



New developments in labor statistics:

Refinement of current statistics, introduction of new programs, and the decennial revision of the Consumer Price Index are underway at BLS

by GEOFFREY H. MOORE AND MAXINE STEWART

THE PRESIDENT'S COMMISSION on Federal Statistics, which recently reported on its year-long study of Federal statistical programs, concluded that major changes in Federal statistics are "not called for" but that "rich opportunities abound for extending past progress." The Commission said that the "primary task" for producers and consumers of Federal statistics is to improve their quality in the 1970's, although some "quantitative extension" also is required.

The task of improving statistics has been a major concern of the Bureau of Labor Statistics (BLS) since its founding in 1884. The Bureau's initial Congressional mandate—"to collect information upon the subject of labor, its relation to capital, the hours of labor, the earnings of laboring men and women, and the means of promoting their material, social, intellectual, and moral prosperity"—has, over the years, become more complex and difficult to satisfy due to population growth and concentration and galloping technological advances accompanied by a myriad of social and economic problems. At the same time that demands for information mounted, the Bureau's data collection and processing techniques and capabilities have improved significantly, providing more sophisticated and useful statistical tools with which to attack domestic problems and to do this more efficiently.

This article reports on new or improved BLS statistical programs in the areas of prices, wages, employment, construction, productivity, occupational health and safety, and some prospective initiatives in these areas.¹

Improved price statistics

The fight against inflation has put increasing demands on the Bureau to provide timely, comprehensive data on price movements. Broad as their respective coverages are, the Consumer Price Index (CPI) and the Wholesale Price Index (WPI) fall

short of measuring the universe of prices. For a number of crucial sectors of the economy, such as government purchases, transportation of freight, industrial and commercial services, wholesale trade, and much of communications, no direct pricing of goods and services is conducted. In others, such as construction and foreign trade, the coverage is grossly inadequate. Without these prices, no comprehensive measure of the price level is possible and analysis of price behavior is seriously handicapped.

There are other gaps as well. For example, the current indexes represent prices paid for each industry's final products; a corresponding set of indexes of prices paid by these industries for their materials—input prices—is needed. Coverage of the input side as well as the output side is needed to trace the origin and ultimate effect of price changes as they work themselves through the economy and create an inflationary environment.

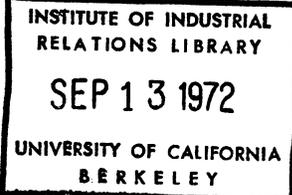
The Bureau has six new statistical enterprises underway designed to improve price statistics by filling gaps that now exist.

Revision of the CPI. The current revision of the Consumer Price Index, designed to make the Index relevant to economic conditions in the 1970's, is the largest—and in some ways, the most innovative—new enterprise underway in the Bureau. Although this is a recurring decennial operation, conceptual and methodological changes in the current revision are sufficiently revolutionary to qualify it as a new statistical enterprise.

A comprehensive review and revision of the entire index is needed because, over a 10-year period, people change their ideas about what they wish to buy—some items lose favor while others gain—and the introduction of new products and services

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steadily reshapes buying habits. People also shop at different kinds of retail establishments. For example, the recent shift to discount stores has affected the prices people pay. Population shifts—both as to age and location—also can affect the nature of consumer needs and satisfactions. If the Index is to be an accurate indicator of price change, it must be updated periodically to be representative of what people buy and where they buy.

The Bureau's revision program started in fiscal year 1970 and will not be completed until 1976. Pilot surveys have been run to test methods of collecting consumer expenditure data and determining where purchases are made. The knowledge gained has been used to develop plans for nationwide consumer expenditure and point-of-purchase surveys. From these surveys, representative goods and services are selected for the Index, the types and location of retail stores from which to collect prices are identified, and the types of workers for whom expenditures are to be reflected in the Index are selected.

In the past the Index has reflected expenditures only for urban wage earners and clerical workers, but consideration is being given to broadening this base by expanding the coverage to include other types of workers or retired persons. The surveys also enable us to determine the proportionate amounts of the goods and services in the consumer's market basket, which is priced for the Index. At present, the Consumer Price Index, based upon expenditures and weights derived from consumer expenditure surveys made in 1960-61, reflects a constant market basket of goods and services—about 400 items—that are priced in 56 cities throughout the country; overall, about 120,000 individual prices are collected each month.

What are the innovations that make the conduct of this revision so different from that of 1960-62? The innovations, each designed to improve the quality of the data and to render them better fitted to a wider variety of uses, are as follows:

The Consumer Expenditure Survey is being conducted on a quarterly instead of an annual basis. This shift to a shorter time period is expected to improve the quality of the results because consumers should better recall their expenditures over a 3-month than a 12-month period. The quarterly method will require five interviews with householders. About 8,500 households will be asked to cooperate on a voluntary basis the first year and

another 8,500 the second. The questionnaire to be used has been developed jointly by the Bureau of the Census and BLS. The survey began this year.

