

Industry Employment Statistics in the United States

Fifty Years of Development

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Prior to 1915, the principal sources of employment data in the United States were the census surveys--the decennial Census of Population and, beginning with 1899, the quinquennial Census of Manufactures. There existed no regular compilation of employment data between the census dates. By 1915, some State agencies were already compiling employment statistics but only three of these--Massachusetts, New York, and New Jersey--were collecting reasonably complete employment data. Although these three were important manufacturing States, the information collected by them failed to give an accurate cross section of manufacturing for the country as a whole because of the high degree of industrial specialization in these States. This was particularly true in Massachusetts, where manufacturing was restricted principally to the textile and boot and shoe industries.

In July 1915, at the time of publication of the first issue of the *Monthly Labor Review*, it was evident that lack of current employment statistics by industry for the Nation as a whole constituted a serious gap in the statistical program of the United States Government. The initial issue of the *Monthly Labor Review* contained reports on employment statistics for Germany, Great Britain, Australia, Canada, Denmark, Finland, France, the Netherlands, Norway, Sweden, and Switzerland. Later issues during 1915 and 1916 contained additional data for several of these countries and for Austria and Italy. While the content and quality of the statistics for these countries varied considerably, data for the three largest countries--Great Britain, Germany, and France--were superior to any published for the United States until after World War I.

Program Beginnings

As an initial step in closing this gap, the Bureau of Labor Statistics began to collect

and publish employment statistics monthly, beginning with October 1915, for four industries--boots and shoes, cotton goods, cotton finishing, and hosiery and underwear. By November 1916, the monthly surveys had been expanded to cover nine additional industries--woolen textiles, silk textiles, men's readymade clothing, iron and steel, car building and repairing, cigar manufacturing, automobile manufacturing, leather manufacturing, and papermaking. At first, the series consisted merely of data on over-the-month changes in employment and payrolls, computed from small samples. In December 1916, the survey covered 574 establishments having a total employment of 519,185.¹

In February 1918, index series on employment and payrolls, using a January 1915 reference base, were developed for each of the 13 industries, but these series were dropped after March 1919.

The cooperative program with State agencies for the preparation of industry employment statistics for States and areas, which is now one of the outstanding features of the BLS industry employment statistics program, had its faint beginnings in this period. As early as March 1916, the Bureau of Labor Statistics had entered into a cooperative agreement with the New York State Department of Labor providing for use by both agencies of employment data collected by the latter agency. Beginning with March 1916, a monthly narrative report on employment in New York State prepared by the New York State Department of Labor, was frequently republished in the *Monthly Labor Review*. It is interesting to note that, at that time, the figures for New York were based on a larger, more representative sample than were the national statistics.

No new developments occurred in the program until after World War I. The short recession in 1918 and 1919 and the longer more

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¹ At that time, the most recent *Census of Manufactures* (for 1914) showed a total of 268,400 establishments and employment of 7,514,000 in all manufacturing.

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Labor force statistics, showing the employment status and hours of work of the noninstitutional population, both farm and nonfarm, are compiled each month from data obtained by personal interviews of a sample of 35,000 households in 357 areas throughout the country. Percentages of the population in a given category are derived from the sample and then applied to independent population estimates prepared by the Bureau of the Census. Monthly data on the labor force are collected and tabulated by the Bureau of the Census under contract with the Bureau of Labor Statistics.

Payroll employment statistics, which provide detailed industry information for the Nation, States, and major areas are based on data supplied by employers. Each month a sample of industrial, commercial, and government establishments, employing collectively about 25 million workers, voluntarily submits data, drawn from payroll records, to the State agencies cooperating with BLS. In these agencies, data are extracted for preparation of estimates on State and area employment, hours, and earnings. The establishment reports are then sent to the BLS for use in the preparation of national estimates. This program is conducted jointly by State employment security agencies, the Bureau of Labor Statistics, and the Bureau of Employment Security in 44 States and the District of Columbia; in the remaining States, the program is a cooperative endeavor by State Departments of Labor and the BLS.

