to the population 16 years of age and over. Published data for France, West Germany, Italy, and the Netherlands relate to the population 14 years of age and over; for Sweden, to the population aged 16 to 74; and for Canada, Australia, and Japan, to the population 15 years of age and over. For Great Britain, the lower age limit was raised from 15 to 16 in 1973. The statistics have been adapted, insofar as possible, to the age at which compulsory schooling ends in each country. Therefore, the adjusted statistics for France relate to the population 16 and over and for West Germany and the Netherlands, to the population 15 years of age and over. The age limits of the statistics for Canada, Australia, Japan, Great Britain, and Italy coincide with the age limits of the published statistics. Statistics for Sweden remain at the lower age limit of 16, but have been adjusted to include persons 75 years of age and over.

in the last 4 weeks (unless on temporary layoff or waiting to begin a new job). Under U.S. concepts, however, many of these persons would be classified as discouraged workers.

Foreign worker joblessness high

Foreign workers continue to be an important factor in the unemployment rates in Western Europe, particularly in West Germany, France, and Sweden. In 1981, foreign workers made up 9.2 percent of the labor force in West Germany, 6.3 percent in France, and 5.4 percent in Sweden; and in all three countries, foreign nationals had substantially higher unemployment rates than native-born workers.

In France, the foreign worker unemployment rate was nearly twice the overall rate in March 1981. Unemployment among both foreign workers and the native born increased at similar rates from 1980. In West Germany, the foreign worker unemployment rate had been increasing more rapidly than the overall rate. In the first quarter of 1982, the rate for foreigners was 50 percent higher than the overall jobless rate; in 1980, it was about one-third higher. Jobless rates for migrant workers in Sweden had been about double the overall rates since the labor force survey began collecting the data in 1977. In the first quarter of 1982, the foreign worker rate reached 6 percent, while the overall rate rose to 3 percent.

───── FOOTNOTES ─────

[1] For further information, see *International Comparisons of Unemployment*, Bulletin 1979, Appendix B (Bureau of Labor Statistics, 1978); and Supplement to Bulletin 1979, Appendix B (Bureau of Labor Statistics, 1982).

[2] Seasonally adjusted quarterly unemployment rates approximating U.S. concepts are not available for the Netherlands. However, the seasonally adjusted registered unemployment rate for the first quarter of 1982 indicates that the Dutch unemployment rate approximating U.S. concepts would probably be higher than the first-quarter U.S. rate.

[3] Department of Employment, "Special Employment and Training Measures," Press Notice, July 20, 1982, p. 1.

[4] In Italy, the employment ratio is understated because of the large pool of "black labor"—persons with an unreported job and whose labor force status is reported as unemployed or not in the labor force. For further information, see *International Comparisons of Unemployment*, p. 134.

[5] In Canada, discouraged workers must have actively sought work within the last 6 months. In the United States, recent jobseeking is not required in order to be classified as discouraged.

A new look at occupational wages within individual establishments

Analysis of wage structures shows
that pay differences within
individual establishments are generally
smaller than those of the surveywide average

ROBERT W. VAN GIEZEN

Reports containing results of occupational wage surveys generally emphasize average earnings of individual jobs. While these types of data are useful to those interested in levels of pay and overall relationships among occupational averages, they do not show occupational pay differentials within individual establishments. For example, according to a Bureau of Labor Statistics report on pay levels in metropolitan areas, janitors averaged $4.87 an hour in July 1980 and tractor-trailer truckdrivers averaged $9.63, or nearly twice as much.[1] But, the average pay differential within individual establishments having both janitors and tractor-trailer drivers was only about 30 percent.

Data on internal pay alignments are of special concern to wage and salary administrators, labor-management contract negotiators, and those who develop or analyze internal wage structures. Although not necessarily to the degree indicated by the comparison of janitors and truckdrivers, pay setters may find a conflict between the twin objectives of gearing occupational pay rates to local labor market conditions and, at the same time, maintaining appropriate internal pay structures. Reconciliation of these conflicting objectives can be a major issue in wage and salary administration.[2] To satisfy the need for information on internal pay alignments, the Bureau of Labor Statistics now reports average occupational pay relationships within establishments in its *Area Wage Survey* publications.[3] This article

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presents an analysis of pay relatives for all metropolitan areas combined, and summarizes the within establishment differences among industry divisions, regions, and establishment size groups.[4]

Method an analysis

A simple numerical example may sharpen the distinction between the two approaches to analyzing occupational wage relationships. The following tabulation uses hypothetical data to illustrate pay relationships of surveywide averages versus those within establishments:

	Establishment			All
	A	B	C	establishments
Surveywide:				
Job 1				
Number of workers . . .	5	1	3	9
Hourly pay	$4	$7	$6	$5
Job 2				
Number of workers . . .	1	2	–	3
Hourly pay	$5	$11	–	$9
Within establishments:				
Number of workers . . .	6	3	–	9
Pay relative	125	157	–	136

The traditional approach—comparison of published survey averages for individual jobs—is influenced by the numbers of workers in these jobs in establishments having different pay levels, as well as by differences in occupational pay levels. Using this approach, the survey average pay in all establishments for job 2 ($9) exceeds that for job 1 ($5) by 80 percent. However, when

the focus shifts to the pay differentials *within* individual establishments, a 36-percent differential results. The differential is computed by averaging pay relatives (average earnings for job 2 as a percent of earnings for job 1) of all establishments, using combined employments of the two jobs as weights. The difference between within establishment and surveywide relationships is affected if an establishment has only one of the two jobs being compared. (Note that establishment C with only one of the jobs is not used in the computation.)

In this tabulation, the average pay difference within establishments (*intra-establishment* differential) is less than the difference between the survey averages for the two jobs (*inter-establishment* differential). However, this is not always the case. The inter-establishment differential would be smaller than the intra-establishment differential if a high-paying firm had a concentration of workers in a low-paying job, or if a low-paying firm had a concentration of workers in a high-paying job.

Intra- versus inter-establishment relationships

Both intra- and inter-establishment pay relationships are shown in table 1. These comprehensive matrices show average pay relationships between pairs of jobs. For example, reading across the row for tractor-trailer drivers, the pay relative of 129 in the janitors column means that the average pay advantage of the drivers over janitors in establishments with both these occupations was 29 percent. The figure in parenthesis, 198, means that the survey average for tractor-trailer drivers in all metropolitan areas was almost double that of janitors when data from all establishments (having either one or both of the jobs) were used in the calculation. Similarly, the data show intra- and inter-establishment pay advantages of tractor-trailer drivers over class B guards of 31 and 132 percent, respectively.[5] These differences between intra- and inter-establishment pay relatives are extreme cases. The comparisons were much closer for most occupational pairings.

A seeming inconsistency in the relationships among some occupations must be explained. For example, intra-establishment differences show a pay advantage of 5 percent for tractor-trailer drivers and of 7 percent for drivers of heavy trucks, when drivers of light trucks serve as a base. One might conclude that within individual establishments, drivers of heavy trucks earn more than drivers of tractor-trailers. However, direct comparisons between these two jobs show a 1-percent advantage in favor of tractor-trailer drivers. The incongruity is eliminated when it is recognized that establishments employing light-truck and tractor-trailer drivers are not necessarily the ones that employ both light- and heavy-truck drivers or both tractor-trailer and heavy-truck

drivers. Each comparison is based on a different set of observations.

Intra-establishment differentials were generally smaller, and substantially so in a number of instances, than inter-establishment differences for the same occupations. This is revealed most strikingly in the comparisons between material movement and custodial occupations, where 90 percent of the inter-establishment differentials exceeded intra-establishment differences. For example, overall survey averages show that material handling laborers earned 71 percent more than class B guards, while the average intra-establishment advantage for these laborers was only 4 percent. These findings can be related to the industrial incidence of the two jobs: many material handling laborers are employed in highly paid and heavily unionized industries; conversely, many guards are employed by protection agencies paying near the Federal minimum wage. This employment pattern tends to widen the difference between surveywide averages but has no effect on occupational pay differentials within individual establishments.

Similar findings appear when the analysis is limited to various levels or classifications of the same occupation. Based on inter-establishment comparisons, drivers of tractor-trailer trucks averaged more than drivers of other trucks, up to 50 percent more than drivers of light trucks. However, when the earnings of truckdrivers within the same establishment are compared, the average differential is lowered to a maximum of 5 percent.

Occupational earnings differentials—whether measured by inter- or intra-establishment differentials—were lower among maintenance, toolroom, and powerplant jobs than any other occupational group studied. The relative homogeneity among these occupations can be explained by several factors. First, almost all of the jobs studied were at the journeyman level of skill, and the workers often were under single-rate pay systems. Second, more than 80 percent of the workers were employed in a single industry division—manufacturing. Finally, these occupations are among the most heavily unionized of the occupations studied. As will be shown later, the findings of this study generally are consistent with the idea that inter-occupational wage differentials are narrower in the union sector.

Except for higher paid tool-and-die makers and lower paid boiler tenders and maintenance helpers, pay rates within establishments were almost identical for all the maintenance, toolroom, and powerplant jobs. Nevertheless, overall survey averages were not reliable indicators of intra-establishment relationships. For example, the overall average pay of millwrights was 4 percent above that for tool-and-die makers, while the intra-establishment pay relationship was reversed—millwrights averaged 4 percent less than tool-and-die makers. This type

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Table 1. Intra- and inter-establishment pay relationships between occupations, all metropolitan areas, July 1980

[Inter-establishment pay relative in parenthesis]

Occupations for which average earnings equals 100

Occupations for which earnings are compared	Tractor-trailer	Heavy truck	Medium truck	Light truck	Power-truck operators (other than forklift)	Forklift operators	Receivers	Shippers and receivers	Warehouse workers
Material movement and custodial									
Truckdrivers, tractor-trailer	100	101 (116)	102 (115)	105 (156)	106 (127)	108 (124)	108 (144)	109 (147)	109 (135)
Truckdrivers, heavy truck	99 (86)	100	106 (100)	107 (135)	106 (110)	107 (107)	114 (124)	111 (127)	111 (117)
Truckdrivers, medium truck	98 (87)	94 (100)	100	106 (135)	102 (110)	105 (107)	103 (125)	104 (128)	105 (117)
Truckdrivers, light truck	95 (64)	94 (74)	95 (74)	100	98 (81)	102 (79)	97 (92)	98 (94)	103 (87)
Power-truck operators (other than forklift)	94 (79)	94 (91)	98 (91)	102 (123)	100	100 (97)	99 (113)	102 (116)	102 (107)
Forklift operators	93 (81)	93 (94)	96 (93)	98 (126)	100 (103)	100	99 (116)	99 (119)	100 (109)
Receivers	92 (69)	88 (81)	97 (80)	104 (108)	101 (88)	101 (86)	100	96 (102)	102 (94)
Shippers and receivers	92 (68)	90 (79)	96 (78)	102 (106)	98 (86)	101 (84)	104 (98)	100	102 (92)
Warehouse workers	92 (74)	90 (86)	95 (85)	97 (115)	98 (94)	100 (91)	98 (106)	98 (109)	100
Shippers	91 (70)	90 (81)	99 (81)	105 (110)	103 (89)	103 (87)	101 (101)	101 (104)	104 (95)
Material handling laborers	91 (74)	90 (85)	90 (85)	91 (115)	97 (94)	96 (91)	92 (106)	94 (109)	92 (100)
Order fillers	90 (68)	86 (79)	92 (79)	96 (107)	99 (87)	97 (85)	93 (99)	96 (101)	96 (93)
Guards, class A	84 (63)	92 (73)	87 (72)	99 (98)	96 (80)	96 (78)	98 (90)	101 (92)	94 (85)
Shipping packers	84 (61)	71 (71)	84 (70)	91 (95)	97 (77)	98 (75)	90 (88)	92 (90)	94 (82)
Janitors, porters, and cleaners	77 (51)	72 (59)	78 (58)	82 (79)	92 (64)	90 (63)	86 (73)	86 (75)	84 (69)
Guards, class B	76 (43)	65 (50)	75 (50)	92 (67)	93 (55)	94 (53)	91 (62)	93 (64)	89 (58)

Occupations for which earnings are compared	Tool-and-die makers	Maintenance electricians	Maintenance machinists	Stationary engineers	Maintenance mechanics (machinery)	Maintenance sheet-metal workers	Maintenance pipefitters	Maintenance mechanics (motor vehicles)
Maintenance, toolroom, and powerplant								
Tool-and-die makers	100	103 (102)	104 (106)	104 (110)	105 (109)	104 (97)	104 (98)	104 (106)
Maintenance electricians	97 (98)	100	100 (104)	101 (108)	101 (107)	101 (96)	102 (97)	103 (105)
Maintenance machinists	96 (95)	100 (96)	100	102 (104)	102 (103)	101 (92)	102 (93)	103 (101)
Stationary engineers	96 (91)	99 (93)	98 (96)	100	100 (99)	100 (89)	101 (89)	101 (97)
Maintenance mechanics (machinery)	96 (92)	99 (94)	98 (97)	100 (101)	100	100 (90)	101 (91)	101 (98)
Maintenance sheet-metal workers	96 (103)	99 (105)	99 (109)	100 (113)	100 (112)	100	100 (101)	100 (109)
Maintenance pipefitters	96 (102)	98 (108)	99 (108)	99 (112)	99 (110)	100 (99)	100	100 (108)
Maintenance mechanics (motor vehicles)	96 (94)	97 (95)	97 (99)	97 (103)	99 (102)	100 (91)	100 (92)	100
Millwrights	96 (104)	98 (106)	97 (110)	99 (114)	99 (113)	100 (101)	100 (102)	100 (111)
Machine-tool operators (toolroom)	95 (99)	98 (100)	97 (104)	100 (108)	99 (107)	101 (96)	100 (97)	101 (105)
Maintenance carpenters	94 (90)	97 (92)	97 (96)	98 (99)	98 (98)	99 (88)	99 (89)	100 (96)
Maintenance painters	93 (87)	94 (88)	94 (92)	96 (96)	94 (94)	97 (85)	97 (85)	97 (93)
Boiler tenders	90 (79)	92 (80)	91 (83)	90 (86)	93 (85)	94 (77)	95 (77)	95 (84)
Maintenance trades helpers	77 (75)	80 (76)	82 (79)	83 (82)	82 (81)	84 (73)	85 (73)	82 (79)

Occupations for which earnings are compared	Computer systems analysts (business) Class A	Class B	Class C	Computer programmers (business) Class A	Class B	Class C	Computer operators Class A	Class B	Class C
Professional and technical									
Computer systems analysts, class A	100	119 (116)	141 (134)	129 (124)	149 (147)	175 (177)	162 (161)	190 (196)	220 (227)
Computer systems analysts, class B	84 (86)	100	120 (116)	111 (107)	129 (127)	149 (153)	137 (139)	161 (169)	188 (196)
Computer systems analysts, class C	71 (75)	84 (86)	100	94 (92)	112 (109)	128 (132)	117 (120)	136 (146)	156 (170)
Computer programmers analysts, class A	78 (81)	90 (94)	106 (108)	100	122 (119)	145 (143)	130 (130)	155 (158)	184 (184)
Computer programmers analysts, class B	67 (68)	78 (79)	89 (91)	82 (84)	100	122 (120)	109 (110)	131 (133)	155 (155)
Computer programmers analysts, class C	57 (57)	67 (66)	78 (76)	69 (70)	82 (83)	100	93 (91)	111 (111)	131 (129)
Computer operators, class A	62 (62)	73 (72)	86 (83)	77 (77)	92 (91)	107 (110)	100	121 (121)	141 (141)
Computer operators, class B	53 (51)	62 (59)	74 (69)	64 (63)	76 (75)	90 (90)	83 (82)	100	121 (116)
Computer operators, class C	45 (44)	53 (51)	64 (59)	54 (54)	64 (65)	77 (78)	71 (71)	83 (86)	100
Peripheral equipment operators	47 (48)	57 (55)	68 (64)	59 (59)	68 (70)	76 (84)	72 (77)	83 (93)	93 (108)
Computer data librarians	48 (45)	57 (53)	68 (61)	60 (56)	69 (67)	80 (80)	76 (73)	88 (89)	103 (103)
Electronics technicians, class A	76 (80)	91 (92)	109 (107)	90 (99)	106 (117)	127 (141)	116 (129)	139 (156)	162 (182)
Electronics technicians, class B	65 (70)	77 (81)	91 (94)	75 (87)	89 (103)	104 (124)	113 (113)	127 (137)	142 (159)
Electronics technicians, class C	54 (51)	64 (59)	76 (68)	61 (63)	74 (75)	85 (90)	88 (82)	106 (99)	119 (115)
Registered industrial nurses	65 (67)	74 (78)	87 (90)	79 (83)	92 (99)	108 (119)	97 (108)	115 (132)	130 (153)

Occupations for which earnings are compared	Secretaries Class A	Class B	Class C	Class D	Class E	Stenographers Senior	General	Transcribing-machine typists	Typists Class A	Class B
Office clerical										
Secretaries, class A	100	116 (109)	132 (119)	146 (133)	153 (144)	143 (123)	160 (133)	157 (165)	162 (149)	180 (184)
Secretaries, class B	86 (91)	100	117 (109)	129 (121)	137 (132)	131 (112)	142 (122)	142 (151)	141 (136)	158 (168)
Secretaries, class C	76 (84)	86 (92)	100	115 (111)	122 (121)	118 (103)	128 (112)	126 (139)	125 (125)	141 (154)
Secretaries, class D	69 (75)	78 (82)	87 (90)	100	113 (109)	111 (92)	120 (100)	116 (125)	118 (112)	131 (138)
Secretaries, class E	65 (69)	73 (76)	82 (83)	88 (92)	100	109 (85)	116 (92)	108 (115)	113 (104)	125 (127)
Stenographers, senior	70 (82)	77 (89)	85 (97)	90 (108)	92 (118)	100	117 (109)	111 (135)	109 (122)	127 (150)
Stenographers, general	63 (75)	71 (82)	78 (89)	83 (100)	86 (108)	86 (92)	100	99 (124)	99 (112)	112 (138)
Transcribing-machine typists	64 (60)	71 (66)	79 (72)	86 (80)	93 (87)	90 (74)	101 (81)	100	103 (90)	113 (111)
Typists, class A	62 (67)	71 (73)	80 (80)	85 (89)	88 (97)	92 (82)	101 (89)	97 (111)	100	117 (123)
Typists, class B	56 (54)	63 (60)	71 (65)	76 (72)	80 (79)	79 (67)	89 (73)	89 (90)	85 (81)	100

Occupations for which average earnings equals 100

Shippers	Material handling laborers	Order fillers	Guards, Class A	Shipping packers	Janitors, porters, and cleaners	Guards, Class B	Occupations for which earnings are compared
							Material movement and custodial
110 (142)	110 (136)	111 (146)	119 (160)	119 (164)	129 (198)	131 (232)	Truckdrivers, tractor-trailer . . . .
111 (123)	112 (117)	116 (126)	108 (138)	141 (142)	139 (171)	154 (200)	Truckdrivers, heavy truck . . . .
101 (123)	111 (117)	109 (127)	114 (138)	119 (142)	128 (171)	133 (201)	Truckdrivers, medium truck . . . .
95 (91)	110 (87)	104 (94)	101 (102)	110 (105)	121 (127)	109 (149)	Truckdrivers, light truck . . . .
97 (112)	103 (107)	101 (115)	104 (126)	103 (129)	108 (156)	108 (183)	Power-truck operators (other than forklift) . . . .
97 (115)	104 (110)	103 (118)	104 (129)	102 (133)	111 (160)	106 (187)	Forklift operators . . . .
99 (99)	109 (94)	108 (102)	102 (111)	111 (114)	116 (137)	109 (161)	Receivers . . . .
99 (96)	107 (92)	105 (99)	99 (108)	109 (111)	116 (134)	107 (157)	Shippers and receivers . . . .
96 (105)	108 (100)	104 (108)	107 (118)	106 (121)	119 (146)	112 (171)	Warehouse workers . . . .
100	109 (95)	106 (103)	103 (112)	111 (116)	115 (139)	112 (163)	Shippers . . . .
91 (105)	100	100 (108)	99 (118)	100 (121)	109 (146)	104 (171)	Material handling laborers . . . .
94 (97)	100 (93)	100	106 (109)	101 (112)	112 (135)	105 (159)	Order fillers . . . .
98 (89)	101 (85)	95 (92)	100	103 (103)	109 (124)	120 (145)	Guards, class A . . . .
90 (87)	100 (83)	99 (89)	97 (97)	100	106 (120)	100 (141)	Shipping packers . . . .
87 (72)	91 (69)	89 (74)	92 (81)	95 (83)	100	99 (117)	Janitors, porters, and cleaners . . . .
89 (61)	96 (58)	95 (63)	83 (69)	100 (71)	101 (85)	100	Guards, class B . . . .

Millwrights	Machine-tool operators (toolroom)	Maintenance carpenters	Maintenance painters	Boiler tenders	Maintenance trades helpers	
						Maintenance, toolroom, and powerplant
104 (96)	105 (101)	106 (111)	107 (115)	111 (127)	130 (134)	Tool-and-die makers . . . .
102 (95)	102 (100)	103 (109)	106 (113)	108 (125)	124 (132)	Maintenance electricians . . . .
103 (91)	103 (96)	104 (105)	107 (109)	110 (120)	123 (127)	Maintenance machinists . . . .
101 (88)	100 (92)	102 (101)	104 (105)	111 (116)	121 (122)	Stationary engineers . . . .
101 (89)	101 (93)	102 (102)	106 (106)	108 (117)	123 (123)	Maintenance mechanics (machinery) . . . .
100 (99)	99 (104)	101 (114)	103 (118)	107 (131)	119 (138)	Maintenance sheet-metal workers . . . .
100 (98)	100 (103)	101 (113)	103 (117)	106 (129)	117 (136)	Maintenance pipefitters . . . .
100 (90)	99 (95)	100 (104)	103 (108)	105 (119)	121 (126)	Maintenance mechanics (motor vehicles) . . . .
100	99 (105)	101 (115)	103 (120)	104 (132)	116 (139)	Millwrights . . . .
101 (95)	100	101 (109)	103 (113)	106 (125)	118 (132)	Machine-tool operators (toolroom) . . . .
99 (87)	99 (92)	100	104 (104)	106 (115)	118 (121)	Maintenance carpenters . . . .
97 (84)	97 (88)	97 (96)	100	101 (111)	114 (117)	Maintenance painters . . . .
96 (76)	94 (80)	95 (87)	99 (90)	100	111 (105)	Boiler tenders . . . .
87 (72)	85 (76)	85 (83)	88 (86)	90 (95)	100	Maintenance trades helpers . . . .

Peripheral equipment operators	Computer data librarians	Electronics technicians Class A	Class B	Class C	Registered industrial nurses	
						Professional and technical
212 (210)	210 (220)	132 (125)	154 (143)	186 (197)	155 (149)	Computer systems analysts, class A . . . .
176 (181)	177 (190)	110 (108)	130 (123)	156 (170)	135 (128)	Computer systems analysts, class B . . . .
147 (157)	148 (164)	91 (93)	109 (106)	131 (147)	116 (111)	Computer systems analysts, class C . . . .
170 (170)	168 (178)	111 (101)	133 (115)	165 (159)	126 (120)	Computer programmers analysts, class A . . . .
146 (143)	144 (150)	94 (85)	112 (97)	135 (134)	109 (101)	Computer programmers anslysts, class B . . . .
132 (119)	126 (125)	79 (71)	96 (81)	118 (111)	93 (84)	Computer programmers analysts, class C . . . .
139 (130)	132 (136)	86 (78)	89 (88)	113 (122)	103 (92)	Computer operators, class A . . . .
121 (107)	113 (112)	72 (64)	78 (73)	95 (101)	87 (76)	Computer operators, class B . . . .
107 (92)	97 (97)	62 (55)	70 (63)	84 (87)	77 (65)	Computer operators, class C . . . .
100	96 (105)	68 (60)	69 (68)	80 (94)	82 (71)	Peripheral equipment operators . . . .
104 (95)	100	70 (57)	75 (65)	88 (90)	80 (68)	Computer data librarians . . . .
148 (168)	143 (176)	100	119 (114)	142 (157)	115 (119)	Electronics technicians, class A . . . .
146 (147)	133 (154)	84 (88)	100	122 (138)	104 (104)	Electronics technicians, class B . . . .
126 (107)	114 (112)	70 (64)	82 (72)	100	85 (76)	Electronics technicians, class C . . . .
122 (141)	125 (148)	87 (84)	96 (96)	118 (132)	100	Registered industrial nurses . . . .

File clerks Class A	Class B	Class C	Messengers	Switchboard operators	Switchboard operator-receptionists	Order clerks Class A	Class B	Payroll clerks	Key entry operators Class A	Class B	
											Office clerical
152 (147)	182 (188)	203 (214)	190 (187)	149 (166)	152 (171)	124 (122)	149 (160)	136 (139)	143 (139)	160 (165)	Secretaries, class A . . . .
137 (135)	158 (172)	176 (195)	167 (171)	135 (152)	137 (156)	110 (112)	135 (146)	121 (127)	128 (127)	143 (151)	Secretries, class B . . . .
123 (124)	141 (158)	159 (180)	149 (157)	120 (139)	125 (143)	100 (103)	120 (134)	108 (117)	113 (117)	129 (139)	Secretaries, class C . . . .
117 (111)	131 (142)	144 (161)	139 (141)	113 (125)	115 (129)	92 (92)	109 (120)	101 (105)	105 (105)	121 (125)	Secretaries, class D . . . .
108 (102)	122 (131)	135 (148)	134 (130)	108 (115)	108 (119)	89 (85)	109 (111)	97 (96)	99 (97)	112 (115)	Secretries, class E . . . .
103 (120)	122 (154)	142 (175)	129 (152)	103 (135)	111 (139)	92 (100)	101 (130)	96 (113)	100 (114)	114 (135)	Stenographers, senior . . . .
95 (111)	108 (141)	122 (160)	116 (140)	96 (124)	102 (128)	82 (92)	96 (120)	88 (104)	92 (105)	102 (124)	Stenographers, general . . . .
101 (89)	114 (114)	126 (129)	121 (113)	98 (100)	102 (103)	77 (74)	101 (96)	87 (84)	94 (84)	104 (100)	Transcribing-machine typists . . . .
99 (99)	114 (126)	127 (143)	121 (125)	97 (111)	101 (114)	82 (82)	97 (107)	87 (93)	92 (93)	104 (111)	Typists, class A . . . .
87 (80)	100 (103)	111 (116)	106 (102)	88 (90)	91 (93)	74 (67)	89 (87)	79 (76)	81 (76)	92 (90)	Typists, class B . . . .

Table 1. Continued—Intra- and inter-establishment pay relationships between occupations, all metropolitan areas, July 1980

[Inter-establishment pay relative in parenthesis]

Occupations for which earnings are compared	Occupations for which average earnings equals 100									
	Secretaries					Stenographers		Transcribing-machine typists	Typists	
	Class A	Class B	Class C	Class D	Class E	Senior	General		Class A	Class B
Office clerical										
File clerks, class A	66 (68)	73 (74)	81 (81)	85 (90)	92 (98)	97 (83)	105 (90)	99 (112)	101 (101)	115 (125)
File clerks, class B	55 (53)	63 (58)	71 (63)	76 (70)	82 (76)	82 (65)	92 (71)	87 (88)	88 (79)	100 (97)
File clerks, class C	49 (47)	57 (51)	63 (56)	69 (62)	74 (67)	70 (57)	82 (62)	80 (77)	78 (70)	90 (86)
Messengers	53 (54)	60 (59)	67 (64)	72 (71)	75 (77)	77 (66)	87 (71)	82 (89)	83 (80)	95 (98)
Switchboard operators	67 (60)	74 (66)	83 (72)	89 (80)	93 (87)	97 (74)	104 (80)	102 (100)	103 (90)	114 (111)
Switchboard operator-receptionists .	66 (59)	73 (64)	80 (70)	87 (78)	92 (84)	90 (72)	98 (78)	98 (97)	99 (87)	110 (107)
Order clerks, class A	81 (82)	91 (90)	100 (97)	109 (109)	113 (118)	109 (100)	123 (109)	129 (135)	123 (122)	135 (150)
Order clerks, class B	67 (63)	74 (69)	84 (75)	92 (83)	92 (90)	99 (77)	105 (83)	99 (104)	103 (93)	112 (115)
Payroll clerks	74 (72)	83 (79)	93 (86)	99 (96)	103 (104)	104 (88)	114 (96)	115 (119)	115 (107)	126 (132)
Key entry operators, class A	70 (72)	78 (79)	88 (85)	95 (95)	101 (103)	100 (88)	109 (96)	107 (119)	108 (107)	124 (132)
Key entry operators, class B	62 (60)	70 (66)	77 (72)	83 (80)	89 (87)	88 (74)	98 (81)	96 (100)	96 (90)	109 (111)

NOTE: See page 23 for a description of these pay relationships and method of computation.

of leadership reversal occurred in about a fifth of the observations.

Inter-establishment pay differences for the professional and technical group also were often poor indicators of intra-establishment pay differentials. Although a tenth of the comparisons between these two measures yielded identical results, differences were 10 points or more in almost a fourth of the observations.

The office clerical group—with five classes of secretaries, three classes of file clerks, and two classes each of stenographers, typists, order clerks, and key entry operators—provides an opportunity to examine wage relationships among workers in the same occupation, but with differing amounts of responsibility. For example, the five classes of secretaries are defined according to the secretary's responsibility and supervisor's position in the organization.[6] Within establishments, each level of secretary provided an average pay gain of from 13 to 17 percent; consequently, the highest level—secretary to board chairman or company president of a medium size firm—averaged 53 percent more than the lowest level—a secretary to a staff specialist or supervisor of a small unit.

In all of the comparisons among the secretaries, pay differentials within establishments exceeded those between surveywide averages. This relationship was also found among other occupations, mainly in the white-collar field. Intra-establishment differences were larger than inter-establishment differences in about two-fifths of the professional-technical and a fourth of the office clerical comparisons. In contrast, this pattern occurred in only 8 percent of both the material movement-custodial and maintenance-toolroom-powerplant comparisons.

As noted, average occupational pay differentials within establishments will exceed those between published averages where high-paying firms have a disproportionately large number of employees in less skilled jobs reported for the survey, or where low-paying firms

have a disproportionately large number of employees in more skilled jobs. These conditions may be more common among white-collar jobs, which are spread across industries with differing pay levels.[7]

Differences by sector

Intra-establishment pay relationships differed among the industry divisions, regions, and establishment size groups studied separately. Within establishments, pay differentials between jobs were narrower in manufacturing, the North Central region, and large establishments, and were broader in nonmanufacturing, the South, and small establishments. (These findings, of course, are interrelated.)

To summarize these relationships, intra-establishment relatives were calculated for each industry, region, and establishment size group studied. The absolute difference for each occupational comparison was computed by subtracting the pay relative from 100. Ignoring the sign of the remainder, these differences were totaled and divided by the number of comparisons to find an average difference.[8] Therefore, a small average difference in table 2 indicates a narrow wage structure and a large difference indicates a broad wage structure.

Professional-technical and office clerical jobs had the highest average differences, 29 and 19 points, respectively. The average difference for maintenance, toolroom, and powerplant occupations was 5 points, and for material movement and custodial jobs, 8 points. These results are not surprising, considering the wide range of skill levels in the white-collar field. For example, professional and technical jobs ranged from highly skilled systems analysts responsible for complex problems to entry-level computer operators. These skill distinctions were not as pronounced among the blue-collar occupations.

Differences in occupational pay relationships were small but consistent among the industries, regions, and size-of-establishment groupings studied. These differ-

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Occupations for which average earnings equals 100											Occupations for which earnings are compared
File clerks			Messengers	Switchboard operators	Switchboard operator-receptionists	Order clerks		Payroll clerks	Key entry operators		
Class A	Class B	Class C				Class A	Class B		Class A	Class B	
											Office clerical
100	117 (128)	131 (145)	124 (127)	100 (113)	97 (116)	83 (83)	92 (108)	88 (94)	95 (95)	106 (112)	File clerks, class A ....
85 (78)	100	116 (113)	107 (99)	87 (88)	88 (91)	69 (65)	85 (85)	76 (74)	81 (74)	91 (88)	File clerks, class B ....
77 (69)	86 (88)	100	96 (87)	81 (78)	82 (80)	63 (57)	82 (75)	69 (65)	73 (65)	83 (77)	File clerks, class C ....
81 (79)	94 (101)	104 (114)	100	82 (89)	85 (91)	70 (65)	83 (85)	74 (74)	78 (75)	87 (89)	Messengers ....
100 (89)	114 (114)	124 (129)	123 (113)	100	100 (103)	78 (74)	95 (96)	88 (84)	95 (84)	104 (100)	Switchboard operators ....
104 (86)	114 (110)	123 (125)	118 (109)	100 (97)	100	78 (72)	94 (93)	88 (81)	93 (82)	103 (97)	Switchboard operator-receptionists .
120 (121)	145 (154)	160 (175)	143 (153)	127 (136)	128 (140)	100	128 (131)	106 (114)	112 (114)	133 (135)	Order clerks, class A ....
108 (92)	118 (118)	121 (134)	120 (117)	105 (104)	107 (107)	78 (77)	100	92 (87)	96 (87)	105 (104)	Order clerks, class B ....
114 (106)	132 (136)	146 (154)	134 (135)	113 (120)	113 (123)	94 (88)	109 (115)	100	106 (100)	117 (119)	Payroll clerks ....
106 (106)	123 (135)	137 (153)	128 (134)	105 (119)	107 (123)	89 (88)	104 (115)	95 (100)	100	120 (119)	Key entry operators, class A .....
94 (89)	109 (114)	121 (129)	115 (113)	97 (100)	97 (103)	75 (74)	96 (96)	86 (84)	83 (84)	100	Key entry operators, class B .....

ences were larger in nonmanufacturing than manufacturing industries for three of the occupational groups. (Because of insufficient data for nonmanufacturing industries, such a comparison could not be made for maintenance, toolroom, and powerplant jobs.)

Regional differences in occupational wage structures were relatively minor, as were the differences by size of establishment.[9] Nevertheless, the South had the largest differentials for 2 of the 4 occupational groups, and tied for the largest for a third group.[10] Among the other three regions, the North Central area had the smallest occupational wage differentials for the two blue-collar groups and for office clerical workers. Occupational pay differences in large establishments, on average, were smaller for all occupational groups, except office clerical jobs—where no size-of-establishment variation was found.

Although the impact of unionization on wage structures could not be directly examined in this study, the data suggest the possibility that internal occupational pay differentials are smaller where labor-management agreements are in effect. Manufacturing, non-Southern regions, and large establishments generally had both smaller pay differences and a higher concentration of workers under labor-management agreements than did nonmanufacturing, the South, and small establishments. An earlier study of production worker earnings in 49 manufacturing and 6 mining industries also showed lower dispersion rates among highly unionized industries.[11] This earlier study, however, used the more traditional analysis of union impact by focusing on inter-establishment variations.[12]

Cost-of-living adjustment clauses found in many union contracts may contribute to a lower wage dispersion in the union sector.[13] These clauses provide for periodic wage adjustments in keeping with changes in a designated price index, such as the Bureau's Consumer Price Index. They usually call for uniform cents-per-hour wage adjustments to all covered employees, and thus tend to reduce percentage differences among occupational wages. ☐

Table 2. Average intra-establishment pay differences among occupations, by selected characteristics, July 1980

[In percentage points]

Characteristics	Material movement and custodial	Maintenance, toolroom, and power-plant	Professional and technical	Office clerical
All establishments	8	5	29	19
Industry:				
Manufacturing	7	5	26	17
Nonmanufacturing	11	(1)	32	20
Region:				
Northeast	9	6	31	20
South	9	7	32	20
North Central	8	5	26	18
West	10	6	29	19
Establishment size:				
Fewer than 1,000 workers ...	10	6	34	19
1,000 workers or more	7	5	27	19

1 Data do not meet publication criteria.

NOTE: See page 25 for explanation of method of computation and footnote 4 of text for definitions of industry divisions and regions.

——— FOOTNOTES ———

[1] See Occupational Earnings in All Metropolitan Areas, July 1980, Summary 81–11 (Bureau of Labor Statistics, 1981), p. 3.

[2] See E. Robert Livernash, "The Internal Wage Structure," in George W. Taylor and Frank C. Pierson, eds., New Concepts in Wage Determination (New York, McGraw-Hill Book Co., 1957), pp. 155–58.

[3] See, for example, tables A–8 to A–11 of Area Wage Survey: Chicago, Ill., Metropolitan Area, March 1982, Bulletin 3015–9.

[4] All data in this article refer to the 262 Standard Metropolitan Statistical Areas of the United States (excluding Alaska and Hawaii), as defined by the Office of Management and Budget through February 1974. BLS surveys are conducted annually in a sample of 70 areas se-

lected and appropriately weighted to represent all 262 areas. Establishments employing 50 workers or more are surveyed in six broad industry divisions: manufacturing; transportation, communication, and other public utilities; wholesale trade; retail trade; finance, insurance, and real estate; and selected services. In the 13 largest areas, the minimum etablishment size is 100 workers in manufacturing; transportation, communication, and other public utilities; and retail trade. Major exclusions from the survey are construction, extractive industries, and government. The regions are defined as follows: *Northeast*—Connecticut, Maine, Massachusetts, New Hampshire, New Jersey, New York, Pennsylvania, Rhode Island, and Vermont; *South*—Alabama, Arkansas, Delaware, District of Columbia, Florida, Georgia, Kentucky, Louisiana, Maryland, Mississippi, North Carolina, Oklahoma, South Carolina, Tennessee, Texas, Virginia, and West Virginia; *North Central*—Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin; and *West*—Arizona, California, Colorado, Idaho, Montana, Nevada, New Mexico, Oregon, Utah, Washington, and Wyoming.

[5] Intra-establishment pay relationships were computed using the following procedures: (1) establishments employing workers in both of the paired occupations were identified; (2) establishment pay levels (averages) for the two occupations were weighted by the combined employment of both jobs to reflect each establishment's contribution to the totals used in the comparison; (3) the weighted pay levels of the two jobs were summed separately across establishments; and (4) each total was divided by the other and the quotients multiplied by 100 to produce the two intra-establishment pay relatives shown for each job pairing.

[6] Job descriptions for the occupations included in area wage surveys are available from the Bureau's regional offices listed on the front cover.

[7] An earlier Bureau study—which compared all occupations surveyed to janitors—had similar findings. In many cases, pay differences between white-collar jobs and janitors were larger when measured within establishments than when overall averages were compared. On the other hand, in almost all blue-collar comparisons, intra-establishment differentials were smaller than those between survey averages. See Virginia L. Ward, "Measuring wage relationships among selected occupations," *Monthly Labor Review*, May 1980, pp. 21–25.

[8] For a further discussion of this technique, see Mark S. Sieling, "Interpreting pay structures through matrix application," *Monthly Labor Review*, November 1979, pp. 41–45.

[9] Regional patterns are composites of numerous individual areas, each with a distinct industrial and occupational pattern. For local pay setting purposes, data similar to those in table 1 are published annually for 70 areas in individual area wage survey bulletins.

[10] This confirms an earlier conclusion of H. M. Douty that "Wage differentials based on skill level tend to be greater within the South than in the remainder of the country. . ." See H. M. Douty, "Wage Differentials: Forces and Counter Forces," *Monthly Labor Review*, March 1968, p. 76.

[11] Carl B. Barsky and Martin E. Personick, "Measuring wage dispersion: pay ranges reflect industry traits," *Monthly Labor Review*, April 1981, pp. 35–41.

[12] Unionism, of course, is only one of a number of influences on occupational wage differentials. Its impact is by no means a settled issue. For a sample of the literature on this subject, see Clark Kerr, "Wage Relationships—The Comparative Impact of Market and Power Forces," in John T. Dunlop, ed., *The Theory of Wage Determination* (New York, St. Martin's Press, 1957), pp. 173–93; Lloyd G. Reynolds and Cynthia H. Taft, *The Evolution of Wage Structure* (New Haven, Yale University Press, 1956); Sherwin Rosen, "Unionism and the Occupational Wage Structure in the United States," *International Economic Review*, June 1970, pp. 269–86; and Robert N. Schoeplein, "Secular Changes in the Skill Differential in Manufacturing, 1952–1973," *Industrial and Labor Relations Review*, April 1977, pp. 314–24.

[13] Cost-of-living adjustment clauses cover more than half of the workers under major collective bargaining agreements. See Edward Wasilewski, "Scheduled wage increases and cost-of-living provisions in 1980," *Monthly Labor Review*, January 1980, p. 10.

Import price indexes for crude petroleum

*On the basis of data reported by firms
to the U.S. Department of Energy,
BLS has developed measures
of monthly price change for oil imports*

EDWARD E. MURPHY AND MARK MCENEARNEY

The Bureau of Labor Statistics' International Price Program is responsible for calculating import and export price indexes for the United States. These indexes are statistical measures of the average change in prices of commodities that are traded between the United States and the rest of the world.

The program was originally funded by Congress in 1970. Price indexes were first published for exports in 1971, and for imports, in 1973. As of June 1982, published indexes accounted for 71 percent of the value of exports and 96 percent of the value of imports. Plans for the program include provisions for increasing the share of exports and imports for which indexes are calculated to 100 percent.

This article describes the International Price Program's price index for crude petroleum imports. The index, which was first published in November 1981,[1] is calculated using price and quantity data collected by the U.S. Department of Energy.

The data in table 1 show how important crude petroleum imports have become to the U.S. economy. In 1970, the United States imported 545 million barrels of crude petroleum at a cost of $1.3 billion. These imports accounted for 13.4 percent of the total U.S. supply of crude petroleum (imports plus domestic production) and 3.2 percent of total merchandise imports. In 1981, U.S. imports of crude petroleum, which measured 1,763 million barrels and cost $61.9 billion, accounted for 36.1 percent of the total U.S. supply of crude petroleum

and 23.7 percent of total merchandise imports.

The following discussion is divided into sections that focus on different aspects of calculating and publishing the index. These include: (1) the construction of the index; (2) the specification of items in the index market basket; (3) the prices and weights that are used to compute the index; (4) the sources of the data; (5) the results of index calculations for the months January 1976 to May 1982; and (6) the policy for revising previously published index values.

Construction of the index. The price index for U.S. imports of crude petroleum is a Laspeyres fixed base-weighted index. The index may be interpreted as a measure of the change in the cost of buying the index market basket, or as a measure of the average change in the prices of items in the index market basket. For this index, the market basket consists of the various crudes—

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Table. 1. U.S. imports of crude petroleum, 1970–81

Year	Crude imports (millions of barrels)	Crude imports (billions of dollars)	Crude imports as a percent of total U.S. supply	Crude imports as a percent of total imports
1970	545	1.3	13.4	3.2
1971	676	1.7	16.4	3.7
1972	901	2.4	20.7	4.3
1973	1,294	4.2	27.8	6.1
1974	1,367	15.3	29.9	15.3
1975	1,585	18.4	34.1	19.1
1976	2,050	25.5	40.8	21.1
1977	2,520	33.6	45.6	22.9
1978	2,392	32.1	42.9	18.7
1979	2,467	46.1	44.1	22.3
1980	1,977	62.0	38.6	25.7
1981	1,763	61.9	36.1	23.7

SOURCE: Bureau of the Census, *U.S. General Imports*, FT135, and U.S. Department of Energy, *1981 Annual Report to Congress.*

for example, Saudi Arabian Light, Mexican Isthmus, and Nigerian Bonny Light—that refiners and other buyers imported into the United States in 1980. A simplified version of the formula for computing the index is:

$$(1) \quad I^t = \frac{\Sigma_{ij} P^t_{ij} \times Q^0_{ij}}{\Sigma_{ij} P^0_{ij} \times Q^0_{ij}} \times 100$$

$$(2) \quad = \frac{\Sigma_{ij} W_{ij} \times P^t_{ij}/P^0_{ij}}{\Sigma_{ij} W_{ij}} \text{sf,10} \times 100$$

$$\text{for } W_{ij} = P^0_{ij} \times Q^0_{ij}$$

where:

I^t = the index in month t;

P^0_{ij} = the price, in dollars per barrel, that company i paid for shipments of crude type j imported in month 0 (the base period);

P^t_{ij} = the price, in dollars per barrel, that company i paid for shipments of crude type j imported in month t (the comparison period);

Q^0_{ij} = the quantity, in barrels, of crude type j that company i imported in month 0 (the base period);

W_{ij} = the dollar value weight assigned to crude type j imported by company i.

Specification of items in the market basket. Price indexes of the Laspeyres type are designed to measure changes in the cost of a given market basket (as opposed of differences in the cost of different market baskets). In the calculations for the crude petroleum index, this is accomplished by ensuring that the items that correspond to the prices in the numerator and denominator of each term in expression (2) above have identical specifications in all months.

The specification of each item in the market basket consists of two pieces of information. These are (1) a crude stream identifier, which shows where the crude in each import shipment was produced (the crude stream accounts for the essential quality characteristics of each crude, such as specific gravity, pour point, sulfur content, and trace element content); and (2) an identifier for the purchasing party. The inclusion of these two pieces of information in the specification ensures that when prices are compared over time they are compared for identically specified items.

Prices. The prices used to compute the index are the amounts, in dollars per barrel, that importing companies pay for their crude, plus any charges incurred in placing the crude on board ship at the foreign port of loading. Prices do not include any of the costs involved in transporting crude from the foreign port to the U.S. port of entry.

Weights. The weight assigned to each item in the market basket is the dollar value of all shipments of that item that were imported into the United States in 1980. In the process of computing the index for the current month, the weights are normalized to account for items in the market basket that were not imported. This is equivalent to imputing a price change equal to the weighted average price change of all items that were imported in the current month, as measured by the change in the index, to items that were not imported in the current month.

Data sources. The data used to compute the index are collected by the U.S. Department of Energy on the monthly Transfer Pricing Report (Form ERA–51, Schedule B). Reporting firms are major importers (those that import 500,000 or more barrels of crude in a given month) and firms that acquire imported crude from affiliated entities. About 40 firms file the report on a regular basis. In 1980, the data in the reports filed by these firms accounted for approximately 90 percent, in dollar terms, of all U.S. imports of crude petroleum.

Firms have 45 days after the end of a given month to file their reports with the Department of Energy. At the Energy Department, data from the reports are keypunched and screened for simple arithmetic errors and errors in transcription. In cases involving apparent errors in the data that cannot be resolved on the basis of the available information, the Department contacts the reporting firm to verify the data that have been reported and, if necessary, obtains the correct information.

Approximately 60 days after the end of a given month, the Department of Energy provides BLS with a computer tape containing these data. At BLS, the data are screened again. Any questions that arise with respect to the data are referred to the Department of Energy and resolved before the data are used to compute the index. The processing associated with computing the index is generally complete within 10 days of receipt of the tape from the Energy Department.

Index values, January 1976 to May 1982. Table 2 shows index values that have been calculated for 11 categories of crude petroleum imports. These include imports from all countries, from members of the Organization of Petroleum Exporting Countries (OPEC)[2] and from nonmembers, and from selected regions and countries. The number of regions and individual countries for which index values are shown is limited by the availability of price data. In keeping with BLS standards for maintaining the confidentiality of company level data, index values that were calculated with prices from fewer than three companies are not shown.