The expenditure data are being collected for the first time by the Bureau of the Census. The collection of the data by the Bureau of the Census will permit the use of many trained data collectors and supervisory staff, already on government payrolls, who have been recently engaged in the conduct of the 1970 census.

Areas included in the expenditure survey have been expanded to 200. This will strengthen the national index as a result of the broader base. Separate data also will be published for many larger cities and areas. But the total number of areas for which publishable data will be available will be fewer. Thus the strengthening of the national sample will be at the expense of some detail.

The housing and family characteristics used to develop the Consumer Expenditure Survey have been obtained from decennial census computer tapes on individual families. As a result of the 1970 census, the Census Bureau has a reservoir of confidential data not available to anyone outside that Bureau, due to prohibitions against disclosure of confidential information. These data permit the Census Bureau to select the sample for the Consumer Expenditure Survey without resort to a large and expensive Comprehensive Housing Unit Survey, such as that conducted in the 1960-62 revision. One advantage of using a universe of households from 1970 census tapes is that the stratification of the sample by income level will be improved.

Consumers are being asked to keep diaries of their expenditures for food and goods and services for personal care over a 2-week period. Some 17,000 households will be involved in 200 areas. The diaries will be kept by a different group than those involved in the quarterly interview, and the 2-week periods will be spread throughout the year to cover all seasons. To insure good responses three personal calls will be made to each householder to explain the procedures, to check on progress in record-keeping, and to review and pick up the diaries. The diaries are expected to improve greatly the detail on those numerous, small, but collectively expensive items that are hard to recall after lapse of a period of time.

A new computer system will be developed for the revised Consumer Price Index, so that the Index can be run on the Labor Department's new 360/65

computer and thus provide for more flexible use of the data, and more efficient processing.

In addition to producing a modernized Index, the expensive (\$30 million) 6-year revision program is expected to produce many valuable byproducts. A multitude of other users are expected to profit from the unique bodies of detailed data on consumer income, assets, liabilities and expenditures, housing characteristics and points of purchase, much of which will be readily available on tapes.

Cost-of-living oriented index. The Bureau is now devoting resources to developing concepts for a long-sought but elusive cost-of-living oriented index. Additional funds have been requested to carry out further experimental work. With such funding, the cost-of-living oriented index will be developed as an experimental annual supplement to the Consumer Price Index. The supplement would differ in four respects from the present Index.

First, it will attempt to measure the effect of consumers' voluntary substitution of one commodity for another when their relative prices change. For example, if the price of beef rises while pork declines, consumers may buy less beef and more pork and still feel as satisfied, at the lower cost than if they had continued to buy the same amounts. A fixed-weight or market basket index, like the present CPI, does not allow for such substitution except

through a major change such as the decennial revision.

Second, the new measure will attempt to reflect the effect of *forced* substitution. Some commodities, like the rubber bathing suit or silk stockings, disappear from the market when new products are developed or for other reasons. When this happens, consumers are forced to buy a substitute—a stretch bikini or nylon stockings—that may cost more or less than earlier preferences.

The cost-of-living oriented index will attempt to measure the continuing cost of the services rendered by durable goods such as houses, automobiles, or appliances, not just the initial price, as in the CPI. Since consumers derive satisfaction from their continued use, the cost-of-living index should reflect this. For example, one buys an apple, and eats it. The consumer's satisfaction goes with it. But when a consumer buys a television set, he enjoys it for several years: its value is not gone with the first viewing. The cost of continuing service over the life of the product will be measured in the Index.

Finally, it will attempt to measure the value to the consumer of benefits from taxes and government services. The CPI reflects a broad spectrum of taxes either implicitly or explicitly. Increases in sales and property taxes are considered to be price increases, because the tax must be paid as part of the price of the goods. And yet, many taxes are used to provide

New BLS statistical series and charts

Job Vacancies in Manufacturing

Monthly Series on Average Duration of Unemployment

Employment Status of Veterans of the Vietnam Era

Hourly Earnings Index

Seasonally Adjusted Rates of Change: for statistical series on prices, and wages

Industry Sector Price Indexes: for 30 additional industries in the manufacturing group

U.S. Export Price Indexes: annually since 1967 for machinery and transportation equipment items

Output Per Man-Hour Indexes: annually for additional industries

Charts Showing Rates of Change in Employment and Price Series: the monthly employment, job vacancy and price releases now are accompanied by a variety of trend charts that show monthly changes over the past 10 years.

Monthly Chartbook on Prices, Wages and Productivity: This new chartbook presents a comprehensive picture of current changes in prices, wages, costs, profits, and productivity in the U.S. economy since 1967.

