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INTERNATIONAL COMPARISON OF UNEMPLOYMENT RATES

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1. Introduction

ANYONE who has followed the recent controversy over American unemployment statistics is aware of the definitional and technical pitfalls involved in the preparation of a single unemployment series, to say nothing of the problems involved in comparing several series for the same country emanating from different sources. Such difficulties are thrice compounded in international comparisons in which the data to be compared have no common basis in economic structure and political and social institutions. On its face, unemployment among industrial workers appears to be a fairly simple concept. In fact, it is a complex multi-dimensional phenomenon, imperfectly measured even in the industrial nations of the West. Nevertheless, interest in unemployment, both as an aspect of the comparative development of national economies and as a factor powerfully influencing the role of nations in the world economy, has stimulated efforts in the past to secure some measure of unemployment going beyond national boundary lines. The most ambitious attempt was the construction of an international index of unemployment by John Lindberg of the International Labour Office.[1] Successive international conferences of labor statisticians have agreed upon the importance of altering statistical practice to the end of facilitating international comparison, but actual progress in this direction has been slow.[2] Helpful in this respect have been several

Note: The authors wish to express their appreciation to Professor Clarence D. Long and to Mrs. Ruth P. Mack for a helpful reading of the first draft of this paper. The Institute of Industrial Relations, University of California, Berkeley, provided material assistance in the preparation of the paper.

[1] This index was computed by averaging percentages of unemployment for 15 countries, weighted by occupied industrial population as indicated by census data. The figures are available for the years 1929 to 1938. For the details of method and calculation, see John Lindberg, "An Attempt to Construct International Measures of Unemployment" (October 1932, p. 491), "Some Problems in the Construction of Index Numbers of Unemployment" (April 1934, p. 472), "World Index Numbers of Unemployment" (January 1939, p. 118), and "World Level of Unemployment" (June 1939, p. 812), in the *International Labour Review*.

[2] See *The Second International Conference of Labour Statisticians*, Interna-

reports of the ILO dealing with specific problems involved in reconciling unemployment statistics on an international basis.[3]

The procedure we have adopted for the purposes of this paper is in some respects more ambitious than previous endeavors, in others much less so. We have attempted to assemble unemployment data for some ten countries, all of them relatively industrialized, for the period 1900-1950, insofar as relevant data were available. The choice of countries was governed (1) by the availability of unemployment statistics, (2) by the availability to us of a minimum of material describing and evaluating these statistics, and (3) by the amount of time at our disposal. Thus, for example, Italy was ruled out by the unsuitable character of its unemployment statistics for much of the period in which we are interested. The United States and the Soviet Union were excluded on the ground that they were to be the subjects of special papers at the Conference.

For each of the countries with which we deal, we have endeavored to prepare a statement setting forth the available unemployment series. The purpose was to secure some basis for judging the degree to which available data express adequately the extent of unemployment, defined as indicated below. Heavy reliance has been placed in each case upon published evaluations of the data by government statisticians, parliamentary commissions, and private economists and statisticians of the countries concerned.

From the available series, we have either selected the one which appeared to us most appropriate for purposes of international comparison, or constructed a new series on the basis of existing ones. Adjustments were made wherever feasible to bring the national data into closer conformance to one another. However, no attempt was made at fine adjustment to an ideal standard, a project which would have required considerably greater resources than we had at our disposal, if indeed it were possible at all. For example, a correction factor was applied to the official Australian unemployment series to eliminate unemployment due to illness and causes other than lack of work, but no adjustment was made to reconcile the Australian definition of unemployment due to lack of work with that, say, of Great Britain.

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tional Labour Office, Studies and Reports, Series N, No. 8, 1925, pp. 48-64; *The Sixth International Congress of Labour Statisticians*, New Series, No. 7, 1948.

[3] Cf. the following International Labour Office Studies and Reports: *Methods of Compiling Statistics of Unemployment*, Series C, No. 7, 1922; *Methods of Statistics of Unemployment*, Series N, No. 7, 1925; *The International Standardization of Labour Statistics*, Series N, No. 25, 1943; *Employment, Unemployment and Labour Force Statistics*, New Series, No. 7, Part 1, 1948.

The resultant unemployment series, expressed in percentages representing the ratio of the unemployed to the number of persons subject to the risk of unemployment, are then brought together and compared. It is at this point that the national expert is apt to throw up his hands in horror. Yet we feel that the results are not without significance. We are not concerned with pinpointing small international differences in the levels of unemployment at particular points of time, but rather with the gross behavior of the data over half a century. We are seeking to detect differences in unemployment rates, secularly and internationally, which appear to be of such magnitude as to render unlikely the legitimate ascription of cause to differences in definition and measurement techniques. In the final analysis, this must remain a matter for individual judgment until a great deal more work has been done on detailed international reconciliation of concepts. In our view, even the brief review that we have undertaken of the statistics of individual countries provides the basis for the exercise of far more informed judgment than would otherwise be possible.[4]

2. *Definition of Unemployment*

The 1925 International Conference of Labour Statisticians resolved that each participating country should investigate the representative qualities of its unemployment statistics in relation to the following criteria:

> "(1) that the ideal population 'field' to which the statistics should relate should be all persons whose normal means of livelihood is employment under contract of service, as well as those persons not hitherto wage earners who seek to become so;
>
> "(2) that the unemployment measured should exclude that due to sickness, invalidity, participation in trade disputes, or voluntary absence from work, and should be limited to unemployment due to lack of employment or to lack of work while in employment.
>
> "(3) that the necessary and sufficing condition for being enumerated as unemployed is that the individual must have been not at work for one day at least."[5]

The next Conference to consider the question, that of 1947, resolved in favor of a considerably different definition. The population at risk

[4] We are by no means the first to engage upon such an undertaking. For previous attempts, see Paul H. Douglas and Aaron Director, *The Problem of Unemployment*, Macmillan, 1931, Chaps. III, IV; *Unemployment: An International Problem*, London, Royal Institute of International Affairs, 1935, Chaps. III-V; Wladimir S. Woytinsky, *Three Sources of Unemployment*, International Labour Office, Studies and Reports, Series C, No. 20, 1935.

[5] *The Second International Conference of Labour Statisticians*, 1925, p. 72.

was broadened to include employers, the self-employed, and unpaid family workers. All persons "able to take a job if offered one, who are out of a job on a given day and have remained out of a job and seeking work for a specified minimum period not exceeding one week" were to be counted as unemployed.[6] Some members of the Conference maintained that a minimum period of one week would serve to understate the "true" level of unemployment, but the majority was of the opinion that "the procedures currently in use, as well as the requirement of maximum accuracy in the count of the unemployed, necessitated the use of a period longer than one day."[7] It may be noted parenthetically that an ILO staff report submitted to the Conference suggested that it would be consonant with usual practice to count as unemployed all persons seeking work "on a given day who are not employed but are able to take a job if offered one."[8]

Unfortunately for our purposes, such resolutions had little effect upon actual practice for the period with which we are concerned.[9] No two countries defined unemployment in precisely the same manner. With reference to time, for example, an unemployed person in Australia was one who had been out of work for three days or more during a specified survey week; in Sweden, it was one who had less than twenty-four hours of employment in a week in his regular trade, or a person working outside his regular trade whose weekly earnings were below those paid in his own trade. The remaining countries, however, appear to have measured unemployment status with reference to a particular day, the precise day depending upon the operating requirements of the institution from which the statistics emanated.[10] Differences also pre-

[6] *The Sixth International Conference of Labour Statisticians*, 1948, Part 4, p. 54.

[7] *Ibid.*, p. 17.

[8] *Employment, Unemployment and Labour Force Statistics*, p. 12. The report stated, in part:

"For the basic definition, the time reference should be of a given day. The reason for this is not only that it is the common practice in most countries, but also that, as far as unemployment and employment statistics are concerned, it yields an unimpeachable result; furthermore, the different sources when compared will be compared on the basis of the same definition instead of a series of different definitions. The basic difficulty in the choice of a week or a month is not the length of the period, but the error involved if the condition is imposed that the status of employment or of unemployment must last throughout that period, or that the status of employment and unemployment must be counted if it appears at any time during the period. The clear definition of the numbers employed or unemployed, therefore, requires the time reference to a given day" (*ibid.*, p. 71).

[9] Particularly since 1945, a number of countries have revised their methods of tabulating unemployment. The changes, however, have not been concerned so much with the definition of unemployment as with the collection of data from different sources.

[10] For a discussion of this point, see *Employment, Unemployment and Labour Force Statistics*, pp. 14-18.

vailed with respect to industrial and occupational coverage, the causes of unemployment taken into account, the treatment of temporary and partial unemployment, and the treatment of persons engaged in emergency public works.

However, the statistics exhibit greater uniformity of definition than the above list of variables might suggest. The cause may be ascribed to a more or less uniform development of the economic and social institutions which permitted the accumulation of unemployment statistics in the first place. For example, in most countries of the West the earliest statistics of unemployment were compiled by trade unions as a by-product of their activities. The development of the organized labor movement exhibits a remarkable uniformity: skilled craftsmen almost always organize before semiskilled factory workers; certain industries, such as building and mining, tend to be early in the timetable of organization; and white collar and farm workers are generally the last to organize, if indeed they organize at all. Thus, coverage of trade union unemployment statistics is generally confined at first to the skilled trades and then gradually broadened to the remainder of manufacturing, mining, transportation, and communication, with commercial and agricultural coverage coming much later. With respect to the registration of unemployment by trade unions, there are usually two major motives involved: the payment of out of work benefits, either entirely from union funds or pursuant to some variant of the Ghent system of unemployment insurance, and the waiver of dues payments during unemployment. There are numerous possibilities of definition, depending upon the precise statutes of the union involved, but imitation among union movements and the choice of simple methods owing to the limited time available to the average union secretary to process his data combine to produce greater uniformity than is commonly believed.

The definition of unemployment which is used appears to us most closely to approach the norm actually employed in practice. This is by no means an "ideal" definition, nor necessarily a modal definition, but rather that definition about which the various available unemployment series tend to cluster and toward which it seemed practicable to work in making our adjustments. In selecting among the various series available for purposes of international comparison, where a choice was possible, this normative definition also played an important role.

TIME PERIOD

As already indicated, most unemployment series are based upon the employment status of the individual worker on a single day. This is the simplest statistic to prepare; the trade union secretary or the

employment exchange manager need merely tabulate the number of persons receiving benefits, or registered for work, on a particular day. Where the Ghent system of unemployment insurance is well developed, as in Belgium, Denmark, and Holland, detailed figures on total man-days of unemployment during a period may be available as a by-product of reports that must be made to the supervising authorities, but in the more usual case there is only the one-day count. The current United States Census definition has virtually no counterpart in most of the earlier statistics, for the distinction between no work at all and some work, no matter how little, during a week was not relevant to the operations of trade unions, employment exchanges, or relief authorities.

Some effort has been made in the past to separate from the unemployed those persons who were on temporary layoff. Canadian retrospective estimates for the years 1931-1950 attempted to exclude persons on a maximum thirty-day layoff with definite instructions to return, but earlier Canadian unemployment series made no such distinction. The British unemployment insurance statistics recorded separately temporarily unemployed persons, that is, persons who had a definite expectation of being re-engaged within six weeks, together with persons employed on a part-time schedule, as *temporarily stopped.* In the Belgian unemployment insurance statistics, workers who had not definitely broken their employment contract with their employer were distinguished from those wholly unemployed. In general, however, persons on temporary layoffs would have been treated as unemployed for most purposes in the countries under review.

It is clear that as the minimum period for which a man must be unemployed in order to be counted lengthens, the less will be the reported amount of unemployment, but little can be said beyond this.[11] A ratio of, say, full weeks of unemployment to single days of unemployment for one country would not necessarily hold true for another, since the relationship is dependent upon the pattern of work force reduction undertaken during periods of recession. For example, if in country A work sharing were more commonly practiced than in country B, the ratio of a full week to a single day of unemployment would tend to be smaller in country A than in B.

EMPLOYMENT STATUS

Historically, statistics of unemployment are usually limited to wage earners, that is, persons working for hire in manual jobs. "Independent

[11] This subject is discussed by Louis J. Ducoff and Margaret J. Hagood, in *Labor Force Definitions and Measurement: Recent Experience in the United States,* Social Science Research Council, Bull. No. 56, New York, 1947.

workers, shopkeepers, handicraftsmen, farmers, the liberal professions, etc., are generally excluded; so also as a rule are salaried employees."[12] In the case of trade union data, the reason is obvious. Unemployment insurance schemes were generally limited to wage earners until recent years, while labor exchanges have usually catered to industrial wage earners (though in some countries they have long been an important factor in the farm labor market).

This generalization is not without exceptions. In Australia, Denmark, and Sweden, organization of white collar workers resulted in their inclusion in unemployment statistics in increasing numbers for the past quarter of a century, though less than in proportion to their labor force strength. In Germany and Great Britain, salaried employees earning less than specified amounts have been insured for some time against unemployment and therefore included in the statistics of unemployment based upon this source. The labor force survey technique that has been adopted by several countries since World War II generally results in full coverage of salaried employees and the self-employed, which is one reason for exercising considerable care in comparing such data with the traditional unemployment statistics.

One other type of person who may be mentioned is the new entrant to the labor market who cannot immediately find a job. Since he was not ordinarily eligible for union membership or qualified for unemployment insurance benefits, he was usually excluded from unemployment series of this character. However, freedom of access to labor exchanges meant that he was often counted among the number of job seekers, as well as among the unemployed in the newer labor force surveys. Exclusion was sometimes accomplished by eliminating individuals below a certain age both from the labor force count and the count of the unemployed.[13]

INDUSTRIAL COVERAGE

There is less uniformity in this respect than on either of the two preceding points, but the situation is by no means hopeless. The general practice has been well summarized as follows:

> "agriculture is either wholly excluded or but feebly represented. . . . Mining is generally included where this branch of economic activity is of practical importance. . . . Transport and communications, banking, commerce, etc., are unevenly represented, but are not, as

[12] Lindberg, "Some Problems in the Construction of Index Numbers of Unemployment," p. 484.

[13] Before the war, for example, in Belgium, persons under 15 years of age were not eligible for unemployment insurance, while those between 15 and 18 years were eligible only if they had worked for an employer for at least six months.

a rule, numerically strong. By far the most important group is 'industry' (including building and mining). And, very broadly speaking, the existing statistics can be said to represent conditions among industrial workers. The fact that some categories of nonindustrial workers are included is not likely to affect the comparisons much."[14]

The source of the particular unemployment series has largely determined the scope of industrial coverage. Since trade unionism traditionally made scant inroads into agriculture, domestic service, commercial pursuits, and government employment, these areas are poorly represented, if at all.[15] Unemployment insurance statistics usually commenced on a narrow industrial base and broadened out in the course of time to include most industries; the British statistics are a case in point. In other countries, however, agriculture, domestic service, and government are excluded from the unemployment insurance system, and therefore from the statistics.

Changes in coverage over time complicate the problem. While one might plot a general trend of industrial coverage, beginning with segments of mining, manufacturing and building, and expanding gradually to the rest of manufacturing and the nonmanufacturing industries, the difficulty is that there is no uniformity either in the precise time of change or in the rate of change internationally. In consequence, even if there was close correspondence between the unemployment series of two countries, at a particular point in time, there would not necessarily be a similar degree of correspondence either earlier or later. Since there is considerable variation in unemployment rates among industries—for example, unemployment is normally much lower among government and commercial employees than among manufacturing wage earners—this factor must be kept in mind in any international comparison of rates of unemployment.

OTHER ELEMENTS IN THE DEFINITION

It has been general practice to limit the concept of unemployment to involuntary idleness due to lack of work, excluding idleness due to

[14] Lindberg, "Some Problems in the Construction of Index Numbers for Unemployment," p. 484.

[15] The fact that in many countries, the railroads and the telephone and telegraph system are nationally owned, and their employees civil servants like our own postal workers, has often meant the exclusion of a large portion of transportation, and virtually all of communications, from unemployment statistics. Trucking has generally been included, though for much of the period under consideration it did not play an important role. No generalization can be made with respect to the maritime trades; exclusion, where it occurred, was based upon the special character of hiring and contract practices in that industry.

labor disputes, illness, and vacations. Where idleness due to any of the latter causes is included in the general unemployment data, as in Australia, it is usually possible to correct the series on the basis of accompanying classifications of the causes of unemployment.

The usual intent has been to keep total and partial unemployment separate, i.e. a worker on short time on the census day will not ordinarily be counted as unemployed. On the other hand, a worker employed intermittently rather than for a reduced number of hours each day would generally be included among the unemployed if an off-day happened to coincide with the census day. Moreover, there is not always a consistent concept of part-time employment; "persons are often included among the unemployed who either are performing various odd jobs or are working on such a reduced schedule of hours that for social reasons they are admitted to relief and are included among the unemployed."[16] It may be noted that a consequence of the adoption of a calendar week as the census unit of time, as in the United States monthly labor force survey, is that partial unemployment does not appear, except insofar as it may be of the skip-a-week type as practiced, for example, by some New England textile firms.

To summarize the foregoing, the concept of unemployment which has been taken as normative for the purposes of this paper is total (as distinguished from partial) involuntary idleness due to lack of work on a particular day, regardless of layoff status, among wage earners whose normal occupation is in manufacturing or mining and who held jobs previous to the inception of unemployment. It is scarcely necessary to add that none of the series considered below conforms precisely to this definition. Nevertheless, the definition conveys the sense of what is being compared when we juxtapose available unemployment series internationally more proximately than any alternative definition that we have been able to construct.

3. *Sources of Unemployment Statistics*

It is not our purpose to present a disquisition on the sources of unemployment statistics. The subject has been dealt with adequately elsewhere.[17] However, it is necessary to consider the question briefly in order that the statistical material dealt with below shall be more intelligible, and also because our conclusions regarding the value of the statistics are somewhat at variance with those of other commentators.

[16] Lindberg, "Some Problems in the Construction of Index Numbers for Unemployment," p. 477.

[17] See the sources cited [*supra*] in notes 1, 2, and 3.

TRADE UNION AND TRADE UNION UNEMPLOYMENT FUND STATISTICS

For anyone who desires to study trends of unemployment going back any distance into the past, the statistics relating to unemployment among members of trade unions constitute an invaluable source of information. These data, for all their faults, constitute the first systematic record of unemployment in most of the industrial nations of the West.

The trade union statistics are subject to numerous and serious deficiencies:

1. The sample of workers which they represent is not a random one; usually skilled craftsmen have been the first to organize, so that they are disproportionately heavily represented in the earlier years. Since skilled workers tend to be less subject to the risk of unemployment, the argument runs, there is an upward bias in trade union unemployment percentages as the labor movement embraces a progressively larger portion of the labor force.[18]

2. Certain industries, such as building construction and the metal trades, which tend to come relatively early in the timetable of trade union organization, are unusually sensitive to cyclical movements, and an index of unemployment in which they figure prominently is less stable than would be one representing the entire population.

3. Some of the trade union statistics are compiled by union secretaries who are simultaneously administering insurance funds, and are thus apt to be reasonably accurate; but in the absence of accompanying insurance schemes, the data may be mere rough estimates rather than careful observations.[19]

4. The trade union statistics typically exclude certain industries, such as agriculture, government service, and rail transport, in which employment tends to be relatively stable.

5. In some countries the number of reporting trade unions has not been held constant, and there is some evidence that the errors in this respect may vary systematically with the business cycle.[20]

Notwithstanding these objections, we have been obliged to rely heavily upon the trade union unemployment statistics. For a number of countries (e.g. Australia, Canada, Denmark, the Netherlands, Nor-

[18] See *Employment, Unemployment and Labour Force Statistics*, p. 87.

[19] *Methods of Statistics of Unemployment*, p. 24.

[20] "The real drawback is that from month to month the number of unions reporting their unemployment varies, and more particularly that the sample reporting varies in kind according to employment conditions. When employment is on the up-grade the reports of the union seem to be fairly representative; when it is on the down-grade there is a clearly marked tendency for the reporting unions to have better employment conditions than the non-reporting unions" (*Seventh Census of Canada, 1931*, Monographs, *Unemployment*, Vol. XIII, 1942, p. 222).

way, and Sweden) they have been the principal if not the exclusive source of information on unemployment until recent years. For the other countries with which we have dealt (France, Germany, and Great Britain) they provided the sole source of information for earlier years, and an important supplementary source more recently.

Necessity has not been the only consideration, however. Upon closer examination, the trade union series do not appear to be as objectionable in particular as they seem in general. In the first place, it is widely conceded that they did provide a fairly accurate index of the trend, as opposed to the absolute level, of unemployment over shorter periods. There are greater reservations with respect to longer periods. For example, a Swedish parliamentary commission came to the conclusion that until the 1930's, the Swedish trade union unemployment series was biased in the direction of greater unemployment over time because of changes in coverage. However, a similar widely held belief regarding the Danish statistics was not substantiated by a special study conducted in 1934. The Dutch trade union statistics were considered without such bias up to 1935 at least, while the Australian and Norwegian statistics do not suffer from this defect. The German and British trade union series have long been regarded as good indexes of the trend of unemployment.[21]

Even when one considers absolute levels of unemployment, the trade union statistics do not come off as badly as might be supposed from the character of the criticism noted above. The Australian series, which has been widely based for many years, differed substantially from the results of the Australian census of 1921, but checked fairly closely with the censuses of 1933 and 1947. Years of criticism have not caused the discontinuation of the series as the principal measure of Australian unemployment, and it is currently regarded by the Commonwealth Statistician as a good measure of trends and as a measure of absolute employment if used "with caution." The voluntary trade union–unemployment insurance statistics of pre-World War II Belgium checked closely with several censuses, though the same could not be said of the pre-World War I data. A comprehensive estimate of Canadian unemployment from 1920 to 1940 by the Bureau of Statistics revealed a significant divergence between this series and the trade union series from 1932 to 1940; during this period, average unemployment was 15 per cent according to the trade union series and 17.8 per cent according to the Bureau's estimates. The trade union unemployment insurance statistics of Denmark are regarded in that country as a satisfactory index of the level of unemployment. While before World

[21] The assertions in this paragraph are based upon the findings contained in the respective appendixes below.

War I, the German trade union statistics appeared significantly to understate unemployment, the data for 1919 to 1933 appear to have been quite satisfactory. The French trade union data are among the least satisfactory of those with which we have dealt, but then the same statement may be made of French unemployment statistics in general. Early adoption of a national unemployment insurance scheme in Great Britain, independent of the trade unions, rendered less necessary reliance upon trade union returns. For the years in which both the unemployment insurance and the trade union unemployment percentages were available, it was found that much better agreement existed than had been anticipated. The trade union unemployment insurance statistics of the Netherlands "could safely be considered as representative up to the 1930's. After 1935, however, they presented in all probability a too unfavorable picture of the size of unemployment."[22] The Norwegian trade union data, despite a somewhat limited base, were found by comparison with the 1930 census to be representative of the unemployment situation among all industrial wage earners at the time. During the subsequent decades, the trade union data are believed to have exaggerated the extent of unemployment, though the facts are difficult to ascertain in the absence of bench-mark data. The conclusion was reached with respect to the Swedish trade union data that they provided a good index of unemployment in the country after 1920 for the industries they covered but were less reliable prior to World War I.[23]

The fact that the trade union unemployment statistics, despite their defects, do not come off so badly after all may be ascribed to the following factors:

1. In some cases the sample of employment covered is relatively large (e.g. 25 per cent of all male employment in Australia as early as 1912, 65 per cent of all Danish wage earners in 1930). This renders the problem of error in collection and sampling less critical.

2. Given the difficulties involved in defining unemployment to begin with, there are certain advantages in having the initial collection and processing of the data done by experts. The local trade union secretary, particularly if he is concurrently operating an unemployment insurance fund, is uniquely in a position to know the state of trade in his area and to appraise the employment status of each individual worker. By contrast, the labor force survey enumerator is often not well pre-

[22] Letter to the authors from Dr. Ph. J. Idenburg, Director General of Statistics, The Netherlands, July 29, 1953.

[23] The statements in this paragraph summarize the relevant findings of Appendixes A to J.

pared, and the informant not always cognizant of the precise employment status of the person under investigation.[24]

3. One of the limitations of certain types of unemployment statistics (e.g. those emanating from public employment offices) is that reporting is incomplete because of lack of incentive of the unemployed worker to report himself as such. In the case of trade union statistics, reporting may be of personal advantage to the unemployed on one or more of three counts: he may be eligible for unemployment benefits, he may be excused from paying his union dues, and he may be able to secure a new job by referral from the union in the event that unemployment registers are kept. In a specific situation, the greater the advantage that accrues to the worker from registering, the more complete the count of unemployment is apt to be.

UNEMPLOYMENT INSURANCE STATISTICS

In those countries in which the Ghent system of unemployment insurance prevails, there is generally a combined set of trade union–unemployment insurance statistics based upon the voluntary unemployment insurance societies closely allied, in the main, with local trade unions.[25] Where there is a national system of unemployment insurance, however, the two types of statistics are always separate.

The limitations of unemployment insurance data for measuring unemployment, and particularly for comparing rates of unemployment, are too well known to require extensive comment. The principal problems arise out of variations in the qualifying formulas, the exhaustion factor, waiting periods, failure to file, and other factors. Here again, however, it seems to us that often too great stress is placed upon differences and not enough upon uniformity. An ILO study published in 1925, when unemployment insurance covered a much smaller proportion of the working population of most countries than it does now, and when benefits were much more limited in scope, mapped out certain principles of coverage and benefit payment which were of quite general application.[26] As the systems became more complete, initial differences tended to disappear.

Unemployment insurance statistics have the unique advantage of permitting the calculation of the total volume of compensable unemployment during a specified period, thus avoiding some of the problems involved in selecting a time period for which to measure

[24] See, e.g. Gertrude Bancroft, "The Census Bureau Estimates of Unemployment," *The Review of Economics and Statistics*, February 1950, p. 60.

[25] This is not universally true, however. In Sweden, for example, the trade unions issue one set of statistics and the unemployment insurance funds another.

[26] *Unemployment Insurance*, International Labour Office, Studies and Reports, Series C, No. 10, 1925.

unemployment. Thus, Danish and Dutch series are available showing the relationship of the number of days lost per annum due to unemployment to the potential number of days worked by all persons covered by the statistics.

We do not mean to suggest that it is possible blithely to compare unemployment insurance data over time, or internationally, on the assumption that they are always sufficiently similar to eliminate the possibility of substantial error. The problem in making comparisons is to determine the limits within which observed differences in the data may be due to the institutions of the unemployment insurance system.

EMPLOYMENT EXCHANGE AND RELIEF STATISTICS

When registration at an employment exchange is a compulsory qualifying prerequisite for unemployment insurance benefits, unemployment exchange registration is likely to parallel closely the unemployment insurance figures. Even there, however, differences may arise because of registration of employed persons seeking to change jobs, or continued registration by unemployed workers who have exhausted benefits. However, when registration is voluntary, employment exchange data are of much more limited value. In such cases rates of unemployment calculated from them cannot be compared internationally; they can only be used to measure differences in trend from a common base year for which comparative rates of unemployment are available from other sources. For our purposes, these statistics have been useful primarily for intranational comparison. Serious divergence between, say, the unemployment insurance series and the employment exchange series would at least serve to raise some question about the representativeness of the former at a particular point in time.

Statistics of unemployment relief were of little value for the purpose at hand. As has been well stated:

> "To a much greater extent than the statistics of compulsory insurance, those obtained from relief institutions are lacking in comparability at different dates owing to changes in the conditions under which relief has been granted, changes which have been much more frequent than in the case of insurance schemes. . . . It may be concluded that despite their imperfections and limitations, these statistics, in the absence of other sources of information, have been of some value in indicating the general movement of unemployment. . . ."[27]

[27] *Methods of Statistics of Unemployment*, pp. 16-17.

LABOR FORCE SURVEYS AND CENSUSES

The periodic labor force survey technique, which was pioneered by the United States and is currently being used in several other countries, would clearly come at the head of the list if the subject under discussion were current rather than historical international unemployment rate comparisons. Given a uniform definition of unemployment, the results of such surveys are likely to be directly comparable with little adjustment, since virtual universal coverage appears to be characteristic of them.[28] For historical purposes, however, labor force surveys do not enter into the picture except in the case of Canada.

Census information is invaluable in providing bench-mark data from which to evaluate the various series of unemployment enumerated above. However, since such information usually relates to a single day of the year, and is available only at long intervals, it is obviously of little value for annual international comparisons of unemployment.

4. Statistics of Unemployment

Statistics of unemployment for nine countries, based upon Appendixes A to J, and stated in terms of rates of unemployment, are shown in Table 1 and Chart 1. The French unemployment rates are not included, since they are rough estimates. The series were selected, and in some cases constructed, from available data according to the criteria considered above. The data go as far back to the starting year of 1900 as possible, but only for the United Kingdom did it prove feasible actually to begin with that year. Gaps appear in several cases for wartime years because of the lack of published information.

LEVELS OF UNEMPLOYMENT DURING SIX MAJOR PERIODS

The half century 1900-1950 is not an historically homogeneous time period. Rather it is an era containing several fairly well-defined periods marked off by great historical events, the effects of which penetrated all national boundaries. This is not to say that the course of historical development in these subperiods was independent of what occurred in past periods or had no influence on developments in following periods. Certainly the histories of the countries considered displayed important elements of continuity in their development over the whole period 1900-1950. It is true, however, that in certain time periods the world economy was subjected to the action of major forces which were

[28] This would appear to be true, at least, of the figures for the United States and Canada. We have not examined the data for France (commencing 1950), Denmark (commencing 1951) or Sweden (under contemplation) with sufficient care to be able to render any judgments on their comparability.

CHART 1

Unemployment Rates, Nine Countries, 1900-1950

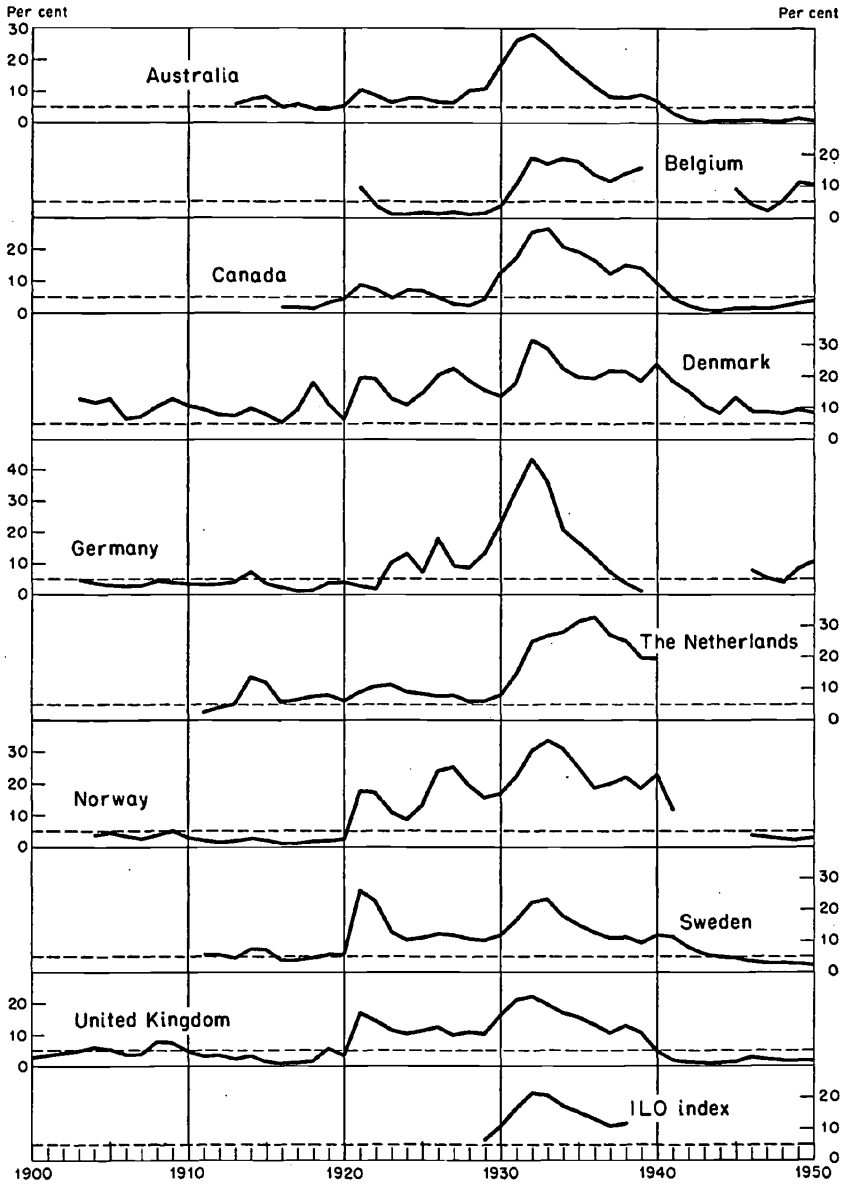

TABLE 1

Unemployment Rates, Nine Countries, 1900-1950

(*per cent*)

Year	Australia	Belgium	Canada	Denmark	Germany	The Nether-lands	Norway	Sweden	United Kingdom
1900									2.5
1901									3.3
1902									4.0
1903				13.0	4.7				4.7
1904				12.0	3.6		3.9		6.0
1905				13.0	3.0		4.4		5.0
1906				6.0	2.7		3.2		3.6
1907				7.0	2.9		2.5		3.7
1908				11.0	4.4		3.7		7.8
1909				13.0	4.3		5.0		7.7
1910				10.7	3.5		2.9		4.7
1911				9.5	3.1	2.5	1.9	5.6	3.0
1912				7.6	3.2	4.0	1.3	5.4	3.2
1913	5.4			7.5	4.2	5.0	1.7	4.4	2.1
1914	7.4			9.9	7.2	13.8	2.3	7.3	3.3
1915	8.3			8.1	3.2	12.0	1.9	7.2	1.1
1916	4.8		1.9	5.1	2.2	5.1	0.9	4.0	0.4
1917	6.1		1.9	9.7	1.0	6.5	0.9	4.0	0.7
1918	4.6		1.3	18.1	1.2	7.5	1.5	4.6	1.3
1919	4.6		3.4	10.9	3.7	7.7	1.7	5.5	5.2
1920	5.5		4.6	6.1	3.8	5.8	2.3	5.4	3.2
1921	10.4	9.7	8.9	19.7	2.8	9.0	17.7	26.6	17.0
1922	8.5	3.1	7.1	19.3	1.5	11.0	17.1	22.9	14.3
1923	6.2	1.0	4.9	12.7	10.2	11.2	10.7	12.5	11.7
1924	7.8	1.0	7.1	10.7	13.1	8.8	8.5	10.1	10.3
1925	7.8	1.5	7.0	14.7	6.8	8.1	13.2	11.0	11.3
1926	6.3	1.4	4.7	20.7	18.0	7.3	24.3	12.2	12.5
1927	6.2	1.8	2.9	22.5	8.8	7.5	25.4	12.0	9.7
1928	10.0	0.9	2.6	18.5	8.6	5.6	19.2	10.6	10.8
1929	10.2	1.3	4.2	15.5	13.3	5.9	15.4	10.2	10.4
1930	18.4	3.6	12.9	13.7	22.7	7.8	16.6	11.9	16.1
1931	26.5	10.9	17.4	17.9	34.3	14.8	22.3	16.8	21.3
1932	28.1	19.0	26.0	31.7	43.8	25.3	30.8	22.4	22.1
1933	24.2	16.9	26.6	28.8	36.2	26.9	33.4	23.3	19.9
1934	19.6	18.9	20.6	22.2	20.5	28.0	30.7	18.0	16.7
1935	15.6	17.8	19.1	19.7	16.2	31.7	25.3	15.0	15.5
1936	11.3	13.5	16.7	19.3	12.0	32.7	18.8	12.7	13.1
1937	8.4	11.5	12.5	21.9	6.9	26.9	20.0	10.8	10.8
1938	7.8	14.0	15.1	21.5	3.2	25.0	22.0	10.9	12.9
1939	8.8	15.9	14.1	18.4	0.9	19.9	18.3	9.2	10.5

(continued on next page)

TABLE 1 (continued)
(*per cent*)

Year	Australia	Belgium	Canada	Denmark	Germany	The Nether-lands	Norway	Sweden	United Kingdom
1940	7.1		9.3	23.9		19.8	23.1	11.8	5.0
1941	2.8		4.5	18.4			11.4	11.3	1.5
1942	0.7		2.2	15.1				7.5	1.0
1943	0.2		0.8	10.7				5.7	0.5
1944	0.3		0.5	8.3				4.9	0.5
1945	0.3	9.1	1.4	13.4				4.5	1.0
1946	0.5	3.9	1.4	8.9	7.5		3.6	3.2	2.5
1947	0.3	2.2	1.3	8.9	5.0		3.1	2.8	2.0
1948	0.3	5.3	2.2	8.6	4.2		2.7	2.8	1.6
1949	1.4	11.1	3.0	9.6	8.3		2.2	2.7	1.6
1950	0.4	10.1	3.8	8.7	10.2		2.7	2.2	1.6

Source:

Australia: Reports of trade unions, corrected to eliminate unemployment due to causes other than nonavailability of work. See Table A-2.