As measured by the index for imports from all countries, prices of imported crude petroleum have nearly tripled since January 1976, the first month for

Table 2. Price indexes of U.S. imports of crude petroleum by source, January 1976 to May 1982

[June 1977 = 100]

Year and month	Imports from all countries	OPEC	Non-OPEC	Selected regions				Selected countries			
				Africa	Far East	Latin America	Middle East	Indonesia	Mexico	Nigeria	Saudi Arabia
1976: January	91.7	92.0	90.6	89.5	92.6	91.0	94.7	92.9	91.6	89.1	94.9
February	91.7	92.0	90.6	89.5	92.7	90.9	94.7	92.9	91.6	89.1	94.9
March	91.6	92.0	90.5	89.6	92.4	90.9	94.6	92.7	91.5	89.2	94.9
April	91.9	92.2	91.0	89.8	92.5	91.5	94.8	92.8	92.2	89.3	95.1
May	91.9	92.1	91.0	89.7	92.6	91.5	94.8	92.8	92.2	89.5	95.1
June	91.9	92.2	91.1	89.9	92.6	91.5	94.8	92.8	92.1	89.6	95.1
July	92.4	92.7	91.5	90.8	92.8	91.9	94.7	93.0	92.6	90.5	95.0
August	92.4	92.7	91.5	90.9	92.8	91.9	94.7	93.0	92.6	90.6	94.9
September	92.5	92.8	91.7	91.2	92.8	92.2	94.7	93.1	92.9	90.8	94.9
October	93.1	93.3	92.7	91.8	93.2	92.8	94.9	93.5	93.5	91.8	95.0
November	93.4	93.5	93.4	92.2	93.3	93.6	94.9	93.6	93.7	91.9	95.1
December	94.0	94.0	94.1	92.9	93.6	94.4	95.2	93.8	94.8	92.4	95.3
1977: January	98.4	98.3	98.7	98.1	98.5	99.1	98.3	98.6	99.5	97.8	98.4
February	99.2	99.1	99.3	99.0	99.3	99.5	99.1	99.4	99.6	98.4	99.0
March	99.7	99.7	99.7	99.3	99.9	99.9	100.1	100.0	100.0	98.6	100.1
April	100.0	100.0	99.9	99.9	99.9	100.0	100.0	99.9	100.0	99.9	100.0
May	100.0	100.0	100.0	99.9	100.0	100.0	100.1	99.9	100.0	100.0	100.0
June	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
July	101.3	101.4	101.0	100.7	100.4	100.9	102.5	100.3	100.8	100.2	102.7
August	102.1	102.2	101.6	101.0	101.0	101.4	104.0	100.9	101.3	100.3	104.1
September	102.5	102.6	101.9	101.2	101.0	101.7	104.8	100.9	101.5	100.4	104.9
October	102.3	102.5	101.7	100.9	101.0	101.6	104.7	100.9	101.4	100.0	104.9
November	102.2	102.4	101.7	100.6	100.8	101.6	104.9	100.7	101.4	99.9	105.1
December	102.2	102.4	101.7	100.6	101.0	101.6	104.9	100.9	101.4	99.8	105.1
1978: January	102.0	102.2	101.5	99.7	100.9	101.5	105.4	100.8	101.3	98.6	105.2
February	101.6	101.8	101.1	99.5	100.6	101.0	104.8	100.5	101.0	98.3	105.2
March	101.6	101.8	101.2	99.5	100.6	101.0	104.9	100.5	101.1	98.2	105.2
April	101.2	101.3	100.8	98.7	100.3	100.7	104.6	100.3	100.8	97.3	105.1
May	101.1	101.2	100.8	98.7	100.1	100.6	104.6	100.1	100.8	97.3	104.9
June	101.1	101.2	100.7	98.7	100.1	100.5	104.5	100.1	100.7	97.3	104.9
July	101.1	101.3	100.7	98.7	100.8	100.2	104.6	100.6	100.1	97.3	104.9
August	101.1	101.2	100.7	98.6	100.7	100.2	104.5	100.4	100.1	97.2	104.9
September	101.1	101.3	100.7	98.9	100.5	100.2	104.4	100.3	100.0	97.2	104.9
October	101.5	101.6	101.1	99.3	100.9	100.6	104.6	100.6	100.4	97.7	105.0
November	102.2	102.3	101.8	100.5	101.5	101.2	104.8	100.9	101.0	98.5	105.1
December	102.1	102.3	101.8	100.5	101.7	101.1	104.8	101.1	100.8	98.4	105.0
1979: January	105.5	105.5	105.4	104.6	103.6	104.7	107.5	102.6	104.8	102.0	107.7
February	108.7	108.7	108.4	107.7	106.8	107.5	111.0	105.8	107.6	104.5	111.2
March	110.1	110.1	110.2	109.3	108.7	108.8	112.1	107.8	108.5	105.6	112.2
April	115.0	114.2	117.4	115.9	111.8	117.0	113.7	110.6	118.4	115.0	112.3
May	126.7	125.9	129.4	130.0	123.7	128.7	122.5	122.4	128.3	128.9	119.5
June	135.2	134.8	136.3	141.7	130.1	133.9	129.3	128.3	131.9	143.0	126.5
July	150.3	148.5	155.6	154.4	145.3	154.2	144.2	142.1	159.0	154.5	141.9
August	163.7	163.0	165.8	170.1	163.2	163.1	156.6	160.7	166.1	170.7	152.8
September	165.5	164.7	167.9	171.1	166.4	165.4	158.9	164.8	167.6	172.4	154.6
October	168.6	167.1	173.3	173.9	168.4	171.8	160.7	166.5	175.9	175.1	156.4
November	173.4	171.8	178.2	183.2	165.3	175.6	162.7	162.0	179.4	177.9	157.6
December	184.5	183.9	186.5	195.6	173.4	180.8	176.5	169.8	182.8	193.3	169.9
1980: January	205.8	206.1	205.1	216.4	195.4	200.2	200.3	192.8	201.6	209.1	195.2
February	223.3	221.9	227.7	233.9	218.8	223.5	211.9	216.5	232.0	221.7	205.9
March	232.9	232.5	234.2	247.1	227.0	228.3	220.1	224.8	236.4	240.6	214.1
April	234.1	233.8	235.2	247.5	230.8	228.6	222.0	228.6	236.5	241.2	216.6
May	236.7	236.8	236.3	247.9	232.4	229.3	228.5	230.3	238.7	242.3	226.8
June	244.0	244.3	243.1	255.8	240.7	236.3	235.0	238.9	244.1	250.1	232.8
July	246.5	246.6	246.5	258.6	242.9	240.5	236.6	240.8	248.5	252.9	233.9
August	247.6	247.5	247.9	260.3	242.7	242.5	236.9	240.4	251.3	255.3	234.0
September	247.3	247.4	247.1	259.2	242.3	242.3	237.8	240.0	251.1	255.4	234.7
October	250.4	251.2	248.2	258.5	242.7	243.3	247.9	240.1	251.8	255.0	246.7
November	250.5	251.2	248.4	257.8	242.5	243.8	249.0	240.0	252.6	253.5	247.5
December	252.6	253.5	250.1	259.4	244.0	245.6	252.2	241.5	255.9	255.5	250.9
1981: January	263.0	262.5	264.5	267.9	248.6	263.8	262.7	245.4	278.5	265.6	261.8
February	273.4	273.1	274.0	279.6	264.7	271.5	270.9	261.9	284.4	275.0	268.7
March	272.9	272.5	274.2	279.2	265.8	272.6	269.2	263.2	285.4	275.0	266.3
April	271.4	271.1	272.0	278.0	264.5	270.5	267.4	262.1	282.6	274.0	264.6
May	271.5	271.6	271.2	278.9	264.6	269.4	267.4	262.1	281.3	273.8	264.7
June	267.6	269.4	262.2	276.3	262.7	258.2	265.4	260.7	264.0	271.8	262.8
July	267.6	269.7	261.0	275.3	262.3	258.5	267.1	260.5	264.4	271.1	265.3
August	262.9	266.8	251.1	271.0	259.9	248.3	264.5	258.6	250.0	268.5	264.1
September	261.3	265.4	248.9	268.3	259.5	245.8	264.1	258.4	250.7	264.2	263.8
October	258.0	261.5	247.2	260.4	258.1	244.8	264.4	257.6	249.7	253.7	265.8
November	258.8	261.1	248.8	260.0	258.9	246.3	266.2	258.2	252.0	252.3	267.9
December	262.1	265.6	251.7	263.3	260.7	247.5	270.9	259.8	253.5	255.5	271.7
1982: January	262.5	266.2	251.5	262.2	260.4	247.4	273.5	259.4	252.1	255.7	276.4
February	260.2	264.1	248.2	259.5	257.9	244.7	272.5	257.0	248.4	254.1	275.9
March	257.2	262.5	240.9	256.3	256.9	237.3	272.3	256.3	242.0	251.7	276.2
April	256.0	261.7	238.6	254.8	256.3	234.0	272.5	255.9	240.6	250.2	276.8
May	252.6	258.6	234.5	251.3	254.5	229.8	269.3	254.4	235.3	246.7	273.5

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which the index was calculated. Prices increased slowly during 1976 and 1977, rising a total of 11 percent over the 24-month period. In 1978, a quiet year in the world petroleum market, prices were virtually unchanged, but between January 1979 and January 1980, the index rose 100 points, from 105.5 to 205.8. During the latter year, political events seriously disrupted the flow of petroleum exports from Iran, at one time the leading oil producing country in OPEC after Saudi Arabia. Prices continued to rise in 1980 and in the first 2 months of 1981. The index reached its highest level to date in February 1981, when it stood at 273.4, then declined slightly over the next 8 months as depressed demand for petroleum lead to greater competition among producers trying to maintain their market shares. The index registered slight increases in November and December 1981 and in January 1982, largely in response to higher prices for OPEC's benchmark crude, Saudi Arabian Light, which took effect in October 1981. In February 1982, prices resumed their decline and by May, the last month for which the index has been calculated, the measure had fallen to 252.6, the lowest since December 1980.

The indexes for imports from OPEC member countries and non-OPEC countries followed the same general pattern as the index for imports from all countries between 1976 and the first 5 months of 1981. The difference between the two indexes was less than half an index point in May 1981, with the index for imports from OPEC measuring 271.6 and the index for imports from non-OPEC countries measuring 271.2. The next month, the two indexes began to diverge and at year's end stood 13.9 index points apart, with the OPEC index at 265.6 and the non-OPEC index at 251.7, off 2.2 percent and 7.2 percent respectively from May. In 1982, the difference between the indexes widened further as the non-OPEC index registered large decreases, while the OPEC index declined only slightly. In May 1982, the index for imports from OPEC was calculated at 258.6 and the non-OPEC index, at 234.5.

Of the four indexes for crude petroleum imports from selected regions, the index for the Middle East, 269.3 in May 1982, increased the most from June 1977, which equals 100. In contrast, the index for Latin America, which until June 1981 followed the same trend as the Middle East index, measured 229.8. The May 1982 index values for the other two regions, Africa and the Far East, were calculated at 251.3 and 254.5.

Among the indexes from selected countries, the index for Mexico, which measured a full 10 index points higher than any of the others as recently as March

1981, stood at 235.3 in May 1982, the lowest of the four country indexes. The May 1982 values for the other indexes were 254.4 for imports from Indonesia, 246.7 for imports from Nigeria, and 273.5 for imports from Saudi Arabia.

Revision policy. There are two factors that affect the data that are used to compute this index which could lead to revisions in previously published index values. These are (1) the timing of some of the reports that importing companies file with the Department of Energy, and (2) company or Department of Energy corrections to data on individual transactions.

Of these two factors, the first is more likely to lead to revisions. Approximately 30 percent of the data that are used to calculate the index for a given month are not available when the index is first calculated. This is the result of differences in the accounting practices of some companies: Companies that book their crude when it is loaded at the foreign port are required to report on all shipments loaded in a given month, while companies that book their crude when it lands in the United States are required to report on all shipments that land in a given month. When BLS first computes the index for the current month, the reports of many of the companies in the second group (the "landed" companies) are not available. Given the amount of data involved, it is likely that the estimate of the index for the current month will be revised when the outstanding data become available.

The second factor, company or Department of Energy corrections to data on individual transactions, has so far not been significant enough to affect aggregate index values. This is not surprising in view of the strength of the sample from which the index is calculated, and what so far has been a low incidence of corrections to data that actually enter into the calculation of the index. Users of the index should realize, however, that these kinds of corrections could affect future index values and, where the effects are significant, result in BLS' revising the index.

An analysis of the results of different calculations of the index over time has shown that index values become fairly stable 3 months after they are first calculated. In view of this, the Bureau's policy will be to revise published index values for up to 3 months preceding the current month for which the index is calculated. Revisions of index values for earlier months are not anticipated, and will not be made unless significant reporting or calculation errors are discovered, or there is a change in the Department of Energy's reporting requirements. □

------ *FOOTNOTES* ------

[1] The price index for U.S. imports of crude petroleum from all countries is published quarterly in the BLS press release "U.S. Import and Export Price Indexes." The release is available on request.

[2] The current members of OPEC are: Algeria, Ecuador, Gabon, Indonesia, Iran, Iraq, Kuwait, Libya, Nigeria, Qatar, Saudi Arabia, the United Arab Emirates, and Venezuela.

Communications
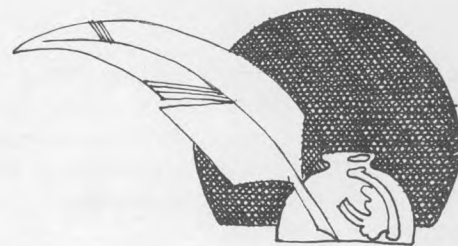
Did job satisfaction really drop during the 1970's?

ANTHONY F. CHELTE, JAMES WRIGHT, AND CURT TAUSKY

That discontent in the American work force is rising has been a commonplace assertion in popular, and even some scholarly literature on employment for the past decade.[1] In contrast, most credible research has shown high and essentially stable levels of job satisfaction. However, a 1979 report by Graham Staines and Robert Quinn, derived from the 1977 Quality of Employment Survey (the third in the series), indicated a significant drop in the national job satisfaction level.[2] This article reviews these data and contrasts them with data from similar surveys of the same era. In general, the pattern of decline reported by Staines and Quinn is not replicated in these other surveys.

Surveys of job satisfaction began in the 1930's and have continued ever since. Regular measurements on national probability samples of the work force have been available for the past 20 years. The wording of specific questions varies among series, but all basically ask workers directly whether they are satisfied with their jobs.

Job satisfaction remained relatively stable throughout the early 1970's. Elliot Richardson reviewed the Gallup series of 1948–73 and found "scanty proof of widespread worker alienation."[3] The Gallup series registered a small drop in overall satisfaction in the later 1960's, but appropriate statistical controls for the changing structure of the labor force erased even this small trend.[4] Curt Tausky reviewed survey data from the Survey Research Center (SRC) of the University of Michigan and the National Opinion Research Center (NORC) and found that the level of job satisfaction was stable from 1958 to 1976.[5] A similar review in 1974 by Quinn and associates covered three major survey series for the period 1958–73, and concluded, "There has not been any significant decrease in overall levels of job satisfaction over the last decade." All other reviews of Gallup, NORC, and SRC data through the early 1970's have reported essentially the same.

In 1969, the University of Michigan initiated a new series on the quality of working life. The first survey, the Survey of Working Conditions, was conducted in 1969–70, and the second and third surveys, the Quality of Employment Survey (QES) were conducted in 1972–73 and in late 1977. A comparison of results of the 1969 and 1973 surveys showed no significant job satisfaction rise or decline.[6] The University of Michigan also conducted a Quality of Life survey in 1971 and in 1978. Here too, the reported levels of job satisfaction were stable. Thus, most surveys, at least through the early 1970's, conclude that job satisfaction in the American labor force has been essentially high and stable.

Two researchers report decline

The third QOE survey was reported by Staines and Quinn in 1979. A comparison of results from the 1973 and 1977 surveys showed, in sharp contrast to all prior series, a precipitous job satisfaction decline. Like all other series, the Quality of Employment surveys asked, "How satisfied are you with your job?" Between 1973 and 1977, the percentage "very satisfied" showed a modest, 5-point decline. Other indicators of job attitudes were constructed using replies from asking a number of individual questions. They are a "general satisfaction" indicator, and six facet-specific "satisfaction" indicators, which show the degree of satisfaction or dissatisfaction with certain aspects of the job, such as pay or coworkers. Both the general satisfaction indicator and five (comfort, challenge, financial rewards, resource adequacy, and promotions) of the specific satisfaction indicators show a definite and statistically significant downward trend (the sole exception is satisfaction with coworkers, which increases somewhat over the era).

Further analysis also revealed that the declines occurred in virtually every segment of the labor force. The decline was somewhat sharper for men than for women,

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was slightly more pronounced among those in lower-skilled positions, and was more precipitous among older workers than younger ones. These variations aside, the basic conclusion of the QOE survey is that job satisfaction declined virtually everywhere in the labor force from 1973 to 1977.

Staines and Quinn advance three hypotheses to account for the downward trend. First, demographic changes in the composition of the labor force have increased the relative predominance of traditionally less satisfied workers. Second, the objective, easily identifiable characteristics of specific jobs are deteriorating. Third, workers are raising their expectations about what they seek or expect in their jobs. The first two of these are inconsistent with other data from the series. For example, the first implies that the trend would disappear with controls for the relevant demographic factors; they do not. As for the second, Staines and Quinn said that changes in the objective qualities of jobs and employment conditions between 1969 and 1977 were not great, and indicate more gains than losses. The series does not contain the data necessary to test the third item, but by process of elimination it is the most plausible.

The suggestion is thus that job satisfaction in the American labor force declined from 1973 to 1977 mainly because of rising expectations. As indicated, the sharpest evidence favoring the declining reported satisfaction conclusion is that derived from the summated indicators by Staines and Quinn in 1979. As of this writing, no analysis of trends in the component items of those indicators has been published.

The response format for the individual component items in that report is as follows: Respondents were given short statements describing various characteristics of work (for example, "the pay is good") and were then asked to state whether the statement is very true, somewhat true, a little true, or not at all true of their own jobs.

Every component item (except one) showed a decline in the percentage of "very true" responses, the drop-offs ranging from about 5 to about 15 percentage points. On the surface, then, the item-specific results sharply confirm the original Staines-Quinn conclusion.

However, more detailed consideration of these results suggests the need for some skepticism. First, the very consistency of the pattern across items is suspicious, if only because such consistent and unambiguous results are rare in social science measurement. More importantly, while the overall declines in the summated indicators seem plausible enough, some of these item-specific trends seem highly implausible. There is, for example, a 10-point drop in the percentage saying it is very true that fringe benefits are good. In fact, the same survey series shows an increase in the proportion of the labor force receiving various fringe benefits. There was another 10-point drop in "having enough time to get the job done," which on the surface suggests a massive and hitherto undetected speed-up of American industry in the span of 4 years. Many of the other specifics have this same curious character: an 8-point drop in "the work is interesting," an 11-point drop in "opportunity to develop my own special abilities," roughly a 12-point decline in "having enough help and equipment to get the job done," a 7-point drop in "the physical surroundings are pleasant," an 11-point drop in the ability to "forget about personal problems at work," and so on. On the assumption that workers themselves provide the best evidence as to the nature and characteristics of their work, these data thus suggest nothing less than a wholesale transformation of the workplace over the 4 years. It is certainly possible that such a transformation in fact occurred, but it is not very likely.

Comparison with other surveys

As noted, Staines and Quinn reported a 5-point drop in the overall proportion of workers "very satisfied" with their work. Similar, although not identical, questions on general job satisfaction were also included in two other survey series covering approximately the same span, the 1973 and 1977 NORC General Social Surveys, and the 1971 and 1978 Quality of American Life Surveys. All three series are based on representative national probability samples. The pattern reported from the Quality of Employment series is not replicated in either of the other two series, neither of which shows a statistically significant change in job satisfaction over the time span (table 1).

Another frequently employed indicator of job satisfaction or work motivation is the question, "If you were

Table 1. Job satisfaction responses for two independent surveys

[In percent]

Response	National Opinion Research Center	
	1973	1977
Number of respondents	1,141	1,262
Very satisfied	49	48
Moderately satisfied	38	39
Little satisfied	8	10
Very dissatisfied	4	3

Response	Quality of life	
	1971	1978
Number of respondents	[1]5,634	2,380
Completely satisfied	36	32
Largely satisfied	30	32
Slightly satisfied	13	15
Neutral	12	10
Slightly dissatisfied	4	5
Largely dissatisfied	2	3
Completely dissatisfied	2	2

[1] Weighted for 1971.

to get enough money to live as comfortably as you would like for the rest of your life, would you continue to work or would you stop working?" This item is contained in both NORC and QES. Again, no significant trend is indicated in the percentages according to the tabulation:

	National Opinion Research Center		Quality of Employment Survey	
Response	1973	1977	1973	1977
Number of respondents	819	940	2,083	2,273
Continue . . .	69	70	67	72
Stop	31	23	33	28

The Quality of American Life Series contains exact replicas of nine component items; both series were products of the same organization (table 2). Sharply contrasting the item-by-item results from the employment series, identical items from the Quality of American Life series show no statistically significant declines.

Perhaps the best data ever assembled on worker expectations are those contained in the first two QOE surveys. Both surveys presented respondents' with the same list of job traits and asked them to state how important each trait was. Unfortunately, the "how important" sequence was dropped in the 1977 survey.

Lacking 1977 data from this series of questions, perhaps the best remaining national data on worker expectations for the era are contained in the NORC series, which presented workers with a list of five job characteristics and asked them to rank them. On the whole, trends on these measures of "worker expectation" are modest and are not consistent with the third Staines-Quinn hypothesis. In fact, there is a slight, but statistically significant, decrease over the 4 years in the proportion ranking "work is important and gives a feeling of accomplishment" as their first preference.

Consistent with the announced decline in job satisfaction, Staines and Quinn also report a decline in overall life satisfaction, specifically, an 11-point drop in the percentage characterizing their lives as "very happy." A nearly identical question was also included in the other two series (table 3). Again, the pattern of decline indicated in the employment series is not replicated in the other two.

The Staines-Quinn findings appear implausible for the following reasons:

- The announced decline is inconsistent with a long history of prior research on job satisfaction trends, all showing high and essentially stable levels of job satisfaction.

Table 2. Comparison of item-by-item results for two surveys

[In percent]

Questions and responses	Quality of employment		Quality of life		Questions and responses	Quality of employment		Quality of life	
	1973	1977	1971[1]	1978		1973	1977	1971[1]	1978
"The work is interesting."					Somewhat true	27	34	25	28
Number of respondents	2,066	2,246	5,654	2,378	Not very true	12	15	12	10
Very true	61	53	63	63	Not at all true	9	9	6	7
Somewhat true	22	28	28	28	"The chances for promotion are good."				
Not very true	12	12	7	3	Number of respondents	1,781	1,909	5,472	2,307
Not at all true	6	7	3	3	Very true	20	16	22	26
"I have the opportunity to develop my own special abilities."					Somewhat true	28	26	26	26
Number of respondents	2,057	2,241	5,346	2,377	Not very true	23	28	29	25
Very true	43	32	42	50	Not at all true	28	30	23	23
Somewhat true	27	32	32	28	"I am given a lot of chances to make friends."				
Not very true	19	21	17	14	Number of respondents	2,029	2,228	5,645	2,380
Not at all true	11	14	9	8	Very true	61	57	64	65
"I am given a chance to do the things I want to do best."					Somewhat true	31	35	23	24
Number of respondents	2,049	2,239	5,645	2,777	Not very true	6	7	9	8
Very true	41	31	47	49	Not at all true	2	1	4	3
Somewhat true	30	33	32	30	"The physical surroundings are pleasant."				
Not very true	17	22	14	13	Number of respondents	2,051	2,240	5,645	2,372
Not at all true	13	14	7	8	Very true	42	35	49	50
"The pay is good."					Somewhat true	32	37	31	33
Number of respondents	2,061	2,246	5,630	2,376	Not very true	18	19	13	13
Very true	41	27	38	37	Not at all true	8	9	6	5
Somewhat true	35	38	38	39	"I have enough time to get the job done."				
Very true	15	20	17	17	Number of respondents	2,063	2,244	5,628	2,375
Not at all true	10	15	7	6	Very true	41	31	51	52
"The job security is good."					Somewhat true	40	45	31	31
Number of respondents	2,056	2,246	5,620	2,396	Not very true	14	17	13	11
Very true	53	42	57	55	Not at all true	5	7	5	6

[1] Results are based on the weighted number of respondents.

- While the overall declines on multiple-item indicators seem plausible enough, many of the trends on the specific component items seem curious and implausible.
- The drop in overall job satisfaction registered in the employment series is not replicated in either of two other series covering approximately the same time span.
- The downward trends in specific component items are not replicated in the only other national survey series containing those items.
- Three hypothesis are offered in the initial article to account for the announced decline. Two are ruled out by data from the employment series itself, and the third is not supported by independent evidence presented here.
- A parallel decline in overall life satisfaction registered in the employment series is also not replicated in two independent tests.

The announced decline may itself be in error, and job satisfaction in the American work forces may have been essentially constant during the mid 1970's. It is unclear

Table 3.   Indicators of life satisfaction from three series
[In percent]

Response	Quality of employment		Quality of life		National Opinion Research Center	
	1973	1977	1971	1978	1973	1977
Number of respondents .	2,080	2,280	2,147	3,647	1,500	1,527
Very happy	38	27	29	27	36	35
Pretty happy	56	65	61	63	51	53
Not too happy	6	9	10	8	13	12

why the QOE employment series would show a trend if one did not exist. A possible reason could be that the 1977 employment sample included only a fraction of the relatively more satisfied 1973 respondents, thus producing an artificial decline in satisfaction. Whatever the explanation, it is apparent that the 1977 employment survey contains proportionally more people who are unhappy with their jobs, and with their lives, than do other reputable national surveys of the same era. Until some plausible account of this difference is given, the results of the 1977 employment survey must be treated with some caution.   □

------ *FOOTNOTES* ------

[1] See Harold Sheppard and Neal Herrick, *Where Have all the Robots Gone: Worker Dissatisfaction in the 70's* (New York, Free Press, 1972); Harry Braverman, *Labor and Monopoly Capital: The Degradation of Work in the Twentieth Century* (New York, Monthly Review Press, 1974); Stanley Aronowitz, *False Promises: The Shaping of American Class Consciousness* (New York, McGraw-Hill Book Co., 1973); and James O'Toole, *Work in America* (Cambridge, Mass., MIT Press, 1973).

[2] Graham Staines and Robert Quinn, "American workers evaluate the quality of their jobs," *Monthly Labor Review*, January 1979, pp. 3–12.

Elliot Richardson, *The Creative Balance: Government, Politics, and the Individual in America's Third Century* (New York, Holt, Rinehart, and Winston, 1976).

[4] Robert Quinn, Graham Staines, and Margaret McCullough, *Job Satisfaction: Is There a Trend*? (Washington, U.S. Government Printing Office, 1974.)

[5] Robert Quinn and Linda Sheppard, *The 1972–73 Quality of Employment Survey* (Ann Arbor, University of Michigan, 1974); and Curt Tausky, *Work Organizations: Major Theoretical Perspectives* (Itaska, Ill., F. E. Peacock, 1978).

[6] Quinn and Sheppard, *The 1972–73 Quality of Employment Survey.*

Family Budgets

Retired couple's budgets, final report, autumn 1981

Rising medical and transportation costs contributed to the increases in the three hypothetical budgets for a retired couple. In autumn 1981, the average urban budgets were $7,226 at the lower level, $10,226 at the intermediate level, and $15,078 at the higher level (table 1). From autumn 1980 to autumn 1981, the lower budget rose 8.8 percent, the intermediate, 8.4 percent, and the higher, 8.3 percent (table 2). The increases were approximately 2 percentage points less than those reported for 1979–80, reflecting smaller increases in food.

This report is the final release of budget data for a retired couple. The expenditure data on which the budgets are based are now 20 years old. Continuation of the program would have required revision of concepts and expenditure data and extensive price collection, for which funding was not available. Therefore, the program was eliminated as part of the Bureau of Labor Statistics' recent overall budget reduction.

Consumption costs rose by 8.7 percent for the lower level budget, 8.4 percent for the intermediate, and 8.3 percent for the higher. Among the components, medical care and transportation showed the largest increases.

Table 1. Summary of annual budgets for a retired couple at three levels of living, urban United States, autumn 1981

Component	Lower budget	Intermediate budget	Higher budget
Total budget[1]	$7,226	$10,226	$15,078
Total family consumption	6,914	9,611	13,960
Food	2,183	2,898	3,642
Housing	2,377	3,393	5,307
Transportation	553	1,073	1,960
Clothing	244	409	629
Personal care	198	290	424
Medical care	1,085	1,091	1,098
Other spending	275	457	901
Other items[2]	311	615	1,118

[1] Beginning with the autumn 1973 updating, the budgets no longer include income taxes.
[2] Other items include gifts and contributions and life insurance.

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

Table. 2 Percentage changes in the budgets for a retired couple, autumn 1980 to autumn 1981

Component	Lower budget	Intermediate budget	Higher budget
Total budget	8.8	8.4	8.3
Total family consumption	8.7	8.4	8.3
Food	4.9	4.5	4.6
Housing	9.6	9.2	9.2
Transportation	13.6	12.9	12.1
Clothing	3.4	3.3	3.3
Personal care	7.6	7.8	7.6
Medical care	14.9	14.8	14.9
Other family consumption	7.8	7.8	7.6
Other items[1]	8.7	8.3	7.8

[1] Other items include gifts and contributions and life insurance.

Medical care costs increased approximately 15 percent at all three levels, while transportation costs rose about 14 percent at the lower level, 13 percent at the intermediate level, and 12 percent at the higher level. These components also showed the largest increases in the period from autumn 1979 to autumn 1980. The total cost of the medical care component for autumn 1981 contains a preliminary estimate of out-of-pocket costs for medicare.

The housing component includes costs for shelter and housefurnishings and operations, and assumes that retired couples either rent or own their homes free of mortgage payments. Renter costs include average contract rent plus heating fuels, gas, electricity, specified equipment, and insurance on household contents. Homeowner costs include property taxes, water, refuse disposal, heating fuels, gas, electricity, specified equipment, home repair and maintenance, and insurance on house and contents.

The "other family consumption" component includes costs for reading materials, recreation, tobacco, alcoholic beverages, and miscellaneous items.

The budgets represent the costs of three hypothetical lists of goods and services that were specified in the mid-1960's to portray three relative levels of living. A retired couple is defined as a husband, age 65 or over, and a wife, who are assumed to be self-supporting, residing in an urban area, in reasonably good health, and

Table 3. Indexes of comparative costs based on an intermediate budget for a retired couple, autumn 1981

[U.S. urban average cost=100]

Area	Total budget	Family consumption										
		Total consumption	Food		Housing			Transportation[1]	Clothing	Personal care	Medical care	Other family consumption
			Total	Food at home	Total	Renter costs	Homeowner costs					
Urban United States	100	100	100	100	100	100	100	100	100	100	100	100
Metropolitan areas[2]	103	103	101	101	107	108	106	101	102	98	101	107
Nonmetropolitan areas[3]	90	90	96	98	80	77	82	96	95	107	98	78
Northeast:												
Boston, Mass.	117	117	102	103	141	136	167	107	110	92	97	117
Buffalo, N.Y.	105	105	102	104	108	98	114	113	119	93	93	106
New York-Northeastern N.J.	114	114	113	110	136	121	161	72	89	101	99	110
Philadelphia, Pa.-N.J.	104	104	111	107	109	102	118	89	72	84	100	106
Pittsburgh, Pa.	103	103	104	104	100	87	104	115	97	89	99	105
Nonmetropolitan areas[3]	101	101	101	102	102	105	123	106	106	105	97	79
North Central:												
Chicago, Ill.-Northwestern Ind.	98	98	98	100	96	104	88	97	93	90	102	121
Cincinnati, Ohio-Ky.-Ind.	98	98	102	103	92	81	92	99	121	85	100	107
Cleveland, Ohio	103	103	100	99	102	104	106	108	110	114	96	112
Detroit, Mich.	102	102	100	101	104	105	107	105	92	97	98	105
Kansas City, Mo.-Kans.	98	98	98	99	89	81	81	106	107	113	103	109
Milwaukee, Wis.	104	104	97	95	109	104	115	111	118	98	99	107
Minneapolis-St. Paul, Minn.	99	99	95	95	99	112	85	106	106	101	95	110
St. Louis, Mo.-Ill.	99	99	104	105	92	84	82	111	97	91	97	99
Nonmetropolitan areas[3]	91	91	95	97	83	88	85	92	109	113	96	79
South:												
Atlanta, Ga.	93	93	97	96	79	80	58	110	111	93	99	109
Baltimore, Md.	98	98	94	93	99	102	78	107	97	97	97	105
Dallas, Tex.	96	96	94	93	89	99	80	110	91	94	104	100
Houston, Tex.	98	98	99	97	90	83	85	102	108	110	106	98
Washington, D.C.-Md.-Va.	108	108	103	104	111	118	106	109	105	120	103	114
Nonmetropolitan areas[3]	86	86	95	97	72	60	70	96	78	99	100	75
West:												
Denver, Colo.	98	98	94	94	94	87	80	109	127	98	98	104
Los Angeles-Long Beach, Calif.	100	100	97	96	96	131	70	119	92	97	109	95
San Diego, Calif.	96	96	95	91	89	112	74	112	94	91	106	104
San Francisco-Oakland, Calif.	107	107	100	100	106	132	81	121	109	118	108	108
Seattle-Everett, Wash.	111	111	101	100	120	142	107	112	110	115	104	116
Honolulu, Hawaii	119	119	134	137	113	155	83	121	105	111	103	119
Nonmetropolitan areas[3]	93	93	96	98	84	90	84	94	118	123	101	82
Anchorage, Alaska	126	126	115	116	137	187	113	124	130	177	122	92

[1] The average costs of automobile owners and nonowners in the intermediate budget were weighted by the following proportions of families: New York, 25 percent for owners, 75 percent for nonowners; Boston, Chicago, Philadelphia, 40 percent for owners, 60 percent for nonowners; all other metropolitan areas, 60 percent for owners, 40 percent for nonowners; nonmetropolitan areas, 68 percent for owners, 32 percent for nonowners.

[2] As defined in 1960–61. For a detailed description of current and previous geographical boundaries, see the 1967 edition of *Standard Metropolitan Statistical Areas*, prepared by the Office of Management and Budget.

[3] Places with populations of 2,500 to 50,000.

able to care for themselves. The different budget levels provide different qualities and quantities of goods and services, but do not include personal income taxes. The lower budget was not designed to be a subsistence or poverty level of spending but simply somewhat lower than the intermediate budget.

The 1981 budgets were estimated by applying price changes for individual geographic areas from autumn 1980 to autumn 1981, as reported in the Consumer Price Index for Urban Wage Earners and Clerical Workers (CPI-W), to the appropriate autumn 1980 budget costs for each main class of goods and services. The budgets have been updated by the CPI since 1969, when

the last direct pricing took place. This method of updating is approximate because the CPI reflects spending patterns and prices for commodities and services purchased by urban wage earners and clerical workers generally, without regard to the type of family and level of living and because the updating was done at a relatively aggregated level. Also, the treatment of homeownership costs in the CPI differs from the treatment in the budgets.

Cost estimates and indexes of costs for the three retired couple's budgets, by metropolitan area and regional nonmetropolitan area averages, are available from the Bureau of Labor Statistics upon request. □

Research Summaries
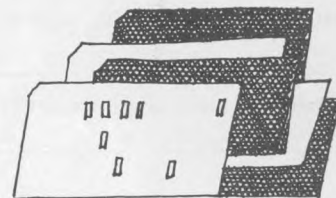
Labor force activity of women receiving child support or alimony

ALLYSON SHERMAN GROSSMAN
AND HOWARD HAYGHE

As divorce, separation, and out-of-wedlock births climbed during the 1970's, the number of mothers rearing children whose fathers were absent from the home rose sharply. Nonetheless, as the decade drew to a close, relatively few mothers received child support payments, despite the legal obligation on the part of most fathers. In addition, very few women received alimony.

A special survey conducted in April 1979,[1] shows that an estimated 2.5 million (35 percent) of the 7.1 million mothers living with children from absent fathers had received child support payments in 1978. An additional million were entitled to them but received none (table 1).

Surprisingly, mothers receiving money for child support were found to be in the labor force more often than those not awarded such support. And, women who received alimony—financial support for their personal maintenance after the dissolution of a marriage— were also more likely to work than those who did not receive such payments.

Child support recipients

In April 1979, 75 percent of the mothers who had received child support in 1978 were in the work force, and 84 percent of those employed worked full time (35 hours a week or more). Of those not awarded support, the comparable proportions were 58 percent and 78 percent. The child-support recipients were also less likely to be unemployed; at 7.3 percent their unemployment rate was only half that of the mothers not awarded support.

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Although generally higher labor force participation rates and lower unemployment rates for the recipients were evident among most major age-race groups, much of the difference between the aggregate rates of the two groups was associated with other factors. That is, mothers not awarded support tended to be black, less educated, and young—groups with serious labor market problems. For example, 47 percent of the mothers not awarded support were black, compared with only 11 percent of the recipients.

Historically, black mothers maintaining their own families have had lower labor force participation rates and higher unemployment rates than their white counterparts. In March 1979, 56 percent of the blacks were in the labor force compared with 71 percent of the whites, and the unemployment rate for this group of blacks was 16 percent, compared with a little less than 9 percent for the white mothers.

Moreover, those not awarded support were, on average, younger, less educated, and more likely to be single (never married) than the recipients. About 30 percent of the mothers not awarded support were below age 25, and 42 percent had never been married. Of the recipients, 8 percent were below age 25 and less than 4 percent had never been married. Also, as shown below, proportionately twice as many mothers not awarded support had failed to complete high school:

	Not awarded support	Recipients
Educational attainment:		
Less than 4 years of high school	44	22
4 years of high school only	40	49
1 year or more of college . . .	16	29

Labor force

Among both blacks and whites, participation rates of recipients were higher than those for mothers awarded no support. About 76 percent of white recipients and 64 percent of the black were working or looking for work,

Table 1. Labor force status of mothers by child support recipiency in 1978, April 1979

[Numbers in thousands]

Recipiency status	Civilian noninstitutional population		Labor force		Employed			Unemployed		Not in labor force
	Number	Percent	Number	Percent of population	Total	Percent		Number	Rate	
						Full time	Part time			
Total	7,094	100.0	4,633	65.3	4,161	81.3	18.7	472	10.2	2,462
Awarded child support	4,196	59.1	2,962	70.6	2,731	83.0	17.0	231	7.8	1,234
Support not scheduled for 1978	772	10.9	465	60.2	437	81.7	18.3	28	6.0	307
Support scheduled for 1978	3,424	48.3	2,497	72.9	2,294	83.3	16.7	203	8.1	927
Did not receive support	969	13.7	669	69.0	600	82.2	17.8	69	10.3	300
Received support	2,455	34.6	1,828	74.5	1,694	83.7	16.3	134	7.3	627
Not awarded child support	2,898	40.9	1,671	57.7	1,430	78.0	22.0	241	14.4	1,228

NOTE: Sums of individual items may not equal totals due to rounding.

compared with 60 and 55 percent of the mothers not awarded support.

By marital status, divorcees were most likely to be in the labor force whether or not they received child support. Among the recipients, almost 85 percent of the divorcees were working or looking for work, compared with 69 percent of the separated women. Moreover, nearly 70 percent of the divorcees not awarded child support were in the labor force compared with 60 percent of the married women and 55 percent of those separated or never married.

Unemployment rates were much higher for those awarded no support than for recipients, regardless of race. At 11.9 percent, the unemployment rate for white nonawardees was 5 percentage points higher than for recipients, while among blacks the nonawardees were more than twice as likely to be jobless (table 2). Unemployment among mothers not awarded child support

was highest for those who had never been married, partly because most were in their teens or early twenties, ages at which the already difficult problems of labor market entry are compounded by child-care responsibilities.

Income and work experience

Child support recipients had average (mean) annual incomes of about $8,940 in 1978, almost 70 percent greater than the $5,340 average for mothers not awarded support. Only part of this difference, however, can be attributed to the payments themselves; because mothers who were recipients were more likely to have earnings and other sources of income.

In 1978, overall child support payments averaged about $1,800, or only half of the difference between the incomes of the recipients and the mothers not awarded support. This is partly because women receiving child

Table 2. Labor force status of mothers by child support recipiency in 1978 and selected characteristics, April 1979

Selected characteristics	Population (in thousands)		Labor force (in thousands)		Labor force participation rate		Unemployment rate	
	Not awarded child support	Received child support	Not awarded child support	Received child support	Not awarded child support	Received child support	Not awarded child support	Received child support
Total	2,898	2,455	1,671	1,828	57.7	74.5	14.4	7.3
Marital status								
Married spouse present	461	781	274	486	59.7	67.1	6.2	7.2
Divorced	483	1,242	333	1,050	68.9	84.6	5.7	6.3
Separated	690	337	379	232	54.9	69.0	17.2	9.9
Widowed	35	8	12	5	(1)	(1)	(1)	(1)
Never-married	1,231	87	674	55	54.8	63.2	20.6	(1)
Race and Hispanic origin:								
White	1,490	2,168	891	1,645	59.8	75.8	11.9	6.9
Black	1,349	260	743	167	55.1	64.2	17.8	8.4
Hispanic	292	124	132	62	45.2	50.0	17.4	(1)
Age								
18 to 24 years	868	205	457	137	52.6	67.2	26.2	20.9
25 to 34 years	1,020	1,086	613	813	60.1	74.9	13.6	7.8
35 to 44 years	629	878	398	677	63.2	77.1	8.7	4.6
45 years and over	381	285	204	200	53.5	70.2	1.7	5.2

[1] Percent not shown where base is less than 75,000.

NOTE: Sums of individual items may not equal totals due to rounding.

support were more likely than those not awarded support to have had some work experience in the previous year. Nearly 80 percent of the recipients worked at some time in 1978, compared with 60 percent of those not awarded child support (table 3). Moreover, the latter tended to work fewer weeks and in lower paying jobs. Nearly the same proportions of the two groups held full-time jobs, but 54 percent of the recipients worked all year, compared with 43 percent of the others. About 2 of 3 child support recipients worked in white-collar occupations, with the remainder about equally divided between blue-collar and service occupations. In contrast, slightly over half (51 percent) of the mothers not awarded child support were blue-collar or service employees, while 48 percent were in white-collar jobs.

Alimony

Although only a very small proportion of ever-divorced or currently separated women reported that they received alimony or maintenance payments in 1978, labor force activity was strong among those who did (table 4). More than 7 of every 10 were working or looking for work. Among the women receiving alimony, those between the ages of 35 and 44 had the highest participation rates and those 45 and over, the lowest.

On average, women 45 years old and over received higher alimony payments than their younger counterparts. The higher payments probably contributed to their lower labor force participation rates, although in general, older women are usually less likely to work than younger women. These higher payments generally result from the longer duration of their marriages.

Many courts have indicated that the duration of the marriage measures the extent of the homemaker's absence from the work force and the probable degree of difficulty she will encounter in attempting to enter or reenter it. In this regard, one study concluded, that . . . "spousal support provides a form of insurance for employment benefits—e.g., work experience, accumulated

Table 4. Labor force status of ever-divorced or currently separated women who received alimony or maintenance payments in 1978, by demographic characteristics, April 1979

[Numbers in thousands]

Characteristics	Total	In labor force		Not in labor force
		Number	Participation rate	
Total, ever-divorced or currently separated	14,334	8,655	59.8	5,768
Alimony or maintenance payment recipients	528	373	70.6	155
Race and Hispanic origin:				
White	486	340	70.0	146
Black	41	32	(¹)	9
Hispanic	24	19	(¹)	6
Age:				
18 to 24 years	26	19	(¹)	7
25 to 34 years	135	99	73.3	36
35 to 44 years	188	150	79.8	37
45 years and over	179	105	58.7	74
Median payments in 1978	$1,570	$1,420	—	$1,810

¹ Rate not shown where base is less than 75,000.
NOTE: Sums of individual items may not equal totals due to rounding.

earnings, pension plans and health insurance—the homemaker has bypassed so that she could devote herself to her family."[2]

IN THE UNITED STATES, there is a clear-cut legal obligation for fathers to provide financial support for their children from a marriage ending in divorce or separation regardless of the labor force status of the mother. Moreover, they are obligated to support children born out of wedlock providing paternity has been proven.[3] Yet, as this report demonstrates, the receipt of child support is not widespread. □

——————FOOTNOTES——————

[1] The estimates in this report are based on data that were collected in March and April 1979 from the Current Population Survey (CPS) conducted for the Bureau of Labor Statistics by the Bureau of the Census. About 56,000 households in 614 areas of the United States with coverage in each of the 50 States and the District of Columbia were eligible for interviews in March. About 40,000 of these households were reinterviewed in April and women, 18 years of age and over, were then asked supplementary questions regarding child support and alimony payments. The labor force estimates shown in this report were derived from special tabulations prepared by Bernard R. Altschuler of the Data Services Group, Office of Current Employment Analysis, Bureau of Labor Statistics.

Estimates based on a sample may vary considerably from results obtained by a complete count, especially in cases where the numbers are small. Therefore, differences based on these estimates may not be significant.

For more detail and the interpretation of such differences, as well as a detailed discussion of the survey methodology and findings, see; *Child Support and Alimony: 1978, Current Population Reports*, Series P–23 no. 112 (Bureau of the Census, 1981).

[2] See Nancy A. Veith, "Rehabilitative Spousal Support: In Need of a More Comprehensive Approach to Mitigating Dissolution Trauma," *University of San Francisco Law Review*, Spring 1978, pp. 493–525.

[3] See Carol Adaire Jones, Nancy M. Gordon, and Isabelle F. Sawhill, "Child Support Payments in the United States," *Working Paper* 992–03, Urban Institute, October 1976, p. 6.

Table 3. Work experience of mothers by child support recipiency in 1978

Weeks worked	Received child support	Not awarded child support
Total (in thousands)	2,455	2,898
Worked	1,942	1,738
Percent of total	79.1	60.0
Worked (percent)	100.0	100.0
Full time	80.7	75.8
40 weeks or more	61.9	51.3
50 to 52 weeks	53.7	43.4
39 weeks or less	18.8	24.5
Part time	19.3	24.2
40 weeks or more	8.1	10.0
50 to 52 weeks	6.0	7.1
39 weeks or less	11.2	14.2

NOTE: Sums of individual items may not equal totals due to rounding.

Does a younger male labor force mean greater earnings inequality?

MARTIN DOOLEY AND PETER GOTTSCHALK

In a recent article in the *Monthly Labor Review*, Peter Henle and Paul Ryscavage showed that inequality of earnings among men grew between 1959 and 1977, although the rate of increase was lower after 1973.[1] Robert Plotnick likewise found an increase in the overall variance of men's earnings during the 1958–77 period.[2] Did this widening disparity reflect more than the effects of changes in the age composition of the labor force?

The answer to this question is important for public policy. If the greater inequality of earnings only reflects growth in the proportion of young males in the labor force as a result of the baby boom, then we might expect a reversal of the trend in the future. As this disproportionately large group of young men ages and is replaced by smaller cohorts, the distribution of earnings may become more equal. More disturbing would be the finding that inequality has grown among men with a given level of work experience. This would indicate that the greater overall inequality reflects more than simply the "younging" of the labor force.

Our analysis makes two contributions to the growing literature on earnings inequality. First, by focusing on inequality within education-experience groups, we demonstrate that two simple demographic explanations are not sufficient to explain the trend. Finis Welch and Richard Freeman have shown that the mean earnings of young workers fell relative to the mean earnings of older workers during the late 1960's and early 1970's.[3] This by itself would increase the between-age-group variance of earnings, and hence, increase the total variance. However, we show that, even after the influence of the between-group variance is eliminated, there remains a substantial trend towards greater inequality. The second demographic explanation is that the young make up a growing percentage of the labor force. Because the young typically have a high earnings variance,[4] the average of the within-age-group variances would tend to increase with the labor market entry of the baby boom. But by examining the variance of separate education-experience categories, we show that this factor is not sufficient to explain the trend in the overall variance. Our principal concern is with the experience

composition of the labor force, but because Jacob Mincer has shown that earnings inequality varies with the level of education,[5] we control for this factor as well.

The second major contribution of this study is to show that the proportion of people with zero earnings also increased within education-experience categories. This development has largely been ignored in the literature. Henle and Ryscavage and Plotnick limited their samples to people with positive earnings. Likewise, our measure of inequality, the variance of the logarithm of earnings, does not allow us to include people with zero earnings. The exclusion of a growing group of individuals who fall at the lowest point in the distribution gives an incomplete picture.

Method of the study

To examine these issues, we start by reviewing our measures of inequality and zero earnings averaged across all education and experience groups. We then turn to an analysis of changes within education and experience categories.

Like Henle and Ryscavage, we used data from the work experience supplement to the March 1968–79 Current Population Survey.[6] The special household questionnaire included data on annual earnings and weeks worked. Our sample covered males 16 through 62, who were not then in school and who reported they had worked 50 to 52 weeks the previous year, or fewer weeks for reasons other than school or, in the case of older men, retirement. Those self-employed or working without pay were excluded. The observations were divided into four education categories: less than 12 years, 12 years, 13 to 15 years, and 16 years or more of schooling completed. Current age minus estimated labor force entry age was used to allocate individuals to single-year labor force experience groups.[7]

Within each of the 1,960 education-experience-year cells, we calculated the variance of log annual and log weekly earnings among earners, as well as the proportion of zero earners. (Weekly earnings are not collected directly from respondents to the March Current Population Survey. For this study, estimates of weekly earnings were obtained by dividing the respondent's reported annual earnings by reported weeks worked. The weeks worked may have been full time, part time, or some combination of the two.) These within-group measures are the basis for our analysis. Inequality of weekly earnings, which has the advantage of not being influenced by changes in the distribution of weeks worked, was not studied by Henle and Ryscavage or Plotnick.

The findings

Table 1 shows the total variance of log earnings and the weighted average of the within-group variances for

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Table 1. Variance of log earnings, and proportion of men with zero earnings, 1967–78

Year	Variance of log annual earnings		Variance of log weekly earnings		Percent with zero earnings (5)
	Total (1)	Within-group[1] (2)	Total (3)	Within-group[1] (4)	
1967	0.503	0.373	0.402	0.302	3.3
1968	.482	.349	.379	.280	3.5
1969	.521	.373	.374	.267	3.6
1970	.584	.417	.405	.287	4.3
1971	.607	.436	.433	.295	4.7
1972	.645	.451	.446	.314	4.9
1973	.613	.432	.441	.308	4.8
1974	.645	.457	.459	.326	5.8
1975	.673	.479	.425	.298	7.3
1976	.671	.473	.432	.299	6.9
1977	.662	.465	.432	.300	6.5
1978	.631	.454	.445	.323	6.4
Trend:[2]					
1967–78 . .	[3].028	[3].025	[3].013	[3].009	[3].072
1967–72 . .	[3].057	[3].048	[3].031	[4].015	[3].092
Change in trend after 1972	[3] −.053	[3] −.042	[3] −.031	−.011	−.035

[1] Weighted average for groups defined by four educational levels and by single years of labor force experience.
[2] Time trend fitted to the log of averages shown in the table.
[3] $1.28 < t < 1.64$.
[4] $1.64 < t$.

each year.[8] The average was constructed by weighing the variance of each of the education-experience cells by the proportion of people in that cell in that year. Column 1 shows that the total variance of log annual earnings grew substantially over the period. The rate of increase, however, seems to have been more rapid prior to 1973, confirming Henle and Ryscavage's earlier conclusions based on gini indexes.[9] Column 2 shows that the increase in the total variance occurs even when we eliminate the effect of changes in between-group variance. The average of the within-group variances of log annual earnings increased from .373 in 1967 to .454 in 1978. Examination of the data again indicates that the growth rate was considerably higher during 1967–72 than in the 1973–78 period.

To estimate growth rates, we fit linear time trends to the data in table 1. A spline covering the 1973–78 period was used to test for change in growth rates.[10] The estimated trend over the full period, the trend over 1967–72, and the change in the trend after 1972 are shown in the bottom three rows.[11]

The time trends fitted to the variance of the log annual earnings indicate a 2.8-percent growth rate in the total variance and a 2.5-percent growth rate in the within-group variance over the full period. This was a result of a very rapid rise between 1967 and 1972 and a leveling after 1972. Columns 3 and 4 of table 1 show that the increasing inequality of annual earnings is not only a reflection of changes in employment patterns. The total variance of weekly earnings also shows a 1.3-percent growth rate and the within-group variance shows a 0.9-percent growth rate; both are statistically signifi-

cant. Again, the growth rates are substantially higher during 1967–72 than in the later period, when the growth rates are quite small. These data indicate that annual and weekly earnings among workers with positive earnings have become less equal, although the rate of increase in the inequality dropped after 1972.

Column 5 shows the percent of males with zero earnings. This series shows a dramatic increase during the survey period. In 1967, 3.3 percent of all men in our sample had zero earnings. By 1978, the proportion had grown to 6.4 percent. The growth rates over the full period and the period 1967–72 are both large and significant. For the percent with zero earnings, the trends in the two subperiods are not significantly different.

The rise in the proportion of men with zero earnings is large enough to warrant careful attention. While it is beyond the scope of this study to explain why this rapid increase has occurred, it is consistent with other survey data which show that the proportion of men out of the labor force in any given month has been growing.[12] More surprisingly, our data indicate that many of these men did not have any earnings during the year.

Table 2 shows the estimated growth rate in the proportion of men with zero earnings and the estimated growth rate in the within-group variance of log annual and weekly earnings for 16 education-experience categories.[13] Columns 1 to 3 indicate that the within-group variance of log annual earnings increased in all cases. All growth rates except two are significantly greater than zero (the exceptions being the two highest experience groups for college graduates). The growth rates are both statistically significant and of substantial magnitude. The within-group variance of the log of annual earnings grew in the 2- to 4-percent range for most categories. This indicates that the average increase in the within-group variance of log annual earnings shown in table 1 reflects more than population shifts among cells as a result of the baby boom.