Employment, Hours, and Earnings, a Graphical Analysis: a monthly compilation that contains 38 charts on employment and unemployment from the Current Population Survey and 94 charts showing industry detail from the industry Employment Survey.

more and better services to consumers. If one is to reflect the direct relationship of government taxation and spending policies to the cost of living, a better measure of government services to the consumer is essential.

Place-to-place comparisons. The Bureau receives numerous requests for information on family expenditures and relative costs of living in different places. These data are needed to indicate changes in consumer spending patterns, to compare living costs in one area with another, and to show differences in expenditures for families of different size or age. Many uses of such information are evident: individual families profit from such information in planning their budgets and purchases; officials in welfare organizations and income maintenance programs use such information to determine the adequacy of welfare and income maintenance payments; businesses use data on comparative living costs among cities to help determine plant locations and differences in salary schedules among cities; private researchers use these data to study the behavior of consumer spending. Recently, a critical question has arisen as to whether geographic differentials should be established for welfare payments to reflect differences in what it costs to live in different places. The Bureau is frequently asked to provide technical assistance on such points.

At the present time, the Bureau is considering alternative ways to assess living costs in different places without relying on the normative aspects of the present family budgets, constructed for a hypothetical family, as has been the case in the past.

One approach being considered is to develop price indexes for different cities that would show how prices paid by consumers in a given city compare with the U.S. average. The family budgets are now used widely for this purpose, but they represent a hypothetical budget for a particular type family rather than an actual pattern of expenditure. The new city indexes would be based on the same market basket of goods and services as the Consumer Price Index. While the existing city CPI's show only changes in prices over time, the new indexes would show differences in price levels from place to place. The expanded biennial pricing of goods and services in 56 cities which will permit place-to-place comparisons of prices has been nearly completed.

The new proposals would also permit data to be developed on actual consumer expenditures at dif-

ferent income levels for different family types, and in different areas. Because the BLS knows of no effective way to determine what income is needed and how it should be spent, it proposes to develop information on *actual* spending at different income levels so it will be clear what the figures represent. From such data, for example, one could determine the actual levels of spending for families in the lower third of the distribution, or the middle third, or the upper third. Pending a decision on the development of actual expenditure data, the family budget estimates currently are being updated through use of data in the Consumer Price Index.

General Price Index. The United States does not have a monthly index of the general price level, or the integrated system of measuring price changes that is needed to understand what is happening to prices. The need for such a General Price Index (GPI), together with a coordinated system of sub-indexes, was demonstrated dramatically in 1969-71 when the most comprehensive available indexes—the Consumer Price Index, Industrial Wholesale Price Index, and GNP Implicit Price Deflator—provided sharply divergent measures of the rate of inflation. According to the CPI, the rate of inflation dropped substantially during 1970 and the first half of 1971 (before the wage-price-rent freeze), but the other two indexes did not tell the same story. Because of differences in concept and coverage, it is difficult to trace the source of these divergencies. The GPI, together with its sub-indexes, will provide a superior measure of the price level and the sources of change in it.

The Bureau recently started developing a monthly price index covering the entire economy (with a breakdown by sector).² It will incorporate data now available from the Consumer Price Index and the Wholesale Price Index programs. In addition, as new data are collected in the Industry Sector Price Index Program, for which an expansion is presently underway with a further expansion proposed for fiscal year 1973 to fiscal year 1976, these data will be incorporated. Input prices showing how much each industry pays for its raw materials also will be collected, if funds permit. These additions will fill major gaps in existing data.

The Bureau hopes to complete an interim index in sufficient detail for use in fiscal year 1973. This will provide policymaking officials, and analysts both within and outside government, with a monthly

index that covers a spectrum of prices broader, more accurately measured, and more detailed than those presently available. Changes in prices for goods and services at various stages of production will also be measured, to fill the need to pinpoint inflationary pressures and to trace their effect on other industries.

Companion research to improve and strengthen this index is now underway. The focus is on improving techniques for accounting for changes in the quality of products included in the various pricing programs. The lack of adequate adjustments for quality changes, as the Stigler Committee observed some years ago, is "the most important defect in these indexes."³ Right now the Bureau is working on quality measures for housing, some household items, and one or two machinery items. If funds are available, product coverage will be expanded. As research on measuring quality changes yields results, the new techniques of pricing will be incorporated into the CPI, the WPI, and the new GPI.

Indexes of import and export prices. For a long time, the United States and most other countries have depended on so-called "unit value indexes" to measure changes in the prices of exports and imports. This simple price index—the total value of a group of products is divided by the number of pounds, tons, or units sold—is affected by changes in the product mix. A price rise may be recorded that reflects only an increase in the relative volume of the more expensive products rather than an actual price change.