Belgium: 1921-1939, official statistics of the voluntary unemployment insurance societies; 1945-1950, same, corrected to eliminate extensions in coverage effected after World War II. See Table B-3.

Canada: 1916-1920, reports of trade unions; 1921-1940, estimates of the Dominion Bureau of Statistics, based on trade union reports; 1941-1950, trade union reports. See Table C-1.

Denmark: Reports of trade union unemployment insurance funds. See Table D-1.

Germany: 1903-1913, trade union reports, corrected for understatement of seasonal unemployment; 1914-1932, trade union reports; 1933-1939, our estimates, based upon employment exchange statistics; 1946-1950, employment exchange statistics. See Tables F-1, F-5, F-6.

The Netherlands: Reports of trade union unemployment insurance funds. See Table G-1.

Norway: Trade union reports. See Table H-1.

Sweden: Trade union reports. See Table I-1.

United Kingdom: 1900-1917, trade union reports; 1918-1950, unemployment insurance statistics. See Tables J-1, J-5, J-7.

inoperative in other periods; the action of these forces delineated certain periods to such an extent that detailed study of them is justified. Of course, in each subperiod there was important variation in the experience of different countries. Unfortunately, it is impossible to isolate the effects of international influences from those produced by forces which were confined within the boundaries of particular nations.

It is generally agreed that in many respects the first World War marked the end of one era and the beginning of another. Fundamental changes occurred in the relative power of nations, the patterns and nature of international trade, and the rates of industrial expansion. We have selected 1904 to 1913 as the first period in which to attempt to measure the average level of unemployment in the countries whose statistics extend back that far. The choice of 1904 as the initial year

of this period was determined by the availability of unemployment statistics. The Norwegian statistics began in 1904, while the German statistics which began in 1903 appeared for only three-quarters of that year.

In the period 1904-1913, with the exception only of Denmark, the averages of the annual unemployment rates shown in Table 2 and displayed graphically in Chart 2, were all below 5 per cent. Even though the annual German trade union figures have been corrected for an understatement of seasonal unemployment, their average, 3.5 per cent, was well below 5 per cent and more than one percentage point below the British average of 4.7 per cent. A study in a report of the British Committee on Industry and Trade[29] which attempted to compare British and German levels of unemployment before World War I also concluded that the German level of unemployment was somewhat lower than the British. While continuous series for France and Belgium could not be constructed for this period, the data available suggest that the average level of unemployment in these two countries was below 5 per cent. Unemployment in Australia for the years 1906-1913 (1906 marking the beginning of the Australian trade union series) averaged 5.7 per cent according to the trade union percentages. This figure, however, is subject to a downward bias since the annual unemployment figures were for periods of low unemployment during each year, rather than annual averages. On the other hand, the high percentage for Denmark (an average of 9.7 per cent unemployed for the years 1904-1913) contains an upward bias which is difficult to evaluate quantitatively.

The second period which we have marked out, 1914-1920, embraces the years most directly influenced by the effects of the war. Since the inclusion of two postwar years, during which some countries were recovering from the ravages of war while others were faced with serious problems of inflation and reconversion, may unduly influence the period averages, the analysis will be extended to cover subdivisions of this period as well as the entire period. For the entire period, the disruption of world economic relations caused by the war was responsible for high levels of unemployment in several countries. For example, Denmark's recorded average level of unemployment was 9.7 per cent, while the Netherlands had 8.3 per cent. For Belgium, there is no satisfactory series available for these years. However, the results of the unemployment census of February-March 1915 and the behavior of the Ghent trade union series indicate that the level of unemployment in Belgium during this period was extremely high. The levels of un-

[29] *Survey of Industrial Relations*, London, Committee on Industry and Trade, 1926, pp. 246-250.

CHART 2

Average Unemployment Rates, Nine Countries, Six Major Periods, 1904-1950

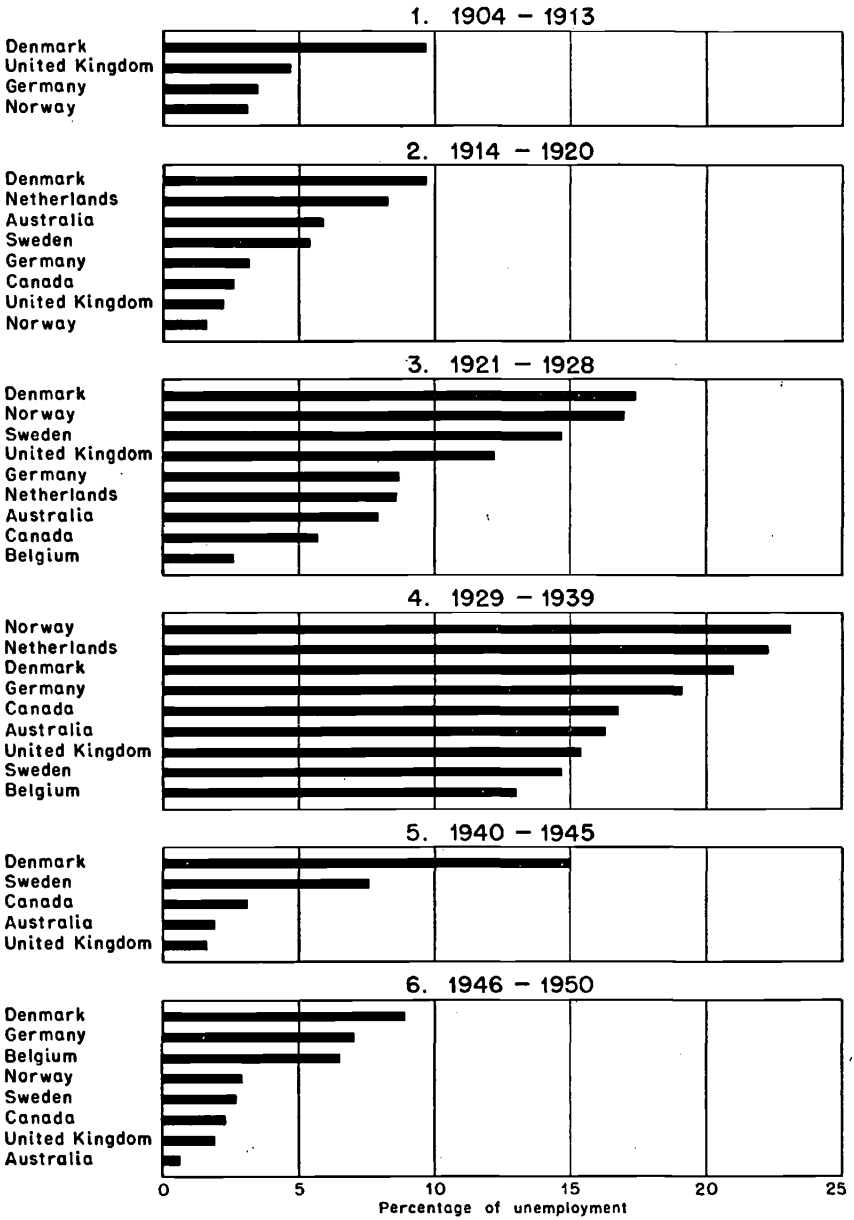

TABLE 2

Average Unemployment Rates, Nine Countries, Six Major Periods, 1904-1950[a]

(*per cent*)

Period	*Australia*	*Belgium*	*Canada*	*Denmark*	*Germany*	*The Netherlands*	*Norway*	*Sweden*	*United Kingdom*
1904-1913				9.7	3.5		3.1		4.7
				(0.23)	(0.15)		(0.32)		(0.34)
1914-1920	5.9		2.6[b]	9.7	3.2	8.3	1.6	5.4	2.2
	(0.20)		(0.42)	(0.29)	(0.47)	(0.31)	(0.31)	(0.20)	(0.68)
1921-1928	7.9	2.6	5.7	17.4	8.7	8.6	17.0	14.7	12.2
	(0.16)	(0.77)	(0.33)	(0.20)	(0.44)	(0.16)	(0.28)	(0.34)	(0.15)
1929-1939	16.3	13.0	16.8	21.0	19.1	22.3	23.1	14.7	15.4
	(0.40)	(0.33)	(0.27)	(0.19)	(0.59)	(0.33)	(0.22)	(0.27)	(0.23)
1940-1945	1.9		3.1	15.0				7.6	1.6
	(1.05)		(0.81)	(0.25)				(0.34)	(0.75)
1946-1950	0.6	6.5	2.3	8.9	7.0		2.9	2.7	1.9
	(0.50)	(0.51)	(0.35)	(0.02)	(0.29)		(0.17)	(0.07)	(0.16)

[a] Figures in parentheses are means of absolute deviations from the period averages divided by the period averages.
[b] 1916-1920.

employment in Australia and Sweden, 5.9 and 5.4 per cent respectively, were moderate while those for the United Kingdom, Germany, Norway, and Canada (1916-1920) were all below 3.2 per cent, the average for Germany.

Countries with unemployment percentages greater than 5.4 during the war years showed decreases in unemployment in the 1919-1920 period, while those with unemployment percentages of 5.4 or lower during the war showed increases in 1919-1920 (see Table 3). The

TABLE 3

Average Unemployment Rates, Eight Countries, 1914-1918 and 1919-1920
(*per cent*)

	Australia	*Canada*	*Denmark*	*Germany*	*The Nether-lands*	*Norway*	*Sweden*	*United Kingdom*
1914-1918	6.2	1.7[a]	10.2	3.0	9.0	1.5	5.4	1.4
1919-1920	5.1	4.0	8.5	3.8	6.8	2.0	5.5	4.2

[a] 1916-1918.

average wartime level of unemployment in Germany, given as 3.0 per cent above, is somewhat high because of the relatively high unemployment percentage in 1914 which resulted principally from panic conditions following the institution of certain monetary policies. The average for 1915-1918 is 1.9 per cent. The 1919-1920 United Kingdom figure, 4.2 per cent, is very approximate since the statistics for 1919 are incomplete, but there is no question that unemployment in these two years was higher than during the war years.

The unemployment statistics of the third period we have considered, 1921-1928, reveal a condition of great diversity. Average levels of unemployment for certain countries (17.4 per cent for Denmark, 17.0 per cent for Norway, 14.7 per cent for Sweden, and 12.2 per cent for the United Kingdom) approached those experienced by many countries during the following period, 1929-1939, a period of international crisis. Other countries (notably Belgium with an average of 2.6 per cent, and France) exhibited average levels of unemployment paralleling the low pre-World War I levels. The remaining countries suffered unemployment levels which appreciably exceeded their previous peacetime levels (Germany 8.7 per cent, the Netherlands 8.6 per cent, Australia 7.9 per cent, and Canada 5.7 per cent). In sum, levels of unemployment reached heights rarely recorded before in the majority of nations.

The years of world-wide economic crisis, 1929-1939, constitute the fourth period of our study. In these years, no country escaped the

scourge of extensive unemployment. Average levels of unemployment ranged from a high of 23.1 per cent for Norway to a low of 13.0 per cent for Belgium (see Table 2). For every country except Sweden, the average level of unemployment was greater than in the preceding period.

Countries with relatively low levels of unemployment in the years 1921-1928 exhibited the greatest relative and absolute increases in the years 1929-1939. If the countries are ranked in both periods according to the absolute level of unemployment, the rank coefficient of correlation is —.679. A ranking based upon the percentage change in unemployment between the two countries yields a coefficient of —.867. The significance of this finding is considered below.

Belgium's average level of unemployment increased fivefold between the two periods, those of Canada and the Netherlands nearly threefold, and those of Australia and Germany more than doubled. The countries which had experienced high unemployment in the period 1921-1928 (Denmark, Norway, and the United Kingdom) showed an increase of about one-quarter. In absolute terms, the general level of unemployment in the 1929-1939 period exceeded that of the 1921-1928 period by about 10 percentage points for Belgium, Canada, Australia, and Germany, by about 14 percentage points for the Netherlands, and by about 3 to 6 percentage points for Denmark, Norway, and the United Kingdom. Sweden alone had little increase. While precise data are lacking for France, it is probable that the average levels of unemployment in these two periods most closely resembled those of Belgium.

Another point of some interest, which may be in part a function of the foregoing finding, is that the dispersion of the unemployment percentages is less in the period 1929-1939 than in 1921-1928. Using as a relative measure of intercountry dispersion the mean of the absolute deviations from the period average divided by the period average, the result is a figure of 0.17 for 1929-1939 and 0.41 for 1921-1928. Why there should have been so great a compression of rates is difficult to determine. It may have been that the high absolute levels of unemployment in the thirties caused an understatement in the reported unemployment due to the phenomena of declining trade union membership and increasing unemployment insurance benefit exhaustions. However, the extent of the compression is so great as to suggest that real forces were at work, that as unemployment rises, economic and institutional factors operate to set limits to the extent of the rise.

The advent of World War II radically changed employment conditions in virtually all nations. The United Kingdom, Australia, and Canada, with average unemployment rates of 1.6, 1.9, and 3.1 per cent,

respectively, displayed the lowest unemployment in the period 1940-1945. The seemingly high average for Canada reflects the relatively high unemployment rates of 9.3 in 1940 and 4.5 in 1941. Similarly for the United Kingdom, the adaptation of its peacetime economy to a wartime full-employment basis took time as evidenced by unemployment rates of 5.0 in 1940 and 1.5 in 1941. Denmark with an average unemployment rate of 15.0, and Sweden with an average of 7.6 per cent for the period 1940-1945, present good examples of the dislocating effects which the war had on the economies of countries not directly engaged in actual combat.

In the postwar period, 1946-1950, the average rate of unemployment was low in all countries with the exception of Denmark, Germany, and Belgium where the averages stood at from 7.0 to 8.0 per cent. Australia's average unemployment, 0.6 per cent, represents the lowest national level for the period. Unemployment in Canada, Norway, Sweden, and the United Kingdom ranged from levels of 2 to 3 per cent. The available evidence for France, the behavior of the series of the number of unplaced applicants for work and of the number of unemployed in receipt of relief as well as the results of sampling surveys of the Institut National de la Statistique et des Études Économiques, indicate that postwar unemployment in France has been low, undoubtedly below 2.5 per cent and probably below 2.0 per cent.

Some mention should be made of the dispersion of the annual unemployment percentages in each period for each country, as an indication of the extent to which the period averages really approximate different levels of unemployment. We have again used the mean of the absolute deviations from the period average divided by the period average as a relative measure of dispersion. In Table 2 the values of this relative coefficient of dispersion are presented in parentheses below each period average. The coefficient values are of most interest for the periods 1904-1913, 1921-1928, and 1929-1939. In the first of these periods, the data for the United Kingdom and Norway show the greatest variation. The coefficient values are 0.34 for the British series and 0.32 for the Norwegian series. One of the major sources of variation in both these series arose from unemployment percentages much above the period averages recorded in 1908 and 1909. In the period 1921-1928, the Belgian data exhibit the greatest variation, giving rise to a coefficient of 0.77. While the Belgian variation took place about a low level of unemployment, such was not the case with Germany, the country whose data display the next greatest degree of variation. During the 1920's the countries whose annual unemployment rates show the least dispersion are the United Kingdom, the Netherlands, Denmark, and Australia whose coefficient values are

0.15, 0.16, 0.20, and 0.16, respectively. The degree of variation in the data of individual countries for the 1929-1939 period is largely determined by the extent to which the peak unemployment exceeded the period average and by the degree and rate of recovery achieved. Since both Germany and Australia experienced sharp and sizable rises in unemployment coupled with very rapid and extensive recoveries, the data for these two countries show the greatest degree of variation. The countries showing the lowest coefficient values for this period, ranging from 0.19 to 0.23, are Denmark, Norway, and the United Kingdom.

THE TREND OF UNEMPLOYMENT IN INDIVIDUAL COUNTRIES

In considering the course of unemployment in the several countries for which we have gathered statistics, no effort will be made to determine the specific *causes* of unemployment in each case. This would involve a major essay in economic history and is obviously beyond the scope of the present paper. Any analysis of this nature requires a framework broad enough to include the multitude of factors affecting the supply of and demand for labor in each country. On the supply side, study would have to be made of the development and growth of the labor force of each country, which would require detailed consideration of demographic factors; factors determining the supply of female, juvenile, and aged workers; the effects of changing economic conditions, particularly wage levels and the availability of work, on the number of persons seeking work; the growth of trade unionism; the influence of various institutions for combating unemployment; and the operation of factors determining the proportion of skilled and unskilled labor in the labor force. For consideration of the demand for labor in each country, no less than a general explanation of the level and composition of output would suffice. In addition to the variables included in the usual short-run, closed-economy, Keynesian, and classical analyses, it would be necessary to consider for each country the stage of economic development, the rate of industrial growth, the nature and magnitude of cyclical and seasonal fluctuations, the changing structure of industry with special reference to national policies governing trusts and cartels, the path of technological progress with its effects on productivity and on the kinds of labor demanded, the internal effects of changing patterns of world trade and of national policies regulating international trade, and the destructive and dislocating effects of war. This lengthy enumeration, undoubtedly incomplete, provides a basis for appreciating the difficulty inherent in any attempt to isolate the specific causes of unemployment in each country.

INTERNATIONAL COMPARISON OF RATES

The major studies of unemployment that have been made are generally limited to single countries,[30] or if they are international in scope, do very little in the way of true international comparison.[31] Moreover, serious work in the field generally dates back to the early 1930's when unemployment was a pressing question involving immediate governmental action. The students of that period were writing against a background of thirty years of secularly rising unemployment and did not have our vantage point of a much longer sweep of time, with a sharp reversal of the previous trend during and after World War II.

All that we hope to do in what follows is to indicate for each of the countries with which we deal its general position in the spectrum of unemployment rates, and to assess the validity of our conclusions in each case in the light of our knowledge of the particular unemployment series involved.

1. Australia. During the pre-World War I years, Australian unemployment was relatively high (see Appendix A). This conclusion is reinforced by the fact that the Australian data shown in Table A-1 for the years prior to 1913 are for periods of low unemployment during the year, rather than annual averages. In the interwar years unemployment remained relatively low but rose rapidly beginning in 1929 to reach a maximum of 28.1 per cent in 1932 (see Table A-2). The recovery after 1932 was remarkably rapid and persistent, however. For no country with the exception of Germany (and the German figures are suspect for this period) was the drop in unemployment from 1932 to 1938 as sharp as that for Australia. By 1938 recorded unemployment was under 8 per cent, less than for any of our countries except Germany.

There was a slight increase in unemployment in 1939, a year later than the secondary peak of the 1930's for most of the other countries. With the entrance of Australia into the war, however, unemployment declined almost to the zero level, and remained extraordinarily low until 1951, the end of the period studied. While the post-World War II Australian unemployment percentages may be understated somewhat because of the application of an arbitrary correction factor to eliminate unemployment for causes other than lack of work, there can be little doubt of the extreme tightness of the Australian labor market since 1940 compared with those of most countries of Western Europe.

2. Belgium. The pre-World War I statistics of unemployment, though incomplete, indicate that unemployment was low up to the depression

[30] See particularly W. H. Beveridge, *Unemployment—A Problem of Industry*, Longmans, 1930; Douglas and Director, *op.cit.*

[31] *Unemployment—An International Problem*, is perhaps the best single study of unemployment internationally.

year of 1908 (see Appendix B). From 1908 up to the outbreak of World War I, there is evidence that Belgium experienced a somewhat higher level of unemployment. During the wartime German occupation of Belgium, unemployment reached extremely high levels as evidenced by the finding of the unemployment census of February-March 1915 that the number of unemployed amounted to a little less than 50 per cent of the number of workers enumerated in the census of 1910. While the exact percentage unemployed is not known, since the accuracy of the unemployment census is questionable on certain grounds, there can be no doubt that unemployment was high at the time of the 1915 census.

The first postwar statistics of the newly formed voluntary unemployment insurance scheme showed 9.7 per cent unemployed in 1921 and 3.1 per cent unemployed in 1922 (see Table B-3). The experience of the next eight years, during which Belgian unemployment did not exceed 2.0 per cent and even dropped below 1.0 per cent in 1928, stands in sharp contrast to the experience of virtually every other one of the countries studied. It should be noted that the Belgian unemployment statistics were very satisfactory in this period since they covered a large number of workers and agreed closely with the unemployment percentages recorded by the censuses of 1930 and 1937.

Depression unemployment in the 1930's reached a peak of 19.0 per cent in 1932, a relatively low peak internationally. Unemployment dipped slightly in 1933, only to rise again in 1934 to 18.9 per cent. Thereafter, unemployment started downward, the descent having been reversed temporarily by the 1938 recession.

Unemployment statistics are not available for the war period. In the postwar period the level of unemployment has been relatively high, in contrast with the prewar experience, averaging 6.5 per cent for the years 1946-1950. The postwar percentages refer only to workers in mining, manufacturing, transportation, and construction, with all other occupations insured under the postwar compulsory unemployment insurance scheme excluded insofar as is possible. This limitation of coverage makes the figures more comparable with the prewar series.

3. *Canada.* The history of unemployment in Canada is in many ways parallel to that of Australia (see Appendix C). Canadian unemployment statistics go back only as far as December 1915, so that no comparison can be made for the pre-World War I period. Beginning in 1919, however, and until 1926, Canadian and Australian unemployment moved together with remarkable precision.

From 1926 to 1928, when Australian unemployment was on the rise, Canadian unemployment declined to what was for the time an ex-

tremely low level, reaching a low of 2.6 per cent in 1928, only to rise to a maximum of 26.6 per cent in 1933, slightly lower than the Australian maximum and later by one year to reach the peak (see Table C-1). The Canadian recovery, as measured by the decline in unemployment, was at about the average rate for the countries studied, with a fairly sharp retardation in 1938. Immediately after World War II, Canadian unemployment was below the 2 per cent mark, but from 1948 to 1950 a progressive increase brought the level in the latter year to 3.8 per cent (see Table C-2). However, postwar Canada must certainly be included among the countries with low unemployment.

4. France. The course of unemployment in France can be traced only in a very approximate fashion because of incomplete statistics (see Appendix E). Before World War I, the unemployment data of four quinquennial censuses, each relating to a single day of March of the census year, provide some basis for asserting that there was a low level of unemployment. Trade union data indicating somewhat higher percentages of unemployment, on the order of from 6 to 8 per cent for years in the first decade of the century, are suspect for a variety of reasons.

The tightness of the French labor market in the 1920's, apart from "the not very intense crises of 1921-1922 and 1926-1927,"[32] is indicated by the fact that large numbers of foreign workers were imported to supplement the French labor force, which had been depleted by war losses.

The precise levels of unemployment prevailing during the depression years of the 1930's are difficult to ascertain from the available statistics. Our estimates, which are shown in Table E-8, must be interpreted with caution; in fact, so approximate do we regard them that we have excluded them from Table 1. They suggest that French unemployment remained relatively low during this period, in fact, lower than for any country studied. The several estimates that are available tend to support the conclusion of relatively low unemployment. A similar conclusion appears to be justified for the postwar years, though the nature of the data renders precise comparison with other countries hazardous. France, it may be noted, provides an apparent exception to our finding that relatively low unemployment during the 1920's tended to be followed by relatively high unemployment during the following decade.

5. Germany. Unemployment in Germany before World War I was low according to the fairly reliable trade union unemployment percentages (see Appendix F). Except for a relatively high level of

[32] "Le chômage en France de 1930 à 1936," Institut de Recherches Économiques et Sociales, Paris, 1938, p. 11.

unemployment in 1914, unemployment in Germany was also extremely low during World War I and in the inflationary period following the war (see Table F-1). In 1923, a sharp increase, from 1.5 per cent unemployed in 1922 to 10.2 per cent in 1923, was indicated by the trade union series. Thereafter, unemployment increased to 13.1 per cent in 1924, fell sharply in 1925, and then spiralled up to 18.0 per cent in 1926. The sharpness of the 1926 peak was unique for Germany, although Norway and Denmark, and to a lesser extent Great Britain, were subject to increasing unemployment during this year. In 1927 the level of unemployment fell about 10 points below the 1926 peak where it remained until the first effects of the Great Depression took hold in Germany. It is clear that instability was one of the distinguishing features of the German labor market in the 1920's, as was the case in Scandinavia. The high average level of unemployment in Germany during these years contrasts sharply with the low levels experienced in Belgium and France.

The Great Depression struck Germany with unusual severity. Unemployment by 1932 had reached a pinnacle of 43.8 per cent. This peak is the highest attained by any of the countries studied. That this percentage is no statistical mirage is evidenced by the fact that the census of 1933 recorded 37.3 per cent of the workers and employees in manufacturing, mining, and construction unemployed. After 1932, the statistics of the number of registered unemployed (Table F-4), as well as those of the number of applicants seeking work, give evidence of an extensive and swift recovery. In 1934, 20.5 per cent of the workers and employees in manufacturing, mining, and construction are estimated to have been unemployed, while by 1938, this percentage had decreased to 3.2. The introduction of forced labor and other Nazi practices renders the figures somewhat suspect for the 1933-1940 period, though the main outlines of the trend in unemployment seem clear enough.

After World War II, the statistics of unemployment reveal a substantial volume of unemployment in Germany, similar to the Belgian and Danish experience. Unemployment percentages for the United States and British occupation zones showed a fall from 7.5 per cent of the total wage and salary earning labor force unemployed in 1946 to 4.7 per cent in 1948, and then a steep rise to 8.1 per cent in 1949 (see Table F-6). Similar percentages for the German Federal Republic also display a sharp increase from 4.2 per cent unemployed in 1948 to 8.3 per cent in 1949. Unemployment rose still further in 1950, reaching 10.2 per cent.

6. The Netherlands. The unemployment picture of the Netherlands

is quite atypical (see Appendix G). In the immediate post-World War I years, 1918 to 1923, unemployment was relatively high. However, from 1923 to 1929, when most other countries had at least one cycle of unemployment, the Dutch level of unemployment declined almost steadily (see Table G-1). In this respect, the Dutch experience was reminiscent of the Belgian, though the absolute level of unemployment in the latter country was considerably below that of Holland.

In 1929, Dutch unemployment began to rise, relatively slowly at first, and then more rapidly as the depression deepened. The unusual feature of the Dutch unemployment trend, however, was that the peak was not reached until 1936, four years later than the modal peak year of 1932. Moreover, while Dutch unemployment declined after 1936, it remained almost until the outbreak of the war at a higher level (percentagewise) than that of any of the countries studied. Part of this excess is in all probability a statistical rather than a real phenomenon, but nonetheless it is probably true that during the later thirties, the Netherlands experienced an abnormally high rate of unemployment. On the other hand, the 1938 recession had no repercussions in Holland in terms of unemployment.

Percentages of unemployment are not available for the Netherlands after 1940. However, employment exchange statistics indicate that after World War II, unemployment was far below the immediate prewar level. For example, whereas some 235,600 persons were registered as totally unemployed in 1939, the 1950 total was only 57,000 (see Table G-2). In all probability, Dutch unemployment from 1946 to 1950 was at a lower level than at any peacetime quinquennium in its recorded unemployment history.

7. *Scandinavia.* The proximity and close economic ties of the Scandinavian countries, Denmark, Norway, and Sweden, have made for certain similarities in their unemployment histories, although in many ways it is the differences among them that are the more interesting (see Appendixes D, H, and I). Recorded unemployment for Denmark was very high throughout the entire half century (see Table D-1). However, at least until World War I, the Danish statistics were relatively overstated, and it is doubtful that average unemployment in Denmark from 1904 to 1913 was twice as high, on the average, as that of Great Britain, as the figures in Table 1 suggest. Throughout this same period Norwegian unemployment was undoubtedly much lower than that of Denmark (see Table H-1), and somewhat lower than Swedish unemployment as well, for the Swedish figures are in all probability understated.

Although all the Scandinavian countries were neutral in World

War I, the Danish economy was subject to the greatest adverse effects of the war, as indicated by the rise of unemployment to 18 per cent in 1918, whereas Norway and Sweden experienced much lower rates, 1.5 per cent and 4.6 per cent respectively, in the same year (see Table I-1).

The Scandinavian unemployment pattern of the 1920's is of particular interest. While unemployment rose in most countries from 1920 to 1921, the increase was particularly sharp for the three Scandinavian countries. Only the United Kingdom showed a rise of comparable magnitude. Swedish unemployment, until that time always moderate, reached the highest peak thereto recorded in any of our countries, 26.6 per cent, although there is some reason to believe that the increase shown by the data exceeded the real rise. Norwegian unemployment, which had averaged 3.1 per cent from 1904 to 1913, rose to 17.7 per cent in 1921. Denmark was intermediate with 19.7 per cent of insured workers unemployed, and the United Kingdom figure was just short of the Norwegian.

Scandinavian unemployment remained at record levels in 1922 and then fell sharply until 1924, when it was roughly comparable to the British level. In 1925, however, at a time when unemployment in all of our countries with the exception of Germany was either stable or declining, a sharp rise in the Danish and Norwegian levels set in, culminating in peaks of 22.5 per cent and 25.4 per cent, respectively, in 1927. This time Swedish unemployment did not follow suit, remaining on a par with the relatively high but stable British level. Thus, during the 1920's Denmark and Norway had two major cycles of unemployment, and Sweden one, quite in contrast with what was happening elsewhere.

Denmark and Norway were very badly hit by the Great Depression, with only Germany exhibiting more unemployment. The Norwegian peak of 33.4 per cent must in all probability be discounted, for the composition of the Norwegian unemployment index was such as to make it unduly volatile. Nevertheless, it is difficult to escape the conclusion that a major change in the structural characteristics of the Norwegian labor market occurred after World War I. Unemployment remained high in both Denmark and Norway right up to the beginning of World War II, only the Netherlands exhibiting a greater degree of unemployment in the late 1930's.

The effects of the Great Depression upon the Swedish economy were not nearly so drastic. Reaching a maximum of 23.3 per cent in 1933, unemployment declined steadily until 1940; the 1937-1938 unemployment increase in Denmark and Norway had no counterpart in the Swedish economy.

Swedish neutrality during World War II was reflected in a somewhat higher unemployment rate than that which prevailed in the belligerent nations (the wartime figures shown for Denmark were due to the extraordinary conditions of the German occupation). From 1946 to 1950, unemployment in Norway averaged 2.9 per cent and in Sweden around 2.7 per cent, a situation of "overfull" employment. By way of contrast, the Danish labor market was much looser, with unemployment remaining fairly steady at about 9 per cent, about the same average level as that which prevailed from 1904 to 1913. In 1950, Denmark, along with Belgium and Germany, was one of the relatively high unemployment countries of Europe, while Norway and Sweden were down at the low British level.

8. *United Kingdom.* Unemployment in the United Kingdom was only roughly measured in the pre-World War I period by the trade union percentages of unemployment (see Appendix J). The average of the trade union figures for the years 1900-1913 is 4.4 per cent, which, according to most authorities, is a satisfactory estimate. The highest pre-World War I trade union percentage, 7.8, was observed for 1908 (see Table J-1). While this high percentage may be biased upward on account of overrepresentation of certain groups of workers in cyclically sensitive trades, it is probable that the overstatement is not great.

During World War I, unemployment fell to very low levels, reaching 0.4 per cent in 1916. Directly after the war, however, unemployment rose severely. The unemployment insurance data for 1919 are incomplete, while the trade union percentage, 2.4, does not properly portray the extent of unemployment in the demobilization period. We have estimated unemployment in 1919 rather roughly at about 5.2 per cent (see Table J-3). In 1921, the unemployment insurance rate curve for the United Kingdom shows a very sharp peak of 17.0 per cent followed by a percentage of 14.3 for 1922. The height of this peak was exceeded only by those of similar peaks occurring in Scandinavian unemployment. During the remaining years of the 1920's, the level of unemployment displayed remarkable stability, varying between a high of 12.5 in 1926, partly influenced by the coal strike of that year, to a low of 9.7 in 1927 (see Table J-7). The average level of unemployment for the years 1921-1928, 12.2 per cent, is exceeded only by the averages for the Scandinavian countries.

Starting from a level of 10.4 per cent in 1929, unemployment increased to a peak of 22.1 per cent in 1932 and declined thereafter. However, the decline was far from complete for the 1939 unemployment percentage was still 10.5.

As in World War I, unemployment rates in World War II were low. In the postwar years 1946-1950, recorded unemployment averaged 1.9 per cent. This percentage is somewhat too low to use in making comparisons with the prewar averages, primarily because of the greater scope of the postwar unemployment insurance schemes. If all the additional persons covered by unemployment insurance in the postwar period are excluded from the denominator used in the calculation of percentages in the postwar period and no change is made in the numbers unemployed, the maximum difference in the postwar percentages due to changes in coverage of the unemployment insurance schemes can be obtained. The results of this calculation indicate that an upward correction of about 0.6 percentage points would be the maximum correction needed to make the postwar percentages comparable to the prewar percentages with respect to coverage. Actually the correction should be smaller, since it was assumed that in excluding persons from the denominator, none of them was unemployed. Probably a postwar average of 2.2 per cent is about right for comparisons with the prewar date.

9. *The ILO World Index of Unemployment.*[33] For the years 1929 to 1938, the International Labour Organization calculated a world index of unemployment based upon the statistics of some fifteen countries.[34] Several alternate systems of weights were tried, including totally gainfully occupied, and totally gainfully occupied in mining, manufacturing, transport, and commerce, without producing great variations in the results. Two indexes, one including the National Industrial Conference Board unemployment estimates for the United States, and the other the higher American Federation of Labor estimates for the United States, are shown in Table 4.

The ILO unemployment percentages are below those shown for most of our countries during the entire period, Belgium excepted (see Table 1). The explanation for this discrepancy appears to lie chiefly in the inclusion in the ILO index of several countries with relatively low unemployment with which we have not dealt, namely, Japan, Poland, and Czechoslovakia. Reported Japanese unemployment for 1929 to 1937 averaged only 5.0 per cent, while Poland averaged 12.6 per cent, and Czechoslovakia, 11.2 per cent. While the ILO index figures for the countries we have covered do not agree with our figures in every particular, there is substantial agreement between them.

[33] For details regarding this measure, see the sources cited above in note 1.

[34] France, Italy, and the Soviet Union were the only countries of industrial importance excluded from the index.

TABLE 4

ILO World Unemployment Rates, 1929-1938
(*per cent*)

Year	*Series 1*	*Series 2*
1929	5.4	6.2
1930	10.3	10.8
1931	16.2	16.5
1932	21.1	21.5
1933	20.1	20.7
1934	16.3	17.1
1935	14.8	15.3
1936	12.4	13.2
1937	10.1	10.8
1938	11.4	11.6

Note: Series 1 and Series 2 differ only with respect to the unemployment estimates used for the United States.
Source: *International Labour Review*, June, 1939, p. 813.

5. *Conclusions*

In the foregoing pages we have presented statistical information on the course of unemployment in ten countries during the first half of this century. The problem of measurement in itself is a difficult one and yet represents only an initial step toward a fuller understanding of the causes of unemployment. The few generalizations which do emerge from the data must be regarded as tentative in character, in part statements of hypotheses rather than of fact.

1. There are striking differences in the general levels of unemployment characterizing different periods during the past fifty years. The interwar years were years of relatively high unemployment, while the first and fifth decades had relatively little unemployment.

2. There is important variation among the unemployment records of various countries, variation so pronounced in many cases that it cannot be ascribed to elements of incomparability in the available statistics. Among the peculiar developments that stand out are the relatively low level of Belgian unemployment during the 1920's, and its contrastingly high post-World War II level; the "extra" cycles of unemployment in Scandinavia during the 1920's, and the transformation of Norway from a "low" to a "high," then back to a "low" unemployment country; the consistently high level of unemployment in the Netherlands from 1932 to 1940, compared with earlier experience; and the extraordinarily high rate of German unemployment in 1932, followed by a very rapid recovery.

3. In the period 1921-1928, average unemployment rates for the

countries studied show much more dispersion than do those of the 1929-1939 period. Relative coefficients of dispersion for the two periods are 0.41 and 0.17.[35] The two lowest average rates for the 1921-1928 period, those of Belgium, 2.6, and Canada, 5.7, contrast sharply with those of Sweden, 17.4, and Norway, 17.0, the two highest. Average rates, 1929-1939, range from Belgium's low of 13.0 to Norway's high of 23.1.

4. We have found an inverse international relationship between the average rates of unemployment during the years 1921-1928 and the changes in average rates between the 1921-1928 and 1929-1939 periods.[36] This relationship may be purely fortuitous, or it may have a genuine economic basis. For example, one might set up the hypothesis that the level of investment relative to gross national product was low in countries with relatively high levels of unemployment in the 1920's, and higher in countries of lower unemployment. Since net investment has a floor (where disinvestment equals depreciation), the impact of the depression could have resulted in a greater fall in investment in the countries with the higher levels of investment (and lower rates of unemployment). This means that the negative multiplier effects in the 1930's would have been greater in these countries. For example, consider the two possibilities for a given country:

a. In the 1920's unemployment was fairly low and investment high. Investment could fall, under the impact of the depression, from the high level to a negative value equal to, but no lower than, depreciation. The multiplier effect would produce a large fall in gross national product with a concomitant large rise in unemployment.

b. In the 1920's unemployment was fairly high and the level of investment low. The shock of the depression could then produce only a relatively small decrease in investment; therefore gross national product would fall less than in case a and the increase in unemployment would be smaller.