Contribution (tax) reports filed by employers subject to State unemployment insurance laws are the major source of benchmarks by means of which overall estimates of nonfarm employment are prepared and adjusted. These reports, covering about three-fourths of the total number of nonfarm employees in the United States, are collected and tabulated by State employment security agencies under the direction of BES. Benchmark data for the remaining portion of nonfarm employment are obtained by BLS from information collected under the programs of the Social Security Administration, the Civil Service Commission, the Interstate Commerce Commission, and a number of other agencies, either private or government.

Labor turnover statistics, showing the rate of accessions and separations, by industry, for the Nation and for selected States and areas are based on data voluntarily supplied by employers. The sample used is smaller than that for the payroll employment statistics and is limited to manufacturing, mining, and communication industries. The State agencies in the labor turnover statistics program have the same responsibilities as in the employment statistics program. In 50 States and the District of Columbia, the program is operated by the State employment security agencies, BLS, and BES.

intense postwar depression of 1920 and 1921 impelled a number of government officials, businessmen, labor leaders, and economists to address themselves to the problems of reconstruction and unemployment. As a result of their investigations, they became doubly aware of the need for more comprehensive information concerning the employment situation. A Conference on Unemployment was called by President Harding in 1921 and two committees were formed, one headed by Henry M. Robinson (the Committee on Employment Statistics) and the other headed by Owen D. Young (the Committee on Unemployment and Business Cycles) which addressed themselves to this problem. The reports of these committees stressed publication of nationwide statistics on employment to show (1) trends of employment and unemployment as a social condition affecting human beings and their welfare; and (2) trends of production and business activity.

Surveys Extended

Probably in part as a result of this recommendation, Congress made additional funds available to the Bureau of Labor Statistics for the fiscal year 1922-23, and the monthly employment surveys were extended in July 1922 to cover 29 additional manufacturing industries. The number was gradually increased to include a total of 52 manufacturing industries, grouped into 12 major categories (e.g., food and kindred products), by October 1923. In April 1924, indexes of employment for all manufacturing, the major groups, and the individual industries were published for the first time. This first series, which began with data for July 1922, was based on the 1923 average as 100, and was weighted by employment for the various industries as shown by the 1919 *Census of Manufactures*. In March 1925, a similar index series on payrolls was inaugurated. Between September 1928 and June 1929, eight nonmanufacturing groups were added to the list of industries for which the Bureau published over-the-month changes. In December 1929, the sample in manufacturing industries covered 12,200 establishments having 3,265,000 employees.² For all industries surveyed, the sample included 34,400 establishments.

²The *Census of Manufactures* for 1929 covered 206,700 establishments with average annual employment of 9,660,000.

These advances in the program followed recommendations of committees appointed by the American Statistical Association in 1922 and 1923 to study the measurement of employment. These committees included leading statisticians of the Federal Government and of State departments of labor.

Federal-State Cooperation Initiated

Out of the committee activity, came a recommendation for greater participation of the State labor departments in the employment statistics program. In addition to the States which were collecting data before the Federal program was initiated, the Industrial Commission of Wisconsin began to collect employment statistics in 1915 and similar work was undertaken by several other States in the postwar depression of 1920-21.

Federal-State cooperation for the collection of employment statistics developed slowly during this period. Wisconsin joined New York as the second State in this program in July 1920, and five other States made agreements with the Bureau of Labor Statistics before 1928. Throughout the decade, employment statistics prepared by State agencies were published each month in the *Monthly Labor Review*. For example, in March 1925, data prepared by the State departments of labor for California, Illinois, Iowa, Maryland, Massachusetts, New York, Oklahoma, and Wisconsin were published. The statistical methods used in preparing these data were very primitive. In most cases, only the percentage changes between the current and previous month in employment and payrolls for a sample of identical establishments were presented. Data for broader categories, e.g., manufacturing, were obtained merely by adding together the samples for component industries. The statistics were not comparable among the various States, nor with the data for the Nation as a whole. Interest in employment statistics languished, however, during the prosperous years from 1923 to 1929, and little was done by other States toward developing reliable employment statistics.