For the group with the lowest experience there is strong confirmation of a slowdown in the trend toward inequality, even within experience categories. Column 3 shows statistically significant declines for all educational levels. For other experience groups, the picture is not so clear. Column 3 shows a decline in the growth rates for all but three of the categories with more than 10 years of experience. However, almost none of these differences in the growth rates is statistically significant. This partially reflects the substantial year-to-year fluctuations in the data that make it difficult to draw conclusions about subperiods. Nevertheless, we can say that a decline in the trend toward greater inequality within education-experience categories is not strongly confirmed by the data for men with more than 10 years of experience.

Columns 4 to 6 show the growth rates in within-group variances of log weekly earnings. As found in ta-

ble 1, the growth rates are considerably lower than those for the log of annual earnings. In addition, we find that (with one exception) the trend toward greater inequality of weekly earnings is statistically significant only for men with less than a college degree and less than 21 years of experience. For these people, growing inequality of annual earnings also reflects growing inequality of weekly earnings. For the other groups, all but one trend coefficient in column 4 is positive but only one of these is statistically significant.[14] Few of the education-experience groups show statistically significant changes in growth rates between the two subperiods.

Columns 7 and 8 show the growth rates in the percent of men with zero earnings. Column 7 shows significantly positive growth rates in the proportion of respondents with zero earnings, even in the higher education-experience cells. Not only are the growth rates in columns 7 and 8 statistically significant but they are quite large, almost all being above 7 percent per year. Columns 8 and 9 indicate that the growth rates in the percentage of zero earners did decline after 1972. However, the statistically significant declines are concentrated in the two groups with lower experience.

IN SUMMARY, we find that the increasing inequality of male earnings reflects more than the changes in the composition of the labor force which resulted from the labor market entry of the baby boom. Even within education-experience cells, the variance of log annual earnings has been increasing. For men with less than 20 years of experience, the variance of log weekly earnings has also been rising. Furthermore, there is an increasingly large proportion of men who earn no income over a full year. The rise in this proportion of zero earners is not confined to those with little education or experience. It seems to be occurring across the board.

What are the possible explanations for our observed inequality *within* education-experience cells? One might be that increased transfer programs have generated disequalizing labor supply responses. But while this hypothesis has yet to be tested rigorously, indirect evidence suggests that it is not a full explanation. Recall, for example, that high education-experience males, whose greater earnings capacity makes them less likely to be eligible for transfer payments, also experienced an increase in inequality. This suggests that expanded transfer programs were not the only factor at work. Another possible explanation involves the education and

Table 2. Trends[1] in average within-group earnings variances and in the percentage of men with zero earnings, by years of experience and education, 1967–78

[In percent]

Experience-education category	Average within-group variance						Percent of men with zero earnings		
	Log annual earnings			Log weekly earnings			Trend, 1967–78 (7)	Trend, 1967–72 (8)	Change in trend after 1972 (9)
	Trend, 1967–78 (1)	Trend, 1967–72 (2)	Change in trend after 1972 (3)	Trend, 1967–78 (4)	Trend, 1967–72 (5)	Change in trend after 1972 (6)			
1 to 10 years' experience: Education:									
Less than 12 years	[2].033	[2].061	[2] −.050	[2].018	.017	.002	[2].087	[2].166	[2] −.140
12 years	[2].044	[2].077	[3] −.060	[2].018	.024	−.010	[2].104	[2].206	[2] −.180
13 to 15 years	[2].054	[2].143	[2] −.158	[2].032	[2].066	[3] −.061	[2].114	[2].212	[2] −.174
16 years or more	[3].017	[2].070	[2] −.093	.002	[3].023	[3] −.037	[2].082	[2].180	[2] −.174
11 to 20 years' experience: Education:									
Less than 12 years	[2].040	[2].070	−.050	[3].018	[3].044	−.047	[2].130	[2].162	[3] −.058
12 years	[2].072	[2].076	−.007	[2].052	.010	[2].073	[2].113	[2].138	−.044
13 to 15 years	[2].041	[2].042	−.003	[2].027	.022	.009	[2].163	[2].240	[3] −.136
16 years or more	[2].025	[3].038	−.022	.007	.014	−.011	[2].111	.041	.124
21 to 30 years' experience: Education:									
Less than 12 years	[2].023	[3].038	−.027	−.004	.020	.017	[2].108	[2].115	−.013
12 years	[2].039	[2].080	[3] −.071	.012	[3].054	.073	[2].094	[2].102	−.014
13 to 15 years	[2].030	.021	.015	.016	.030	−.022	[2].104	[2].121	−.030
16 years or more	.012	−.011	.040	.001	−.027	.050	[2].031	.025	.010
31 or more years' experience: Education:									
Less than 12 years	[2].019	[2].036	[3] −.030	[3].007	.007	−.001	[2].088	[2].099	−.020
12 years	[2].019	[2].032	[3] −.024	.004	.006	−.002	[2].115	[2].109	.012
13 to 15 years	[3].028	[2].082	[3] −.096	.018	[3].063	−.080	[2].060	.015	.080
16 years or more	.015	−.010	.044	.016	.004	.023	.032	.073	−.074

[1] Trends are fitted to the log of the average variances and percentage of zero earnings within each experience-education category.

[2] 1.64 < t.

[3] 1.28 < t < 1.64.

training investment decisions of persons born during the baby boom. Increasing inequality of human capital investment among members of recent cohorts may have led to increased earnings inequality, especially during the early years of the life cycle. In an earlier study, we provided both theoretical and empirical support for this hypothesis. Including a measure capturing baby boom effects reduces the trend toward inequality but does not eliminate it.[15] A more satisfactory explanation for the trend towards greater inequality, both within demographic groups and within occupations (as shown by Henle and Ryscavage), therefore, remains an important topic for further research. □

———— FOOTNOTES ————

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

[2] Robert D. Plotnick, "Trends in Male Earnings Inequality," *Southern Economic Journal,* January 1982, pp. 724–32.

[3] See Finis Welch, "Effects of Cohort Size on Earnings: The Baby Boom Babies' Financial Bust," *Journal of Political Economy,* October 1979, pp. S65–S97; and Richard Freeman, "The Effect of Demographic Factors on Age-Earnings Profiles," *Journal of Human Resources,* Summer 1979, pp. 289–318.

[4] See Jacob Mincer, *Schooling, Experience and Earnings* (New York, Columbia University Press, 1974).

[5] See Jacob Mincer, *Schooling.*

[6] The March work experience supplement is a retrospective survey which asks respondents to describe their own labor force experience and that of other household members for all of the previous calendar year.

[7] Finis Welch and William Gould used data from the 1940, 1950, 1960, and 1970 censuses and the Coleman-Rossi sample to estimate labor force entry age for men conditional on observed age, education, and birth cohort. These data were kindly provided to the authors by Finis Welch. Current age minus estimated labor force entry age was used to estimate labor force experience. See Finis Welch and William Gould, "An Experience Imputation or an Imputation Experience," unpublished paper (Los Angeles, University of California, October 1976).

[8] The between-group variance in each year is simply the difference between the total and the average within-group variance shown in table 1.

[9] See Henle and Ryscavage, "The distribution of earned income."

[10] The time trends in table 1 are estimated by fitting a time trend and a spline (which is a variable which takes on the values 1, 2 . . . n in the n years following 1972, allowing the fitted time trend to kink in 1973) to the 12 yearly observations for each series. The dependent variables are the logarithms of the averages shown in table 1.

An alternative procedure is to use observations on each category in each year, yielding 1,960 observations for each regression. Because these observations can be grouped exactly on the 12 yearly values of the independent variables, this procedure is identical to estimating equations using the time trend and spline as independent variables and the average of the logs, rather than the log of the averages, as dependent variables. The trends based on this alternative procedure give the same qualitative results.

[11] The 1973–78 trend can be obtained by adding the bottom rows.

[12] For example, see Donald Parsons, "The Decline in Male Labor Force Participation," *Journal of Political Economy,* February 1980, pp. 117–34.

[13] The trends in table 2 are calculated as follows: The 1960 single year-experience-education categories, which make up our basic data, are aggregated into 192 categories made up of 16 experience-education cells observed in each of 12 years. The single year-experience-education data are used to calculate weighted averages of the two variables shown in table 2 (percentages of zero earners and within-group variances) for each of the 16 categories for each year. Time trends are fitted to the log of these averages within each aggregated category. Again, the alternative procedure of fitting trends to the averages of the logs gives similar results.

[14] Entering the unemployment rate in the regression used to estimate the trend does not alter the basic conclusion. Time trends still tend to be insignificant for all but the groups with the least education and experience.

[15] Martin Dooley and Peter Gottschalk, *Earnings Inequality Among Males in the U.S.: Trends and the Effect of Labor Force Growth,* QSEP Research Report No. 19 (Hamilton, Ont., McMaster University, February 1982).

Major Agreements
Expiring Next Month
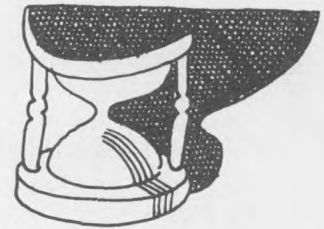
This list of collective bargaining agreements expiring in December is based on contracts on file in the Bureau's Office of Wages and Industrial Relations. The list includes agreements covering 1,000 workers or more.

Employer and location	Industry	Labor organization [1]	Number of workers
American Millinery Manufacturers Association, Inc. (New York)	Apparel	Hatters	2,000
Associated Hospitals of The East Bay, Inc. (California)	Hospitals	American Nurses' Association (Ind.)	1,400
AVX Corp., AVX Ceramics (Myrtle Beach, S.C.)	Electrical products	Electrical Workers (IBEW)	1,800
Hughes Aircraft Co. (California)	Electrical products	Carpenters	13,000
International Telephone and Telegraph Corp., General Controls Division (California)	Fabricated metal products	Electrical Workers (IBEW)	1,000
Liggett and Myers Tobacco Co., Inc. (Durham, N.C.)	Tobacco	Bakery, Confectionery and Tobacco Workers	1,000
Loews Theatres, Inc., Lorillard Division (Louisville, Ky.)	Tobacco	Bakery, Confectionery and Tobacco Workers	1,500
Manufacturers' Industrial Relations Association (Interstate)	Primary metals	Molders	4,000
Michigan Consolidated Gas Co. (Detroit and Ann Arbor, Mich.)	Utilities	Service Employees	1,300
Occidental Chemical Co. (White Springs, Fla.)	Chemicals	Chemical Workers	1,500
Pacific Gas and Electric Co., 2 agreements (California)	Utilities	Electrical Workers (IBEW)	18,100
Pacific Gas and Electric Co. (California)	Utilities	Marine Engineers	1,900
RCA Corp., National Agreement (Interstate)	Electrical products	Electrical Workers (IBEW)	13,000
Republic Airlines, Inc., 2 agreements (Interstate)	Air transportation	Air Line Pilots	7,400
Salt River Project Agricultural Improvement and Power District (Phoenix, Ariz.)	Utilities	Electrical Workers (IBEW)	1,500
Standard Plastic Products, Inc. (Plainfield, N.J.)	Miscellaneous manufacturing	Leather, Plastic and Novelty Workers	1,100
Western Airlines, Inc. (Interstate)	Air transportation	Air Line Pilots	2,300
Government activity			
Alaska: General Government Employees	Multidepartments	Alaska Public Employees Association (Ind.)	5,850
Labor Trades and Crafts Unit	Central administration	Laborers	1,400
Colorado: Denver School District 1; professional employees	Education	National Education Association (Ind.)	4,300
Ohio: Dayton Board of Education; professional employees	Education	National Education Association (Ind.)	2,000

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

Developments in Industrial Relations
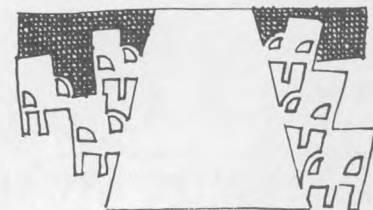
Legislated settlement ends rail strike

In late September, President Reagan signed into law a legislated settlement (P.L. 97–262) to end a 4-day strike by about 26,000 members of the Brotherhood of Locomotive Engineers. The strike had curtailed rail freight and passenger service across much of the country. At issue in the dispute was the Locomotive Engineers' right to strike should they fail to maintain their traditional pay differential over other operating employees represented by the United Transportation Union if those employees negotiate "crew consist" agreements providing additional compensation in return for a reduction in crew size. The Locomotive Engineers have had such a strike provision in their contracts since 1975.

The legislated settlement preempted this right and implemented other recommendations of an emergency board established by the President in July. Under provisions of the Railway Labor Act, the President can establish such a board if negotiations and mediation reach an impasse, at which time a 60-day "cooling-off period" begins. In mid-August, the board recommended that the union accept the national railroad wage-and-benefit pattern and that the union be allowed to negotiate changes in engineer compensation when there is a "change in the compensation relationship as a result of a crew consist agreement between a given carrier and the United Transportation Union." However, the board also said that during the life of the agreement the Locomotive Engineers should only negotiate "within the peaceful procedures of the Railway Labor Act."

When the "cooling-off period" (which had been extended 10 days) expired on September 19, the Locomotive Engineers walked off their jobs. This prompted President Reagan to ask the Congress to pass emergency legislation conforming to the emergency board's recommendations to end the strike. The Congress passed the measure on September 22.

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

In signing the legislation, the President noted that "vital national interests" had been at stake and that a prolonged strike could have idled "nearly a million Americans"—primarily in the rail, auto, steel, and mining industries, and also have an adverse effect on the agricultural products industry. The mandated settlement provided the same general wage-and-benefit terms as those already negotiated in the railroad industry by 11 other unions, some of which had settled as early as November 1981. (See *Monthly Labor Review*, January 1982, p. 24.) Members of the United Transportation Union were voting on a pattern agreement negotiated in September.

Pre-bargaining talks end at aluminum companies

Discussions between three major aluminum companies and the United Steelworkers did not result in labor cost concessions the companies had sought. However, a union official said that the talks had "cleared the air on a number of issues" in preparation for the 1983 bargaining. The union's existing 3-year contracts with the Aluminum Co. of America, Reynolds Metals Co., and Kaiser Aluminum & Chemical Corp. expire May 31, 1983. In recent years, the Steelworkers' settlement with these companies has set a pattern for workers it represents at other aluminum companies, as well as for the Aluminum, Brick and Glass Workers union, which represents 20,000 employees of Alcoa, Reynolds, and other companies. Overall, the Steelworkers represents 25,000 employees in the industry.

The Steelworkers apparently ended talks because the Aluminum Workers rejected any negotiation with the industry, which meant that any concessions by the Steelworkers would end compensation parity in the industry. At the time the talks were terminated, the three companies were operating at less than 50 percent of capacity and, reportedly, their output was selling below the cost of production.

Steel industry update

There was renewed hope in the steel industry that the Steelworkers and the eight Coordinating Committee

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Steel Companies could reach a pattern-setting accommodation on cuts in labor costs, despite the union's earlier rejection of an employer proposal. (See *Monthly Labor Review*, August 1982, p 56.) Steelworkers President Lloyd McBride indicated the union was willing to consider a reopening of discussions with the companies, which were operating at less than 40 percent of capacity, with some 120,000 workers on layoff.

Despite the uncertain outlook for an early settlement with the eight companies, other individual companies were able to reach wage concession agreements with the Steelworkers:

• Employees of Phoenix Steel Corp.'s Claymont, Del., plant agreed to an immediate $1.25 an hour wage cut, to be followed by a 25-cent cut in January 1983. Both reductions will continue to the August 1983 termination of the current 3-year contract. Workers at the company's Phoenixville, Pa., plant rejected a similar proposal, but negotiations were continuing. Half of the 1,800 workers at the two specialty steel plants were on furlough.

• In Illinois, 1,300 workers at Northwestern Steel & Wire Co.'s wire and rod mill agreed to reductions in pay and holidays amounting to as much as $3 an hour, according to the company. Company President Peter Dillion declined to estimate the total savings to the company but said the operation had lost money for the last 3 years. The settlement was impelled by the company's July 20 announcement that it would close the mill in 90 days if the workers did not agree to cuts in compensation.

• Colt Industries Inc. again announced plans to close its Crucible Stainless & Alloy Division mill in Midland, Pa., by yearend. However, Colt did indicate that the plant was still for sale; earlier purchase negotiations with Cyclops Corp. were not successful. The company currently has 275 employees, compared with a peak of 5,500 in 1980.

• In West Virginia, the 11,000 employees of National Steel Corp.'s Weirton Steel Division retained Lazard Freres & Co. to help in their efforts to purchase the operation. The investment banking firm will assist in forming a stock ownership plan, negotiating a purchase price, getting financing, and evaluating Weirton's assets.

• Republic Steel Corp. announced a 7- to 10-percent pay cut for 5,800 nonunion salaried employees. Earlier this year, Republic had frozen cost-of-living salary increases and merit pay increases for salaried employees and had reduced their numbers by 1,400.

Company besieged by claims, files bankruptcy

In action that may have widespread implications for other asbestos producers and processors—and for companies in other industries—Manville Corp. filed for bankruptcy, asserting that its assets were insufficient to meet the projected costs of thousands of lawsuits filed by workers claiming physical disabilities resulting from exposure to asbestos. John H. McKinney, Manville's chairman and president, explained that "our businesses are in good shape despite this recession . . . [but] we are completely overwhelmed by the cost of the asbestos health lawsuits filed against us." At the time, there were 16,500 claims pending against Manville, with 500 being added each month.

Manville apparently decided to seek protection under Chapter 11 of the Federal Bankruptcy Act of 1978 after a study by Epidemiology Resources, Inc., indicated that Manville faced a potential total of 52,000 suits at a possible cost of $2 billion, nearly twice the company's current $1.1 billion net worth. Officials said this was the "low projection"; the "high projection" was for 120,000 suits at a liability of more than $5 billion.

In recent years, Manville and other asbestos producers and users have been hit by medical claims and have been asking the Federal Government to assume a major share of the cost because many of the workers incurred cancer or asbestosis from exposure to asbestos during wartime service in shipyards. Dave Pullen of the Asbestos Compensation Coalition (nine firms that either manufacture asbestos or did so in the past) maintains that the Government has a degree of responsibility because it "acted just like any other manufacturer. They bought and sold asbestos fiber, they purchased machinery to give to asbestos manufacturers, they specified the products and controlled the workplace where most of those workers were exposed."

Initial indications were that this position was not favored by the Congress. Senator Robert Dole, chairman of the Subcommittee on the Courts, criticized Manville's decision to file under the bankruptcy act, saying "this procedure is dubious, and unusual at best. America's bankruptcy system can ill afford the additional strains to be placed upon it by those who would use its protection for shelter against personal or corporate attacks where other remedies, both legal and congressional, would seem to be more appropriate."

Attorneys for many of the claimants also reacted bitterly to Manville's action, calling it improper because the company was viable despite a $19.9 million loss during the second quarter of the year.

Actually, Manville was not the first asbestos company to file under Chapter 11. A month earlier, UNR, a Chicago company, had sought protection under the chapter, which suspends creditor claims while the company attempts to reorganize and improve its financial condition.

There were no immediate indications of how other asbestos companies would handle their claims. At the

time of the Manville action, 260 other asbestos companies faced a total of 13,500 claims.

Texaco settles, 7-month strike ends

The round of bargaining in petroleum refining was finally concluded when Texaco, Inc., and the Oil, Chemical and Atomic Workers agreed on a contract that ended a 7-month strike at the company's Port Arthur, Tex., refinery. The major issue in the dispute arose in 1976, when Texaco began reducing the optional lump-sum payment retiring workers may elect instead of the usual monthly benefits. The company claimed the reduction was justified because rising interest rates would have enabled workers investing their lump sum to exceed the total value of monthly benefits drawn by other retirees. The dispute accelerated in 1981, when the union initiated and won a Federal District Court case concerning Texaco's action. At the time of the accord, the court was considering Texaco's appeal.

The parties agreed to an out-of-court settlement of the legal dispute. The accord provides for the reduction of lump-sum benefits to apply to future retirees. However, the 542 workers who retired and elected lump-sum payments between February 1976 and January 1982 will share $3 million provided by Texaco. In addition, future retirees will be credited with up to 5 years of service time lost because of strikes or union duties. Future retirees also can get credit for other time lost by paying an amount equal to 4 percent of base pay for the period lost.

The 3½ year agreement also called for wage increases of 9 percent, effective immediately, and 90 cents an hour, effective June 15, 1983. (This matches increases provided by 2-year agreements the union had negotiated with other refineries earlier in the year.) In 1984 and 1985, Texaco workers will receive the same wage increases as those resulting from the 1984 bargaining at the other companies.

In an effort to reduce its work force, Texaco agreed to pay employees who quit before they are eligible to retire $4,000 plus 1 week of pay for each year of service. Texaco said it was necessary to reduce the refinery's hourly work force by 1,000 persons because of a worldwide glut of petroleum products.

Texaco kept the Port Arthur refinery in operation during the strike, using nonunion technical and management employees.

Glass workers trade wages for job security

More than 5,000 glass workers were covered by a settlement between Libby-Owens-Ford Co. and the Glass and Ceramic Workers that a company official said "provides greater job security . . . in return for reducing fu-

ture wage costs." At the time of the settlement, 2,000 hourly employees were on layoff attributed to the depressed condition of the housing and automobile industries.

The new contract, which supersedes the balance of a 3-year contract scheduled to expire in October 1983, runs to October 1985. Under the agreement:

- The union gave up 19-cent-an-hour wage increases scheduled for October of 1982 and 1983, but there will be a 19-cent increase in October 1984.
- The provision for automatic quarterly cost-of-living pay adjustments was suspended, subject to activation if the BLS Consumer Price Index for Urban Wage Earners and Clerical Workers (1967=100) rises more than 33.6 points. Part of the suspended adjustment will be recovered by the employees if parts shipped to the automobile industry reach specified levels.
- Provisions for October 1982 pension and insurance improvements were retained.
- Libby-Owens-Ford agreed to establish a $800,000 fund to pay health insurance premiums for laid-off workers, retirement incentives, or as lump-sum payments to active employees. Each local union will decide how to use its share of the fund.
- Libby-Owens-Ford agreed not to expand glassmaking or auto glass fabricating furnaces at plants where workers are not represented by the union.
- The parties agreed to reopen negotiation in October 1984 if hours worked by members of the bargaining unit drop below a specified level.

The contract covered operations in Toledo, Ohio, Ottawa, Ill., Charleston, W.Va., and Lathrop, Calif.

Newspapers begin cost-reducing measures

More than a year of uncertainty over the fate of the financially troubled *New York Daily News* was ended when the last of the newspaper's 11 unions agreed to a package of cost-reduction measures. Details of the package varied among unions, but the overall objective was to reduce labor costs by $50 million a year, the minimum cut the paper said was necessary for continued operation. The reduction was to be attained by eliminating the equivalent of 1,340 full-time employees from the work force. To help do this, the newspaper set up a $50 million fund to finance one-time "buy-out" payments for full-time employees who elect to leave. The *Daily News* also agreed to spend $44 million to upgrade its printing plant in Brooklyn and establish two suburban plants.

The accord called for (1) a 3-year extension of the current labor contracts, which had been scheduled to expire in March 1984, (2) weekly wage increases of $38,

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$35, and $37 in March of 1984, 1985, and 1986, (3) a cost-of-living wage adjustment clause that could result in additional increases, and (4) a possible reopening of bargaining if the paper attains a profit that exceeds 6-percent of net worth.

The unions had agreed to reopen their current 3-year agreements (which were not scheduled to expire until March 1984) in response to a request by the parent Tribune Co. of Chicago, which cited a 1981 operating loss of $13 million and an expected 1982 loss of $30 million. The effort to save the morning tabloid came after the Tribune Co. had failed to sell the paper, which has a circulation of 1.5 million on weekdays and 2.2 million on Sundays.

Elsewhere in the industry, the *Minneapolis Star and Tribune Co.* announced that it will allow 825 nonunion employees to take up to 30 days off without pay, with an option to take more. A company official said the program will reduce payroll costs and give employees more leisure time, and that a similar program will be discussed with union-represented workers if they expressed an interest. The *Minneapolis Star* and the *Minneapolis Tribune* merged in April in an effort to reduce payroll and distribution costs.

Iron Workers pay frozen for 1 year

In Arizona, members of Iron Workers Local 75 approved a 1-year contract that freezes their pay rate at $16.25 an hour for 1 year but does provide for a 20-cent-an-hour increase in employer financing of benefits. The agreement was negotiated with the Arizona Steel Field Erectors Association. Harry Steel, business manager of the local, explained, "We have a lot of unemployment and a lot of our people are moving out of the State, so we thought it was best to hold the line until things get better." Currently, about 30 percent of the local's 1,500 members are unemployed.

Delta nonunion workers get pay increases

Delta Airlines granted its 33,000 nonunion employees general and merit pay increases totaling up to 8 percent, along with improvements in benefits. (The changes did not apply to Delta's 4,000 pilots, who are covered by a contract that calls for periodic improvements in pay and benefits.) Delta suffered an operating loss for the quarter ending March 31, 1982—its first quarterly loss in 25 years—but rebounded and showed a net profit of $20.8 million for the fiscal year that ended June 30.

Teamsters' pension fund monitoring extended

A quarter century of controversy concerning the Teamsters' Central States Pension Fund was eased when fund trustees and the Department of Labor entered into a consent decree that will extend Federal monitoring and independent management of the fund's assets for at least 10 years. The decree opened the possibility of settling several Federal suits involving the fund. In the most important suit, filed in 1978, the Government accused Teamsters' President Roy L. Williams and 18 other former trustees of "gross mismanagement" of millions of dollars of fund assets. The trustees had resigned a year earlier, under pressure from the Department of Labor and the Internal Revenue Services.

Secretary of Labor, Raymond J. Donovan, said the decree contains "virtually all of the safeguards that the Government has been seeking . . . [to] assure that the assets of the Teamsters' pension fund are protected and managed prudently and professionally.

The decree contains provisions to (1) require the fund to use an independent assets manager (as before, the manager is permitted to consult with the trustees, but trustees cannot veto the manager's investment decisions); (2) permit the trustees to fire the investment manager and hire a replacement, subject to approval by the court; (3) create an independent special counsel, to be selected by the court, to monitor operation of the fund and periodically report the results to the court; (4) remove fund trustees and employees convicted of certain "relevant" crimes, such as fraud or embezzlement; and (5) continue the court's jurisdiction over the fund for 10 years, for an additional 5 years if the Department of Labor insists, and beyond that "for good cause shown." □

Book Reviews
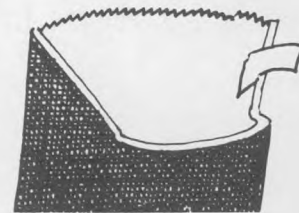
Holy macro! Inflation's not that simple

Commodity Prices and the New Inflation. By Barry P. Bosworth and Robert Z. Lawrence. Washington, The Brookings Institution, 1982. 215 pp. $24.95, cloth; $9.95, paper.

The traditional division of economic theory in college textbooks between microeconomics (dealing with such topics as the theory of the firm, market structures, and price determination) and macroeconomics (dealing with such topics as business cycles, inflation, and unemployment), while a useful pedagogical tool in many respects, may also tend to obscure some crucial connections in the real world. It is particularly important to realize that the effectiveness of macroeconomic policy alternatives such as anti-inflation remedies may be highly dependent on the microeconomic forms of market structure and industrial organization prevailing within the economy.

This point is central to the analysis presented by Barry Bosworth and Robert Lawrence in their new book, *Commodity Prices and the New Inflation.* They contend that we cannot rely on macroeconomic measures alone to contain inflation without sacrificing real output and employment because the American economy is a thorough mixture of "auction markets," where prices are largely determined by competitive forces, and "customer" or "fixed-price" markets, where prices are set in at least a partially monopolistic environment.

This distinction between "perfect" and "imperfect" competition has been a staple of microeconomic theory for almost half a century. The implications of this distinction for macroeconomic stabilization policies have seldom been well appreciated, however. Bosworth and Lawrence observe that, on one hand, if the economy were dominated by markets fitting into the competitive model, then "fiscal and monetary policies would be an adequate basis for controlling inflation." If, on the other hand, "all prices and wages reflected the outcome of a bilateral monopoly or fixed-price model," then some variation of incomes policies might be effective. "But since the actual economy is a mixture of market structures," the authors conclude, "either of these policies will be frustrated when used alone." Given these circumstances, the authors summarize the basis for their emphasis on control of supplies of primary agricultural

and energy commodities as a critical element in any comprehensive anti-inflation program:

> Any attempt to stabilize the overall price level by inducing a price change in the inflexible sector to offset changes in the sensitive sector might prove far more costly than stabilizing the price in the sensitive sector itself. Indeed, it is the extreme sensitivity of commodity prices to changes in demand and supply that suggests that control over supplies in these markets is likely to be more efficient than control over the aggregate money supply. This does not mean that monetary policy should be abandoned as a weapon against all types of inflation but rather that it should be supplemented in the case of commodity price changes. In fact, macroeconomic policy is of great importance to primary commodity markets, which need a stable environment to function efficiently.

Bosworth and Lawrence focus on the pivotal role played by primary commodity prices in the wide fluctuations in the level of inflation during the 1970's, not only in our own country, but in Western Europe and Japan as well. They concentrate on the determinants of agricultural and energy prices; while prices for many other raw commodities were also quite volatile during the past decade, the authors cite evidence to demonstrate that "their impact on the average price level was small because the value of their use is small as a share of total GNP." In this country, consumption of these other raw materials amounts to less than 4 percent of the gross national product.

One of the more intriguing aspects of the authors' analysis of farm price movements since 1970 is their explanation of how a mere 3 or 4 percent drop from the trend of world production of cereals (that is, grains and rice) in 1972–73 led to a doubling in these prices. Bosworth and Lawrence give relatively little weight to several popular explanations, such as the long-term rise in world demand for livestock products and hence cereals. They fix a large share of responsibility instead on short-sighted government policies here and abroad. For example, the American government had decided by the early 1970's to let our domestic grain reserves drain to appease both farmers worried about the reserve's depressing impact on grain prices and consumers complaining about the reserve's costs. At the same time, many foreign governments had chosen to insulate their populations from sudden shifts in world farm prices by controlling retail food price movements, there-

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by failing to restrain demand in times of shortage. Thus, when the Soviet Union unexpectedly emerged as a major grain purchaser at a time when our reserves were already down and world demand was still high, American consumers were forced to bear the brunt of the inevitable adjustment process through both sky-rocketing prices and reduced food consumption. More suitable government policies could have spread the burden more evenly and would not have led to such an inflationary outcome.

The shifting balance of power between the oil-producing companies controlled from the industrial West and the oil-producing countries of the Third World receives considerable attention from the authors. They remind us with painful clarity that few in the West realized the potential strength of the Organization of Petroleum Exporting Countries (OPEC) until the 1973 oil embargo, even though in retrospect the signs of OPEC's growing power were obvious long before. They demonstrate that the two major oil crises of the 1970's "were not marked by big declines in supply but rather by panicky inventory hoarding in response to expected shortfalls." Policies to influence consumer psychology are therefore an integral part of any strategy to help prevent or alleviate recurrences of steep runups in oil product prices.

The authors realize that choosing and implementing the right mix of policies targeted at constraining commodity prices in international markets will not be easy. In general, Bosworth and Lawrence support a series of sophisticated commodity reserve policies that might require more coordination between nations than has hitherto been attainable. The authors explain quite convincingly why they reject traditional multinational reserve and commodity stabilization agreements, which they view as "inherently unstable" for political as well as economic reasons. Bosworth and Lawrence see more hope, for example, in a network of bilateral agreements on grain reserves that would allow contracting countries to take care of each other's grain import or export needs within predetermined price ranges, leaving countries outside the network to adjust to any major supply disruptions or gluts in the "residual market." These and other targeted microeconomic policy recommendations may prove to be the most controversial part of the book, even for those of us who agree that macroeconomic stabilization policies by themselves are inadequate.

Commodity Prices and the New Inflation is an exceptionally well written and cogently argued book that makes a valuable contribution to understanding how the contemporary economy works—or, more pointedly, why it hasn't worked so well in recent years. Bosworth and Lawrence's synthesis of macro- and microeconomic theories is quite successful, I believe, as is their analysis of the mistakes that have plagued public policies so often. Their advice for solving the problems confronting us, however, is still very much open for debate. They freely draw upon a wealth of empirical studies conducted by other economists without burdening the book with esoteric mathematical exercises. This is a work for any economically literate person interested in pondering the dilemmas of stagflation.

—CRAIG HOWELL
Office of Prices and Living Conditions
Bureau of Labor Statistics

Turning point in current thinking

The Crisis in Economic Theory. Edited by Daniel Bell and Irving Kristol. New York, Basic Books, Inc., Publishers, 1981. 226 pp. $15.50, cloth; $6, paper.

This book comprises a series of essays originally published in the 50th anniversary issue of *The Public Interest* magazine. The essays run the gamut of contemporary economic theory—from the rational expectations theorists and monetarists to the Post-Keynesians and Marxists. The common theme integrating the different perspectives is the belief that the synthesis of Keynesian and neoclassical economics, which provided a basic rationale for economic policy in the generation after World War II, has become irrelevant, if not misleading. This theory became outmoded in the 1970's as simultaneous inflation, recession, and unemployment came to characterize capitalist economies.

In the "golden age" of the neoclassical synthesis, 1947 to 1973, democratic capitalist nations generally accepted the Keynesian thesis that the central government's budget through its taxing and spending programs could serve as an economic balance and stabilize economies at high employment levels. The advent of annual national income accounting, computerized econometric models, and the availability of reliable and current unemployment data from the Current Population Survey appeared to provide a basis for utilizing Keynesian theories as operational tools in planning for economic growth.

The Employment Act of 1946 and the establishment of the Council of Economic Advisers represented official recognition that the thrust, if not the specific details, of the Keynesian theory, had become an important foundation of government policy. The Keynesian system was supplemented by the widespread acceptance of the Phillips curve analysis suggesting that governments could choose among unemployment rate goals depending on the rate of inflation they were prepared to accept.

The strength of the neoclassical synthesis was its integration of a role for government in determining the overall level of economic activity with the maintenance

of a predominant role for competition and market pressures in individual sectors of the economy. The primary flaw with the theory in the 1970's was the contradictory policy options it implied. To reduce inflation, the Keynesian diagnosis pointed to the need for a surplus in the Federal budget to drain off purchasing power from the economy. To counter rising unemployment, the theory recommended that the government operate at a deficit to stimulate the demand for goods and labor. Because it was impossible for government to run both a surplus and a deficit at the same time, the net effect of this analysis in matters of public policy was paralysis—a paralysis punctuated by periodic attempts to stimulate or restrain the economy. These attempts were quicky abandoned for their alternatives. The disenchantment with Keynesian policies was intensified as inflation moved many Americans into higher tax brackets unaccompanied by comparable increases in purchasing power.

The essays in *The Crisis in Economic Theory* present a variety of theoretical formulations that might provide alternatives to the neoclassical synthesis as a basis for policy. To some, as in Mark Willes' exposition of rational expectations theory, the critical variable in economics consists of the expectations of individuals attempting to adapt to a highly uncertain future. Because no one knows in advance what will happen to the economy when government policy changes, there is a need for reducing uncertainties created by government policy by minimizing the government's economic role. Appropriately, Willes regards the rational expectations theory as constituting a "counterrevolution" in economics. Israel Kirzner's well-reasoned essay on the Austrian perspective in economics recommends a return to economists' earlier focus on the entrepreneur as the strategic factor in explaining the dynamics of the economy. Irving Kristol contends that current economic theory has retreated into a mode of overrefinement that obscures the critical substratum of truth in the classical and neoclassical emphasis on the importance of individual self-interest in promoting economic growth. The common thread in these essays is the absence of a role for government as an economic balance and a penchant for abandoning the Keynesian element in the neoclassical synthesis.

At the other end of the spectrum, the Neo-Keynesians, illustrated by Paul Davidson's essay, seek to provide the theoretical underpinning for a more active government role in the economy. The Neo-Keynesians appear to represent more of a tendency than a formalized theory, a tendency that would replace the neoclassical synthesis with a synethesis of the Keynesian emphasis on the government's role in stabilizing the economy with more activist government policies in controlling industry and lessening economic inequalities. A

Marxist perspective, represented by Edward Nell's essay, contends that the Marxian theory of value and capital provides a valid framework for assessing the socioeconomic changes that have produced the present economic drift and for anticipating future directions. A common denominator of the critics represented in the volume is their vision of the economy as one dominated by giant firms possessing market power rather than by the competitive pressures assumed in the neoclassical theory.

Crisis in Economic Theory underscores the uneasy union that has typically existed between economic theory and labor economics. This union is likely to become more insecure if the Keynesian component in the neoclassical synthesis loses its significance for policy. The conventional neoclassical theory focuses on labor as a cost of production, and the theory tends to view labor organizations as semimonopolistic restraints in the labor market. Economists concerned with labor issues have tended to stress the importance of bargaining, group behavior, and social factors concerned with livelihood. Keynesian economics built in a positive role for labor organizations because of it emphasis on wages as income and purchasing power as well as costs. Union efforts to raise wages, therefore, could frequently be justified as benefiting society as well as union members because they helped to maintain high levels of effective demand. The differences in approach are also illustrated by the controversies over maintaining or increasing the statutory minimum wage. The minimum wage standards that protect livelihood and purchasing power in the view of most Keynesian-oriented labor economists are regarded in the neoclassical tradition as the cause for much of the recent severe unemployment among young people, especially young blacks.

In his essay on "Models and Reality in Economic Discourse," Daniel Bell cogently relates theoretical issues in economics to the substantive changes that have characterized the larger society. According to Bell, the contemporary economic models are losing their relevance in explaining reality, because the economies to which they refer have been transformed by technological advances, market power, and expansion of the Government's role in the economy. In democratic capitalist societies in which governments account for between 20 and 60 percent of all economic transactions, economic theories based on the behavior of atomistic individuals who are assumed to be maximizing their preferences provide limited insight. Economic choices take on a political dimension as they increasingly become influenced by the government's collective decisionmaking as in defense outlays, or by the efforts of organized groups made up of farmers, businessmen, wage earners, or older persons to seek the government's aid in protecting their economic status. Bell's critique raises anew the

question presented 75 years ago by that acerbic and insightful critic of orthodox economic theory, Thorstein Veblen. Veblen asked, "Why is Economics Not an Evolutionary Science?" The absence of a significant response to Veblen's question helps to explain much of the predicament faced by economic theory in the 1970's and early 1980's.

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Current Labor Statistics

NOTES ON CURRENT LABOR STATISTICS

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

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

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

Seasonally adjusted labor force data in tables 2–7 were revised in the March 1982 issue of the *Review* to reflect experience through 1981. The original estimates also were revised to 1970 to reflect 1980 census population controls.

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

Annual revision of the seasonally adjusted payroll data shown in tables 10, 12, and 14 were made in August 1981 using the X-11 ARIMA seasonal adjustment methodology. New seasonal factors for productivity data in tables 28 and 29 are usually introduced in the September issue. Seasonally adjusted indexes and percent changes from month to month and from quarter to quarter are

published for numerous Consumer and Producer Price Index series. However, seasonally adjusted indexes are not published for the U.S. average All Items CPI. Only seasonally adjusted percent changes are available for this series.

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

Availability of information. Data that supplement the tables in this section are published by the Bureau of Labor Statistics in a variety of sources. Press releases provide the latest statistical information published by the Bureau; the major recurring releases are published according to the schedule given below. The *BLS Handbook of Labor Statistics*, Bulletin 2070, provides more detailed data and greater historical coverage for most of the statistical series presented in the *Monthly Labor Review*. More information from the household and establishment surveys is provided in *Employment and Earnings*, a monthly publication of the Bureau. Historically, comparable information from the establishment survey is published in two comprehensive data books — *Employment and Earnings, United States* and *Employment and Earnings, States and Areas*, and their annual supplements. More detailed information on wages and other aspects of collective bargaining appears in the monthly periodical, *Current Wage Developments*. More detailed price information is published each month in the periodicals, the *CPI Detailed Report* and *Producer Prices and Price Indexes*.

Symbols

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

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

n.e.c. = not elsewhere classified.

Schedule of release dates for major BLS statistical series

Series	Release date	Period covered	Release date	Period covered	Release date	Period covered	MLR table number
Employment situation	November 5	October	December 3	November	January 7	December	1–10
Producer Price Index	November 16	October	December 10	November	January 14	December	21–25
Consumer Price Index	November 23	October	December 21	November	January 21	December	17–20
Real earnings	November 23	October	December 21	November	January 21	December	11–15
Productivity and costs:							
Nonfinancial corporations	November 29	3rd quarter	.....	....	....	....	26–29
Nonfarm business and manufacturing	....	....	.....	....	January 28	4th quarter	26–29
Major collective bargaining settlements	....	....	.....	....	January 31	1982	33–34

EMPLOYMENT DATA FROM THE HOUSEHOLD SURVEY

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

Definitions

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

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

The **civilian labor force** consists of all employed or unemployed persons in the civilian noninstitutional population; the **total labor force** includes military personnel. Persons **not in the labor force** are those not classified as employed or unemployed; this group includes persons retired, those engaged in their own housework, those not working while attending school, those unable to work because of long-term illness, those discouraged from seeking work because of personal or job market factors, and those who are voluntarily idle. The **noninstitutional population** comprises all persons 16 years of age and older who are not inmates of penal or mental institutions, sanitariums, or homes for the aged, infirm, or needy.

Full-time workers are those employed at least 35 hours a week; **part-time workers** are those who work fewer hours. Workers on part-time schedules for economic reasons (such as slack work, terminating or starting a job during the week, material shortages, or inability to find full-time work) are among those counted as being on full-time status, under the assumption that they would be working full time if conditions permitted. The survey classifies unemployed persons in full-time or part-time status by their reported preferences for full-time or part-time work.

Notes on the data

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

Data in tables 2–7 are seasonally adjusted, based on the seasonal experience through December 1981.

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1. Employment status of the noninstitutional population, 16 years and over, selected years, 1950–81

[Numbers in thousands]

Year	Total non-institutional population	Total labor force			Civilian labor force								Not in labor force
		Number	Percent of population		Total	Employed				Unemployed			
						Total	Percent of population	Agriculture	Nonagri-cultural industries	Number	Percent of labor force		
1950	106,645	63,858	59.9		62,208	58,918	55.2	7,160	51,758	3,288	5.3		42,787
1955	112,732	68,072	60.4		65,023	62,170	55.1	6,450	55,722	2,852	4.4		44,660
1960	119,759	72,142	60.2		69,628	65,778	54.9	5,458	60,318	3,852	5.5		47,617
1965	129,236	77,178	59.7		74,455	71,088	55.0	4,361	66,726	3,366	4.5		52,058
1966	131,180	78,893	60.1		75,770	72,895	55.6	3,979	68,915	2,875	3.8		52,288
1967	133,319	80,793	60.6		77,347	74,372	55.8	3,844	70,527	2,975	3.8		52,527
1968	135,562	82,272	60.7		78,737	75,920	56.0	3,817	72,103	2,817	3.6		53,291
1969	137,841	84,240	61.1		80,734	77,902	56.5	3,606	74,296	2,832	3.5		53,602
1970	140,272	85,959	61.3		82,771	78,678	56.1	3,463	75,215	4,093	4.9		54,315
1971	143,033	87,198	61.0		84,382	79,367	55.5	3,394	75,972	5,016	5.9		55,834
1972	146,574	89,484	61.1		87,034	82,153	56.0	3,484	78,669	4,882	5.6		57,091
1973	149,423	91,756	61.4		89,429	85,064	56.9	3,470	81,594	4,365	4.9		57,667
1974	152,349	94,179	61.8		91,949	86,794	57.0	3,515	83,279	5,156	5.6		58,171
1975	155,333	95,955	61.8		93,775	85,846	55.3	3,408	82,438	7,929	8.5		59,377
1976	158,294	98,302	62.1		96,158	88,752	56.1	3,331	85,421	7,406	7.7		59,991
1977	161,166	101,142	62.8		99,009	92,017	57.1	3,283	88,734	6,991	7.1		60,025
1978	164,027	104,368	63.6		102,251	96,048	58.6	3,387	92,661	6,202	6.1		59,659
1979	166,951	107,050	64.1		104,962	98,824	59.2	3,347	95,477	6,137	5.8		59,900
1980	169,848	109,042	64.2		106,940	99,303	58.5	3,364	95,938	7,637	7.1		60,806
1981	172,272	110,812	64.3		108,670	100,397	58.3	3,368	97,030	8,273	7.6		61,460

2. Employment status by sex, age, race, and Hispanic origin, seasonally adjusted

[Numbers in thousands]

Employment status	Annual average		1981				1982								
	1980	1981	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
TOTAL															
Total noninstitutional population[1]	169,848	172,272	172,758	172,966	173,155	173,330	173,495	173,657	173,843	174,020	174,201	174,364	174,544	174,707	174,889
Armed Forces[1]	2,102	2,142	2,165	2,158	2,158	2,164	2,159	2,168	2,175	2,176	2,175	2,173	2,180	2,196	2,198
Civilian noninstitutional population[1]	167,745	170,130	170,593	170,809	170,996	171,166	171,335	171,489	171,667	171,844	172,026	172,190	172,364	172,511	172,690
Civilian labor force	106,940	108,670	108,494	109,012	109,272	109,184	108,879	109,165	109,346	109,648	110,666	110,191	110,522	110,644	110,980
Participation rate	63.8	63.9	63.6	63.8	63.9	63.8	63.5	63.7	63.7	63.8	64.3	64.0	64.1	64.1	64.3
Employed	99,303	100,397	100,258	100,343	100,172	99,613	99,581	99,590	99,492	99,340	100,117	99,764	99,732	99,839	99,720
Employment-population ratio[2]	58.5	58.3	58.0	58.0	57.9	57.5	57.4	57.3	57.2	57.1	57.5	57.2	57.1	57.1	57.0
Agriculture	3,364	3,368	3,358	3,378	3,372	3,209	3,411	3,373	3,349	3,309	3,488	3,357	3,460	3,435	3,368
Nonagricultural industries	95,938	97,030	96,900	96,965	96,800	96,404	96,170	96,217	96,144	96,032	96,629	96,406	96,272	96,404	96,352
Unemployed	7,637	8,273	8,236	8,669	9,100	9,571	9,298	9,575	9,854	10,307	10,549	10,427	10,790	10,805	11,260
Unemployment rate	7.1	7.6	7.6	8.0	8.3	8.8	8.5	8.8	9.0	9.4	9.5	9.5	9.8	9.8	10.1
Not in labor force	60,806	61,460	62,099	61,797	61,724	61,982	62,456	63,324	63,321	62,197	61,360	61,999	61,842	61,867	61,710
Men, 20 years and over															
Civilian noninstitutional population[1]	71,138	72,419	72,670	72,795	72,921	73,020	73,120	73,209	73,287	73,392	73,499	73,585	73,685	73,774	73,867
Civilian labor force	56,455	57,197	57,262	57,355	57,459	57,665	57,368	57,448	57,554	57,730	58,164	58,016	58,084	58,026	58,407
Participation rate	79.4	79.0	78.8	78.8	78.8	79.0	78.5	78.5	78.5	78.7	79.1	78.8	78.8	78.7	79.1
Employed	53,101	53,582	53,693	53,504	53,354	53,122	53,047	53,097	53,006	52,988	53,260	52,985	52,996	52,887	52,828
Agriculture	2,396	2,384	2,383	2,413	2,382	2,311	2,390	2,386	2,377	2,382	2,464	2,424	2,474	2,436	2,447
Nonagricultural industries	50,706	51,199	51,310	51,091	50,972	50,811	50,657	50,711	50,629	50,606	50,796	50,561	50,522	50,451	50,381
Unemployed	3,353	3,615	3,569	3,851	4,105	4,543	4,322	4,351	4,548	4,742	4,904	5,031	5,088	5,139	5,579
Unemployment rate	5.9	6.3	6.2	6.7	7.1	7.9	7.5	7.6	7.9	8.2	8.4	8.7	8.8	8.9	9.6
Women, 20 years and over															
Civilian noninstitutional population[1]	80,065	81,497	81,792	81,920	82,038	82,151	82,260	82,367	82,478	82,591	82,707	82,811	82,926	83,035	83,152
Civilian labor force	41,106	42,485	42,344	42,831	42,987	42,88	42,868	43,031	43,243	43,301	43,683	43,904	44,076	44,115	44,025
Participation rate	51.3	52.1	51.8	52.3	52.4	52.2	52.1	52.2	52.4	52.4	52.8	53.0	53.2	53.1	52.9
Employed	38,492	39,590	39,426	39,814	39,878	39,713	39,764	39,744	39,807	39,715	40,075	40,350	40,392	40,490	40,369
Agriculture	584	604	608	596	635	572	648	628	636	601	634	581	600	589	585
Nonagricultural industries	37,907	38,986	39,818	39,218	39,243	39,141	39,115	39,116	39,172	39,114	39,441	39,769	39,791	39,901	39,784
Unemployed	2,615	2,895	2,918	3,017	3,109	3,175	3,104	3,286	3,435	3,586	3,608	3,554	3,684	3,626	3,656
Unemployment rate	6.4	6.8	6.9	7.0	7.2	7.4	7.2	7.6	7.9	8.3	8.3	8.1	8.4	8.2	8.3
Both sexes, 16 to 19 years															
Civilian noninstitutional population[1]	16,543	16,214	16,131	16,093	16,037	15,995	15,955	15,913	15,902	15,861	15,820	15,794	15,753	15,702	15,671
Civilian labor force	9,378	8,988	8,888	8,826	8,826	8,631	8,643	8,686	8,549	8,616	8,819	8,271	8,362	8,503	8,548
Participation rate	56.7	55.4	55.1	54.8	55.0	54.0	54.2	54.6	53.8	54.3	55.7	52.4	53.1	54.2	54.5
Employed	7,710	7,225	7,139	7,025	6,940	6,778	6,771	6,748	6,679	6,637	6,782	6,429	6,344	6,463	6,523
Agriculture	385	380	367	369	355	326	373	359	336	326	390	353	386	411	336
Nonagricultural industries	7,325	6,845	6,772	6,656	6,585	6,452	6,398	6,389	6,343	6,311	6,392	6,076	5,958	6,052	6,187
Unemployed	1,669	1,763	1,749	1,801	1,886	1,853	1,872	1,938	1,870	1,979	2,037	1,842	2,018	2,040	2,025
Unemployment rate	17.8	19.6	19.7	20.4	21.4	21.5	21.7	22.3	21.9	23.0	23.1	22.3	24.1	24.0	23.7
White															
Civilian noninstitutional population[1]	146,122	147,908	148,370	148,562	148,631	148,755	148,842	148,855	149,132	149,249	149,250	149,429	149,569	149,536	149,652
Civilian labor force	93,600	95,052	94,884	95,365	95,535	95,329	95,120	95,333	95,508	96,015	96,641	96,223	96,493	96,414	96,762
Participation rate	64.1	64.3	64.0	64.2	64.3	64.1	63.9	64.0	64.0	64.3	64.8	64.4	64.5	64.5	64.7
Employed	87,715	88,709	88,628	88,734	88,498	88,010	87,955	87,990	87,956	87,988	88,450	88,173	88,137	88,133	88,020
Unemployed	5,884	6,343	6,256	6,631	7,037	7,319	7,165	7,344	7,552	8,026	8,191	8,050	8,356	8,281	8,742
Unemployment rate	6.3	6.7	6.6	7.0	7.4	7.7	7.5	7.7	7.9	8.4	8.5	8.4	8.7	8.6	9.0
Black															
Civilian noninstitutional population[1]	17,824	18,219	18,297	18,333	18,362	18,392	18,423	18,450	18,480	18,511	18,542	18,570	18,600	18,626	18,659
Civilian labor force	10,865	11,086	11,134	11,188	11,207	11,226	11,188	11,205	11,217	11,170	11,335	11,253	11,322	11,412	11,482
Participation rate	61.0	60.8	60.9	61.0	61.0	61.0		60.7	60.7	60.3	61.1	60.6	60.9	61.3	61.5
Employed	9,313	9,355	9,319	9,313	9,321	9,279	9,314	9,265	9,197	9,111	9,216	9,174	9,223	9,262	9,166
Unemployed	1,553	1,731	1,815	1,875	1,886	1,947	1,874	1,939	2,020	2,058	2,120	2,079	2,098	2,150	2,316
Unemployment rate	14.3	15.6	16.3	16.8	16.8	17.3	16.8	17.3	18.0	18.4	18.7	18.5	18.5	18.8	20.2
Hispanic origin															
Civilian noninstitutional population[1]	8,901	9,310	9,466	9,559	9,556	9,519	9,400	9,341	9,297	9,235	9,297	9,428	9,521	9,689	9,464
Civilian labor force	5,700	5,972	5,964	6,074	6,151	6,095	6,054	6,065	6,024	5,933	6,001	5,931	5,966	6,087	5,967
Participation rate	64.0	64.1	63.0	63.5	64.4	64.0	64.4	64.9	64.8	64.2	64.5	62.9	62.7	62.8	63.1
Employed	5,126	5,348	5,393	5,422	5,446	5,426	5,330	5,298	5,260	5,191	5,166	5,131	5,135	5,197	5,097
Unemployed	575	624	571	652	705	669	724	767	764	743	834	800	832	890	870
Unemployment rate	10.1	10.4	9.6	10.7	11.5	11.0	12.0	12.6	12.7	12.5	13.9	13.5	13.9	14.6	14.6

[1] The population and Armed Forces figures are not seasonally adjusted.
[2] Civilian employment as a percent of the total noninstitutional population (including Armed Forces).