The Bureau of Labor Statistics and the National Bureau of Economic Research, Inc., have experimented with methods of determining actual international transaction prices for complicated types of machinery and some equipment. These items constitute an important part of our foreign trade, and their competitive position significantly affects our balance-of-payments. The results of these experiments are sufficiently promising to show that the methods can be used in actual price index construction. BLS, therefore, is developing a continuous reporting system on prices paid for internationally traded commodities, from which some concrete measures of the price competitiveness of American products vis-a-vis the products of other countries can be derived.

With the cooperation of American producers and exporters, particularly those exporting machinery

and equipment, export price indexes were published by BLS last June, for the first time, for 11 groups of machinery products.⁴ From June 1967 through June 1970, these indexes showed a wide range of increases—1 percent for calculating machines, 10 percent for telecommunications equipment, 19 percent for tractors and excavating machinery. The indexes are based on actual transaction prices, as best they can be determined, and are far more reliable than unit value data; the products covered represented only 10 percent of U.S. commodity exports in 1970. This year the Bureau updated the 11 available indexes and added 5 more, in the durable manufacturing group, bringing coverage up to 13 percent of all exports. The average price rise between June 1970 and June 1971 was 4.8 percent, slightly less than in the preceding year.

The Bureau is also examining a large amount of bid data collected by U.S. Government agencies and State and local governments to see if they can be used to develop price indexes for goods imported into the United States from selected foreign countries.

More transaction prices. About two-thirds of the prices collected in the Wholesale Price Index are transaction prices, the balance being list prices. To the extent that the changes in list prices differ significantly from changes in transaction prices, the reliability of the WPI as a measure of *actual* price change is reduced. The Bureau is undertaking to identify commodities for which there is reason to believe a difference exists between list and transaction prices and to collect transaction prices in these areas. Priority attention will then be given to obtaining transaction prices for those commodities that have the heaviest weight in the Index. The ultimate goal is, of course, to have the Index reflect only actual prices paid for goods and services.

Improved wage statistics

The Bureau has undertaken two new wage statistics enterprises that will be useful in collective bargaining activities and in national economic policy. They are the General Wage Index (GWI) and comparisons of union/nonunion wages.

General Wage Index. The historical development of wage statistics has been quite different from that of commodity price statistics. A vast number of wage

and earnings statistics are produced currently, but no single index has emerged that has anything like the general "acceptability" of the CPI or WPI. Moreover, the most commonly used measure of wages, average hourly earnings, has many flaws as a measure of changes in wage rates. Average earnings are affected significantly by many extraneous factors: changes in the proportion of hours paid for at overtime rates, shifts in the volume of employment in high- or low-wage industries, changes in the occupational structure within enterprises. Moreover, earnings do not measure total compensation since they omit nonwage benefits. As a consequence, a number of fairly comprehensive BLS wage series often show conflicting movements. These differences are usually explainable, but frequently they contribute to misunderstanding.

A major statistical innovation, therefore, would be to construct a general wage index that will measure changes in the price of labor and have the acceptability of the existing BLS measures of employment, prices, and productivity.⁵ This index would help to clarify, through the building blocks used in its construction, movements in the entire structure of compensation and their relation to other economic forces. When completed, it will cover all employees, and include all forms of employee compensation, but will be free of the effects of fluctuations in the amount of overtime pay, shifts in employment between low- and high-wage industries, between geographic sectors, and changes in the occupational mix—all of which distort current measures. It will be available monthly, will be seasonally adjusted, and will measure wages both in current and constant dollars. In time, it may be improved to provide separate data for industries, areas, union and nonunion employment situations, and to show separately the various components of compensation. Development of a general wage index will not be simply a marginal addition to the vast array of wage data. Rather, it will constitute an integrated set of statistics reflecting changes in the price of labor.

As part of this long range program, the Bureau has already produced a new Hourly Earnings Index for production and nonsupervisory employees in the private nonfarm economy. It is based on average hourly earnings obtained from the monthly BLS survey of business establishments adjusted to exclude the effects of fluctuations in overtime pre-

miums (for manufacturing only), employment shifts between low- and high-wage industries, and normal seasonal variations. As a result of these adjustments, the index more closely reflects underlying movements in wage rates. An index of real hourly earnings is obtained by dividing by the Consumer Price Index.⁶

Union/nonunion wages. Beginning this year, the Bureau started to collect data that will make it possible to show average hourly earnings by the union or nonunion status of the establishments reporting in the Bureau's industry employment program. These data will be available for publication this fall. This new series will permit, for the first time, a comparison of the trend and level of union and nonunion wages.

Improved labor force statistics

The Bureau has four new series on labor force statistics either recently published or being developed. They cover Vietnam veterans, duration of unemployment, job vacancies, and occupational employment statistics.

Vietnam war veterans. Beginning in May 1970, the Bureau commenced publication of quarterly data on the employment status of Vietnam era war veterans by age and race. Monthly data also are available to compare the employment status of war veterans to that of nonveterans in the same age group (20-29). Beginning in 1972, these data have been available in seasonally adjusted form.