Bureau Activity Reflects National Issues

During the twenties, the Bureau's employment and payroll statistics began to be used in economic analyses. One of the earliest examples

is the article in the *Monthly Labor Review* of March 1922 by the Commissioner of Labor Statistics, Ethelbert Stewart, entitled "Trend of Employment in the Manufacturing Industries in the United States, June 1914, to December 1921." In 1926, Ewan Clague was engaged by the Bureau to conduct a study of productivity in a number of industries. To derive indexes for use in computing productivity per man-hour, he made extensive use of the employment indexes in conjunction with *Census of Manufactures* data on man-hours and some of the Bureau's studies on wages and hours in specific industries.

The stock market crash in October 1929 was followed by the Great Depression. In 1930, the deepening economic crisis with its attendant problem of mass unemployment impelled President Hoover to appoint an Advisory Committee on Employment Statistics to study the need for expanded data in the subject field. This committee, headed by Professor Joseph H. Willits of the University of Pennsylvania, with Ewan Clague as one of its technical advisors, reported in the spring of 1931. Among the recommendations which were to have considerable impact on the subsequent development of employment statistics were: (a) the development of employment "indexes" for additional non-manufacturing industries, notably contract construction and service industries; (b) the tabulation of employment data for some entire States and for some leading cities, especially in those areas where no State department of labor was conducting local tabulations; (c) the introduction of certain technical improvements, developed by the Division of Research and Statistics of the Federal Reserve Board, necessary to bring the BLS indexes of manufacturing employment and payrolls into alignment with data shown in the biennial *Census of Manufactures* for 1923 and following years; and (d) the development of a program for the collection of man-hours data for wage earners in manufacturing. To implement these recommendations, the Advisory Committee also recommended that Congress provide an additional appropriation of \$200,000 for the fiscal year 1932, with \$50,000 of this amount to be made available immediately in the spring of 1931. Congress granted a substantial portion of these recommended funds.

During the Great Depression when mass unemployment threatened to become a permanent aspect of American life, there was much controversy among various authorities concerning

the actual number of unemployed. Even at this time, there were still no reliable measures of either unemployment or total employment. In the early years of the Roosevelt administration, however, the U.S. Secretary of Labor made frequent references to the Bureau's employment data for use as an indirect measure of unemployment. The need for more comprehensive measures of employment became increasingly urgent and current estimates of wage and salary workers in nonagricultural establishments were developed not only for the segment as a whole, but in some industry detail. In 1936, the Bureau began its publication, as a mimeographed release, of a series on employment in nonagricultural establishments. After September 1940, estimates of total non-agricultural employment (including proprietors and firm members, self-employed persons, casual workers, and domestic workers)³ and of wage and salary workers in nonagricultural establishments were published monthly in the *Monthly Labor Review*. In the case of employment in nonagricultural establishments, estimates were also given for major industry groups (e.g., mining, manufacturing). These series were based originally on the 1930 *Census of Population* data on employment and unemployment.

Benchmark Revisions Initiated

A comparison of the Bureau's indexes of manufacturing employment and payrolls with *Census of Manufactures* data over the period 1923-29 showed a downward bias of approximately 9 percent in the Bureau's indexes. If factory employment had been estimated for the year 1929 on the basis of the Bureau's unadjusted indexes, using the 1923 index as comparable to census factory employment for that year, the Bureau's estimate would have been below the 1929 census levels by approximately 1,000,000. Using a procedure developed by the Federal Reserve Board, the Bureau of Labor Statistics revised its indexes over the period

³This series on total nonagricultural employment was discontinued in October 1941, when the Works Progress Administration's *Monthly Report on Employment* (after August 1942, the *Monthly Report on the Labor Force*, by the Bureau of the Census) became available. This series provided estimates of labor force, employment, and unemployment based on a nationwide sample of households.