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

3. Selected employment indicators, seasonally adjusted

[Numbers in thousands]

Selected categories	Annual average		1981				1982								
	1980	1981	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
CHARACTERISTIC															
Total employed, 16 years and over	99,303	100,397	100,258	100,343	100,172	99,613	99,581	99,590	99,492	99,340	100,117	99,764	99,732	99,839	99,720
Men	57,186	57,397	57,471	57,266	57,051	56,725	56,629	56,658	56,472	56,401	56,820	56,223	56,192	56,210	56,148
Women	42,117	43,000	42,787	43,077	43,121	42,888	42,952	42,932	43,020	42,940	43,297	43,541	43,540	43,630	43,572
Married men, spouse present	39,004	38,882	38,855	38,746	38,553	38,342	38,234	38,255	38,181	38,142	38,312	38,354	38,213	38,184	38,041
Married women, spouse present	23,532	23,915	23,626	23,874	23,820	23,691	23,744	23,727	23,900	23,831	24,213	24,401	24,223	24,300	24,187
Women who maintain families	4,780	4,998	5,015	5,045	5,049	5,064	5,107	5,158	5,095	5,095	4,986	5,112	5,247	5,216	5,115
OCCUPATION															
White-collar workers	51,882	52,949	52,908	53,199	53,086	53,084	52,836	52,841	52,763	53,177	53,705	53,586	53,685	53,750	53,876
Professional and technical	15,968	16,420	16,598	16,681	16,657	16,774	16,803	16,612	16,659	16,844	16,818	17,053	17,292	17,023	16,901
Managers and administrators, except farm	11,138	11,540	11,533	11,616	11,461	11,424	11,091	11,253	11,311	11,501	11,541	11,504	11,355	11,613	11,649
Salesworkers	6,303	6,425	6,441	6,400	6,418	6,450	6,520	6,544	6,637	6,603	6,587	6,547	6,567	6,677	6,507
Clerical workers	18,473	18,564	18,336	18,502	18,550	18,436	18,423	18,432	18,155	18,229	18,759	18,482	18,471	18,437	18,819
Blue-collar workers	31,452	31,261	31,266	30,953	30,683	30,344	30,203	30,309	30,416	29,924	29,926	29,716	29,609	29,465	29,143
Craft and kindred workers	12,787	12,662	12,514	12,446	12,411	12,446	12,370	12,454	12,511	12,492	12,316	12,207	12,229	12,342	12,253
Operatives, except transport	10,565	10,540	10,524	10,410	10,220	10,169	9,966	9,955	9,860	9,688	9,585	9,655	9,453	9,257	8,938
Transport equipment operatives	3,531	3,476	3,506	3,580	3,438	3,368	3,415	3,503	3,397	3,400	3,419	3,414	3,439	3,268	3,369
Nonfarm laborers	4,567	4,583	4,722	4,517	4,614	4,361	4,451	4,397	4,648	4,343	4,607	4,441	4,488	4,598	4,583
Service workers	13,228	13,438	13,391	13,525	13,670	13,639	13,709	13,612	13,526	13,555	13,738	13,791	13,634	13,926	14,029
Farmworkers	2,741	2,749	2,743	2,770	2,802	2,660	2,817	2,787	2,710	2,623	2,731	2,660	2,750	2,711	2,714
MAJOR INDUSTRY AND CLASS OF WORKER															
Agriculture:															
Wage and salary workers	1,425	1,464	1,461	1,502	1,436	1,352	1,377	1,426	1,416	1,423	1,541	1,431	1,530	1,568	1,538
Self-employed workers	1,642	1,638	1,643	1,631	1,641	1,602	1,674	1,596	1,644	1,664	1,698	1,676	1,674	1,613	1,562
Unpaid family workers	297	266	256	261	321	228	380	359	277	270	236	251	250	254	255
Nonagricultural industries:															
Wage and salary workers	88,525	89,543	89,376	89,460	89,238	88,991	88,759	88,586	88,526	88,322	89,051	88,606	88,541	88,737	88,650
Government	15,912	15,689	15,475	15,491	15,397	15,585	15,578	15,527	15,492	15,453	15,422	15,635	15,443	15,569	15,691
Private industries	72,612	73,853	73,901	73,969	73,841	73,406	73,181	73,059	73,034	72,869	73,629	72,970	73,098	73,168	72,959
Households	1,192	1,208	1,102	1,162	1,204	1,291	1,248	1,161	1,225	1,192	1,202	1,201	1,200	1,242	1,229
Other	71,420	72,645	72,799	72,807	72,637	72,115	71,932	71,898	71,809	71,677	72,427	71,770	71,898	71,927	71,730
Self-employed workers	7,000	7,097	7,217	7,152	7,141	7,057	6,971	7,055	7,126	7,264	7,269	7,319	7,268	7,352	7,478
Unpaid family workers	413	390	399	451	425	410	410	408	434	413	382	397	390	409	372
PERSONS AT WORK [1]															
Nonagricultural industries	90,209	91,377	90,878	91,384	91,323	90,922	90,125	90,892	90,548	90,596	91,282	91,020	90,501	90,508	91,054
Full-time schedules	73,590	74,339	73,794	73,886	73,915	73,360	72,803	73,028	72,649	72,335	73,036	72,662	c 72,430	72,112	71,700
Part time for economic reasons	4,064	4,499	4,656	5,009	5,026	5,288	5,071	5,563	5,717	5,834	5,763	5,444	5,492	5,648	6,600
Usually work full time	1,714	1,738	1,759	2,006	1,945	2,121	1,783	2,193	2,237	2,223	2,211	2,064	2,001	2,054	2,571
Usually work part time	2,350	2,761	2,897	3,003	3,081	3,167	3,287	3,370	3,480	3,611	3,552	3,380	3,491	3,594	4,029
Part time for noneconomic reasons	12,555	12,539	12,428	12,489	12,382	12,274	12,251	12,300	12,183	12,427	12,483	12,914	12,579	12,748	12,754

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

4. Selected unemployment indicators, seasonally adjusted

[Unemployment rates]

Selected categories	Annual average		1981				1982								
	1980	1981	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
CHARACTERISTIC															
Total, 16 years and over	7.1	7.6	7.6	8.0	8.3	8.8	8.5	8.8	9.0	9.4	9.5	9.5	9.8	9.8	10.1
Both sexes, 16 to 19 years	17.8	19.6	19.7	20.4	21.4	21.5	21.7	22.3	21.9	23.0	23.1	22.3	24.1	24.0	23.7
Men, 20 years and over	5.9	6.3	6.2	6.7	7.1	7.9	7.5	7.6	7.9	8.2	8.4	8.7	8.8	8.9	9.6
Women, 20 years and over	6.4	6.8	6.9	7.0	7.2	7.4	7.2	7.6	7.9	8.3	8.3	8.1	8.4	8.2	8.3
White, total	6.3	6.7	6.6	7.0	7.4	7.7	7.5	7.7	7.9	8.4	8.5	8.4	8.7	8.6	9.0
Both sexes, 16 to 19 years	15.5	17.3	17.2	17.7	19.0	19.0	19.6	20.0	19.0	20.8	20.3	19.4	21.0	20.6	20.4
Men, 16 to 19 years	16.2	17.9	17.5	17.9	19.6	20.2	20.8	20.4	20.2	22.3	21.2	21.1	22.6	22.5	22.0
Women, 16 to 19 years	14.8	16.6	16.8	17.5	18.3	17.7	18.2	19.4	17.6	19.2	19.2	17.5	19.2	18.6	18.7
Men, 20 years and over	5.3	5.6	5.5	5.9	6.4	6.9	6.6	6.7	7.0	7.3	7.5	7.7	7.9	7.9	8.6
Women, 20 years and over	5.6	5.9	5.9	6.1	6.3	6.4	6.3	6.6	6.9	7.2	7.3	7.1	7.3	7.1	7.4
Black, total	14.3	15.6	16.3	16.8	16.8	17.3	16.8	17.3	18.0	18.4	18.7	18.5	18.5	18.8	20.2
Both sexes, 16 to 19 years	38.5	41.4	40.8	45.6	44.1	42.2	41.2	42.3	46.0	48.1	49.8	52.6	49.7	51.6	48.5
Men, 16 to 19 years	37.5	40.7	38.5	41.6	41.9	39.6	36.3	40.7	48.5	48.3	50.6	58.1	48.3	50.1	51.2
Women, 16 to 19 years	39.8	42.2	43.4	49.5	46.6	45.1	46.7	44.2	43.1	47.8	48.9	46.2	51.2	53.1	45.4
Men, 20 years and over	12.4	13.5	14.5	14.7	15.5	16.5	16.3	16.0	16.0	16.9	17.0	17.1	16.8	17.2	19.8
Women, 20 years and over	11.9	13.4	14.0	13.9	13.6	14.1	13.3	14.5	15.4	15.6	15.3	15.0	15.5	15.1	15.7
Hispanic origin, total	10.1	10.4	9.6	10.7	11.5	11.0	12.0	12.6	12.7	12.5	13.9	13.5	13.9	14.6	14.6
Married men, spouse present	4.2	4.3	4.4	4.8	5.2	5.7	5.3	5.3	5.5	6.0	6.1	6.5	6.6	6.7	7.3
Married women, spouse present	5.8	6.0	6.0	6.1	6.5	6.6	6.2	7.0	7.1	7.8	7.4	7.0	7.4	7.1	7.5
Women who maintain families	9.2	10.4	10.7	10.6	10.8	10.5	10.4	10.2	10.6	11.5	11.8	12.4	12.0	11.6	12.4
Full-time workers	6.9	7.3	7.3	7.7	8.1	8.7	8.4	8.5	8.9	9.2	9.2	9.4	9.5	9.6	10.1
Part-time workers	8.8	9.4	9.6	9.5	10.2	9.2	9.6	10.8	10.0	10.9	10.5	9.8	11.4	10.3	10.5
Unemployed 15 weeks and over	1.7	2.1	2.1	2.1	2.2	2.2	2.2	2.5	2.7	2.7	3.0	3.3	3.2	3.3	3.5
Labor force time lost[1]	7.9	8.5	8.5	9.1	9.5	10.1	10.0	9.8	10.4	10.4	11.1	10.2	10.7	10.7	11.7
OCCUPATION															
White-collar workers	3.7	4.0	4.1	4.1	4.2	4.5	4.2	4.6	4.8	4.9	4.8	5.0	4.9	4.8	4.8
Professional and technical	2.5	2.8	2.8	2.6	2.7	3.4	2.9	3.1	3.2	3.2	3.3	3.3	3.3	3.1	3.2
Managers and administrators, except farm	2.4	2.7	2.7	2.8	3.0	3.1	2.7	3.1	3.0	3.3	3.5	3.8	3.7	3.8	3.6
Salesworkers	4.4	4.6	5.0	4.9	5.0	4.9	4.5	4.8	5.8	5.6	5.2	5.8	5.4	5.5	5.4
Clerical workers	5.3	5.7	5.8	6.0	6.0	6.2	6.3	6.7	6.9	7.2	6.8	6.9	6.9	6.7	6.7
Blue-collar workers	10.0	10.3	10.2	10.9	11.8	12.7	12.5	12.5	12.9	13.7	13.5	13.9	14.4	14.2	15.6
Craft and kindred workers	6.6	7.5	7.7	8.3	8.5	9.3	9.0	8.4	9.1	9.6	9.4	10.3	10.9	10.6	11.4
Operatives, except transport	12.2	12.2	11.6	12.8	14.1	15.5	15.4	15.4	15.9	16.9	16.5	16.7	17.4	17.5	20.2
Transport equipment operatives	8.8	8.7	8.7	8.0	10.4	10.5	10.2	10.3	10.4	10.7	11.8	13.0	11.6	12.5	11.6
Nonfarm laborers	14.6	14.7	14.6	15.6	16.0	16.9	16.9	17.9	17.9	19.2	18.3	17.9	18.6	17.4	19.2
Service workers	7.9	8.9	9.0	9.3	9.7	9.6	9.2	9.8	10.2	11.1	11.3	9.9	10.5	10.6	10.7
Farmworkers	4.6	5.3	4.0	6.2	6.2	6.4	6.9	4.9	5.4	5.8	8.3	7.2	6.1	6.9	5.1
INDUSTRY															
Nonagricultural private wage and salary workers[2]	7.4	7.7	7.7	8.1	8.4	9.1	8.8	9.0	9.5	9.9	9.9	10.0	10.2	10.1	10.7
Construction	14.1	15.6	16.3	17.6	17.8	18.1	18.7	18.1	17.9	19.4	18.8	19.2	20.3	20.3	22.6
Manufacturing	8.5	8.3	7.9	8.6	9.4	11.0	10.4	10.6	10.8	11.3	11.6	12.3	12.0	12.1	13.8
Durable goods	8.9	8.2	7.7	8.6	9.5	11.8	11.0	11.3	10.8	11.9	12.2	13.2	12.7	12.9	14.9
Nondurable goods	7.9	8.4	8.3	8.6	9.3	9.6	9.5	9.5	10.8	10.5	10.7	11.0	11.0	10.8	12.3
Transportation and public utilities	4.9	5.2	4.2	4.8	5.5	6.0	6.4	5.9	5.6	7.0	6.5	6.9	6.1	7.0	6.9
Wholesale and retail trade	7.4	8.1	8.5	8.4	8.6	8.9	8.7	9.0	10.3	10.1	10.6	9.7	10.5	9.8	9.8
Finance and service industries	5.3	5.9	6.0	6.2	6.1	6.4	5.9	6.5	6.9	7.0	6.9	6.8	7.0	7.0	6.8
Government workers	4.1	4.7	4.7	4.7	5.2	5.0	4.8	5.2	4.9	5.3	5.0	4.6	4.6	4.6	4.9
Agricultural wage and salary workers	11.0	12.1	11.0	13.4	14.1	14.8	16.2	12.8	14.0	14.6	18.2	16.3	13.8	14.3	12.5

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

[2] Includes mining, not shown separately.

5. Unemployment rates, by sex and age, seasonally adjusted

Sex and age	Annual average		1981				1982								
	1980	1981	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Total, 16 years and over	7.1	7.6	7.6	8.0	8.3	8.8	8.5	8.8	9.0	9.4	9.5	9.5	9.8	9.8	10.1
16 to 19 years	17.8	19.6	19.7	20.4	21.4	21.5	21.7	22.3	21.9	23.0	23.1	22.3	24.1	24.0	23.7
16 to 17 years	20.0	21.4	21.4	21.5	22.6	21.9	21.9	22.7	22.7	24.6	25.3	23.7	26.1	25.8	26.9
18 to 19 years	16.2	18.4	18.5	20.0	20.5	21.2	21.3	22.0	21.3	21.9	21.3	21.9	22.8	22.6	21.6
20 to 24 years	11.5	12.3	12.3	12.7	13.0	13.5	13.5	14.1	14.2	14.7	14.3	14.4	14.5	15.2	15.3
25 years and over	5.1	5.4	5.4	5.7	6.0	6.5	6.3	6.4	6.8	7.0	7.1	7.4	7.5	7.3	7.9
25 to 54 years	5.5	5.8	5.8	6.2	6.5	6.9	6.7	6.8	7.3	7.4	7.7	7.7	7.9	7.8	8.6
55 years and over	3.3	3.6	3.8	3.8	3.8	4.1	4.2	4.3	4.6	5.0	4.8	5.4	5.2	5.1	5.1
Men, 16 years and over	6.9	7.4	7.3	7.7	8.3	9.0	8.6	8.7	9.0	9.4	9.6	9.7	9.9	10.0	10.7
16 to 19 years	18.3	20.1	19.9	20.1	21.8	22.3	22.1	22.5	23.5	24.4	24.0	24.2	25.1	25.1	25.3
16 to 17 years	20.4	22.0	21.5	21.1	22.7	22.6	23.0	23.0	24.3	24.7	26.3	25.8	28.1	27.3	29.6
18 to 19 years	16.7	18.8	18.7	19.3	21.0	22.2	21.4	22.1	22.9	24.3	21.9	24.0	23.4	23.4	22.6
20 to 24 years	12.5	13.2	13.1	13.8	14.4	14.8	14.9	15.4	15.7	16.0	15.5	15.8	15.9	16.6	17.4
25 years and over	4.8	5.1	5.0	5.5	5.8	6.5	6.3	6.3	6.6	6.9	6.9	7.5	7.5	7.5	8.2
25 to 54 years	5.1	5.5	5.5	5.9	6.3	6.9	6.7	6.7	7.1	7.2	7.5	8.0	8.1	8.0	9.1
55 years and over	3.3	3.5	3.5	3.7	3.7	4.4	4.3	4.2	4.8	5.1	4.7	5.0	4.8	5.4	5.4
Women, 16 years and over	7.4	7.9	8.0	8.2	8.4	8.5	8.4	8.9	9.0	9.4	9.5	9.1	9.6	9.5	9.5
16 to 19 years	17.2	19.0	19.5	20.7	20.9	20.5	21.2	22.1	20.1	21.3	22.1	20.2	23.1	22.8	21.9
16 to 17 years	19.6	20.7	21.2	21.9	22.5	21.1	20.6	22.5	20.8	24.5	24.1	21.4	24.1	24.2	23.9
18 to 19 years	15.6	17.9	18.3	20.6	19.9	20.0	21.1	21.9	19.6	19.4	20.6	19.7	22.2	21.7	20.6
20 to 24 years	10.4	11.2	11.4	11.5	11.3	12.0	11.9	12.7	12.6	13.3	12.9	12.9	12.9	13.7	12.9
25 years and over	5.5	5.9	6.0	6.1	6.4	6.4	6.3	6.5	7.0	7.2	7.4	7.2	7.4	7.0	7.4
25 to 54 years	6.0	6.3	6.3	6.5	6.8	6.9	6.7	7.0	7.6	7.7	8.0	7.4	7.7	7.5	8.0
55 years and over	3.2	3.8	4.3	4.0	3.8	3.7	4.1	4.3	4.3	4.8	5.0	6.0	6.0	4.6	4.7

6. Unemployed persons, by reason for unemployment, seasonally adjusted

[Numbers in thousands]

Reason for unemployment	Annual average		1981				1982								
	1980	1981	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
NUMBER OF UNEMPLOYED															
Lost last job	3,947	4,267	4,426	4,573	4,905	5,343	5,205	5,153	5,622	5,906	5,901	6,302	6,177	6,347	7,073
On layoff	1,488	1,430	1,452	1,631	1,826	2,042	1,860	1,740	1,828	1,946	1,969	2,071	2,079	2,180	2,669
Other job losers	2,459	2,837	2,974	2,942	3,079	3,301	3,345	3,413	3,794	3,959	3,932	4,231	4,098	4,167	4,404
Left last job	891	923	921	976	916	923	835	964	885	937	874	813	813	806	767
Reentered labor force	1,927	2,102	2,058	2,178	2,339	2,244	2,079	2,277	2,249	2,365	2,438	2,372	2,528	2,440	2,415
Seeking first job	872	981	977	1,002	996	1,021	1,055	1,100	1,044	1,081	1,154	1,088	1,249	1,328	1,326
PERCENT DISTRIBUTION															
Total unemployed	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Job losers	51.7	51.6	52.8	52.4	53.6	56.1	56.7	54.3	57.4	57.4	56.9	59.6	57.4	58.1	61.1
On layoff	19.5	17.3	17.3	18.7	19.9	21.4	20.3	18.3	18.7	18.9	19.0	19.6	19.3	20.0	23.0
Other job losers	32.1	34.3	35.5	33.7	33.6	34.6	36.5	35.9	38.7	38.5	37.9	40.0	38.1	38.2	38.0
Job leavers	11.7	11.2	11.0	11.2	10.0	9.7	9.1	10.2	9.0	9.1	8.4	7.7	7.5	7.4	6.6
Reentrants	25.2	25.4	24.6	25.0	25.5	23.5	22.7	24.0	22.9	23.0	23.5	22.4	23.5	22.3	20.8
New entrants	11.4	11.9	11.7	11.5	10.9	10.7	11.5	11.6	10.7	10.5	11.1	10.3	11.6	12.2	11.4
PERCENT OF CIVILIAN LABOR FORCE															
Job losers	3.7	3.9	4.1	4.2	4.5	4.9	4.8	4.7	5.1	5.4	5.3	5.7	5.6	5.7	6.4
Job leavers	.8	.8	.8	.9	.8	.8	.8	.9	.8	.9	.8	.7	.7	.7	.7
Reentrants	1.8	1.9	1.9	2.0	2.1	2.1	1.9	2.1	2.1	2.2	2.2	2.2	2.3	2.2	2.2
New entrants	.8	.9	.9	.9	.9	.9	1.0	1.0	1.0	1.0	1.0	1.0	1.1	1.2	1.2

7. Duration of unemployment, seasonally adjusted

[Numbers in thousands]

Weeks of unemployment	Annual average		1981				1982								
	1980	1981	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.	Sept.
Less than 5 weeks	3,295	3,449	3,529	3,707	3,852	4,037	3,852	3,789	3,825	3,958	3,874	3,543	3,990	3,923	4,038
5 to 14 weeks	2,470	2,539	2,585	2,686	2,882	3,016	3,068	3,052	3,078	3,304	3,320	3,458	3,161	3,304	3,595
15 weeks and over	1,871	2,285	2,248	2,292	2,364	2,372	2,399	2,724	2,954	3,015	3,286	3,673	3,580	3,631	3,870
15 to 26 weeks	1,052	1,122	1,146	1,166	1,229	1,189	1,210	1,445	1,605	1,508	1,634	1,826	1,792	1,810	1,856
27 weeks and over	820	1,162	1,102	1,126	1,135	1,183	1,190	1,278	1,349	1,507	1,652	1,847	1,788	1,821	2,014
Mean duration, in weeks	11.9	13.7	13.7	13.6	13.1	12.8	13.5	14.1	13.9	14.2	14.6	16.5	15.6	16.2	16.6
Median duration, in weeks	6.5	6.9	6.9	6.8	6.9	6.7	7.2	7.3	7.6	8.5	9.0	9.8	8.3	8.2	9.5

EMPLOYMENT, HOURS, AND EARNINGS DATA FROM ESTABLISHMENT SURVEYS

EMPLOYMENT, HOURS, AND EARNINGS DATA in this section are compiled from payroll records reported monthly on a voluntary basis to the Bureau of Labor Statistics and its cooperating State agencies by 177,000 establishments representing all industries except agriculture. In most industries, the sampling probabilities are based on the size of the establishment; most large establishments are therefore in the sample. (An establishment is not necessarily a firm; it may be a branch plant, for example, or warehouse.) Self-employed persons and others not on a regular civilian payroll are outside the scope of the survey because they are excluded from establishment records. This largely accounts for the difference in employment figures between the household and establishment surveys.

Definitions

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

Production workers in manufacturing include blue-collar worker supervisors and all nonsupervisory workers closely associated with production operations. Those workers mentioned in tables 11–15 include production workers in manufacturing and mining; construction workers in construction; and nonsupervisory workers in transportation and public utilities; in wholesale and retail trade; in finance, insurance, and real estate; and in services industries. These groups account for about four-fifths of the total employment on private nonagricultural payrolls.

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

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

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 1982 data, published in the July 1982 issue of the *Review*. Consequently, data published in the *Review* prior to that issue are not necessarily comparable to current data. Complete comparable historical unadjusted and seasonally adjusted data are published in a Supplement to Employment and Earnings (unadjusted data from April 1977 through February 1982 and seasonally adjusted data from January 1974 through February 1982) and in *Employment and Earnings, United States, 1909–78*, BLS Bulletin 1312–11 (for prior periods).

A comprehensive discussion of the differences between household and establishment data on employment appears in Gloria P. Green, "Comparing employment estimates from household and payroll surveys," *Monthly Labor Review*, December 1969, pp. 9–20. See also *BLS Handbook of Methods for Surveys and Studies*, Bulletin 1910 (Bureau of Labor Statistics, 1976).

8. Employment by industry, selected years, 1950–81

[Nonagricultural payroll data, in thousands]

Year	Total	Private sector	Goods-producing				Service-producing									
			Total	Mining	Construction	Manufacturing	Total	Transportation and public utilities	Wholesale and retail trade			Finance, insurance, and real estate	Services	Government		
									Total	Wholesale trade	Retail trade			Total	Federal	State and local
1950	45,197	39,170	18,506	901	2,364	15,241	26,691	4,034	9,386	2,635	6,751	1,888	5,357	6,026	1,928	4,098
1955	50,641	43,727	20,513	792	2,839	16,882	30,128	4,141	10,535	2,926	7,610	2,298	6,240	6,914	2,187	4,727
1960 [1]	54,189	45,836	20,434	712	2,926	16,796	33,755	4,004	11,391	3,143	8,248	2,629	7,378	8,353	2,270	6,083
1964	58,283	48,686	21,005	634	3,097	17,274	37,278	3,951	12,160	3,337	8,823	2,911	8,660	9,596	2,348	7,248
1965	60,765	50,689	21,926	632	3,232	18,062	38,839	4,036	12,716	3,466	9,250	2,977	9,036	10,074	2,378	7,696
1966	63,901	53,116	23,158	627	3,317	19,214	40,743	4,158	13,245	3,597	9,648	3,058	9,498	10,784	2,564	8,220
1967	65,803	54,413	23,308	613	3,248	19,447	42,495	4,268	13,606	3,689	9,917	3,185	10,045	11,391	2,719	8,672
1968	67,897	56,058	23,737	606	3,350	19,781	44,160	4,318	14,099	3,779	10,320	3,337	10,567	11,839	2,737	9,102
1969	70,384	58,189	24,361	619	3,575	20,167	46,023	4,442	14,705	3,907	10,798	3,512	11,169	12,195	2,758	9,437
1970	70,880	58,325	23,578	623	3,588	19,367	47,302	4,515	15,040	3,993	11,047	3,645	11,548	12,554	2,731	9,823
1971	71,214	58,331	22,935	609	3,704	18,623	48,278	4,476	15,352	4,001	11,351	3,772	11,797	12,881	2,696	10,185
1972	73,675	60,341	23,668	628	3,889	19,151	50,007	4,541	15,949	4,113	11,836	3,908	12,276	13,334	2,684	10,649
1973	76,790	63,058	24,893	642	4,097	20,154	51,897	4,656	16,607	4,277	12,329	4,046	12,857	13,732	2,663	11,068
1974	78,265	64,095	24,794	697	4,020	20,077	53,471	4,725	16,987	4,433	12,554	4,148	13,441	14,170	2,724	11,446
1975	76,945	62,259	22,600	752	3,525	18,323	54,345	4,542	17,060	4,415	12,645	4,165	13,892	14,686	2,748	11,937
1976	79,382	64,511	23,352	779	3,576	18,997	56,030	4,582	17,755	4,546	13,209	4,271	14,551	14,871	2,733	12,138
1977	82,471	67,344	24,346	813	3,851	19,682	58,125	4,713	18,516	4,708	13,808	4,467	15,303	15,127	2,727	12,399
1978	86,697	71,026	25,585	851	4,229	20,505	61,113	4,923	19,542	4,969	14,573	4,724	16,252	15,672	2,753	12,919
1979	89,823	73,876	26,461	958	4,463	21,040	63,363	5,136	20,192	5,204	14,989	4,975	17,112	15,947	2,773	13,147
1980	90,406	74,166	25,658	1,027	4,346	20,285	64,748	5,146	20,310	5,275	15,035	5,160	17,890	16,241	2,866	13,375
1981	91,105	75,081	25,481	1,132	4,176	20,173	65,625	5,157	20,551	5,359	15,192	5,301	18,592	16,024	2,772	13,253

[1] Data include Alaska and Hawaii beginning in 1959.

9. Employment by State

[Nonagricultural payroll data, in thousands]

State	August 1981	July 1982	August 1982 [P]	State	August 1981	July 1982	August 1982 [P]
Alabama	1,347.3	1,322.9	1,319.3	Montana	290.2	278.6	278.3
Alaska	189.7	199.4	([1])	Nebraska	623.6	608.2	604.4
Arizona	1,019.0	1,003.5	1,003.4	Nevada	423.9	416.8	417.2
Arkansas	738.4	715.8	719.3	New Hampshire	405.0	397.4	400.3
California	10,032.9	9,940.4	9,901.5	New Jersey	3,127.1	3,097.8	3,098.4
Colorado	1,285.3	1,277.9	1,281.2	New Mexico	477.9	472.0	474.8
Connecticut	1,426.4	1,406.4	1,395.8	New York	7,331.2	7,272.5	7,264.4
Delaware	261.2	262.2	259.1	North Carolina	2,355.1	2,286.1	2,296.8
District of Columbia	622.0	625.7	624.4	North Dakota	250.8	251.5	251.4
Florida	3,660.0	3,720.7	3,698.5	Ohio	4,315.1	4,194.7	4,181.4
Georgia	2,180.2	2,149.1	2,149.8	Oklahoma	1,195.1	1,202.6	1,201.0
Hawaii	405.8	404.7	403.3	Oregon	1,018.3	964.1	964.6
Idaho	325.4	312.9	311.8	Pennsylvania	4,749.1	4,487.5	4,482.4
Illinois	4,769.2	4,626.6	4,615.9	Rhode Island	403.5	384.7	392.6
Indiana	2,115.7	2,006.2	2,005.3	South Carolina	1,190.1	1,160.1	1,164.1
Iowa	1,076.2	1,029.6	1,026.4	South Dakota	239.0	231.9	231.7
Kansas	939.9	912.4	910.2	Tennessee	1,750.6	1,704.5	1,703.6
Kentucky	1,190.1	1,127.1	1,128.1	Texas	6,171.1	6,248.5	6,226.1
Louisiana	1,636.7	1,613.0	1,608.6	Utah	558.6	557.8	558.8
Maine	432.6	413.6	422.1	Vermont	202.8	201.0	201.8
Maryland	1,697.4	1,684.9	1,662.3	Virginia	2,169.6	2,167.2	2,164.0
Massachusetts	2,654.0	2,592.8	2,603.2	Washington	1,589.6	1,551.2	1,546.9
Michigan	3,331.9	3,197.0	3,190.6	West Virginia	631.9	602.8	603.4
Minnesota	1,769.3	1,706.3	1,709.3	Wisconsin	1,936.3	1,868.7	1,872.4
Mississippi	813.0	789.6	782.7	Wyoming	223.6	215.6	213.9
Missouri	1,976.3	1,953.0	1,955.9	Virgin Islands	37.7	35.9	36.0

[1] Not available.

p = preliminary.

10. Employment by industry division and major manufacturing group, seasonally adjusted

[Nonagricultural payroll data, in thousands]

Industry division and group	Annual average		1981				1982								
	1980	1981	Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May	June	July	Aug. P	Sept. P
TOTAL	90,406	91,105	91,363	91,224	90,996	90,642	90,460	90,459	90,304	90,083	90,166	89,839	89,535	89,268	89,038
PRIVATE SECTOR	74,166	75,081	75,459	75,307	75,088	74,725	74,596	74,609	74,445	74,231	74,313	74,007	73,900	73,610	73,478
GOODS-PRODUCING	25,658	25,481	25,583	25,393	25,176	24,908	24,684	24,631	24,450	24,289	24,255	23,994	23,840	23,639	23,546
Mining	1,027	1,132	1,192	1,195	1,202	1,206	1,201	1,203	1,197	1,182	1,152	1,124	1,100	1,082	1,080
Construction	4,346	4,176	4,124	4,101	4,071	4,026	3,966	3,974	3,934	3,938	3,988	3,940	3,927	3,895	3,890
Manufacturing	20,285	20,173	20,267	20,097	19,903	19,676	19,517	19,454	19,319	19,169	19,115	18,930	18,813	18,662	18,576
Production workers	14,214	14,021	14,087	13,915	13,717	13,488	13,431	13,290	13,179	13,042	13,008	12,852	12,760	12,637	12,580
Durable goods	12,187	12,117	12,184	12,059	11,901	11,724	11,622	11,575	11,490	11,375	11,332	11,203	11,133	10,984	10,904
Production workers	8,442	8,301	8,345	8,218	8,061	7,885	7,793	7,759	7,685	7,576	7,553	7,443	7,388	7,263	7,205
Lumber and wood products	690.5	668.7	661	643	628	615	607	611	607	615	617	615	614	612	615
Furniture and fixtures	465.8	467.3	473	469	462	457	452	449	446	443	443	442	439	443	441
Stone, clay, and glass products	662.1	638.2	638	629	620	610	596	596	590	584	586	580	579	574	573
Primary metal industries	1,142.2	1,121.1	1,125	1,104	1,082	1,053	1,038	1,024	1,007	976	945	926	906	888	880
Fabricated metal products	1,613.1	1,592.4	1,604	1,577	1553	1,529	1,515	1,505	1,496	1,481	1,472	1,452	1,446	1,427	1,416
Machinery, except electrical	2,494.0	2,507.0	2,539	2,532	2,511	2,486	2,459	2,446	2,419	2,389	2,377	2,322	2,274	2,232	2,212
Electric and electronic equipment	2,090.6	2,092.2	2,113	2,101	2,077	2,049	2,055	2,048	2,038	2,034	2,034	2,026	2,018	2,004	1,997
Transportation equipment	1,899.7	1,892.6	1,884	1,861	1,830	1,791	1,777	1,778	1,774	1,748	1,755	1,745	1,759	1,718	1,689
Instruments and related products	711.3	726.8	734	731	727	725	720	718	716	713	713	708	708	702	700
Miscellaneous manufacturing	418.0	410.7	413	412	411	409	403	400	397	392	390	387	390	384	381
Nondurable goods	8,098	8,056	8,083	8,038	8,002	7,952	7,895	7,879	7,829	7,794	7,783	7,727	7,680	7,678	7,672
Production workers	5,772	5,721	5,742	5,697	5,656	5,603	5,548	5,531	5,494	5,466	5,455	5,409	5,372	5,374	5,375
Food and kindred products	1,708.0	1,674.3	1,658	1,662	1,664	1,661	1,657	1,663	1,658	1,643	1,652	1,637	1,643	1,626	1,622
Tobacco manufactures	68.9	69.8	69	69	69	68	69	68	68	67	67	67	65	65	63
Textile mill products	847.7	822.5	827	814	804	794	780	777	760	773	759	741	741	737	736
Apparel and other textile products	1,263.5	1,244.0	1,253	1,243	1,235	1,222	1,201	1,201	1,186	1,165	1,165	1,161	1,126	1,146	1,143
Paper and allied products	692.8	687.8	695	685	681	677	674	670	668	664	661	658	657	654	659
Printing and publishing	1,252.1	1,265.8	1,274	1,276	1,276	1,276	1,275	1,276	1,278	1,274	1,274	1,269	1,267	1,270	1,269
Chemicals and allied products	1,107.4	1,107.3	1,110	1,107	1,103	1,100	1,095	1,093	1,088	1,082	1,079	1,073	1,068	1,070	1,068
Petroleum and coal products	197.9	215.6	216	215	215	214	210	208	207	206	207	205	205	205	211
Rubber and miscellaneous plastics products	726.8	736.1	746	734	725	716	712	708	703	706	708	704	700	697	693
Leather and leather products	232.9	233.0	235	233	230	224	222	215	213	214	211	212	208	208	208
SERVICE-PRODUCING	64,748	65,625	65,780	65,831	65,820	65,734	65,776	65,828	65,854	65,794	65,911	65,845	65,695	65,629	65,492
Transportation and public utilities	5,146	5,157	5,181	5,162	5,150	5,128	5,125	5,115	5,100	5,094	5,101	5,078	5,044	5,024	5,023
Wholesale and retail trade	20,310	20,551	20,660	20,654	20,623	20,524	20,630	20,670	20,655	20,584	20,652	20,595	20,615	20,544	20,488
Wholesale trade	5,275	5,359	5,383	5,380	5,375	5,357	5,346	5,343	5,336	5,323	5,331	5,307	5,299	5,288	5,277
Retail trade	15,035	15,192	15,277	15,274	15,248	15,167	15,284	15,327	15,319	15,261	15,321	15,288	15,316	15,256	15,211
Finance, insurance, and real estate	5,160	5,301	5,328	5,325	5,324	5,331	5,326	5,326	5,336	5,335	5,342	5,352	5,359	5,361	5,367
Services	17,890	18,592	18,707	18,773	18,815	18,834	18,831	18,867	18,904	18,929	18,963	18,988	19,042	19,042	19,054
Government	16,241	16,024	15,904	15,917	15,908	15,917	15,864	15,850	15,859	15,852	15,853	15,832	15,635	15,658	15,560
Federal	2,866	2,772	2,764	2,757	2,749	2,756	2,741	2,737	2,736	2,730	2,728	2,739	2,737	2,740	2,734
State and local	13,375	13,253	13,140	13,160	13,159	13,161	13,123	13,113	13,123	13,122	13,125	13,093	12,898	12,918	12,826

p=preliminary.

11. Hours and earnings, by industry division, selected years, 1950–81

[Gross averages, production or nonsupervisory workers on nonagricultural payrolls]

Year	Private sector			Mining			Construction			Manufacturing		
	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings
1950	$53.13	39.8	$1.335	$67.16	37.9	$1.772	$69.68	37.4	$1.863	$58.32	40.5	$1.440
1955	67.72	39.6	1.71	89.54	40.7	2.20	90.90	37.1	2.45	75.30	40.7	1.85
1960[1]	80.67	38.6	2.09	105.04	40.4	2.60	112.67	36.7	3.07	89.72	39.7	2.26
1964	91.33	38.7	2.36	117.74	41.9	2.81	132.06	37.2	3.55	102.97	40.7	2.53
1965	95.45	38.8	2.46	123.52	42.3	2.92	138.38	37.4	3.70	107.53	41.2	2.61
1966	98.82	38.6	2.56	130.24	42.7	3.05	146.26	37.6	3.89	112.19	41.4	2.71
1967	101.84	38.0	2.68	135.89	42.6	3.19	154.95	37.7	4.11	114.49	40.6	2.82
1968	107.73	37.8	2.85	142.71	42.6	3.35	164.49	37.3	4.41	122.51	40.7	3.01
1969	114.61	37.7	3.04	154.80	43.0	3.60	181.54	37.9	4.79	129.51	40.6	3.19
1970	119.83	37.1	3.23	164.40	42.7	3.85	195.45	37.3	5.24	133.33	39.8	3.35
1971	127.31	36.9	3.45	172.14	42.4	4.06	211.67	37.2	5.69	142.44	39.9	3.57
1972	136.90	37.0	3.70	189.14	42.6	4.44	221.19	36.5	6.06	154.71	40.5	3.82
1973	145.39	36.9	3.94	201.40	42.4	4.75	235.89	36.8	6.41	166.46	40.7	4.09
1974	154.76	36.5	4.24	219.14	41.9	5.23	249.25	36.6	6.81	176.80	40.0	4.42
1975	163.53	36.1	4.53	249.31	41.9	5.95	266.08	36.4	7.31	190.79	39.5	4.83
1976	175.45	36.1	4.86	273.90	42.4	6.46	283.73	36.8	7.71	209.32	40.1	5.22
1977	189.00	36.0	5.25	301.20	43.4	6.94	295.65	36.5	8.10	228.90	40.3	5.68
1978	203.70	35.8	5.69	332.88	43.4	7.67	318.69	36.8	8.66	249.27	40.4	6.17
1979	219.91	35.7	6.16	365.07	43.0	8.49	342.99	37.0	9.27	269.34	40.2	6.70
1980	235.10	35.3	6.66	397.06	43.3	9.17	367.78	37.0	9.94	288.62	39.7	7.27
1981	255.20	35.2	7.25	439.19	43.7	10.05	398.52	36.9	10.80	318.00	39.8	7.99

Year	Transportation and public utilities			Wholesale and retail trade			Finance, insurance, and real estate			Services		
	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings	Average weekly earnings	Average weekly hours	Average hourly earnings
1950	......	......	......	$44.55	40.5	$1.100	$50.52	37.7	$1.340	......	......	......
1955	......	......	......	55.16	39.4	1.40	63.92	37.6	1.70	......	......	......
1960[1]	......	......	......	66.01	38.6	1.71	75.14	37.2	2.02	......	......	......
1964	$118.78	41.1	$2.89	74.66	37.9	1.97	85.79	37.3	2.30	$70.03	36.1	$1.94
1965	125.14	41.3	3.03	76.91	37.7	2.04	88.91	37.2	2.39	73.60	35.9	2.05
1966	128.13	41.2	3.11	79.39	37.1	2.14	92.13	37.3	2.47	77.04	35.5	2.17
1967	130.82	40.5	3.23	82.35	36.6	2.25	95.72	37.1	2.58	80.38	35.1	2.29
1968	138.85	40.6	3.42	87.00	36.1	2.41	101.75	37.0	2.75	83.97	34.7	2.42
1969	147.74	40.7	3.63	91.39	35.7	2.56	108.70	37.1	2.93	90.57	34.7	2.61
1970	155.93	40.5	3.85	96.02	35.3	2.72	112.67	36.7	3.07	96.66	34.4	2.81
1971	168.82	40.1	4.21	101.09	35.1	2.88	117.85	36.6	3.22	103.06	33.9	3.04
1972	187.86	40.4	4.65	106.45	34.9	3.05	122.98	36.6	3.36	110.85	33.9	3.27
1973	203.31	40.5	5.02	111.76	34.6	3.23	129.20	36.6	3.53	117.29	33.8	3.47
1974	217.48	40.2	5.41	119.02	34.2	3.48	137.61	36.5	3.77	126.00	33.6	3.75
1975	233.44	39.7	5.88	126.45	33.9	3.73	148.19	36.5	4.06	134.67	33.5	4.02
1976	256.71	39.8	6.45	133.79	33.7	3.97	155.43	36.4	4.27	143.52	33.3	4.31
1977	278.90	39.9	6.99	142.52	33.3	4.28	165.26	36.4	4.54	153.45	33.0	4.65
1978	302.80	40.0	7.57	153.64	32.9	4.67	178.00	36.4	4.89	163.67	32.8	4.99
1979	325.58	39.9	8.16	164.96	32.6	5.06	190.77	36.2	5.27	175.27	32.7	5.36
1980	351.25	39.6	8.87	176.46	32.2	5.48	209.60	36.2	5.79	190.71	32.6	5.85
1981	382.18	39.4	9.70	190.95	32.2	5.93	229.05	36.3	6.31	208.97	32.6	6.41

[1] Data include Alaska and Hawaii beginning in 1959.

12. Weekly hours, by industry division and major manufacturing group, seasonally adjusted

[Gross averages, production or nonsupervisory workers on private nonagricultural payrolls]

Industry division and group	Annual average 1980	Annual average 1981	1981 Sept.	Oct.	Nov.	Dec.	1982 Jan.	Feb.	Mar.	Apr.	May	June	July	Aug. P	Sept. P
PRIVATE SECTOR	35.3	35.2	35.0	35.1	35.1	35.0	34.4	35.0	34.9	34.9	35.0	34.9	34.9	34.8	34.8
MANUFACTURING	39.7	39.8	39.4	39.5	39.3	39.1	37.6	39.4	39.0	39.0	39.1	39.2	39.2	39.0	38.6
Overtime hours	2.8	2.8	2.7	2.7	2.5	2.4	2.3	2.4	2.3	2.4	2.3	2.4	2.4	2.4	2.3
Durable goods	40.1	40.2	39.7	40.0	39.7	39.5	38.2	39.8	39.5	39.5	39.6	39.7	39.7	39.4	38.7
Overtime hours	2.8	2.8	2.7	2.6	2.4	2.3	2.2	2.2	2.2	2.2	2.2	2.3	2.2	2.2	2.1
Lumber and wood products	38.5	38.7	37.6	37.8	37.7	37.7	35.0	37.9	37.6	37.6	38.5	38.7	38.6	38.3	38.1
Furniture and fixtures	38.1	38.4	37.4	38.0	37.6	37.9	33.6	37.7	37.3	37.4	37.5	37.8	37.6	38.0	37.2
Stone, clay, and glass products	40.8	40.6	40.3	40.1	40.1	39.7	38.6	40.1	40.0	40.0	40.2	40.4	40.6	40.3	40.3
Primary metal industries	40.1	40.5	40.6	40.0	39.6	39.2	38.3	39.4	38.8	38.5	38.5	38.9	38.9	38.9	37.7
Fabricated metal products	40.4	40.3	39.6	40.0	39.7	39.5	38.1	39.7	39.5	39.4	39.5	39.4	39.5	39.1	38.5
Machinery, except electrical	41.0	40.9	40.3	40.8	40.7	40.4	39.3	40.7	40.2	40.1	39.8	39.6	39.8	39.4	38.8
Electric and electronic equipment	39.8	39.9	39.7	39.8	39.4	39.5	38.3	39.8	39.4	39.3	39.4	39.5	39.8	39.3	38.7
Transportation equipment	40.6	40.9	40.1	40.6	40.4	39.7	39.0	40.5	40.4	41.1	41.1	41.6	41.0	40.5	39.5
Instruments and related products	40.5	40.4	40.4	40.3	40.2	39.9	39.0	39.9	39.9	39.9	40.2	40.2	40.1	40.1	39.5
Miscellaneous manufacturing	38.7	38.8	38.4	38.9	39.0	38.5	37.3	38.6	38.6	38.5	38.7	38.6	38.7	38.6	38.1
Nondurable goods	39.0	39.1	38.9	38.9	38.7	38.6	36.8	38.9	38.5	38.4	38.5	38.6	38.6	38.5	38.5
Overtime hours	2.8	2.8	2.8	2.8	2.7	2.6	2.5	2.6	2.5	2.6	2.5	2.5	2.6	2.6	2.6
Food and kindred products	39.7	39.7	39.3	39.5	39.5	39.8	39.1	40.2	39.5	39.4	39.4	39.5	39.5	39.2	39.4
Textile mill products	40.1	39.6	38.8	39.0	38.7	37.8	32.3	38.3	37.6	37.7	37.9	37.8	37.7	38.2	38.1
Apparel and other textile products	35.4	35.7	35.2	35.5	35.5	35.1	31.4	35.5	35.0	34.7	34.8	35.1	35.2	34.9	35.0
Paper and allied products	42.2	42.5	43.0	42.4	42.0	41.8	41.3	42.3	41.8	42.1	41.8	42.0	41.9	41.8	41.5
Printing and publishing	37.1	37.3	37.1	37.1	37.1	37.1	36.9	37.4	37.1	37.1	36.8	37.1	37.0	36.8	37.1
Chemicals and allied products	41.5	41.6	42.2	41.5	41.2	41.3	41.0	41.2	40.7	40.7	41.0	41.0	40.9	40.8	41.3
Petroleum and coal products	41.8	43.2	43.1	42.2	42.5	42.7	44.3	43.5	43.5	44.0	44.1	44.1	43.3	44.2	43.0
Rubber and miscellaneous plastics products . . .	40.0	40.3	39.7	39.9	39.6	39.4	37.9	40.0	39.6	39.8	39.9	40.1	40.2	39.7	39.5
Leather and leather products	36.7	36.8	36.2	36.7	36.5	36.1	34.1	35.6	35.8	35.6	35.6	35.7	36.1	36.1	35.7
WHOLESALE AND RETAIL TRADE	32.2	32.2	32.1	32.0	32.1	32.0	31.7	32.0	31.9	31.8	32.0	31.9	31.9	31.9	32.1
WHOLESALE TRADE	38.5	38.6	38.5	38.4	38.5	38.4	38.1	38.5	38.4	38.3	38.5	38.6	38.5	38.5	38.3
RETAIL TRADE	30.2	30.1	30.1	29.9	30.0	29.9	29.7	29.9	29.8	29.8	30.0	29.8	29.9	29.9	30.2
SERVICES	32.6	32.6	32.5	32.6	32.6	32.6	32.5	32.6	32.6	32.7	32.7	32.7	32.6	32.7	32.8

NOTE: The industry divisions of mining; construction; tobacco manufactures (a major manufacturing group, nondurable goods); transportation and public utilities; and finance, insurance, and real estate are no longer shown. This is because the seasonal component in these is small relative to the trend-cycle, or irregular components, or both, and consequently cannot be precisely separated.

p = preliminary.