5. A positive rank correlation, 0.679, was found between peak unemployment rates in the 1930's and the extent to which unemployment diminished thereafter, as measured by the difference between the peak and the minimum rates observed in the 1930's.[37] This correlation may be merely due to chance or perhaps to a peculiar combination of biases in the data. If the relationship is indeed a real one, it suggests that countries hardest hit by unemployment did the most to alleviate the

[35] This coefficient is the average of absolute deviations from the general period average (the unweighted average of the individual countries' period averages) divided by the general period average.

[36] See p. 461.

[37] The Netherlands' peak unemployment did not occur until 1936. All other peaks occurred either in 1932 or 1933. Exclusion of the Netherlands from this calculation raises the correlation coefficient to 0.804.

problem. Certainly the extreme case of Germany, the country exhibiting the highest peak unemployment and the most extensive recovery, fits in well with the above hypothesis.[38]

6. To test whether the data give any indication that the extent of recovery in the 1930's is related in some fashion to conditions responsible for levels of unemployment in the 1920's, two calculations were performed. Average levels of unemployment, 1921-1928, were correlated with peak minus minimum rates of the 1930's, a measure of the extent of recovery. A rank correlation coefficient equal to 0.179 (0.103 upon exclusion of the Netherlands) was obtained. A similar calculation involving 1921-1928 average rates and minimum rates in the 1930's produced a positive correlation of only 0.200. These rather weak correlations, while not disproving the hypothesis under inspection, provide no substantial support for it.

7. Progress toward more refined and accurate measures of unemployment and more uniform and conceptually complete definitions of unemployment was observed to be related to the stage of development of institutions concerned with combating unemployment and its effects. The establishment of state-supported trade union unemployment funds was a first step in the direction of standardizing and refining the preexisting trade union statistics. National systems of unemployment insurance resulted in the broadening of coverage, as well as in further standardization of definitions. Employment exchange statistics have been less useful to us than other types as a result of the form in which they generally appear but provided a useful supplementary source of information on unemployment trends. Finally, the most recent type of statistic developed, the labor force sample survey, reflects a heightened interest in the exact state of the labor market by the community and particularly by national governments, which have in large part assumed responsibility for offsetting unfavorable developments.

Our study, limited as it is to a single gross measure of unemployment, provides only a rough index of the relative intensity of unemployment in the countries studied. It is our impression that a more intensive examination of the available data on a comparative basis, including a study of seasonality, industrial, and geographical distribution of unemployment, and its incidence among various segments of the labor force, would, in conjunction with supplementary studies, provide a basis for testing more refined and significant hypotheses concerning the causes of unemployment and the mechanism by which it is transmitted across national boundaries.

[38] Values of the rank correlation coefficient required for significance when calculated from samples of 8 cases are 0.63 at the 90 per cent level and 0.71 at the 95 per cent level. It should be noted that the correlation coefficient above, 0.679, is based on samples with 9 cases. Tables for $n = 9$ are not available (see Helen M. Walker and Joseph Lev, *Statistical Inference*, Holt, 1953, pp. 282 and 478).

Appendix A:
Australia

Any historical analysis of Australian unemployment must be based upon figures reported over a long period by trade unions. The currently available unemployment insurance data under the Unemployment and Sickness Benefits Act began only on July 1, 1945. The trade union series has the following characteristics:

1. Beginning with the year 1913, quarterly figures on unemployment were collected from a number of trade unions. For selected years from 1891 to 1912, the Commonwealth Bureau of Census and Statistics endeavored to obtain retrospective estimates of unemployment from a number of trade unions as of the end of the year only. These figures are shown, together with the number of reporting unions and membership of reporting unions, in Table A-1.

TABLE A-1

Unemployment Rates Reported by Trade Unions, Australia, Selected Years, 1891-1912

Year	*Number of Reporting Unions*	*Membership of Reporting Unions*	*Per Cent of Members Unemployed at End of Year*
1891	25	6,445	9.29
1896	25	4,227	10.81
1901	39	8,710	6.59
1906	47	11,299	6.67
1907	51	13,179	5.74
1908	68	18,685	5.98
1909	84	21,122	5.79
1910	109	32,995	5.63
1911	160	67,961	4.67
1912	464	224,023	5.55

Source: *Trade Unionism, Unemployment, Wages, Prices, and Cost of Living in Australia, 1891 to 1912,* Melbourne, Commonwealth Bureau of Census and Statistics, 1913.

Since few trade unions paid any form of unemployment benefit in the earlier years, accurate records of unemployment were difficult to obtain, and returns were not available for the same unions throughout the period. Moreover, since the data are year-end data, they cannot be taken to represent average unemployment for the specified year.

The data for 1912 represented 75 per cent of the total number of local unions existing at the time and 52 per cent of union membership. However, coverage drops off rapidly as we go backward from 1912. Thus, in 1891, only 20 per cent of the local unions with 12 per cent of total union membership were covered. The corresponding figures for

1896 were: 19 and 8 per cent; for 1901, 20 and 9 per cent; and for 1906, 16 and 6 per cent.[1] It was estimated that for 1912, 44 per cent of all male employees and 8.4 per cent of all female employees, in all professions, trades, and occupations in the Commonwealth, were members of trade unions.[2] If it is assumed that all trade union members were males,[3] coverage among male employees in 1912 would have been about 25 per cent.

The Bureau of Census was of the opinion that the particular industries covered in this sample did not result either in upward or downward bias. The building and metal trades were heavily represented, while such comparatively stable industries as railways were not represented at all. Unskilled casual labor was poorly represented. "Thus, for some reasons, the percentage given is likely to be greater, and for other reasons less, than the true average percentage unemployed throughout the country."[4] Moreover, the following comparisons with census returns were adduced in favor of the reliability of the data:[5]

	PER CENT UNEMPLOYED		
	1891	*1901*	*1911*
Trade union returns	9.29	6.59	4.67
Census returns[a]	7.46[b]	6.50	4.53

[a] All male wage earners, excluding "professional" occupations.
[b] New South Wales and Victoria only.

The difference shown for 1891 was ascribed to the fact that the census was taken in March while the trade union data were for the year end, the intervening months having witnessed a depression following upon a long strike of maritime workers and sheep shearers.

The validity of these observations has been challenged, however. It has been asserted that since the two series were for different dates in the year any resemblance in the results "is only an accident and does not support a claim that the trade union returns are representative of the state of unemployment in Australia."[6] The relatively small membership of the reporting unions in each of the census years is another limiting factor.

[1] *Trade Unionism, Unemployment, Wages, Prices, and Cost of Living in Australia, 1891 to 1912*, Melbourne, Commonwealth Bureau of Census and Statistics, 1913, pp. 13, 18.
[2] *Ibid.*, p. 12.
[3] In fact, some 96 per cent of trade union members were males in 1912 (*ibid.*, p. 11).
[4] *Ibid.*, p. 18. [5] *Ibid.*
[6] J. K. L. Gifford, *Economic Statistics for Australian Arbitration Courts*, Melbourne, Macmillan, 1928, p. 7.

As to the first objection, it may be noted that for the years 1913 to 1920, for which quarterly trade union data are available (for the last week in the months of February, May, August, and November), and which, except for 1914, were years in which unemployment was comparable absolutely to that reported for the years 1901-1912, the percentage of unemployment in the fourth quarter of any year was within one percentage point of unemployment in the first quarter of the following year.[7] The first and fourth quarters of the year normally mark the period of lowest unemployment in Australia. Since the census date was in the first quarter, and the trade union report was at the end of the fourth quarter (prior to 1913), the possibility of divergence between the two was not so great as implied by the above quotation. However, neither the census nor the trade union figures prior to 1913 accurately represent average unemployment throughout the year, precisely because they were both in quarters of lowest unemployment.

2. The quarterly trade union data collected since 1913 represent unemployment in the last weeks of the months of February, May, August, and November. Annual averages derived from them are shown in Table A-2.

These figures have certain limitations, of which the following are the most important.

a. Coverage. The relative size of the sample of workers represented by the series is indicated by the following data:[8]

Year	*Per Cent of Trade Union Members in Sample*	*Estimated Per Cent of All Male Wage and Salary Earners*
1921	51.4	31.1
1933	56.2	35.0
1939	48.2	31.6
1947	53.6	40.0
1950	52[a]	25-30[a]

[a] These figures are from *Labour Report*, 1950, No. 39, p. 122. The last figure is the ratio of reporting membership to all wage earners, including women.

[7] The average difference for the years 1913 to 1920 inclusive was 0.9 per cent. In five of the seven years, unemployment in the first quarter was higher than in the preceding quarter (by an average of 0.7 per cent), while in the two remaining years, the reverse was true (by an average of 1.4 per cent).

[8] The data are from various issues of *Labour Report*, Commonwealth Bureau of Census and Statistics. The years chosen are those for which census data are available. For the earlier years, the omission of female wage and salary earners did not constitute a serious distorting factor in indicating degree of coverage, since the labor force participation of women was low. For later years, however, and particularly since the war, the greatly increased labor force participation of women, plus the smaller extent to which they are unionized, produce quite different results if they are included in the comparison. Thus, for 1947, the ratio of covered trade union membership to *all* wage and salary earners is only 29 per cent, compared with the 40 per cent ratio to *male* wage and salary earners shown in the table.

TABLE A-2

Unemployment Rates Reported by Trade Unions, Australia, Annual Average, 1913-1951

(*per cent unemployed*)

Year	*Due to Lack of Work Only*	*All Causes*	Year	*Due to Lack of Work Only*	*All Causes*
1913	5.4	6.5	1933	24.2	25.1
1914	7.4	8.3	1934	19.6	20.5
1915	8.3	9.3	1935	15.6	16.5
1916	4.8	5.8	1936	11.3	12.2
1917	6.1	7.1	1937	8.4	9.3
1918	4.6	5.8	1938	7.8	8.7
1919	4.6	6.6	1939	8.8	9.7
1920	5.5	6.5	1940	7.1	8.0
1921	10.4	11.2	1941	2.8	3.7
1922	8.5	9.3	1942	0.7	1.6
1923	6.2	7.1	1943	0.2	1.1
1924	7.8	8.9	1944	0.3	1.2
1925	7.8	8.8	1945	0.3	1.2
1926	6.3	7.1	1946	0.5	1.4
1927	6.2	7.0	1947	0.3	1.2
1928	10.0	10.8	1948	0.3	0.9
1929	10.2	11.1	1949	1.4	2.0
1930	18.4	19.3	1950	0.4	0.8
1931	26.5	27.4	1951	0.3	0.7
1932	28.1	29.0			

Note: For the years up to and including 1929, a special sample of unemployment by cause is shown separately in the annual *Labour Reports*. For some years, however, total unemployment for all causes shown in this special sample differs from total unemployment for all causes for all reporting unions. In making the adjustment, the ratio of unemployment due to lack of work to unemployment for all causes, derived from the special restricted sample, was applied to the global unemployment figure derived from the total reporting population.

From 1929 to 1947 the *Labour Reports* simply note that the percentage of unemployment due to (1) sickness and accident and (2) all other causes except lack of work remained uniform at 0.7 per cent and 0.2 per cent, respectively. Thus, a constant factor of 0.9 per cent has been deducted from the global unemployment percentages to adjust for these years. Beginning with 1948, the adjustment factor was put at 0.6 per cent for accident and illness, and "insignificant" for other causes; for the years 1948-1951, therefore, a 0.6 per cent adjustment factor has been deducted.

Source: *Labour Reports*, Commonwealth Bureau of Census and Statistics, *passim*.

It is apparent that because of the high degree of union organization, the trade union unemployment series has long covered a remarkably large proportion of the Australian labor market, in comparison to similar types of statistics of other countries.

The principal omissions in industrial coverage are for the pastoral

and agricultural trades, for industries in which workers have permanency of employment (such as railway and tramway employees and civil servants), and for such casual trades as longshoremen's work. However, there appears to be no reason to suspect any particular bias toward greater or less unemployment for the industrial fields covered, which include, in addition to manufacturing, mining, building construction, land transport other than railways, and domestic service. Salaried individuals as well as wage earners appear to be represented in the sample, though whether to the same relative extent cannot be determined from the data.

b. Methods of Collecting Information. The basic reports are prepared quarterly by local trade union secretaries and submitted to the Bureau of the Census for processing. The Bureau has made the following observations regarding the reporting mechanism:

> "Very few unions pay unemployment benefits, but the majority of the larger organizations have permanent secretaries and organizers who are in close touch with the members and with the state of trade in their particular industries. In many cases unemployment registers are kept, and employers apply to the union officials when labor is required. Provision is also made in the rules for members out of work to pay reduced subscriptions."[9]

An intensive examination of the reporting procedure in thirty reporting unions yielded the following conclusions:

> "Some kept unemployment registers, which members signed when they became unemployed. In unions paying unemployment benefit, such a record would probably be fairly accurate, but in others, the majority, where there is no advantage in registering, for a time at least, the records and the returns based on them would obviously be liable to error. There would be no reliable check on members working in other occupations, up to one or two years at least, when they are removed from the register . . . some unions try to allow for these errors by guessing the probable numbers affected. Such returns are based on records plus guesswork. Other unions keep no record at all, and simply send in a return based on 'general observation.' The character of the occupations represented by some unions, e.g. seasonal work, prevents any accurate record being kept. Some unions return men on relief work as employed, while others, probably the majority, do not. Generally speaking, the information which unions have about unemployment amongst their own members is, in a few

[9] *Labour Reports*, No. 27, 1936, p. 108.

cases, fairly complete, and in the majority approximate to very dubious."[10]

In addition to these difficulties, the reporting system sometimes conceals unemployment if the unions are seeking wage increases through a court of arbitration and at other times exaggerates unemployment in order to justify restrictions on entry to the trade.[11]

Notwithstanding these imperfections, the Commonwealth Statistician thinks that the trade union series provides a good measure of the trend of unemployment, even though the absolute figures must be used with caution, apparently on the theory that the errors cancel out, in a rough way.[12]

c. Definitions. A person is recorded as unemployed if he is out of work for three days or more during the specified survey week. Part-time unemployment is not reported separately; the particular work pattern of the individual on less than full time determines whether he is classified as employed or unemployed.

Persons who are out of work due to direct involvement in a strike or lockout are not counted as unemployed, but those in other industries who are indirectly affected are considered unemployed.[13] However, persons unemployed for any other cause, such as illness and accident, are included among the unemployed. Fortunately, data were collected for a number of years from some of the reporting unions which permitted a breakdown of unemployment by cause. These data have been used to correct the global unemployment percentages by eliminating unemployment for all causes other than lack of work. The corrected series is also shown in Table A-2.

3. The trade union unemployment data may be checked against census data for 1921, 1933, and 1947. The comparisons are shown in Table A-3. The substantial difference between the figures in 1921 led to the observation that "the trade union unemployment percentages for those unemployed through scarcity of work very much exaggerated the amount of unemployment due to scarcity of work."[14] However, the close correspondence between them in 1933, when the census figure was, if anything, higher than the trade union data, indicates that at least in periods of very high unemployment, the trade union data mirrored with considerable accuracy the prevailing level of unemploy-

[10] E. E. Ward, "A Sample of Unemployment in Victoria," *Economic Record*, June 1938, p. 23.

[11] Gifford, *op.cit.*, p. 5.

[12] E. Ronald Walker, *Unemployment Policy*, Sydney, Angus and Robinson, 1936, pp. 64-65.

[13] *Labour Reports*, No. 30, 1939, p. 103.

[14] Gifford, *op.cit.*, p. 9.

TABLE A-3

Comparison of Unemployment Rates Due to Lack of Work as Shown by Census and Trade Union Returns, Australia, 1921, 1933, and 1947

YEAR	TYPE OF WORKER COVERED	CENSUS		TRADE UNION	
		Per Cent Unemployed	*Date*	*Per Cent Unemployed*	*Date*
1921	Male workers	6.0[a]	April 4	10.4	1st quarter
1933	Male workers	24.9[b]	June 30	24.8	2nd quarter
1947	Male and female workers	1.3	June 30	0.4	2nd quarter

[a] The corresponding figure for males and females together is 5.0 per cent.

[b] The corresponding figure for males and females together is 22.4 per cent. This percentage makes no allowance for youths and girls who would normally have been wage and salary earners but who were never employed on account of the depression and were thus not classified as wage and salary earners. Such an allowance would raise the percentage of unemployment.

Source: 1921—J. L. K. Gifford, *Economic Statistics for Australian Arbitration Courts*, Melbourne, Macmillan, 1928, p. 9. 1933—*Census of the Commonwealth of Australia*, June 30, 1933, Vol. II. 1947—*Year Book of the Commonwealth of Australia*, 1953, p. 549.

ment. The same, of course, would be true when unemployment was very low, as indicated by the data for 1947.

A comparison of unemployment in Queensland for the years 1925-1927, based upon unemployment insurance statistics in that state, yielded the conclusion that

> "the trade union percentage very much exaggerated at certain times the amount of unemployment due to lack of work, though at other times it fell below the percentage based on the Department [of Labour] statistics. From August to November, 1924, from February to May, 1925, from May to August, 1926, and from August to November, 1926, even the direction of movement of the two series was different, and in general the trade union percentage fluctuated more than the other."[15]

A more careful and elaborate study of unemployment in Victoria in 1937 indicated that of a sample of 2,000 men receiving public assistance, only 12 per cent were or ever had been members of unions, reporting or otherwise, whereas the reporting unions constituted a sample of 20 to 25 per cent of the wage and salary earners in Victoria at the time. In fact, only about 6 per cent of the group studied were currently registered as unemployed with reporting unions. Despite this great discrepancy, total unemployment in Victoria was estimated at 10 per cent from public labor exchange data, and 9.3 per cent on the basis of the trade union reports. This fairly close correspondence

[15] *Ibid.*, p. 11.

is attributed to "a fortuitous cancelling of errors which may or may not persist."[16]

CONCLUSIONS

The only series of unemployment other than the trade union reports available for Australia is that emanating from the unemployment insurance system, commencing in 1945. For each year between 1945 and 1952, *the direction of movement* was the same for the two series; but the absolute level of unemployment shown by the two series cannot be compared, since there are qualifications for the receipt of unemployment benefits, including a means test, which restrict the coverage of the unemployment insurance data.

The trade union series, therefore, must be used for Australian unemployment statistics for any considerable period of time. Even with corrections to eliminate unemployment for causes other than lack of work, this series has certain drawbacks. To an outside observer it seems that much of the criticism of the series was made by individuals who were attempting to make out the strongest possible case against it. The sample is, and has been for many years, substantial; industrial coverage has been wide, and not obviously biased; and several tests of the trade union data against census and other bench marks have revealed fairly close correspondence between the two, with the conspicuous and important exception of the year 1921. It cannot be said prima facie, that the trade union series either "overstated" or "understated" unemployment as compared with some theoretical norm of perfection, on the basis of the available evidence. All things considered, the Australian trade union series appears to be one of the better of the unemployment series, when compared with the character of the data available for other countries.

Appendix B:
Belgium

The principal series yielding information on unemployment in Belgium are (1) early trade union, communal fund, and employment exchange statistics, (2) voluntary unemployment insurance statistics, and (3) compulsory unemployment insurance statistics.

EARLY TRADE UNION, COMMUNAL FUND, AND EMPLOYMENT EXCHANGE STATISTICS

The Ghent trade union rates of unemployment were the first official unemployment statistics to appear. They were published monthly in

[16] Ward, *op.cit.*

the *Revue du travail* beginning in December 1895. The unions covered were classified in ten groups: clerical workers, commercial agents, and foremen; workers in printing; textiles; building; wood; metals; food; clothing; transport; and a miscellaneous group. The size of the Ghent sample increased from 13,591 members in twenty-nine unions in the first year of operation to 19,028 members in forty-nine unions in 1907 (see Table B-1).

Reporting was on a voluntary basis in the years before the creation of the Ghent Communal Unemployment Fund[1] in 1901. After the fund

TABLE B-1

Trade Union and Communal Fund Unemployment Rates, Belgium, 1896-1918
(*per cent*)

YEAR	GHENT TRADE UNIONS[a]		NATIONAL TRADE UNIONS[b]	COMMUNAL FUNDS[b]
	All Members	*Excluding Clerks*		
1896	3.5	4.3		
1897	2.8	3.6		
1898	3.1	3.9		
1899	2.4			
1900	2.9	2.7		
1901	2.7	2.9		
1902	2.9	3.3		
1903	2.6	3.6	3.4	
1904	2.8	3.4	3.0	
1905	2.2	2.9	2.1	
1906	1.9	2.3	1.8	
1907	1.6	2.1	2.2	
1908	2.9		5.8	
1909	3.1		3.3	3.0
1910	1.9		2.0	3.6
1911	1.5		1.9	4.4
1912	1.2		1.3	4.8
1913	1.5		2.0	
1914	13.5			
1915	32.3			
1916	59.3			
1917	58.4			
1918	53.7			

[a] 1896-1913: Averages of monthly percentages appearing in the *Revue du travail*. Rates, excluding clerks, commercial travelers, and foremen, were calculated from annual data (based on twelve months from December through November) appearing in the *Revue du travail* through 1907.

1914-1918: Calculated from data in Ernest Mahaim, *Le secours de chômage en Belgique pendant l'occupation Allemande*, Yale University Press, 1926, pp. 152-153.

[b] Averages of monthly data appearing in the *Revue du travail*.

[1] Ernest Mahaim states: "The Ghent unemployment fund was the best organized institution of unemployment insurance before the war" (*Le secours de chômage*

came into operation, participating unions, receiving communal unemployment subsidies, were required to submit monthly statements of the amount of unemployment to a special communal comptroller. Close controls by the communal authorities, as well as supervision by individual unions, insured accurate reporting.

The industrial distribution of workers covered by the Ghent scheme is compared below with that of all workers in the commune of Ghent and of industrial wage earners in Belgium. While the industrial classifications may not be perfectly comparable, it is evident that the Ghent sample underrepresented workers in building, food and tobacco, and clothing, and overrepresented workers in textiles and metals. Other important groups, workers in ceramics, mining, quarrying, and transport (after 1904) were not represented in the sample at all. In addition, the published Ghent percentages are based upon a sample which includes a considerable number of clerical workers, sales agents, and foremen.

	GHENT TRADE UNION SAMPLE		CENSUS OF 1910	
INDUSTRY	*1902*	*1907*	*Ghent Commune*	*Entire Country*
Book	2.8	3.0	2.2	[a]
Textile	61.7	53.4	46.2	18.9
Building	4.0	6.8	7.6	9.5
Wood	6.3	7.9	7.1	6.8
Metal	15.7	17.3	9.6	14.8
Food and tobacco	2.3	2.6	3.6	5.1
Clothing	2.8	2.8	9.3	7.7
Transport	0.7	0.0	14.4	3.6
Other	3.7	6.2		33.6
	100.0	100.0	100.0	100.0
Total (thousands)	14.1[b]	16.1[b]	43.8	1,270.0

[a] Included in "Other" group.

[b] Union totals exclude clerical workers, sales agents, and foremen, 2,513 persons in nine unions in 1902 and 2,924 persons in nine unions in 1907.

Source: Ghent trade union statistics from annual reports appearing in issues of the *Revue du travail*; census data from *Recensement de l'industrie et du commerce*, 1910, Vol. I, p. 519 and 554.

With the spread of trade union unemployment plans, the *Revue du travail* began in 1902 to publish National Trade Union percentages of unemployment. They first covered 115 unions with 29,920 members, but by 1912, the coverage had expanded to include 276 unions with

en Belgique pendant l'occupation Allemande, Paris, Les Presses Universitaires de France, Publications de la Donation Carnegie pour la Paix, Yale University Press, 1926, p. 150).

77,526 members (see Table B-1). Since the trade union unemployment schemes developed to meet the needs of special trades, unions, and localities, it is not surprising to find that there were many differences among them.[2] Definitions of unemployment were far from uniform and conditions governing the payment of unemployment benefit varied considerably. However, it appears likely that the usual short duration of benefit payments, coupled with stringent eligibility requirements, produced a downward bias in the trade union unemployment percentages, particularly in times of depression.

From 1909 through 1912, monthly unemployment statistics of the communal unemployment funds were published in the *Revue du travail* as part of the annual report on communal and provincial unemployment subsidies (see Table B-1, column 3). In 1909, the percentages were based on the reports of 310 trade unions affiliated with communal funds whose members numbered 58,413. By 1912, coverage had extended to include 370 unions with a membership of 103,537. The communal fund statistics included wage earners in mining, transportation, and manufacturing, and salary earners. Since the majority of communal funds were modeled after the Ghent fund, their operations exhibited some degree of uniformity. Study of the industrial distribution of workers included in the communal fund statistics in December 1910, the month of the census, reveals that workers in construction, mining, and clothing were underrepresented, while those in textiles, wood and furniture, printing, and arts and crafts were overrepresented.

Public and subsidized private employment exchange statistics are available beginning with 1896. They provide data on the number of applications for work, of vacancies, and of placements. The early figures are poor since the number of exchanges was small and reporting was irregular. In 1904, only ten exchanges were in operation. By 1914, the number had increased to fifty. While useful as a rough indicator of fluctuations in the labor market, the statistics do not provide anything approaching a suitable measure of the number of unemployed persons. Many unemployed persons registered at more than one exchange and were therefore included in the statistics twice. Other unemployed persons did not use the exchanges when seeking work. The limited number of employment exchanges in the early years meant that many of the unemployed did not have the services of an employment exchange at their disposal. Later, when the statistics became more comprehensive, the far better unemployment insurance statistics make it unnecessary to refer to them for a measure of unemployment (see Table B-2).

[2] See Constance A. Kiehel, *Unemployment Insurance in Belgium*, Industrial Relations Counselors, 1932, pp. 117-119.

TABLE B-2

Public and Subsidized Private Employment Exchange Statistics, Belgium, 1896-1930[a]

Year	*Number of Exchanges (thousands)*	*Applications (thousands)*	*Vacancies (thousands)*	*Placements (thousands)*	*Vacancies per 100 Applicants*[b]
1896		13.1	16.8	4.3	128
1897		12.0	16.7	6.4	139
1898		13.5	16.4	6.3	121
1899		10.9	16.7	6.7	153
1900		10.0	16.5	8.2	165
1901		14.1	13.1	7.7	93
1902		17.0	11.1	6.4	65
1903		23.4	12.4	7.1	53
1904	10	20.5	13.3	8.0	65
1905	10	17.2	14.9	8.2	87
1906	10	19.2	16.3	10.6	85
1907	12	23.8	18.5	11.9	78
1908	14	39.9	21.6	15.1	54
1909	17	51.6	28.0	18.7	54
1910	31	60.1	40.8	24.9	68
1911	39	69.7	56.0	31.7	80
1912	43	71.2	64.8	36.1	91
1913	49	88.2	74.7	43.7	85
1914[c]	50	88.6	54.9	34.0	62
1919[d, e]	47	92.2	26.8	14.9	29
1920	38	141.6	90.2	57.4	64
1921[f]		181.3	96.8	71.4	53
1922[f]		192.3	136.9	89.8	71
1923	30	161.3	144.3	93.2	89
1924	33	168.9	125.5	86.0	74
1925	36	166.0	101.6	74.1	61
1926	37	179.5	98.0	73.0	55
1927	40	176.8	107.8	75.8	61
1928	42	148.5	143.3	89.5	97
1929	42	141.2	146.1	89.2	103
1930	44	190.1	100.8	72.9	53

[a] From 1896 to 1907, figures were particularly poor. Failure to report and typographical errors which cannot be corrected were frequent.

[b] Calculated for years 1896-1906, 1914, and 1919; *Revue du travail* for other years.

[c] First seven months.

[d] No data available 1915-1918.

[e] Last six months; exchanges not in operation during first six months.

[f] No reports from subsidized private exchanges.

Source: 1896-1906, 1914 and 1919—Constance A. Kiehel, *Unemployment Insurance in Belgium*, Industrial Relations Counselors, 1932, p. 62. 1907-1930, excluding 1914 and 1919—*Revue du travail*, February 1931, p. 334.

There are available two unemployment censuses which afford an opportunity to gauge the value of the trade union and communal fund unemployment rates. The results of the first census, that of October 31, 1896, were marred by several methodological defects.[3] In particular, workers' returns understated the amount of unemployment in certain seasonal trades, counted as unemployed some persons who were sick, and included among the unemployed some older persons who were not looking for work. Data in the census report suggest that between 4 and 5 per cent of the total number of industrial wage earners were unemployed on the date of the census.

The percentages unemployed reported in the second census of December 31, 1910,[4] are shown below:

	Industry	*Commerce*	*Industry and Commerce*
Wage earners[a]	6.3	6.9	6.3
Salary earners[b]	1.3	3.2	2.0
Wage and salary earners[a, b]	6.0	4.8	5.9

[a] 5,242 wage earners on strike, included among the unemployed in the census, have been excluded.

[b] 23 salary earners on strike, included among the unemployed in the census, have been excluded.

A comparison of the trade union and communal fund unemployment percentages with those of the censuses follows:

	UNEMPLOYMENT PERCENTAGES[a]			
DATE	*Census*[b]	*Ghent Trade Unions*	*National Trade Unions*	*Communal Funds*
October 31, 1896	4.5	2.9 (3.5)		
December 31, 1910	6.3	2.2 (1.9)	1.8 (2.0)	4.2 (3.6)

[a] Percentages in parentheses are annual averages.

[b] Percentage of industrial wage earners unemployed.

It is apparent that the differences encountered above are substantial. Some of the reasons for them have already been mentioned: the local nature of the Ghent statistics, diversities in trade union practices and definitions, and unrepresentative small samples.

[3] See *Recensement général des industries et des métiers (31 octobre 1896)*, Vol. 18, p. 424; Max E. Waxweiler, "Le statistique des ouvriers industriels sans travail en Belgique" in *Compte rendu de la Conference Internationale du Chômage*, Vol. II, report No. 8, 1910, pp. 1-15; B. Seebohm Rowntree, *Land and Labour, Lessons from Belgium*, London, Macmillan, 1910, pp. 502-503; Kiehel, *op.cit.*, p. 41.

[4] *Recensement de l'industrie et du commerce*, Vol. 8, p. 37 and Vol. 2, p. 1414.

What then may be said of the level of unemployment in Belgium before World War I? Rowntree, in an admittedly rough approximation, employed the trend in the Ghent trade union series in conjunction with the census of 1896 in order to estimate the level of unemployment in the years from 1896 through 1907. After remarking that the Belgian economy prospered in the closing years of the nineteenth century and in the early years of the twentieth century, he writes:

> "Thus, the percentage of men out of work, which was shown by the census to have been 4½ per cent in 1896, has been considerably smaller since then. If it has declined in the same ratio as the percentage of unemployed in Ghent, it will have averaged 3½ per cent for the seven years 1896 to 1902, and 2¾ per cent from 1903 to 1907. . . . These are the only statistics upon which any estimate of the amount of unemployment in Belgium can be based. So far as they go, they appear to show that, taking an average of years, the percentage of unemployed workers in Belgium is somewhere about 3 per cent, but for reasons given on p. 503, this figure can only be taken as approximately correct."[5]

Rowntree cites personal communications from M. Louis Varlez, director of the Ghent unemployment fund, M. Vandervelde, leader of the Belgian Labor Party, and M. De Leener, a Belgian economist, to the effect that 3 per cent is a good estimate of the average level of unemployment in Belgium for the period from 1896 through 1907.

The depression of 1908 is undoubtedly not adequately reflected in the trade union series. Many workers exhausted their unemployment benefits, and, though still unemployed, did not appear in the statistics. The Ghent percentage rose only to 2.9 in 1908 and then to 3.1 in 1909. In 1910, when the census put normal average unemployment at about 5 per cent,[6] the Ghent percentage stood at 1.9. The National Trade Union percentage reached a peak of 12.0 in January 1908, while the annual average for 1908 was 5.8, followed by percentages of 3.3 and 2.0 for 1909 and 1910, respectively.

Several rough calculations indicate that the level of unemployment in 1908 and 1909 was about 6 to 9 per cent for industrial wage earners.[7] For the years 1910 to the beginning of World War I, the level of unemployment probably fluctuated between 3 and 6 per cent.

[5] Rowntree, *op.cit.*, p. 504.

[6] *Recensement de l'industrie et du commerce*, Vol. 8, p. 22.

[7] Two calculations were performed. In the first, the ratio of the census estimate of normal unemployment in 1910 to the Ghent percentage for 1910 was applied to earlier Ghent percentages. The second calculation employed unemployment percentages for the industrial groups in the Ghent sample and weights derived from the census of 1910.

During World War I, with the German invasion and occupation, unemployment rose to extraordinary heights. The Ghent trade union series, the only one which continued to appear, represented relief more than unemployment figures and reached very high levels (see Table B-1). The unemployment census of February-March 1915, which was limited to occupied Belgium, showed that a little less than 50 per cent of the total number of wage and salary earners, as given by the 1910 census, were unemployed.[8] While the accuracy of the census is questionable since it was not carefully planned and was rushed to completion under the disturbing influence of an occupying power, there can be little doubt but that there actually existed an extremely high level of unemployment at the time of the census and throughout the war years.

VOLUNTARY UNEMPLOYMENT INSURANCE STATISTICS[9]

After World War I, steps were taken to form a system of voluntary unemployment insurance societies to replace relief measures which had been instituted during the war. In spite of difficulties encountered in the depression of 1920-1921, this program was a success. By the end of 1920, 627 communes had formed eighty-four communal and intercommunal unemployment funds and total membership in the unemployment insurance societies increased from 126,300 in 1913 to 668,000.

State supervision, in addition to requiring uniformity of operation, entailed a more careful and uniform definition of involuntary unemployment. Persons incapable of working, on strike or locked out, and those definitely dismissed from their previous employment who refused to accept suitable work under customary working conditions (as determined by the employment exchange authorities with the help of the executive committees of the unemployment funds) were excluded from benefit and hence not considered unemployed. Registration at an employment exchange was required on the first day of unemployment. A person was considered as wholly unemployed (*chômeur complet*) if he met the above conditions and if his employment were definitely terminated for an indeterminate period or for a limited period of more than one month.

The statistics of the voluntary unemployment insurance societies, published monthly in the *Revue du travail*, covered workers above fifteen years of age engaged in mining, manufacturing, building, transport, etc., but excluded those in agriculture, fishing, and personal

[8] Mahaim, *op.cit.*, p. 50.

[9] Source: *Revue du travail; Yearbook 1934-1935*, International Labour Organization, Vol. II, p. 171; Kiehel, *op.cit.*, Chaps. 3 and 9-14, pp. 41-51 and 138-298.

service. The inclusion of persons under eighteen was qualified, however, since such persons received benefit only if they had been working for an employer for at least six months and had been insured for at least twelve months. In October 1930, persons over sixty-five years of age were excluded from benefit. Persons in their waiting period, or having exhausted their right to benefit, or receiving relief from emergency relief funds (*fonds de crise*), were counted as unemployed (see Table B-3).

The results of two censuses, those of December 31, 1930, and of February 27, 1937, provide information which is of great value in

TABLE B-3
Unemployment Insurance Statistics, Belgium, 1921-1952

	VOLUNTARY UNEMPLOYMENT INSURANCE			COMPULSORY UNEMPLOYMENT INSURANCE		
					Wholly Unemployed (per cent)	
YEAR	*Membership (thousands)*	*Wholly Unemployed[a] (per cent)*	YEAR	*Membership[b] (thousands)*	*All Industry*	*Selected Industry[c]*
1921	688	9.7	1945	1,554	7.4	9.1
1922	705	3.1	1946	1,880	3.2	3.9
1923	654	1.0	1947	1,995	1.8	2.2
1924	607	1.0	1948	2,004	4.3	5.3
1925	598	1.5	1949	2,047	8.7	11.1
1926	611	1.4	1950	2,047	8.4	10.1
1927	629	1.8	1951	2,095	7.5	8.6
1928	632	0.9	1952	2,098	8.2[d]	
1929	640	1.3				
1930	693	3.6				
1931	761	10.9				
1932	920	19.0				
1933	980	16.9				
1934	955	18.9				
1935	900	17.8				
1936	911	13.4				
1937	916	11.5				
1938	987	14.0				
1939	1,016	15.9				

[a] Percentages calculated from monthly data. The monthly percentages are formed by comparing the daily average of the registered unemployed with the total number of insured persons.

[b] June of indicated years.

[c] The following groups are excluded: agriculture, forestry, hunting, fishing, hotels, restaurants, personal and welfare services, salary earners, artists, and domestic service.

[d] 10 months.

Source: *Revue du travail* and *Yearbooks of Labour Statistics*, ILO.

assessing the accuracy of the voluntary unemployment insurance percentages of unemployment. In Table B-4, the industrial distribution of insured wage earners is compared with that of the total population of industrial wage earners. The comparison reveals that the insurance sample's industrial representation closely approximated that of the total population of industrial wage earners.