1923-29 so that they approximated the census levels in each of the years 1923, 1925, 1927, 1929, and 1931.⁴ This project was the first of the periodic revisions of establishment employment series to new "benchmark" levels. BLS Bulletin 610, which presented the revised indexes, also included for the first time monthly estimates of employment and payrolls for all manufacturing and its major industry groups. The series on manufacturing employment and payrolls were subsequently adjusted to benchmarks derived from the 1933, 1935, 1937, and 1939 *Census of Manufactures* as these appeared. Employment and payroll indexes for various nonmanufacturing industries were also adjusted to data from the several Censuses of Business taken during the 1930's.

Current Collection of Hours and Earnings Data Instituted

In 1932, the Bureau began the collection of data on production worker man-hours, and in January 1933 published average hourly earnings, average weekly hours, and average weekly earnings, as well as indexes of employment and payrolls, for 90 manufacturing industries in 15 groups and for 14 nonmanufacturing industries. These new data formed an important adjunct to the Bureau's statistical series as they made available for the first time data on current trends in hours and earnings. Their importance as economic indicators was quickly recognized, as attested by their extensive use in articles in the *Monthly Labor Review* analyzing economic trends reflected by BLS statistical data. In later years, similar use was made of the newly developed series on nonagricultural employment.

State and Area Data Developed

Interest in employment data for States and areas was also stimulated in the 1930's by the overriding importance of the problem of unemployment. By 1935, employment data were being gathered in 19 States, including all the

⁴*Revised Indexes of Factory Employment and Payrolls, 1919 to 1933* (BLS Bulletin 610, 1935), by Lewis E. Talbert and Alice Olenin. The techniques used were developed at the Federal Reserve Board by William A. Berridge, Woodlief Thomas, and Aryness Joy (Wickens) and at the Federal Bank of Philadelphia by J. Frederic Dewhurst.

major industrial States. This was an increase of nine States since 1928. Federal-State cooperation for the collection of employment statistics developed slowly during this period, however. By 1936, only 12 States participated in this program, an increase of only 5 States since 1928.

Beginning with data for December 1931, a table was published each month in the *Monthly Labor Review* showing percentage changes in employment and payrolls, by State, between the current and previous month for a sample of establishments. This tabulation presented data by State for all manufacturing, a selection of nonmanufacturing industries, and for all industries, combined. Although publication of this table was discontinued after July 1934, State employment statistics of the same type, but covering all industries and manufacturing only, were published monthly after July 1935. Also, beginning with December 1931, percentage changes in employment and payrolls, calculated from a sample for all industries, were published for the 13 cities which had populations in excess of 500,000 in 1930. Crude as these statistics were, they did represent the first attempt by the BLS to provide current employment data for all States and major cities on a monthly basis.

These statistics were not adequate representations of employment conditions in States and areas, so the Bureau constructed State indexes based on employment changes and weighted by industry employment. The weights used were derived from the 1933 *Census of Manufactures* and *Census of Business* and the 1932 *Census of Mineral Industries*. These indexes were based on 1932-33 averages and although not published, were used extensively to answer inquiries on the degree of recovery reached in any State, from the depths of the depression, and for comparison with other economic series.

During 1938-39, the need for estimates of actual State employment resulted in the creation of a unit whose sole responsibility was to compile estimates of nonagricultural employment. By 1940, estimates of employment levels for all 48 States and the District of Columbia were published. Each State series was the sum of 20 to 60 components. Unemployment compensation data, census data, and the BLS sample reports together with data from other sources provided the basic materials. The series were

revised in 1942 and publication of them continued until 1947.