13. Hourly earnings, by industry division and major manufacturing group

[Gross averages, production or nonsupervisory workers on private nonagricultural payrolls]

Industry division and group	Annual average 1980	Annual average 1981	1981 Sept.	1981 Oct.	1981 Nov.	1981 Dec.	1982 Jan.	1982 Feb.	1982 Mar.	1982 Apr.	1982 May	1982 June	1982 July	1982 Aug.P	1982 Sept.P
PRIVATE SECTOR	$6.66	$7.25	$7.40	$7.42	$7.47	$7.45	$7.55	$7.54	$7.55	$7.58	$7.63	$7.64	$7.67	$7.69	$7.76
Seasonally adjusted	(¹)	(¹)	7.37	7.40	7.45	7.46	7.52	7.53	7.54	7.59	7.65	7.67	7.71	7.73	7.72
MINING	9.17	10.05	10.27	10.25	10.39	10.41	10.65	10.62	10.62	10.65	10.66	10.82	10.91	10.88	11.03
CONSTRUCTION	9.94	10.80	11.07	11.65	11.18	11.26	11.59	11.32	11.33	11.32	11.46	11.41	11.53	11.61	11.72
MANUFACTURING	7.27	7.99	8.16	8.16	8.20	8.27	8.42	8.34	8.37	8.42	8.45	8.50	8.55	8.51	8.59
Durable goods	7.75	8.53	8.70	8.73	8.77	8.83	8.92	8.89	8.91	8.94	9.01	9.06	9.11	9.10	9.16
Lumber and wood products	6.55	7.00	7.16	7.10	7.16	7.16	7.38	7.27	7.28	7.24	7.41	7.59	7.64	7.62	7.67
Furniture and fixtures	5.49	5.91	6.01	6.06	6.05	6.12	6.28	6.19	6.21	6.21	6.23	6.30	6.34	6.39	6.38
Stone, clay, and glass products	7.50	8.27	8.53	8.50	8.54	8.56	8.70	8.62	8.65	8.72	8.80	8.86	8.93	8.92	9.04
Primary metal industries	9.77	10.81	11.22	10.97	11.10	11.08	11.23	11.20	11.15	11.24	11.23	11.31	11.37	11.51	11.60
Fabricated metal products	7.45	8.20	8.33	8.39	8.42	8.53	8.55	8.57	8.64	8.69	8.79	8.83	8.85	8.86	8.90
Machinery, except electrical	8.00	8.81	8.96	9.04	9.08	9.18	9.19	9.20	9.18	9.24	9.26	9.27	9.30	9.33	9.38
Electric and electronic equipment	6.94	7.62	7.75	7.80	7.83	7.90	7.98	7.96	8.01	8.03	8.05	8.09	8.18	8.24	8.32
Transportation equipment	9.35	10.39	10.49	10.74	10.74	10.76	10.79	10.82	10.89	10.89	11.08	11.21	11.25	11.19	11.24
Instruments and related products	6.80	7.43	7.59	7.60	7.68	7.81	7.93	7.94	8.00	8.07	8.16	8.23	8.31	8.45	8.47
Miscellaneous manufacturing	5.46	5.96	6.05	6.05	6.11	6.19	6.27	6.29	6.32	6.35	6.38	6.41	6.40	6.38	6.48
Nondurable goods	6.55	7.18	7.36	7.33	7.38	7.44	7.67	7.54	7.57	7.65	7.66	7.70	7.77	7.74	7.83
Food and kindred products	6.85	7.43	7.56	7.51	7.61	7.67	7.82	7.74	7.79	7.90	7.92	7.90	7.88	7.87	7.89
Tobacco manufactures	7.74	8.88	8.76	8.67	9.04	8.96	9.21	9.56	9.72	10.05	9.93	10.35	10.42	9.42	9.39
Textile mill products	5.07	5.52	5.69	5.72	5.73	5.72	5.76	5.76	5.76	5.79	5.79	5.79	5.81	5.82	5.86
Apparel and other textile products	4.56	4.96	5.04	5.05	5.04	5.04	5.18	5.13	5.15	5.18	5.16	5.18	5.17	5.18	5.20
Paper and allied products	7.84	8.60	8.95	8.82	8.89	8.96	9.06	8.99	9.03	9.11	9.14	9.28	9.41	9.44	9.62
Printing and publishing	7.53	8.18	8.37	8.40	8.42	8.48	8.58	8.56	8.59	8.59	8.61	8.66	8.74	8.79	8.87
Chemicals and allied products	8.30	9.12	9.38	9.37	9.42	9.53	9.68	9.68	9.71	9.81	9.83	9.95	10.02	10.01	10.20
Petroleum and coal products	10.10	11.38	11.55	11.47	11.58	11.59	11.91	12.29	12.32	12.50	12.52	12.53	12.42	12.40	12.56
Rubber and miscellaneous plastics products	6.52	7.16	7.29	7.30	7.31	7.38	7.51	7.49	7.45	7.52	7.56	7.64	7.65	7.64	7.74
Leather and leather products	4.58	4.99	5.09	5.09	5.11	5.15	5.19	5.22	5.24	5.32	5.32	5.36	5.30	5.35	5.43
TRANSPORTATION AND PUBLIC UTILITIES	8.87	9.70	9.95	9.94	10.05	10.06	10.10	10.13	10.07	10.14	10.17	10.20	10.29	10.41	10.46
WHOLESALE AND RETAIL TRADE	5.48	5.93	6.04	6.01	6.04	6.02	6.17	6.16	6.16	6.18	6.20	6.20	6.21	6.22	6.24
WHOLESALE TRADE	6.96	7.57	7.70	7.73	7.79	7.81	7.94	7.94	7.93	7.97	8.03	8.01	8.07	8.10	8.12
RETAIL TRADE	4.88	5.25	5.37	5.29	5.32	5.31	5.43	5.42	5.43	5.44	5.47	5.47	5.48	5.48	5.50
FINANCE, INSURANCE, AND REAL ESTATE	5.79	6.31	6.39	6.43	6.52	6.47	6.56	6.62	6.59	6.64	6.77	6.71	6.78	6.86	6.90
SERVICES	5.85	6.41	6.52	6.58	6.67	6.66	6.79	6.79	6.77	6.81	6.85	6.84	6.87	6.89	6.98

¹ Not available.   p = preliminary.

14. Hourly Earnings Index, for production workers on private nonagricultural payrolls, by industry

[1977 = 100]

Industry	Not seasonally adjusted Sept. 1981	Not seasonally adjusted July 1982	Not seasonally adjusted Aug. 1982P	Not seasonally adjusted Sept. 1982P	Not seasonally adjusted Percent change from: Sept. 1981 to Sept. 1982	Seasonally adjusted Sept. 1981	Seasonally adjusted May 1982	Seasonally adjusted June 1982	Seasonally adjusted July 1982	Seasonally adjusted Aug. 1982P	Seasonally adjusted Sept. 1982P	Seasonally adjusted Percent change from: Aug. 1982 to Sept. 1982
PRIVATE SECTOR (in current dollars)	141.7	148.6	149.2	150.2	6.0	141.4	147.7	148.1	148.9	149.8	149.9	0.1
Mining	151.7	161.3	161.0	162.9	7.4	(¹)	(¹)	(¹)	(¹)	(¹)	(¹)	(¹)
Construction	135.5	140.8	141.6	142.9	5.5	133.5	139.9	139.7	140.6	140.7	140.8	.0
Manufacturing	144.7	153.3	153.6	154.6	6.8	144.7	151.8	152.5	153.3	154.2	154.6	.2
Transportation and public utilities	143.0	148.3	150.0	151.2	5.8	141.5	148.2	149.1	148.9	150.0	149.7	-.2
Wholesale and retail trade	141.0	145.5	145.8	146.3	3.8	141.0	145.1	145.2	145.7	146.4	146.3	-.1
Finance, insurance, and real estate	139.8	148.3	150.1	150.7	7.8	140.4	148.0	147.2	148.6	150.5	151.3	.5
Services	139.7	147.8	148.2	149.4	7.0	139.7	146.5	147.3	148.7	149.6	149.5	-.1
PRIVATE SECTOR (in constant dollars)	92.1	92.4	92.6	(²)	(²)	92.1	93.7	93.0	93.0	93.2	(²)	(²)

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

² Not available.
p = preliminary.

15. Weekly earnings, by industry division and major manufacturing group

[Gross averages, production or nonsupervisory workers on private nonagricultural payrolls]

Industry division and group	Annual average 1980	1981	1981 Sept.	Oct.	Nov.	Dec.	1982 Jan.	Feb.	Mar.	Apr.	May	June	July	Aug.ᵖ	Sept.ᵖ
PRIVATE SECTOR															
Current dollars	$235.10	$255.20	$259.74	$261.18	$262.20	$262.24	$255.95	$262.39	$261.99	$262.27	$265.52	$267.40	$269.98	$270.69	$270.05
Seasonally adjusted	(¹)	(¹)	257.95	259.74	261.50	261.10	258.69	263.55	263.15	264.89	267.75	267.68	269.08	269.00	268.66
Constant (1977) dollars	172.74	170.13	168.88	169.49	169.71	169.30	164.70	168.31	168.37	167.80	168.16	167.33	167.90	168.03	167.63
MINING	397.06	439.19	450.85	456.13	461.32	466.37	456.89	463.03	465.16	454.76	454.12	463.10	463.68	462.40	457.75
CONSTRUCTION	367.78	398.52	396.31	419.62	414.78	417.75	385.95	406.39	419.21	415.44	429.75	427.88	438.14	436.54	432.47
MANUFACTURING															
Current dollars	288.62	318.00	322.32	323.95	325.54	329.97	312.38	326.93	327.27	325.85	329.55	334.05	332.60	331.89	333.29
Constant (1977) dollars	212.06	212.00	209.57	210.22	210.71	213.02	201.02	209.70	210.33	208.48	208.71	209.04	206.84	206.01	206.88
Durable goods	310.78	342.91	346.26	350.07	351.68	356.73	336.28	352.93	352.84	350.45	355.90	360.59	357.11	356.72	355.41
Lumber and wood products	252.18	270.90	271.36	271.22	269.93	272.80	248.71	272.63	273.73	270.05	285.29	297.53	294.90	296.42	294.53
Furniture and fixtures	209.17	226.94	226.58	233.92	230.51	238.07	204.10	231.51	233.50	230.39	231.76	238.77	233.31	244.10	239.25
Stone, clay, and glass products	306.00	335.76	346.32	344.25	345.87	343.26	325.38	337.90	344.27	347.93	355.52	361.49	362.56	362.15	367.02
Primary metal industries	391.78	437.81	457.78	435.51	440.67	438.77	431.23	443.52	434.85	434.99	430.11	439.96	437.75	441.98	439.64
Fabricated metal products	300.98	330.46	330.70	337.28	337.64	345.47	323.19	337.66	342.14	338.91	346.33	349.67	344.27	345.54	343.54
Machinery except electrical	328.00	360.33	361.98	367.93	372.28	381.89	360.25	374.44	370.87	367.75	367.62	367.09	363.63	363.87	364.88
Electric and electronic equipment	276.21	304.04	307.68	311.22	311.63	319.16	304.04	316.81	316.40	313.17	315.56	455.39	319.56	322.18	321.98
Transportation equipment	379.61	424.95	418.55	440.34	438.19	445.46	414.34	437.13	439.96	441.05	455.39	466.34	456.75	447.60	440.61
Instruments and related products	275.40	300.17	306.64	307.04	313.34	317.87	306.10	317.60	320.80	318.77	327.22	330.85	328.25	337.16	334.57
Miscellaneous manufacturing	211.30	231.25	234.14	237.77	241.35	242.03	229.48	241.54	244.58	242.57	245.63	247.43	244.48	246.27	248.83
Nondurable goods	255.45	280.74	287.78	286.60	288.56	291.65	277.65	291.04	289.93	291.47	294.14	297.99	299.15	299.54	303.02
Food and kindred products	271.95	294.97	300.89	296.65	302.88	309.87	302.63	307.28	303.81	306.52	312.05	312.05	312.05	312.44	314.81
Tobacco manufactures	294.89	344.54	352.15	341.60	350.75	341.38	332.48	366.15	362.56	367.83	369.40	397.44	383.46	361.73	370.91
Textile mill products	203.31	218.59	221.34	225.37	224.62	220.79	179.71	219.46	217.15	215.39	219.44	220.60	216.13	222.91	223.85
Apparel and other textile products	161.42	177.07	177.41	180.79	180.43	178.92	155.40	180.58	180.77	178.19	180.08	183.89	183.02	182.85	181.48
Paper and allied products	330.85	365.50	386.64	373.97	376.05	382.59	374.18	377.58	376.55	380.80	379.31	389.76	391.46	393.65	401.15
Printing and publishing	279.36	305.11	313.04	312.48	314.07	321.39	312.31	317.58	318.69	316.11	315.99	319.55	322.51	326.11	330.85
Chemicals and allied products	344.45	379.39	395.84	388.86	391.87	398.35	394.94	397.85	395.20	399.27	401.06	406.96	407.81	406.41	421.26
Petroleum and coal products	422.18	491.62	512.82	494.36	499.10	493.73	514.51	518.64	522.37	550.00	549.63	553.83	546.48	549.32	557.66
Rubber and miscellaneous plastics products	260.80	288.55	289.41	293.46	291.67	295.94	283.88	298.85	295.77	297.04	300.13	306.36	302.94	303.31	305.73
Leather and leather products	168.09	183.63	183.24	186.80	187.03	187.46	172.83	184.27	186.54	187.26	191.52	196.71	191.33	194.21	192.77
TRANSPORTATION AND PUBLIC UTILITIES . . .	351.25	382.18	390.04	388.65	393.96	395.36	388.85	397.10	392.73	393.43	394.60	399.84	403.37	409.11	410.03
WHOLESALE AND RETAIL TRADE	176.46	190.95	194.49	192.32	192.68	194.45	191.89	194.66	194.66	195.91	197.78	199.02	202.45	202.77	200.93
WHOLESALE TRADE	267.96	292.20	296.45	298.38	300.69	302.25	300.13	303.31	303.72	304.45	308.35	309.19	312.31	312.66	311.00
RETAIL TRADE	147.38	158.03	162.17	157.64	158.54	160.89	157.47	159.35	159.64	161.02	163.01	164.65	168.24	168.24	166.65
FINANCE, INSURANCE, AND REAL ESTATE . . .	209.60	229.05	230.04	232.77	236.02	234.21	237.47	239.64	239.22	240.37	245.75	242.23	245.44	249.02	247.71
SERVICES	190.71	208.97	211.25	213.85	216.78	217.12	219.32	220.68	220.03	221.33	222.63	224.35	227.40	228.06	228.25

¹ Not available.   p = preliminary.

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

Definitions

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

Under both State and Federal unemployment insurance programs for civilian employees, insured workers must report the completion of at least 1 week of unemployment before they are defined as unemployed. Persons not covered by unemployment insurance (about 10 percent of the labor force) and those who have exhausted or not yet earned benefit rights are excluded from the scope of the survey. **Initial claims** are notices filed by persons in unemployment insurance programs to indicate they are out of work and wish to begin receiving compensation. A claimant who continued to be unemployed a full week is then counted in the insured unemployment figure. The **rate of insured unemployment** expresses the number of insured unemployed as a percent of the average insured employment in a 12-month period.

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

16. Unemployment insurance and employment service operations

[All items except average benefits amounts are in thousands]

Item	1981 Aug.	Sept.	Oct.	Nov.	Dec.	1982 Jan.	Feb.	Mar.	Apr.	May	June	July	Aug. P
All programs:													
Insured unemployment	2,874	2,680	2,753	3,228	3,935	4,681	4,723	4,892	4,760	4,388	4,328	4,495	4,398
State unemployment insurance program:[1]													
Initial claims[2]	1,610	1,681	1,996	2,286	3,272	3,328	2,272	2,418	2,347	1,989	2,399	2,655	2,358
Insured unemployment (average weekly volume)	2,656	2,488	2,592	3,061	3,778	4,470	4,376	4,282	4,067	3,729	3,707	3,910	3,831
Rate of insured unemployment	3.0	2.9	3.0	3.5	4.3	5.1	5.0	4.9	4.6	4.3	4.3	4.6	4.4
Weeks of unemployment compensated	9,594	9,565	9,424	10,052	14,592	15,962	15,631	18,144	ʳ16,158	ʳ13,679	ʳ14,648	14,655	15,015
Average weekly benefit amount for total unemployment	$105.94	$107.39	$108.92	$110.52	$112.83	$114.83	$116.95	$117.10	ʳ$117.61	ʳ$118.08	ʳ$118.64	$117.28	$121.52
Total benefits paid	$1,004,864	$1,001,020	$997,757	$1,080,810	$1,592,546	$1,764,206	$1,781,830	$2,072,642	ʳ$1,849,881	ʳ$1,573,444	ʳ$1,689,061	$1,679,378	$1,746,195
State unemployment insurance program:[1] (Seasonally adjusted data)													
Initial claims[2]	1,851	2,099	2,187	2,233	2,106	2,304	2,354	2,521	2,442	2,379	2,528	2,317	2,814
Insured unemployment (average weekly volume)	2,867	2,985	3,171	3,403	3,593	3,604	3,644	3,777	3,939	3,925	3,995	3,959	4,137
Rate of insured unemployment	3.3	3.4	3.6	3.9	4.1	4.1	4.2	4.3	4.5	4.5	4.6	4.5	4.7
Unemployment compensation for ex-servicemen:[3]													
Initial claims[1]	19	15	11	9	11	8	8	10	9	8	10	10	11
Insured unemployment (average weekly volume)	44	34	26	22	19	16	13	11	10	9	8	7	7
Weeks of unemployment compensated	190	153	116	91	93	65	49	48	37	31	29	25	24
Total benefits paid	$21,425	$17,144	$12,952	$10,043	$10,155	$7,098	$5,304	$5,141	ʳ$4,013	$3,395	ʳ$3,314	$2,821	$2,793
Unemployment compensation for Federal civilian employees:[4]													
Initial claims	17	18	20	16	17	17	12	13	13	11	14	13	12
Insured unemployment (average weekly volume)	25	29	32	36	39	40	40	38	33	29	28	29	27
Weeks of unemployment compensated	102	100	112	127	174	162	154	172	ʳ146	120	123	120	118
Total benefits paid	$9,543	$10,495	$11,719	$13,491	$18,891	$18,040	$17,517	$19,677	ʳ$16,806	$13,526	ʳ$13,922	$13,445	$13,140
Railroad unemployment insurance:													
Applications	13	15	21	13	19	22	11	9	5	5	36	68	68
Insured unemployment (average weekly volume)	29	34	40	44	54	75	67	65	57	44	44	55	55
Number of payments	63	74	86	83	117	153	140	154	130	95	93	100	100
Average amount of benefit payment	$202.53	$207.98	$197.26	$207.08	$212.33	$213.39	$214.07	$215.71	$209.48	$200.75	$199.15	$202.54	$202.54
Total benefits paid	$7,071	15,046	15,994	$16,377	$25,292	$30,544	$28,011	$33,853	$26,262	$19,110	$18,574	$17,998	$17,998
Employment service:[5]													
New applications and renewals	....	16,502	....	....	4,081	....	....	7,439	....	....	....	10,965	10,965
Nonfarm placements	....	3,509	....	....	731	....	....	1,232	....	....	....	1,902	1,902

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

[2] Excludes transition claims under State programs.

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

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

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

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

r=revised.

p=preliminary.

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

Definitions

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

The CPI is based on prices of food, clothing, shelter, fuel, drugs, transportation fares, doctor's and dentist's fees, and other goods and services that people buy for day-to-day living. The quantity and quality of these items is kept essentially unchanged between major revisions so that only price changes will be measured. Prices are collected from over 18,000 tenants, 24,000 retail establishments, and 18,000 housing units for property taxes in 85 urban areas across the country. All taxes directly associated with the purchase and use of items are included in the index. Because the CPI's are based on the expenditures of two population groups in 1972–73, they may not accurately reflect the experience of individual families and single persons with different buying habits.

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

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

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

To the extent possible, prices used in calculating Producer Price Indexes apply to the first significant commercial transaction in the United States, from the production or central marketing point. Price data are generally collected monthly, primarily by mail questionnaire.

Most prices are obtained directly from producing companies on a voluntary and confidential basis. Prices generally are reported for the Tuesday of the week containing the 13th day of the month.

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

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

Notes on the data

Beginning with the May 1978 issue of the *Review*, regional CPI's cross classified by population size, were introduced. These indexes will enable users in local areas for which an index is not published to get a better approximation of the CPI for their area by using the appropriate population size class measure for their region. The cross-classified indexes will be published bimonthly. (See table 19.)

For further details about the new and the revised indexes and a comparison of various aspects of these indexes with the old unrevised CPI, see *Facts About the Revised Consumer Price Index*, a pamphlet in the Consumer Price Index Revision 1978 series. See also *The Consumer Price Index: Concepts and Content Over the Years*, Report 517, revised edition (Bureau of Labor Statistics, May 1978).

For interarea comparisons of living costs at three hypothetical standards of living, see the family budget data published in the *Handbook of Labor Statistics, 1977*, Bulletin 1966 (Bureau of Labor Statistics, 1977), tables 122–133. Additional data and analysis on price changes are provided in the *CPI Detailed Report* and *Producer Prices and Price Indexes*, both monthly publications of the Bureau.

As of January 1976, the Wholesale Price Index (as it was then called) incorporated a revised weighting structure reflecting 1972 values of shipments. From January 1967 through December 1975, 1963 values of shipments were used as weights.

For a discussion of the general method of computing consumer, producer, and industry price indexes, see *BLS Handbook of Methods for Surveys and Studies*, Bulletin 1910 (Bureau of Labor Statistics, 1976), chapters 13–15. See also John F. Early, "Improving the measurement of producer price change," *Monthly Labor Review*, April 1978, pp. 7–15. For industry prices, see also Bennett R. Moss, "Industry and Sector Price Indexes," *Monthly Labor Review*, August 1965, pp. 974–82.

17. Consumer Price Index for Urban Wage Earners and Clerical Workers, annual averages and changes, 1967–81

[1967 = 100]

Year	All items		Food and beverages		Housing		Apparel and upkeep		Transportation		Medical care		Entertainment		Other goods and services	
	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change	Index	Percent change
1967	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...	100.0	...
1968	104.2	4.2	103.6	3.6	104.0	4.0	105.4	5.4	103.2	3.2	106.1	6.1	105.7	5.7	105.2	5.2
1969	109.8	5.4	108.8	5.0	110.4	6.2	111.5	5.8	107.2	3.9	113.4	6.9	111.0	5.0	110.4	4.9
1970	116.3	5.9	114.7	5.4	118.2	7.1	116.1	4.1	112.7	5.1	120.6	6.3	116.7	5.1	116.8	5.8
1971	121.3	4.3	118.3	3.1	123.4	4.4	119.8	3.2	118.6	5.2	128.4	6.5	122.9	5.3	122.4	4.8
1972	125.3	3.3	123.2	4.1	128.1	3.8	122.3	2.1	119.9	1.1	132.5	3.2	126.5	2.9	127.5	4.2
1973	133.1	6.2	139.5	13.2	133.7	4.4	126.8	3.7	123.8	3.3	137.7	3.9	130.0	2.8	132.5	3.9
1974	147.7	11.0	158.7	13.8	148.8	11.3	136.2	7.4	137.7	11.2	150.5	9.3	139.8	7.5	142.0	7.2
1975	161.2	9.1	172.1	8.4	164.5	10.6	142.3	4.5	150.6	9.4	168.6	12.0	152.2	8.9	153.9	8.4
1976	170.5	5.8	177.4	3.1	174.6	6.1	147.6	3.7	165.5	9.9	184.7	9.5	159.8	5.0	162.7	5.7
1977	181.5	6.5	188.0	6.0	186.5	6.8	154.2	4.5	177.2	7.1	202.4	9.6	167.7	4.9	172.2	5.8
1978	195.3	7.6	206.2	9.7	202.6	8.6	159.5	3.4	185.8	4.9	219.4	8.4	176.2	5.1	183.2	6.4
1979	217.7	11.5	228.7	10.9	227.5	12.3	166.4	4.3	212.8	14.5	240.1	9.4	187.6	6.5	196.3	7.2
1980	247.0	13.5	248.7	8.7	263.2	15.7	177.4	6.6	250.5	17.7	267.2	11.3	203.7	8.5	213.6	8.8
1981	272.3	10.2	267.8	7.7	293.2	11.4	186.6	5.2	281.3	12.3	295.1	10.4	219.0	7.5	233.3	9.2

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

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981	1982						1981	1982					
	Aug.	Mar.	Apr.	May	June	July	Aug.	Aug.	Mar.	Apr.	May	June	July	Aug.
All items	276.5	283.1	284.3	287.1	290.6	292.2	292.8	276.5	282.5	283.7	286.5	290.1	291.8	292.4
Food and beverages	270.1	275.6	276.5	278.1	280.2	280.8	279.9	270.6	275.9	276.8	278.4	280.5	281.2	280.2
Housing	299.7	306.7	309.4	313.8	317.5	319.2	320.1	299.6	306.2	309.2	313.7	317.5	319.3	320.5
Apparel and upkeep	187.4	191.1	191.9	191.5	190.8	189.7	191.8	187.9	190.5	191.2	190.6	189.6	188.7	190.7
Transportation	283.7	285.1	282.9	285.6	292.8	296.1	296.2	285.1	286.6	284.3	287.1	294.5	297.9	298.0
Medical care	299.3	318.8	321.7	323.8	326.4	330.0	333.3	298.6	317.4	320.2	322.3	324.8	328.1	331.3
Entertainment	222.3	232.8	233.9	234.4	235.6	236.6	237.4	219.9	229.5	230.5	231.1	232.3	233.5	233.9
Other goods and services	235.6	252.2	253.8	255.0	255.8	257.2	258.3	233.5	249.3	250.9	252.4	253.1	254.5	255.7
Commodities	256.2	258.8	258.9	261.5	265.1	266.5	266.4	256.9	259.1	259.2	261.7	265.4	266.9	266.8
Commodities less food and beverages	245.8	247.1	247.0	249.8	254.0	255.7	255.9	246.7	247.5	247.2	250.1	254.5	256.3	256.5
Nondurables less food and beverages	263.9	263.4	259.7	261.0	266.3	268.2	268.8	266.8	265.3	261.3	262.6	268.2	270.3	270.7
Durables	230.9	233.5	235.8	239.8	243.2	244.7	244.6	229.9	232.4	234.8	238.9	242.3	243.9	244.0
Services	312.2	325.5	328.4	331.8	334.9	337.0	338.9	312.7	325.8	329.1	332.4	335.7	337.9	340.0
Rent, residential	210.3	219.6	220.1	221.8	222.6	224.8	226.0	209.9	219.1	219.6	221.3	222.1	224.3	225.5
Household services less rent	379.9	392.5	397.3	403.0	407.7	409.4	411.7	384.2	396.6	402.3	408.2	413.3	415.3	418.1
Transportation services	275.7	288.8	290.3	291.3	294.7	297.2	297.8	274.3	287.9	289.2	290.0	293.2	295.7	296.5
Medical care services	323.4	345.1	348.0	350.2	353.0	357.3	361.0	322.1	343.0	345.8	348.0	350.7	354.7	358.3
Other services	239.1	254.0	255.3	255.9	257.0	258.0	259.7	238.3	252.4	253.8	254.4	255.5	256.6	258.4
Special indexes:														
All items less food	274.9	281.7	282.9	286.0	289.7	291.5	292.5	275.2	281.3	282.5	285.6	289.4	291.4	292.4
All items less mortgage interest costs	260.9	267.2	267.9	270.3	273.6	275.1	275.6	261.5	267.3	267.9	270.3	273.7	275.3	275.8
Commodities less food	243.8	245.2	245.0	247.8	251.9	253.5	253.8	244.7	245.6	245.3	248.1	252.4	254.1	254.4
Nondurables less food	258.4	258.4	255.0	256.2	261.2	263.0	263.6	261.2	260.2	256.6	257.8	263.0	265.0	265.4
Nondurables less food and apparel	298.0	296.6	291.4	293.4	301.0	304.3	304.2	300.0	297.8	292.3	294.4	302.4	305.8	305.5
Nondurables	268.1	270.7	269.3	270.7	274.4	275.7	275.5	269.7	271.6	270.1	271.5	275.4	276.8	276.5
Services less rent	331.7	345.7	349.1	352.8	356.5	358.5	360.5	332.6	346.4	350.2	353.8	357.7	359.9	362.2
Services less medical care	308.8	321.1	324.0	327.5	330.7	332.5	334.1	309.4	321.6	324.9	328.3	331.7	333.6	335.6
Domestically produced farm foods	260.6	263.8	264.5	267.1	270.3	270.7	268.4	259.9	262.7	263.5	266.0	269.2	269.7	267.4
Selected beef cuts	276.7	272.0	275.1	281.6	289.1	287.4	280.8	277.2	273.3	276.4	283.1	290.6	288.8	281.9
Energy	416.1	406.1	395.7	402.1	418.6	424.5	424.5	418.9	407.9	396.9	403.1	420.4	426.5	426.1
All items less energy	265.6	273.6	275.7	278.3	280.7	282.0	282.7	264.7	272.3	274.5	277.0	279.4	280.8	281.5
All items less food and energy	261.3	269.8	272.2	274.9	277.3	278.7	279.8	260.3	268.3	270.9	273.6	276.0	277.6	278.7
Commodities less food and energy	220.9	225.3	227.2	229.9	232.1	233.1	233.6	220.2	224.5	226.4	229.1	231.3	232.4	232.8
Energy commodities	449.9	424.5	406.6	410.2	430.8	438.2	436.6	450.6	425.0	406.9	410.5	431.6	439.0	437.3
Services less energy	308.3	321.5	324.5	327.2	329.9	331.8	333.6	308.9	321.8	325.2	327.9	330.6	332.6	334.7
Purchasing power of the consumer dollar, 1967 = $1	$0.362	$0.353	$0.352	$0.348	$0.344	$0.342	$0.342	$0.362	$0.354	$0.352	$0.349	$0.345	$0.343	$0.342

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

[1967=100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981	1982						1981	1982					
	Aug.	Mar.	Apr.	May	June	July	Aug.	Aug.	Mar.	Apr.	May	June	July	Aug.
FOOD AND BEVERAGES	270.1	275.6	276.5	278.1	280.2	280.8	279.9	270.6	275.9	276.8	278.4	280.5	281.2	280.2
Food	277.4	283.0	283.9	285.5	287.8	288.5	287.4	277.7	283.1	284.1	285.7	288.0	288.6	287.5
Food at home	272.8	277.1	277.9	279.8	282.6	282.8	280.8	272.2	276.2	277.0	278.8	281.6	281.9	279.8
Cereals and bakery products	272.6	281.3	281.7	283.3	283.6	284.3	284.8	272.0	280.0	280.4	282.0	282.3	283.0	283.4
Cereals and cereal products (12/77 = 100)	149.5	153.9	153.6	154.5	154.5	154.8	154.5	151.3	154.8	154.6	155.4	155.5	155.8	155.5
Flour and prepared flour mixes (12/77 = 100)	139.6	139.2	139.7	141.8	142.1	143.5	141.6	142.0	139.6	140.1	142.1	142.5	144.0	142.1
Cereal (12/77 = 100)	154.6	165.2	165.4	165.7	166.1	166.3	166.5	156.4	167.2	167.4	167.8	168.2	168.5	168.6
Rice, pasta, and cornmeal (12/77 = 100)	151.4	151.2	149.6	150.2	149.4	148.9	149.3	153.1	152.4	150.8	151.5	150.6	150.0	150.5
Bakery products (12/77 = 100)	142.4	147.1	147.5	148.3	148.6	149.0	149.4	141.5	146.0	146.3	147.2	147.4	147.8	148.1
White bread	235.6	242.3	242.8	243.8	242.4	246.1	246.6	233.0	238.3	238.8	240.0	238.3	241.9	242.5
Other breads (12/77 = 100)	140.8	145.1	145.2	146.3	145.6	145.1	146.2	143.4	147.0	147.1	148.2	147.5	147.0	148.2
Fresh biscuits, rolls, and muffins (12/77 = 100)	143.4	148.4	147.6	149.7	149.9	148.9	150.5	141.0	144.6	143.8	146.0	146.2	145.4	146.6
Fresh cakes and cupcakes (12/77 = 100)	142.7	148.0	148.4	149.0	149.2	148.9	149.5	141.2	146.4	146.4	147.4	147.5	147.2	147.6
Cookies (12/77 = 100)	143.1	149.4	150.2	150.5	150.7	150.0	149.6	144.1	150.2	151.2	151.4	151.5	150.9	150.6
Crackers, bread, and cracker products (12/77 = 100)	130.6	135.3	137.3	139.6	140.9	141.8	141.3	130.9	136.5	138.7	141.0	142.3	143.2	142.6
Fresh sweetrolls, coffeecake, and donuts (12/77 = 100) ...	143.9	146.3	146.8	147.3	148.9	148.5	148.9	143.4	148.7	149.3	149.9	151.5	151.1	151.5
Frozen and refrigerated bakery products and fresh pies, tarts, and turnovers (12/77 = 100)	147.1	153.5	153.4	153.6	156.3	156.2	156.6	141.5	146.8	146.5	146.7	149.4	149.2	149.5
Meats, poultry, fish, and eggs	255.8	256.9	258.3	261.0	266.0	268.5	265.4	255.5	256.4	257.8	260.7	265.8	268.3	265.1
Meats, poultry, and fish	262.2	262.1	264.2	268.2	274.3	276.2	273.7	261.8	261.5	263.6	267.7	273.9	275.8	273.3
Meats	262.0	261.2	263.6	269.7	277.2	278.8	276.5	261.3	260.6	262.8	269.0	276.5	278.2	275.8
Beef and veal	275.9	271.7	274.8	281.1	288.2	286.7	280.5	275.9	272.3	275.3	281.9	289.0	287.4	280.8
Ground beef other than canned	267.4	265.8	266.9	269.4	274.6	272.5	268.1	269.4	266.9	267.9	270.7	275.9	273.9	269.0
Chuck roast	285.3	284.3	285.4	287.2	295.4	296.2	289.7	295.5	293.1	294.1	296.2	304.9	305.3	298.9
Round roast	247.2	243.0	244.9	252.4	257.0	251.8	245.0	247.3	245.9	247.9	255.9	260.1	254.7	247.9
Round steak	256.0	258.8	262.8	269.2	278.8	271.2	263.4	251.5	256.4	260.8	267.8	277.2	269.4	261.1
Sirloin steak	282.2	260.6	271.1	282.3	294.1	295.6	285.5	279.2	262.2	272.4	283.8	295.5	298.0	286.8
Other beef and veal (12/77 = 100)	164.3	161.5	163.7	169.0	173.3	173.3	169.7	162.6	159.8	162.1	167.5	171.9	171.7	168.0
Pork	235.3	239.5	241.6	249.9	259.5	265.4	268.2	236.5	238.9	241.0	249.2	258.9	264.9	267.6
Bacon	231.1	249.6	255.9	267.7	280.7	283.9	295.6	234.5	253.3	259.7	271.9	285.3	288.7	300.4
Chops	224.1	216.3	223.4	230.0	241.2	248.9	248.0	224.4	214.7	221.7	228.2	239.6	247.3	246.3
Ham other than canned (12/77 = 100)	105.3	109.2	105.4	111.1	112.6	115.3	116.8	103.7	106.5	102.8	108.3	109.6	112.4	113.8
Sausage	297.2	305.8	305.7	313.3	326.3	331.9	332.2	298.6	306.6	306.3	314.2	327.2	332.9	333.5
Canned ham	234.9	247.6	245.6	249.9	253.2	255.3	257.6	238.0	251.2	248.9	253.2	256.4	258.7	261.1
Other pork (12/77 = 100)	135.0	132.6	135.2	138.9	145.4	150.3	150.8	136.3	131.7	134.5	138.2	144.7	149.5	150.0
Other meats	261.4	262.4	262.8	264.0	268.5	272.0	272.8	259.6	261.7	261.8	263.2	267.8	271.3	272.3
Frankfurters	259.8	260.5	259.5	262.7	268.8	274.2	275.6	260.4	260.0	258.4	261.8	268.3	273.4	274.9
Bologna, liverwurst, and salami (12/77 = 100)	147.0	149.2	150.2	150.7	154.6	156.5	157.5	145.7	149.4	150.3	150.7	154.6	156.6	157.6
Other lunchmeats (12/77 = 100)	130.6	133.7	133.2	134.3	135.5	137.3	138.3	128.8	131.7	131.2	132.3	133.4	135.1	136.1
Lamb and organ meats (12/77 = 100)	146.8	141.0	142.6	141.2	143.1	143.9	142.3	148.3	144.2	145.6	144.4	146.5	147.3	145.6
Poultry	202.0	194.7	193.3	196.0	197.5	199.6	196.2	201.2	192.8	191.5	194.1	195.8	197.8	194.4
Fresh whole chicken	201.4	195.1	194.1	196.8	199.1	201.2	193.8	199.6	192.8	192.0	194.7	197.0	198.8	191.8
Fresh and frozen chicken parts (12/77 = 100)	131.8	127.5	127.6	128.3	129.3	129.4	128.2	131.6	125.9	125.9	126.5	127.5	127.9	126.5
Other poultry (12/77 = 100)	129.7	123.9	121.3	124.3	124.6	127.3	127.7	129.9	123.3	120.8	123.9	124.3	126.9	127.4
Fish and seafood	356.8	376.3	382.0	366.3	365.2	370.2	367.6	356.4	375.5	381.4	365.0	364.2	368.7	365.8
Canned fish and seafood (12/77 = 100)	139.8	141.0	141.5	139.8	139.9	140.5	139.4	138.5	140.5	140.8	139.2	139.4	139.9	138.8
Fresh and frozen fish and seafood (12/77 = 100)	133.6	144.7	147.9	139.4	138.6	141.3	140.4	134.1	144.6	148.0	138.9	138.3	140.8	139.7
Eggs	177.6	195.2	186.9	172.3	162.5	173.6	161.2	177.7	196.3	187.9	173.4	163.4	174.7	162.3
Dairy products	243.8	246.5	247.5	247.0	246.3	247.5	247.5	243.9	245.9	246.8	246.3	245.7	246.8	246.8
Fresh milk and cream (12/77 = 100)	134.5	135.3	135.9	135.7	135.2	135.6	135.4	134.3	134.8	135.3	135.1	134.7	135.1	134.8
Fresh whole milk	220.2	221.7	222.2	222.0	221.3	221.6	221.2	219.8	220.8	221.3	221.1	220.4	220.7	220.3
Other fresh milk and cream (12/77 = 100)	134.2	135.1	136.2	135.7	135.4	136.2	136.0	134.4	134.6	135.7	135.2	134.9	135.7	135.5
Processed dairy products (12/77 = 100)	142.5	144.9	145.6	145.2	144.9	145.9	146.3	143.3	145.3	145.9	145.5	145.2	146.2	146.6
Butter	246.2	250.1	250.1	251.4	250.9	251.1	252.1	248.5	252.7	252.7	253.7	253.4	253.7	254.6
Cheese (12/77 = 100)	140.8	143.3	143.7	144.0	143.2	144.2	144.8	141.5	143.6	144.0	144.3	143.6	144.5	145.1
Ice cream and related products (12/77 = 100)	147.9	149.5	150.9	148.7	149.6	150.4	150.6	147.9	148.9	150.2	147.9	148.7	149.6	149.6
Other dairy products (12/77 = 100)	135.6	139.5	139.9	139.7	138.7	141.3	140.7	137.2	140.3	140.8	140.4	139.4	142.0	141.6
Fruits and vegetables	286.1	293.1	294.0	297.9	305.6	299.7	291.4	282.5	289.1	290.3	293.6	301.0	295.3	286.7
Fresh fruits and vegetables	295.8	302.1	304.1	311.7	325.9	313.8	296.9	290.4	296.1	298.9	305.1	318.6	307.1	289.7
Fresh fruits	306.9	297.8	306.7	318.8	340.8	332.4	336.1	298.4	287.3	295.5	306.9	327.0	320.5	323.2
Apples	282.1	288.7	287.5	299.8	321.4	331.8	314.5	284.6	288.5	287.8	300.1	321.9	333.3	316.7
Bananas	245.2	263.0	268.5	261.6	267.9	245.4	233.7	239.9	261.1	266.1	259.3	265.5	243.6	231.3
Oranges	353.7	316.3	330.8	362.1	406.8	438.2	473.0	325.1	285.9	300.2	328.3	367.5	399.9	433.5
Other fresh fruits (12/77 = 100)	163.5	157.2	163.4	168.2	177.1	161.6	163.9	160.5	151.8	157.6	162.4	170.3	156.1	158.1
Fresh vegetables	285.5	306.1	301.8	305.1	311.9	296.4	260.2	283.2	304.2	302.0	303.7	311.1	295.0	259.6
Potatoes	375.1	301.0	306.1	320.3	344.9	370.9	328.1	362.8	294.8	300.8	313.6	339.7	366.0	323.4
Lettuce	290.6	270.9	355.2	291.6	269.1	254.5	246.3	290.0	271.3	358.6	293.5	270.0	253.0	247.5
Tomatoes	209.9	258.1	220.5	226.5	275.6	270.2	194.3	211.0	261.8	224.9	230.6	279.9	274.9	198.2
Other fresh vegetables (12/77 = 100)	143.6	185.0	166.3	179.3	177.5	155.6	138.3	144.1	184.0	166.7	178.6	177.0	154.8	137.8
Processed fruits and vegetables	277.9	285.8	285.5	285.4	285.9	c 286.8	288.0	276.2	283.7	283.3	283.3	283.9	284.8	285.9
Processed fruits (12/77 = 100)	143.4	149.0	148.2	148.3	148.0	148.5	148.7	143.4	148.6	147.7	147.9	147.6	148.1	148.2
Frozen fruit and fruit juices (12/77 = 100)	143.5	149.2	147.1	145.7	144.4	143.5	142.8	142.8	148.2	146.1	144.6	143.4	142.6	141.7
Fruit juices other than frozen (12/77 = 100)	147.4	152.4	151.5	152.2	151.7	152.2	153.0	147.1	151.4	150.4	151.0	150.7	151.0	151.9
Canned and dried fruits (12/77 = 100)	139.1	145.3	145.6	146.4	147.0	148.8	148.9	139.8	145.9	146.2	147.0	147.6	149.4	149.6
Processed vegetables (12/77 = 100)	135.7	138.2	138.6	138.5	139.3	139.7	140.7	134.6	137.2	137.5	137.4	138.2	138.6	139.6
Frozen vegetables (12/77 = 100)	134.9	142.0	144.0	143.9	145.6	146.7	147.7	135.7	143.4	145.3	145.2	146.9	148.0	149.0

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

[1967=100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981	1982						1981	1982					
	Aug.	Mar.	Apr.	May	June	July	Aug.	Aug.	Mar.	Apr.	May	June	July	Aug.
FOOD AND BEVERAGES — Continued														
Food — Continued														
Food at home — Continued														
Fruits and vegetables — Continued														
Cut corn and canned beans except lima (12/77=100)	137.4	141.2	140.5	140.7	141.1	141.0	143.6	135.4	138.8	137.9	138.5	138.8	138.6	141.2
Other canned and dried vegetables (12/77=100)	135.4	134.8	135.0	134.6	135.2	135.4	135.6	133.7	133.3	133.5	133.2	133.8	134.1	134.2
Other foods at home	325.1	331.7	331.6	332.6	332.6	332.2	333.3	326.1	332.6	332.6	333.5	333.5	333.1	334.0
Sugar and sweets	361.3	365.5	365.3	365.7	366.8	369.5	370.1	362.7	365.4	365.2	365.6	366.9	369.7	370.3
Candy and chewing gum (12/77=100)	146.1	150.3	150.9	150.0	150.4	150.5	150.0	147.4	150.1	150.8	149.9	150.5	150.6	150.1
Sugar and artificial sweeteners (12/77=100) ...	164.3	161.0	159.9	160.5	161.4	164.6	166.7	165.3	162.4	161.1	161.8	162.8	166.1	168.2
Other sweets (12/77=100)	145.0	147.4	147.2	148.9	148.9	149.8	149.6	142.9	145.5	145.3	147.0	146.9	147.9	147.5
Fats and oils (12/77=100)	269.2	259.6	260.4	260.6	260.7	259.3	258.3	268.7	259.7	260.4	260.6	260.7	259.3	258.2
Margarine	258.2	256.7	259.6	259.7	261.2	258.4	257.9	255.7	256.1	259.1	259.3	260.8	258.0	257.3
Nondairy substitutes and peanut butter (12/77=100) ...	179.8	156.1	157.3	156.0	156.5	154.9	154.2	178.8	154.4	155.6	154.2	154.9	153.1	152.4
Other fats, oils, and salad dressings (12/77=100) ...	129.4	129.5	129.0	129.6	129.1	129.2	128.5	129.6	130.0	129.5	130.2	129.7	129.7	129.0
Nonalcoholic beverages	413.1	424.8	424.1	425.6	424.8	422.8	423.8	415.2	426.6	426.0	427.3	426.6	424.4	425.3
Cola drinks, excluding diet cola	298.2	306.6	304.9	306.1	305.9	302.9	304.3	296.6	303.8	302.4	303.6	303.3	300.4	301.7
Carbonated drinks, including diet cola (12/77=100) ...	141.5	143.4	143.4	144.3	143.1	143.3	144.8	138.9	141.4	141.5	142.3	141.2	141.1	142.6
Roasted coffee	346.0	366.6	369.6	369.3	365.1	364.3	365.5	342.8	362.2	365.0	364.3	360.1	359.3	360.4
Freeze dried and instant coffee	333.3	343.6	343.4	344.3	344.3	344.9	344.9	333.8	343.4	343.0	343.9	343.8	344.4	344.4
Other noncarbonated drinks (12/77=100) ...	134.9	138.9	138.7	138.9	140.0	139.2	137.7	135.0	139.1	138.9	139.1	140.2	139.5	137.8
Other prepared foods	257.9	266.5	266.6	267.5	267.8	268.0	269.9	259.7	268.1	268.3	269.5	269.8	269.8	271.5
Canned and packaged soup (12/77=100) ...	133.6	135.6	135.7	135.7	136.3	136.9	137.9	134.8	137.8	137.8	137.7	138.3	138.9	140.0
Frozen prepared foods (12/77=100)	143.5	147.0	147.2	147.8	147.3	146.7	149.1	142.5	146.5	146.7	147.3	146.8	146.0	148.5
Snacks (12/77=100)	148.8	153.4	152.9	153.5	153.2	152.7	153.1	151.5	155.4	155.0	155.6	155.2	154.8	155.1
Seasonings, olives, pickles, and relish (12/77=100) ...	144.4	153.2	153.6	152.8	153.3	152.7	154.1	142.8	152.2	152.7	151.9	152.4	152.1	153.2
Other condiments (12/77=100)	142.9	148.2	148.7	150.2	150.6	151.4	151.9	145.6	149.9	150.4	151.9	152.4	153.2	153.6
Miscellaneous prepared foods (12/77=100)	142.0	147.7	147.6	148.5	148.3	149.3	150.2	142.1	147.9	147.7	148.7	148.5	149.5	150.3
Other canned and packaged prepared foods (12/77=100) ...	139.5	143.2	143.3	143.5	144.5	144.6	145.4	140.8	144.5	144.6	144.9	145.8	145.9	146.8
Food away from home	293.7	302.4	303.6	304.8	305.9	307.6	308.7	296.4	305.4	306.7	307.8	309.0	310.7	311.8
Lunch (12/77=100)	143.2	147.0	147.5	148.2	148.9	149.6	150.3	144.2	148.6	149.1	149.8	150.5	151.2	152.0
Dinner (12/77=100)	141.9	145.7	146.3	147.1	147.4	148.1	148.6	143.7	147.3	147.9	148.8	149.1	149.8	150.3
Other meals and snacks (12/77=100)	142.1	147.9	148.6	148.5	149.2	150.5	150.7	143.1	148.7	149.3	149.2	149.9	151.1	151.3
Alcoholic beverages	201.4	206.6	207.4	208.0	208.4	209.2	210.1	203.8	208.8	209.5	210.1	210.4	211.3	212.1
Alcoholic beverages at home (12/77=100)	130.6	134.0	134.6	135.0	135.0	135.5	136.1	132.4	135.4	136.0	136.2	136.3	136.9	137.4
Beer and ale	202.6	209.2	210.5	210.3	210.6	211.4	211.9	203.2	208.3	209.6	209.4	209.6	210.5	210.9
Whiskey	144.7	147.0	147.2	148.2	148.3	148.9	149.6	145.6	147.8	148.0	149.0	149.1	149.8	150.4
Wine	227.4	235.3	236.4	236.9	235.3	236.5	238.9	235.5	243.3	244.4	244.9	242.7	245.0	247.1
Other alcoholic beverages (12/77=100)	117.0	118.1	118.2	119.0	119.7	119.6	120.3	117.0	118.0	118.0	118.9	119.6	119.6	120.5
Alcoholic beverages away from home (12/77=100)	134.7	138.2	138.4	139.1	140.3	140.8	141.2	135.4	139.7	139.9	140.6	141.6	142.1	142.4
HOUSING	299.7	306.7	309.4	313.8	317.5	319.2	320.1	299.6	306.2	309.2	313.7	317.5	319.3	320.5
Shelter	322.0	327.6	331.4	336.7	340.9	342.8	344.2	323.6	328.5	332.8	338.3	342.6	344.6	346.5
Rent, residential	210.3	219.6	220.1	221.8	222.6	224.8	226.0	209.9	219.1	219.6	221.3	222.1	224.3	225.5
Other rental costs	298.5	320.1	323.7	323.6	327.3	330.0	333.9	299.0	318.9	322.8	322.6	326.3	329.4	333.3
Lodging while out of town	325.7	340.9	346.6	346.6	352.2	356.5	362.0	324.4	337.9	343.9	344.0	349.4	354.2	359.5
Tenants' insurance (12/77=100)	133.9	144.1	144.9	144.4	145.5	145.6	147.5	134.5	144.3	144.7	143.8	144.8	144.8	146.6
Homeownership	361.8	365.7	370.6	377.4	382.8	384.5	385.9	364.8	367.9	373.6	380.5	386.0	388.0	390.1
Home purchase	272.6	269.2	272.3	279.3	285.6	287.7	287.9	272.3	267.1	270.5	278.1	284.4	286.8	287.3
Financing, taxes, and insurance	488.3	500.9	508.4	516.2	521.8	524.3	527.3	495.3	507.0	516.0	523.8	529.7	532.4	536.8
Property insurance	389.0	394.1	393.6	396.7	400.6	401.5	402.5	390.5	396.5	396.0	399.2	402.7	403.7	404.6
Property taxes	205.2	216.6	217.2	218.3	218.8	219.3	221.8	207.1	218.5	219.1	220.2	220.7	221.1	223.7
Contracted mortgage interest cost	641.3	655.5	667.1	678.5	686.7	690.4	694.0	643.8	656.4	670.2	681.4	690.0	694.0	699.6
Mortgage interest rates	232.4	240.7	242.1	240.2	238.3	237.3	238.8	233.3	242.3	244.4	242.1	240.2	239.2	241.2
Maintenance and repairs	320.5	327.2	331.6	334.5	336.1	334.7	335.9	315.8	323.7	328.3	330.9	332.4	331.5	332.5
Maintenance and repair services	350.6	357.8	363.6	367.0	369.1	366.9	368.5	349.5	358.6	365.0	368.0	370.0	368.1	369.6
Maintenance and repair commodities	249.5	255.0	256.2	257.8	258.3	258.7	258.8	243.1	248.6	249.7	251.3	252.1	252.9	253.0
Paint and wallpaper, supplies, tools, and equipment (12/77=100)	146.9	151.8	153.1	154.2	153.3	153.4	154.2	139.2	144.7	145.8	147.0	146.0	146.5	147.3
Lumber, awnings, glass, and masonry (12/77=100) ...	124.2	123.9	124.5	124.5	124.7	125.0	124.1	122.0	121.2	121.9	121.9	122.1	1225	121.7
Plumbing, electrical, heating, and cooling supplies (12/77=100)	132.0	133.4	133.4	135.1	136.2	137.1	136.3	130.6	133.1	133.1	134.9	136.0	136.6	135.6
Miscellaneous supplies and equipment (12/77=100)	130.5	135.1	135.6	136.3	138.4	138.3	138.8	133.3	137.1	137.4	138.2	140.6	140.5	140.9
Fuel and other utilities	327.8	339.3	339.2	345.4	352.2	354.7	356.3	328.7	340.2	340.3	346.5	353.6	356.2	357.7
Fuels	419.5	430.5	428.2	438.0	448.4	452.0	454.0	418.7	429.9	427.8	437.4	448.3	451.9	453.8
Fuel oil, coal, and bottled gas	674.6	664.0	641.3	644.6	656.6	659.9	659.9	677.9	666.7	644.0	647.7	659.7	662.9	662.7
Fuel oil	707.3	692.3	666.2	670.6	684.8	688.6	686.8	710.2	694.3	668.4	673.3	687.5	691.1	689.1
Other fuels (6/78 = 100)	163.6	168.0	166.4	165.7	165.6	166.0	169.2	165.1	169.5	167.9	167.1	166.9	167.4	170.5
Gas (piped) and electricity	360.8	375.9	377.8	389.0	398.9	402.1	404.4	359.4	374.8	376.8	387.8	398.2	401.5	403.7
Electricity	311.9	313.3	312.8	314.9	327.5	330.5	333.7	312.1	312.3	311.8	314.4	327.7	330.8	333.7
Utility (piped) gas	416.2	458.6	465.3	494.6	497.2	500.2	500.6	411.2	456.6	463.6	490.8	493.8	496.9	497.5