Table B-5 indicates that the insurance sample included a preponderance of industrial wage earners. Percentage wise, the representation of salary earners and wage and salary earners in commerce was much

TABLE B-4

Comparison of the Industrial Distribution of Insured Wage Earners with That of Census Wage Earners in Industry, Belgium, December 31, 1930

INDUSTRY	PERCENTAGE OF THE TOTAL NUMBER OF: *Insured Industrial Wage Earners*	*Industrial Wage Earners*
Fishing	0.4	0.1
Mining	9.8	10.9
Quarrying	3.1	2.4
Metal	21.3	19.7
Ceramics	2.6	2.5
Glass	1.8	1.8
Chemical	2.9	3.6
Food	2.7	4.7
Textile	21.4	15.2
Clothing	1.3	5.3
Construction	9.2	10.9
Wood and furnishing	6.5	6.8
Hides and leather	2.7	2.8
Tobacco	1.2	0.9
Paper	1.0	1.1
Book	1.7	1.4
Art and crafts	3.3	2.5
Transport	7.0	7.4
Total	100.0	100.0
Total numbers	610,886	1,480,753

Note: Details may not add up to totals because of rounding.
Source: *Revue du travail*, June 1934, pp. 760-761.

smaller than in the total population of wage and salary earners. Males represented 86.6 per cent of the total insurance sample, while in the census males accounted for 81.3 per cent of the total number enumerated.

On the basis of this analysis of the insurance sample, it would appear that the insurance percentages can be taken to represent the level of

TABLE B-5

Comparison of Proportion of Wage Earners, Salary Earners, and Males and Females in the Insurance Sample and Census, Belgium, December 31, 1930

A. Percentage of Wage and Salary Earners Who Were in Industry and Commerce, and Number in Each Sample

	Industry	*Commerce*	*Unassigned*	*Total*	*Total Number*
Wage earners:					
Insurance	98.6	1.4	[a]	100.0	619,584
Census	95.9	4.1	[a]	100.0	1,545,377
Salary earners:					
Insurance	76.8	23.2	[a]	100.0	35,636
Census	60.6	39.0	0.4	100.0	304,895
Total wage and salary earners:					
Insurance	97.4	2.6	[a]	100.0	655,230
Census	90.0	9.9	0.1	100.0	1,850,272

B. Percentage in Industry and Commerce Who Were Wage and Salary Earners, and Number in Each Sample

	Wage Earners	*Salary Earners*	*Total*	*Total Number*
Industry:				
Insurance	95.8	4.2	100.0	638,222[b]
Census	88.9	11.1	100.0	1,665,603[c]
Commerce:				
Insurance	51.0	49.0	100.0	16,927[b]
Census	34.9	65.1	100.0	182,804[c]
Industry and commerce:				
Insurance	94.5	5.5	100.0	655,230
Census	83.5	16.5	100.0	1,850,272

C. Percentage of Males and Females in Industry and Commerce Who Were Wage and Salary Earners, and Number in Each Sample

	Male	*Female*	*Total*	*Total Number*
Industry and commerce:				
Wage earners				
Insurance	86.7	13.3	100.0	619,584
Census	81.9	18.1	100.0	1,545,377
Wage and salary earners				
Insurance	86.6	13.4	100.0	655,230
Census	81.3	18.7	100.0	1,850,272

[a] Less than 0.05.

[b] Excluding 26 insured salary earners and 55 insured wage earners who could not be definitely assigned to industry or commerce.

[c] Excluding 1,059 census salary earners and 806 census wage earners who could not be definitely assigned to industry or commerce.

Source: *Revue du travail*, June 1934, pp. 722-725.

unemployment among industrial wage earners subject to the following biases:

1. The inclusion of some salary earners in industry (4.2 per cent of the number insured in industry) should produce a downward bias since salary earners usually experience lower unemployment rates than industrial wage earners.

2. The inclusion of a small number of wage and salary earners in commerce (2.6 per cent of the total insurance sample) should act to lower the insurance percentage relative to the "true" percentage for industrial wage earners.

3. The overrepresentation of males in the insurance sample should tend to raise the insurance percentage, since male unemployment rates usually exceed those of females.

On the two census dates, it is possible to compare the insurance unemployment rates with the census rates. The data, presented below, reveal that on December 31, 1930, the insurance unemployment percentage, based on the total number of insured persons, was 0.5 percentage points below that of the census percentage for industrial wage earners; on February 27, 1937, the insurance percentage exceeded the census percentage for industrial wage earners by 2.0 percentage points.[10]

That the insurance percentage stood below the census percentage in 1930 and above it in 1937 may be attributable to the operation of the biases listed above. In 1930, the difference between male and female industrial wage earners' unemployment rates, as given by the census, was much smaller than in 1937. This implies that the bias due to the overrepresentation of males operated more strongly in 1937 than in 1930. Further, unemployment rates for salary earners and for wage and salary earners in commerce were both lower than the rates for industrial wage earners in 1930 than in 1937 according to the censuses (see Table B-6). This means that the biases arising from the inclusion of some salary earners and a small number of wage and salary earners in commerce in the insurance sample probably influenced the insurance percentages more in 1930 than in 1937. Since the

10

DATE	INSURANCE PERCENTAGES (WHOLLY UNEMPLOYED)	CENSUS UNEMPLOYMENT PERCENTAGES FOR INDUSTRIAL WAGE EARNERS		
		Male	*Female*	*Total*
December 31, 1930	9.2	10.1	7.8	9.7
February 27, 1937	13.7	13.6	3.3	11.7

Source: Table B-6 and *Revue du travail.*

TABLE B-6

Unemployment Rates of Wage and Salary Earners, by Sex, Belgium, Census of December 31, 1930, and February 27, 1937[a]

(per cent)

	WAGE EARNERS		SALARY EARNERS		WAGE AND SALARY EARNERS	
	1930	*1937*	*1930*	*1937*	*1930*	*1937*
Industry:						
Male	10.1	13.6	1.7	4.0	9.1	12.4
Female	7.8	3.0	1.9	3.1	7.3	3.0
Both sexes	9.7	11.7	1.7	3.9	8.8	10.8
Commerce:						
Male	5.9	11.4	2.9	6.9	4.1	9.3
Female	4.8	5.7	2.5	4.4	3.0	4.9
Both sexes	5.7	10.1	2.8	6.0	3.8	8.0
Industry and commerce:						
Male	9.9[b]	13.5	2.3[c]	5.0	8.7[b,c]	12.1
Female	7.7[b]	3.3	2.5[c]	3.9	6.7[b,c]	3.4
Both sexes	9.5[b]	11.6	2.3[c]	4.7	8.3[b,c]	10.4

[a] Helpers (*aidants*), none of whom were listed as unemployed in either census, are excluded.

[b] Including 806 wage earners (663 males of whom 373 were unemployed and 143 females of whom 33 were unemployed) who were not able to be assigned to industry or commerce.

[c] Including 1,059 salary earners (761 males of whom 474 were unemployed and 298 females of whom 158 were unemployed) who were not able to be assigned to industry or commerce.

Source: 1930 census—*Revue du travail*, June 1934, pp. 758-759. 1937 census—*Annuaire statistique de la Belgique et du Congo Belge*, Vol. 70, 1950, pp. 128-129.

first two biases act to depress the insurance percentage while the third acts to raise it, all relative to the "true" rate for industrial wage earners, the combined action of all of them may be responsible for the differences between the insurance percentages and the census percentages for industrial wage earners on these two dates.

COMPULSORY UNEMPLOYMENT INSURANCE STATISTICS[11]

After World War II, Belgium instituted compulsory unemployment insurance for all wage and salary earners in all lines of economic activity except civil servants appointed permanently by the state, the provinces, and the municipalities; employees of the Societé Nationale des Chemins de Fer Belges with the exception of temporary workers; persons performing military service; family helpers; apprentices; and

[11] Source: "Rapport sur la possibilité d'une coordination et d'une comparaison des statistiques du chômage dans les pays de Benelux," Commission de Coordination des Statistiques, Groupe de travail: Statistiques du chômage, 1952; *Revue du travail; International Labour Review*, December 1948, pp. 827-828.

private domestic servants (except in Eupen, Malmedy, and Saint Vith). Also excluded are unemployed persons who have a right to old age pensions (sixty-five years old and over in general) or who receive a pension from public authorities.

Counted as unemployed in the statistics are unemployed persons who must register at an unemployment exchange in order to receive benefit and wholly unemployed persons seeking work who voluntarily register. A person is counted as unemployed from the day he registers at an employment exchange. An unemployed person who does not keep up his registration (whether because he has found a job or for any other reason) is immediately excluded from the series. Since the right to unemployment benefits is of unlimited duration, the problem of unemployed persons exhausting their right to benefit and hence possibly not being motivated to register at an employment exchange does not arise.

Partial unemployment, which is differentiated from total unemployment, is defined as a period of unemployment alternating regularly with periods of employment. Accidental unemployment refers to unemployment resulting from floods, freezing weather, lack of power, machinery breakdown, etc. Unemployment rates, published in the *Revue du travail*, are calculated for the wholly unemployed and for the partially or accidentally unemployed.

In order to establish a rate of unemployment comparable to the prewar percentages, the compulsory insurance data, presented in Table B-3, have been subjected to the following adjustments:

1. For the years 1947 and on, unemployed persons in the following groups have been excluded from the monthly totals of wholly unemployed persons: agriculture, forestry, hunting, fishing, hotels, restaurants, personal and welfare services, salary earners, artists, and domestic service. The monthly numbers of remaining wholly unemployed persons were averaged to obtain an annual average.

2. Annual estimates of the total number of insured persons outside the groups listed above were constructed by excluding persons in these groups from the total number insured on December 31, 1946. On this date the total number insured was 1,880,268. After excluding the aforementioned groups, there remained 1,242,000 insured persons. To obtain estimates for following years, it was assumed that this group of insured persons, 1,242,000 persons in 1946, grew at the same rate as did the total number of insured persons.

3. From the annual averages of wholly unemployed persons developed in (1) and from estimates derived in (2), annual unemployment percentages were calculated.

The unemployment percentages, calculated in the manner described above,[12] are probably not strictly comparable with the pre-World War II percentages of the voluntary unemployment insurance societies. However, they do provide a better basis for comparing post- and pre-World War II levels of unemployment for industrial wage earners than do the unaltered compulsory unemployment insurance percentages. This is so because the postwar insurance system includes many persons outside industry not included in the prewar voluntary unemployment insurance sample.

SUMMARY

Before 1921, the available unemployment statistics are too fragmentary to derive reliable annual percentages of unemployment. The Ghent Trade Union series, relating to a limited geographical region, cannot be assumed to represent the level of unemployment in the whole of Belgium. The National Trade Union series, based on the returns of unions with extremely diverse unemployment benefit schemes embodying varying definitions of unemployment, is of little or no value as a measure of unemployment. Finally, the unemployment percentages of the trade unions affiliated with communal funds cover only a few years and are based on a sample which was rapidly changing.

After 1920, the unemployment insurance statistics, with wide coverage in all years, provide an excellent measure of unemployment in Belgium. The unemployment percentages of the voluntary unemployment insurance scheme can be taken to approximate closely the level of unemployment among industrial wage earners. The data of the more inclusive compulsory unemployment insurance system, available for the post-World War II period, have been adjusted to obtain unemployment percentages as comparable as possible to the prewar percentages.

Appendix C:
Canada

Canadian unemployment statistics go back only as far as December 1915, when the government began to compile and publish data relating to unemployment among trade union members. This series was published quarterly until 1920, monthly from 1920 to 1943, and quarterly

[12] Data are not available to perform this calculation for 1945 and 1946. The calculated percentages for 1947-1951 bear a fairly constant relationship to the published percentages for the wholly unemployed for all insured persons. For 1947, the ratio of the calculated percentage to the percentage based on the total number insured is 1.22, and for following years is 1.23, 1.21, 1.37, 1.19, and 1.15. The average of these ratios, 1.23, was used to obtain percentages for 1945 and 1946.

from 1944 to June 1950, when it was discontinued. The principal characteristics and limitations of the series are as follows:[1]

1. There has been variation from month to month in coverage. Local unions, which supplied the basic data, were not always faithful in submitting returns. In 1950 there were 2,643 local unions with 570,600 members submitting returns (the total numbers of paid workers in nonagricultural industry on June 1, 1950, was estimated at 3,378,000), but neither the extent nor the industrial scope of the coverage in that year typified the situation at any other time. Roughly speaking, the trade union sample included between 10 and 20 per cent of the total number of nonagricultural wage earners in Canada.

2. The representative nature of the sample was found to vary with business conditions. When employment was rising, the trade union data were found to approximate more closely the degree of unemployment as measured by more comprehensive censuses than when employment was declining, since there was a tendency for the reporting unions to have better employment conditions than the nonreporting unions. Moreover, persons dropping out of unions on the downswing of the cycle were more apt to be unemployed than those remaining in the unions.

3. The industrial coverage of the trade union data included fishing, lumbering, mining, manufacturing, transportation, communications, trade, and services. Among major occupational groups only agriculture was excluded.

4. Only wage earners (or paid workers, the terms being used almost interchangeably in Canadian statistics) were included in the reports. For purposes of international comparison such a limitation is an advantage rather than a disadvantage.

5. Persons engaged in work other than their own trade or idle because of illness were not considered as unemployed, and unions engaged in industrial disputes were excluded from the tabulation. From the nature of the returns, persons who had never held nonagricultural jobs, and were therefore not likely to have joined a union, would not have been covered.

6. M. C. McLean, who was largely responsible for the excellent monograph on unemployment which accompanied the 1931 census, had the following to say of the trade union series:

> "The objection that the organization of labor unions brings about employment conditions different from those prevailing among the generality of wage-earners is here regarded as frivolous. If we could

[1] A detailed analysis of the trade union series may be found in *Seventh Census of Canada, 1931*, Monographs, *Unemployment*, Vol. XIII, 1942, pp. 222-228.

obtain an estimate of unemployment as close to the truth as the difference caused by labor union organization we should have not only the best estimate in the world, but also figures better than those of any census, since definitions of employment are subject to very wide variations. This is not the trouble with the labor union figures. The real drawback is that from month to month the number of unions reporting their unemployment varies, and more particularly that the sample reporting varies in kind according to employment conditions. When employment is on the up-grade the reports of the unions seem to be fairly representative; when it is on the down-grade there is a clearly marked tendency for the reporting unions to have better employment conditions than the non-reporting unions."[2]

Annual unemployment percentages derived by arithmetical average from the quarterly or monthly trade union statistics are shown in Table C-1, column 1.

In an effort to eliminate some of the deficiencies of the trade union data, the Dominion Bureau of Statistics adjusted them for variation in the size of the sample and for decline in trade union membership during periods of recession, for the years 1920-1935. The corrected data are shown in Table C-1, column 2. A comparison of the two series reveals that only in 1921 and 1932 (both years of considerable unemployment) did the two series differ by more than 2 percentage points of unemployment.

To secure unemployment statistics free of the limitations inherent in the trade union data, the Dominion Bureau of Statistics, on the basis of the 1931 census, an index of employment based upon monthly reports of business concerns,[3] and the trade union data as corrected, prepared independent estimates for the years 1920-1940. Annual unemployment rates, derived from the monthly data of these estimates, are contained in Table C-1, column 3.

An unemployed was defined for the purpose of these estimates as "the person who could tell a census enumerator that he had worked as a wage earner or that he had a wage-earning occupation, but is at present out of work (not through illness, accident, strike or lockout, etc.)." Under this definition youths of working age who had never held steady jobs, as well as those on farms who might have been wage earners under better employment conditions, were excluded from the unemployment census.

[2] *Ibid.*, p. 222.

[3] The Bureau of Statistics' index of employment varied in coverage from year to year, including 36 per cent of all wage earners in 1921 and 45 per cent in 1931. Because of sharp variations in the size of the labor force at risk, this index alone could serve only as a very rough indicator of unemployment.

TABLE C-1

Annual Unemployment Rates among Wage Earners, Canada, 1915-1950
(*per cent*)

Year	*Reported by Trade Unions* (1)	*Reported by Trade Unions, Corrected for Variation in Size of Sample and Membership* (2)	*Estimated by the Bureau of Statistics* (3)
1915	7.9[a]		
1916	1.9		
1917	1.9		
1918	1.3		
1919	3.4		
1920	4.6	3.8[a]	3.8[b]
1921	12.6	8.9	8.9
1922	7.1	7.1	7.1
1923	4.9	4.9	4.9
1924	7.2	7.1	7.1
1925	6.4	7.0	7.0
1926	5.1	4.7	4.7
1927	4.9	2.9	2.9
1928	4.5	2.6	2.6
1929	5.7	4.2	4.2
1930	11.0	12.7	12.9
1931	16.9	17.5	17.4
1932	22.0	24.4	26.0
1933	22.3	24.1	26.6
1934	18.2	18.9	20.6
1935	15.4	16.0	19.1
1936	13.2		16.7
1937	10.7		12.5
1938	13.1		15.1
1939	12.2		14.1
1940	7.8		9.3
1941	4.5		
1942	2.2		
1943	0.8		
1944	0.5		
1945	1.4		
1946	1.4		
1947	1.3		
1948	2.2		
1949	3.0		
1950	3.8[c]		

[a] December only. [b] June to December. [c] March and June only.

Column — Source

1 — 1915-1919, W. A. Berridge, *Report on Employment and Income of Labor in Canada, 1910-1931*, World Social Economic Congress, 1931, p. 6. 1920-1935, *Seventh Census of Canada, Unemployment*, pp. 283-285. 1936-1950, *Labour Gazette, passim.*

2 — 1920-1935, *Seventh Census of Canada, Unemployment*, pp. 285-287.

3 — 1920-1936, *Seventh Census of Canada, Unemployment*, pp. 274-276. 1936-1937, *Canada's Unemployment Problem*, L. Richter, editor, Toronto, Macmillan, 1939, p. 9. 1938-1940, *Statistics Relating to Labor Supply under War Conditions*, Ottawa, Dominion Bureau of Statistics, 1941, p. 14.

Several of the problems encountered in the preparation of these estimates are worthy of special note:

1. There was found to be a considerable amount of migration between the wage earner and the independent worker groups during the period studied. This was attributed to the rapid industrialization which Canada was then undergoing. For example, according to the 1921 census, there were 3,173,000 gainfully employed persons; in 1931, there were 3,927,000, an increase of 23.8 per cent. The number of wage earners employed rose from 1,789,000 in 1921 to 2,133,000 in 1931, or 19.2 per cent. If the ratio of wage earners to gainfully employed population in 1931 had remained unchanged from 1921 (62.1 per cent), there would have been in 1931 some 2,439,000 wage earners, and unemployment would have been 12.5 per cent. In fact, the 1931 census revealed that there were 2,570,000 wage earners in that year, so that 17 per cent were without jobs. Consequently, estimates of the labor force based upon census projections were hazardous, and indexes of *employment* were only of limited value in estimating unemployment.

2. Large-scale immigration to and emigration from Canada, depending upon the phase of the business cycle, were additional complicating factors.

> "The immigration occurred during low unemployment but kept up until unemployment rose almost to a peak. Emigration then started and it was accompanied (or followed) by decreasing unemployment. This, of course, introduces a widely different concept of unemployment from that generally accepted, *viz.* that unemployment is merely the opposite of employment. Unemployment only partly declined with increasing employment. As noticed it also *increased with increasing numbers of wage earners and decreased with decreasing numbers of wage earners.*"[4]

Recently, the Dominion Bureau of Statistics prepared an estimate of the labor force for the period 1931 to 1950, based in part upon the quarterly survey of the labor force which was initiated in November 1945. However, these estimates, from which unemployment percentages may be derived, differ substantially from the earlier statistics in concept and coverage:

1. The new series includes agriculture as well as nonagricultural industry. While the agricultural labor force is shown separately, no separate figure is given for agricultural unemployment.

2. As far as the labor force is concerned, paid workers (wage earners) and the self-employed (including unpaid family workers) are shown separately, but again no separation is made for the unemployed.

[4] *Seventh Census of Canada, 1931 Unemployment*, p. 15.

3. The labor force survey includes in the labor force (i.e. in the denominator of the unemployment ratio)

> "those who were at work during any part of the [survey] week, or had jobs from which they were temporarily absent, or were looking for work . . . while those who did not work for pay or profit during the survey week and had no job and were not looking for work, are classed as not in the labor force (as either permanently unable or too old to work, keeping house, going to school, retired or voluntarily idle, or other)."[5]

4. Persons temporarily laid off with definite instructions to return to work within thirty days are regarded as *employed* by the labor force survey, but as *unemployed* under earlier definitions. This tends toward a relative understatement of unemployment under the labor force concept. Offsetting this is the fact that persons who have never worked but are looking for work are counted as in the labor force and unemployed by the labor force survey, and (in theory) as neither gainfully occupied nor unemployed under the earlier census concept.

5. The Bureau of Statistics, in its estimates, linked the post-1945 labor force survey data to the pre-1945 census data by adjusting the latter to the former concept.[6] The estimates were made as of June 1 for each year beginning with 1931, to take advantage of the fact that this was the population census day in 1931 and 1941.[7]

Two sets of unemployment rates derived from these estimates are presented in Table C-2. In the first set, persons without jobs and seeking work are related to the entire civilian labor force. From 1931 to 1939 the resultant unemployment percentages are below any of the other series considered above, because while unemployment is normally restricted to the paid-worker group, the labor force at risk here includes a substantial number of employees, self-employed, and unpaid family workers. After 1939, however, this series follows closely the uncorrected trade union percentage, being slightly above the latter up to 1947 and slightly below it from 1948 to 1950.

The second series in Table C-2 relates persons without jobs and seeking work to the total of paid workers with jobs and persons without jobs. This series runs consistently higher than any other series, caused no doubt by the fact that the unemployment data include farm workers and some self-employed, whereas the labor force at risk excludes these categories.

[5] *Canadian Labor Force Estimates 1931-1950*, Dominion Bureau of Statistics, Reference Paper No. 23, 1951, p. 2.

[6] For the war years, employment service data were used in making the estimates (*ibid.*, p. 10).

[7] The actual day for 1941 was June 2.

INTERNATIONAL COMPARISON OF RATES

For purposes of international comparison, the best of the unemployment series is that in Table C-1, column 3. Coverage is inclusive, with only agriculture excluded; it is limited to wage earners, avoiding the

TABLE C-2

Estimated Unemployment Rates Derived from Labor Force Survey Data and Projected Back to 1931 by the Bureau of Statistics, Canada, 1931-1950

Year	*Unemployed as Per Cent of Total Labor Force*	*Unemployed as Per Cent of Paid Workers plus Persons without Jobs*
1931	11.6	19.1
1932	17.6	28.6
1933	19.3	32.5
1934	14.5	24.6
1935	14.2	24.3
1936	12.8	22.3
1937	9.1	16.3
1938	11.4	20.1
1939	11.4	20.3
1940	9.2	16.1
1941	4.4	7.1
1942	3.0	4.6
1943	1.7	2.5
1944	1.4	2.1
1945	1.6	2.4
1946	2.6	4.1
1947	1.9	2.8
1948	1.6	2.5
1949	2.0	3.0
1950	2.6	3.8

Source: *Canadian Labor Force Estimates*, Dominion Bureau of Statistics, p. 15.

pitfalls of attempting to measure unemployment among other groups; persons on temporary layoff are counted as unemployed, while those who have never worked are excluded from the count; and persons engaged primarily in keeping house, with part-time employment outside, are similarly handled.

Unfortunately, this series is available only for the period 1920 to 1940. The only series which presents data prior to 1920 is the trade union series, which has the additional advantage of continuing unbroken until 1950. The trade union data diverge significantly from the Bureau of Statistics estimates from 1932 to 1940; during these years, average unemployment was 15 per cent according to the trade union series and 17.8 per cent in the Bureau estimates. The maximum divergence was 4 percentage points in 1933, the year of greatest unemploy-

ment. The years before 1920 and after 1940 were years of relatively low unemployment. On the basis of the behavior of the two series—and indeed, all available series[8]—in such periods, it does not seem unreasonable to link to the Bureau estimates the trade union series for the pre-1920 and post-1940 years. It was not necessary to average the series for the two years in which they were linked, since they were quite close together in those years (0.8 percentage points in 1920, 1.5 percentage points in 1940). For 1950, the trade union series is extrapolated on the basis of the labor force survey series. The resultant series is shown in Table 1.

Appendix D:
Denmark

There is only one major source of information on Danish unemployment, namely, the statistics emanating from the operation of the unemployment insurance system. Denmark has the Ghent system of unemployment insurance, under which the state subsidizes and supervises unemployment insurance societies operated by trade unions. The early establishment of the system (subsidies were paid as early as 1907) and its relative liberality combine to render the unemployment statistics derived from it a generally accepted measure of unemployment in the country.

The rates of unemployment derived from this source are shown in Table D-1, for the years 1903-1950. The specific characteristics of the series are as follows:

1. Prior to 1910, the data were calculated by the trade unions directly. Beginning in that year, the task of assembling and publishing the data was taken over by the Danish Statistical Department, a governmental agency. The basic reports come from unemployment insurance societies, covering persons aged eighteen or over, who are able to work and seeking work.

Because Danish unemployment insurance provisions have always been relatively liberal, particularly with respect to duration of benefits, the degree of unemployment registration is probably higher than in most other countries.[1] This would be particularly true of the earlier

[8] From 1941 to 1949 inclusive, the labor force survey series yields average unemployment of 2.2 per cent compared with 1.9 per cent as shown by the trade union data.

[1] Under the Danish system of unemployment insurance, reporting is virtually mandatory even for those who may not immediately qualify for benefits. Long duration of benefits, plus the additional fact that persons who exhaust benefits are still "controlled" as long as they retain membership in the insurance society, make for full reporting.

TABLE D-1

Unemployment Rates and Working Days Lost Due to Unemployment among Insured Workers, Denmark, Annual Average, 1903-1950

Year	Rates	Days Lost	Year	Rates	Days Lost	Year	Rates	Days Lost
1903	13.0		1919	10.9	30.4	1935	19.7	59.7
1904	12.0		1920	6.1	17.4	1936	19.3	58.1
1905	13.0		1921	19.7	56.7	1937	21.9	64.5
1906	6.0		1922	19.3	57.4	1938	21.5	65.6
1907	7.0		1923	12.7	36.9	1939	18.4	56.1
1908	11.0		1924	10.7	32.2	1940	23.9	71.7
1909	13.0		1925	14.7	42.2	1941	18.4	
1910	10.7	27.4	1926	20.7	62.0	1942	15.1	
1911	9.5	23.9	1927	22.5	68.3	1943	10.7	
1912	7.6	20.0	1928	18.5	56.2	1944	8.3	
1913	7.5	18.8	1929	15.5	47.0	1945	13.4	
1914	9.9	24.7	1930	13.7	40.9	1946	8.9	
1915	8.1	20.5	1931	17.9	53.7	1947	8.9	
1916	5.1	13.1	1932	31.7	95.9	1948	8.6	
1917	9.7	23.7	1933	28.8	88.6	1949	9.6	
1918	18.1	48.5	1934	22.2	67.3	1950	8.7	

Source: *Unemployment rates*: 1903-1908—F. Zeuthen, "Arbejdsløsheden," *Socialt Tidsskrift*, 1932, Vol. VIII, p. 305. 1909-1940—K. Vedel-Petersen, *Danmarks Statistik*, Copenhagen, 1946, p. 418. 1941-1950—*Statistiske Meddelelser*, 4 Raekke, 144 Bind, 2 Haefte, *Arbejdsløsheden 1950*, p. 13.

Working days lost: The following volumes of *Statistiske Meddelelser*—4 R., 48 B., 5 H.; 4 R., 61 B., 4 H.; 4 R., 74 B., 2 H.; 4 R., 88 B., 4 H.; 4 R., 100 B., 2 H.; 4 R., 115 B., 4 H.

years of the century, because of the comparatively early development of the Danish unemployment insurance system.[2]

2. The unemployment rates are derived by comparing the number of persons registered as unemployed on a particular day of the month (in recent years, at least, the count day has been the last Friday in each month) with the total numbers of persons insured.[3] Since records are kept on the basis of actual days of unemployment suffered, data are also available on the number of working days lost due to this cause (see Table D-1). Statistics on the potential number of working days are not published, so that it is not possible to express the latter series in percentage form. However, when the two series are compared, it is

[2] Thus Professor Zeuthen has noted: "The [unemployment] figures appear to have been relatively high for Denmark earlier; but a large part of this difference disappeared later, partly on the basis of more complete statistics in other countries after the introduction of unemployment insurance." F. Zeuthen, *Arbejdsløn og Arbejdsløshed*, Copenhagen, Nyt Nordisk Forlag, 1939, p. 245.

[3] K. Vedel-Petersen, *Danmarks Statistik*, Copenhagen, 1946, p. 418. It should be emphasized that the number of persons reporting themselves as unemployed, not the number receiving benefits, is used in calculating the rate of unemployment.

clear that they move very closely together. This is not unexpected, in view of the common source, but it does indicate that basing the calculation of the unemployment percentage on an end-month count does not introduce any serious bias, as compared with a daily count.

3. The degree of coverage has varied considerably over time. The total number of members of unemployment insurance societies was as follows:[4]

Year	*Members*	*Year*	*Members*
1910	101,462	1930	288,939
1914	127,685	1935	386,080
1915	141,090	1940	501,426
1920	306,919	1950	645,000
1925	269,238		

These figures may be compared with the following statistics of employment, derived from census data. The figures exclude the self-employed, higher supervisory personnel, and those unemployed at the time of the census, and are limited to manufacturing, construction, and retail and wholesale trade.

Census Year	*Manufacturing and Construction*	*Commerce*	*Total*
1914	262,000	n.a.	
1925	309,000	114,000	423,000
1935	353,000	123,000	476,000

n.a. = not available.

Thus, in 1914, when insurance was limited almost exclusively to skilled workers in manufacturing and construction, the coverage was less than 50 per cent of this group. From 1914 to 1920, the insured group expanded considerably as a consequence of a more liberal policy of admission to funds, but the next five years witnessed a sharp decline in unemployment insurance society membership. Nevertheless, coverage in 1925 was much greater than in 1914, particularly when it is realized that the number of insured among commercial employees was very small.

An estimate of unemployment insurance coverage for 1930 indicated that 65 per cent of all wage earners and 20 per cent of salaried employees were society members, with virtually no membership among supervisory personnel and domestic employees. The wage-earner group

[4] *Statistiske Meddelelser*, 4R., 115B., 4H.; 4R., 114B., 2H.

included apprentices not eligible for membership, and agricultural workers.[5] Excluding these two groups raised the coverage of wage earners to 79 per cent. Moreover, since many of the commercial employees were young people, receiving help at home and only marginally attached to the labor market, the actual coverage among commercial employees was probably understated.[6]

The figures for 1935 indicate increased coverage, though conceptual differences between the census and unemployment insurance figures render hazardous the determination of a precise percentage of coverage. The following statement regarding coverage in 1952 indicates roughly the degree of coverage since the war: "In Denmark the overwhelming majority of the insured are urban workers in crafts and industries where the coverage approaches 90 per cent of all workers. In the rural districts and among salaried employees, on the other hand, coverage does not exceed 20 per cent."[7]

4. At the beginning of the century, unemployment insurance coverage was confined largely to skilled workers in manufacturing. The subsequent extension of coverage resulted, first, in bringing in unskilled and semiskilled wage earners (who in Denmark are organized in a large multi-industrial union), and secondly, in embracing many employees in retail and wholesale establishments. There has been considerable discussion in the Danish literature of the possible bias imparted to the unemployment figures by this extension of coverage.

It was generally assumed that the effect of growing coverage was to impart an upward bias to unemployment statistics, on the assumption that the newer recruits were more unemployment-prone than the older members; that the closer coverage reached 100 per cent for each trade or industry, the greater would be the reported unemployment, other things being equal. This effect was particularly feared during the rapid increase in unemployment society membership from 1930 to 1935. However, a special study conducted in June 1934, indicated that newly enrolled members were *less* subject to unemployment than older members.

The chief explanation appears to have been that a substantial proportion of the new members enrolled between 1930 and 1934 were recent migrants from the countryside into industry, who because of age and other characteristics were able to displace older insured workers.[8]

[5] About 20 per cent of wage earners in agriculture and fishing were covered.

[6] J. S. Dich, "Arbejdsløshedstallene og Arbejdsløsheden," *Socialt Tidsskrift*, January 1932, p. 16.

[7] The Ministries of Social Affairs of Denmark, Finland, Iceland, Norway, and Sweden, *Freedom and Welfare*, 1953, p. 414.

[8] Vedel-Petersen, *op.cit.*, p. 243.

Nevertheless, the belief persists that in the long run, increased coverage, and in particular the greater coverage of unskilled and semiskilled workers, has tended to result in an increase in reported unemployment, though precise estimates of the degree of the bias are not available.[9]

5. Low coverage among agricultural laborers, domestic servants, and commercial employees, as well as the exclusion of civil servants, results in an overstatement of reported unemployment in comparison with the unemployment for the entire labor force, since by and large the excluded groups tend to have a lower rate of unemployment than the covered groups. It was estimated that for 1930, the published data would have to be reduced by one-sixth to take the noninsured labor force into account.[10]

CONCLUSION

On the basis of the foregoing observations, it may be concluded that the Danish statistics of unemployment derived from the unemployment insurance system provide a good index of unemployment among wage earners in manufacturing and construction. They would appear to be more reliable than similar data for other countries for the following reasons: (1) the early development of unemployment insurance in Denmark, which meant less of an upward bias in the data as coverage broadened; (2) the high degree of coverage in manufacturing and construction in recent years; (3) the high intensity of reporting due to the liberality of the benefit system; and (4) the decentralization of administration, and particularly the fact that registration of the unemployed and the payment of benefits are handled by persons completely familiar with the employment situation in the trade concerned. There has probably been some upward bias in the absolute size of the figures over the years, although this may have been reversed in recent years because of the spread of unemployment society membership among wholesale and retail employees. However, no measure of this bias is available.

Compared with other countries, it is probable that, particularly for the first quarter of the century, the Danish unemployment statistics were relatively overstated because of relative completeness of reporting and a high degree of coverage. This factor has undoubtedly diminished in importance, but the Danish unemployment statistics still remain among the most comprehensive of the several countries studied.

[9] Zeuthen, *op.cit.*, pp. 240-243. See also Jørgen S. Dich, *Arbejdsløshedsproblemet i Danmark 1930-1938*, Copenhagen, Socialministeriets Økonomisk-Statistiske Undersøgelser Nr. 4, 1939, pp. 3-49, for a discussion of this factor, and of the effect of more stringent controls over registration of unemployed introduced during the nineteen-thirties.

[10] J. S. Dich, *op.cit.*

Appendix E:
France

AVAILABLE STATISTICAL INFORMATION CONCERNING UNEMPLOYMENT

Quinquennial Censuses of Unemployment.[1] Since 1896, the quinquennial censuses, embracing the total population of France, have included questions concerning the employment status of all persons who work under the direction of or in the service of another, with the exception of homeworkers. Wage and salary earners in all lines of activity came within the scope of the censuses. In Table E-1, the results

TABLE E-1

Unemployment According to the Quinquennial Censuses, France, 1896-1936

DATE	WAGE AND SALARY EARNERS UNEMPLOYED (*thousands*)	PER CENT OF WAGE AND SALARY EARNERS UNEMPLOYED			INDUSTRIAL WAGE AND SALARY EARNERS[a] UNEMPLOYED (*thousands*)	PER CENT OF INDUSTRIAL WAGE AND SALARY EARNERS UNEMPLOYED		
		Both Sexes	*Male*	*Female*		*Both Sexes*	*Male*	*Female*
Mar. 29, 1896	267	3.0	3.2	2.7	170	4.3	4.3	4.3
Mar. 3, 1901	315	3.5	3.8	3.0	199	4.6	4.7	4.4
Mar. 4, 1906	239	2.6	2.8	2.3	166	3.8	3.8	3.9
Mar. 5, 1911	209	1.9	n.a.	n.a.	[b]	[b]	[b]	[b]
Mar. 6, 1921	537	5.1	4.6	5.9	426	7.6	6.2	11.6
Mar. 7, 1926	243	2.2	2.2	2.1	168	2.6	2.6	2.7
Mar. 8, 1931	453	4.0	4.0	4.0	330	5.0	4.8	5.7
Mar. 8, 1936	864	7.5	7.8	6.9	638	11.6	11.8	11.0

[a] Wage and salary earners in mining, quarrying, building, manufacturing, communications, and transportation.

[b] Change in the system of industrial classification makes data not comparable to that for other years.

n.a. = not available.

Source: 1911: *Bulletin du Ministère du Travail*, October-December 1932, p. 381. 1936: *Annuaire statistique*, Vol. 56, Paris 1946, p. 143. Other years: *Recense général de la population (8 mars 1931)*, Vol. 1, Part 3, Paris 1935, pp. 67-68.

of these censuses are presented. The unemployment percentages refer to both wage and salary earners. It is not possible to calculate percentages for wage earners alone since in all the censuses, the number of unemployed (*sans emploi*) is not given for wage and salary earners separately.

While the census returns generally excluded those unemployed because of sickness from the total number unemployed, this is not

[1] See Census Reports: *Le chômage en France d'après les recensements professionals*, Paris, Bulletin du Ministère du Travail, October-December 1932, pp. 377-385; Alexander de Lavergne and L. Paul Henry, *Le chômage*, Paris, Marcel Rivière, 1910, p. 66.

true for the two earliest censuses. In the census of 1896, 62,407 of the 266,875 persons reporting themselves unemployed failed to indicate the cause of their unemployment. In the 1901 census questionnaire, no question concerning the cause of unemployment was included. The following censuses queried the unemployed to determine whether their unemployment was due to sickness.