Estimates at National Level

By 1935, data on employment, payrolls, and hours and earnings were published at the national level for all manufacturing, durable and nondurable goods manufacturing, 90 manufacturing industries, and 21 nonmanufacturing categories including building construction, Federal Government, and Class I railroads. No material change in program content occurred after 1935 until the beginning of World War II.

The onset of that conflict in 1939, followed by the entry of the United States after the assault on Pearl Harbor in December 1941, placed additional demands on the Bureau's employment statistics program. Perhaps the most noteworthy development of these years was that the additional responsibilities placed upon the system pointed up the need for greater uniformity between the various programs of establishment-based statistics on employment and related subjects as compiled by the BLS, the Bureau of the Census, and the agencies administering the emerging social insurance programs. Differences in concepts, in industrial classification, and in reporting practices often limited the usefulness of these statistics in wartime planning and in economic analysis. While most improvements had to await the end of the war, several important advances took place during those years.

After the adjustment of the national series for manufacturing industries to the 1939 *Census of Manufactures*, employment estimates were published monthly for all major groups and 157 industries in manufacturing. These series, first published in January 1943, provided estimates back to 1939. Estimates of employment in 11 nonmanufacturing industries were published in May 1943.

Recourse to Social Insurance Statistics

A most far-reaching decision was to use as employment benchmarks the statistical data which became available about 1940 as a by-product of the newly organized social insurance programs. The Social Security Act, passed in 1935, provided for the collection of employment and payroll data from firms subject to the

provisions of the act. These data could be used for both statistical and administrative purposes. Summary tabulations of such materials became available about 1940 from the unemployment insurance program (prepared by the State employment security agencies, with the Bureau of Employment Security acting as coordinator). These data became the preferred sources of benchmarks because they encompassed industrial categories not covered by the censuses of manufactures and censuses of business, notably contract construction and finance, insurance, and real estate. Further benchmarks were available from the social insurance system on an annual basis, whereas after 1939, the *Census of Manufactures* was only taken for the years 1947, 1954, 1958, and 1963 and the final results were generally not published until 2 or 3 years afterward. The intervals between the other industrial censuses were of like magnitude. The statistics from the unemployment insurance system became the principal source of benchmarks for the BLS industry employment statistics program; this partly because the data become available on an annual basis, but mainly because of the close ties engendered between the State employment security agencies and the BLS, through development of the State and area employment statistics program in the 1940's and the 1950's. These benchmarks had to be supplemented, of course, by data from other sources in the case of industries which were not covered or were only partially covered by the unemployment insurance program. However, the unemployment insurance data cover about 75 percent of the total employment in nonagricultural industries, and reasonably adequate benchmarks are available for the remaining segments.

Program Effects of World War II

The efforts of the Bureau during the years 1940-45 were not directed primarily toward technical improvement, but toward providing the military and civilian war agencies with data on employment, payrolls, and hours and earnings in industries important to the war effort. To this end, series were inaugurated in 1942 for 67 additional manufacturing industries, largely those engaged in the production of materials of key importance in the war program. The division also prepared special

analyses and tabulations by industry and area for the Congress, the Army, the War Production Board, and the War Labor Board. A considerable number of requests for special tabulations of employment, hours, and earnings data were received each month by the Bureau, during the war years. In 1940, the War and Navy Departments began to use indexes of hourly earnings as the basis of escalator clauses in defense contracts. These clauses provided for additional compensation in the case of an advance in average hourly earnings between the time a contract was signed and completion of the material on order.

Several series which ultimately became a regular part of the industry employment statistics program were first developed during World War II. One was the series on straight-time hourly earnings in manufacturing industries. During the depression years, overtime work had been quite rare, and the overtime provisions of the Fair Labor Standards Act of 1938 were designed primarily to discourage scheduling of overtime. As the United States became more and more involved in the war effort, after 1939, the need for additional manpower was met in part by the use of overtime. Hence, the Bureau's monthly series on gross average hourly earnings no longer reflected the trend of straight-time earnings as they had before World War II. In 1942, the Bureau reviewed the information in its files on hours of work in manufacturing and derived a mathematical relationship between straight-time and gross hours which permitted the estimation on a current basis of straight-time earnings in manufacturing and its major industry groups.