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

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981	1982						1981	1982					
	Aug.	Mar.	Apr.	May	June	July	Aug.	Aug.	Mar.	Apr.	May	June	July	Aug.
HOUSING—Continued														
Fuel and other utilities—Continued														
Other utilities and public services	183.7	195.0	197.7	198.9	200.4	201.4	202.4	184.3	195.4	198.2	199.5	201.1	202.1	203.1
Telephone services	149.2	158.5	160.8	161.6	163.2	163.8	164.2	149.5	158.6	161.0	161.9	163.5	164.2	164.6
Local charges (12/77 = 100)	117.3	125.6	127.9	128.9	131.2	131.9	132.5	117.6	125.7	128.1	129.2	131.6	132.3	132.9
Interstate toll calls (12/77 = 100)	113.4	117.7	119.9	120.0	119.6	119.7	119.7	113.8	117.8	120.2	120.4	120.1	120.1	120.1
Intrastate toll calls (12/77 = 100)	101.8	109.0	108.9	109.3	109.8	110.0	110.0	101.6	108.7	108.7	109.0	109.4	109.6	109.6
Water and sewerage maintenance	299.2	316.9	320.7	323.5	324.9	327.7	331.9	301.4	319.7	323.6	326.7	328.0	330.8	334.8
Household furnishings and operations	222.9	231.6	232.6	233.4	233.7	234.1	233.4	219.8	228.0	229.1	230.0	230.4	230.9	230.0
Housefurnishings	186.2	192.7	193.8	194.7	194.7	194.7	193.3	184.5	190.4	191.7	192.5	192.6	192.7	191.3
Textile housefurnishings	203.4	217.7	218.7	220.9	220.2	218.6	220.4	207.3	219.9	221.4	223.9	223.3	221.1	222.9
Household linens (12/77 = 100)	124.6	134.7	135.8	135.4	134.6	131.9	132.9	126.8	135.6	137.0	136.8	135.9	133.3	134.1
Curtains, drapes, slipcovers, and sewing materials (12/77 = 100) .	129.1	136.7	136.9	140.1	140.1	140.8	142.2	132.1	138.7	139.1	142.8	143.0	143.2	144.7
Furniture and bedding	205.4	212.1	214.7	215.1	214.4	214.2	210.3	201.4	208.2	211.0	211.3	210.9	210.5	206.9
Bedroom furniture (12/77 = 100)	135.9	140.8	142.3	144.5	143.0	144.8	141.4	132.2	137.2	138.9	140.7	139.7	141.2	137.3
Sofas (12/77 = 100)	116.0	118.0	119.3	119.1	117.5	117.7	117.0	115.0	118.2	119.6	119.4	118.2	118.1	117.5
Living room chairs and tables (12/77 = 100) .	116.7	121.6	123.2	122.8	123.2	121.9	121.1	116.9	121.8	123.3	122.9	123.3	122.0	121.4
Other furniture (12/77 = 100)	135.9	140.5	142.3	141.6	142.3	140.9	137.1	132.2	135.8	137.9	137.0	137.7	136.3	133.3
Appliances including TV and sound equipment	147.3	150.1	150.6	151.4	151.4	151.6	151.3	146.6	149.7	150.3	151.1	151.2	151.5	151.2
Television and sound equipment (12/77 = 100) .	108.6	109.1	108.7	108.8	108.6	108.7	108.3	107.8	108.2	107.7	107.9	107.7	107.8	107.5
Television	105.0	104.7	104.2	104.3	104.4	104.0	103.9	104.2	103.5	103.0	103.0	103.1	102.7	102.7
Sound equipment (12/77 = 100)	112.8	114.0	113.7	113.9	113.5	114.0	113.3	111.9	113.2	112.8	113.0	112.7	113.2	112.6
Household appliances	174.9	180.3	182.1	183.6	183.8	184.2	184.1	174.1	180.4	182.3	183.8	184.2	184.8	184.6
Refrigerators and home freezers	175.8	183.7	184.8	186.2	187.7	187.4	187.4	178.9	189.3	190.6	191.8	193.2	192.9	192.9
Laundry equipment (12/77 = 100)	129.2	133.3	136.4	136.6	136.7	137.3	137.3	129.1	133.5	136.6	136.8	136.9	137.5	137.5
Other household appliances (12/77 = 100)	119.5	122.2	122.9	124.3	123.9	124.4	124.3	117.0	120.0	120.7	122.3	122.3	123.0	122.7
Stoves, dishwashers, vacuums, and sewing machines (12/77 = 100)	118.5	121.9	122.3	123.7	123.1	123.3	122.7	116.4	119.3	119.7	121.4	121.6	122.2	121.4
Office machines, small electric appliances, and air conditioners (12/77 = 100)	120.6	122.5	123.5	124.9	124.8	125.6	126.0	117.7	120.7	121.8	123.3	123.0	123.9	124.2
Other household equipment (12/77 = 100)	131.7	137.3	137.8	138.3	139.0	139.6	138.2	131.0	135.3	135.6	136.0	136.9	137.5	136.0
Floor and window coverings, infants', laundry, cleaning, and outdoor equipment (12/77 = 100) .	133.4	140.9	140.3	141.4	142.3	142.7	142.9	129.3	133.3	132.9	133.9	134.9	135.4	135.4
Clocks, lamps, and decor items (12/77 = 100)	125.8	129.0	130.2	131.4	132.2	132.3	129.8	122.5	125.4	126.5	127.4	128.2	128.3	125.1
Tableware, serving pieces, and nonelectric kitchenware (12/77 = 100)	138.9	143.1	145.0	144.4	145.6	145.9	143.8	137.0	139.0	140.6	139.8	141.4	141.9	140.0
Lawn equipment, power tools, and other hardware (12/77 = 100) .	124.0	132.1	130.8	132.1	131.9	133.2	132.3	128.8	137.3	136.0	137.4	137.1	138.5	137.2
Housekeeping supplies	272.0	284.2	284.9	285.5	286.5	288.4	288.7	268.6	280.4	281.2	281.8	283.1	285.0	284.9
Soaps and detergents	267.0	279.5	280.0	278.8	280.8	281.4	279.4	263.6	275.7	276.3	275.2	277.0	277.6	275.4
Other laundry and cleaning products (12/77 = 100) .	134.8	142.1	142.7	143.3	143.8	145.3	144.6	134.7	140.9	141.6	142.3	142.7	144.2	143.6
Cleansing and toilet tissue, paper towels and napkins (12/77 = 100) .	138.4	145.7	146.4	146.0	146.5	147.7	148.5	138.7	145.4	146.2	145.6	146.1	147.4	148.3
Stationery, stationery supplies, and gift wrap (12/77 = 100)	126.6	130.7	131.4	132.0	132.5	134.3	135.4	128.2	133.8	134.6	135.3	136.0	137.8	138.6
Miscellaneous household products (12/77 = 100) .	141.7	147.5	147.5	149.3	150.2	150.3	150.7	136.9	142.4	142.4	144.1	144.9	145.1	145.5
Lawn and garden supplies (12/77 = 100)	139.2	144.7	144.7	144.8	144.0	145.3	145.7	131.8	136.7	136.8	136.6	136.7	138.1	138.1
Housekeeping services	296.9	309.9	310.4	311.3	311.7	312.5	312.9	295.1	308.2	309.2	310.2	310.9	311.6	312.2
Postage	308.0	337.5	337.5	337.5	337.5	337.5	337.5	308.1	337.5	337.5	337.5	337.5	337.5	337.5
Moving, storage, freight, household laundry, and drycleaning services (12/77 = 100)	143.9	150.8	152.1	153.1	154.2	155.3	156.1	143.8	150.6	152.2	153.3	154.5	155.4	156.4
Appliance and furniture repair (12/77 = 100)	128.5	135.0	135.6	136.6	137.0	137.5	137.7	127.2	133.5	134.1	135.1	135.5	136.0	136.1
APPAREL AND UPKEEP	187.4	191.1	191.9	191.5	190.8	189.7	191.8	187.9	190.5	191.2	190.6	189.6	188.7	190.7
Apparel commodities	178.0	180.8	181.4	180.9	180.0	178.6	180.8	179.0	180.8	181.3	180.5	179.4	178.2	180.3
Apparel commodities less footwear	174.3	176.8	177.4	176.7	175.6	174.0	176.9	175.2	176.6	177.1	176.0	174.7	173.4	176.2
Men's and boys'	177.6	181.7	183.1	183.8	183.1	182.4	183.7	178.4	181.6	182.9	183.7	183.2	182.6	183.5
Men's (12/77 = 100)	111.7	114.5	115.5	115.9	115.4	114.9	115.9	112.8	114.7	115.7	116.2	115.8	115.4	116.2
Suits, sport coats, and jackets (12/77 = 100) .	105.6	107.2	107.6	108.1	107.3	105.5	108.0	99.7	100.4	101.1	101.4	100.6	99.2	101.2
Coats and jackets (12/77 = 100)	97.7	98.1	99.1	99.9	99.5	98.2	99.1	102.4	99.7	100.7	101.5	101.1	99.8	100.3
Furnishings and special clothing (12/77 = 100) .	129.5	136.8	138.2	138.7	138.0	138.7	138.4	125.3	133.1	134.5	135.3	134.7	135.3	134.9
Shirts (12/77 = 100)	117.9	119.9	121.3	121.2	121.5	121.6	121.9	122.1	122.3	123.4	123.1	123.8	123.6	123.9
Dungarees, jeans, and trousers (12/77 = 100) .	106.6	108.6	109.7	110.3	109.7	109.5	110.5	112.5	114.2	115.1	115.6	115.2	115.0	116.0
Boys' (12/77 = 100)	115.8	117.8	118.3	118.8	118.5	118.6	118.4	113.8	116.1	116.5	117.1	116.9	116.9	116.7
Coats, jackets, sweaters, and shirts (12/77 = 100) .	109.2	109.4	111.2	111.5	110.7	109.0	110.5	109.5	109.7	111.5	112.0	111.5	109.7	111.3
Furnishings (12/77 = 100)	124.3	128.7	130.3	131.2	131.9	132.1	131.1	120.3	124.7	126.0	127.2	128.0	128.2	127.2
Suits, trousers, sport coats, and jackets (12/77 = 100) .	117.5	120.1	119.0	119.6	119.4	120.7	119.5	114.7	117.8	116.8	117.3	117.1	118.3	117.1
Women's and girls'	157.8	160.3	160.9	159.1	157.3	154.6	159.2	161.2	163.0	163.4	160.8	158.4	156.2	160.9
Women's (12/77 = 100)	104.4	106.8	107.1	105.7	104.4	102.1	105.4	107.1	109.0	109.1	107.1	105.4	103.5	106.9
Coats and jackets	162.1	162.0	163.4	158.3	156.4	154.9	163.0	168.7	173.1	172.9	165.7	162.9	161.8	171.0
Dresses	166.2	163.1	166.6	162.0	160.1	152.8	158.5	153.4	148.1	151.1	147.1	145.4	138.4	145.9
Separates and sportswear (12/77 = 100) .	97.4	100.3	100.1	101.2	100.2	96.7	98.3	101.1	101.2	101.0	101.9	101.0	97.6	99.1
Underwear, nightwear, and hosiery (12/77 = 100) .	121.2	127.1	127.4	128.1	127.9	127.7	129.3	121.0	126.9	127.3	127.9	127.6	127.4	129.0
Suits (12/77 = 100)	87.0	92.7	89.4	83.4	78.6	77.6	85.6	109.8	114.1	111.0	100.6	92.7	93.1	99.8
Girls' (12/77 = 100)	107.9	105.6	106.7	106.3	105.8	106.3	108.2	107.6	106.0	106.9	106.2	105.2	105.4	107.4
Coats, jackets, dresses, and suits (12/77 = 100) .	101.6	98.2	98.8	96.9	95.1	98.8	101.4	101.5	97.2	97.6	95.0	92.4	96.0	99.4
Separates and sportswear (12/77 = 100) .	108.7	104.6	105.4	105.9	106.0	103.6	105.8	108.9	106.9	107.6	108.0	107.7	104.1	105.9
Underwear, nightwear, hosiery, and accessories (12/77 = 100) .	117.0	119.6	122.0	122.4	122.9	123.8	124.0	115.1	118.7	121.0	121.5	121.9	122.7	123.0

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

[1967 = 100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981	1982						1981	1982					
	Aug.	Mar.	Apr.	May	June	July	Aug.	Aug.	Mar.	Apr.	May	June	July	Aug.
APPAREL AND UPKEEP — Continued														
Apparel commodities — Continued														
Apparel commodities less footwear — Continued														
Infants' and toddlers'	263.6	264.7	267.0	269.0	268.7	268.8	272.4	279.3	275.4	278.2	279.3	278.2	277.8	283.0
Other apparel commodities	214.0	212.7	210.8	209.7	209.9	209.7	210.8	206.1	201.6	199.5	198.8	198.9	198.7	199.5
Sewing materials and notions (12/77 = 100)	117.5	118.1	118.5	119.3	119.2	120.0	121.5	115.3	116.5	116.9	117.7	117.6	118.5	119.6
Jewelry and luggage (12/77 = 100)	147.2	145.7	143.8	142.5	142.8	142.2	142.6	141.4	136.7	134.5	133.5	133.6	133.1	133.3
Footwear	200.0	204.9	205.6	206.5	206.6	206.4	204.4	200.8	205.2	206.1	206.9	206.7	206.7	204.1
Men's (12/77 = 100)	128.3	132.5	132.3	132.4	132.1	132.3	130.9	129.8	134.5	134.4	134.5	134.1	134.3	132.7
Boys' and girls' (12/77 = 100)	129.1	129.2	130.4	131.5	132.1	131.7	128.7	130.4	132.1	133.6	134.6	134.8	134.4	131.3
Women's (12/77 = 100)	120.6	124.7	125.1	125.8	125.8	125.6	125.4	118.9	120.8	121.1	121.6	121.6	121.5	121.1
Apparel services	260.2	271.3	273.4	274.7	275.3	276.6	277.4	258.2	269.0	271.0	272.3	273.0	274.3	275.2
Laundry and drycleaning other than coin operated (12/77 = 100)	154.7	162.4	163.5	164.4	164.8	165.4	165.6	153.9	160.9	162.0	162.8	163.3	163.8	164.1
Other apparel services (12/77 = 100)	137.2	141.1	142.5	142.9	143.1	144.1	145.0	136.5	141.5	142.7	143.1	143.4	144.6	145.5
TRANSPORTATION	283.7	285.1	282.9	285.6	292.8	296.1	296.2	285.1	286.6	284.3	287.1	294.5	297.9	298.0
Private	280.5	281.3	278.8	281.5	288.9	292.3	292.4	282.6	283.7	281.2	284.0	291.6	295.1	295.2
New cars	191.9	194.4	196.0	197.5	198.1	198.6	198.7	192.1	194.2	195.9	197.3	197.9	198.5	198.6
Used cars	266.9	280.9	285.1	291.4	298.2	302.4	304.4	266.9	280.9	285.2	291.4	298.2	302.4	304.4
Gasoline	411.7	383.9	366.7	370.4	392.3	400.3	398.4	412.9	385.4	367.9	371.7	393.8	401.6	399.7
Automobile maintenance and repair	295.5	310.2	311.9	313.6	316.0	318.0	319.2	296.1	311.1	312.8	314.4	316.8	318.7	320.0
Body work (12/77 = 100)	145.8	154.5	155.0	155.7	156.3	157.5	158.2	145.4	152.7	153.3	154.0	154.7	156.0	156.8
Automobile drive train, brake, and miscellaneous mechanical repair (12/77 = 100)	140.9	148.7	149.5	150.8	151.6	151.9	152.5	142.6	152.8	153.7	154.9	155.7	156.1	156.6
Maintenance and servicing (12/77 = 100)	137.8	143.9	144.5	145.0	146.8	147.9	148.5	138.2	143.4	144.0	144.4	146.2	147.3	147.8
Power plant repair (12/77 = 100)	141.2	148.0	149.1	150.1	150.8	151.7	152.4	140.5	147.5	148.6	149.6	150.3	151.2	151.9
Other private transportation	243.0	254.5	255.1	255.7	258.7	260.8	260.8	245.6	257.8	258.2	258.8	261.8	264.0	263.9
Other private transportation commodities	212.1	215.6	214.9	216.9	217.5	216.3	214.8	213.4	218.2	217.3	219.4	220.0	218.8	217.1
Motor oil, coolant, and other products (12/77 = 100)	146.8	150.2	150.7	149.9	150.7	151.5	153.2	144.1	148.7	149.2	148.4	149.0	150.3	151.8
Automobile parts and equipment (12/77 = 100)	135.7	137.9	137.2	138.8	139.2	138.2	136.8	137.0	139.9	139.2	140.9	141.2	140.1	138.6
Tires	189.3	191.7	190.1	192.3	192.8	191.8	189.5	191.5	195.5	193.7	196.0	196.4	195.5	193.0
Other parts and equipment (12/77 = 100)	132.4	135.7	136.2	138.0	138.3	136.6	135.8	132.9	135.9	136.6	138.4	138.6	136.8	136.0
Other private transportation services	253.6	267.2	268.2	268.4	272.2	275.1	275.5	256.6	270.8	271.6	271.8	275.5	278.5	278.9
Automobile insurance	260.3	269.8	270.4	271.6	274.0	275.4	275.8	260.1	269.6	270.2	271.3	273.5	274.9	275.2
Automobile finance charges (12/77 = 100)	177.3	188.9	187.2	186.3	192.0	193.6	193.5	176.3	188.2	186.7	185.9	191.2	192.6	192.9
Automobile rental, registration, and other fees (12/77 = 100)	119.5	129.7	133.3	133.3	133.3	137.4	138.0	119.5	130.1	133.7	133.7	133.8	138.4	138.8
State registration	147.9	168.5	174.2	174.2	174.3	183.6	183.8	148.0	167.8	173.8	173.8	173.9	183.2	183.4
Drivers' licenses (12/77 = 100)	106.2	122.9	123.0	127.7	127.7	132.8	132.8	105.9	123.0	123.0	127.9	127.9	133.1	133.1
Vehicle inspection (12/77 = 100)	128.7	129.3	129.0	126.7	126.7	128.5	128.5	129.4	130.6	130.4	128.3	128.3	129.9	129.9
Other vehicle-related fees (12/77 = 100)	140.0	145.3	149.5	149.2	149.3	151.0	151.9	145.8	152.5	156.4	156.2	156.3	158.7	159.4
Public	326.5	336.7	339.3	342.1	345.6	347.2	348.1	320.9	331.0	333.3	335.1	337.9	339.8	341.0
Airline fare	371.4	379.0	382.7	388.9	396.0	397.4	397.5	370.0	376.3	379.8	385.2	392.4	393.2	393.5
Intercity bus fare	347.5	365.6	367.0	366.0	363.7	368.3	370.5	347.3	367.0	368.7	367.5	365.4	370.6	372.3
Intracity mass transit	294.0	306.6	308.1	308.3	309.2	311.0	312.8	293.9	305.7	307.2	307.1	307.9	310.3	312.3
Taxi fare	288.1	297.2	297.6	297.6	298.0	299.3	299.7	296.7	306.6	307.3	307.2	307.6	308.7	309.3
Intercity train fare	304.6	314.1	332.1	337.9	338.2	338.4	338.6	305.0	314.5	332.1	337.9	338.2	338.4	338.6
MEDICAL CARE	299.3	318.8	321.7	323.8	326.4	330.0	333.3	298.6	317.4	320.2	322.3	324.8	328.1	331.3
Medical care commodities	189.4	200.0	202.4	204.1	205.6	206.5	208.2	190.6	200.6	203.0	204.8	206.3	207.1	208.8
Prescription drugs	175.4	186.1	188.8	190.4	191.8	193.4	195.6	176.5	187.0	189.7	191.4	192.7	194.4	196.6
Anti-infective drugs (12/77 = 100)	134.8	139.3	140.9	142.5	143.3	144.2	146.0	137.0	141.1	142.5	144.1	145.1	146.0	147.5
Tranquilizers and sedatives (12/77 = 100)	139.6	148.6	152.0	153.8	154.9	156.1	157.6	138.8	148.3	151.8	153.8	154.7	155.8	157.4
Circulatories and diuretics (12/77 = 100)	127.6	135.7	136.7	137.0	138.4	139.3	140.7	128.6	135.6	136.6	136.8	138.2	139.1	140.6
Hormones, diabetic drugs, biologicals, and prescription medical supplies (12/77 = 100)	160.4	170.8	173.3	175.4	177.2	179.6	181.6	160.3	172.0	174.6	176.9	178.6	181.1	183.1
Pain and symptom control drugs (12/77 = 100)	140.2	150.8	153.1	153.7	154.6	155.4	157.6	142.7	152.3	154.6	155.2	156.0	157.1	159.3
Supplements, cough and cold preparations, and respiratory agents (12/77 = 100)	133.1	142.7	144.7	145.9	146.3	147.9	149.6	133.9	142.7	144.8	146.0	146.4	148.1	149.8
Nonprescription drugs and medical supplies (12/77 = 100)	135.6	142.5	143.9	145.1	146.3	146.4	147.2	136.7	143.2	144.6	145.9	147.1	147.1	147.9
Eyeglasses (12/77 = 100)	126.3	129.5	130.1	130.9	131.6	131.6	131.6	125.3	128.1	128.7	129.7	130.4	130.4	130.3
Internal and respiratory over-the-counter drugs	215.5	228.1	231.1	233.4	235.2	234.9	236.6	217.5	229.6	232.5	235.0	236.8	236.2	237.9
Nonprescription medical equipment and supplies (12/77 = 100)	130.4	138.1	138.9	139.5	141.1	142.2	142.9	132.3	138.8	139.7	140.4	142.0	143.2	144.2
Medical care services	323.4	345.1	348.0	350.2	353.0	357.3	361.0	322.1	343.0	345.8	348.0	350.7	354.7	358.3
Professional services	282.9	295.8	297.8	299.2	301.2	302.8	304.4	282.7	295.9	297.9	299.3	301.3	302.9	304.6
Physicians' services	302.7	320.3	322.2	324.0	326.4	328.7	330.4	306.7	323.2	325.2	327.0	329.4	331.6	333.5
Dental services	269.9	278.6	281.1	282.1	283.9	284.8	286.4	266.6	276.6	279.2	280.3	282.1	282.9	284.4
Other professional services (12/77 = 100)	137.3	142.4	142.5	143.4	143.8	144.8	145.6	133.6	139.4	139.4	140.2	140.7	141.5	142.5
Other medical care services	372.5	404.7	408.7	411.9	415.7	423.2	429.4	370.6	401.6	405.4	408.5	412.1	419.4	425.4
Hospital and other medical services (12/77 = 100)	154.7	168.5	169.8	170.6	171.6	174.7	177.1	153.1	166.9	168.3	169.1	170.0	172.9	175.2
Hospital room	489.4	538.5	542.2	543.8	546.8	557.8	565.5	482.6	531.0	535.2	536.7	539.4	549.7	557.6
Other hospital and medical care services (12/77 = 100)	152.9	165.2	166.4	167.6	168.5	171.2	173.6	151.8	164.2	165.5	166.6	167.5	170.0	172.2

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

[1967=100 unless otherwise specified]

General summary	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981	1982						1981	1982					
	Aug.	Mar.	Apr.	May.	June	July	Aug.	Aug.	Mar.	Apr.	May	June	July	Aug.
ENTERTAINMENT	222.3	232.8	233.9	234.4	235.6	236.6	237.4	219.9	229.5	230.5	231.1	232.3	233.5	233.9
Entertainment commodities	226.5	236.6	238.0	238.8	239.6	241.1	240.5	222.2	230.8	232.0	232.8	233.8	235.5	234.4
Reading materials (12/77 = 100)	136.0	146.1	146.8	148.5	149.4	150.4	149.4	135.9	145.3	146.1	147.7	148.6	149.7	148.9
Newspapers	265.0	276.4	280.1	281.6	283.9	285.9	286.3	265.4	276.0	279.7	281.2	283.4	285.6	286.0
Magazines, periodicals, and books (12/77 = 100)	137.2	152.4	151.6	154.4	155.0	156.1	153.8	137.1	152.2	151.4	154.2	154.8	156.0	153.6
Sporting goods and equipment (12/77 = 100)	127.2	132.3	132.9	132.8	132.7	132.8	133.2	120.8	124.3	124.7	124.9	125.3	125.7	124.9
Sport vehicles (12/77 = 100)	128.6	135.4	136.1	135.4	135.7	135.4	135.7	118.3	122.5	122.8	122.6	123.9	124.1	122.4
Indoor and warm weather sport equipment (12/77 = 100)	118.2	119.9	120.4	121.0	119.6	120.3	119.7	116.7	118.1	118.6	119.2	117.1	118.0	117.5
Bicycles	192.2	197.6	198.9	199.4	197.6	198.3	199.4	193.5	198.9	200.2	200.7	198.8	199.4	200.4
Other sporting goods and equipment (12/77 = 100)	124.1	125.6	126.3	127.6	127.9	129.4	130.3	124.9	126.0	126.5	127.9	128.3	129.8	130.9
Toys, hobbies, and other entertainment (12/77 = 100)	130.5	134.5	135.4	135.5	136.1	137.3	136.9	129.6	133.5	134.3	134.4	134.9	136.1	135.7
Toys, hobbies, and music equipment (12/77 = 100)	129.3	133.4	134.1	134.8	135.9	137.2	136.4	126.6	130.2	130.7	131.4	132.4	133.7	132.8
Photographic supplies and equipment (12/77 = 100)	126.0	128.3	129.8	130.0	130.3	130.8	130.2	127.1	129.5	131.0	131.2	131.5	131.9	131.4
Pet supplies and expenses (12/77 = 100)	136.2	140.8	141.9	141.0	140.6	142.0	142.5	136.6	141.7	142.7	141.8	141.5	143.0	143.6
Entertainment services	216.7	227.8	228.5	228.7	230.5	230.8	233.5	217.0	228.4	229.2	229.2	230.9	231.3	234.2
Fees for participant sports (12/77 = 100)	132.0	141.9	142.0	141.6	142.5	141.8	143.4	132.4	143.5	143.7	142.9	143.8	143.0	144.8
Admissions (12/77 = 100)	128.1	131.2	132.2	133.0	133.5	135.5	137.4	126.9	130.3	131.2	132.1	132.6	134.6	136.5
Other entertainment services (12/77 = 100)	121.7	125.1	125.2	125.7	127.9	127.8	128.3	123.1	125.9	125.9	126.4	128.7	128.8	129.2
OTHER GOODS AND SERVICES	235.6	252.2	253.8	255.0	255.8	257.2	258.3	233.5	249.3	250.9	252.4	253.1	254.5	255.7
Tobacco products	219.9	234.1	235.1	237.4	237.8	239.2	240.1	219.1	233.2	234.0	236.6	237.0	238.3	239.3
Cigarettes	222.2	237.3	238.0	240.4	240.7	242.2	243.1	221.4	236.3	236.9	239.6	239.9	241.3	242.3
Other tobacco products and smoking accessories (12/77 = 100)	132.9	138.1	139.9	141.0	141.8	142.1	142.4	133.9	138.2	140.1	141.1	142.0	142.2	142.5
Personal care	235.1	243.7	245.9	246.5	247.8	249.4	250.6	232.4	241.8	244.1	244.7	246.0	247.5	248.8
Toilet goods and personal care appliances	230.1	240.6	243.8	244.5	246.3	247.7	249.5	229.4	241.5	244.7	245.4	247.0	248.6	250.5
Products for the hair, hairpieces, and wigs (12/77 = 100)	134.1	140.8	142.9	142.1	143.2	145.0	145.0	132.5	140.0	142.3	141.7	142.6	144.2	144.4
Dental and shaving products (12/77 = 100)	140.0	148.0	149.0	150.1	150.5	150.9	153.1	137.6	146.6	147.6	148.6	148.9	149.5	151.6
Cosmetics, bath and nail preparations, manicure and eye makeup implements (12/77 = 100)	128.9	135.1	136.5	137.6	139.6	139.9	141.3	128.9	136.1	137.5	138.5	140.1	140.5	142.0
Other toilet goods and small personal care appliances (12/77 = 100)	133.9	137.4	140.3	140.5	140.8	141.8	142.5	136.4	140.7	143.5	144.0	144.4	145.4	146.2
Personal care services	240.3	247.3	248.7	249.2	250.1	251.8	252.5	235.7	242.6	244.0	244.4	245.4	246.9	247.6
Beauty parlor services for women	241.9	248.9	250.7	251.3	252.3	254.4	255.0	235.7	242.5	244.3	245.0	245.9	247.9	248.7
Haircuts and other barber shop services for men (12/77 = 100)	134.4	138.4	138.8	138.9	139.4	139.8	140.2	133.3	137.2	137.6	137.7	138.2	138.5	139.0
Personal and educational expenses	260.4	290.4	291.9	292.8	293.3	294.5	295.8	261.7	291.7	293.5	294.6	295.2	296.4	297.9
Schoolbooks and supplies	231.4	263.3	263.8	264.2	264.6	264.8	265.3	235.2	267.5	268.0	268.4	268.8	269.0	269.6
Personal and educational services	267.2	297.1	298.7	299.8	300.3	301.7	303.1	268.4	298.0	300.0	301.4	302.0	303.4	305.1
Tuition and other school fees	134.2	151.1	151.4	151.4	151.5	152.0	152.6	134.7	151.7	152.0	152.0	152.1	152.5	153.2
College tuition (12/77 = 100)	133.2	150.7	151.0	151.0	151.2	151.8	151.9	133.1	150.9	151.3	151.3	151.4	152.0	152.0
Elementary and high school tuition (12/77 = 100)	137.8	152.2	152.2	152.2	152.2	152.2	154.6	138.7	152.9	152.9	152.9	152.9	152.9	155.6
Personal expenses (12/77 = 100)	148.7	157.4	160.9	163.6	164.5	166.0	167.4	147.6	156.7	160.5	163.6	164.6	166.1	167.6
Special indexes:														
Gasoline, motor oil, coolant, and other products	405.9	379.3	362.6	366.1	387.3	395.0	393.2	406.9	380.6	363.7	367.2	388.6	396.2	394.4
Insurance and finance	408.1	420.9	426.3	431.5	436.5	439.1	441.3	407.3	419.9	425.9	430.9	436.0	438.8	441.7
Utilities and public transportation	289.7	302.7	305.1	311.0	316.6	318.7	320.3	288.5	301.5	304.0	309.8	315.6	317.8	319.4
Housekeeping and home maintenance services	334.0	344.0	347.5	349.8	351.2	350.3	351.4	333.0	344.0	348.2	350.4	351.8	351.0	352.2

c= corrected.

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

[December 1977 = 100]

Category and group	Size class A (1.25 million or more) 1982			Size class B (385,000–1.250 million) 1982			Size class C (75,000–385,000) 1982			Size class D (75,000 or less) 1982		
	Apr.	June	Aug.	Apr.	June	Aug.	Apr.	June	Aug.	Apr.	June	Aug.
Northeast												
EXPENDITURE CATEGORY												
All items	143.6	147.7	149.0	150.0	155.5	155.8	158.6	163.5	161.2	151.9	156.9	155.3
Food and beverages	143.7	145.9	144.9	142.2	144.1	143.4	147.4	148.8	148.9	140.4	142.9	142.9
Housing	144.5	151.6	153.3	155.3	165.2	164.5	173.3	182.1	174.5	160.5	169.3	163.7
Apparel and upkeep	119.1	118.6	119.6	122.5	122.8	122.4	127.4	128.3	128.4	125.1	123.4	124.8
Transportation	153.7	157.2	159.4	160.0	164.6	166.5	158.6	162.2	164.7	158.1	161.2	163.7
Medical care	146.4	147.5	150.0	148.9	150.2	156.1	150.4	152.7	157.2	151.5	155.4	156.1
Entertainment	135.5	136.5	139.7	136.2	137.5	137.4	135.8	136.4	136.8	139.0	141.1	143.8
Other goods and services	139.0	139.8	141.7	141.1	142.1	143.2	145.3	146.7	148.1	142.9	144.0	144.6
COMMODITY AND SERVICE GROUP												
Commodities	140.8	144.6	145.3	146.6	151.5	151.6	149.6	153.8	152.3	146.5	150.6	149.8
Commodities less food and beverages	139.0	143.8	145.5	148.7	155.1	155.6	150.6	156.2	153.9	149.4	154.3	153.1
Services	147.4	151.8	153.8	155.4	161.9	162.4	173.4	179.1	175.6	160.4	166.8	163.8
North Central Region												
EXPENDITURE CATEGORY												
All items	155.2	159.6	162.2	155.1	155.3	157.0	151.2	155.2	158.9	153.3	156.4	160.2
Food and beverages	141.9	144.1	143.7	141.7	142.8	142.7	143.1	145.0	144.9	146.2	148.7	149.2
Housing	168.8	175.1	179.8	167.2	163.3	165.6	157.2	162.1	169.4	160.7	164.0	171.4
Apparel and upkeep	114.8	114.0	117.0	122.7	123.0	124.1	125.8	124.7	126.7	123.5	120.5	120.1
Transportation	158.7	165.1	166.1	156.9	163.2	165.0	158.4	165.7	166.7	157.2	163.1	164.1
Medical care	150.9	153.0	155.8	152.8	155.2	161.2	153.8	155.6	157.7	157.0	158.3	161.0
Entertainment	137.0	137.1	138.8	130.3	129.5	131.7	138.1	139.2	139.9	130.9	131.5	131.4
Other goods and services	140.3	141.4	142.3	146.5	152.5	153.3	139.0	141.2	142.8	146.4	148.3	150.2
COMMODITY AND SERVICE GROUP												
Commodities	145.4	149.4	150.9	146.4	148.5	148.8	144.3	148.8	150.8	143.7	147.9	149.1
Commodities less food and beverages	147.0	151.9	154.2	148.3	150.9	151.3	144.8	150.5	153.4	142.6	147.6	149.0
Services	169.8	174.8	179.0	169.3	166.2	170.3	162.4	165.6	172.0	168.7	169.8	177.8
South												
EXPENDITURE CATEGORY												
All items	152.9	156.3	156.9	155.7	158.4	159.1	152.3	157.6	158.6	153.5	156.5	158.8
Food and beverages	145.0	146.7	147.2	144.9	146.9	146.5	144.0	146.0	146.0	145.9	147.7	147.5
Housing	161.1	165.2	165.0	165.2	167.2	167.9	159.1	167.0	167.8	161.5	164.6	168.4
Apparel and upkeep	125.6	124.9	124.0	124.3	123.6	122.6	120.2	118.6	121.0	111.1	109.4	107.9
Transportation	157.5	163.4	165.3	159.7	167.0	168.6	157.1	165.1	166.4	155.8	163.3	165.6
Medical care	149.5	152.8	156.2	152.3	154.5	157.3	160.1	162.5	166.2	165.1	166.6	169.3
Entertainment	130.1	132.0	131.7	141.2	143.1	145.0	141.1	142.7	142.1	145.7	145.2	148.1
Other goods and services	142.8	144.1	145.6	142.4	143.3	143.6	143.7	144.5	145.2	150.2	150.4	152.3
COMMODITY AND SERVICE GROUP												
Commodities	146.3	149.1	149.7	147.6	150.9	150.9	144.3	149.2	149.6	146.0	149.7	149.6
Commodities less food and beverages	146.9	150.1	150.8	148.8	152.6	152.8	144.5	150.6	151.2	146.0	150.5	150.5
Services	162.1	166.5	166.9	167.8	169.8	171.5	164.5	170.6	172.4	164.8	166.8	172.6
West												
EXPENDITURE CATEGORY												
All items	158.5	160.8	160.3	157.0	158.6	159.9	151.1	149.7	153.3	157.9	159.9	158.5
Food and beverages	144.5	146.4	147.5	147.6	148.9	148.6	143.5	145.1	144.9	148.5	149.9	150.6
Housing	168.1	170.1	167.7	164.8	165.6	166.6	156.3	150.3	155.6	163.5	165.5	160.5
Apparel and upkeep	120.6	120.0	119.8	126.6	125.2	124.9	119.7	122.3	122.8	140.4	140.5	138.5
Transportation	162.9	167.7	169.9	161.7	165.9	169.7	158.3	163.5	167.0	160.5	162.8	166.2
Medical care	160.7	164.4	167.1	156.0	159.5	163.3	157.3	159.6	167.0	162.4	166.2	168.5
Entertainment	137.7	138.5	135.8	136.8	139.4	141.0	133.9	134.2	135.7	148.9	150.6	153.1
Other goods and services	147.5	147.0	149.3	148.9	149.1	149.8	139.5	139.9	141.7	149.8	153.3	154.4
COMMODITY AND SERVICE GROUP												
Commodities	145.5	147.8	148.8	148.1	149.5	151.0	146.4	147.5	149.9	148.9	151.3	149.2
Commodities less food and beverages	145.9	148.4	149.4	148.3	149.7	152.1	147.5	148.5	152.0	149.1	152.0	148.7
Services	175.9	178.1	175.5	169.3	171.1	172.1	157.9	152.8	158.1	171.2	172.5	172.1

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

[1967=100 unless otherwise specified]

Area[1]	All Urban Consumers							Urban Wage Earners and Clerical Workers (revised)						
	1981	1982						1981	1982					
	Aug.	Mar.	Apr.	May	June	July	Aug.	Aug.	Mar.	Apr.	May	June	July	Aug.
U.S. city average[2]	276.5	283.1	284.3	287.1	290.6	292.2	292.8	276.5	282.5	283.7	286.5	290.1	291.8	292.4
Anchorage, Alaska (10/67=100)	...	260.0	...	263.8	...	263.6	...	...	254.5	...	258.0	...	259.1	...
Atlanta, Ga.	276.1	...	280.2	...	291.1	...	295.6	278.1	...	282.9	...	282.9	...	297.1
Baltimore, Md.	...	281.9	...	283.6	...	286.1	...	...	282.2	...	283.7	...	287.0	...
Boston, Mass.	...	269.8	...	272.5	...	279.2	...	...	269.8	...	272.0	...	278.7	...
Buffalo, N.Y.	260.3	...	258.3	...	265.8	...	267.7	259.4	...	256.4	...	264.1	...	265.5
Chicago, Ill.-Northwestern Ind.	275.8	276.4	280.2	287.7	291.8	293.1	293.2	274.6	276.5	280.0	287.0	291.5	292.7	292.5
Cincinnati, Ohio-Ky.-Ind.	...	284.9	...	288.7	...	293.3	...	...	287.2	...	291.2	...	295.9	...
Cleveland, Ohio	284.4	...	286.5	...	297.8	...	312.2	283.0	...	285.7	...	297.0	...	310.6
Dallas-Ft. Worth, Tex.	288.2	...	297.2	...	304.8	...	304.3	285.1	...	292.7	...	300.5	...	300.2
Denver-Boulder, Colo.	...	309.2	...	313.4	...	319.9	...	...	315.0	...	319.5	...	326.3	...
Detroit, Mich.	283.5	278.2	283.7	285.9	289.1	292.4	292.7	279.1	275.1	280.3	282.7	286.0	289.3	289.3
Honolulu, Hawaii	256.6	...	263.8	...	269.5	...	269.9	256.6	...	264.7	...	269.5	...	270.1
Houston, Tex.	294.7	...	304.9	...	313.9	...	318.6	291.8	...	302.1	...	310.9	...	315.3
Kansas City, Mo.-Kansas	271.3	...	274.0	...	281.6	...	285.0	270.2	...	272.1	...	280.1	...	283.6
Los Angeles-Long Beach, Anaheim, Calif.	274.8	286.6	286.8	287.1	290.1	289.3	289.1	278.6	290.4	290.5	290.6	293.9	293.0	292.8
Miami, Fla. (11/77=100)	...	155.1	...	155.7	...	155.1	...	...	156.4	...	157.0	...	156.9	...
Milwaukee, Wis.	...	289.3	...	292.9	...	296.5	...	...	292.5	...	296.0	...	299.6	...
Minneapolis-St. Paul, Minn.-Wis.	286.6	...	301.7	...	304.1	...	313.8	287.0	...	301.2	...	303.8	...	313.3
New York, N.Y.-Northeastern N.J.	264.8	267.4	268.2	270.9	276.7	277.3	278.5	264.0	265.9	266.5	269.4	275.3	276.1	277.1
Northeast, Pa. (Scranton)	...	267.2	...	270.2	...	275.1	...	...	268.4	...	272.1	...	277.3	...
Philadelphia, Pa.-N.J.	270.5	274.7	275.1	275.1	279.7	281.1	281.3	271.6	274.3	274.5	274.7	279.1	280.9	280.7
Pittsburgh, Pa.	277.7	...	275.3	...	285.1	...	291.4	278.1	...	276.7	...	285.9	...	291.8
Portland, Oreg.-Wash.	...	286.7	...	282.1	...	292.5	...	...	283.9	...	279.7	...	290.6	...
St. Louis, Mo.-Ill.	...	280.7	...	285.7	...	290.2	...	...	279.3	...	284.5	...	289.2	...
San Diego, Calif.	...	319.0	...	329.2	...	334.8	...	...	313.9	...	323.3	...	329.4	...
San Francisco-Oakland, Calif.	287.9	...	298.8	...	304.6	...	304.3	287.2	...	297.8	...	303.4	...	302.8
Seattle-Everett, Wash.	...	293.4	...	301.2	...	296.6	...	...	289.6	...	297.1	...	292.9	...
Washington, D.C.-Md.-Va.	...	278.8	...	278.4	...	281.3	...	...	283.8	...	283.3	...	286.3	...

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

21. Producer Price Indexes, by stage of processing

[1967=100]

Commodity grouping	Annual average 1981	1981 Sept.	Oct.	Nov.	Dec.	1982 Jan.	Feb.	Mar.	Apr.	May [1]	June	July	Aug.	Sept.
FINISHED GOODS														
Finished goods	269.8	271.5	274.3	274.7	275.4	277.9	277.9	277.3	277.3	ʳ277.8	279.9	281.7	282.4	281.4
Finished consumer goods	271.3	273.1	275.1	275.2	275.8	278.3	278.6	277.7	277.3	ʳ277.7	280.0	282.0	282.7	282.0
Finished consumer foods	253.6	256.2	254.0	252.7	252.9	256.4	258.2	257.1	260.0	262.3	263.4	260.7	259.8	259.9
Crude	263.8	253.5	253.8	260.0	273.9	280.6	282.5	263.3	266.6	ʳ259.9	254.3	240.6	238.6	227.8
Processed	250.6	254.4	252.0	249.9	249.0	252.1	254.0	254.5	257.3	ʳ260.3	262.0	260.4	259.6	260.6
Nondurable goods less foods	319.6	324.2	324.3	325.4	326.3	329.3	330.3	328.8	325.7	ʳ324.3	328.1	334.7	336.7	338.4
Durable goods	218.6	215.8	224.5	224.7	225.4	226.2	224.0	223.9	224.1	ʳ225.0	226.2	227.0	227.7	223.2
Consumer nondurable goods less food and energy	208.8	211.8	212.6	213.6	213.9	217.4	219.6	220.5	222.3	ʳ223.1	222.9	223.3	224.0	225.4
Capital equipment	264.3	265.3	271.5	273.0	274.1	276.2	275.0	275.8	277.2	ʳ278.1	279.6	280.9	281.4	279.5
INTERMEDIATE MATERIALS														
Intermediate materials, supplies, and components	306.0	309.7	309.4	309.0	309.4	311.0	311.1	310.6	309.9	309.8	310.0	311.4	311.0	310.7
Materials and components for manufacturing	286.1	290.2	290.2	289.5	289.3	290.4	290.9	290.4	290.6	ʳ291.4	290.0	289.6	289.1	290.2
Materials for food manufacturing	260.4	254.6	250.9	246.8	245.6	250.7	252.8	252.0	254.4	260.0	260.9	260.0	258.3	257.6
Materials for nondurable manufacturing	285.8	291.2	290.9	289.4	288.8	289.0	289.3	288.8	287.6	ʳ287.6	285.8	283.6	282.9	282.4
Materials for durable manufacturing	312.1	317.1	316.7	314.9	314.0	313.6	313.1	310.9	311.0	ʳ311.0	307.3	308.2	307.2	310.2
Components for manufacturing	259.3	263.8	265.1	266.9	267.8	269.8	270.9	271.8	272.6	ʳ273.6	273.9	274.2	274.6	276.1
Materials and components for construction	287.6	290.0	290.1	290.2	291.1	292.0	293.0	293.3	294.0	ʳ293.7	294.2	294.0	293.3	293.4
Processed fuels and lubricants	595.4	601.4	596.9	595.1	598.1	604.4	596.8	593.0	579.9	ʳ570.9	581.2	601.6	603.8	593.2
Manufacturing industries	498.6	500.5	497.5	496.4	499.0	505.9	497.8	496.1	487.5	ʳ481.4	492.0	508.4	511.0	497.4
Nonmanufacturing industries	680.8	690.5	684.7	682.2	685.6	691.3	684.2	678.3	661.1	ʳ649.5	659.3	683.4	685.2	677.5
Containers	276.1	280.6	280.9	280.6	280.2	282.5	285.5	286.3	287.0	ʳ287.0	286.7	286.4	285.6	285.5
Supplies	263.8	266.1	266.6	267.2	268.3	269.8	270.4	270.6	272.1	ʳ273.4	273.6	273.5	272.9	272.5
Manufacturing industries	253.1	256.8	258.2	259.2	261.0	262.6	263.3	264.5	265.3	ʳ266.7	267.3	267.3	267.1	267.3
Nonmanufacturing industries	269.6	271.1	271.2	271.6	272.4	273.8	274.4	274.1	276.0	277.2	277.1	277.0	276.2	275.5
Feeds	230.4	221.3	215.9	212.0	214.6	214.8	212.0	208.1	213.1	214.2	213.1	211.1	203.7	198.4
Other supplies	276.4	280.7	282.3	283.7	284.1	285.7	287.3	287.9	288.9	ʳ290.1	290.4	290.7	291.3	291.5
CRUDE MATERIALS														
Crude materials for further processing	329.0	327.4	319.9	313.9	311.5	318.4	321.6	320.0	322.6	ʳ328.3	325.7	323.4	320.5	316.3
Foodstuffs and feedstuffs	257.4	253.4	245.7	238.3	233.7	242.6	248.3	247.9	254.4	ʳ262.6	259.8	255.5	250.7	242.9
Nonfood materials	482.3	486.0	479.2	476.3	478.6	481.5	479.3	475.2	469.9	ʳ470.2	467.9	470.0	471.1	474.3
Nonfood materials except fuel	413.7	410.2	404.1	397.8	396.2	399.5	394.8	387.1	378.8	376.6	370.0	369.1	369.6	369.6
Manufacturing industries	429.4	425.4	418.6	411.7	409.8	413.2	407.5	398.4	389.0	ʳ386.3	378.9	378.4	378.9	379.1
Construction	261.8	263.6	264.7	264.8	265.2	267.6	270.5	273.2	273.3	ʳ274.5	273.7	270.4	270.7	269.1
Crude fuel	751.2	788.7	779.0	792.5	813.0	812.9	824.5	839.7	851.2	ʳ864.8	885.2	903.1	906.9	926.3
Manufacturing industries	864.9	911.4	898.4	915.8	942.5	940.3	954.4	974.7	989.1	ʳ1,006.7	1,033.6	1,056.0	1,060.9	1,086.1
Nonmanufacturing industries	674.0	704.8	697.8	708.2	724.0	725.6	735.4	746.6	755.8	ʳ766.4	781.7	796.0	798.9	813.9
SPECIAL GROUPINGS														
Finished goods excluding foods	273.3	274.7	279.1	280.0	280.9	283.0	282.4	281.9	281.1	ʳ281.0	283.4	286.7	287.9	286.6
Finished consumer goods excluding foods	276.5	277.9	281.6	282.4	283.2	285.2	284.9	284.0	282.3	ʳ281.8	284.6	288.7	290.1	289.1
Finished consumer goods less energy	233.6	234.9	237.2	237.2	237.6	240.5	241.3	241.3	243.0	ʳ244.3	244.9	244.5	244.7	243.8
Intermediate materials less foods and feeds	310.1	314.6	314.6	314.5	314.9	316.4	316.4	316.0	315.1	314.6	314.8	316.4	316.3	316.0
Intermediate materials less energy	285.2	288.7	288.8	288.5	288.7	289.9	290.7	290.5	291.0	ʳ291.6	290.9	290.6	290.0	290.6
Intermediate foods and feeds	250.3	243.5	239.3	235.2	235.2	238.8	239.4	237.7	240.9	245.0	245.3	244.1	240.6	238.4
Crude materials less agricultural products	545.6	551.4	543.4	540.7	543.5	546.1	543.9	538.4	531.6	ʳ531.5	529.4	531.8	532.2	536.2
Crude materials less energy	254.0	250.4	243.2	235.8	231.6	239.1	243.4	242.8	247.3	ʳ252.8	248.6	245.0	241.5	235.6

[1] Data for May 1982 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

r=revised.