The census unemployment figures refer to wage and salary earners of all ages. A breakdown of the unemployed by age is available in the 1911 census report and in earlier ones, but is not available in reports following 1911.

Trade Union Unemployment Statistics.[2] The trade union series, shown in Table E-2, which extends from 1895 through 1913 is based on trade union replies made monthly to inquiries of the Office du Travail which asked for the number of workers belonging to the union on a specified day of the month and the number of these members

TABLE E-2

Unemployment Rates among Trade Union Members, France, 1895-1913

Year	*Total Sample of Union Members*	*Total Sample Excluding Miners*	*Union Members in Industry and Commerce*[a]
1895	7.0	n.a.	n.a.
1896	6.7	n.a.	n.a.
1897	6.9	n.a.	n.a.
1898	7.3	n.a.	n.a.
1899	6.6	n.a.	n.a.
1900	6.8	8.0	n.a.
1901	7.8	9.9	n.a.
1902	9.9	10.9	n.a.
1903	9.4	10.2	9.1
1904	10.2	11.3	10.7
1905	9.0	10.0	8.7
1906	7.6	8.4	7.4
1907	7.0	7.6	6.8
1908	8.6	9.6	9.2
1909	7.3	8.1	7.1
1910	5.8	6.5	5.8
1911	5.7	6.2	5.4
1912	5.4	6.1	5.6
1913	4.7	n.a.	n.a.

[a] Excluding union members in mining, agriculture, and wood-cutting.

n.a. = not available.

Source: *Annuaire statistique*, Paris 1913, p. 183. *Bulletin de l'Office du Travail*, February 1908, p. 130, and February 1913, p. 123.

[2] See *Le chômage en France de 1900 à 1907*, Bulletin de l'Office du Travail, February 1908, pp. 128-134; annual reports entitled, *Le chômage en France en 19--*, which appeared in the Bulletin through 1913; Lavergne and Henry, *op.cit.*, p. 53.

without work (*sans ouvrage*) or without a job (*sans place*) on the above date. In order to make the meaning of the word unemployed more precise, those not at work because of sickness or workers who were on strike were not counted as unemployed. At about the fifteenth of each month, the Labor Ministry sent a questionnaire to all unions whose existence was known to the Ministry. These included unions paying out of work benefits as well as those not paying such benefits. In 1900, of 2,754 unions known to the Ministry and to whom questionnaires were sent, 626 unions (22.7 per cent) replied. The responding unions had a membership of 141,000 which was 29.3 per cent of the membership of all known unions. By 1907, 1,059 of a total of 5,475 unions (19.3 per cent) responded. These unions had a membership of 207,000 which was 23.2 per cent of the total number of union members in France. In all the years from 1900 on, the union sample included about 20 to 25 per cent of the total number of unionists (see Table E-3). However, the number of trade unionists covered by

TABLE E-3

Coverage of Trade Union Unemployment Series, France, 1900-1912

	NUMBER OF UNIONS			MEMBERSHIP OF UNIONS (*thousands*)		
YEAR	*In Existence*	*Responding*	*Per Cent Responding*	*All Unions*	*Responding Unions*	*Responding as Per Cent of All*
1900	2,754	626	22.7	480	141	29.3
1901	3,448	822	23.8	578	143	24.7
1902	3,833	887	23.1	614	146	23.7
1903	4,089	1,004	24.6	642	157	24.5
1904	4,361	1,004	23.0	717	173	24.2
1905	4,768	980	20.1	772	174	22.6
1906	4,996	1,143	22.9	818	203	24.9
1907	5,475	1,059	19.3	892	207	23.2
1908	n.a.	986		n.a.	200	
1909		1,034			222	
1910		1,009			232	
1911		912			221	
1912		814			211	

n.a. = not available.

Source: *Bulletin de l'Office du Travail*, February 1908, p. 129, and February 1913, p. 122.

the returns represented only about 5 per cent of the total number of wage and salary earners in manufacturing, mining, building, and transportation.

The industrial groups represented in the trade union returns were

agriculture, forestry, food, hides and leather, books, textiles, wood, metal, mining, building, and salary earners. The miners' union of Pas-de-Calais with a membership of 20,000 to 30,000 was generally excluded in calculation of the percentages published in the *Bulletin* since this union reported irregularly. Annual percentages including miners, 1895-1913, appeared in *Annuaire statistique* of 1913. From 1903-1912, a separate percentage for industry and commerce, that is excluding workers in agriculture, wood-cutting, fishing and mining, was published in the *Bulletin* (see Table E-3).

Public Relief Fund Statistics.[3] Since August 1914, when the state began to subsidize unemployment relief funds, monthly statistics of the number of wholly unemployed persons in receipt of relief from departmental, communal and intercommunal unemployment relief funds have appeared. Annual averages of the monthly data for 1915 and following years are shown in Table E-4.

In spite of the fact that local unemployment fund operations have been required to conform to conditions embodied in state decrees, far from complete uniformity of operation has resulted. In general, relief has been extended to those who are involuntarily unemployed, that is, to workers who have terminated their relation with their former employer and who have satisfied certain additional conditions. To be eligible for receipt of relief, the involuntarily unemployed person had to be capable of working and ready and willing to accept a job. As evidence of willingness to work, unemployed workers were required to register at an employment exchange. Further, an unemployed person had to satisfy certain residence requirements and to show proof of previous employment in the period directly preceding his period of unemployment. Those unemployed on account of strikes and lockouts, misbehavior, and seasonal causes, as well as those pensioned off or retired, were generally denied relief.

The effect of these restrictions on the grant of relief has been to keep the recorded number of unemployed in receipt of relief considerably below the actual number of unemployed. This understatement is further magnified for several other reasons. Since the relief payments were very small, many unemployed persons, although eligible for relief payments, did not apply for them. Furthermore, other eligible

[3] See *Le chômage en France d'après les statistiques des Institutes Publiques d'Assistance aux Chômeurs et des Offices Publics de Placement*, Bulletin du Ministère du Travail, January-March 1933, pp. 1-10; *ILO Yearbook*, 1934-1935, p. 175; *Note Française sur la reglementation du chômage et ses rapports avec l'élaboration des statistiques*, Commission Permanente de l'Organisation du Traité de Bruxelles, 3ème Session du Groupe de Travail des Statisticiens, Document A/1690; *International Labour Review*, December 1948, p. 830.

TABLE E-4

Unemployed in Receipt of Public Relief, France, 1915-1952

Year	*Unemployed in Receipt of Relief (thousands)*	Year	*Unemployed in Receipt of Relief (thousands)*
1915	174	1935	427
1916	72	1936	432
1917	28	1937	355
1918	13	1938	374
1919	52	1939	382[b]
1920	6	1940	n.a.
1921	47	1941	293
1922	5	1942	70
1923	2	1943	20
1924	1	1944	n.a.
1925	1	1945	16
1926	2	1946	16
1927	34	1947	7
1928	5	1948	17
1929	1	1949	40
1930	3	1950	52
1931	45	1951	40
1932	273[a]	1952	39
1933	274		
1934	345		

[a] From July 1932 on, unemployed in receipt of relief from the welfare offices are included.

[b] Average of months January through August.

n.a. = not available.

Source: 1915-1926: Calculated from monthly data in *Bulletin du Ministère du Travail*, January-March 1933, p. 6. 1927-1952: International Labour Organisation's *Yearbooks of Labour Statistics*.

unemployed persons who were unwilling to submit to questioning by the relief authorities or who felt that the acceptance of relief involved a certain social humiliation did not apply for relief. For the above reasons, the series of the number of unemployed in receipt of relief is of extremely limited value as a measure of the true volume of unemployment in France.

Employment Exchange Statistics.[4] These statistics, covering all lines of activity, relate to persons seeking work who register at employment exchanges. The monthly figures show the number of unfilled applications for work at the end of the week ending nearest the end of the month. The law requires that employment offices be created in all departments and all towns with more than 10,000 inhabitants; however, in normal times many unemployed workers who prefer to seek

[4] See note 3.

work on their own do not register with the employment exchanges. In times of economic crisis, the registration is more complete since payment of unemployment relief is subject to such registration. Annual averages of the number of unplaced applicants for work are presented in Table E-5.

TABLE E-5

Unplaced Applicants for Work, France, 1921-1952

Year	*Number of Unplaced Applicants for Work (thousands)*	Year	*Number of Unplaced Applicants for Work (thousands)*
1921	28	1940	n.a.
1922	13	1941	395
1923	10	1942	124
1924	10	1943	42
1925	11	1944	n.a.
1926	12	1945	68
1927	47[a]	1946	57
1928	15	1947	46
1929	10	1948	78
1930	14	1949	131
1931	64	1950	153
1932	308	1951	120
1933	305	1952	132
1934	376		
1935	464		
1936	475		
1937	380		
1938	402		
1939	418[b]		

[a] From February 1927 onward, these figures include unemployed persons in receipt of public relief.

[b] Average of months January through August.

n.a. = not available.

Source: 1921-1926—Calculated from monthly data presented by Adolf Agthe, "Statistische Übersicht der Arbeitslosigkeit in der Welt," in *Die Arbeitslosigkeit der Gegenwart*, Manuel Saitzew, editor, Verein für Sozialpolitik, Vol. 185, No. 1, p. 157. 1927-1952—International Labour Organisation's *Yearbooks of Labour Statistics*.

Employment Surveys.[5] In April 1950, and twice each year since then, the Institut National de la Statistique et des Études Économiques has conducted employment surveys (*les enquêtes par sondage sur l'emploi*), based on a stratified sample of dwellings, in an attempt to ascertain the level of unemployment and to gain other information

[5] See *Une enquête par sondage sur l'emploi*, Institut National de la Statistique et des Études Économiques, Bulletin Mensuel de Statistique, Supplement, January-March 1951, pp. 1-24.

pertaining to employment and unemployment. (In December 1951, the sample consisted of 10,314 dwellings obtained from the census of 1946. The sample was constructed as follows: France was divided into eight regions which were each further subdivided into ten subregions. The subregions were weighted in the random drawing of dwelling places by the number of persons in agriculture for rural communes and by the number of inhabitants for urban communes. First a random drawing of communes was made, each commune being weighted as described above, and then a random selection of dwelling places within each commune was drawn.)

All persons fourteen years of age and over living in the selected dwelling places are questioned. The unemployed are defined as persons not having employment, having already worked, physically able to perform the work for which they are qualified, and actively seeking work. Excluded from the surveys are persons living in convents, barracks, hospitals, prisons, and other institutions. In addition, the surveys do not include the island of Corsica.

The results of two of these inquiries, together with the number of unemployed in receipt of public relief and the number of unplaced applicants for work, are shown below (in thousands):

Date	*Unemployed as Estimated by Surveys*	*Unplaced Applicants for Work*	*Unemployed in Receipt of Public Relief*
April 1950	290	175	61
October 1950	190	139	45

Source: *Bulletin mensuel de statistique*, Supplement, January-March 1951, p. 6, and International Labour Organisation, *Yearbook of Labour Statistics*, 1953, p. 87.

As had been anticipated, the estimate of the total number of unemployed persons was much larger than either of the two other categories.

Employment Indexes. Since 1930, returns made by industrial establishments to the provincial offices of the Factory Inspectorate have provided information affording an employment index.[6] The first index, using 1930 as a base, covered all establishments employing 100 persons or over in mining, manufacturing, commerce, and transportation. In the early 1930's, the chain index covered about 2.5 million wage earners with almost 90 per cent in mining and manufacturing. A second employment index, employing April 1939 as a base, was constructed from the returns of establishments employing 10 or more

[6] Later information was obtained from surveys of a representative sample of establishments.

workers. This index, which has been carried back to 1937, came to cover approximately 6.8 million workers in 1947 (see Table E-6).

TABLE E-6

Index of the General Level of Employment, France, 1930-1950

Year	*Old Index*[a]	*New Index*[b]	*Year*	*New Index*[b]
1930	100.0		1941	91.7
1931	92.5		1942	93.2[c]
1932	80.9		1943	97.0[d]
1933	79.4		1944	92.1
1934	76.9		1945	93.8
1935	73.5		1946	99.2
1936	74.1		1947	104.9
1937	78.6	100.0	1948	107.7
1938	81.2	102.7	1949	109.5
1939	83.4[e]	104.0[e]	1950	110.0
1940	n.a.	n.a.		

[a] Relates to establishments employing 100 or more persons.
[b] Relates to establishments employing 10 or more persons.
[c] January-June, September, and December.
[d] Figures commencing 1943 are averages of quarterly figures except: 1944, average of March and December; 1945, average of March, June, and September.
[e] January-July.
n.a. = not available.
Source: Old index: *Yearbook of Labour Statistics, 1941*, International Labour Organisation, p. 29. New Index: *Yearbook of Labour Statistics, 1949-1950*, International Labour Organisation, p. 44.

EVALUATION OF FRENCH UNEMPLOYMENT STATISTICS

Because French unemployment statistics are singularly incomplete, it is extremely difficult to develop a satisfactory continuous measure of unemployment. The only pre-World War I continuous series is that of the trade unions. The percentage figures shown for this series, when compared with the results of the quinquennial censuses, appear to overstate the volume of unemployment. The table at the top of the next page reveals the magnitude of this overstatement.

To single out the particular factors responsible for the differences between the census and trade union percentages of unemployment is a task beset with uncertainties. Possibly the trade unions that answered the inquiries were experiencing high rates of unemployment and did not constitute a representative sample. Further, since it is generally maintained that unions with systems of unemployment payments report more accurately than unions without such arrangements, the accuracy of the French trade union unemployment statistics, not limited to unions with such systems, is open to question. But most important is the fact that the sample of unionists covered by the

DATE	CENSUS PERCENTAGE		TRADE UNION PERCENTAGE	
	Total	*Industry*	*Total*	*Industry and Commerce*
March 1896	3.0	4.3	6.7[a]	n.a.
March 1901	3.5	4.6	7.8[a]	n.a.
March 1906	2.6	3.8	9.4	8.6
March 1911	1.9	[b]	6.3	5.8

[a] Annual figures including miners. Other trade union figures are for March of the census years and exclude miners.

[b] A change of industrial classification in the census of 1911 makes it incomparable to earlier and later censuses.

n.a. = not available.

Source: Tables E-1, E-2, and *Bulletin de l'Office du Travail, passim.*

returns was exceedingly small. That the census percentages did not understate the level of unemployment is difficult to establish with certainty. It should be noted, however, that in spite of the slow growth of the French labor force, the index of industrial production rose continuously, without a fall in any year, from a level of 63 in 1901 to one of 100 in 1913.[7] If no large changes in productivity occurred, it would appear that France was experiencing a low level of unemployment in these years.[8]

In the interwar period, the statistics of the employment exchanges and of the unemployment relief funds understate the amount of unemployment for reasons set forth above. The extent of this understatement can be appreciated by comparison with the numbers reported unemployed in the quinquennial censuses (in thousands):

Date	*Unemployed According to Census*	*Unemployed in Receipt of Relief*	*Unplaced Applicants for Work*[a]
March 1921	537	70	32
March 1926	243	0.4	9
March 1931	453	41	57
March 1936	864	465	509

[a] Before February 1927, these figures do not include the number of unemployed in receipt of relief.

Source: Table E-1; Adolf Agthe, "Statistische Übersicht der Arbeitslosigkeit in der Welt," in *Die Arbeitslosigkeit der Gegenwart,* Manuel Saitzew, editor, Verein für Sozialpolitik, Vol. 185, No. 1, p. 157; and *Bulletin de l'Office du Travail, passim.*

In view of the unsatisfactory nature of the available statistics, various estimates of unemployment in France in the interwar period

[7] *Résumé rétrospectif, annuaire statistique,* Vol. 57, 1946, p. 99.

[8] See statement of *l'Institut de Recherches Économiques et Sociales* quoted below.

will be consulted in an effort to gain some idea of the actual amount of unemployment during these years. The Institut de Recherches Économiques et Sociales in the opening paragraph of its study, *Le chômage en France de 1930 à 1936*, states:

> "From the beginning of the century to the year 1930, France—except at the beginning of hostilities in 1914 and during the short and not very intense crises of 1921-22 and 1926-27—barely suffered from any unemployment except seasonal unemployment. In normal periods, it was the scarcity of manual labor and not its superabundance which was feared; in the years of prosperity which followed the war it was necessary to call in foreign workers at great expense in order to fill up the vacancies left in the economically active population."[9]

The low level of unemployment in the 1920's, referred to above, is reflected in the following estimates of unemployment which Adolf Agthe[10] constructed on the basis of the census results and the series of unplaced applicants for work (in thousands):

Year	Average Number Wholly Unemployed	Year	Average Number Wholly Unemployed
1921	362	1927	1,085
1922	182	1928	383
1923	142	1929	127
1924	240	1930	163
1925	266	1931	845
1926	278	end 1931	1,381

According to the 1926 census, there were 12.25 million wage and salary earners in France, including 2.4 million in agriculture, forestry, and fishing. Thus, if the above estimates are accurate, it is seen that (except for 1921 and 1927) the level of unemployment during the 1920's probably hovered about the "irreducible minimum."

With the advent of the depression of the 1930's, unemployment increased to levels not properly reflected in the inadequate statistics of the period. A number of estimates have been gathered and are presented on the next page.

The estimates of Agthe have been described above. Cahill constructed his estimate "on the basis of the Census and other official returns."[11] Gilbert, Chief of the First Bureau, Directorate of Labor,

[9] *Le chômage en France de 1930 à 1936*, Paris, Institut Scientifique de Recherches Économiques et Sociales, 1938, p. 11.

[10] Adolf Agthe, "Statistische Übersicht der Arbeitslosigkeit in der Welt," in *Die Arbeitslosigkeit der Gegenwart*, Manuel Saitzew, editor, Verein für Sozialpolitik, Vol. 185, No. 1, pp. 137-174, especially p. 148.

[11] Cahill, *op.cit.*, p. 37.

Date	Authority	Number Wholly Unemployed (thousands)
1930	Agthe[a]	163
1931	Agthe[a]	845
March 1931	Census[b]	453
End 1931	Agthe[a]	1,381
1932	Woytinsky[c]	1,300
1934	Cahill[d]	700-800
February 1935	Institut Scientifique de Recherches Économiques et Sociales (ISRES)[e]	more than 1,089[f] (1,140)
February 1935	Gilbert[g]	2,000
April 1935	Gilbert[g]	1,900
October 1935	ISRES[e]	722[f] (758)
March 1936	Census[b]	864
October 1937	ISRES[e]	559[f] (587)
1937	Clark[h]	about 24 per cent of the *non-agricultural* occupied population

[a] Adolf Agthe, "Statistische Übersicht der Arbeitslosigkeit in der Welt," in *Die Arbeitslosigkeit der Gegenwart*, Manuel Saitzew, editor, Verein für Sozialpolitik, Vol. 185, No. 1, p. 148.

[b] Table E-1.

[c] Wladimir S. Woytinsky, *Three Sources of Unemployment*, ILO Studies and Reports, Series C, No. 20, Geneva, 1935, p. 114.

[d] Sir Robert Cahill, *Economic Conditions in France*, Department of Overseas Trade, H.M.S.O., 1934, p. 37.

[e] *Ibid.*, p. 37 and p. 62.

[f] These estimates were made employing the provisional figure of 823,803 unemployed for the census of 1936. Figures in parentheses have been calculated using the actual 1936 census figure, 864,170.

[g] A. Gilbert, "Public Employment Office Administration and Unemployment Insurance in France," in *Administration of Public Employment Offices and Unemployment Insurance*, Industrial Relations Counselors, 1935, pp. 106-107.

[h] Colin Clark, *Conditions of Economic Progress*, Macmillan and Co., London 1940, p. 70.

Ministry of Labor, presented his figures without explanation. Clark described his estimate as follows, "The figure for 1937 is roughly computed from the decline in the statistics of employment, compilation of which began in 1930."[12] The 1936 census enumerated 20.3 million persons gainfully occupied, with 7.1 million in agriculture and forestry. Thus the nonagricultural occupied population was about 13 million. Of these 13 million, 9.6 million were wage and salary earners; therefore 24 per cent of this latter number would yield approximately 2.3 million unemployed in 1937 according to Clark's estimate (on the assumption that the number occupied did not vary appreciably between 1936 and 1937).

[12] Clark, *op.cit.*, p. 71.

Woytinsky constructed his estimate of unemployment in 1932 in the following manner. He assumed that the normal level of unemployment was 240,000 (the result of the 1926 census). From his careful comparison of the amount of work performed and the course of industrial production, he concluded that the fall of over 31 per cent in industrial production between 1926 and 1932 should have led to the dismissal of 1.7 million workers in industry; in commerce and transport, he estimated that staffs were cut down by about 10 per cent (i.e. by 200,000 wage earners) by 1932. The reduction in the average hours of work, according to Woytinsky, saved some 500,000 workers from dismissal. Further, account must be taken of the fall in the number of wage earners mainly due to a net exodus of foreign workers which he estimated at from 400 to 500 thousand. Thus Woytinsky's estimate incorporates the following items:[13]

Item	*Estimate (thousands)*
Normal unemployment	240
Decrease in employment in industry	1,700
Decrease in employment in commerce and transport	200
Decrease in employment in other occupations	60
Total	2,200
Number saved from dismissal by shortening hours of work	—500
Decrease in the number of wage earners	—400
Total wholly unemployed	1,300

The estimates of the Institut Scientifique de Recherches Économiques et Sociales were made with many reservations and a complete awareness of the difficulties involved in constructing such estimates. The Institute calculated that the number of unplaced applicants for work represented 15.8 per cent of the number of unemployed reported in the census of 1931 and 61.7 per cent of the number reported unemployed in the census of 1936. To estimate unemployment in February 1935, the date at which unemployment reached its peak (according to the figures of unplaced applicants for work), the Institute assumed that the number of unplaced applicants for work represented 50 per cent of the actual number of unemployed. Since there were 544,567 unplaced applicants for work in February 1935, the total number of unemployed on the above assumption must have been "more than 1,089,000."[14] The estimates for October 1935 and

[13] Woytinsky, *op.cit.*, p. 113.

[14] This calculation employed the provisional results of the census of 1936. On the basis of the actual results of this census, this figure is calculated to be 1,140,000.

October 1937 were constructed in a similar way on the assumption that the number of unplaced applicants for work represented 58.0 and 61.7 per cent, respectively, of the actual number of unemployed in these two months.

The problem of picking one's way through these various estimates in order to arrive at reasonable figures approximating the actual number unemployed in each year is a thorny one. This task is made doubly difficult by several complicating features of the French labor market. During the 1930's there was a large exodus of foreign workers from France which is only partially shown in the statistics of emigration and immigration (see Table E-7). Cahill, commenting on the exodus of foreign workers, wrote:

TABLE E-7

Controlled Admissions and Departures of Foreign Workers, France, 1922-1938

(*thousands*)

Year	*Admissions*	*Departures*[a]	*Excess or Deficit(—) of Admissions*
1922	182	50	132
1923	263	60	203
1924	265	48	218
1925	176	54	122
1926	162	49	113
1927	64	90	—26
1928	98	54	44
1929	179	39	140
1930	222	44	178
1931	102	93	9
1932	69	109	—40
1933	75	49	26
1934	72	40	32
1935	57	67	—10
1936	41	46	—5
1937	68	21	47
1938	46	21	25

[a] "While the number of controlled admissions is a close approximation to the actual number of foreign workers entering France, because of the strict regulations regarding entry, this is by no means the case as far as departures are concerned. It seems likely that the number of uncontrolled departures is twice as many as the controlled, or rather that the actual number of departures is three times the number given herewith." A. Gilbert, "Public Employment Office Administration and Unemployment Insurance in France," in *Administration of Public Employment Offices and Unemployment Insurance*, Industrial Relations Counselors, 1935, p. 102.

Source: 1922-1933: *ibid.* 1934-1938: *Yearbook of Labour Statistics, 1939*, International Labour Organisation, p. 198.

"The total number of foreigners resident in France at the census of March, 1931, was 2,890,923 (of whom 1,258,000 wage earners), as against 2,485,047 in 1926 (1,096,000 wage earners). . . . In view of the large number of departures from the latter half of 1931 onwards, consequent upon the general depression and the stricter limitation on the entry of foreign labour, it is possible that by the end of 1933 this total had declined to about 2,200,000 . . . the central federation of the metallurgical and mining industries in February, 1934, assumed that the effective total of departures was threefold that of the recorded departures, and the total net exodus for the three years since early in 1931 was between 450,000 and 500,000 workers. An official figure of December, 1933, calculated the net excess of departures over arrivals of foreign workers since the March 1931 census at 418,000."[15]

The estimate of a net exodus of about 450,000 for the years 1931-1934 seems too high in the light of the census results. These show that in 1931 there were about 1,289,000 foreign wage and salary earners (employed and unemployed) in France (see below). The 1936 census showed 911,000. The decrease in the number of foreign wage and salary earners is thus 378,000 between the years 1931 and 1936. That this smaller number is not the result of a net influx between 1934 and 1936 is easily established since the unaltered statistics of immigration and emigration show a net exodus for 1935 and 1936 in spite of the afore-mentioned understatement of departures.

Other complications are brought out in the following excerpt from the British *Ministry of Labour Gazette*:

"On the basis of the employment returns it would appear that the total reduction in the numbers employed between September, 1930, and September, 1934, was nearly 1½ million, whereas the number registered at the Employment Exchanges in September, 1934, was only 357,672. The French Ministry of Labour states that this difference is largely due to an exodus of about 450,000 foreign workers, coupled with the withdrawal from gainful occupation of persons who are not obliged to earn a living, and the return to agricultural employment, which is not covered by the monthly employment returns."[16]

The suggested shift to agricultural employment can be examined in the light of the census returns. In 1931, there were 7,704,000 occupied in agriculture, forestry, and fishing (5,532,000 employers and inde-

[15] Cahill, *op.cit.*, pp. 29-30.
[16] *Ministry of Labour Gazette*, March 1935, p. 96.

pendent workers, 6,500 salaried employees, 2,141,000 wage earners, and 24,900 unemployed). In 1936, there were 7,204,000 occupied in agriculture, forestry, and fishing (5,260,000 employers and independent workers, 1,898,000 wage and salary earners, and 45,600 unemployed). Thus the total number occupied in agriculture, forestry, and fishing actually decreased by about 500,000. Some of this decrease may be explained by the exodus of foreign workers and withdrawal from gainful occupation. The data, however, do not suggest that any appreciable shift to agricultural employment occurred.

As regards the above-mentioned withdrawal from gainful occupation, there does appear to be a significant decrease in the number gainfully occupied between 1931 and 1936. The 1931 census listed 21,612,000 persons gainfully occupied (including the unemployed) while the 1936 census listed only 20,260,000. Thus the decrease amounted to 1,352,000. The composition of this decrease is revealed below (in thousands):

	GAINFULLY OCCUPIED		WAGE AND SALARY EARNERS		WAGE AND SALARY EARNERS EXCLUDING AGRICULTURE, FORESTRY, AND FISHING	
YEAR	*Total*	*Foreigners*	*Total*	*Foreigners*	*Total*	*Foreigners*
1931	21,612	1,599	12,621	1,289	10,449	1,135
1936	20,260	1,245	11,562	911	9,619	748
Decrease:	1,352	354	1,059	378	830	387

For wage and salary earners (omitting agriculture, forestry, and fishing), the total decrease was 830,000 of which 387,000 represented a decrease in the number of foreigners. Thus there remains a net decrease in this group of 443,000 which may constitute the group which the French Ministry of Labor said withdrew from gainful occupation.

It is clear that the task of constructing unemployment rates for France is not easy. Any derived percentages must, from the nature of the data, be subject to a large degree of uncertainty. The percentages presented in Table E-8 represent crude estimates of the level of unemployment among wage and salary earners in manufacturing, construction, and mining. The estimates for 1921-1930 were derived as follows: Agthe's estimates of unemployment, presented above, were compared with the 12.25 million wage and salary earners enumerated in the census of 1926 to obtain annual unemployment percentages. Since both Agthe's estimates and the census figure include workers

TABLE E-8

Estimated Unemployment Rates among Wage and Salary Earners in Manufacturing, Mining, and Construction, France, 1921-1939

Year	Per Cent Unemployed	Year	Per Cent Unemployed
1921	5.0	1930	2.0
1922	2.0	1931	6.5
1923	2.0	1932	15.4
1924	3.0	1933	14.1
1925	3.0	1934	13.8
1926	3.0	1935	14.5
1927	11.0	1936	10.4
1928	4.0	1937	7.4
1929	1.0	1938	7.8
		1939	8.1[a]

[a] January-August.

outside manufacturing, construction, and mining, a correction factor was applied to raise the percentages. The correction factor was obtained by comparing the census unemployment rate for wage and salary earners in industry (see Table E-1) with the unemployment rate for all workers and assuming that the value of this ratio varied linearly between censuses. The values of the ratio for the censuses of 1921, 1926, and 1931 were calculated to be 1.49, 1.18, and 1.25, respectively.

The estimates for 1931-1936 were derived in the following manner: The census of March 1931 enumerated 5,385,000 wage and salary earners in employment in manufacturing, construction, and mining.[17] On the assumption that the employment index for industrial establishments employing 100 or more workers can be taken to represent the trend of employment in manufacturing, construction, and mining,[18] the annual figure of the number employed in manufacturing, construction, and mining in 1931 was calculated to be 5,265,000. The employment index was further used to obtain estimates for other years. The estimate for 1936, 4,218,000, is in good agreement with the number of employed wage and salary earners in manufacturing, mining, and construction, namely, 4,223,000. The total number of wage and salary earners, employed and unemployed, was 5,630,000 in the census of 1931 and 4,710,000 in the census of 1936. The lower figure for 1936 reflects both the exodus of foreign workers and the withdrawal from

[17] In 1931, according to the census, there were 556,000 employed salary earners (*employés*) in manufacturing, mining, and construction.

[18] As mentioned above, almost 90 per cent of the workers covered by the returns upon which the employment index was calculated were engaged in manufacturing and mining.

gainful occupation mentioned above. Lack of data permits no course other than to assume that the variation between the census dates was a linear decrease. The number unemployed was then estimated by subtracting the estimated number employed from the estimated total number of wage and salary earners. The resulting estimates of French wage and salary earners in manufacturing, mining, and construction from 1931 to 1936 are tabulated below (in thousands):

Year	*Total Number*	*Number Employed*	*Number Unemployed*
1931	5,630	5,265	365
1932	5,446	4,605	841
1933	5,262	4,519	743
1934	5,078	4,377	701
1935	4,894	4,184	710
1936	4,710	4,218	492

The estimates for the years 1937-1939 were not constructed in the same manner since there is some difficulty in estimating the total number of wage and salary earners in these years. Instead, the assumption, employed by the Institut Scientifique de Recherches Économiques et Sociales, that the number of unplaced applicants for work represented about 61.7 per cent of the actual number of unemployed in all lines of activity was adopted. It was then assumed that the number unemployed in all occupations bore the same relation to the number unemployed in manufacturing, mining, and construction as in the census of 1936.[19] The total numbers unemployed given by this calculation are 616,000 in 1937, 652,000 in 1938, and 678,000 for January through August of 1939. On the basis of the second assumption, the estimated numbers unemployed in manufacturing, mining, and construction are 347,000 in 1937, 368,000 in 1938, and 382,000 in 1939 (January-August). To calculate percentages, it was assumed that the number of wage and salary earners in manufacturing, mining, and construction remained at 4,710,000, the number given in the census of 1936.[20]

The census of March 1931 showed 4.3 per cent of the wage and salary earners in manufacturing, mining, and construction unemployed. While this is below the estimate of 6.5 per cent presented in Table E-8 for 1931, the difference can be explained by the worsening of unemployment in the months after March. For example, Agthe estimated 1,381,000 unemployed in all lines of activity at the end of 1931, a much

[19] The census recorded a total of 864,000 unemployed wage and salary earners of whom 487,000 were in manufacturing, mining, and construction.

[20] This assumption, when used in conjunction with the method of deriving the estimates of unemployment for 1931-1936, led to unreasonably low estimates of unemployment for 1937-1939.

higher figure than the 453,000 recorded by the census in March. The estimate of 492,000 unemployed in manufacturing, mining, and construction in 1936 agrees quite closely with the 1936 census figure of 487,000.

Woytinsky's estimate of 1,300,000 unemployed in 1932 included 260,000 in commerce, transport, and occupations other than manufacturing, mining, and construction. Subtraction of these leaves 1,040,000 unemployed. Also included in this latter number is a figure for normal unemployment before the depression, 240,000, which Woytinsky obtained from the 1926 census. This census listed about 160,000 unemployed in manufacturing, mining, and construction. Thus 80,000 of the 240,000 in normal unemployment must be subtracted from Woytinsky's estimate. When this is done, there remains 960,000 unemployed. This figure compared with the estimated number of wage and salary earners in manufacturing, mining, and construction in 1932, 5,446,000, yields an unemployment percentage of 17.6. In view of the crude nature of the estimates, the agreement with the estimate above, 841,000 unemployed or 15.4 per cent unemployed, is quite satisfactory.

None of the other estimates presented above were as explicitly derived as was Woytinsky's and therefore it is difficult to make direct comparisons. Cahill's estimate of 700 to 800 thousand unemployed in all lines of activity in 1934 seems to be too low in view of the fact that the employment index fell four points from 80.9 in 1932 to 76.9 in 1934. Of course, because of the departure of foreign workers and the withdrawal from gainful occupation, as well as for other reasons, the employment index alone can not be taken as an indicator of the level of unemployment. However, when Cahill's estimate is viewed both in relation to the fall of the index and in relation to the other estimates presented above, it seems to be low. The estimates of the Institut Scientifique de Recherches Économiques et Sociales and those of Gilbert for 1935 differ considerably. Gilbert's estimates suggest that the estimate of 14.5 per cent unemployed in manufacturing, mining, and construction may be too low a figure. On the other hand, the Institute's estimates for 1935, which are slightly lower than Woytinsky's estimate for 1932, are in agreement in this respect with the estimates presented in Table E-8. If it is assumed that the unemployed in manufacturing, mining, and construction represented 60 per cent of the total number unemployed,[21] then, on the basis of the Institute's estimates for 1935, there were over 684,000 unemployed in these industries in February and 455,000 in October. On the basis of Gilbert's estimate of 2 million unemployed in February, there were

[21] This percentage was 56.4 according to the results of the census of 1936.

1.2 million unemployed in manufacturing, mining, and construction in this month. The estimate of 710,000 unemployed in these activities in 1935, derived above, does not seem unreasonable compared with the results of these calculations. For 1937, Clark's estimate, amounting to about 2.3 million unemployed, is far above the Institute's estimate for October of 1937 which was 587,000. Since the census of March 1936 showed a total of 864,000 unemployed and since there was an improvement of economic conditions between 1936 and 1937, it appears that Clark's estimate is much too high.

In the post World War II years what statistical information is available indicates that unemployment rates have been very low. In 1950 it was estimated on the basis of surveys that 290,000 persons were unemployed in April and 190,000 in October (see above). These figures which include persons in all activities, when compared with the total number of wage and salary earners enumerated in the census of 1946, about 13.4 million, suggest very low unemployment rates. In 1950 the number of unplaced applicants for work was 153,000 and the number of unemployed in receipt of public relief was 52,000 (see Tables E-4 and E-5). Since both these latter figures are peak values for the postwar years, the conclusion that unemployment was quite low in the postwar years appears reasonable.

Appendix F:
Germany

TRADE UNION SERIES

Percentages of unemployment for members of trade unions which paid unemployment benefit first appeared in 1903 as the result of an agreement between the Imperial Statistical Office and the statistical offices of these trade unions. From 1903 to June 1906, these percentages were given quarterly; from then until 1933 when the series terminated, the percentages appeared monthly, based on reports relating to the end of each month. The annual trade union rates, averages of the monthly data, are presented in Table F-1.

The trade unions covered by the series reported the total number of members, the number of wholly unemployed members whether in receipt of benefit or not (*unterstützte und nichtunterstützte*), the number of members working short time, and information concerning the number of hours worked in the last week of each month.[1] Since unemployed trade union members were reported whether in receipt of benefit or not, differences in the unemployment benefit schemes of

[1] See monthly reports in the *Reichsarbeitsblatt.*

TABLE F-1

Unemployment Rates among Members of Reporting Trade Unions, Germany, 1903-1932

Year	*Membership of Reporting Unions*[a] *(thousands)*	*Per Cent Wholly Unemployed*[b]	*Corrected Per Cent Wholly Unemployed*[c]
1903	429	2.9	4.7
1904	642	2.1	3.6
1905	1,082	1.6	3.0
1906	1,367	1.2	2.7
1907	1,294	1.6	2.9
1908	1,262	2.9	4.4
1909	1,387	2.8	4.3
1910	1,688	2.0	3.5
1911	1,975	1.9	3.1
1912	2,100	2.0	3.2
1913	1,980	2.9	4.2
1914	1,265	7.2[d]	
1915	830	3.2	
1916	804	2.2	
1917	1,078	1.0	
1918	1,601	1.2	
1919	4,497	3.7	
1920	5,545	3.8	
1921	6,076	2.8	
1922	6,455	1.5	
1923	4,625	10.2	
1924	3,483	13.1	
1925	3,639	6.8	
1926	3,420	18.0	
1927	4,039	8.8	
1928	4,484	8.6	
1929	4,583	13.3	
1930	4,445	22.7	
1931	3,968	34.3	
1932	3,347	43.8	

[a] Figures refer to the last quarter of each year until 1919; for 1919 and later years, the figures relate to the last day of December of each year.