Duration of unemployment. Monthly data have been available for some time on the number of unemployed persons classified by the number of consecutive weeks of unemployment they have experienced up to the survey week. These data give the impression that the typical period of unemployment is fairly long. For example, the average duration of unemployment computed in this manner for 1969 was 8 weeks, and 13 percent of the unemployed had experienced more than 14 weeks of unemployment. This is not, however, a good estimate of the length of the typical spell of unemployment, because those who had experienced only short periods of unemployment are less likely to show up in the count of the unemployed. A proper estimate for 1969 yields an average of less than 5 weeks, with only 6 percent lasting longer than 14 weeks.⁷

Methods of deriving these estimates month by month have been worked out, and the estimates formed the basis for a new series on the characteristics of unemployment.

Job vacancies. In 1970, the Bureau began publishing a monthly series on job openings in manufacturing industries. Data are available back to April 1969.⁸ Currently, the Bureau is expanding this program to generate job vacancy data for the entire economy, nationwide, by area, by industry, and by occupation. Comprehensive coverage will enhance greatly the value of the data as a measure of the demand for labor and as an information source on where that demand is. For example, during the past 2 years, the demand for labor in many manufacturing industries has been weak, owing partly to cutbacks in defense expenditures. The result was a sharp dip in job vacancies in manufacturing from nearly 300,000 during 1969 to under 100,000 during 1971. But employment in the service industries has kept growing, so that job vacancies in this sector probably maintained a high level, though we have no definite information on this from the survey. The expanded coverage that we hope to get will remedy this deficiency.

Occupational employment statistics. This new statistical program is designed to provide current employment by occupation and industry for the private nonfarm economy. The data generated by the program will be valuable in planning and developing manpower training programs, providing realistic vocational guidance information, and aiding State and national manpower projections and occupational outlook studies.

Present plans call for industries to be surveyed over 2 years; manufacturing industries are being surveyed in the first year of the program (1972), most nonmanufacturing industries in the second year, and, depending on resources, a 2-year cycle will be initiated thereafter. Approximately 45,000 establishments are included in the national sample covering manufacturing; a somewhat larger sample—between 60,000 and 80,000—will be used for nonmanufacturing establishments. Although the national sample is being drawn to provide national estimates, cooperating State agencies will expand the sample to provide estimates for some occupations in their State.⁹

Improved construction statistics

Recognizing the urgent need for better statistical intelligence on construction, President Nixon asked his Cabinet Committee on Construction for recommendations for improving statistics on “prices and costs, industry compensation and fringe benefit patterns, industrial relations . . . mortgage financing and construction loan commitments, industry employment, manpower requirements, training and safety . . . and changes in the housing stock including mobile homes.”¹⁰ To do this, the Committee set up a Subcommittee on Construction Statistics. The Subcommittee’s report, approved by the Cabinet Committee in December 1970, contained a lengthy list of recommendations.

In 1971, the Bureau of Labor Statistics began implementation of the recommendations of the Subcommittee and Congress appropriated \$1 million to fund development of additional wage, price, manpower and productivity statistics for this vital industry.¹¹ With these funds, the Bureau is planning to undertake the following new statistical endeavors as rapidly as possible.

The development of price indexes for construction materials and for mobile homes. Although construction activity accounts for a significant part of the GNP, a comprehensive set of price indexes covering this sector is not available. Without them, it is impossible either to measure changes in construction activity accurately (since price indexes are used as deflators in the GNP accounts) or to evaluate the extent and sources of inflation in construction. The first step is to develop criteria and methods for pricing construction inputs which are consistent with data developed for productivity and labor costs. (The Bureau of the Census has a companion program to develop price indexes of construction output.) Residential and nonresidential construction will be treated separately, as well as single and multiple family construction. Account will be taken of technological changes, including the substitution of new materials. The price data will be combined to form indexes for various types of materials, modules and components. In addition, indexes of prices for mobile homes, a rapidly growing sector of the market, will be developed.

Provision of information on the straight-time hourly earnings of employees in various occu-

pations in the construction industry. A major expansion of wage data for the construction industry is essential. No information is available on wages or earnings of workers employed by nonunion contractors, especially in the largely unorganized residential building sector. The new program will obtain, through a new occupational wage survey, information concerning straight-time hourly earnings of employees in selected occupations for contract construction and for operative builders (those engaged in construction for sale rather than as contractors). Information also will be collected on overtime pay, paid holidays, vacations, and other supplementary compensation. Union wage scales and hours of work in heavy construction, similar to that now collected for other segments of construction, also will be obtained. In addition, the feasibility of collecting information on the annual earnings and annual hours of employment of construction workers will be explored.