22. Producer Price Indexes, by commodity groupings

[1967=100 unless otherwise specified]

Code	Commodity group and subgroup	Annual average 1981	1981 Sept.	Oct.	Nov.	Dec.	1982 Jan.	Feb.	Mar.	Apr.	May[1]	June	July	Aug.	Sept.
	All commodities	293.4	295.7	296.1	295.5	295.8	298.3	298.6	298.0	298.0	298.6	299.4	300.6	300.4	299.5
	All commodities (1957–59 = 100)	311.3	313.7	314.2	313.5	313.8	316.5	316.8	316.2	316.2	316.8	317.7	318.9	318.7	317.8
	Farm products and processed foods and feeds	251.5	250.3	246.0	242.5	241.0	246.0	248.4	247.5	251.6	ʳ255.8	255.3	252.5	250.1	247.5
	Industrial commodities	304.1	307.4	309.0	309.3	310.0	311.8	311.6	311.0	309.9	ʳ309.6	310.7	313.0	313.4	312.9
	FARM PRODUCTS AND PROCESSED FOODS AND FEEDS														
01	Farm products	254.9	251.1	243.1	237.4	234.6	242.2	247.1	244.7	250.6	ʳ256.5	252.7	246.5	242.0	234.4
01–1	Fresh and dried fruits and vegetables	267.3	252.8	248.8	254.0	280.5	289.2	290.1	257.3	267.6	ʳ271.5	263.8	238.4	237.7	220.3
01–2	Grains	248.4	227.0	227.6	226.5	213.6	225.2	223.2	220.9	226.0	228.2	225.7	212.8	197.2	187.3
01–3	Livestock	248.0	257.3	244.5	231.1	225.0	236.8	251.2	255.6	267.6	282.9	277.5	270.3	268.4	259.0
01–4	Live poultry	201.2	196.7	185.7	175.0	171.4	186.8	197.3	197.7	186.2	192.7	207.2	212.5	189.3	196.5
01–5	Plant and animal fibers	242.0	206.5	211.7	198.5	188.4	198.2	193.5	199.5	207.4	214.1	203.1	220.8	207.5	196.8
01–6	Fluid milk	287.4	287.3	294.3	288.2	286.7	287.6	285.8	282.5	280.3	278.8	278.9	279.0	278.8	281.9
01–7	Eggs	187.1	193.2	193.8	209.7	195.5	187.0	200.6	204.0	192.1	164.3	159.3	171.7	171.7	173.3
01–8	Hay, hayseeds, and oilseeds	274.1	267.2	230.4	221.1	218.8	218.4	217.6	213.7	222.8	ʳ227.3	219.3	220.0	218.1	201.8
01–9	Other farm products	273.8	268.9	263.3	273.1	280.2	280.1	273.7	273.0	274.2	273.9	271.8	265.5	274.4	276.8
02	Processed foods and feeds	248.7	248.9	246.6	244.3	243.6	247.1	248.1	248.1	251.1	254.4	255.8	254.8	253.6	253.6
02–1	Cereal and bakery products	255.5	258.5	256.9	256.5	255.1	256.6	253.3	253.3	253.5	ʳ252.8	253.3	253.6	253.2	254.1
02–2	Meats, poultry, and fish	246.2	253.3	246.6	240.0	236.1	243.7	247.9	250.0	258.2	ʳ267.6	271.1	266.1	262.3	265.7
02–3	Dairy products	245.6	245.5	246.8	246.9	247.2	247.7	248.0	248.0	248.4	248.5	248.7	248.8	249.0	249.3
02–4	Processed fruits and vegetables	261.2	270.0	271.7	270.5	271.8	273.2	276.3	275.9	275.2	ʳ273.8	275.4	275.9	274.9	273.2
02–5	Sugar and confectionery	275.9	246.8	246.7	244.1	247.6	256.8	257.2	255.0	256.0	ʳ265.3	269.5	276.1	286.0	279.1
02–6	Beverages and beverage materials	248.0	249.1	250.0	251.4	251.9	253.9	255.1	256.4	256.6	ʳ256.5	256.5	256.7	257.3	256.8
02–7	Fats and oils	227.4	224.3	223.4	221.5	219.1	216.6	216.8	213.7	218.1	ʳ222.3	222.0	221.4	216.0	211.6
02–8	Miscellaneous processed foods	250.1	253.0	249.9	250.1	250.1	251.0	250.9	249.5	249.6	248.0	248.6	248.0	245.9	246.9
02–9	Prepared animal feeds	230.2	222.9	218.1	214.7	217.2	217.4	214.9	211.4	216.3	217.4	216.4	214.6	207.9	204.5
	INDUSTRIAL COMMODITIES														
03	Textile products and apparel	199.7	202.9	204.0	203.6	203.4	205.0	205.6	205.0	205.4	ʳ205.4	204.5	204.1	203.9	203.8
03–1	Synthetic fibers (12/75 = 100)	156.3	161.0	162.7	161.6	161.5	162.9	163.2	161.3	163.0	ʳ163.4	163.8	162.4	163.1	163.4
03–2	Processed yarns and threads (12/75 = 100)	138.0	142.3	144.4	143.0	139.6	139.2	140.7	140.5	140.4	141.0	139.4	139.2	135.9	136.6
03–3	Gray fabrics (12/75 = 100)	146.8	149.1	148.0	147.4	147.2	148.2	147.3	146.6	146.3	ʳ145.9	145.8	144.8	144.5	143.5
03–4	Finished fabrics (12/75 = 100)	125.2	126.8	126.7	126.5	125.6	126.8	127.1	125.6	125.4	ʳ125.2	124.0	123.8	124.4	123.8
03–81	Apparel	186.0	188.0	189.9	190.8	191.0	192.7	193.2	193.4	194.1	ʳ194.5	193.0	193.1	193.5	193.5
03–82	Textile housefurnishings	226.7	232.2	233.0	233.4	233.6	237.6	240.8	241.4	241.8	ʳ239.5	244.4	243.0	240.7	242.5
04	Hides, skins, leather, and related products	260.9	261.7	260.0	259.8	260.7	261.8	261.6	260.6	263.4	ʳ263.2	262.7	261.3	263.2	264.8
04–2	Leather	319.8	313.2	313.7	311.3	312.3	319.0	317.7	313.3	310.6	ʳ309.8	306.7	307.4	304.7	309.2
04–3	Footwear	240.9	242.9	239.6	239.8	240.1	238.9	238.6	239.8	244.8	ʳ244.5	243.8	241.7	247.3	248.2
04–4	Other leather and related products	241.8	245.0	245.0	245.4	245.4	247.5	248.1	248.1	248.1	ʳ248.1	250.5	252.0	249.9	252.9
05	Fuels and related products and power	694.5	703.5	698.1	698.1	702.5	705.1	697.8	689.7	670.6	ʳ662.2	677.4	701.8	705.7	701.8
05–1	Coal	497.2	510.2	510.8	512.7	515.2	525.3	529.9	532.6	534.0	ʳ534.0	534.1	538.6	539.1	541.4
05–2	Coke	456.4	469.7	469.7	469.7	469.7	469.7	469.7	467.5	467.5	ʳ467.5	462.7	463.9	460.0	460.7
05–3	Gas fuels[2]	939.4	976.6	965.6	983.0	1,003.7	987.9	987.6	990.5	992.7	ʳ1,001.2	1,029.7	1,055.4	1,073.7	1,116.6
05–4	Electric power	367.2	383.8	378.4	378.3	384.2	392.8	392.9	403.7	406.3	ʳ407.1	406.6	416.9	415.3	415.4
05–61	Crude petroleum[3]	803.5	796.8	788.2	785.9	787.2	787.2	770.3	744.8	717.9	ʳ717.8	718.5	718.7	718.7	718.8
05–7	Petroleum products, refined[4]	805.9	806.1	802.3	798.3	798.6	801.9	789.7	770.6	733.5	ʳ713.2	738.5	777.1	781.8	763.1
06	Chemicals and allied products	287.6	293.3	292.4	292.0	291.8	292.9	293.6	294.6	294.3	ʳ295.0	293.5	291.6	291.6	291.4
06–1	Industrial chemicals[5]	363.3	371.8	367.9	363.7	362.8	362.9	362.2	361.4	357.8	ʳ357.1	352.9	349.7	349.7	349.3
06–21	Prepared paint	249.8	250.7	250.7	254.5	256.4	258.9	258.9	258.9	264.7	ʳ264.2	265.1	265.1	265.1	265.1
06–22	Paint materials	300.1	308.0	308.1	308.3	305.8	306.6	306.4	306.8	306.7	ʳ306.9	304.2	304.3	302.3	303.0
06–3	Drugs and pharmaceuticals	193.5	197.8	198.5	198.2	198.9	202.2	204.4	205.9	208.9	ʳ209.9	209.6	209.9	211.1	212.6
06–4	Fats and oils, inedible	295.6	285.6	277.7	282.5	280.4	272.8	274.2	290.1	282.6	288.4	287.5	278.2	254.2	254.1
06–5	Agricultural chemicals and chemical products	285.0	292.6	293.1	295.7	294.9	296.8	298.0	297.1	295.8	ʳ294.8	294.0	291.5	290.6	290.1
06–6	Plastic resins and materials	289.2	296.8	299.5	293.2	294.2	286.1	287.3	285.5	286.0	ʳ283.2	281.9	280.6	282.4	281.5
06–7	Other chemicals and allied products	254.2	257.4	256.9	259.9	260.0	263.8	264.9	268.5	270.0	ʳ272.7	273.0	270.7	271.8	270.7
07	Rubber and plastic products	232.6	235.7	237.3	238.0	238.3	237.3	239.3	240.8	241.1	ʳ242.1	243.3	243.1	243.6	243.3
07–1	Rubber and rubber products	256.2	260.3	262.9	264.4	264.6	262.5	266.0	266.7	266.6	ʳ269.0	271.5	271.6	272.5	271.7
07–11	Crude rubber	281.8	283.1	279.8	279.0	280.8	281.8	282.1	283.5	283.3	ʳ283.7	282.4	280.2	278.6	276.5
07–12	Tires and tubes	250.6	256.5	257.1	255.9	255.4	253.6	256.7	253.7	253.4	ʳ254.9	255.3	255.6	257.9	255.7
07–13	Miscellaneous rubber products	251.4	253.9	261.1	266.7	267.2	263.8	268.8	274.3	274.7	ʳ278.8	285.4	286.1	286.0	287.5
07–2	Plastic products (6/78 = 100)	128.5	129.9	130.3	130.3	130.6	130.5	131.0	132.3	132.6	ʳ132.5	132.6	132.3	132.3	132.5
08	Lumber and wood products	292.8	289.3	284.3	282.1	285.4	285.5	285.2	285.3	286.5	ʳ284.6	288.7	288.3	284.4	283.0
08–1	Lumber	325.1	320.2	311.7	306.6	309.9	310.0	308.1	308.2	312.4	ʳ310.5	315.2	319.2	312.7	311.3
08–2	Millwork	273.4	271.4	271.3	271.8	273.7	277.1	278.6	276.5	276.6	ʳ276.3	280.1	281.8	280.2	279.5
08–3	Plywood	245.7	240.8	234.3	233.5	239.7	237.4	235.1	236.5	234.0	ʳ230.5	238.9	232.4	229.3	228.4
08–4	Other wood products	239.1	240.5	239.9	239.3	239.4	238.2	238.7	238.6	237.7	ʳ237.4	237.1	236.0	235.8	235.6

See footnotes at end of table.

22. Continued—Producer Price Indexes, by commodity groupings

[1967 = 100 unless otherwise specified]

Code	Commodity group and subgroup	Annual average 1981	1981				1982								
			Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May[1]	June	July	Aug.	Sept.
	INDUSTRIAL COMMODITIES — Continued														
09	Pulp, paper, and allied products	273.8	277.8	279.2	280.4	281.0	285.5	286.3	287.4	288.5	r 289.6	289.3	288.9	289.1	289.2
09-1	Pulp, paper, and products, excluding building paper and board	270.8	274.8	275.7	275.8	275.6	276.1	276.8	276.6	275.3	r 274.8	274.6	272.9	272.6	271.8
09-11	Woodpulp	397.1	394.2	402.3	413.7	413.7	410.3	410.3	411.6	389.9	r 393.3	390.3	370.5	369.2	367.2
09-12	Wastepaper	175.7	178.5	165.1	144.5	143.4	135.2	128.8	129.2	128.1	121.5	115.2	115.6	116.0	116.0
09-13	Paper	279.8	285.9	287.8	287.4	287.2	289.2	289.8	289.6	289.4	r 288.2	288.2	287.0	286.1	286.0
09-14	Paperboard	258.1	261.6	261.7	261.6	260.0	259.7	261.4	261.1	261.2	258.8	255.9	255.0	255.5	250.7
09-15	Converted paper and paperboard products	258.8	262.8	263.2	263.1	263.2	263.9	264.7	264.5	264.3	r 264.3	265.0	264.6	264.4	264.2
09-2	Building paper and board	231.7	234.2	233.3	232.1	230.3	233.8	231.4	239.6	236.3	r 240.2	239.4	239.2	243.8	242.8
10	Metals and metal products	300.4	304.9	305.3	304.2	303.3	304.7	304.2	302.9	303.1	r 302.8	300.1	300.2	300.2	301.8
10-1	Iron and steel	333.8	339.8	341.3	340.0	339.9	343.1	342.9	342.5	342.8	r 341.3	338.3	337.4	337.4	336.6
10-17	Steel mill products	337.6	345.3	348.7	348.6	348.9	350.6	350.3	350.5	352.2	352.1	349.9	349.1	348.7	348.4
10-2	Nonferrous metals	285.8	289.4	285.4	281.1	277.1	274.4	273.6	267.2	266.1	r 263.6	253.7	256.1	256.1	263.4
10-3	Metal containers	315.6	318.8	318.2	318.1	316.8	324.3	326.2	327.2	330.0	r 330.2	330.2	329.9	328.8	328.7
10-4	Hardware	263.2	267.8	269.5	271.5	272.0	274.1	274.8	278.2	278.5	r 278.9	277.9	278.9	280.3	280.4
10-5	Plumbing fixtures and brass fittings	267.5	271.6	272.9	273.1	274.0	274.6	276.4	279.1	280.3	281.0	282.5	283.0	274.7	277.0
10-6	Heating equipment	224.2	228.5	229.0	228.8	229.9	233.4	233.1	235.4	236.0	r 237.2	238.6	239.1	238.6	239.3
10-7	Fabricated structural metal products	295.5	300.0	302.6	303.2	303.0	303.4	304.0	304.5	305.2	r 304.9	305.2	303.8	304.4	304.2
10-8	Miscellaneous metal products	270.5	273.7	276.1	278.0	278.3	281.2	278.7	279.0	279.7	r 284.5	289.5	288.8	288.9	289.3
11	Machinery and equipment	263.3	268.1	269.3	270.4	272.0	274.1	275.4	276.2	277.6	r 278.2	278.4	279.4	279.7	280.3
11-1	Agricultural machinery and equipment	288.3	292.8	295.5	300.8	302.8	303.1	304.6	306.4	306.8	r 308.2	308.8	310.2	311.4	313.6
11-2	Construction machinery and equipment	320.8	326.5	328.3	329.6	332.0	337.0	337.9	339.2	341.5	r 343.5	343.7	346.1	346.4	347.5
11-3	Metalworking machinery and equipment	301.3	305.3	306.6	307.9	312.9	315.9	317.2	317.8	319.6	r 320.7	320.8	321.9	322.4	322.6
11-4	General purpose machinery and equipment	288.7	293.9	295.1	296.2	297.9	300.0	301.3	302.0	303.4	r 303.8	303.1	304.4	304.5	304.5
11-6	Special industry machinery and equipment	307.9	312.8	314.6	315.0	316.4	320.4	320.7	321.3	322.9	r 323.9	324.7	327.1	326.9	327.0
11-7	Electrical machinery and equipment	220.2	224.2	225.3	226.0	227.0	228.7	229.5	230.3	231.7	r 231.3	231.9	232.0	232.0	232.5
11-9	Miscellaneous machinery	252.6	258.5	259.0	259.8	260.4	261.4	264.0	264.9	266.1	r 267.9	268.0	268.9	270.3	271.1
12	Furniture and household durables	198.5	201.0	201.3	202.1	202.9	203.5	204.6	205.5	206.0	r 206.5	206.6	206.8	207.4	207.7
12-1	Household furniture	219.7	222.2	222.8	225.1	226.6	227.5	227.4	227.6	229.7	r 230.0	231.1	230.9	231.4	231.6
12-2	Commercial furniture	257.5	261.6	262.1	263.3	263.9	266.7	271.2	273.6	274.2	r 275.2	276.2	277.8	278.0	278.6
12-3	Floor coverings	178.7	181.7	180.9	182.3	181.4	180.3	180.6	180.6	181.1	r 181.3	180.7	180.1	179.4	180.3
12-4	Household appliances	187.3	190.1	190.8	190.9	191.3	193.4	195.3	197.3	197.8	r 198.9	198.5	199.3	200.1	200.4
12-5	Home electronic equipment	89.2	87.8	88.1	88.0	89.6	89.3	89.6	89.1	87.9	r 88.0	88.2	88.2	88.0	87.7
12-6	Other household durable goods	281.0	285.8	285.8	285.3	286.2	283.4	283.7	285.0	285.9	r 285.4	284.6	283.6	287.4	288.1
13	Nonmetallic mineral products	309.5	313.2	313.3	313.7	313.5	315.6	319.0	319.9	320.2	r 321.2	318.7	320.3	320.4	320.2
13-11	Flat glass	212.6	218.3	218.5	215.9	216.1	216.2	216.2	216.2	216.2	r 226.4	216.2	226.1	226.1	221.1
13-2	Concrete ingredients	296.3	298.5	298.4	298.5	298.7	306.2	308.4	309.8	309.5	r 312.5	310.9	310.6	311.7	311.2
13-3	Concrete products	291.2	292.9	293.3	293.4	293.6	295.5	295.9	296.3	297.7	r 298.2	297.9	298.2	298.3	298.6
13-4	Structural clay products, excluding refractories	249.8	255.3	256.2	256.5	257.5	257.5	257.7	257.7	258.1	r 258.6	258.4	258.8	258.8	259.5
13-5	Refractories	302.4	307.1	307.8	308.9	311.3	316.8	335.1	337.4	338.7	r 339.5	340.9	340.9	341.2	341.3
13-6	Asphalt roofing	407.5	401.6	402.9	410.2	405.6	401.3	400.4	394.4	386.7	r 385.5	388.8	392.3	392.5	400.2
13-7	Gypsum products	256.2	252.9	252.4	251.3	249.7	250.4	255.0	260.7	263.2	259.4	256.4	255.8	253.9	253.9
13-8	Glass containers	328.7	335.5	335.5	335.5	335.5	335.4	352.2	356.0	358.1	r 358.1	357.4	357.4	357.3	357.9
13-9	Other nonmetallic minerals	463.8	474.3	473.3	473.5	474.7	474.7	478.7	479.6	479.1	r 471.3	465.2	466.4	466.2	466.2
14	Transportation equipment (12/68 = 100)	235.4	231.8	244.5	246.3	246.8	248.6	245.2	245.2	245.8	r 247.5	249.6	250.4	251.2	245.0
14-1	Motor vehicles and equipment	237.6	232.8	247.8	248.9	249.5	250.8	246.8	246.8	247.2	r 249.2	251.5	252.5	253.3	245.0
14-4	Railroad equipment	336.1	338.7	338.7	341.3	340.1	345.8	345.8	346.3	343.5	r 342.8	349.6	349.3	354.7	354.7
15	Miscellaneous products	265.7	267.0	268.5	269.5	267.6	268.3	273.5	272.7	273.2	r 272.2	271.6	273.8	272.4	280.3
15-1	Toys, sporting goods, small arms, ammunition	211.9	213.6	213.0	212.7	213.3	218.4	220.1	220.7	221.0	r 221.8	222.9	222.9	224.4	224.7
15-2	Tobacco products	268.3	274.5	278.2	278.2	278.2	278.2	306.6	306.6	306.7	r 307.0	306.7	311.3	311.3	328.8
15-3	Notions	259.8	267.8	269.7	269.7	269.7	270.3	270.4	271.5	271.5	r 280.1	280.3	280.3	280.3	280.3
15-4	Photographic equipment and supplies	210.0	208.7	208.9	209.0	209.1	209.9	210.5	212.1	214.2	r 210.6	210.8	210.6	210.6	211.6
15-5	Mobile homes (12/74 = 100)	156.8	158.7	159.1	159.3	159.3	159.5	159.6	161.9	162.2	r 162.5	162.5	162.5	162.5	162.8
15-9	Other miscellaneous products	347.4	345.5	348.5	344.8	344.6	342.2	341.1	334.5	334.1	r 331.3	328.0	333.1	326.5	344.7

[1] Data for May 1982 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.
[2] Prices for natural gas are lagged 1 month.
[3] Includes only domestic production.

[4] Most prices for refined petroleum products are lagged 1 month.
[5] Some prices for industrial chemicals are lagged 1 month.
r = revised.

23. Producer Price Indexes, for special commodity groupings

[1967 = 100 unless otherwise specified]

Commodity grouping	Annual average 1981	1981				1982								
		Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May¹	June	July	Aug.	Sept.
All commodities — less farm products	295.7	298.5	299.5	299.4	300.0	302.0	301.9	301.4	300.9	ʳ301.2	302.3	304.1	304.3	303.9
All foods	251.8	251.7	249.1	247.4	247.6	251.6	253.2	251.6	254.7	257.9	259.0	356.8	255.9	255.4
Processed foods	252.1	252.8	250.0	247.6	246.5	250.5	251.9	252.1	255.1	259.0	260.9	259.8	258.9	259.3
Industrial commodities less fuels	263.7	266.4	268.7	269.0	269.4	271.1	271.5	271.7	272.3	272.8	272.5	272.7	272.7	272.6
Selected textile mill products (Dec. 1975 = 100)	135.8	138.1	138.2	138.4	137.9	139.3	139.7	139.0	139.0	ʳ138.7	138.1	137.5	137.6	137.7
Hosiery	134.3	135.5	136.5	136.5	136.7	136.9	136.9	137.5	138.0	138.5	138.5	138.5	138.5	138.7
Underwear and nightwear	203.4	204.7	204.7	205.7	206.3	213.9	215.6	215.9	215.9	ʳ215.9	217.8	218.0	218.1	219.0
Chemicals and allied products, including synthetic rubber and fibers and yarns	278.4	284.4	283.8	283.2	283.1	284.3	285.1	285.6	285.6	ʳ286.1	284.8	283.0	283.4	283.2
Pharmaceutical preparations	186.9	191.6	192.8	192.5	193.3	196.8	199.3	201.1	204.5	ʳ205.8	205.3	205.7	207.2	209.3
Lumber and wood products, excluding millwork	303.0	298.0	290.1	286.4	290.7	289.9	287.9	288.5	290.5	ʳ288.1	294.0	294.6	289.2	287.9
Steel mill products, including fabricated wire products	337.6	345.3	348.7	348.6	348.9	350.6	350.3	350.5	352.2	352.1	349.9	348.7	348.4	348.1
Finished steel mill products, excluding fabricated wire products	336.2	343.7	347.4	347.2	347.5	349.3	348.9	349.2	351.0	350.9	348.6	347.7	347.3	347.0
Finished steel mill products, including fabricated wire products	336.2	343.7	347.4	347.2	347.5	349.3	348.9	349.2	351.0	350.9	348.6	347.4	347.0	346.7
Special metals and metal products	279.4	280.1	286.7	286.8	286.6	287.9	286.0	285.3	285.6	ʳ286.3	285.8	286.3	286.6	284.2
Fabricated metal products	280.0	283.9	286.0	287.0	287.1	289.4	289.0	289.9	290.8	ʳ292.6	294.6	294.0	293.9	294.1
Copper and copper products	203.8	205.1	201.9	198.9	195.4	194.5	194.1	190.8	191.6	ʳ193.0	180.0	179.5	180.1	181.4
Machinery and motive products	256.7	257.7	264.3	265.8	266.9	268.9	268.1	268.5	269.6	ʳ270.7	271.8	272.8	273.3	270.8
Machinery and equipment, except electrical	288.5	293.8	295.0	296.4	298.4	300.7	302.3	303.1	304.6	ʳ305.7	305.7	307.2	307.7	308.3
Agricultural machinery, including tractors	297.3	301.6	305.7	312.5	314.7	315.1	316.0	318.4	319.0	ʳ319.9	319.8	320.5	321.5	324.6
Metalworking machinery	329.7	333.9	336.7	338.3	341.2	343.8	344.9	346.4	348.8	ʳ349.3	350.3	352.7	353.2	353.6
Numerically controlled machine tools (Dec. 1971 = 100)	239.3	241.8	241.8	242.2	242.0	240.1	239.8	239.9	239.9	ʳ239.9	240.3	239.6	239.6	239.8
Total tractors	324.7	330.7	338.3	342.2	342.3	346.9	346.9	349.1	352.4	ʳ353.6	353.2	354.2	354.8	358.9
Agricultural machinery and equipment less parts	289.8	294.0	297.6	303.5	305.8	306.5	307.4	309.7	310.3	ʳ311.0	311.0	311.8	312.5	315.1
Farm and garden tractors less parts	300.1	305.5	313.0	319.6	319.7	319.7	319.7	323.5	323.5	ʳ325.0	324.3	324.2	324.8	331.8
Agricultural machinery, excluding tractors less parts	295.2	298.7	299.9	303.5	310.9	311.6	313.2	314.6	315.6	ʳ316.1	316.5	317.7	319.0	319.1
Industrial valves	315.9	322.7	322.4	323.4	325.3	328.6	330.2	330.5	331.1	ʳ331.2	327.2	329.2	329.2	329.4
Industrial fittings	302.1	304.3	304.1	304.1	304.1	304.1	304.1	304.1	309.1	309.1	309.1	310.2	310.2	309.2
Construction materials	283.0	284.4	284.6	284.1	285.2	286.6	286.9	287.5	288.2	ʳ288.2	289.1	289.0	288.2	287.9

¹ Data for May 1982 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.　　r = revised.

24. Producer Price Indexes, by durability of product

[1967 = 100]

Commodity grouping	Annual average 1981	1981				1982								
		Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May¹	June	July	Aug.	Sept.
Total durable goods	269.8	271.8	275.0	275.4	276.0	277.6	277.4	277.4	278.1	ʳ278.5	278.4	279.1	279.1	278.7
Total nondurable goods	312.4	315.0	312.8	311.4	311.4	314.7	315.4	314.2	313.6	314.5	316.0	317.7	317.3	315.9
Total manufactures	286.0	288.3	289.5	289.7	289.9	291.9	292.0	291.4	291.1	291.3	292.4	293.9	293.9	293.1
Durable	269.7	271.7	275.1	275.8	276.5	278.0	277.8	277.8	278.7	ʳ279.2	279.4	280.1	280.1	279.7
Nondurable	303.6	306.3	305.5	304.5	304.3	306.8	307.2	305.9	304.1	ʳ304.0	306.2	308.6	308.6	307.3
Total raw or slightly processed goods	330.7	332.7	326.4	323.3	323.6	328.9	330.6	329.7	331.9	ʳ335.1	333.6	333.3	331.8	330.3
Durable	271.2	270.4	263.7	253.4	247.8	253.8	253.7	250.1	245.3	ʳ239.7	225.2	225.0	225.7	227.0
Nondurable	334.0	336.3	330.0	327.4	328.2	333.4	335.2	334.5	337.2	ʳ341.1	340.6	340.2	338.6	336.9

¹ Data for May 1982 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.　　r = revised.

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

[1967 = 100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1981	1981				1982								
			Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May¹	June	July	Aug.	Sept.
	MINING														
1011	Iron ores (12/75 = 100)	167.6	168.1	168.1	171.3	171.3	171.3	171.3	171.3	171.3	177.1	177.1	177.1	177.1	177.1
1092	Mercury ores (12/75 = 100)	346.0	364.5	354.1	354.1	343.7	347.9	313.7	325.0	327.0	308.3	307.5	306.2	287.5	289.4
1211	Bituminous coal and lignite	493.7	506.0	506.2	507.8	510.3	520.9	525.8	524.9	527.9	ʳ529.9	529.8	533.5	534.7	536.3
1311	Crude petroleum and natural gas	898.6	913.6	900.8	907.5	921.7	919.7	913.9	905.4	893.3	ʳ901.2	915.1	925.3	926.7	938.4
1442	Construction sand and gravel	277.4	279.2	279.7	279.8	280.7	287.4	289.9	293.1	292.6	ʳ295.0	295.2	295.3	296.5	296.0
1455	Kaolin and ball clay (6/76 = 100)	138.7	137.1	143.4	143.4	143.4	149.6	149.6	149.6	151.7	151.7	151.7	151.7	151.7	151.7
	MANUFACTURING														
2011	Meatpacking plants	243.1	252.7	244.1	237.0	234.1	237.6	244.4	247.3	254.0	ʳ264.7	265.7	258.4	253.0	253.1
2013	Sausages and other prepared meats	241.4	253.9	252.2	248.9	247.0	245.6	251.0	248.6	253.0	ʳ266.2	273.7	272.2	275.4	282.3
2016	Poultry dressing plants	192.0	188.8	175.5	172.8	166.7	(²)	(²)	(²)	(²)	ʳ(²)	(²)	(²)	(²)	(²)
2021	Creamery butter	274.8	275.0	279.2	279.5	275.0	275.0	276.4	276.8	275.3	274.9	274.9	275.0	276.3	276.8

See footnotes at end of table.

25. Continued—Producer Price Indexes for the output of selected SIC industries

[1967 = 100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1981	1981 Sept.	Oct.	Nov.	Dec.	1982 Jan.	Feb.	Mar.	Apr.	May¹	June	July	Aug.	Sept.
	MANUFACTURING—Continued														
2022	Cheese, natural and processed (12/72 = 100)	215.7	215.0	215.4	215.9	218.4	218.6	217.9	216.7	216.5	217.1	217.9	218.6	218.8	218.7
2024	Ice cream and frozen desserts (12/72 = 100)	211.9	212.7	212.5	212.5	212.7	212.8	212.8	210.9	214.2	214.2	214.2	213.6	213.6	216.5
2033	Canned fruits and vegetables	248.5	254.3	257.0	256.4	258.9	260.8	262.6	262.4	262.3	ʳ262.6	264.6	265.5	263.2	260.1
2034	Dehydrated food products (12/73 = 100)	177.6	183.4	182.1	181.4	182.1	184.0	181.8	181.5	181.5	178.5	178.5	180.4	180.0	179.6
2041	Flour mills (12/71 = 100)	196.0	195.3	191.1	191.5	189.2	191.5	187.5	187.3	192.5	188.4	189.1	185.5	180.2	182.2
2044	Rice milling	277.2	268.2	247.3	235.4	215.1	205.9	192.2	183.5	177.9	183.0	180.3	177.6	183.0	183.0
2048	Prepared foods, n.e.c. (12/75 = 100)	124.5	119.6	117.3	116.4	116.0	116.0	115.9	114.6	115.4	116.7	115.7	115.4	113.3	109.6
2061	Raw cane sugar	273.5	212.3	219.9	224.3	230.8	247.6	245.1	233.0	242.9	269.2	286.7	311.5	318.1	295.6
2063	Beet sugar	314.3	270.7	250.3	230.4	250.5	266.4	272.2	272.2	269.7	ʳ277.3	280.2	290.5	297.4	300.8
2067	Chewing gum	309.8	303.2	303.2	303.2	303.2	303.3	303.3	303.3	303.4	303.4	303.4	303.3	304.7	304.7
2074	Cottonseed oil mills	199.0	182.3	172.0	167.2	182.4	184.9	170.5	158.1	164.7	167.9	170.2	174.6	173.1	164.5
2075	Soybean oil mills	245.8	234.2	229.7	221.2	221.9	223.1	220.4	216.6	225.8	232.0	226.4	224.1	205.5	200.6
2077	Animal and marine fats and oils	288.0	281.2	274.0	272.3	266.6	260.4	262.6	271.8	273.3	271.5	272.3	264.3	242.4	241.2
2083	Malt	282.5	275.4	275.4	275.4	275.4	267.1	267.1	267.1	259.1	259.8	259.8	259.8	259.8	251.2
2085	Distilled liquor, except brandy (12/75 = 100)	134.7	135.5	135.5	137.9	137.9	140.1	137.9	140.2	140.2	139.8	139.8	139.8	140.4	140.4
2091	Canned and cured seafoods (12/73 = 100)	187.8	188.8	188.2	188.3	188.5	187.2	187.0	187.7	188.2	188.0	188.4	187.8	184.3	186.2
2092	Fresh or frozen packaged fish	369.1	353.5	356.9	360.8	369.5	396.8	389.2	419.1	432.2	ʳ425.9	442.8	418.9	426.2	446.7
2095	Roasted coffee (12/72 = 100)	238.1	237.3	238.2	239.2	240.4	245.1	247.7	248.8	250.6	ʳ248.0	247.6	247.0	246.4	244.7
2098	Macaroni and spaghetti	252.0	259.5	259.5	259.5	259.5	259.5	259.5	259.5	259.5	259.5	259.5	259.5	259.5	259.5
2111	Cigarettes	277.7	284.2	288.4	288.4	288.4	288.4	319.7	319.7	319.8	ʳ319.9	319.8	324.9	324.9	345.1
2121	Cigars	170.0	174.5	174.5	174.5	174.5	174.5	178.6	178.6	179.6	ʳ179.6	176.6	176.6	176.6	176.8
2131	Chewing and smoking tobacco	320.7	325.3	326.1	326.1	326.1	326.1	349.4	349.4	349.4	353.6	353.6	358.3	358.3	358.5
2211	Weaving mills, cotton (12/72 = 100)	232.7	236.0	233.2	229.8	227.6	227.3	227.1	226.4	226.3	ʳ226.4	226.0	222.0	221.7	218.6
2221	Weaving mills, synthetic (12/77 = 100)	136.7	139.5	139.4	139.8	139.5	139.8	139.7	140.0	139.2	ʳ138.5	138.0	137.5	137.1	136.4
2251	Women's hosiery, except socks (12/75 = 100)	113.5	115.0	115.2	115.1	115.2	115.6	115.6	116.1	116.2	ʳ116.9	117.0	117.0	117.0	117.0
2254	Knit underwear mills	210.2	210.9	210.9	212.8	213.0	225.2	225.2	225.9	226.0	ʳ226.1	228.7	230.8	231.1	231.2
2257	Circular knit fabric mills (6/76 = 100)	110.9	111.9	112.0	112.4	111.8	112.4	113.2	110.7	110.2	ʳ109.9	108.2	108.6	108.7	108.6
2261	Finishing plants, cotton (6/76 = 100)	144.9	145.4	144.9	143.5	141.4	140.5	140.3	140.8	141.6	ʳ141.5	141.3	140.2	139.8	138.4
2262	Finishing plants, synthetics, silk (6/76 = 100)	126.5	129.0	129.1	129.1	128.6	129.4	129.9	128.5	128.5	ʳ128.4	127.2	126.7	128.7	128.1
2272	Tufted carpets and rugs	154.2	157.3	155.7	157.0	156.7	155.5	155.7	155.7	156.1	156.4	156.9	156.1	155.4	156.1
2281	Yarn mills, except wool (12/71 = 100)	221.7	223.8	222.4	219.9	217.2	216.3	215.7	215.4	214.4	ʳ214.7	214.0	213.7	213.2	213.1
2282	Throwing and winding mills (6/76 = 100)	139.3	148.0	154.5	145.6	146.0	145.7	150.3	150.0	151.0	ʳ152.7	149.3	149.0	140.4	142.5
2284	Thread mills (6/76 = 100)	151.4	154.8	157.0	157.0	156.8	156.8	156.8	156.8	156.7	156.6	156.5	156.5	158.0	158.0
2298	Cordage and twine (12/77 = 100)	134.8	139.3	139.3	139.3	140.7	141.0	141.0	141.0	141.0	141.0	141.0	141.0	141.0	142.6
2311	Men's and boys' suits and coats	224.0	226.5	227.4	228.4	230.5	233.7	233.6	233.8	234.4	234.6	235.3	237.2	239.8	240.0
2321	Men's and boys' shirts and nightwear	209.5	211.5	212.4	212.6	213.4	173.4	215.9	216.9	217.3	ʳ217.5	215.7	216.0	216.1	219.4
2322	Men's and boys' underwear	230.6	230.8	230.8	233.0	233.0	246.9	246.9	247.4	247.4	247.4	251.2	251.2	251.2	250.7
2323	Men's and boys' neckwear (12/75 = 100)	114.6	113.9	113.9	113.9	113.9	115.3	117.3	117.3	117.3	117.3	121.3	121.3	121.3	121.3
2327	Men's and boys' separate trousers	186.2	186.4	186.8	186.9	187.1	188.4	188.4	188.4	194.1	ʳ195.8	195.0	195.6	195.6	195.6
2328	Men's and boys' work clothing	248.6	251.2	253.1	253.2	253.3	252.5	254.2	254.9	255.2	ʳ254.7	254.1	252.9	253.1	252.3
2331	Women's and misses' blouses and waists (6/78 = 100)	120.6	121.3	126.4	126.7	126.7	126.5	126.5	126.5	126.5	ʳ126.5	123.7	123.6	123.8	123.8
2335	Women's and misses' dresses (12/77 = 100)	121.3	123.5	123.4	124.1	122.7	123.0	123.0	123.1	122.9	122.9	123.1	123.7	123.6	122.7
2341	Women's and children's underwear (12/72 = 100)	169.7	170.6	170.6	171.6	171.6	174.7	174.8	175.0	175.0	ʳ176.6	179.4	179.4	179.4	178.1
2342	Brassieres and allied garments (12/75 = 100)	136.7	138.8	138.8	138.9	140.1	145.1	148.8	148.8	148.8	ʳ148.1	148.5	148.4	148.4	150.2
2361	Children's dresses and blouses (12/77 = 100)	120.9	121.7	122.0	122.5	123.2	123.2	123.2	123.2	122.2	ʳ122.2	121.0	119.4	120.3	118.6
2381	Fabric dress and work gloves	289.3	289.2	289.2	289.2	289.2	293.8	297.4	295.5	295.5	295.5	294.5	294.5	288.2	288.2
2394	Canvas and related products (12/77 = 100)	132.0	134.6	137.6	137.6	139.7	144.9	144.9	147.2	145.7	ʳ145.9	143.8	143.8	143.8	145.4
2396	Automotive and apparel trimmings (12/77 = 100)	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0	131.0
2421	Sawmills and planing mills (12/71 = 100)	228.2	225.2	219.5	215.5	218.6	218.0	216.9	216.9	218.8	ʳ217.4	219.7	221.6	217.5	216.3
2436	Softwood veneer and plywood (12/75 = 100)	142.0	135.4	129.3	129.0	134.5	132.5	130.5	131.8	129.1	ʳ125.9	133.3	129.6	126.7	128.6
2439	Structural wood members, n.e.c. (12/75 = 100)	156.6	156.6	154.8	154.2	153.2	153.9	153.5	152.6	153.4	ʳ152.8	152.9	154.5	155.1	154.4
2448	Wood pallets and skids (12/75 = 100)	152.5	152.8	152.0	150.4	149.9	149.8	149.0	148.2	145.9	ʳ144.7	144.2	144.1	143.8	143.8
2451	Mobile homes (12/74 = 100)	156.9	158.7	159.2	159.3	160.3	160.4	160.5	162.7	163.0	ʳ163.3	163.4	163.4	163.4	163.7
2492	Particleboard (12/75 = 100)	173.6	170.5	168.0	166.9	170.3	172.6	170.7	177.7	178.2	178.0	176.9	175.4	174.5	175.3
2511	Wood household furniture (12/71 = 100)	197.4	200.1	201.0	202.0	202.8	203.6	204.3	205.1	207.4	ʳ207.7	207.6	208.1	208.0	208.0
2512	Upholstered household furniture (12/71 = 100)	174.0	175.3	175.6	179.5	182.1	184.4	179.3	179.3	181.8	ʳ182.3	185.1	184.1	185.5	185.9
2515	Mattresses and bedsprings	192.3	195.2	195.2	197.5	198.0	204.4	205.6	205.6	205.7	205.9	210.3	210.1	210.4	210.4
2521	Wood office furniture	254.2	257.1	257.1	257.0	257.6	261.9	270.7	270.8	270.8	ʳ270.8	271.9	272.0	272.4	272.4
2611	Pulp mills (12/73 = 100)	252.4	251.3	255.0	262.5	262.5	258.6	258.6	260.7	253.6	ʳ249.7	246.5	238.5	237.2	235.4
2621	Paper mills, except building (12/74 = 100)	156.2	158.8	159.8	159.7	159.6	162.0	162.0	162.0	161.3	ʳ160.3	160.8	160.7	159.9	159.8
2631	Paperboard mills (12/74 = 100)	151.7	153.7	153.6	153.5	152.7	152.5	153.4	153.0	152.8	ʳ151.3	150.0	149.1	149.4	146.5
2647	Sanitary paper products	343.4	344.3	344.0	344.1	344.6	344.6	344.6	344.5	344.5	ʳ343.6	347.3	346.4	349.2	350.0
2654	Sanitary food containers	244.8	253.2	253.4	253.3	253.3	254.0	256.9	260.0	259.9	ʳ259.9	261.4	261.4	261.4	262.2
2655	Fiber cans, drums, and similar products (12/75 = 100)	163.0	163.2	167.6	167.6	170.0	176.4	176.5	176.5	176.5	176.7	176.7	176.7	177.5	177.5
2812	Alkalies and chlorine (12/73 = 100)	305.9	316.0	317.7	317.0	324.8	329.4	335.2	335.6	322.0	ʳ341.1	338.2	324.4	325.8	324.3
2821	Plastics materials and resins (6/76 = 100)	150.8	156.0	156.3	153.7	154.3	150.7	152.6	151.0	152.6	ʳ150.9	150.7	150.2	150.8	151.1
2822	Synthetic rubber	293.3	299.3	301.0	301.4	302.7	303.9	306.1	306.7	306.6	307.1	303.8	301.8	299.9	298.8
2824	Organic fiber, noncellulosic	155.6	160.6	164.2	162.5	161.9	161.8	162.9	162.6	162.5	ʳ161.6	161.3	160.5	159.5	160.1
2873	Nitrogenous fertilizers (12/75 = 100)	142.8	142.1	142.9	144.2	142.9	142.4	142.6	142.2	141.7	ʳ140.5	139.5	136.1	135.0	135.6
2874	Phosphatic fertilizers	254.1	259.4	259.4	258.5	259.0	261.0	263.5	261.6	258.2	256.2	257.6	256.6	248.7	245.9
2875	Fertilizers, mixing only	270.7	272.0	273.8	273.7	270.5	274.3	276.8	278.4	278.7	ʳ278.6	278.8	278.6	277.9	275.4
2892	Explosives	311.9	316.5	318.7	316.5	315.6	314.9	317.6	320.5	327.2	ʳ326.1	319.6	318.4	324.8	337.3
2911	Petroleum refining (6/76 = 100)	294.4	295.8	294.6	293.3	293.1	293.0	289.1	281.7	267.4	259.2	267.7	281.4	283.7	280.3
2951	Paving mixtures and blocks (12/75 = 100)	194.3	196.0	196.3	196.4	196.0	197.0	198.0	198.1	197.1	ʳ196.3	195.1	194.8	194.4	194.8
2952	Asphalt felts and coatings (12/75 = 100)	176.9	174.3	174.9	178.1	176.1	174.2	173.8	171.2	168.1	ʳ168.4	169.8	171.3	171.1	174.5
3011	Tires and inner tubes (12/73 = 100)	215.8	220.6	221.0	220.1	221.2	222.0	222.4	220.3	216.7	ʳ221.3	221.5	221.7	226.2	221.7

25. Continued—Producer Price Indexes for the output of selected SIC industries

[1967=100 unless otherwise specified]