[b] Average of quarterly figures for 1903-1906 and monthly averages thereafter. The figure for 1903 is based on an average of percentages for the last three quarters.

[c] See text for discussion of correction.

[d] The high percentage recorded in 1914 is in part due to the panic conditions which accompanied the German decree of August 4, 1914, affecting the basis of the currency system.

Source: *Reichsarbeitsblatt* and *Statistisches Jahrbuch.*

reporting unions probably did not materially affect the statistics. The numbers reported unemployed did not include invalids who were no longer able to perform work and persons on strike, locked out, or sick.[2]

The numerical coverage of the series shown in Table F-1 expanded rapidly in the first few years. At the end of 1903, 429,000 trade unionists were covered by the returns. By the end of 1905, this figure had increased to 1,082,000, and at the end of 1912, it exceeded 2 million. After World War I, the percentages came to be based on a much greater number of trade unionists, 6,076,000 at the end of 1921, 3,639,000 at the end of 1925, and 3,347,000 at the end of 1932, or about one-half or more of all trade unionists in Germany. During the 1920's and early 1930's, from about one-third to one-half of the total number of wage earners in manufacturing, mining, and construction were included in the trade union sample.

The trade union returns covered workers in manufacturing, mining, building, and transportation. Industrial representation in the trade union sample at several dates is shown in Table F-2 together with the

TABLE F-2

Percentage Distribution of Industrial Workers in Trade Union Sample, 1912-1929, and Censuses of 1925 and 1933, Germany

	TRADE UNION SAMPLE				CENSUS	
INDUSTRY	*1912*[a]	*1922*[b]	*1925*[c]	*1929*[b]	*1925*[d]	*1933*[d]
Mining	5.6	[e]	[e]	3.3	7.5	6.2
Stone and earthwork	7.6	2.5	2.5	5.7	5.7	5.0
Machine construction and metals	25.6	27.9	23.0	22.6	21.9	17.8
Textiles	8.9	13.4	10.9	8.3	9.0	9.0
Book and paper	1.6	1.5	1.5	2.7	4.1	4.0
Printing	6.1	2.2	3.4	3.3		
Leather and shoemaking	4.4	2.8	4.0	0.2	1.2[f]	1.1[f]
Wood and woodworking	10.3	7.4	8.4	7.0	6.7	6.0
Food, tobacco, and drink	6.0	4.8	5.6	6.8	7.6	9.5
Clothing	0.7	1.7	2.9	3.6	8.1	8.3
Building	0.3	10.5	13.6	15.9	12.7	15.2
Transportation	10.8	8.8	6.7	8.3	7.0	7.0
Other	12.1	16.5	17.5	12.3	8.5	10.9
	100.0	100.0	100.0	100.0	100.0	100.0

[a] Fourth quarter. [b] End of October. [c] End of June. [d] June 16.
[e] Including linoleum. [f] Included in "Other" group.
Source: *Reichsarbeitsblatt* for trade union data and *Statistisches Jahrbuch für des Deutsches Reichs*, 1930, Vol. 49, pp. 19-21 and 1935, Vol. 54, pp. 20-21 for census data.

[2] Wladimir S. Woytinsky, "Arbeitslosigkeit und Kurzarbeit," *Jahrbücher für Nationalökonomie und Statistik*, Vol. 79, 1931, p. 18.

industrial distribution of all workers (*arbeiter*) in these groups as given in the censuses of 1925 and 1933. The data show that there was no gross over- or underrepresentation of particular groups, with the exception of clothing workers, during the 1920's. In 1912, workers in building and clothing were very much under represented.

Before World War I, there is very little statistical information available to gauge the validity of the trade union unemployment figures. The only nationwide unemployment census (that of 1895) took place before the trade union percentages appeared. While no direct comparison can thus be made between the census results and the trade union figures, the census results do give some indication of the level of unemployment in what has been described as a year of "fairly good trade."[3] Since the census count was made both in June and in December of 1895, its results also shed some light on the variation of seasonal unemployment.

On June 18, 1895, the census found 97,782 workers in mining and industry (excluding agriculture, transport, commerce, household service, public service, and the professions) unemployed.[4] On December 2, 1895, 274,625 workers in mining and industry were unemployed. These figures, which excluded those unemployed on account of sickness, represented 1.5 and 4.2 per cent, respectively, of the total number of workers in industry and mining. The average of these percentages (2.9), it will be noted, is almost equal to the trade union percentages in the years of two cyclical lows (1903 and 1908). This suggests that the trade union percentages may have understated the actual amount of unemployment in Germany in the early years of the series.

The suggested understatement of the level of unemployment by the trade union percentages is also indicated by the magnitude of their seasonal variation. The pre-World War I percentages for June and December of each year are given below:

Month	*1903*	*1904*	*1905*	*1906*	*1907*	*1908*	*1909*	*1910*	*1911*	*1912*	*1913*
June	3.2	2.1	1.5	1.2	1.4	2.9	2.8	2.0	1.6	1.7	2.7
December	2.6	2.4	1.8	1.8	2.7	4.4	2.6	2.1	2.4	2.8	4.8

Source: *Reichsarbeitsblatt, passim.*

Whereas the census unemployment percentage for December (4.2) exceeded the percentage for June (1.5) by 2.7 percentage points in a year of recovery from the depression of 1894,[5] the trade union per-

[3] Otto Most, *The Problem of Unemployment in Germany*, London, Cassell, 1910, p. 16.

[4] Census data from *ibid.*, p. 20.

[5] Hubert Post, *Untersuchungen über den Umfang der Erwerbslosigkeit* in *Sammlung Nationalökonomischer und Abhandlungen*, Jena, G. Fischer, 1914, Vol. 70. p. 16.

centages reveal no seasonal variation of this magnitude in any of the years, 1903-1913. This may be the result of the afore-mentioned under-representation of building workers in the union sample. For the good years 1905, 1906, 1907, 1911, and 1912, the trade union percentages for June are quite similar to the percentage of unemployment recorded in the census of June 1895.

More direct evidence revealing the understatement of seasonal unemployment by the trade union figures is afforded by the unemployment censuses taken by various municipalities in the winter of 1908-1909 (see Table F-3). These censuses showed that there was a total

TABLE F-3

Number and Per Cent Unemployed According to the Unemployment Censuses of Various Municipalities, Germany, 1908-1909

Date of Census	*Municipality*	*Number Unemployed*[a]	*Per Cent of Workers Unemployed*
Nov. 18, 1908	Berlin	28,006	5.1
Mar. 31, 1909	Bochum	420	1.4
Jan. 20, 1909	Brunswick	575	1.8
Nov. 18, 1908	Charlottenburg	1,948	2.5
Jan. 15, 1909	Chemnitz	1,862	2.4
Jan. 24, 1909	Cologne	3,478	3.4
Feb. 28, 1909	Dortmund	1,078	2.1
Nov. 28, 1908	Dresden	5,004	4.2
Feb. 14, 1908	Elberfeld	703	1.7
Oct. 15, 1908	Halle-on-the-Saal	2,917	7.8
Dec. 13, 1908	Kiel	1,960	5.3
Nov. 29, 1908	Magdeburg	2,208	3.9
Feb. 1, 1909	Mannheim	1,511	3.4
Dec. 10, 1908	Nuremberg	2,513	2.7
Nov. 18, 1908	Rixdorf	3,681	7.2
Feb. 14, 1909	Shoeneberg	2,659	10.2
Nov. 17, 1908	Stuttgart	1,001	1.6
Nov. 3, 1908	Wiesbaden	596	2.8

[a] Excluding those incapable of working because of illness or causes other than lack of work.

Source: Otto Most, *The Problem of Unemployment in Germany*, London, Cassell, 1910, p. 16.

of 62,120 workers unemployed, or 4.1 per cent of the number of workers residing in these cities. After careful consideration of the methods employed in these censuses and of criticisms which have been made of the results, Most concluded: "It is notorious, however, that this figure [4.1 per cent] is very considerably less than the reality, and according to careful estimates must be increased by about one-half, so that the average of these towns would in reality be about 6 per cent."[6]

[6] Most, *op.cit.*, p. 22.

This estimate of about 6 per cent for the winter of 1908 is considerably higher than the trade union percentage for December 1908 (4.4), which was the highest recorded in the winter of 1908-1909. The difference between the trade union percentage of June 1908 (2.9) and Most's estimate of about 6 per cent unemployed in the winter of 1908-1909 is 3.1 percentage points, not far different from the seasonal variation exhibited in the census of 1895 (2.7 percentage points).

To take account of seasonal variation, a rough correction can be made. The June trade union percentages are assumed to be correct. The seasonal variation, assumed to be 2.9 percentage points, is added to the June figure to yield a figure approximating winter unemployment. Rough annual rates can then be obtained by averaging the June figures and the winter figures. While far from being entirely satisfactory estimates, it is probable that percentages calculated in this fashion (see Table F-1) more nearly approach the actual level of unemployment in Germany before World War I than do the unadjusted figures.

After World War I, when the trade union percentages came to be based on reports covering a considerable number of workers, there does not seem to be much doubt but that they represent good measures of the level of unemployment. Wiggs points out that the low percentages for the inflationary period, 1918-1923, represent a valid picture of the unemployment situation: "This [the broad coverage] means that there is little danger of the low 1922 figures having been an underestimation. The feature of the period from 1918 to 1923 was the lowness of unemployment and the nonappearance of seasonal fluctuations, in spite of the existence of statistics which would certainly have revealed them had they existed."[7]

Woytinsky, evaluating the trade union percentages for the 1920's, dismissed the contention that the trade unionists represented a select group and thus did not constitute a good sample as follows: "This consideration does not hold up however. The modern unions are not associations of the working class aristocracy, but much more are they industrial unions which encompass all occupations rather uniformly and in which the unskilled and partially skilled are just as well represented as the skilled."[8] He then went on to write: "I believe to have proved that the unemployment figures of the unions reflect rather exactly the situation on the whole labor market. The usual extrapolation of these figures is thus warranted. The accounts of the unions concerning unemployment and short-time among their members are characteristic of all industry."[9]

[7] Kenneth I. Wiggs, *Unemployment in Germany since the War*, London, King, 1933, pp. 31-32.

[8] Woytinsky, *op.cit.*, p. 22.

[9] *Ibid.*, p. 23.

Woytinsky's conclusion is borne out by the results of the censuses of June 16, 1925 and of June 16, 1933, shown below:

WORKERS AND EMPLOYEES	MANUFACTURING, MINING, AND CONSTRUCTION		TRADE, COMMERCE, AND TRANSPORTATION		TOTAL	
	1925	*1933*	*1925*	*1933*	*1925*	*1933*
Total number[a] (*thousands*)	11,766	11,240	3,055	3,632	14,821	14,872
Number unemployed (*thousands*)	421	4,197	130	922	551	5,119
Per cent unemployed	3.6	37.3	4.3	25.4	3.7	34.4

[a] *Arbeiter* and *Angestellte*. The figures for 1925 included a small number of public officials (*Beamte*). It was assumed that the number of officials in 1925 was the same as the number enumerated in these groups in 1933.

Source: *Die Erwerbstätigkeit der Reichsbevölkerung*, Statistik des Deutsches Reichs, Berlin, 1936, Bd. 453, Heft 2, p. 16.

On June 16, 1925, 3.6 per cent of the workers and employees in manufacturing, mining, and construction were unemployed.[10] For the end of the same month, the trade union percentage for the wholly unemployed was 3.5 (3.6 at the end of May 1925). The census of June 16, 1933 showed 37.3 per cent of the workers and employees in the above named activities unemployed. The trade union rate was 40.3 at the end of June 1933 (44.7 at the end of May).[11] These comparisons lend support to the claim that the trade union rates were valid measures of the volume of unemployment among workers in manufacturing, mining, and construction.

EMPLOYMENT EXCHANGE STATISTICS BEFORE WORLD WAR II

Reports of employment exchanges have been published monthly in the *Reichsarbeitsblatt* since 1907. Before the Employment Exchanges Act of 1922, which established an employment exchange in every commune and district of local administration, the published statistics (giving the number of persons seeking work, the number of vacancies, and an index of the number of workers seeking work per hundred

[10] Those enumerated as unemployed in the census were all persons capable of working who before the census count were occupied as workers and employees and who were without employment at the time of the census because of lack of work (see *Einführung in die Berufszählung Systematische und Alphabetische Verzeichnisse zur Berufszählung 1933*, Berlin, Statistik des Deutsches Reichs, 1936, Bd. 453, Heft 1, pp. 6-7).

[11] Trade union rates, with the exception of June 1933, from *Reichsarbeitsblatt*. The June 1933 figure was obtained from Oscar Weigert, *Placement and Unemployment Insurance in Germany*, Industrial Relations Counselors, 1934, p. 25.

vacancies) covered only a few exchanges and for this reason are of limited value.

Later employment exchange returns listed the number of registered unemployed as well as the numbers seeking work. Until November 1926, the monthly statistics of the applicants for work referred to the middle of each month. After November 1926, these figures were given for the end of each month and later also for the middle of each month. The number of registered unemployed referred to the end of each month. These statistics covered all lines of activity.

The *registered unemployed* figures (see Table F-4) included all unemployed persons registered at the employment exchanges, whether in receipt of unemployment insurance or relief benefit or not.[12] For

TABLE F-4

Registered Unemployed, Germany, 1925-1940
(*thousands*)

Year	Registered Unemployed	Year	Registered Unemployed
1925	687	1935	2,151[b]
1926	2,028	1936	1,593
1927	1,336	1937	912
1928	1,376	1938	429
1929	1,899	1939	119[c]
1930	3,076	1940	52[c]
1931	4,520		
1932	5,575		
1933	4,804[a]		
1934	2,718		

[a] The figures for July 31, 1933 and following months excluded persons employed in labor camps. In July 1933 the number excluded amounted to 150,000.

[b] Including registered unemployed persons in the Saar Territory after April 1935.

[c] Excluding unemployed in East Prussia, Upper Silesia, and the German Sudetenland.

Source: 1925-1927—Wladimir S. Woytinsky, *Three Sources of Unemployment*, ILO Studies and Reports, Series C, No. 20, Geneva, 1935, p. 80. 1928-1940—*Statistisches Jahrbuch* and ILO *Yearbooks of Labour Statistics*.

[12] After World War I, there were frequent changes in the form of unemployment relief. A comprehensive scheme of relief was introduced during the demobilization period. In February 1924, the scope of the scheme was limited to cover only those unemployed who had already completed a prescribed period as employed persons. On October 1, 1927, the relief system was superseded by a system of unemployment insurance which covered all occupations. Emergency benefit, originally supplementary to unemployment relief, was embodied in the unemployment insurance scheme. Under the strain of the widespread unemployment of the great depression, the insurance and emergency benefit schemes proved unequal to the task of providing for the masses of unemployed workers. Therefore, the poor relief system evolved into a third form of unemployment relief for those unemployed persons who, for a variety of reasons, were no longer covered by either unemployment insurance or emergency benefit.

example, the composition of the number of registered unemployed at the end of January 1933 was as follows:

Recipients of standard benefit	953,117
Recipients of emergency benefit	1,418,949
Able-bodied unemployed in receipt of poor relief	2,366,259
Unemployed not in receipt of any form of relief	1,275,287
Total registered unemployed	6,013,612

There is ample evidence that during the 1930's the figures of the registered unemployed did not measure the full extent of unemployment. Many persons who lost all hope of finding work at the exchanges or who had no claim to benefits of any kind, failed to register at employment exchanges. Estimates of the numbers of such persons (i.e. of so-called *invisible unemployment*), based on incomplete statistics, are quite divergent. For example, the German Institute for Business Research, in a discussion of estimates of the extent of invisible unemployment made by the *Economist*,[13] concluded that the *Economist*'s estimates of 2,537,000 for June 1933 and 2,418,000 for June 1935 were much too high. The Institute's own estimates for these two dates were 799,000 and 722,000. Woytinsky's estimate for the summer of 1932 was 2,100,000.[14] Since there is no way of reconciling these estimates or of making more reliable ones, the actual number of unemployed persons in Germany during the 1930's is only very approximately known.

The figures of the registered unemployed (covering all occupations and subject to the shortcomings touched upon above) cannot be used directly to obtain unemployment percentages for workers in manufacturing, mining, and construction. Perhaps the best that can be done is to use the result of the census of June 16, 1933[15] in conjunction with the trend of the registered unemployed series to obtain percentages of unemployment applicable to the above group of workers. Percentages constructed in this manner (see Table F-5) agree fairly

[13] *Weekly Report of the German Institute for Business Research*, Berlin, August 22, 1935.

[14] Wladimir S. Woytinsky, *Three Sources of Unemployment*, Geneva, International Labour Organisation, Studies and Reports, Series C, No. 20, 1935, p. 97. Woytinsky's and the other estimates depended upon the Health Insurance statistics for an estimate of employment and estimates of the total number of workers.

[15] The census of June 16, 1933 found 37.3 per cent of the workers and employees in manufacturing, construction, and mining unemployed. By use of the monthly registered unemployed figures, the annual rate is found to be 36.2. The figures in Table F-4 serve to provide a basis for calculating percentages for other years. For June 1925, the month of the census, the calculated percentage is 3.1 compared with the census rate of 3.6, shown above, for manufacturing, mining, and construction.

TABLE F-5

Estimated Unemployment Rates for Workers and Employees in Manufacturing, Mining, and Construction, Germany, 1925-1939

Year	Per Cent Unemployed[a]	Year	Per Cent Unemployed[a]
1925	5.2	1933	36.2
1926	15.3	1934	20.5
1927	10.1	1935	16.2
1928	10.4	1936	12.0
1929	14.3	1937	6.9
1930	23.2	1938	3.2
1931	34.1	1939	0.9
1932	42.0		

[a] Estimates constructed as described in text. The estimates have been taken back to 1925 to afford comparison with the trade union percentages in the years 1925-1932.

closely with the trade union figures for 1925 to 1932 and with the result of the 1925 census. For the later 1930's the calculated percentages are somewhat higher than those published in the ILO's *Yearbooks of Labour Statistics* since these latter percentages apply to workers and employees (approximately 21 million) in all lines of activity, including agriculture, personal and domestic service, and public administration. Further, it is not clear how the problem of invisible unemployment was dealt with in calculating the ILO percentages.

POST-WORLD WAR II UNEMPLOYMENT STATISTICS

After World War II, quarterly unemployment statistics for occupied Germany first appeared for March 1946, and quarterly figures for the German Federal Republic, for March 1948.[16] For the United States and British occupation zones, the series showed the number of unemployed as a percentage of the total number of wage and salary earners (see Table F-6). In 1946, and through March 1947, the unemployed were defined to be persons not working and considered available for work under the Allied Control Council's Order No. 3 of 1946. Under this order, all persons (1) in employment, (2) unemployed and seeking work, and (3) all other males between the ages of fourteen and sixty-five and all other females between the ages of fifteen and fifty were required to register at local employment offices. Persons in this last group who were physically or mentally incapacitated, mothers of young children, housewives, or students were considered as not available for work; all other persons in this group, in addition to those in

[16] Source: *Report of the Military Governor, Statistical Annex*; Office of the Military Government for Germany (U.S. Zone), *International Labour Review*, December 1948, p. 830.

TABLE F-6

Unemployment Rates, United States and British Occupation Zones and German Federal Republic, 1946-1952

YEAR	UNEMPLOYED AS PER CENT OF WAGE- AND SALARY-EARNING LABOR FORCE[a]	
	U.S. and British Occupation Zones	*German Federal Republic*
1946	7.5[b]	
1947	5.0[b]	
1948	4.7	4.2
1949	8.1	8.3
1950		10.2
1951		9.0
1952		8.4

[a] Averages of quarterly data.

[b] The unemployed in 1946 and through March 1947 were persons not working and available for work within the meaning of Control Council Order No. 3 (see text). Files of the unemployed thereafter were gradually purged of unplaceables. June 1948 and later figures show only persons not working and registered as seeking work.

Source: Office of the Military Government for Germany (U.S. Zone), *Report of the Military Governor, Statistical Annex*, No. XXVII, May 1949, p. 75. *Yearbook of Labour Statistics, 1953*, International Labour Organisation, p. 87.

groups (1) and (2), were considered as available for work and came to be counted among the unemployed whether seeking work or not.

In mid-1948, and thereafter, both the unemployment statistics of the United States and British occupation zones and of the German Federal Republic include as unemployed only persons registered at employment exchanges as seeking work. The wage- and salary-earning labor force, which serves as a base for calculating unemployment rates, is equal to the sum of the number of registered unemployed seeking work and the number of employed wage and salary earners. Wage and salary earners in all occupations are covered by the statistics.

SUMMARY

Before World War I, the trade union unemployment percentages probably understated the actual level of unemployment in Germany. For the most part, this understatement is presumed to have arisen because certain seasonal trades, particularly building, were not sufficiently represented in the trade union sample. To overcome this shortcoming, a rather rough correction (described above) was applied to the trade union percentages for the years 1903-1913.

The trade union percentages for the years 1914-1932, based on a large sample of union members in which industrial groups received

approximately appropriate weights, represent good measures of the extent of unemployment among workers in mining, manufacturing, construction, and transportation.

A calculation based on the census results of June 16, 1933 and on the trend of the numbers of registered unemployed, provides unemployment rates for the years 1933-1939. These, when carried back before 1933, are in fair agreement with both the trade union percentages for 1925-1932 and with the results of the census of June 16, 1925.

In the post-World War II years, unemployment rates covering all wage and salary earners are available from 1946 on. These rates are probably lower than unemployment percentages for only wage earners in manufacturing, mining, and construction. The amount of the probable understatement for the years 1946-1948 is somewhat lessened because some persons who were not seeking work were included among the numbers unemployed.

Appendix G:
The Netherlands

The information that we have been able to secure on Dutch unemployment statistics is insufficient to provide the basis for a thorough critical evaluation. It has therefore been necessary to confine this section to a presentation of the available statistics with as full a description as the material at our disposal allowed.

The principal unemployment series for the Netherlands were those emanating from trade union unemployment insurance funds, commencing in 1911 and terminating in 1941 (see Table G-1). The first series (in column 1) represents the ratio of unemployed workers to those insured in voluntary union funds.[1] The data were compiled on a weekly basis, no distinction being made with respect to the number of days per week for which benefits were paid (i.e. a worker was counted as being unemployed once in a week whether he lost one day or the entire week). Workers with separate spells of unemployment in a single week were similarly counted just once.[2] The series shown in column 2 represents the ratio of the precise number of

[1] The data include also "a small number of workers who, although belonging to unions having [unemployment] funds, are excluded from benefit on account of age, and workers who belong to unions having no unemployment funds." *The I.L.O. Yearbook 1934-35*, International Labour Office, Vol. II, p. 180. It was reported in 1925 that only 7,000 workers whose employment status was reported on were in unions not having unemployment funds compared with some 270,000 thus covered.

[2] *Methods of Compiling Statistics of Unemployment*, International Labour Office, Studies and Reports, Series C, 1922, pp. 71-77.

TABLE G-1

Unemployment Rates among Insured Trade Unionists, the Netherlands, 1911-1940

Year	*Per Cent of Workers Unemployed* (1)	*Ratio of Days Lost Due to Unemployment to Potential Working Days of Insured Workers* (2)	Year	*Per Cent of Workers Unemployed* (1)	*Ratio of Days Lost Due to Unemployment to Potential Working Days of Insured Workers* (2)
1911	2.7	2.5	1926	8.7	7.3
1912	4.2	4.0	1927	9.0	7.5
1913	5.1	5.0	1928	6.9	5.6
1914	16.2	13.8	1929	7.1	5.9
1915	14.6	12.0	1930	9.7	7.8
1916	5.8	5.1	1931	18.1	14.8
1917	9.6	6.5	1932	29.5	25.3
1918	10.0	7.5	1933	31.0	26.9
1919	8.9	7.7	1934	32.1	28.0
1920	7.2	5.8	1935	36.3	31.7
1921	10.9	9.0	1936	36.3	32.7
1922	12.6	11.0	1937	29.2	26.9
1923	12.8	11.2	1938	27.2	25.0
1924	10.2	8.8	1939	21.7	19.9
1925	9.5	8.1	1940	22.9	19.8

Source: *Maandschrift van het Centraal Bureau voor de Statistiek, passim.*

man-days of unemployment to the maximum number of days at risk of unemployment (i.e. six times the membership of the reporting organizations).

The major characteristics of these data may be outlined as follows:

1. It is obvious that the index in column 2 is more accurate than that in column 1 in measuring the total volume of unemployment. The weekly percentage of unemployed workers would be unaffected, for example, by changes in the average duration of unemployment per week, whereas the percentage of man-days unemployed would reflect such a change. The difference between the two series reflects changes in the number of days per week of average unemployment. The two percentages would be the same, for example, if all unemployed workers during a particular week were unemployed for six days. As the average number of days of unemployment per week declines, the difference between the two percentages widens.

The relationship of the two series is thus dependent upon the form that unemployment takes. If it is concentrated on a particular group of individuals, the percentages would correspond closely; if available work were spread among the work force, in the form either of a reduction in the number of days worked per week or the number of hours

worked per day,[3] the second series would depart from the first. The largest percentage difference in the spread between the two series came in the years 1917 and 1918, whereas during the Great Depression, the spread did not widen greatly (in percentage terms).

2. The industrial coverage of the data appears to have been quite broad, including, in addition to manufacturing, building construction, agriculture, fishing, the retail trades, and commercial work. However, manufacturing and building appear to have been most fully represented in the sample. The insured population in 1925 was said to constitute 90 per cent of the total number of organized workers in the Netherlands, so that the data presented "a very accurate idea both of the fluctuation in unemployment and of the absolute extent of unemployment among insured persons."[4] At the time, however, some 65 per cent of the industrial labor force was not organized, so that the data could not be said to be representative necessarily of unemployment generally.[5] The absolute number of workers covered by the statistics rose from 275,000 in 1925 to a high of 525,000 in 1933, declined to 468,000 in 1936, and rose again to 511,000 in 1940.[6] The reporting base was fairly substantial from the start, having been 65,000 in 1913 and 106,000 by 1915.

3. The method of collecting the statistics was calculated to insure a considerable degree of accuracy. The trade union unemployment insurance funds, as a condition for the receipt of state aid, were required to maintain comprehensive membership registers, and to record not only the days of unemployment for which benefits were paid, but also the number of benefitless days of unemployment. The funds received from the state a per capita allowance per week to cover administrative costs, including the preparation of statistics. Although persons who had exhausted their benefits sometimes failed to keep their registration as unemployed current, it was believed that this did not constitute a serious source of error.[7]

4. Persons out of work due to labor disputes, illness, accidents, or other causes than lack of work, were not counted as unemployed.

5. The following statement was made by the Director General of Statistics with respect to the representative character of the series:

[3] It would appear that days of less than full employment were tabulated as such. However, we have been able to find no precise statement to this effect.

[4] *The Second International Conference of Labour Statisticians*, International Labour Office, Studies and Reports, Series N, No. 8, 1925, p. 51, note 1.

[5] Estimated from *Jaarcijfers von Nederland, passim.* The number of trade union members on January 1, 1925, was compared with the average of the number of industrial and transport workers in 1920 and 1930.

[6] These figures are from Central Bureau Voor De Statistiek, *Jaarcijfers von Nederland, passim.*

[7] *The Second International Conference of Labour Statisticians*, p. 51, note 1.

"These percentages could safely be considered as representative up to the 1930's. After 1935, however, they presented in all probability a too unfavorable picture of the size of unemployment."[8]

The only other series of unemployment going back over a long period is that relating to the operation of public employment offices. Prior to the 1930's these data were incomplete, since there was no widespread registration of the unemployed by these offices. However, with the growth of unemployment during the depression, registration was made compulsory for all unemployed in receipt of relief and unemployment benefits, and those employed on public works. Registration is voluntary for others.

Coverage is quite broad. It is believed that all manual workers register, as a rule, and maintain their registration even after their right to benefits has expired. Clerical workers not in receipt of benefits often do not register, however. Young workers seeking their first jobs are included in the registration, but persons formerly self-employed who are seeking employment are not. Married women who are not the sole support of their families are not included among the unemployed, even though they may be willing and able to work. Figures for unemployed agricultural workers are not considered complete.[9] The enumeration takes place on the last day of each month, and the annual figures are an average of the monthly tallies.

This series is shown in Table G-2.[10] In two respects the prewar and postwar data are not comparable:

1. The so-called "frost unemployed" (persons laid off in extremely cold weather) were included up to 1940 but excluded thereafter. These persons constituted some 15 per cent of the total unemployed during the months of December and January and, on an annual basis, increased reported unemployment by perhaps 3 per cent.

2. Up to and including 1948, the unemployed aged sixty-five and over were included among the unemployed, but were omitted thereafter. It is estimated that the over sixty-five-year age group constituted about 1.5 per cent of the total number of persons out of work.

In general, persons who are partially unemployed are excluded from the count of unemployment. A person without a labor contract must be willing and able to work for a full day in order to be included. Persons on temporary layoff are not included among the unemployed unless they did not perform any labor during the entire week in which the census day falls.

[8] Letter to the authors from Dr. Ph. J. Idenburg, Director General of Statistics of the Netherlands, July 29, 1953.

[9] *The Netherlands*, United States Bureau of Labor Statistics, Catalogue of Labor Statistics Series, mimeographed, June 1952.

[10] Data for the years of German occupation of the Netherlands are omitted.

TABLE G-2

Persons Registered at End of Month as Unemployed at Public Employment Offices, the Netherlands, Annual Average, 1933-1952

(*thousands*)

Year	*Totally Unemployed*	*Employed on Public Works*	*Unemployed but Receiving Pay from Employers*	*Total*
1933	274.8	48.1	[a]	322.9
1934	281.8	51.0	[a]	332.8
1935	328.8	55.9	[a]	384.7
1936	368.5	46.0	[a]	414.5
1937	324.0	44.9	[a]	368.9
1938	303.4	50.2	[a]	353.6
1939	235.6	60.0	[a]	295.6
1945[b]	97.4	39.8	60.1	197.3
1946	53.1	35.7	4.3	93.1
1947	30.7	15.2	1.1	47.0
1948	29.0	13.4	0.8	43.2
1949	42.1	20.2	0.8	63.1
1950	57.7	21.4	1.1	80.2
1951	67.7	25.0	0.6	93.3
1952	104.3	31.8	1.5	137.6

[a] Not significant.

[b] Covers the months June-December only.

Source: *Jaarcijfers voor Nederland,* Centraal Bureau voor Statistiek, *passim.*

If the data in Table G-2 are converted into index form with 1933 as a base, and the resultant index applied to the 1933 percentage of unemployment indicated under the man-days lost series of the trade union data, it appears that the two series corresponded closely until 1935, but after that time the employment exchange data showed a persistently higher level of unemployment than the union data.[11] This may have been because the former were becoming progressively more complete during the 1930's as the result of stricter registration requirements.

The only unemployment data available for the postwar years are the employment exchanges statistics of Table G-2.[12] They indicate a level of unemployment much lower than that of the 1930's. If one were to extrapolate the prewar unemployment percentages on the basis of this series, unemployment would average about 5 per cent from 1946 to 1950 inclusive. However, assigning specific percentages

[11] However, the trend was similar from 1936 to 1939; the principal divergence came between 1935 and 1936, when the employment exchange series moved up more rapidly than the trade union series.

[12] Beginning with July 1952, a new series based upon the Unemployment Act of 1949 was initiated. These data are of too recent origin to warrant consideration here.

for particular years does not appear to be warranted on the basis of such an extrapolation in view of the nature of the relationship between the two series during the years 1933-1939.

CONCLUSIONS

The only statistics of unemployment for the Netherlands that are appropriate for purposes of international comparison for the period with which we are concerned are those shown in Table G-1. As between the two series contained therein, that in column 2, showing the ratio of days lost due to unemployment to potential working days of insured workers, would appear to be the one which is the more consistent with our normative definition.

This series has the usual defects of this type of statistics. Nevertheless, the Dutch statistical authorities consider it as generally representative of unemployment in the country until 1935, after which it probably overstated unemployment somewhat. No unemployment percentages are available for the postwar period, but it is clear from the data in Table G-2 that the postwar level of unemployment was considerably below the prewar level.

Appendix H:
Norway

TRADE UNION STATISTICS

The major source of unemployment statistics in Norway is provided by trade union reports to the Central Bureau of Statistics, beginning with July 1903, and continuing up to the present time. The percentages of unemployment thus derived are shown in Table H-1.

The characteristics of this series are as follows:

1. The data cover the national trade unions in the following industries and trades: metalworking (including shipbuilding); molders; printing; bookbinding; shoe manufacture; baking; bricklaying; the remaining building trades; sawmills; and woodworking. Coverage has been limited consistently to these ten organizations, all of which operated their own unemployment funds until 1939, when a national compulsory unemployment system was adopted.

2. In July, 1903, when the first reports were made, they covered 162 local unions with 10,200 members. At that time there were 350 local unions with 15,000 total membership.[1] Coverage for subsequent years was as follows:[2]

[1] Tillaegshefte 2 til *Statistiske Meddelelser*, Norway, Statistisk Centralbyrå, 1920, p. 18.
[2] *Ibid.*

Year	Number of Members (thousands)
1906	14.5
1909	18.0
1912	27.0
1915	30.0
1918	35.7

In 1918, when total trade union membership was 116,000 coverage was less representative of trade union unemployment, though not necessarily of total unemployment, than at the outset. In 1939, the ten reporting unions had 96,000 members out of a total union membership of 357,000, or about 27 per cent.[3] The corresponding figures for December 31, 1949 were 139,000 covered out of a total trade union

TABLE H-1

Unemployment Rates among Members of Reporting Trade Unions, Norway, 1904-1941, 1946-1951

Year	Per Cent Unemployed	Year	Per Cent Unemployed
1904	3.9	1927	25.4
1905	4.4	1928	19.2
1906	3.2	1929	15.4
1907	2.5	1930	16.6
1908	3.7	1931	22.3
1909	5.0	1932	30.8
1910	2.9	1933	33.4
1911	1.9	1934	30.7
1912	1.3	1935	25.3
1913	1.7	1936	18.8
1914	2.3	1937	20.0
1915	1.9	1938	22.0
1916	0.9	1939	18.3
1917	0.9	1940	23.1
1918	1.5	1941	11.4
1919	1.7		
1920	2.3	1946	3.6
1921	17.7	1947	3.1
1922	17.1	1948	2.7
1923	10.7	1949	2.2
1924	8.5[a]	1950	2.7
1925	13.2	1951	3.6
1926	24.3		

[a] Data for this year affected by a general work stoppage in the metal trades.

Source: 1904-1947—Statistisk Centralbyrå, *Statistiske Oversikter*, 1948, p. 363. 1948-1951—*Statistisk Årbok for Norge*, 1952, p. 223.

[3] This total includes only unions affiliated with the Norwegian Federation of Labor. However, unaffiliated trade-union membership was insignificant at this time.

membership of 474,000 or 29 per cent. The percentage covered in 1949 was roughly equal to that prevailing in 1918.

3. The statistics were gathered by trade union secretaries in charge of union unemployment funds and were considered to be fairly reliable insofar as reporting was concerned, since the unemployed individual had a strong incentive to report his status. An individual was counted as unemployed only once each month regardless of the number of spells of unemployment suffered. One limitation on completeness was the fact that when the right to benefits ceased, many individuals ceased reporting, thus tending to understate the degree of unemployment during periods of severe recession.[4]

4. The most serious deficiency of the trade union series appears to be the fact that it is heavily weighted with industries which are very sensitive to cyclical fluctuations. Five of the ten unions reporting are in capital goods industries; two unions, those in the metal and building trades, alone accounted for from 70 to 80 per cent of total reporting membership. The following conclusion emerged from an analysis of this aspect of the series:

> "The percentage of unemployment for the 10 trade unions thus cannot be said to give a representative picture of unemployment in the nation—not even for industry, since among others such important groups as the cellulose and paper industry, mining, the electrometallurgical and electrochemical industry, the textile and clothing industries, and food processing, apart from baking, are excluded. To this should be added the fact that it covers only organized workers."[5]

A comparison of the published trade union series with an apparently unpublished series covering working days lost due to unemployment in some twenty-five to twenty-nine trade unions indicates that the latter group has absolutely lower and less severely fluctuating unemployment. These percentages, which were read off a chart and are therefore approximate, are shown in Table H-2. For example, at the height of the depression in 1933, when the ten-union series showed 33.4 per cent unemployment, the twenty-nine-union series showed only about 22 per cent. The fact that the more comprehensive data have not been published, however, must indicate a lack of confidence in it by the Central Bureau of Statistics, perhaps because many of the unions had no unemployment funds which would ensure full reporting by the unemployed.

5. A census of unemployment taken on December 1, 1930 provided

[4] Tillaegshefte 2 til *Statistiske Meddelelser*, 1920, p. 18.