Provision of essential industrial relations data and analysis needed for collective bargaining and public policy. Because work stoppages are more frequent in the construction industry than in any other, information that relates contract provisions and dispute settlement procedures to work stoppages is urgently needed both to assist the parties in negotiations and to further public policy. In light of recent efforts to widen job opportunities for minority groups in construction, a detailed factual study of industrial relations practices is needed. Information obtained through this program also will be helpful to the Construction Industry Collective Bargaining Commission established by the President last year. This program, when implemented, will bring together information on work stoppages, contract agreements, and industrial relations practices—such as apprenticeship, union membership qualifications, hiring requirements, and worker mobility. Data will also be obtained on health insurance plans, particularly coverage benefits, and eligibility requirements. Work stoppages will be analyzed to identify localities or industry sectors in which strikes often occur. Major characteristics of contracts, such as duration, number of paid holidays, vacations, union security, shift provisions, travel allowances, rest periods, grievance procedures, and seniority also will be tabulated. Public and private dispute settlements machinery will be examined and related to the success or failure

of the parties to conclude a new agreement or to resolve disagreements with a minimum of disruption.

Provision of data on labor and material requirements for major types of construction and development of measures of productivity change. The current intensified concern about economic changes in construction underscores the need for more comprehensive and timely information on manpower requirements and productivity. Industry and labor officials, Congressional committees, and Presidential Commissions repeatedly have cited the lack of adequate information on labor requirements per unit of output. Because measures of construction output are inadequate, current productivity measures for construction are seriously deficient. A recently completed BLS study of single-family housing construction showed that output per man-hour had advanced at the rate of 2 percent a year from 1962 to 1969.¹² It also showed that the construction of an average single-family house in 1969, at a cost of \$26,000, generated nearly 3,600 man-hours of labor in all sectors of the economy, or roughly 2 man-years.

The Bureau plans to expand its current limited program to cover additional types of construction, including elementary and secondary schools, facilities for higher education, waterworks, and public office buildings. Studies of these areas have either not been done previously or are out of date.

New productivity and related statistics

The National Commission on Productivity, appointed by President Nixon, was instructed "to give first priority to the problems we face now; . . . achieve a balance between costs and productivity that will lead to more stable prices." Development of such new initiatives and evaluation of their effectiveness will depend, in part, upon measures of productivity, wages, and prices not only for the United States as a whole, but also for critical industries. In response to a series of requests, BLS has undertaken several research and statistical projects. Two reports and a chartbook have been prepared: *The Meaning and Measurement of Productivity* (1971), *Labor-Management Approaches to Improving Productivity* (1971), and *Productivity and the Economy* (1971). In addition, the Bureau either has completed or is completing the following work for the commission:

- Productivity statistics for some additional industries; a resolution of conceptual and measurement problems in the service sector of the economy.
- Price measurements for 29 additional manufacturing industries for which data are not available; if funds are available, price indexes will be developed for an additional 35 manufacturing industries as well as for railroads, life insurance, and some sectors of retail trade.
- Wage measures free of the effects of employment shifts among industries for use in the General Wage Index discussed earlier.
- Studies of factors affecting the rate of productivity growth among industries.

Occupational safety and health statistics

The Bureau has for many years compiled rates of work injuries by frequency and severity on an annual basis for a limited number of industries. A major expansion and refinement of these statistics is underway as a result of the passage of the 1970 Occupational Safety and Health Act, which requires each employer to make, keep, and preserve records prescribed by the Secretary of Labor or Secretary of Health, Education, and Welfare concerning injury and health statistics and employee exposure to potentially toxic materials or harmful agents.

With the cooperation of State agencies, the Bureau is building a comprehensive new statistical program to pinpoint injuries and illnesses by industry, size of establishment and geographic area. Analyses of these data will provide a better foundation of fact to guide inspection and enforcement efforts under the act and the preparation of new safety standards. Since the basic objective of the act is to reduce occupational injuries and illnesses, the statistics collected are designed to measure progress toward that goal. (See the article on page 14.)

Future directions

In addition to the programs already discussed, a number of other proposals for new or improved measures of wages, prices, productivity, and employment are under consideration:

Monthly pricing of the CPI. The Consumer Price Index has been subject to some searching scrutiny lately as stabilization mechanisms were introduced and the President announced his intention to reduce inflation to a range of 2 to 3 percent per year by

the end of 1972. The CPI is the most frequently used measure of the rate of inflation, but many of the prices it contains are not collected every month. In general, prices collected monthly are those that change frequently, such as those for foods; other prices, such as rents, are collected only every 3 or 6 months, since they do not change frequently. Nevertheless, to the extent that all prices are not collected monthly, the index does not measure monthly price change as promptly or as precisely as it might.

The Bureau proposes, if resources can be secured, to collect monthly prices for the CPI market basket so that nearly all nonfood commodities and most services would be priced each month. Such a procedure, which is entirely consistent with the overall design of the CPI, would improve its sample, and make the Index a more precise measure of what is happening to prices.