1972 SIC code	Industry description	Annual average 1981	1981				1982								
			Sept.	Oct.	Nov.	Dec.	Jan.	Feb.	Mar.	Apr.	May [1]	June	July	Aug.	Sept.
3021	Rubber and plastic footwear (12/71 = 100)	184.4	185.3	185.0	185.0	185.2	186.1	188.4	189.1	189.0	r 186.6	187.0	187.0	186.8	185.9
3031	Reclaimed rubber (12/73 =100)	194.1	200.3	200.3	200.3	200.3	200.3	200.4	207.2	209.2	r 209.5	208.4	207.7	207.4	207.6
3079	Miscellaneous plastic products (6/78 = 100)	128.9	130.3	130.8	130.8	131.0	131.1	131.6	132.8	133.2	r 133.0	132.9	132.6	132.7	132.7
3111	Leather tanning and finishing (12/77 = 100)	150.7	148.3	148.2	146.8	147.5	150.8	149.3	147.9	146.8	r 147.4	146.9	147.5	146.5	148.5
3143	Men's footwear, except athletic (12/75 = 100)	169.3	170.9	170.5	170.6	171.3	173.1	172.2	173.5	174.9	175.1	175.2	171.6	175.5	175.7
3144	Women's footwear, except athletic	217.1	218.2	212.5	212.7	212.4	208.5	209.8	210.3	217.0	r 216.2	215.2	216.3	220.6	222.2
3171	Women's handbags and purses (12/75 = 100)	155.5	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.4	158.5	157.8	159.0
3211	Flat glass (12/71 = 100)	175.3	180.0	180.1	180.1	177.4	177.5	177.5	177.5	177.5	r 187.9	177.5	187.7	187.7	186.3
3221	Glass containers	328.6	335.4	335.4	335.4	335.4	335.3	352.1	355.8	358.0	r 358.0	357.3	357.3	357.2	357.7
3241	Cement, hydraulic	329.6	332.0	330.3	330.3	330.3	339.6	341.5	341.5	341.1	r 341.9	338.7	337.8	336.0	335.1
3251	Brick and structural clay tile	296.5	299.9	299.9	300.5	300.5	298.9	299.4	299.4	303.4	r 304.5	306.4	307.2	307.2	307.5
3253	Ceramic wall and floor tile (12/75 = 100)	133.4	140.4	140.4	140.4	140.4	140.4	140.4	140.4	140.6	r 140.6	138.0	138.0	138.0	138.0
3255	Clay refractories	310.2	312.5	313.9	315.2	319.9	329.6	354.4	355.6	355.2	r 355.5	357.1	357.2	357.7	357.9
3259	Structural clay products, n.e.c.	222.6	227.5	231.7	231.7	236.6	225.6	226.0	225.9	215.9	r 215.8	216.5	216.4	216.5	219.5
3261	Vitreous plumbing fixtures	254.9	259.0	259.0	259.3	260.1	261.1	260.6	260.8	261.8	265.4	265.5	264.2	263.9	267.1
3262	Vitreous china food utensils	335.0	336.8	336.8	344.7	344.7	347.7	347.7	347.3	346.5	r 355.5	349.8	349.8	349.8	349.8
3263	Fine earthenware food utensils	309.1	313.8	313.8	315.0	315.0	315.1	315.1	315.0	314.9	r 316.2	314.8	314.8	314.8	314.8
3269	Pottery products, n.e.c. (12/75 = 100)	160.1	161.8	161.8	163.7	163.7	164.3	164.3	164.2	164.0	r 166.3	164.8	164.7	164.7	164.8
3271	Concrete block and brick	270.4	274.2	274.3	274.2	275.1	274.9	276.4	276.4	276.5	r 276.7	277.0	277.1	277.4	276.8
3273	Ready-mixed concrete	298.7	299.2	299.5	299.4	299.6	301.9	301.9	302.5	303.9	r 305.5	304.7	305.4	304.8	305.4
3274	Lime (12/75 = 100)	172.5	173.7	173.7	173.5	173.8	178.8	183.7	185.7	186.3	r 188.0	188.4	188.1	188.3	188.2
3275	Gypsum products	256.9	252.9	251.5	252.5	250.6	250.9	253.9	260.5	262.5	258.8	256.2	256.5	254.3	254.7
3291	Abrasive products (12/71 = 100)	232.9	237.3	237.6	241.0	241.0	241.3	248.3	249.8	250.2	r 251.7	252.1	252.0	252.3	252.3
3297	Nonclay refractories (12/74 = 100)	185.3	189.7	189.7	190.2	190.3	191.2	198.3	200.4	202.3	203.2	203.9	203.8	203.8	203.8
3312	Blast furnaces and steel mills	342.8	350.3	353.1	353.0	353.3	354.7	354.4	354.4	356.1	355.9	353.6	352.9	352.8	352.3
3313	Electrometallurgical products (12/75 = 100)	121.8	121.4	125.4	125.4	125.3	125.3	123.4	120.3	120.3	120.3	120.4	120.4	121.4	121.4
3316	Cold finishing of steel shapes	316.2	326.2	326.4	326.4	327.6	327.0	327.0	327.0	327.1	r 327.3	325.6	325.2	325.6	325.1
3317	Steel pipes and tubes	341.5	350.5	362.0	362.3	363.0	363.7	364.1	365.8	365.9	r 365.9	365.7	364.0	361.6	361.0
3321	Gray iron foundries (12/68 = 100)	299.7	302.0	303.3	305.2	306.1	307.9	310.0	311.5	311.9	r 311.1	311.6	311.3	311.3	309.7
3333	Primary zinc	326.3	355.9	337.0	337.5	315.7	308.6	311.2	292.0	273.4	r 256.6	259.7	266.4	277.0	291.6
3334	Primary aluminum	333.1	333.6	333.5	332.5	332.8	324.1	320.2	320.8	312.4	r 308.8	308.4	305.7	308.0	304.4
3351	Copper rolling and drawing	212.3	214.1	212.3	209.2	207.1	204.8	203.9	198.4	196.4	r 197.4	189.8	189.2	190.1	190.9
3353	Aluminum sheet, plate, and foil (12/75 = 100)	175.8	178.0	179.9	180.2	180.8	181.8	181.7	181.2	179.9	r 178.6	178.0	178.2	177.1	177.2
3354	Aluminum extruded products (12/75 = 100)	180.1	181.2	181.3	181.4	181.1	180.8	180.8	180.5	180.2	180.2	180.1	179.5	178.9	178.0
3355	Aluminum rolling, drawing, n.e.c. (12/75 = 100)	159.1	157.7	163.0	166.2	166.1	166.1	166.5	166.3	162.9	163.0	165.4	164.7	164.5	165.9
3411	Metal cans	305.1	306.8	307.0	306.0	304.9	310.8	314.0	313.6	318.5	r 318.7	319.3	318.6	318.0	318.1
3425	Hand saws and saw blades (12/72 = 100)	201.4	204.6	204.8	205.0	206.0	211.6	214.8	214.9	215.3	r 221.3	220.9	221.0	221.2	221.2
3431	Metal sanitary ware	265.5	270.2	270.3	271.6	271.8	271.3	272.8	275.1	275.8	r 275.5	276.0	276.1	276.9	276.4
3465	Automotive stampings (12/75 = 100)	146.0	146.9	147.4	149.7	149.1	150.1	144.7	144.2	144.3	r 144.5	153.0	153.0	153.3	153.5
3482	Small arms ammunition (12/75 = 100)	159.0	159.9	159.9	159.9	163.9	167.5	167.5	167.5	166.3	r 166.3	175.9	175.9	175.9	175.9
3493	Steel springs, except wire	245.9	252.4	253.9	254.1	256.1	255.8	257.4	256.4	254.3	r 254.5	255.2	253.1	253.5	253.5
3494	Valves and pipe fittings (12/71 = 100)	248.9	252.7	252.9	253.5	255.7	257.7	258.9	259.1	260.3	r 260.9	259.0	260.1	260.1	260.4
3498	Fabricated pipe and fittings	361.3	375.1	377.7	378.6	379.3	378.6	377.7	379.8	385.5	385.4	385.4	383.8	385.6	382.4
3519	Internal combustion engines, n.e.c.	311.9	322.1	323.2	326.4	325.4	329.4	332.0	332.6	334.2	r 338.4	337.7	339.6	343.8	347.1
3531	Construction machinery (12/76 = 100)	156.8	160.1	161.0	161.6	159.7	162.5	162.4	163.3	164.3	165.2	165.3	166.5	166.7	166.8
3532	Mining machinery (12/72 = 100)	282.5	286.9	288.5	290.8	292.9	295.5	297.8	300.9	302.4	r 304.0	303.5	304.0	303.4	304.5
3533	Oilfield machinery and equipment	395.8	411.3	415.6	418.2	420.3	427.2	429.2	435.8	439.3	r 438.4	437.8	438.4	439.6	439.1
3534	Elevators and moving stairways	253.9	254.6	257.0	260.7	265.6	264.3	269.8	271.6	271.8	r 275.5	273.5	275.5	275.5	275.3
3542	Machine tools, metal forming types (12/71 = 100)	306.9	312.0	311.7	312.3	319.3	319.7	322.8	324.5	325.2	r 325.5	326.5	333.6	333.6	333.3
3546	Power driven hand tools (12/76 = 100)	147.3	148.6	149.5	149.5	150.0	153.3	153.2	153.9	154.7	r 156.3	156.4	157.4	157.5	157.2
3552	Textile machinery (12/69 = 100)	243.5	248.2	248.0	247.9	249.9	252.3	253.5	255.0	256.2	r 257.3	258.1	259.8	258.9	259.3
3553	Woodworking machinery (12/72 = 100)	225.0	228.9	228.9	229.1	229.1	233.7	232.9	233.4	234.7	234.7	234.4	230.0	230.6	230.6
3576	Scales and balances, excluding laboratory	226.2	226.1	226.2	226.3	226.5	228.3	228.8	229.8	229.6	229.5	230.6	231.9	231.9	231.9
3592	Carburetors, pistons, rings, valves (6/76 = 100)	178.0	182.1	185.4	187.2	187.3	185.3	189.6	190.4	192.8	r 195.4	195.7	196.6	197.2	197.6
3612	Transformers	209.9	214.5	217.3	222.0	222.0	220.5	222.2	222.4	223.3	224.4	224.8	224.7	226.0	224.6
3623	Welding apparatus, electric (12/72 = 100)	227.5	231.6	232.5	233.2	235.8	236.8	236.9	232.3	237.6	r 237.6	233.1	236.9	237.5	237.7
3631	Household cooking equipment (12/75 = 100)	141.2	141.6	141.6	141.9	142.6	146.0	146.8	147.2	146.2	r 147.1	146.9	148.2	150.4	151.0
3632	Household refrigerators, freezers (6/76 = 100)	132.8	136.4	137.8	137.9	137.9	140.1	141.1	142.3	142.5	143.2	144.3	145.5	145.9	145.9
3633	Household laundry equipment (12/73 = 100)	174.3	177.2	177.0	178.4	178.8	180.1	180.5	186.2	186.9	188.6	189.0	189.1	189.7	190.1
3635	Household vacuum cleaners	159.1	158.8	161.3	161.0	160.8	165.6	165.2	165.7	165.4	r 165.5	158.4	158.4	159.4	159.5
3636	Sewing machines (12/75 = 100)	146.8	153.8	156.0	156.0	156.0	156.0	155.8	155.8	154.3	r 154.3	153.7	153.7	153.0	153.0
3641	Electric lamps	277.3	283.1	285.9	284.8	281.3	282.1	286.1	283.6	296.6	294.5	293.9	291.9	291.9	296.3
3644	Noncurrent-carrying wiring devices (12/72 = 100)	249.6	258.5	258.7	262.1	262.1	257.9	259.0	258.1	260.0	r 262.7	261.1	260.7	260.3	261.3
3646	Commercial lighting fixtures (12/75 = 100)	154.8	157.6	158.9	159.3	159.2	159.2	161.1	162.4	163.5	r 167.7	167.2	166.5	165.9	165.4
3648	Lighting equipment, n.e.c. (12/75 = 100)	155.9	161.7	162.0	162.4	163.1	162.8	167.8	168.8	170.9	r 171.2	170.9	171.1	171.2	171.2
3671	Electron tubes receiving type	309.7	327.5	327.5	327.8	342.2	374.1	374.2	374.4	374.5	r 374.4	375.1	376.0	376.0	380.7
3674	Semiconductors and related devices	r 90.9	91.4	91.6	92.0	91.7	90.9	90.2	90.0	89.5	r 89.3	89.7	90.8	90.5	90.8
3675	Electronic capacitors (12/75 = 100)	170.3	172.4	171.5	168.1	166.6	167.4	169.7	168.4	167.6	166.6	166.8	166.7	166.2	165.5
3676	Electronic resistors (12/75 = 100)	141.4	142.7	142.7	143.0	142.8	143.7	144.0	143.4	144.4	145.2	144.9	144.4	144.6	144.8
3678	Electronic connectors (12/75 = 100)	154.9	156.5	156.8	155.8	155.8	155.9	156.2	156.7	156.4	r 158.3	158.3	157.6	160.9	159.8
3692	Primary batteries, dry and wet	182.2	182.7	182.7	182.7	182.7	182.0	184.3	190.5	195.5	r 195.8	195.8	196.3	196.3	196.8
3711	Motor vehicles and car bodies (12/75 = 100)	150.3	143.4	158.6	158.7	159.1	159.8	155.0	154.9	154.9	r 157.0	159.6	159.7	160.3	151.4
3942	Dolls (12/75 = 100)	131.3	130.9	130.9	130.9	130.9	135.3	136.6	136.6	136.8	136.5	136.3	136.5	136.5	136.5
3944	Games, toys, and children's vehicles	221.3	222.2	222.2	222.6	223.9	228.4	232.5	234.1	234.1	r 234.3	231.7	231.8	231.8	232.1
3955	Carbon paper and inked ribbons (12/75 = 100)	138.5	140.6	140.2	140.2	140.3	140.3	140.3	140.3	140.3	140.5	140.6	140.5	140.5	139.3
3995	Burial caskets (6/76 = 100)	139.5	143.4	143.4	143.4	142.7	142.7	143.8	145.3	145.3	149.3	149.3	150.8	150.8	150.8
3996	Hard surface floor coverings (12/75 = 100)	151.8	153.7	153.7	153.7	153.7	155.1	155.2	156.1	156.1	156.3	154.3	155.0	155.7	156.9

[1] Data for May 1982 have been revised to reflect the availability of late reports and corrections by respondents. All data are subject to revision 4 months after original publication.

[2] Not available.

r=revised.

PRODUCTIVITY DATA

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

Definitions

Output is the constant dollar gross domestic product produced in a given period. Indexes of **output per hour of labor input,** or labor productivity, measure the value of goods and services produced per hour of labor. **Compensation per hour** includes wages and salaries of employees plus employers' contributions for social insurance and private benefit plans. The data also include an estimate of wages, salaries, and supplementary payments for the self-employed, except for nonfinancial corporations, in which there are no self-employed. **Real compensation per hour** is compensation per hour adjusted by the Consumer Price Index for All Urban Consumers.

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

The **implicit price deflator** is derived by dividing the current dollar estimate of gross product by the constant dollar estimate, making the deflator, in effect, a price index for gross product of the sector reported.

The use of the term "man hours" to identify the labor component of productivity and costs, in tables 26 through 29, has been discontinued. **Hours of all persons** is now used to describe the labor input of payroll workers, self-employed persons, and unpaid family workers. **Output per all-employee hour** is now used to describe labor productivity in nonfinancial corporations where there are no self-employed.

Notes on the data

In the business sector and the nonfarm business sector, the basis for the output measure employed in the computation of output per hour is Gross Domestic Product rather than Gross National Product. Computation of hours includes estimates of nonfarm and farm proprietor hours.

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

Beginning with the September 1982 issue of the *Review,* all of the productivity and cost measures contained in these tables are based on revised output and compensation measures released by the Bureau of Economic Analysis in July as part of the regular revision cycle of the National Income and Product Accounts. Measures of labor input have been revised to reflect results of the 1980 census, and seasonal factors have been recomputed for use in the preparation of quarterly measures. The word "private" is no longer being used as part of the series title of one of the two business sector measures prepared by BLS; no change has been made in the definition or content of the measures as a result of this change.

26. Annual indexes of productivity, hourly compensation, unit costs, and prices, selected years, 1950–81

[1977=100]

Item	1950	1955	1960	1965	1970	1974	1975	1976	1977	1978	1979	1980	1981
Business sector:													
Output per hour of all persons	50.4	58.3	65.2	78.3	86.2	92.5	94.5	97.6	100.0	100.6	99.6	98.9	100.7
Compensation per hour	20.0	26.4	33.9	41.7	58.2	78.0	85.5	92.9	100.0	108.6	119.1	131.4	144.1
Real compensation per hour	50.5	59.6	69.5	80.1	90.8	95.9	96.3	98.9	100.0	100.9	99.4	96.7	96.0
Unit labor cost	39.7	45.2	52.0	53.3	67.5	84.4	90.5	95.1	100.0	108.0	119.5	132.9	143.1
Unit nonlabor payments	43.4	47.6	50.6	57.6	63.2	78.5	90.4	94.0	100.0	106.7	112.8	119.3	135.2
Implicit price deflator	41.0	46.0	51.6	54.7	66.0	82.4	90.5	94.7	100.0	107.5	117.2	128.3	140.4
Nonfarm business sector:													
Output per hour of all persons	56.3	62.8	68.3	80.5	86.8	92.9	94.7	97.8	100.0	100.6	99.3	98.5	99.9
Compensation per hour	21.8	28.3	35.7	42.8	58.7	78.5	86.0	93.0	100.0	108.6	118.8	130.9	143.6
Real compensation per hour	55.0	64.0	73.0	82.2	91.5	96.4	96.8	99.0	100.0	100.9	99.2	96.3	95.7
Unit labor cost	38.8	45.0	52.2	53.2	67.6	84.5	90.8	95.1	100.0	108.0	119.6	133.0	143.8
Unit nonlabor payments	42.7	47.8	50.4	58.0	63.7	75.8	88.5	93.5	100.0	105.3	110.3	119.1	134.8
Implicit price deflator	40.1	46.0	51.6	54.8	66.3	81.6	90.0	94.6	100.0	107.1	116.5	128.3	140.8
Nonfinancial corporations:													
Output per hour of all employees	(¹)	(¹)	66.6	80.2	85.7	91.7	94.8	97.8	100.0	101.0	101.2	100.8	102.7
Compensation per hour	(¹)	(¹)	36.2	43.0	58.3	77.6	85.5	92.5	100.0	108.6	119.2	131.6	144.4
Real compensation per hour	(¹)	(¹)	74.2	82.5	90.9	95.4	96.2	98.5	100.0	100.8	99.5	96.8	96.2
Unit labor cost	(¹)	(¹)	54.4	53.5	68.0	84.7	90.2	94.6	100.0	107.5	117.8	130.5	140.6
Unit nonlabor payments	(¹)	(¹)	54.6	60.8	63.1	75.6	90.8	95.0	100.0	104.2	106.9	117.7	134.8
Implicit price deflator	(¹)	(¹)	54.5	56.1	66.3	81.6	90.4	94.7	100.0	106.4	114.1	126.1	138.6
Manufacturing:													
Output per hour of all persons	49.4	56.4	60.0	74.5	79.1	90.8	93.4	97.5	100.0	100.9	101.5	101.7	104.5
Compensation per hour	21.5	28.8	36.7	42.8	57.6	76.3	85.4	92.3	100.0	108.3	118.9	132.8	146.4
Real compensation per hour	54.0	65.1	75.1	82.3	89.8	93.8	96.2	98.3	100.0	100.6	99.2	97.7	97.5
Unit labor cost	43.4	51.0	61.1	57.5	72.7	84.1	91.5	94.6	100.0	107.4	117.1	130.6	140.0
Unit nonlabor payments	54.3	58.5	61.1	69.3	65.0	69.3	87.3	93.7	100.0	102.5	99.9	97.1	108.8
Implicit price deflator	46.6	53.2	61.1	61.0	70.5	79.8	90.3	94.4	100.0	106.0	112.0	120.8	130.8

¹ Not available.

27. Annual changes in productivity, hourly compensation, unit costs, and prices, 1971–81

Item	Year											Annual rate of change	
	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1950-81	1960-81
Business sector:													
Output per hour of all persons	3.6	3.5	−2.6	−2.4	2.2	3.3	2.4	0.6	−0.9	−0.7	1.8	ʳ2.4	2.1
Compensation per hour	6.6	6.5	8.0	9.4	9.6	8.6	7.7	8.6	9.7	10.4	9.6	6.2	ʳ7.2
Real compensation per hour	2.2	3.1	1.6	−1.4	0.5	2.6	1.2	0.9	−1.4	−2.8	−0.7	ʳ2.3	1.8
Unit labor cost	2.9	2.9	5.3	12.1	7.3	5.1	5.1	8.0	10.7	11.2	7.7	3.6	5.0
Unit nonlabor payments	7.6	4.5	5.9	4.4	15.1	4.0	6.4	6.7	5.7	5.8	13.3	ʳ3.4	ʳ4.6
Implicit price deflator	4.4	3.4	5.5	9.5	9.8	4.7	5.6	7.5	9.0	9.4	9.5	ʳ3.5	4.9
Nonfarm business sector:													
Output per hour of all persons	3.3	3.7	2.4	−2.5	2.0	3.2	2.2	0.6	−1.3	−0.9	1.4	ʳ2.1	ʳ1.8
Compensation per hour	6.6	6.7	7.6	9.4	9.6	8.1	7.5	8.6	9.3	10.2	9.7	5.9	7.0
Real compensation per hour	2.2	3.3	1.3	−1.4	0.4	2.2	1.0	0.9	−1.7	−2.9	−0.7	ʳ2.0	1.5
Unit labor cost	3.2	2.9	5.0	12.2	7.5	4.7	5.2	8.0	10.7	11.2	8.1	ʳ3.7	5.0
Unit nonlabor payments	7.4	3.2	1.3	5.9	16.7	5.7	6.9	5.3	4.7	8.0	13.1	ʳ3.3	ʳ4.5
Implicit price deflator	4.5	3.0	3.8	10.2	10.3	5.0	5.7	7.1	8.8	10.2	9.7	3.6	4.9
Nonfinancial corporations:													
Output per hour of all employees	4.8	3.0	2.6	−3.4	3.4	3.2	2.3	1.0	0.2	−0.3	1.8	(¹)	2.0
Compensation per hour	6.5	5.8	7.7	9.7	10.1	8.2	8.1	8.6	9.8	10.4	9.7	(¹)	6.9
Real compensation per hour	2.1	2.5	1.4	−1.1	0.9	2.3	1.6	0.8	−1.3	−2.8	−0.6	(¹)	1.4
Unit labor cost	1.6	2.8	4.9	13.6	6.5	4.9	5.7	7.5	9.6	10.7	7.8	(¹)	4.8
Unit nonlabor payments	7.4	2.7	1.5	7.1	20.1	4.6	5.3	4.2	2.6	10.1	14.6	(¹)	ʳ4.1
Implicit price deflator	3.5	2.8	3.8	11.4	10.9	4.8	5.6	6.4	7.2	10.5	10.0	(¹)	ʳ4.6
Manufacturing:													
Output per hour of all persons	6.1	5.0	5.4	−2.4	2.9	4.4	2.5	0.9	0.7	0.2	2.8	2.6	2.7
Compensation per hour	6.1	5.4	7.2	10.6	11.9	8.0	8.3	8.3	9.7	11.8	10.2	5.8	6.9
Real compensation per hour	1.8	2.0	0.9	−0.3	2.5	2.1	1.8	0.6	−1.4	−1.6	−0.2	2.0	1.4
Unit labor cost	0.0	0.3	1.7	13.3	8.8	3.4	5.7	7.4	9.0	11.6	7.2	3.1	4.1
Unit nonlabor payments	11.2	0.8	−3.3	−1.8	25.9	7.4	6.7	2.5	−2.6	−2.7	12.0	2.1	2.7
Implicit price deflator	3.1	0.5	0.3	9.0	13.1	4.6	6.0	6.0	5.7	7.8	8.4	2.8	3.7

¹ Not available.   r = revised.

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

[1977=100]

Item	Annual average		Quarterly indexes										
			1979	1980				1981				1982	
	1980	1981	IV	I	II	III	IV	I	II	III	IV	I	II
Business sector:													
Output per hour of all persons	98.9	100.7	99.1	99.3	98.2	98.9	99.3	100.7	100.7	101.0	100.2	100.0	100.3
Compensation per hour	131.4	144.1	123.0	126.7	130.0	133.1	136.1	140.0	142.5	145.6	148.2	150.9	153.4
Real compensation per hour	96.7	96.0	97.8	97.0	96.4	96.9	96.2	96.2	96.4	95.7	95.6	96.5	97.1
Unit labor cost	132.9	143.1	124.1	127.6	132.3	134.7	137.0	139.0	141.5	144.2	147.9	150.9	153.0
Unit nonlabor payments	119.3	135.2	113.2	116.0	116.2	120.6	124.6	131.8	133.4	137.4	138.3	136.4	137.3
Implicit price deflator	128.3	140.4	120.4	123.7	126.9	129.9	132.8	136.5	138.8	141.9	144.6	146.0	147.7
Nonfarm business sector:													
Output per hour of all persons	98.5	99.9	98.8	98.7	97.6	98.4	99.2	100.4	100.0	100.0	99.1	99.2	99.3
Compensation per hour	130.9	143.6	122.7	126.2	129.3	132.6	135.7	139.5	142.0	145.1	147.7	150.4	152.6
Real compensation per hour	96.3	95.7	97.6	96.6	96.0	96.5	95.9	96.0	96.0	95.4	95.3	96.3	96.6
Unit labor cost	133.0	143.8	124.1	127.8	132.5	134.7	136.8	139.0	141.9	145.1	149.0	151.6	153.7
Unit nonlabor payments	119.1	134.8	111.3	115.2	116.7	120.3	124.4	131.5	132.8	136.7	138.4	136.7	137.4
Implicit price deflator	128.3	140.8	119.8	123.6	127.2	129.9	132.7	136.5	138.9	142.3	144.5	146.6	148.2
Nonfinancial corporations:													
Output per hour of all employees	100.8	102.7	100.6	100.8	99.8	101.1	101.7	102.8	102.7	102.8	102.2	102.3	102.9
Compensation per hour	131.6	144.4	123.1	126.8	130.0	133.4	136.3	140.4	142.7	145.7	148.6	151.7	154.1
Real compensation per hour	96.8	96.2	97.9	97.0	96.4	97.1	96.3	96.5	96.5	95.8	95.9	97.1	97.5
Total unit costs	131.0	143.4	121.4	125.0	130.4	132.9	135.8	138.3	141.7	144.7	149.1	151.8	154.0
Unit labor cost	130.5	140.6	122.4	125.8	130.2	131.9	134.1	136.5	138.9	141.7	145.4	148.3	149.7
Unit nonlabor costs	132.5	151.4	118.7	122.7	131.0	135.7	140.7	143.4	149.6	153.1	159.6	161.8	166.2
Unit profits	87.9	101.6	84.1	91.1	81.9	87.8	90.5	104.7	98.8	105.2	97.6	86.1	82.4
Implicit price deflator	126.1	138.6	117.1	121.1	124.8	127.7	130.6	134.5	136.8	140.2	143.2	144.3	145.8
Manufacturing:													
Output per hour of all persons	101.7	104.5	101.9	102.6	100.4	100.3	103.6	105.2	105.0	105.0	102.8	102.1	102.2
Compensation per hour	132.8	146.4	122.6	127.1	130.9	135.2	138.4	142.6	144.9	147.3	150.7	154.7	157.6
Real compensation per hour	97.7	97.5	97.4	97.3	97.1	98.5	97.8	98.0	97.9	96.8	97.2	99.0	99.7
Unit labor cost	130.6	140.0	120.3	123.9	130.3	134.9	133.6	135.5	138.0	140.3	146.6	151.5	154.3

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

[1977=100]

Item	Quarterly percent change at annual rate						Percent change from same quarter a year ago					
	IV 1980 to I 1981	I 1981 to II 1981	II 1981 to III 1981	III 1981 to IV 1981	IV 1981 to I 1982	I 1982 to II 1982	I 1980 to I 1981	II 1980 to II 1981	III 1980 to III 1981	IV 1980 to IV 1981	I 1981 to I 1982	II 1981 to II 1982
Business sector:												
Output per hour of all persons	5.6	0.0	1.1	−2.9	−1.0	1.2	1.4	2.5	2.2	0.9	−0.7	−0.4
Compensation per hour	11.7	7.5	9.0	7.4	7.3	6.9	10.5	9.7	9.4	8.9	7.8	7.6
Real compensation per hour	0.2	0.5	−2.6	−0.4	3.9	2.2	−0.7	−0.1	−1.3	−0.6	0.3	0.7
Unit labor costs	5.7	7.5	7.8	10.6	8.4	5.6	8.9	6.9	7.1	7.9	8.6	8.1
Unit nonlabor payments	25.0	4.9	12.5	2.9	−5.4	2.7	13.7	14.8	13.9	11.0	3.5	3.0
Implicit price deflator	11.6	6.6	9.3	8.0	3.8	4.7	10.4	9.4	9.2	8.9	6.9	6.4
Nonfarm business sector:												
Output per hour of all persons	4.9	−1.3	−0.3	−3.5	0.6	0.5	1.7	2.5	1.6	−0.1	−1.1	−0.7
Compensation per hour	11.8	7.1	9.0	7.3	7.7	6.0	10.6	9.8	9.4	8.8	7.8	7.5
Real compensation per hour	0.4	0.1	−2.6	−0.5	4.3	1.4	−0.6	0.0	−1.2	−0.6	0.3	0.6
Unit labor costs	6.6	8.6	9.3	11.2	7.1	5.5	8.8	7.1	7.7	8.9	9.0	8.3
Unit nonlabor payments	24.9	4.0	12.1	5.1	−4.6	2.0	14.1	13.8	13.6	11.2	4.0	3.5
Implicit price deflator	12.1	7.1	10.2	9.2	3.3	4.4	10.4	9.2	9.6	9.6	7.4	6.7
Nonfinancial corporations:												
Output per hour of all employees	4.7	−0.4	0.3	−2.3	0.5	2.3	2.1	2.9	1.7	0.6	−0.5	2.3
Compensation per hour	12.4	6.9	8.5	8.3	8.6	6.4	10.7	9.8	9.2	9.0	8.1	6.4
Real compensation per hour	0.9	−0.1	−3.0	0.5	5.2	1.7	−0.5	0.1	−1.4	−0.5	0.6	1.7
Total unit costs	7.5	10.2	8.6	12.8	7.4	6.0	10.6	8.7	8.9	9.8	9.7	8.7
Unit labor costs	7.4	7.3	8.2	10.9	8.1	4.0	8.5	6.7	7.5	8.4	8.6	7.8
Unit nonlabor costs	8.0	18.5	9.8	17.8	5.7	11.4	16.9	14.2	12.9	13.4	12.8	11.1
Unit profits	79.5	−20.8	28.4	−25.9	−39.4	−16.0	14.9	20.7	19.7	7.9	−17.8	−16.6
Implicit price deflator	12.3	7.1	10.2	8.9	3.0	4.4	11.0	9.6	9.7	9.6	7.3	4.4
Manufacturing:												
Output per hour of all persons	6.3	−0.7	−0.1	−8.2	−2.4	0.2	2.6	4.5	4.7	−0.8	−2.9	−2.7
Compensation per hour	12.7	6.6	6.8	9.6	11.1	7.8	12.2	10.7	8.9	8.9	8.5	8.8
Real compensation per hour	1.2	−0.4	−4.6	1.6	7.6	3.1	0.8	0.9	−1.7	−0.6	1.0	1.8
Unit labor costs	6.0	7.3	6.8	19.4	13.9	7.7	9.3	5.9	4.0	9.8	11.7	11.8

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DATA FOR THE EMPLOYMENT COST INDEX are reported to the Bureau of Labor Statistics by a sample of 2,000 private non-farm establishments and 750 State and local government units selected to represent total employment in those sectors. On average, each reporting unit provides wage and compensation information on five well-specified occupations.

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

Definitions

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

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

Data on negotiated wage changes apply to private nonfarm industry collective bargaining agreements covering 1,000 workers or more. Data on compensation changes apply only to those agreements covering 5,000 workers or more. *First-year* wage or compensation changes refer to average negotiated changes for workers covered by settlements reached in the period and implemented within the first 12 months after the effective date of the agreement. *Changes over the life of the agreement* refer to all adjustments specified in the contract, expressed as an average annual rate. These measures exclude wage changes that may occur under cost-of-living adjustment clauses, that are triggered by movements in the Consumer Price Index. *Wage-rate changes* are expressed as a percent of straight-time hourly earnings; *compensation changes* are expressed as a percent of total wages and benefits.

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

Notes on the data

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

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

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

For a more detailed discussion of the ECI, see chapter 25, "The Employment Cost Index," of the BLS *Handbook of Methods* (Bulletin 1910), and the *Monthly Labor Review* articles: "Employment Cost Index: a measure of change in the 'price of labor,'" July 1975; "How benefits will be incorporated into the Employment Cost Index," January 1978; and "The Employment Cost Index: recent trends and expansion," May 1982.

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

30. Employment Cost Index, total compensation, by occupation and industry group

[June 1981=100]

Series	1980			1981				1982		Percent change	
										3 months ended	12 months ended
	June	Sept.	Dec.	March	June	Sept.	Dec.	March	June	June 1982	
Civilian nonfarm workers[1]	—	—	—	—	100.0	102.6	104.5	106.3	107.5	1.1	7.5
Workers, by occupational group											
White-collar workers	—	—	—	—	100.0	102.7	104.9	106.5	107.7	1.1	7.7
Blue-collar workers	—	—	—	—	100.0	102.3	104.1	105.7	107.1	1.3	7.1
Service workers	—	—	—	—	100.0	102.8	104.2	107.2	108.3	1.0	8.3
Workers, by industry division											
Manufacturing	—	—	—	—	100.0	102.1	104.0	106.0	107.2	1.1	7.2
Nonmanufacturing	—	—	—	—	100.0	102.8	104.8	106.4	107.7	1.2	7.7
Services	—	—	—	—	100.0	104.4	107.1	108.2	109.2	.9	9.2
Public administration[2]	—	—	—	—	100.0	104.3	106.0	108.1	109.1	.9	9.1
Private nonfarm workers	90.7	92.8	94.7	98.1	100.0	102.0	104.0	105.8	107.2	1.3	7.2
Workers, by occupational group											
White-collar workers	90.8	92.6	94.5	98.3	100.0	101.8	104.0	105.8	107.2	1.3	7.2
Blue-collar workers	90.5	93.0	94.9	97.8	100.0	102.2	104.0	105.6	107.0	1.3	7.0
Service workers	90.8	92.7	94.3	99.3	100.0	101.9	103.1	106.7	107.9	1.1	7.9
Workers, by industry division											
Manufacturing	90.5	92.6	94.7	98.0	100.0	102.1	104.0	106.0	107.2	1.1	7.2
Nonmanufacturing	90.8	92.9	94.7	98.2	100.0	102.0	103.9	105.7	107.1	1.3	7.1
State and local government workers	—	—	—	—	100.0	105.3	107.4	108.8	109.3	.5	9.3
Workers, by occupational group											
White-collar workers	—	—	—	—	100.0	105.7	107.8	109.1	109.5	.4	9.5
Blue-collar workers	—	—	—	—	100.0	104.2	105.9	108.2	108.9	.6	8.9
Workers, by industry division											
Services	—	—	—	—	100.0	105.8	107.9	109.0	109.4	.4	9.4
Schools	—	—	—	—	100.0	106.0	107.9	108.9	109.1	.2	9.1
Elementary and secondary	—	—	—	—	100.0	106.3	108.3	109.3	109.5	.2	9.5
Hospitals and other services[3]	—	—	—	—	100.0	105.0	107.8	109.5	110.3	.7	10.3
Public administration[2]	—	—	—	—	100.0	104.3	106.0	108.1	109.1	.9	9.1

[1] Excludes household and Federal workers.
[2] Consists of legislative, judicial, administrative, and regulatory activities.
[3] Includes, for example, library, social, and health services.
NOTE: Dashes indicate data not available.

31. Employment Cost Index, wages and salaries, by occupation and industry group
[June 1981=100]

Series	1980			1981				1982		Percent change	
	June	Sept.	Dec.	March	June	Sept.	Dec.	March	June	3 months ended	12 months ended
										June 1982	
Civilian nonfarm workers[1]	—	—	—	—	100.0	102.5	104.4	106.3	107.3	0.9	7.3
Workers, by occupational group											
White-collar workers	—	—	—	—	100.0	102.6	104.7	106.7	107.6	.8	7.6
Blue-collar workers	—	—	—	—	100.0	102.4	104.0	105.5	106.7	1.1	6.7
Service workers	—	—	—	—	100.0	102.5	103.6	106.8	107.9	1.0	7.9
Workers, by industry division											
Manufacturing	—	—	—	—	100.0	102.1	104.0	105.9	107.0	1.0	7.0
Nonmanufacturing	—	—	—	—	100.0	102.7	104.5	106.5	107.5	.9	7.5
Services	—	—	—	—	100.0	104.4	106.6	108.6	109.5	.8	9.5
Public administration[2]	—	—	—	—	100.0	103.8	105.5	107.5	108.4	.8	8.4
Private nonfarm workers	91.5	93.5	95.4	98.0	100.0	102.0	103.8	105.9	107.1	1.1	7.1
Workers, by occupational group											
White-collar workers	91.4	93.3	95.2	98.1	100.0	101.8	103.9	106.2	107.3	1.0	7.3
Professional and technical workers	90.8	93.2	95.3	98.2	100.0	103.3	105.5	108.0	109.4	1.3	9.4
Managers and administrators	92.0	93.5	94.7	98.6	100.0	101.6	102.8	105.8	107.2	1.3	7.2
Salesworkers	90.7	92.2	94.8	96.2	100.0	98.0	101.9	102.2	101.8	−.4	1.8
Clerical workers	91.9	93.8	95.7	98.6	100.0	102.7	104.2	107.0	108.3	1.2	8.3
Blue-collar workers	91.6	93.8	95.7	97.7	100.0	102.3	103.9	105.4	106.6	1.1	6.6
Craft and kindred workers	91.4	94.0	96.1	97.8	100.0	102.9	104.3	106.2	107.6	1.3	7.6
Operatives, except transport	91.5	93.6	95.5	97.8	100.0	102.1	104.1	105.4	106.6	1.1	6.6
Transport equipment operatives	92.2	93.5	95.3	96.8	100.0	101.0	102.7	103.2	104.1	.9	4.1
Nonfarm laborers	91.8	93.9	95.7	97.5	100.0	101.5	103.3	104.1	105.1	1.0	5.1
Service workers	91.9	93.4	94.8	99.2	100.0	101.8	102.7	106.7	107.9	1.1	7.9
Workers, by industry division											
Manufacturing	91.8	93.6	95.7	97.9	100.0	102.1	104.0	105.9	107.0	1.0	7.0
Durables	91.2	93.5	95.7	97.9	100.0	102.1	104.5	106.3	107.4	1.0	7.4
Nondurables	92.7	93.8	95.7	97.8	100.0	102.0	103.1	105.3	106.3	.9	6.3
Nonmanufacturing	91.3	93.4	95.2	98.1	100.0	102.0	103.8	105.9	107.1	1.1	7.1
Construction	91.9	94.5	95.9	97.6	100.0	103.0	104.3	105.9	107.3	1.3	7.3
Transportation and public utilities	90.2	93.1	95.6	97.7	100.0	102.0	103.6	105.7	106.9	1.1	6.9
Wholesale and retail trade	92.2	93.6	95.1	98.2	100.0	101.3	102.3	103.9	105.8	1.8	5.8
Wholesale trade	92.1	93.0	95.9	98.5	100.0	102.0	103.4	106.3	108.9	2.4	8.9
Retail trade	92.2	93.8	94.8	98.1	100.0	101.0	101.9	103.0	104.5	1.5	4.5
Finance, insurance, and real estate	89.4	91.2	93.1	95.7	100.0	98.3	102.3	103.7	102.4	−1.3	2.4
Services	91.9	94.2	95.7	99.6	100.0	103.6	105.8	108.8	110.0	1.1	10.0
State and local government workers	—	—	—	—	100.0	105.0	107.0	108.2	108.7	.5	8.7
Workers, by occupational group											
White-collar workers	—	—	—	—	100.0	105.4	107.5	108.5	108.9	.4	8.9
Blue-collar workers	—	—	—	—	100.0	103.9	105.5	107.5	107.9	.4	7.9
Workers, by industry division	—	—	—								
Services	—	—	—	—	100.0	105.5	107.6	108.4	108.8	.4	8.8
Schools	—	—	—	—	100.0	105.7	107.7	108.3	108.5	.2	8.5
Elementary and secondary	—	—	—	—	100.0	106.0	107.9	108.7	108.8	.1	8.8
Hospitals and other services[3]	—	—	—	—	100.0	104.6	107.3	108.8	109.5	.6	9.5
Public administration[2]	—	—	—	—	100.0	c103.8	105.5	107.5	108.4	.8	8.4

[1]Excludes household and Federal workers.
[2]Consists of legislative, judicial, administrative, and regulatory activities.

[3]Includes, for example, library, social, and health services.
NOTE: Dashes indicate data not available.
c= corrected.

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

[June 1981 = 100]

Series	1980			1981				1982		Percent change	
										3 months ended	12 months ended
	June	Sept.	Dec.	March	June	Sept.	Dec.	March	June	June 1982	
COMPENSATION											
Workers, by bargaining status[1]											
Union	89.7	92.4	94.7	97.6	100.0	102.5	104.8	106.5	108.4	1.8	8.4
Manufacturing	—	—	—	—	100.0	102.3	104.6	106.3	108.0	1.6	8.0
Nonmanufacturing	—	—	—	—	100.0	102.7	105.0	106.8	108.7	1.8	8.7
Nonunion	91.1	92.8	94.6	98.4	100.0	101.7	103.5	105.3	106.5	1.1	6.5
Manufacturing	—	—	—	—	100.0	101.8	103.5	105.7	106.6	.9	6.6
Nonmanufacturing	—	—	—	—	100.0	101.7	103.5	105.2	106.4	1.1	6.4
Workers, by area size[1]											
Metropolitan areas	90.6	92.8	94.7	98.1	100.0	102.1	104.1	105.7	107.2	1.4	7.2
Other areas	90.3	91.9	94.2	98.1	100.0	101.8	c103.2	106.2	107.0	.8	7.0
WAGES AND SALARIES											
Workers, by bargaining status[1]											
Union	90.8	93.5	95.8	97.4	100.0	102.7	105.0	106.5	108.1	1.5	8.1
Manufacturing	91.3	93.8	96.1	97.7	100.0	102.6	104.7	105.9	107.3	1.3	7.3
Nonmanufacturing	90.4	93.1	95.5	97.1	100.0	102.8	105.2	107.0	108.8	1.7	8.8
Nonunion	91.8	93.4	95.1	98.2	100.0	101.6	103.2	105.6	106.5	.9	6.5
Manufacturing	92.3	93.4	95.4	97.9	100.0	101.7	103.3	105.9	106.7	.8	6.7
Nonmanufacturing	91.5	93.4	95.0	98.3	100.0	101.6	103.2	105.5	106.4	.9	6.4
Workers, by region[1]											
Northeast	92.5	94.2	96.0	98.3	100.0	101.7	104.4	106.1	106.7	.6	6.7
South	91.4	93.2	94.9	98.0	100.0	101.9	102.8	105.7	107.4	1.6	7.4
North Central	91.6	93.3	95.3	98.1	100.0	101.6	103.3	104.7	106.1	1.3	6.1
West	90.4	93.5	95.3	97.9	100.0	103.2	105.1	107.9	108.6	.6	8.6
Workers, by area size[1]											
Metropolitan areas	91.4	93.5	95.4	97.9	100.0	102.1	104.0	105.9	107.1	1.1	7.1
Other areas	91.5	92.9	95.1	98.3	100.0	101.8	103.1	106.0	106.8	.8	6.8

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

c = corrected.

33. Wage and compensation change, major collective bargaining settlements, 1977 to date

[In percent]

Measure	Annual average					Quarterly average								
						1980			1981				1982 P	
	1977	1978	1979	1980	1981	II	III	IV	I	II	III	IV	I	II
Total compensation changes covering 5,000 workers or more, all industries:														
First year of contract	9.6	8.3	9.0	10.4	10.2	10.2	11.4	8.5	7.7	11.6	10.5	11.0	1.9	2.1
Annual rate over life of contract ..	6.2	6.3	6.6	7.1	8.3	7.4	7.2	6.1	7.2	10.8	8.1	5.8	1.2	1.6
Wage rate changes covering at least 1,000 workers, all industries:														
First year of contract	7.8	7.6	7.4	9.5	9.8	9.1	10.5	8.3	7.1	11.8	10.8	9.0	3.0	2.9
Annual rate over life of contract ..	5.8	6.4	6.0	7.1	7.9	7.3	7.4	6.5	6.2	9.7	8.7	5.7	2.8	2.7
Manufacturing:														
First year of contract	8.4	8.3	6.9	7.4	7.2	6.7	8.4	7.8	6.4	8.2	9.0	6.6	2.5	1.3
Annual rate over life of contract ..	5.5	6.6	5.4	5.4	6.1	5.1	5.6	5.8	5.5	6.7	7.5	5.4	2.7	1.2
Nonmanufacturing (excluding construction):														
First year of contract	8.0	8.0	7.6	9.5	9.8	10.3	9.5	8.2	8.0	11.8	8.6	9.6	2.6	6.5
Annual rate over life of contract ..	5.9	6.5	6.2	6.6	7.3	8.5	5.9	6.8	7.3	9.1	7.2	5.6	2.1	5.7
Construction:														
First year of contract	6.3	6.5	8.8	13.6	13.5	12.2	15.4	14.3	11.4	12.9	16.4	11.4	9.1	5.8
Annual rate over life of contract ..	6.3	6.2	8.3	11.5	11.3	10.4	13.0	12.0	10.3	11.1	12.4	11.7	8.9	6.0

p=preliminary.

34. Effective wage adjustments in collective bargaining units covering 1,000 workers or more, 1977 to date

Measure	Year					Year and quarter								
						1980			1981				1982 P	
	1977	1978	1979	1980	1981	II	III	IV	I	II	III	IV	I	II
Average percent adjustment (including no change):														
All industries	8.0	8.2	9.1	9.9	9.5	3.3	3.5	1.3	1.7	3.2	3.3	1.5	1.0	1.9
Manufacturing	8.4	8.6	9.6	10.2	9.4	3.4	2.9	1.7	2.3	2.4	3.1	1.9	.9	.9
Nonmanufacturing	7.6	7.9	8.8	9.7	9.5	3.2	4.0	1.1	1.2	3.8	3.4	1.1	1.0	2.6
From settlements reached in period	3.0	2.0	3.0	3.6	2.5	1.0	1.7	.5	.4	1.1	.5	.4	.2	.3
Deferred from settlements reached in earlier period	3.2	3.7	3.0	3.5	3.8	1.4	1.2	.3	.5	1.4	1.5	.4	.6	1.3
From cost-of-living clauses	1.7	2.4	3.1	2.8	3.2	.8	.7	.6	.7	.7	1.2	.6	.3	.2
Total number of workers receiving wage change (in thousands) [1]	—	—	—	—	8,648	—	—	—	3,855	4,701	4,364	3,225	2,955	3,359
From settlements reached in period	—	—	—	—	2,270	—	—	—	579	909	540	604	199	407
Deferred from settlements reached in earlier period	—	—	—	—	6,267	—	—	—	888	2,055	3,023	882	1,038	1,629
From cost-of-living clauses	—	—	—	—	4,593	—	—	—	2,639	2,669	2,934	2,179	1,960	1,496
Number of workers receiving no adjustments (in thousands)	—	—	—	—	145	—	—	—	4,937	4,092	4,428	5,568	5,767	5,364

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

p=preliminary.

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

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

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

Month and year	Number of stoppages		Workers involved		Days idle	
	Beginning in month or year	In effect during month or year	Beginning in month or year (in thousands)	In effect during month (in thousands)	Number (in thousands)	Percent of estimated working time
1947	270	....	1,629	....	25,720	
1948	245	....	1,435	....	26,127	.22
1949	262	....	2,537	....	43,420	.38
1950	424	....	1,698	....	30,390	.26
1951	415	....	1,462	....	15,070	.12
1952	470	....	2,746	....	48,820	.38
1953	437	....	1,623	....	18,130	.14
1954	265	....	1,075	....	16,630	.13
1955	363	....	2,055	....	21,180	.16
1956	287	....	1,370	....	26,840	.20
1957	279	....	887	....	10,340	.07
1958	332	....	1,587	....	17,900	.13
1959	245	....	1,381	....	60,850	.43
1960	222	....	896	....	13,260	.09
1961	195	....	1,031	....	10,140	.07
1962	211	....	793	....	11,760	.08
1963	181	....	512	....	10,020	.07
1964	246	....	1,183	....	16,220	.11
1965	268	....	999	....	15,140	.10
1966	321	....	1,300	....	16,000	.10
1967	381	....	2,192	....	31,320	.18
1968	392	....	1,855	....	35,567	.20
1969	412	....	1,576	....	29,397	.16
1970	381	....	2,468	....	52,761	.29
1971	298	....	2,516	....	35,538	.19
1972	250	....	975	....	16,764	.09
1973	317	....	1,400	....	16,260	.08
1974	424	....	1,796	....	31,809	.16
1975	235	....	965	....	17,563	.09
1976	231	....	1,519	....	23,962	.12
1977	298	....	1,212	....	21,258	.10
1978	219	....	1,006	....	23,774	.11
1979	235	....	1,021	....	20,409	.09
1980	187	....	795	....	20,844	.09
1981	145	....	729	....	16,908	.07
1981: January	6	12	12.0	29.6	257.9	.01
February	7	10	10.7	20.9	118.5	.01
March	16	20	201.6	207.8	861.8	.04
April	17	27	48.0	223.5	4,085.2	.20
May	18	27	85.1	259.0	4,454.0	.24
June	30	43	200.1	415.1	2,618.3	.13
July	23	38	80.1	125.4	1,575.5	.08
August	9	17	36.2	86.6	1,017.9	.05
September	5	10	26.3	65.2	898.8	.05
1982 p: January	2	4	6.1	11.4	199.9	.01
February	2	6	2.5	13.9	236.9	.01
March	3	8	8.3	21.3	352.2	.02
April	9	16	35.7	55.3	480.3	.02
May	14	21	43.7	60.3	636.1	.03
June	17	25	41.4	64.5	894.0	.04
July	11	22	r 36.3	r 62.2	r 830.9	.04
August	r 15	r 24	r 41.9	r 59.8	r 785.9	.04
September	15	29	391.4	425.0	2,167.2	.11

p=preliminary.   r=revised.

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Current Wage Developments. August issue includes employee wage and benefit changes and collective bargaining settlements in July and a special report on collective bargaining settlements in the private sector during the first 6 months of 1982. 60 pp. September issue includes employee wage and benefit changes and collective bargaining settlements in August and special reports on State and local government collective bargaining settlements during the first 6 months of 1982 and on the Employment Cost Index for June of 1982. 56 pp., $2.50 ($14 per year).

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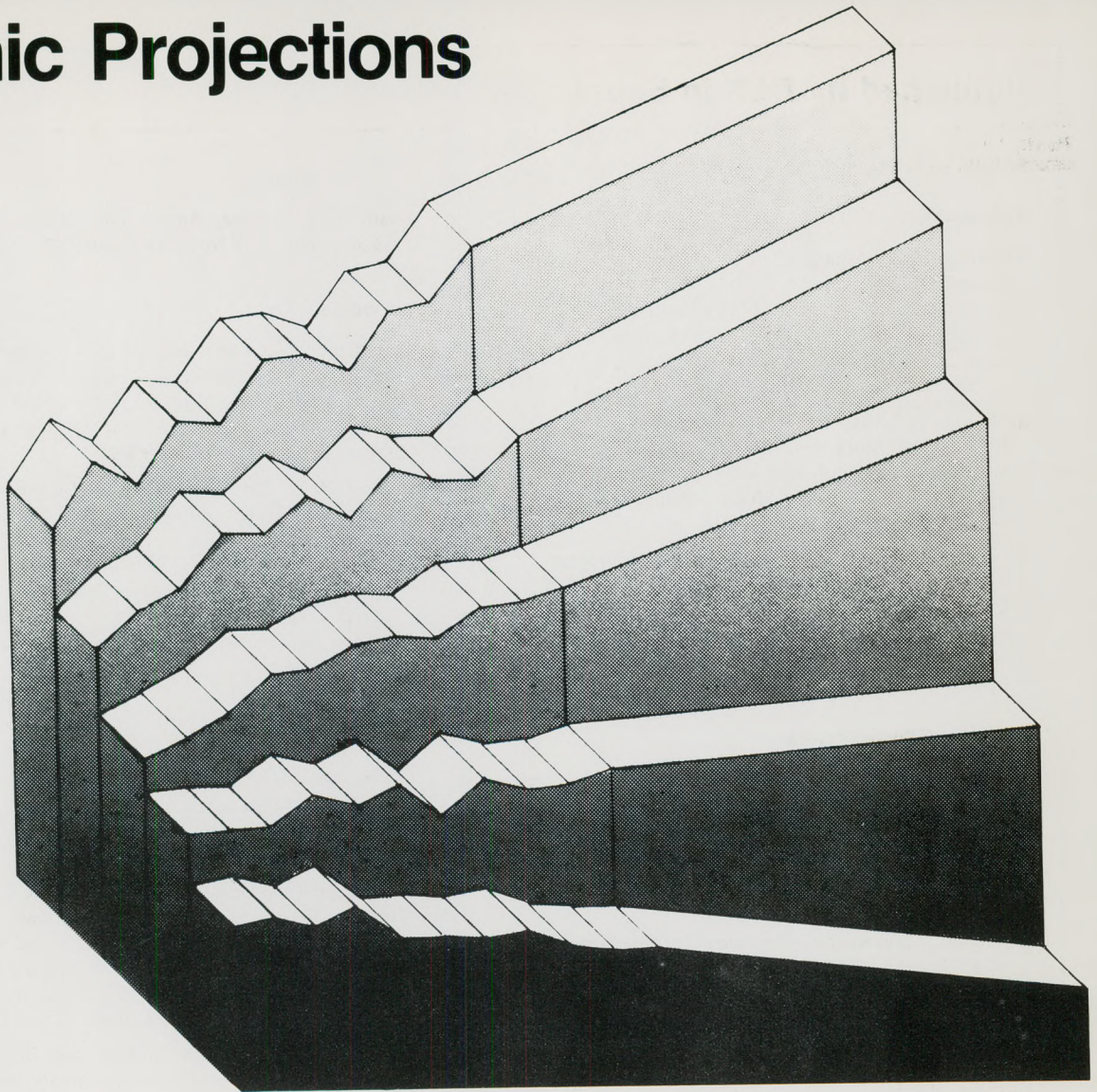
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