[5] Morton Tuveng, *Arbeidsløshet og Beskjeftigelse i Norge Før og Under Krigen*, Bergen, J. Grieg, 1946, p. 40.

TABLE H-2

Unemployment Rates among Members of from 25 to 29 Trade Unions, Norway, 1920-1939

Year	Per Cent Unemployed	Year	Per Cent Unemployed
1920	2.0	1930	16.0
1921	14.0	1931	21.0
1922	12.5	1932	21.5
1923	8.0	1933	22.0
1924	5.0	1934	20.0
1925	9.0	1935	19.0
1926	16.5	1936	18.0
1927	19.0	1937	17.0
1928	14.0	1938	20.0
1929	13.0	1939	20.0

Source: Figure 2 in Morton Tuveng, *Arbeidsløshet og Beskjeftigelse i Norge Før og Under Krigen*, Bergen, 1946, p. 35. No published source other than this chart has been found for these data.

an opportunity to test the validity of the trade union series. This census included all wage earners in industrial and agricultural occupations, except that fishermen and the self-employed other than artisans in manufacturing were excluded. Newly entering young persons who had not secured permanent employment but were looking for work were included among the unemployed.

The percentage of unemployment among men was 14.6 per cent (for women it was much lower, 2.7 per cent). The rate of unemployment among the ten reporting trade unions at the end of November 1930, was 21.4 per cent, considerably higher than the over-all census figure (virtually all the reporting trade union membership was male). However, the census percentage of male wage earner unemployment in industry, excluding transportation, agriculture, and the forest trades, was 17.8 per cent; for *urban* industrial wage earners, it was 22.6 per cent. This close correspondence seemed to indicate that the trade union rates of unemployment were representative of unemployment among all industrial wage earners.[6]

LABOR EXCHANGE DATA (TO 1939)

The only other Norwegian unemployment data available for any considerable time period are those emanating from the public employment exchanges. Table H-3 shows the excess of job seekers over vacancies at the exchanges, from 1919 to 1939. A drastic change in the reporting system adopted in 1940 makes it impossible to com-

[6] "Arbeidsledigheten efter folketellingen, 1930," *Statistiske Meddelelser, Det Statistiske Centralbyrå*, 1933, p. 74.

pare the data for that year and subsequent years with the series in Table H-3.

TABLE H-3

Excess of Job Seekers over Vacancies at Public Employment Exchanges, Norway, 1919-1939

Year	*Excess*	*Year*	*Excess*
1919	110	1930	19,353
1920	1,726	1931	27,478
1921	17,375	1932	33,831
1922	19,492	1933	36,279
1923	14,425	1934	36,339
1924	11,263	1935	36,103
1925	14,956	1936	32,643
1926	23,467	1937	28,520
1927	23,889	1938	28,923
1928	21,759	1939	26,777
1929	19,089		

Source: Morton Tuveng, *Arbeidsløshet og Beskjeftigelse i Norge Før og Under Krigen*, Bergen, 1946, p. 40.

The deficiencies of the labor exchange data, even apart from the manner in which they are expressed, render them of use only for comparative purposes with other Norwegian data. The number of exchanges reporting has varied over time; agricultural as well as industrial job seekers were included; registration was entirely voluntary, except where required as a condition for obtaining relief, where the relief laws influenced registration; and a relatively small number of job vacancies were reported to the public exchanges.[7]

While the general movements of the two series are similar, the amplitude of the cyclical changes in the trade union series is considerably greater. The movement of the labor exchange data is closer to that of the special union series shown in Table H-2 during the period 1929-1939, though from 1920-1929 the latter exhibited greater swings.

LABOR EXCHANGE DATA (SINCE 1945)

Beginning in 1938, applicants for unemployment insurance were required to report to the labor exchanges as a condition of securing unemployment benefits. Moreover, a law enacted in 1947 required all employers who had in their employ persons subject to the insurance law (which includes virtually all workers except those in fishing, domestic service, and civil service) to notify the labor exchanges of all vacancies.[8] For these reasons, the labor exchange data of the last

[7] See *Arbeidsmarkedet*, Arbeidsdirektorat, No. 6, 1952, p. 178; Johan Hvidsten, "Unemployment in Norway," *International Labour Review*, February-March 1923, p. 231; *Statistiske Meddelelser*, 1926, p. 82.

[8] *Sosial Håndbok for Norge*, Oslo, Norsk Forening for Sosialt Arbeide, 1953, Vol. II, p. 26.

decade are likely to be more representative than the earlier statistics. It must be borne in mind, however, that employees who are either not covered by the unemployment insurance system, or are not eligible for benefits, although covered, are not required to report.

These data, shown in Table H-4, confirm the fact that there has been a very low rate of unemployment in Norway since the war.

TABLE H-4

Unemployment Indicated by Labor Exchange Data, Norway, 1946-1951

Year	*Job Seekers*	*Vacancies*	*Excess(+) or Deficit(−) of Job Seekers over Vacancies*
1946	196,243	225,621	−29,378
1947	191,121	219,259	−28,138
1948	198,612	223,011	−24,399
1949	200,095	234,673	−34,578
1950	219,759	244,781	−25,022
1951	384,369	351,870	+32,499

Source: *Statistisk Arbok for Norge, passim.*

Their movement does not follow in detail the trade union series of Table H-1, which is not unexpected because of the nature of the data and the low levels of employment involved. Both sets of data, however, show an increase in unemployment in 1951, perhaps the only significant movement during the period 1946-1951.

CONCLUSION

Despite its inadequacies, the trade union series provides the only useable index of Norwegian unemployment over any considerable period of time. Its most serious defect is the exaggerated swing during the depression of the 1930's because of the heavy weighting accorded to business cycle-sensitive industries. The data in Table H-2 indicate that some of the extreme figures shown for this period should be discounted, but the information necessary for making this correction is lacking.

Appendix I:
Sweden

There are two published series measuring unemployment for Sweden which go back to the first decade of this century: one based upon reports of trade unions, the other upon reports of labor exchanges. A series based upon unemployment insurance statistics is available only since 1936.

TRADE UNION STATISTICS

These data, which are shown in Table I-1, are based upon reports submitted by trade unions to the Royal Social Board. An exhaustive analysis of their validity as a general gauge of unemployment pre-

TABLE I-1

Unemployment Rates among Members of Reporting Trade Unions, Sweden, 1911-1952

Year	*Per Cent Unemployed*	*Year*	*Per Cent Unemployed*
1911	5.6	1932	22.4
1912	5.4	1933	23.3
1913	4.4	1934	18.0
1914	7.3	1935	15.0
1915	7.2	1936	12.7
1916	4.0	1937	10.8
1917	4.0	1938	10.9
1918	4.6	1939	9.2
1919	5.5	1940	11.8
1920	5.4	1941	11.3
1921	26.6	1942	7.5
1922	22.9	1943	5.7
1923	12.5	1944	4.9
1924	10.1	1945	4.5
1925	11.0	1946	3.2
1926	12.2	1947	2.8
1927	12.0	1948	2.8
1928	10.6	1949	2.7
1929	10.2	1950	2.2
1930	11.9	1951	1.8
1931	16.8	1952	2.4

Source: 1911-1929—*Statens Offentliga Utredningar 1931*, No. 20, p. 58. 1930-1952—*Sociala Meddelanden, passim.*

sented in 1931 by a governmental commission,[1] resulted in the following findings:

1. The trade union series is based upon reports submitted by cooperating trade unions to the Royal Social Board, first commencing in 1911. At the outset, about thirty national unions with members in manufacturing, transportation, building, and commerce reported. This included virtually all the trade unions in these branches of the economy. Unions of agricultural workers, railroad workers, seamen, and, until 1920, lumber workers, did not report, however.

2. Since reporting was voluntary, not all locals of these national

[1] *Arbetslöshetens Omfattning, Karaktär och Orsaker*, Statens Offentliga Utredningar, Stockholm, Socialdepartementet, No. 20, 1931.

unions submitted reports each month. In 1911, 64 per cent of the members of reporting national unions were accounted for in the reports submitted. The proportion declined to a low of 42 in 1920, but rose thereafter to 69 per cent in 1929 and 87 per cent in 1940. At the end of 1949, the percentage of the membership covered by reports was 97.5 per cent.

3. A special study made in 1923 of twenty-seven reporting national unions (the percentage of membership covered in 1923 was 49 per cent) indicated that in only three cases—the bricklayers, painters, and miners—did the reporting locals appear to be unrepresentative of unemployment in the union as a whole. "With regard to other unions the data seem quite accurately to portray changes in unemployment for the organized members, and when the data for the various unions are combined, the average unemployment percentage appears quite accurately to represent the situation in the trade unions."[2] The high reporting percentages during the 1930's and 1940's would tend to reinforce the conclusion that the trade union data were representative of unemployment *among trade union members.*

4. The trade unions report the total number of members and the number unemployed on the last day of each month, the monthly data being averaged to secure an annual figure. As a rule, unemployment comes to the notice of the local union secretary because unemployed members are exempted from the payment of union dues, the so-called "free-stamping" of their membership cards. "The right of free-stamping due to unemployment is general in the case of total absence from work because of lack of work; it is sometimes given when employment is less than twenty-four hours a week, sometimes when a man has work outside the trade and his weekly earnings do not amount to more than twenty-four hours of work at the rate of pay provided in the collective agreement."[3] Since in addition to this right some unions have long paid unemployment insurance benefits, there has been considerable incentive for the unemployed trade unionist to report himself as such. The union secretary may seek to verify the claim, or he may simply accept the statement of the worker, depending upon the circumstances. The local union has no obligation to pay per capita tax to the national union for "free-stamped" workers, but the national union must continue its per capita to the Federation of Labor, so that it has an incentive to police the system. In some unions the local officer is personally liable for underpayment to the national union, serving to

[2] *Ibid.*, p. 50.

[3] *Ibid.*, p. 45. We have seen no suggestion to the effect that the right of free-stamping accorded to underemployed was so widespread as seriously to affect the unemployment figures.

offset a tendency to grant "free-stamping" on account of age, partial unemployment, or personal reasons.

Although the "free-stamping" rules were found to vary in detail among unions, the Commission found a rough uniformity to exist. However, no distinction was made between voluntary and involuntary unemployment. Also, some unions were less representative because they maintained a closed door policy to new members.

5. The principal drawbacks which the Commission found in the trade union statistics stemmed from changes in absolute numbers and the composition of trade union membership. As a consequence of a disastrous general strike in 1909, Swedish trade union membership fell drastically, and did not again attain what the Commission considered to be a representative magnitude until after World War I,[4] though this is a matter of judgment rather than of proof. After World War I, however, there can be little question that the Swedish trade unions were representative within the economic sector which they covered. By 1929, the unions include over half of all persons employed in manufacturing, commerce, transport, and communications. For manufacturing alone, the coverage was two-thirds. The 1950 organization in manufacturing, building, and transportation has been estimated at 95 per cent of the labor force.[5]

When unemployment reporting first started, the Swedish trade union movement was largely craft in character. With the spread of organization to factory industry, as well as with increasing organization of women and youths, groups which were more unemployment-prone were represented in the statistics to a greater extent. As a consequence, at least until the 1930's, the trade union unemployment series is subject to a bias over time in the direction of greater unemployment, though no estimate of the magnitude of the bias is available.

6. Nor is there any specific information on the effects upon representativeness of cyclical movements in employment. It is generally true that during severe downswings in employment, trade union unemployment statistics do not fully reflect the degree of unemployment because of withdrawals or exclusion of unemployed members. This phenomenon was noted in 1931,[6] but specific information on this point is not available for later periods.

7. The growth of trade unions, while it has had the effect of making them more representative of the labor force at large, has had an offsetting effect in that it becomes more difficult to verify claims of unemployment, due to the greater burden of work upon union officials.

[4] *Ibid.*, p. 97.
[5] Walter Galenson, *Comparative Labor Movements*, Prentice-Hall, 1952, p. 119.
[6] *Statens Offentliga Utredningar*, No. 20, 1931, p. 50.

An inquiry into the operation of three unions in the 1920's revealed that, on occasion, persons who were not working because of age or illness, or those working on their own account, were included with the unemployed. Married women not looking for jobs were sometimes retained as members and accorded "free-stamping" and were thus included among the unemployed. However, better training of union officials, and more important, the increasing importance of trade union unemployment funds, tended to make for stricter control.

8. On the basis of the foregoing factors, the Commission reached the conclusion that "the data based upon the trade union unemployment series yield too low a result for the prewar (World War I) period and that the post-1920 data better reflect unemployment than the prewar figures. The errors discovered for the years after 1920 are difficult to measure precisely, but they appear to increase the magnitude to some extent. However, the data can be used to describe changes in unemployment during the latter period."[7]

9. Several attempts have been made to check the trade union unemployment data against special censuses of unemployment. A census of May 5, 1927, when appropriately adjusted to the trade union concept, indicated a considerably lower rate of unemployment than that shown by the trade union statistics.[8] Better results were obtained with respect to an unemployment census of March 2, 1936. It was estimated that for the entire country, 211,000 persons were unemployed on that date. However, since white collar workers and women were not well represented in the trade union statistics, the appropriate figure to compare with the latter was an estimated 175,000 male manual workers unemployed. At that time, the unions reported unemployment of 96,000, which was adjusted upward to 123,000 to take into account the nonreporting unions. In addition, 58,000 persons in urban communities applied for unemployment relief, of whom between 38,000 and 43,000 were estimated *not* to belong to trade unions. Thus total unemployment by this method was from 161,000 to 166,000, and male worker unemployed from 150,000 to 155,000. The difference of 20,000 to 25,000 in unemployment among male workers indicated by the two

[7] *Ibid.*, p. 61. Bagge has commented on the data as follows: "The prewar figures are probably somewhat too low in relation to the postwar figures, but as a general picture of the development of unemployment the above-mentioned conclusion that the general level of unemployment during the period 1922-23 to 1929-30 was about twice as high as before the war will hold good." Gösta Bagge, "Wages and Unemployment in Sweden 1920-30," *Economic Essays in Honor of Gustav Cassel*, London, G. Allen, 1933, p. 691.

[8] *Ibid.*, p. 94. The discrepancy appears to have been due largely to the failure of the census adequately to enumerate the unemployed (see Harrison Clark, *Swedish Unemployment Policy—1914 to 1940*, American Council on Public Affairs, 1941, p. 66).

methods was attributed to unemployment among nonunion workers who had not applied for relief. The most important discrepancy was for agricultural workers, of whom perhaps 20,000 were subject to seasonal unemployment.[9]

EMPLOYMENT EXCHANGE STATISTICS

The only other unemployment series dating back as far as the trade union series is that compiled by the employment exchange system. About ten labor exchanges were established in the major cities between 1902 and 1906. The system grew thereafter into a network of offices covering the entire country. Until 1934, the local employment exchanges were autonomous, although they had to meet certain operating requirements in order to secure state aid. In 1934 the entire system was unified under the direct supervision of the Unemployment Commission (which became the Employment Commission in 1940 and the Employment Board in 1948). In 1952 there were 210 employment offices operating under twenty-five provincial employment boards.[10] In 1913, the employment exchanges filled 118,000 vacancies, in 1951, 1,200,000. It is estimated that about one-third of all the vacancies in manufacturing and commerce are filled by the public employment exchanges.[11]

The data relating to the work of the labor exchanges show the number of job applications per month in relation to each 100 vacancies of which the exchanges are notified. Each job applicant is counted only once a year in the annual averages, regardless of the number of separate job applications made during the year. Similar practice is followed in averaging vacancies: whereas during each month the total number of unfilled vacancies is counted in, regardless of the fact that some vacancies carry over from month to month, the annual averages count each carried over unfilled vacancy just once. The annual averages are shown in Table I-2.

These data, while useful for checking the trade union series, have certain deficiencies both with respect to the measurement of unemployment and for our specific purposes. Not all persons seeking jobs at the exchanges are unemployed: some want to change their jobs, others may be seeking seasonal work. Since persons seeking unemployment relief are generally required to register with the employment exchanges, changes in relief qualifications influence reporting. Strikers, and other persons not working for reasons other than unemployment,

[9] See *Sociala Meddelanden*, No. 5, 1939, p. 339.

[10] *Social Sweden*, Stockholm, Social Welfare Board, 1952, p. 412, and Harrison Clark, *op.cit.*, Chap. VII.

[11] *Ibid.*

TABLE I-2

Number of Job Applicants per 100 Vacancies at Employment Exchanges, Sweden, 1910-1949

Year	*Applications per 100 Vacancies*	Year	*Applications per 100 Vacancies*
1910	138	1930	183
1911	132	1931	251
1912	125	1932	487
1913	116	1933	685
1914	131	1934	479
1915	137	1935	365
1916	98	1936	262[a]
1917	102	1937	187
1918	139	1938	196
1919	116	1939	173
1920	107	1940	182
1921	282	1941	198
1922	296	1942	147
1923	186	1943	131
1924	171	1944	136
1925	198	1945	131
1926	201	1946	116
1927	210[a]	1947	111
1928	201	1948	118
1929	174	1949	134

[a] Beginning with 1936, vacancies were redefined to exclude state unemployment reserve work, whereas prior to that year such work was included among the vacancies. The effect of this change was to reduce the number of vacancies and thus increase the relative, particularly during the depression years. The relatives under the new concept were calculated back to 1927, and are shown here. The old series from 1927 to 1934 was as follows:

1927	198	1931	236
1928	192	1932	413
1929	169	1933	545
1930	178	1934	392

See *Sociala Meddelanden*, 1936, No. 2, p. 73.

Source: 1910-1914—*Sociala Meddelanden*, 1915, No. 3, p. 267. 1915-1920—*Ibid., passim.* 1921-1926—*Ibid.*, 1936, No. 2, p. 73. 1927-1936—*Ibid.*, 1937, No. 2, p. 82. 1937-1950—*Ibid., passim.*

may also register at the exchanges. Nor do the published figures permit the computation of a rate of unemployment, since the number of job seekers is related to vacancies reported by employers[12] rather than to the employed population catered to by the exchanges.

When the year-to-year *trend* of unemployment indicated by the

[12] It should also be noted that employer notification of vacancies may vary cyclically. In periods of manpower shortage there is apt to be more adequate notification than during periods of unemployment, when the employer can rehire old employees at the gate.

employment exchanges data is compared with the trade union series, it appears that except for the period 1920-1923, the two series have moved in much the same manner,[13] although the drop in unemployment from 1933 to 1937 was relatively greater according to the employment exchange data. From 1920 to 1921, however, the relative increase in unemployment as indicated by the trade union series was much greater than according to the employment exchange series, and similarly with the decline in unemployment from 1921 to 1923. The reasons for this divergence have not been established. A possible source of discrepancy is the fact that from 1920 to 1923, state relief work was included with vacancies (see note to Table I-2), so that while union members on relief work would normally have been reported unemployed, they would not have affected the supply-demand ratio at the labor exchanges. Nevertheless, the magnitude of the discrepancy does throw some doubt upon the validity of the very high unemployment rates for 1921 and 1922 in the trade union series.

UNEMPLOYMENT INSURANCE DATA

The Swedish unemployment insurance system is organized along the lines of the Ghent System, with the basic operating units being state-subsidized trade union unemployment funds. The present state system first came into effect in 1934, although many trade unions had previously operated funds without state assistance. In that year the funds were opened, on a voluntary basis, to all persons working in the particular trade.[14] In order to receive benefits, an unemployed person must register for work with a public employment exchange. In 1950 some 1,100,000 persons were insured under the state scheme, a great increase over the 181,000 workers covered in 1938.

The unemployment fund rates of unemployment represent the relationship between the total number of weeks of unemployment during a month and the total possible weeks of work during that month (i.e. the membership of the fund multiplied by elapsed weeks). An unemployed worker is exempted from the payment of his normal contribution to the unemployment fund, and it is this number of "free-stamped" weeks which is reported as weeks of unemployment. In most cases, the fund secretary, who is usually also the local union secretary, makes the determination as to an individual's unemployment status. Registration at an employment exchange is *not* required for "free stamping," though it is required for the receipt of benefits.

[13] The correspondence is a rough one at best. There are variations for individual years in addition to those indicated in the text.

[14] *Social Sweden*, p. 420.

Since these statistics are based upon "free stamping" of the unemployment books rather than upon weeks of benefit payment, they tend to be more comprehensive than the usual unemployment insurance statistics. While in general they are based upon the same principle as the trade union unemployment series, there are some differences:

1. The coverage of the unemployment fund statistics is somewhat broader than that of the trade union series, including musicians, barbers, commercial white collar workers, hotel and restaurant personnel, foremen, and other groups not included in the trade union reports.

2. There is an eight-week period of grace for the payment of the unemployment fund contribution, so that there is a lag in the reporting of unemployment, since the weeks of employment are reported in the accounting period when "free stamping" is granted. This lag is more significant for the monthly than for the annual averages.[15]

The unemployment insurance fund percentages are shown in Table I-3 for the period 1936-1951. Comparison of these figures with the

TABLE I-3

Percentage of Member-Weeks of Unemployment among Members of the Unemployment Insurance System, Sweden, 1936-1951

Year	*Per Cent of Unemployment*	*Year*	*Per Cent of Unemployment*
1936	11.4	1945	5.1
1937	8.9	1946	4.0
1938	7.2	1947	3.9
1939	6.4	1948	4.4
1940	7.9	1949	3.9
1941	8.6	1950	3.5
1942	5.2	1951	2.7
1943	4.9		
1944	5.1		

Source: *Sociala Meddelanden.*

trade union data reveals that from 1936 to 1943 they were somewhat lower than the latter; the maximum divergence was 3.9 per cent in 1940, and the average divergence for the period was 2.4 per cent of unemployment. From 1944 to 1951 the unemployment insurance fund percentage consistently exceeded the trade union unemployment percentages, the average excess for the period being 1.0 per cent of unemployment.

[15] See *Sociala Meddelanden*, No. 4, 1942, p. 322.

OTHER STATISTICS

Beginning with 1922, data on the number of unemployment relief applicants were collected on a systematic basis. The difficulty with these data, however, is that the local administration of relief has varied considerably. ". . . the number of applications for relief at the local committees has always been strongly affected by the prospects of getting relief. If the committee has a reputation for generosity, many will come who are not really in need, and the reverse is also true."[16] Relief rolls were often padded by local communities in order to qualify for or increase the subsidy from the central government. The conclusion has been reached that the relief statistics do not represent "either the number of unemployed or the number needing relief."[17]

There are several employment series published regularly. The Royal Social Board has published monthly since 1939 an index of employment in manufacturing, which continued an annual series beginning in 1911. There is also an older series, no longer published, representing evaluations of employment conditions by employers, ranked in five grades from poor to good. These employment series are not suitable for the measurement of unemployment.

SUMMARY

The trade union series constitutes the best long-term index of Swedish unemployment. With respect to international comparison, it has the following characteristics:

1. For recent years only, the coverage goes beyond manufacturing, mining, and building. It includes in addition those unions covering commerce, municipal workers, and trucking. The weight of the latter groups (in terms of reported membership) was 20 per cent at the end of 1950.

2. The returns have not been confined to unions which pay unemployment benefits, though since 1934 the process of reporting unemployed members and weeks of unemployment among insured members has been closely parallel.

3. In general, unemployment due to labor disputes and illness is excluded.

4. The trade union percentages are generally believed by Swedish economists to constitute a good index of unemployment for the sector of the economy covered and within the definition of unemployment used.

[16] Clark, *op.cit.*, p. 73.
[17] *Ibid.*, p. 72.

Appendix J:
The United Kingdom

The three major continuous unemployment series available for the United Kingdom are the trade union series, the unemployment insurance series, and the series giving the number of unemployed persons on the registers of the employment exchanges.

TRADE UNION SERIES

The trade union unemployment series was constructed from monthly reports, submitted in the early years to the Board of Trade and later to the Ministry of Labour, by trade unions paying out-of-work benefits. In these monthly returns, the trade unions reported (1) the total number of their members and (2) the number of members wholly unemployed at the end of the month whether in receipt of unemployment benefit or not. With this information at their disposal, the authorities were able to calculate monthly unemployment percentages by comparing the number of trade unionists reported unemployed with the membership of the reporting unions. Annual trade union percentages (1881-1926), averages of the monthly percentages, are presented in Table J-1. The series, which extends back to 1851, was discontinued in 1926. Some further characteristics of the series are set forth below.

1. The trade union unemployment reports excluded workers who were sick, superannuated, on strike, or locked out from the total number reported unemployed each month. In addition to being excluded from the numbers unemployed, persons on strike or locked out were also excluded from the membership figures used in calculating percentages.

2. The accuracy of the union reports is generally held to be quite good. Beveridge described the caliber of the reporting as follows:

> "The unions making returns are asked to include all their unemployed members whether in receipt of benefit or not. The great bulk of them continue their payments for periods so considerable that those who at any time have run out of benefit are a very small fraction of all the unemployed. Even as to these the obligation to register generally remains; the rules almost invariably provide that all members out of work must sign the vacant book regularly whether in receipt of benefit or not. Nor is the obligation to register merely formal. In a good many unions, even after the actual allowance has come to an end, members continuing to sign the books are excused from payment of their contributions. . . .

"There is, therefore, no reason to doubt the substantial completeness of the returns made, at least as to the members who are wholly unemployed."[1]

TABLE J-1

Unemployment among Trade Union Members, United Kingdom, 1881-1926

YEAR	COVERAGE (*thousands*)	PER CENT UNEMPLOYED[a]	
		Uncorrected	*Corrected*[b]
1881	140	3.5	3.55
1882	151	2.3	2.35
1883	160	2.6	2.6
1884	167	8.1	7.15
1885	169	9.3	8.55
1886	168	10.2	9.55
1887	164	7.6	7.15
1888	168	4.9	4.15
1889	188	2.1	2.05
1890	213	2.1	2.1
1891	229	3.5	3.4
1892	234	6.3	6.2
1893	329	7.5	7.7
1894	368	6.9	7.2
1895	391	5.8	6.0
1896	423	3.3	3.35
1897	458	3.3	3.45
1898	458	2.8	2.95
1899	494	2.0	2.05
1900	525	2.5	2.45
1901	531	3.3	3.35
1902	538	4.0	4.2
1903	550	4.7	5.0
1904	567	6.0	6.4
1905	569	5.0	5.25
1906	586	3.6	3.7
1907	661	3.7	3.95
1908	689	7.8	8.65
1909	698	7.7	8.7
1910	703	4.7	5.1
1911	759	3.0	3.05
1912	834	3.2	
1913	922	2.1	
1914	993	3.3	
1915	922	1.1	
1916	939	0.4	
1917	950	0.7	
1918	1,117	0.8	
1919	1,334	2.4	

(continued on next page)

[1] William H. Beveridge, *Unemployment, a Problem of Industry*, London, Longmans, 1909, p. 19.

TABLE J-1 (continued)

YEAR	COVERAGE (*thousands*)	PER CENT UNEMPLOYED[a]	
		Uncorrected	*Corrected*[b]
1920	1,603	2.4	
1921	1,235	14.8[c,d]	
1922	1,360	15.2	
1923	1,145	11.3	
1924	1,084	8.1[d]	
1925	978	10.5	
1926	833	12.2[c]	

[a] Trade union percentages based on returns collected by the Board of Trade and the Ministry of Labour from various trade unions which paid unemployment benefit; persons on strike or locked out, sick or superannuated are excluded. Percentages for some of the earlier years are partly computed from the expenditure of the several unions on unemployment benefit.

[b] The nature of the correction applied by the Board of Trade is discussed in the text.

[c] Affected by general coal mining stoppage.

[d] Figures from 1921 on exclude pottery trade operatives. From July 1924 building trade operatives are also excluded from the general average.

Source: *Fourteenth Abstract of Labour Statistics*, London, Board of Trade, 1911, p. 2. *Twenty-second Abstract of Labour Statistics*, London, Ministry of Labour, 1937, p. 48.

Further, since the labor unions served in many instances as labor exchanges, unemployed members who sought work at the labor union offices were brought to the attention of the union secretaries. Thus, to abide by union rules, to collect benefit, to be excused from payment of contributions, and to find work, unemployed members had good reason to make their unemployment known to the union officials charged with submitting the monthly unemployment reports to the authorities.

3. The membership of the reporting trade unions (see Table J-1) expanded from 140,000 in 1881 to 525,000 in 1900. By 1910, the number covered by the returns had reached 703,000, followed by coverage of well over a million in the years 1918-1924. After reaching a peak of 1,603,000 in 1920, the number covered contracted until in 1926, the last year of the series, membership in the reporting unions stood at 833,000. From 1900 to the outbreak of World War I, the membership of the reporting unions included about one-fourth of the total membership of trade unions and other employees' associations in Great Britain and Northern Ireland.[2] After the war, this fraction fluctuated from about one-sixth to about one-fifth.

[2] *Twenty-second Abstract of Labour Statistics*, London, Ministry of Labour, 1937, p. 137. The statistics relate to all organizations of employees, including those

The census of 1921 for Great Britain enumerated approximately 7.74 million employees with occupations in manufacturing, mining, quarrying, and building. Included in this figure are 555,660 general laborers or other unskilled workers. The union sample therefore represented from approximately one-fifth to a little over one-tenth of the total number of employees enumerated in the above named activities in 1921. Unfortunately, the census figures do not show wage and salary earners separately, therefore it is not possible to compare the membership of the reporting trade unions with the number of wage earners alone.

4. The industrial coverage of the trade union sample depended upon the development of trade union schemes providing for the payment of unemployment benefits in the various trades. Since out-of-work payments were first instituted among unions in the engineering, shipbuilding, and metal trades, unionists in these trades are more heavily represented in the union sample in the earlier years of the series. In the years 1881-1890, these groups accounted for nearly 60 per cent of the total membership represented in the returns. For 1894, 1908, and 1921, the industrial percentage distribution of the trade union sample in the United Kingdom was:

Trade	*1894*	*January 1908*		*December 1921*	
Building	21	9.4	14.8	6.8	13.1
Woodworking and furnishing		5.4		6.3	
Coal mining	19	19.5		12.7	
Engineering and shipbuilding	46	34.2	39.1	37.4	42.6
Other metal		4.9		5.2	
Printing, bookbinding, and paper	10	8.7		7.1	
Textiles	3	14.5		11.4	
Clothing	0	0		9.6	
Pottery	0	0		2.4	
Miscellaneous	1	3.4		1.1	
Total	100	100		100	

Sources: 1894 and 1908—William H. Beveridge, *Unemployment, a Problem of Industry*, London, Longmans, 1909, p. 19. 1921—*Ministry of Labour Gazette.*

The trade union sample was drawn mainly from manufacturing, mining, and building with workers in agriculture, transportation, communications, domestic service, government, and commerce excluded.

of salaried and professional workers, as well as those of manual wage earners, which are known to include among their functions that of negotiating with employers about regulating the conditions of employment of their members.

Of the trades covered by the returns, the shipbuilding, engineering, and metal (three highly fluctuating trades) were overrepresented.

5. Since the composition of the trade union sample changed over time, the Board of Trade, in an effort to put the percentages on a comparable basis, constructed "corrected" trade union unemployment percentages. This was done by averaging the unemployment rate for the engineering, shipbuilding, and metal groups, taken together, and the mean of the unemployment rates for all other groups (see Table J-1).[3] In the years 1881-1911, the maximum deviation between the corrected percentages and the unadjusted percentages was 1.0 percentage point. In thirteen of these 31 years, the deviations were 0.1 percentage point or less. For nine of the years, the unadjusted percentages exceeded the corrected, for two there was no difference, and for the remaining years, the corrected percentages stood slightly above the unadjusted figures. The conclusion indicated by this comparison is that the correction which the Board of Trade applied did not affect the trade union percentages to any significant degree in the years 1881-1911. Furthermore, the arbitrary system of averaging which the Board of Trade adopted does not in the least insure that the "corrected" percentages represent a more correct estimate of unemployment than do the unadjusted figures.

6. A memorandum of the Ministry of Labour in the *Survey of Industrial Relations* referred to one other property of the trade union sample as follows: "Moreover, unskilled and casual labour is insufficiently represented in the returns, which relate mainly to skilled workmen."[4] For example, in the tobacco trade, unionists represented in the returns were largely cigar makers, while in the building trades, they were mostly carpenters and joiners.

7. The trade union percentages are considered to be a valid index of unemployment for the years covered by the series. The Committee on Industry and Trade stated that this had been confirmed by certain calculations of Bowley in 1912 and by the figures provided by the introduction of unemployment insurance.[5]

8. Several analyses indicate that the trade union rates of unemploy-

[3] For example, in 1908 the unemployment percentage for the engineering, shipbuilding, and metal trades was 12.5 while for all other unionists covered by the returns it was 4.8. Therefore the "corrected" percentage was 8.65 for this year. In the same year the unadjusted trade union rate was 7.8, the highest annual rate for the years between 1900 and 1914 (see *Fifteenth Abstract of Labour Statistics*, London, Board of Trade, 1912, p. 2).

[4] *Survey of Industrial Relations*, London, Committee on Industry and Trade, 1926, p. 218.

[5] *Ibid.*, p. 245.

ment did not substantially falsify the level of unemployment of wholly unemployed persons in the trades covered by the union returns.

Beveridge has presented a detailed analysis of the trade union series in an effort to determine, "how far the unemployment rate derived from trade union returns before 1914 can be taken as a guide, not merely to the direction in which unemployment was moving at any moment, that is to say its rise or fall, but also to the general level of unemployment over a period of years."[6] His analysis takes account of the following factors:

1. Coverage of the trade union series was limited to trade unionists in the trades covered. He concluded that a reduction of one-sixth, i.e. from 4.8 (the average for the years 1883-1913), to 4.0 should correct for this point.

2. Unemployment insurance records after World War I covered a greater variety of industries. No correction is needed here since in Beveridge's words: "It is safest to regard the occupations covered by the trade union returns, as having had on an average much the same general level of unemployment as all occupations taken together, though less in good times and more in bad times. That is to say, no correction either way should be made on account of the narrower occupational basis of the trade union unemployment rate."

3. The bases of the trade union and of the unemployment insurance schemes were not only different from one another but each of them changed from time to time. Beveridge suggested that an upward correction of 1 percentage point be applied to the trade union average, raising it to 5 per cent.

4. To account for the more complete recording of unemployment by the insurance statistics, Beveridge raised the union average by another percentage point to 6 per cent. Here the major part of the correction was attributed to the fact that the trade union rates did not include those working short time. Also included was allowance for the fact that some unemployment of short duration and some of extremely long duration failed to be included in the union returns.

Beveridge concluded his analysis with the suggestion that 6.0 per cent is the most probable rate of prewar unemployment to use for comparison with interwar unemployment rates. However, he admitted that this figure could be anywhere from 4.8, the actual recorded trade union average, to 7.0 per cent.

In the final report of the Royal Commission on Unemployment Insurance, there appeared the following evaluation of the average level of unemployment before World War I:

[6] William H. Beveridge, *Full Employment in a Free Society*, London, G. Allen, 1945, pp. 328-335.

". . . there is, however, little doubt that the postwar average figure of 13 per cent is much higher than would have been shown by prewar experience had corresponding statistics been available. The experience of the trade unions which gave unemployment benefit was examined when the 1911 and 1920 Acts were prepared, and the estimate then reached of unemployment for the industries at present included in the insurance scheme in the twenty years before the war was an average of about 4 per cent."[7]

Actually the average of the trade union rates for the twenty years before the war (1894-1913) was 4.3 per cent.

Thus these two analyses appear to confirm the validity of the trade union percentages as a measure of the average level of unemployment over a period of years. The Royal Commission cited an estimate of about 4 per cent for the twenty years before World War I, only 0.3 percentage points below the trade union average for these years. Beveridge's estimate of approximately 6 per cent for the years 1883-1913 includes a correction for short time. If only total unemployment be counted, Beveridge's figure would be about 5.5 per cent. The average of the trade union rates, 1883-1913, was 4.8, just 0.7 percentage points below Beveridge's figure.

9. The only statistical information available to gauge the value of the trade union series as an absolute measure of unemployment at particular times is the unemployment statistics of the unemployment insurance schemes from the last months of 1912 through 1926, the year in which the trade union series terminated. In Table J-2 the annual averages of the trade union percentages and of the unemployment insurance unemployment percentages for these years are compared.

John Hilton, former Director of Statistics, Ministry of Labour, who compared the monthly trade union percentages with those of the unemployment insurance schemes for the months September 1912 through December 1922, concluded:

"The experience which has been gained since the records of the proportions unemployed among insured workpeople became available, suggests that in times of good employment the Trade Union percentage has approximated very closely to the general percentage unemployed, but that in times of serious depression the over representation of the engineering and shipbuilding trades in the figures has (as was believed to be the case) tended to raise the general percentage for all unions included to a level appreciably too high

[7] *Final Report of the Royal Commission on Unemployment Insurance*, London, 1932, pp. 85-86.