This improvement will cover the bulk of the Index. Rents would still be priced semiannually because of the infrequency of change. Some items that would still be priced annually, such as college tuition and property taxes, normally change only once a year. Prices of homes and used cars and of food consumed away from home, which constitute only 8 percent of the Index, will continue to be represented by 3-month moving averages of monthly data.

Occupational wage index. At present the Bureau publishes four types of measures of wage change: average hourly earnings, general wage change data, negotiated wage changes under labor-management contracts, and total compensation per man-hour. The first is available monthly; the others, quarterly. Each of these measures, however, has limitations as an indicator of wage change.

The key problem with average hourly earnings, which represent gross earnings of all production or nonsupervisory workers, is to separate out the employment changes and premium payments that affect earnings but not wage rates. Some progress has been made in this area in that the new average hourly earnings index (already discussed) adjusts earnings for changes in employment by industry and overtime in manufacturing, as well as for seasonal variations. However, it is not adjusted for changes in overtime in nonmanufacturing industries nor in the occupational composition of employment. To this

extent, it does not measure changes in wage rates alone. Furthermore, it does not include supplementary benefits, which have become significant in the wage package.

Among the quarterly series, the general wage change series does measure changes in wage rates alone, in that it is not affected by employment or overtime changes. But its coverage is limited to manufacturing enterprises. It does not include small unionized firms (even within manufacturing), and excludes firms which do not grant across-the-board or general wage increases and longevity or merit increases granted individual workers. Thus this series presents only a partial view of wage changes. Measures of wage changes in union contracts are, of course, limited to the sector covered by such contracts, and only the larger contracts (1,000 employees or more) are included. Wages and benefits combined are measured only for contracts in a still larger size group (5,000 employees or more). Data on total compensation per man-hour cover all except government employees and include fringe benefits as well as wages and salaries. Like hourly earnings, however, the figures are affected by employment shifts between industries and occupations.

Until the General Wage Index (discussed earlier) is completed, the Bureau has proposed to develop an interim monthly index of wage or salary rates for selected jobs. The new measure would use the sample of establishments now covered in the Bureau's area occupational wage program (which does not include mining, construction, or government, or establishments with fewer than 50 employees). Changes in wage rates for an occupation within an establishment would be measured. Constant employment weights would be used to avoid the effects of shifts in employment among occupations or among establishments and occupations would be selected to represent office clerical, skilled, and unskilled groups.

The new index would have some deficiencies due to limited industry and occupational coverage, absence of fringe benefits, and possible effects of wage increases based on length of service.

Employment and unemployment statistics. Because the labor force survey currently used to estimate employment and unemployment is based on a single week in every month (the week that includes the

12th), the statistics sometime exhibit irregularity from month to month which reflects special factors occurring only in the survey week, such as unusual working conditions or holidays. These irregularities can perhaps be reduced and a more representative picture of employment conditions obtained by collecting the data for all weeks in the month.

If funds are made available, a parallel but smaller sample of the Current Population Survey would be made in the weeks not covered by the present monthly survey. If analysis of the data collected indicates a significant improvement, the parallel survey would be continued for 3 years to develop sufficient information to seasonally adjust a series based on averages for all weeks in the month when it is first published. In the meantime the existing series would be continued.

A WIDE VARIETY of additional problem areas in statistics where new initiatives are being considered could be discussed. For example, in view of the broad impact on employment of changes in Federal Government activities in the defense, space, health, education, housing, and the environmental areas, it would seem desirable to develop a systematic plan for identifying their prospective employment effects. Manpower implications of alternative ways in which these and other programs might develop over 5 to 10 years need to be considered at the time basic decisions are made. The beginnings of such an estimating system already exist through work the Bureau has done on economic growth, manpower projections, and the impact of defense cutbacks.

Another example is the development of annual consumer expenditure surveys. The massive survey being conducted in 1972 and 1973 will provide a basis for the decennial revision of the CPI. Although more frequent revisions of the CPI are probably not warranted, there are many other uses for up-to-date information on how consumers are spending their money, whether they are using savings or credit to supplement their current income, and how spending patterns vary at different levels of income, among families of different size, and so on. Wide demand for the Bureau's estimates of family budgets is evidence of this need but these estimates are hypothetical constructions, not actual expenditures. Small scale annual surveys could be designed to obtain current information on expenditures for broad cate-

gories of goods and services, but within a sampling framework which will permit collection of more detailed data for individual components (transportation, medical care, housing, education); particular groups in the population (low-income families); or specific regions. These surveys would be designed to preserve general comparability with the 1972-73 expenditure survey.