Manpower needs during the war were also met by increased employment of women. Beginning with 1942, the Bureau collected semi-annual data on the number of women production workers in manufacturing, but this survey was discontinued in 1947 when the Bureau's budget was reduced severely.

The concept of "spendable" weekly earnings was also developed during this period. Prior to the late 1930's, gross weekly earnings and "take-home" pay were practically synonymous. The introduction of payroll taxes for social insurance programs and, particularly, the practice after 1942 of withholding income taxes meant that there was considerable difference between actual weekly earnings and the amount of the worker's paycheck. The series on spend-

able earnings was first introduced in a *Monthly Labor Review*, March 1944 article entitled "Spendable Earnings of Factory Workers, 1941-43."⁵ This series, which was eventually carried back to 1939, has been published regularly since 1948.

When tabulations of employment data reported to State unemployment insurance agencies first became available, in the early 1940's, providing benchmarks for employment series, the feeling grew that the proper place to estimate State and area employment was in the State agencies. In 1944, as a first step in this direction, the preparation of State employment series was transferred to the Bureau's eight regional offices, where staffs were set up for the purpose of preparing employment statistics. In States with which the Bureau had cooperative agreements, the regional office staffs advised and assisted the State agencies. For the other States, the estimates were actually prepared in the regional offices.

One effect of World War II on the domestic economy was to eliminate the chronic mass unemployment which beset the entire decade of the 1930's. With the memory of that unhappy period in mind, Congress passed the Employment Act of 1946. When he signed the act, President Truman stated that it was a commitment of the Federal Government "to take measures necessary for a healthy economy, one that provides opportunities for those able, and willing, and seeking to work." Under this legislation, the President was given the duty of formulating programs to carry out the purposes of the law. His recommendations were to be presented to the Congress at the beginning of each session, in an "Economic Report." To assist the President in these duties, the Council of Economic Advisors was established in the Executive Office of the President. Within Congress, the Joint Committee on the Economic Report was set up under the act to study the recommendations of the President as embodied in his Economic Report. The responsibilities of the Council, combined with the activity of the Joint Committee, were ultimately to produce considerable demands that improved data and new statistical series be made available from the statistical agencies of the Federal Government.

⁵This series differed somewhat in concept from the currently published series in that it also reflected payroll deductions for War Bonds, a practice considered to be nearly universal during that period.

The immediate postwar period, however, was a period of program contraction. In 1947, the Congress reduced the Bureau's budget, to bring its activities back to the prewar level. In making curtailments, the Bureau dropped the series on women production workers in all manufacturing and discontinued the regional office preparation of employment statistics. The emphasis, as far as State and area employment statistics were concerned, was shifted toward their preparation by the State agencies under cooperative agreement with BLS.

Cooperative Program Includes All States

In the long run, this arrangement proved advantageous to both the Bureau and the State agencies. By 1949, the last State had joined the program.⁶ Thirty-two States became cooperators in the 5-year period, 1945-49. In most instances, the cooperating State agencies were State employment security agencies. As the program spread to all States, the view of the purposes of cooperation changed and broadened. Cooperation had been initiated primarily to reduce the burden of reporting statistics for employers, but even in the earlier years there had been some emphasis on the desirability of having adequate systems of State statistics developed by the cooperating State agencies. Cooperation on a national plane between the Bureau of Labor Statistics and the Bureau of Employment Security brought about rapid development in the cooperative program of employment statistics. On the one side, the BLS was interested in developing the system to achieve maximum industrial detail, accuracy and comparability in national, State, and area statistics; on the other, the Bureau of Employment Security had an urgent need for accurate, current, and detailed employment statistics for States and local areas, to facilitate program operations of the various State employment security systems. Since 1949, when the BLS received augmented appropriations for its work on employment statistics and a joint program for financing the activity was worked out between BLS and BES, the program has been financed in part by the Federal grants toward administration of the employment security system, in part by

⁶ Alaska and Hawaii were brought into the cooperative program shortly after they were admitted to the Union in 1959.

appropriations to the Bureau of Labor Statistics, and in the six States where the cooperating agency is other than the employment security agency, by State legislative action. Technical direction of the State program has been the responsibility of the BLS, effected in part through instructional materials developed in the national office, and in part by the advice and assistance supplied to the State agencies by technical staff working out of the BLS regional offices.

By the end of 1949, estimates of employment in manufacturing were being published for all States and the District of Columbia. Estimates of total employment in nonagricultural establishments were published for 30 States and 14 areas. For 10 additional areas, employment estimates were published for manufacturing. Hours and earnings averages for production workers in manufacturing were published for 27 States and 31 areas. Five years later, estimates of total employment were published for 46 States, the District of Columbia and 79 areas. Hours and earnings for manufacturing were published for 48 States and 103 areas.

Program Improvements, 1945-65

The period from 1945 to 1950 was characterized by a major overhaul of the techniques and procedures for estimating employment, hours, and earnings. The revision of the series to 1947 benchmarks, in 1949, was the most significant event in this process. As a result of this revision, estimates of employment at all levels of industry detail were for the first time revised to benchmarks derived directly from the unemployment insurance (UI) program operations, for those industries covered by the program. Prior to 1943, the unemployment insurance agencies had only tabulated the data at quite broad industry levels (e.g., food and kindred products; apparel), but in that year their reports were summarized at the next finer degree of industry detail. This made it possible to set up a list of industries in the detail desired by BLS which could be revised directly to coincide with UI benchmarks. Also, in 1947, the BLS adopted the same system of industrial classification as that used by the unemployment security agencies, the 1942 Social Security Board Classification system for nonmanufacturing, and the 1945 Standard Industrial Classification system for manufacturing, prepared by the Bureau of the

Budget. Prior to this time, industry classification in the BLS industry employment statistics program had been closely tied to those used in the various Censuses of Manufactures and Censuses of Business taken during the 1920's and 1930's. There was also a substantial improvement in the quality of employment estimates for industries not covered by the unemployment insurance program, due to the development of new benchmark sources for these industries.

Considerable attention was also paid to the development of continuous historical series during this period. By 1950, as a result of this effort, national series on total employment in nonagricultural establishments and for each of the major divisions were prepared, and carried back to 1919. Series for individual industries and industry groups, going back in some instances for employment series to 1939 and for hours and earnings series back to 1932, were also prepared.

The program continued to show a steady growth throughout the 1950's, not only in terms of the volume of statistics provided, but also in meeting the increasing demand for information both on the part of Federal agencies and the public. In late 1949, the Bureau instituted a series on the number of women employed in manufacturing and, later, added series on employment of women in a number of nonmanufacturing industries. The Korean conflict of 1950-53 involved the Bureau of Labor Statistics in activities similar to those in which it had engaged in World War II. Among these was a quarterly survey of establishments in metalworking industries, to obtain information on plant operations and other matters. This project was conducted by the Bureau during 1951 and 1952.

In August 1954, the Bureau took over, from the Federal Reserve Board, the preparation of seasonally adjusted estimates of employment by industry division and major industry groups in manufacturing and began publishing these series on a regular monthly basis. Later, seasonally adjusted series were developed on average weekly hours and on aggregate man-hours in manufacturing and certain nonmanufacturing categories. In January 1956, the collection of overtime man-hours in manufacturing was instituted, and before the end of the year, series were being prepared on average overtime hours in major industry groups in manufacturing.