A final example is provided by growing needs for local area data. Manpower programs, welfare, housing, the whole range of social and economic programs designed to deal with problems in the American social and economic structure have been

focused largely in urban centers. A major shift in statistical programs—on wages, prices, employment—to provide more and better State and local data will be necessary to meet informational needs growing out of the shift in decisionmaking responsibilities to State and local levels. How such programs should be funded, how they should be designed to meet acceptable standards of accuracy, comparability, and timeliness, and how the essential interests of users of data for individual areas can be identified and preserved, are large questions that the Bureau of Labor Statistics and other agencies must continue to address. □

—FOOTNOTES—

¹ For an earlier view of BLS plans, see Geoffrey H. Moore, "Long-range program objectives for BLS," *Monthly Labor Review*, October 1969, pp. 3-6.

² See Allan D. Searle, "Toward comprehensive measurement of prices," *Monthly Labor Review*, March 1971, pp. 9-22.

³ *The Price Statistics of the Federal Government*, a report of the Price Statistics Review Committee of the National Bureau of Economic Research to the Bureau of the Budget, hearings before the Economic Statistics Subcommittee of the Joint Economic Committee, Jan. 18, 1961.

⁴ See U.S. Department of Labor Press Release 71-363, June 30, 1971.

⁵ See Norman J. Samuels, "Developing a general wage index," *Monthly Labor Review*, March 1971, pp. 3-8.

⁶ Thomas W. Gavett, "Measures of change in real wages and earnings," *Monthly Labor Review*, February 1972, pp. 48-53.

⁷ Hyman B. Kaitz, "Analyzing the length of spells of

unemployment," *Monthly Labor Review*, November 1971, pp. 11-20.

⁸ Raymond A. Konstant and Irvin F. O. Wingard, "Analysis and Use of Job Vacancy Statistics: Part I," *Monthly Labor Review*, August 1968, pp. 22-31; and Part II in *Monthly Labor Review*, September 1968, pp. 18-21; and Raymond A. Konstant, "Job Vacancies in 1970," *Monthly Labor Review*, February 1971, pp. 20-21.

⁹ Harold Goldstein, "The new occupational employment statistics program," *Monthly Labor Review*, October 1971, pp. 12-17; and Denis M. Gruskin, "Problems of Gathering Occupational Data by Mail," *Monthly Labor Review*, February 1968, pp. 59-61.

¹⁰ Statement by the President on Combating Construction Inflation and Meeting Future Construction Needs, March 17, 1970.

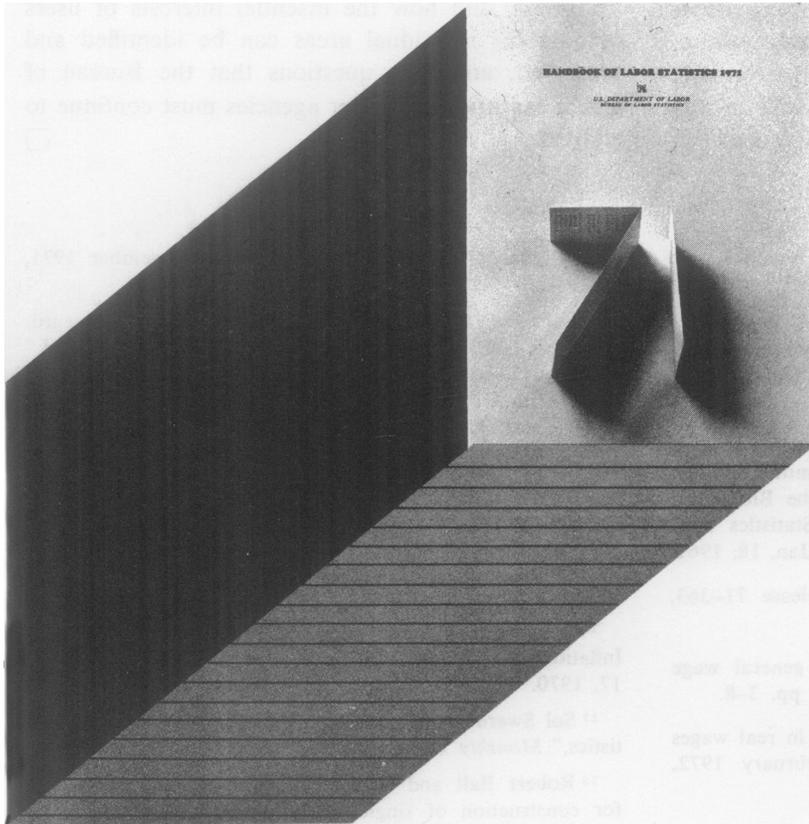
¹¹ Sol Swerdloff, "Surveying the gaps in construction statistics," *Monthly Labor Review*, February 1971, pp. 33-37.

¹² Robert Ball and Larry Ludwig, "Labor requirements for construction of single-family houses," *Monthly Labor Review*, September 1971, pp. 12-14.

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