The Bureau first made use of machine tabulation equipment to prepare its tabulations of employment and payroll data in the early 1930's. For a long time thereafter, however, the actual calculations of employment and payroll estimates and indexes and hours and earnings averages continued to be performed by statistical clerks using desk calculators. In the 1950's, however, increasingly efficient electronic data-processing equipment became available, and by the early 1960's, nearly all the routine calculations involved in estimation and benchmark adjustment, including the arithmetic tests of individual sample reports for reasonableness, were performed on EDP equipment.

A major adjustment of the series to 1958 and 1959 benchmarks was completed in 1961. This revision introduced a number of innovations. The 1957 Standard Industrial Classification was adopted for both manufacturing and nonmanufacturing industries. Benchmarks stratified by employment size became available for the first time, so that size stratification could be introduced into the estimation process. Estimates for a number of additional industries, particularly in manufacturing, were introduced. New benchmark sources became available, particularly for certain classes of nonprofit organizations as a result of the virtually total election of old-age, survivors, and disability insurance coverage by establishments in these categories under the 1950 amendments to the Social Security Act.

As a result of the revision, estimates of total employment were published at the national level for 365 industrial categories, an increase of almost 50 percent over the 246 for which data were previously published. The number of industries for which average hours and earnings were published decreased slightly, however, from 364 to 323; intensive review had indicated that for some industries these averages were not sufficiently reliable to meet publication standards. Employment series were published for every industry for which hours and earnings averages were published; previously, the corresponding employment data were not available for 160 series on hours and earnings. The number of manufacturing industries for which data on average overtime hours were published increased sixfold, from 24 to 143. These statistics were based on a sample which included, in the fall of 1965, nearly 140,000 reports from American industry and government.

This sample was used also to prepare a large body of employment statistics for States and areas. In September 1965, employment and hours and earnings series were available for 50 States, the District of Columbia and 170 areas of which 160 were Standard Metropolitan Statistical Areas, as defined by the Bureau of the Budget in 1965. Approximately 7,200 employment series and hours and earnings series for about 3,300 industries are published by the States and areas.

As a part of the revision of the national series to 1964 benchmarks, all series hitherto unpublished were subjected to a thorough review to determine which could meet publication criteria. As a result of this review, employment series for 36 industries and hours and earnings series for 34 industries were considered to meet the criteria and included among those published.

An active sample expansion program is currently in progress, directed toward implementing a newly developed sample design. If additional resources are provided to bring this program to fulfillment, the sample will be considerably strengthened and monthly employment, hours, and earnings series can be published for many industries for which at present the samples are inadequate. Among these are employment series for nearly 200 industries for which only benchmark data are published annually for the month of March. As the performance of series becomes adequate, as measured by predetermined standards, they may be moved into the published category. In this way, a gradual expansion of published detail can be effected. It is hoped that, in the

next few years, current statistics on employment, hours, and earnings can be developed and published for the 64 Standard Metropolitan Statistical Areas not yet covered by the program.

Bulletins and Other Publications

Data produced in the course of the program have been published in the *Monthly Labor Review* since January 1916. A monthly bulletin containing the series has been issued since June 1924. The latter publication was called *Employment In Selected Industries* until August 1928, at which time the title was changed to *Trends of Employment*. After July 1935, the bulletin was entitled *Employment and Payrolls*. After January 1948, the hours and earnings series growing out of the program were published in a separate bulletin called *Hours and Earnings*. In May 1954, these two publications were again combined into a single periodical, *Employment and Earnings*.

The past few years have witnessed an important addition to the Bureau's regular publication on employment statistics. A volume entitled *Employment and Earnings Statistics for the United States* provides monthly data on all series produced at the national level, by the industry employment statistics program, back to the beginning of each series. This volume is revised annually. A companion volume, *Employment and Earnings Statistics for States and Areas*, provides annual averages for all employment and hours and earnings series published by State agencies, back to the beginning of the series. This publication is also issued each year.