TABLE J-2

Comparison of Trade Union and Unemployment Insurance Unemployment Rates, United Kingdom, 1912-1926

(*per cent*)

YEAR	TRADE UNION UNEMPLOYMENT		UNEMPLOYMENT INSURANCE UNEMPLOYMENT[a]	
	Unadjusted[b]	*Adjusted*[c]	*Wholly Unemployed*[d]	*Wholly and Temporarily Unemployed*[e]
1912	3.2	3.3		
1913	2.1	2.1	3.6	
1914	3.3	3.3	4.2	
1915	1.1	1.1	1.2	
1916	0.4	0.4	0.6	
1917	0.7	0.6	0.7	
1918	0.8	0.8	1.3	
1919	2.4[f]	2.1[f]	5.2[g]	
1920	2.4	2.0	3.2[h]	
1921[i]	14.8	13.5	13.8	17.0
1922	15.2	12.8	13.3	14.3
1923	11.3		11.4[j]	11.7
1924	8.1		n.a.	10.3
1925	10.5		n.a.	11.3
1926	12.2[k]		8.9[k]	12.5[k]

[a] Coverage of the unemployment insurance statistics expanded in 1916 and in 1920.

[b] Data from Table J-1.

[c] John Hilton, "Statistics Derived from the Working of the Unemployment Insurance Acts," *Journal of the Royal Statistical Society*, March 1923, pp. 190-191. Hilton weighted the trade union percentages for various industrial groups by the estimated number of workers in each, instead of in the proportions in which each group was represented in the trade union returns. The annual figures above are averages of Hilton's monthly data.

[d] 1913-1922—Hilton, *op. cit.*, pp. 190-191. Averages of monthly data. 1923-1926—*Ministry of Labour Gazette.*

[e] Data from Table J-5.

[f] Trade union rates did not adequately reflect unemployment among workers in general in this year. Out-of-work donation records, the records of the scheme which temporarily replaced unemployment insurance during 1919, showed a rise from 365,000 at the beginning of January 1919 to a maximum of 790,000 early in March. For discussion of unemployment in 1919, see Hilton, *op. cit.*, pp. 183-184, and Arthur C. Pigou, *Aspects of British Economic History, 1918-1925*, London, Macmillan, 1947, pp. 9-21.

[g] The average of unemployment insurance rates for January, February, November, and December of 1919 is 8.2. Since data are not available for other months, it was assumed that the average for these months bore the same relation to the annual average as in 1920.

[h] Average of eleven months.

[i] Before December 1921, the figures relate to Great Britain and Ireland; after this date they relate to Great Britain and Northern Ireland.

[j] January-October.

[k] Affected by coal mining strike.

to represent accurately the average proportion of workpeople unemployed in the country as a whole."[8]

In this conclusion, Hilton refers to *all workers*, including those in agriculture, railroads, domestic service, and government. Undoubtedly the overstatement in bad times, referred to above as appreciable, would be somewhat less pronounced if the comparison were limited to workers in manufacturing, building, and mining.

The Committee on Industry and Trade in its report of 1926 commented as follows:

> "The other check upon the trade union index is that which has recently been made possible by the institution of Unemployment Insurance. It will be seen from reference to p. 33 that a comparison between the percentage of insured workpeople unemployed with the trade union figure indicates that the latter is not only a fairly reliable index but even a tolerable measure of unemployment."[9]

The years after 1900 up to World War I, except for 1908 and 1909, were years of good employment. If Hilton's conclusion to the effect that the trade union percentages approximate very closely the level of unemployment in times of good employment can be carried back this far (he studied the period 1912-1922), the trade union percentages can be taken to approximate, perhaps rather roughly at times, the level of unemployment in these years. For the years 1908 and 1909, there may be some overstatement of the level of unemployment because of the overrepresentation of the engineering, shipbuilding, and metal groups. Several considerations indicate that this overstatement could not have been very serious. Comparison with the unemployment insurance statistics revealed that in the depression of the early 1920's, much more severe than that of 1908-1909, the maximum divergence between the trade union percentages and the unemployment insurance percentages was 1.9 percentage points (Table J-2). In 1921, the shipbuilding, engineering, and metal groups constituted 42.6 per cent of the union sample, whereas in 1908 it constituted 39.1 per cent. Further, as revealed in Table J-3, in the 1920's the unemployment percentages of this group stood higher relative to those of other groups than in 1908-1909 and therefore influenced the average for all groups more in the 1920's than in 1908-1909. Therefore, there is reason to suppose that the overstatement in 1908-1909 was not as great as in 1921.[10]

[8] Hilton, *op.cit.*, p. 182.

[9] *Survey of Industrial Relations*, p. 245.

[10] William A. Berridge in his article, "Employment and the Business Cycle," *The Review of Economic Statistics*, January 1922, pp. 12-51, compared cycles derived from the trade union percentages, 1903-1914, for all trades with those de-

TABLE J-3

Trade Union Unemployment Rates for Various Industrial Groups, United Kingdom, Selected Years, 1907-1926

Year	All Unions	Engineering, Shipbulding, and Metal	Carpenters and Joiners	Other Wood-working and Finishing	Printing and Bookbinding
1907	3.7	4.9	7.3	4.6	4.3
1908	7.8	12.5	11.6	8.3	5.5
1909	7.7	13.0	11.7	7.6	5.6
1921[a]	14.8[b]	22.1	3.9	9.4	7.3
1922	15.2	27.0	7.5[c]	7.6	6.6
1923	11.3	20.6	5.0[c]	5.8	4.7
1924[b]	8.1	13.8	1.9[c]	4.5	3.3
1925	10.5	13.5	2.2[c]	4.4	2.8
1926[a]	12.2	18.2	5.2[c]	8.2	4.3

[a] Affected by general coal mining stoppage.

[b] Figures from 1921 onward exclude pottery trade operatives. From July 1924 onward building trade operatives are excluded from the general average.

[c] Average of quarters.

Source: *Twentieth Abstract of Labour Statistics*, London, Ministry of Labour, 1931, p. 72.

UNEMPLOYMENT INSURANCE STATISTICS[11]

Since the enactment of the first National Unemployment Insurance Act of 1911, unemployment percentages are available for persons compulsorily insured against unemployment. These statistics are described below.

1. The coverage of the unemployment insurance statistics, shown in Table J-4, has expanded with the broadening of the unemployment insurance schemes. At the time when the first act came into operation in 1912, the statistics included about 2.1 million workers, sixteen years of age or older, engaged in the following lines of activity: building, construction of works, shipbuilding, engineering, construction of vehicles, and sawmilling.[12] The scope of the statistics was extended by the acts of 1916 and of 1920. The former act, which brought approximately 1.5 million additional persons under unemployment insurance, covered workers occupied in machine woodwork, the repair of metal goods, the manufacture of munitions, chemicals, meats, rubber and rubber products, leather and leather products, bricks, cement, wooden

rived by combining the cycles for four leading industrial groups (engineering, shipbuilding and metals; building; woodworking, etc.; and printing, etc.) both in weighted and unweighted averages. "The three curves agree so closely that it is unnecessary to present them for inspection" (p. 42).

[11] Occasionally these statistics are called employment exchange statistics since the employment exchange authorities administered unemployment insurance.

[12] See page 568 for this footnote.

TABLE J-4

Persons Insured under Unemployment Insurance Schemes, United Kingdom, 1913-1952
(*thousands*)

Year	*Number*[a]	*Year*	*Number*
1913	2,070	1935[c]	13,058[d] 14,003[e]
1914	2,326	1936[f]	14,285[g] 14,909[h]
1915	2,078	1937	15,334
1916	2,029	1938[i]	15,501[j] 15,743[k]
1917	3,632	1939	15,898
1918	3,922	1940[l]	15,194[m] 15,154[n]
1919	3,721	1941	14,918[o] 15,282[p]
1920	4,197	1942	15,438
1921	11,338	1943	15,003
1922	11,432	1944	14,514
1923	11,486	1945	14,000
1924	11,664	1946	15,572
1925	11,892	1947	15,930
1926	12,041	1948[q, r]	16,147[s] 20,820[t]
1927[b]	12,131	1949	20,870
1928	11,882	1950	21,120
1929	12,094	1951	21,216
1930	12,406	1952	21,266
1931	12,772		
1932	12,810		
1933	12,885		
1934	12,960		

[a] July of each year. The figures for 1913-1921 include all of Ireland, while later figures relate to Great Britain and Northern Ireland.

[b] Ages 16 and over through 1927 and 16-64 from 1928 on.

[c] Persons 14-16 became insurable.

[d] Includes those 16-64.

[e] Relates to ages 14-64.

[f] Persons in agriculture came under unemployment insurance in 1936.

[g] Excludes agriculture.

[h] Includes agriculture.

[i] Some classes of domestic workers first insured.

[j] Excludes domestic workers.

[k] Includes domestic workers.

[l] Women aged 60-64 ceased to be insurable in 1940.

[m] Includes women aged 60-64.

[n] Excludes women aged 60-64.

[o] Excludes nonmanual workers earning £250 and not more than £420 per year, who first became insurable in 1940.

[p] Includes nonmanual workers earning £250 and not more than £420 per year.

[q] School-leaving age raised from 14 to 15 in 1947. Figures for 1948 relate to those 15 and over.

[r] Change caused by institution of national insurance.

[s] Insured under Unemployment Insurance Scheme.

[t] Insured under National Insurance Scheme.

Source: *Report on National Unemployment Insurance to July 1923*, 1924, p. 23; *Nineteenth Abstract of Labour Statistics*, 1928, p. 78 and *Twenty-second Abstract of Labour Statistics*, 1937, p. 14 (all London, Ministry of Labour); and *Statistical Abstract for the United Kingdom*, London, Board of Trade, various dates, *passim*.

cases, artificial stone, and other artificial building materials. The act of 1920 was responsible for a large expansion of coverage. It increased the number of persons insured to well over 11 million by applying unemployment insurance to all persons, sixteen years of age or over, who were employed under a contract of service or apprenticeship (except apprentices without money payments) and, if nonmanual workers, received remuneration not exceeding £250 a year. The principal persons excluded from the scheme were those occupied in agriculture, forestry, horticulture, and private domestic service.[13] Thus the total number insured under the Act of 1920 included nonmanual workers earning less than £250 a year and engaged in an insurable trade, workers in manufacturing, mining, transportation, fishing, gas, water, electricity, the distributive trades, commerce, banking, insurance and finance.[14] Table J-6 below shows the industrial distribution of the insured population together with the census count of the number of insurable persons engaged in these industries on April 27, 1931.[15] The industrial classification employed in the insurance statistics was the same as that employed in the census.

[12] Industrial representation in the insurance year 1913-1914 was as follows:

Trade	*Number Insured*	*Proportion*
Building	812,659	35.0
Construction of works	144,231	6.2
Shipbuilding	264,217	11.3
Engineering	817,931	35.2
Construction of vehicles	209,985	9.0
Sawmilling	12,029	0.5
Others	64,546	2.8
Total	2,325,598	100.0

Source: *Nineteenth Abstract of Labour Statistics*, London, Ministry of Labour, 1928, p. 33.

[13] Also excluded were (1) persons in military service, (2) permanent members of any police force, (3) teachers, (4) agents paid by commission or fees, or a share in the profits, who are mainly dependent on earnings from some other occupation or who are ordinarily employed as agents for more than one agency, (5) nonmanual workers earning over £250 a year (note that for manual laborers, coverage is independent of the rate of remuneration), (6) casual workers occupied other than for the purposes of the employer's trade or business, (7) workers coming under special orders who are engaged in certain subsidiary employments which are not their principal means of livelihood, (8) crews of fishing vessels wholly remunerated by shares of profits or gross earnings, and (9) female nurses.

[14] These last three groups were included under Special Schemes.

[15] The term *insurable person* refers to those persons meeting the necessary requirements to be covered by unemployment insurance. The census data are adjusted to this concept by excluding those under 16 years of age, those 65 years of age and over, and those listed as managers, all of whom did not qualify for unemployment insurance coverage in 1931.

As from May 4, 1936, persons in agricultural occupations (except private gardeners who were not included until February 1937) were included in the statistics. In April 1938, certain classes of domestic employments were brought under the insurance schemes, while in September 1940, nonmanual workers with a rate of remuneration exceeding £250 but not exceeding £420 were also included.

The base of the statistics was further enlarged with the enactment of the National Insurance Scheme of 1948. Under this scheme, the total number of persons, aged fifteen or over, who work for pay or gain or who register themselves available for such work became insurable. The statistics came to include private indoor domestic servants and nonmanual workers with a rate of remuneration exceeding £420, two groups which were formerly uninsurable.

2. The age groups included in the statistics have shown some variation. Until 1928, the persons included were aged sixteen and over. In 1928, persons sixty-five and over were excluded. In 1934, the minimum age of persons covered by the statistics was lowered from sixteen years to the age (not less than fourteen years) at which juveniles were no longer required by law to attend school. Women aged sixty and under sixty-five were excluded in 1940. In 1947, when the school leaving age was raised from fourteen to fifteen, the age groups included were fifteen through sixty-four for males and fifteen through fifty-nine for females. After mid-1948, all persons over fifteen came to be included in the statistics.

3. The count of the total number of insured persons is made in conjunction with the renewal of the unemployment insurance books which are issued to all insured persons. Formerly, such a count was made once a year in July. In 1948, insurance books of different colors (marked A, B, C, and D) were issued at random and all cards of the same color are now exchanged at quarterly dates. Thus the count of the insured is now based on random 25 per cent samples at the end of each quarter.

4. Upon becoming unemployed, insured persons are required to lodge their books at an employment exchange in order to claim benefit and to seek new employment. Upon resumption of employment, the insurance book is removed and deposited with the new employer. The determination of the number of insured persons unemployed, which was the figure used in computing percentages before mid-1948, was accomplished by counting the number of books lodged at the employment exchanges on the Monday nearest the middle of the month. Persons sick, incapacitated, disqualified from benefit under the trade dispute regulation, or who refused a suitable offer of employment

were excluded. Before September, 1937, the following groups constituted the number of insured unemployed:

a. Persons whose claims had been admitted for insurance benefit
b. Persons whose applications had been authorized for unemployment allowances
c. Persons whose claims were under consideration
d. Other insured persons not in receipt of allowances but who maintained registration at an employment exchange
e. Persons under the Special Schemes for banking, insurance, and, after 1936, agriculture, with claims to benefit
f. Persons whose books were in the "two months file"[16]

Usually, the persons in categories a and e constituted the major part of the total number of insured unemployed. The numbers in category f were generally not large.

The system of counting the insured unemployed was altered on several occasions. The effects and nature of these changes are shown below:[17]

MONTH AND YEAR	NATURE OF THE CHANGE IN COUNTING THE NUMBER OF INSURED UNEMPLOYED	NUMBER OF INSURED UNEMPLOYED IN GREAT BRITAIN (THOUSANDS)	
		Old Count	*New Count*
September 1937	Before this date, all persons with books lodged on the Monday of the count were included; after this date, all persons who, during the week subsequent to the count, were found to have actually been in employment on the Monday of the count, even though their books remained lodged at an exchange, were excluded.	1,420	1,373
January 1939	Before this date, the figures related to persons who were maintaining registration at the exchanges and to persons whose books were in the "two months file"; after this date, the latter group was excluded.	2,125	2,035
January 1941	From this date, the figures excluded persons who had been classified as unsuitable for ordinary employment.	681	653
June 1948	A new procedure for counting the unemployed, described below, was instituted in July. The *Labour Gazette* gave the results of counting by the old and new methods for June.	274	286

[16] This file contained the books of persons for whom no information was available as to whether they were sick, deceased, had emigrated, or had obtained em-

The effect of each of these changes[18] on the unemployment percentages (based on some 12 to 15 million insured persons in the 1930's and about 15 to 16 million in the 1940's until 1948) is small. However, it must be recognized that in making comparisons of the percentages for the postwar period up to 1948, with those before 1937, changes in the methods of counting have tended to reduce the former relative to the latter. The change which occurred in mid-1948 is described as follows in the *Labour Gazette*:

> "Hitherto the published figures of unemployment have represented the numbers of persons insured under the Unemployment Insurance Acts who were registered at the Employment Exchanges as unemployed, i.e. who had fallen out of insurable employment. The number of persons insured under the new scheme who register for employment at Employment Exchanges may include in addition to those who have fallen out of work, some nonemployed insured persons registered for their first job. . . . It has therefore been decided to include in the statistics of unemployment all persons registered at Employment Exchanges with the exception of (a) persons in employment who are registering for a change of job and (b) registered disabled persons who require employment under sheltered conditions."[19]

As shown above, this change added 12,000 persons to the number unemployed in June 1948.

5. For most years of the unemployment insurance series, which is shown in Table J-5, separate figures are given for the numbers wholly unemployed and temporarily unemployed. The *Labour Gazette* defined temporary unemployment as follows:

> "The figures under the heading 'temporary stoppages' include those persons recorded as unemployed on the date of the return who were either on short time or were otherwise stood off or suspended

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ployment in an uninsured trade. Such books were included in the count of the insured unemployed for a period of up to two months from the date the person had last been in contact with the employment exchange. Regular form letters were sent to persons losing contact with the exchange in an effort to ascertain their employment status.

[17] R. B. Ainsworth, "Labour Statistics," in *Sources and Nature of the Statistics of the United Kingdom*, Maurice G. Kendall, Editor, London, Oliver & Boyd, 1952, Vol. 1, p. 80. The data for June 1948 were obtained from the *Ministry of Labour Gazette*, January 1949, p. 2.

[18] One further change which took place in July 1940 was the exclusion of men in attendance at government training centers, who were unemployed when they entered the centers.

[19] *Ministry of Labour Gazette*, August 1948, p. 260.

TABLE J-5

Unemployment Rates, Insured Population, United Kingdom, 1921-1952

YEAR	WHOLLY AND TEMPORARILY UNEMPLOYED		WHOLLY UNEMPLOYED	
	Excluding Agriculture[a]	*Including Agriculture*[b]	*Excluding Agriculture*[c]	*Including Agriculture*[b]
1921[d]	17.0		13.8	
1922	14.3		13.3	
1923	11.7		11.4[e]	
1924	10.3		n.a.	
1925	11.3		n.a.	
1926	12.5[f]		8.9[f]	
1927	9.7		7.4	
1928	10.8		8.2	
1929	10.4		8.2	
1930	16.1		11.8	
1931	21.3		16.7	
1932	22.1		17.6	
1933	19.9		16.4	
1934	16.7		13.9	
1935	15.5		13.1	
1936	13.1		11.2	
1937	10.8	10.0	9.3	8.5
1938	12.9	11.0		9.5
1939	10.5	9.5		8.0
1940		6.0		5.0
1941		2.0		1.5
1942		1.0		1.0
1943		0.5		0.5
1944		0.5		0.5
1945		1.0		1.0
1946		2.5		2.5
1947		3.0		2.0
1948		1.6[g, h]		1.6[g, h]
1949		1.6		1.6
1950		1.6		1.6
1951		1.3		1.2
1952		2.1		1.7

[a] 1921-1927—16 years of age and over; 1928-1939—16-65 years of age.

[b] 1937-1939—14-65 years of age; 1940-1947—males aged 14-65 and females aged 14-60; 1948-1952—15 years of age and over.

[c] 1921-1927—16 years of age and over; 1928-1937—16-65 years of age.

[d] Great Britain and Ireland to December 1921; Great Britain and Northern Ireland thereafter.

[e] January-October. [f] Affected by the coal mining strike.

[g] For 1948 and on the rates relate to all registered unemployed insured under the National Insurance Scheme, 15 and over, excluding only registered disabled persons requiring employment under sheltered conditions.

[h] July-December.

Source: *Ministry of Labour Gazette*, January 1940, p. 2; International Labour Organisation's *Yearbooks of Labour Statistics*.

on the definite understanding that they were to return to their former employment within a period of six weeks from the date of suspension. In cases where there was no definite prospect of return within six weeks, the individuals have been included in the statistics as 'wholly unemployed.'"[20]

Thus, the classification "temporarily stopped" or "temporarily unemployed" embraces certain types of partial unemployment, partial both in the sense that the work week is shortened and that the employment contract is not definitely broken.

6. At mid-1948, there was the following change in the method of calculating the unemployment percentages:

"Hitherto the percentage rate of unemployment has been obtained by expressing the insured registered unemployed as a percentage of the estimated total insured under the Unemployment Insurance Acts. Because the unemployment statistics now cover a wider field, the percentage rate of unemployment will in the future be obtained by expressing the total number of unemployed persons on the registers as a percentage of the estimated total industrial population (i.e. the estimated total in civil employment together with the registered unemployed).[21]

The effects of this change on the unemployment percentages can be appreciated by noting that in July 1948, there were 15.76 million persons insurable under the old Unemployment Insurance Acts in Great Britain,[22] whereas the number in civil employment and the registered unemployed amounted to 19.4 million.[23]

7. Since unemployed insured persons have been included in the count of the insured unemployed, *whether receiving unemployment benefit or not*, as long as they maintained registration at an employment exchange, the effects of exhaustion of the right to unemployment benefit do not influence the percentages to any great extent. In the depression years of the 1930's, the *Labour Gazette* pointed out that the unemployed maintained registration at an employment exchange for the following reasons:[24]

a. To receive unemployment benefit
b. To obtain assistance in obtaining employment

[20] *Ibid.*, February 1926, p. 54.
[21] *Ibid.*, August 1948, p. 260.
[22] *Ibid.*, February 1949, p. 41. Of the total, 183,000 males and 173,000 females were under 16 years of age.
[23] *Ibid.*, October 1948, p. 329.
[24] *Ibid.*, April 1932, p. 129.

c. To have their health insurance cards franked during unemployment so as to avoid payment of health insurance
d. To meet the condition for receipt of public assistance imposed in the cases of all able-bodied applicants by the Public Assistance Authorities

Thus most unemployed insured persons came to register at an employment exchange and are therefore included in the count of the unemployed.

This assertion is confirmed by the results of the census of April 27, 1931, insofar as it relates to the industries wholly covered by unemployment insurance. The data in Table J-6 show that for April 27, 1931, the number of insured males wholly and temporarily unemployed was 1,491,000 (1,101,000 wholly unemployed and 390,000 temporarily unemployed) for the industries shown in the upper part of the table. For the same group of industries on the same date, the census count showed 1,270,000 males out of work.[25] The figures diverge somewhat because some persons temporarily stopped, that is who were working short time or had promise of employment within six weeks, did not report themselves out of work to the census, but were counted among the insured unemployed. The figures for females are at variance, the insurance total being larger than the census total, for reasons discussed below. Thus this comparison of the census and insurance figures indicates that the number of insured unemployed at this date include the total number of unemployed persons in the industries covered and did not understate unemployment because of nonregistration of those who may have exhausted their right to benefit. For other dates, there is no way of explicitly determining the extent to which nonregistration affected the statistics; however, in view of the various provisions for extended benefit during the 1920's and 1930's[26] and of the other reasons for the unemployed to register pointed out above, it does not appear likely that much long term unemployment went unrecorded.

8. Estimates are available which furnish some information on the quantitative effects which certain legislative and administrative changes have had on the numbers of unemployed recorded in the series.[27] These are given below:

[25] Arthur L. Bowley, *Studies in the National Income*, London, Cambridge University Press, 1942, p. 104. The census out-of-work figures have been adjusted by Bowley to include an estimate for Northern Ireland and to exclude persons under 16 years of age and those 65 and over.

[26] See *Nineteenth Abstract of Labour Statistics*, London, Ministry of Labour, 1928, pp. 70-73, and *Twenty-second Abstract of Labour Statistics*, London, Ministry of Labour, 1937, pp. 68-71.

[27] *Ministry of Labour Gazette*, February 1930, p. 50, and March 1935, p. 85.

Date	Nature of Change	Estimated Increase(+) or Decrease(—) Caused in the Live Register[a]
February 1924	Removal of certain special restrictions on the grant of extended benefit	+13,500
August 1924	Relaxation of certain conditions for the receipt of both standard and extended benefit	+70,000
August 1925	Restoration of the special conditions for extended benefit which were removed in February, 1924	—10,000
January 1928	Persons aged 65 and over ceased to be insured under the Unemployment Acts	—25,000
April 1928	Relaxation of conditions for the receipt of benefit	+40,000
July 1928	Institution of the system of franking Health Insurance cards of persons registered at employment exchanges	+25,000
March 1935	Introduction of the Unemployment Assistance Scheme	+10,000 to 20,000

[a] The "Live Register," a term referring to the numbers registered at the employment exchanges, is more inclusive than the number of insured unemployed registered at the exchanges in that it includes uninsured persons as well as insured; however, it does not include those in the "two months file." See below.

Two quantitatively more important changes not appearing above occurred in 1930 and in 1931. The Unemployment Insurance Act of 1930, which came into operation on March 13 of that year, repealed the condition for receipt of benefit "under which a claimant was required to prove that he was genuinely seeking work but unable to obtain suitable employment, and the Transitional condition (c) under which a claimant who had paid 30 contributions in the previous two years had to prove that during that period he had been employed in an insurable employment to such an extent as was reasonable."[28] This relaxation of the "genuinely seeking work" condition caused a number of persons, mostly married women, to register as unemployed to receive benefit when they were not really seeking employment. The effects of this change on the unemployment insurance percentages can be roughly estimated from a comparison of the unemployment rates for males with that of females. Assuming that the female rate was normally 54 per cent of the male rate in these years[29] and that the

[28] *Ministry of Labour Gazette*, June 1930, p. 221.

[29] In "An Analysis of Unemployment III," by William H. Beveridge (*Economica*, May 1937), this figure is suggested since, "In five years 1932-1936 during which there have been no major changes of the insurance scheme affecting the

TABLE J-6

Census of Population and Unemployment Insurance Statistics, United Kingdom, 1931
(*thousands*)

INDUSTRY	NUMBER OF PERSONS OF INSURABLE AGE				NUMBER UNEMPLOYED					
	Males		*Females*		*Males*			*Females*		
						Insured			*Insured*	
	Census[a]	*Insured*	*Census*[a]	*Insured*	*Census*	*Wholly*	*Temporarily*	*Census*	*Wholly*	*Temporarily*
Coal	1,084	1,046	6	6	216	181	97	1	1	0
Other mining	109	105	3	2	20	18	5	0	0	0
Mining products	56	46	3	3	11	9	2	0	0	0
Bricks, glass, earthenware	152	153	56	59	24	21	11	9	10	9
Chemicals	164	156	52	58	25	23	3	4	5	1
Engineering	629	687	104	113						
Vehicles	316	291	39	30	485	405	166	37	47	15
Ships	276	249	5	4						
Metals and metal trades	721	620	137	160						
Cotton	196	192	354	361	50	42	28	100	96	49
Wool	94	96	132	144	13	12	11	16	21	18
Other textiles	221	210	313	320	35	35	30	41	56	34
Leather	49	42	26	24	8	6	2	4	4	1
Clothing	228	194	437	408	31	21	10	29	27	12
Food	265	201	176	173	35	25	2	23	25	2
Drink	95	86	23	26	11	9	1	2	4	0
Tobacco	19	16	32	32	1	1	0	1	3	1
Wood	224	191	31	34	42	32	4	3	4	1
Paper	71	69	64	62	6	5	3	5	6	2

(continued on next page)

TABLE J-6 (continued)

(*thousands*)

INDUSTRY	NUMBER OF PERSONS OF INSURABLE AGE				NUMBER UNEMPLOYED					
	Males		*Females*		*Males*			*Females*		
						Insured			*Insured*	
	Census[a]	*Insured*	*Census*[a]	*Insured*	*Census*	*Wholly*	*Temporarily*	*Census*	*Wholly*	*Temporarily*
Printing	203	180	90	97	19	15	1	8	10	1
Miscellaneous	129	99	72	59	22	15	4	8	8	2
Building	963	1,096	13	11	196	212	8	1	1	0
Gas, etc.	229	165	7	7	20	14	1	0	0	0
Subtotal	6,493	6,190	2,175	2,193	1,270	1,101	390	292	330	151
Transport	1,304	827	48	35	154	176	5	3	3	0
Commerce	1,580	1,282	809	806	173	144	6	62	69	4
Fishing	44	29	2	1	10	5	0	0	0	0
Government	1,188	403	402	43	103	51	3	8	2	0
Professions	227	75	266	56	11	5	0	13	2	0
Entertainments	112	59	54	31	24	12	0	10	6	0
Other	136	105	43	37	96	42	1	28	4	1
Subtotal	4,591	2,780	1,624	1,009	571	435	15	124	86	5
Agriculture	635	0	58	0	62	0	0	3	0	0
Personal service	524	165	1,649	360	64	26	0	137	50	3
Grand total	12,243	9,135	5,506	3,562	1,967	1,562	406	557	466	159

[a] Includes those out of work and excludes managers, etc., and persons under 16 or over 65 years of age. An estimate for Northern Ireland is included.

Source: Arthur L. Bowley, *Studies in the National Income*, London, Cambridge University Press, 1942, pp. 104-105.

male rate was not much affected (see results of the census of 1931 in Table J-6), a simple calculation shows that, on these assumptions, the rates for males and females, taken together, were 14.4 in 1930 and 19.6 in 1931. These rates are slightly low in view of the fact that the new regulations were not operative over the whole of 1930 and 1931. Taking this into account, it is probable that the recorded rates for 1930 and 1931 (16.1 and 21.3 respectively) overstated the amount of unemployment by about a maximum of 1.5 percentage points.

The above estimate of the overstatement in 1930 and 1931 is reasonable in the light of the estimate made by the Ministry of Labour of the decrease in the unemployment insurance percentages brought about by the tightening of the conditions for receipt of benefit which occurred in late 1931 and which reversed the policy of the 1930 Act:

> "the reduction in the number of insured persons recorded as unemployed due to all the recent changes was about 65,000 at 25th January, 100,000 at 22nd February, and 129,000 at 21st March, 1932. If these persons had been included in the figures of insured persons recorded as unemployed at 21st March, the percentage rate of unemployment among insured persons would have been increased by about 1.0."[30]

Thus, at a time when unemployed insured persons and other insured persons were probably most respondent to changes in the conditions governing the payment of benefit, the unemployment percentages were influenced to the extent of only 1.0 to 1.5 percentage points. It does not seem unwarranted to conclude that these 1.0 to 1.5 percentage points represent the maximum effect which changes in the regulations governing conditions of the right to benefit have had on the insurance unemployment rates.

9. The unemployment rates in Table J-7 include only the wholly unemployed and apply to insured persons engaged in manufacturing, construction, and mining.[31] Insured persons in the following groups have been excluded in calculating these percentages: agriculture; fishing; gas, water, and electricity supply industries; distributive trades; commerce, banking, insurance, and finance; transport; and miscellaneous trades and services. Because of deficiencies in the data and

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relation of male and female unemployment the general rate for females has averaged 54 per cent of the rate for males. This perhaps may be taken as the normal relation on the present basis of insurance" (p. 168). In an earlier article, "An Analysis of Unemployment I" (*Economica*, November 1936, p. 358), Beveridge presented the data upon which he based this statement.

[30] *Ministry of Labour Gazette*, April 1932, p. 129.

[31] Averages of quarterly data.

TABLE J-7

Insured Persons Wholly Unemployed, Manufacturing, Construction, and Mining, United Kingdom, 1927-1939

Year	*Number of Insured Persons Included*[a] *(thousands)*	*Per Cent Wholly Unemployed*
1927	7,937[b]	8.3[b]
1928	7,935	8.8
1929	8,007	8.7
1930	8,143	12.1
1931	8,227	18.6
1932	8,157	19.8
1933	8,046	18.7
1934	8,146	15.0
1935	8,168	13.9
1936	8,332	11.6
1937	8,596	9.2
1938	8,724	10.1
1939	8,864	9.0

[a] Excluded from the total number of insured persons are those engaged in (1) agriculture, (2) fishing, (3) gas, water, and electricity supply industries, (4) distributive trades, (5) commerce, banking, insurance, and finance, (6) transport, and (7) miscellaneous trades and services. Unemployed insured persons in these groups have been excluded from the total number of insured unemployed for January, April, July, and October of each year; the quarterly figures were then averaged, and this average was divided by the number of insured persons in groups excluding the above to obtain the rates presented above.

[b] Ages 16 and over for 1927 and 16-65 for following years. These figures are for July of each year.

Source: *Twentieth Abstract of Labour Statistics*, London, Ministry of Labour, 1931, pp. 34-41. *Twenty-first Abstract of Labour Statistics*, 1935, pp. 28-35. *Twenty-second Abstract of Labour Statistics*, 1937, pp. 18-27. *Ministry of Labour Gazette, passim.*

changes in industrial classification, these rates have been calculated only for the years 1927-1939.

Comparison with the percentages of the wholly unemployed (see Table J-5) reveals that the calculated rates for manufacturing, mining, and construction move in close agreement with the percentages based on the total insurance sample. The calculated rates are slightly above the percentages for the wholly unemployed, based on the entire sample, and somewhat below those for the wholly and temporarily unemployed.

STATISTICS OF NUMBERS SEEKING EMPLOYMENT AT EMPLOYMENT EXCHANGES

These statistics are available from 1910 when the national system of employment exchanges, created by the Labour Exchanges Act of 1909,

came into operation. Sometimes referred to as the "live register" figures of unemployment, these statistics have borne a close relation to those of the numbers of unemployed insured persons. As pointed out above, after mid-1948 the count of the number of persons registered as unemployed at employment exchanges, subject to certain exclusions, forms the basis for calculation of unemployment rates. Before 1948, the relation between the number of persons on the "live register" and the number of unemployed insured persons registered at employment exchanges is brought out by the following table:[32]

1. Unemployment insurance claims admitted	2,244,477
2. Unemployment insurance claims under consideration	79,337
3. Insured persons not entitled to benefit	274,167
4. Uninsured persons on register	130,430
5. "Two months" file	181,001
6. Insured unemployed under Special Schemes	5,290
Persons on "live register," lines 1-4	2,728,411
Unemployed insured persons, lines 1-3, 5 and 6	2,784,272

The number on the "live register" included some uninsured persons and excluded two categories of insured persons. In contrast to the insurance statistics which are formed on a known base (the total number of insured persons), there is no suitable base with which to relate the statistics of the numbers on the "live register." For this reason, the weekly "live register" figures are less useful than the unemployed insured figures.[33]

SUMMARY

1. From 1900 to World War I, the trade union unemployment rates constitute the only continuous measure of unemployment. Comparison with later unemployment insurance statistics indicates that in times of good employment they were a fairly reliable measure of the level of unemployment among industrial wage earners. In times of poor employment, they may have overstated unemployment somewhat because of the overrepresentation of certain cyclically sensitive groups in the union sample. Further, it must be recognized that for particular dates the trade union percentages may not have been a completely reliable measure of unemployment.

2. The unemployment insurance percentages with very broad coverage after 1920 represent a good measure of unemployment. While these statistics have been subject to certain changes, the effects of

[32] *Ministry of Labour Gazette*, February 1932, p. 64.

[33] The statistics also list the number of placements and vacancies and, for most dates, separate the wholly unemployed from the temporarily unemployed.

the changes (1921-1947) have not greatly affected the continuity of the series.

3. Expansion of the base upon which rates are calculated in 1948 has tended to lower following rates relative to those preceding 1948. The maximum amount by which this expansion of coverage could have lowered the unemployment rates for the years 1948-1952 relative to the rate for 1947 is approximately one-half of a percentage point.[84]

COMMENT

GLADYS L. PALMER, University of Pennsylvania

In connection with the paper by Walter Galenson and Arnold Zellner—several international statistical organizations have struggled with the problem of securing greater comparability in unemployment rates between countries. In 1950, the Manpower Council of the Organization for European Economic Cooperation and the International Labour Office sponsored a "working party" to conduct a field study and recommend policy. This group concluded that periodic sample surveys of the labor force would yield more reliable, if less detailed, data and more comparable unemployment rates than could possibly be obtained from the records of existing national unemployment insurance systems. Largely as a result of their recommendations, several international conferences of manpower statisticians were held to discuss standard concepts of measurement, and France, Italy, and Denmark have initiated programs of periodic or occasional labor force surveys.

Variations in the coverage of European unemployment insurance systems are not the only factor that militates against making valid statistical comparisons of unemployment rates between countries. Administrative regulations with respect to the receipt of unemployment benefits also differ widely and they may account for some of the discrepancies in levels or trends noted in the paper.

ANGUS MCMORRAN, Dominion Bureau of Statistics, Canada

Walter Galenson and Arnold Zellner set themselves a very difficult task when they undertook the preparation of a set of unemployment rates that would lend themselves to international comparison. We are

[84] In 1947, with unemployment at 2.0 per cent, the base was approximately 16 million (see Tables J-4 and J-5). Expansion of the base to 21 million, under the assumption that none of the additional persons brought in were unemployed, decreases the unemployment rate from 2.0 to 1.5. The actual fall in the unemployment rate for the wholly unemployed between 1947 and 1948 was from 2.0 to 1.6.

all aware of the difficulty of preparing a measure of unemployment in only one country that is acceptable to the various elements in that country and comparable over time. The problems are increased immeasurably when we seek valid comparisons between countries. The handling of the available material has been most skillful and I find it difficult to make any real contribution to the problem within the scope laid down by the paper.

The series used in preparing an historical study in this field may not be the one considered best for each country. Of necessity, it must be the series that appears most common to all the countries and is available for the period under review. For these reasons, the series presented in this paper rely heavily on trade union statistics since they are the principal and, in some cases, the exclusive source of unemployment information until recent years. The writers point out that trade union statistics are subject to numerous and serious deficiencies. But on close examination, they find them less objectionable than such statistics would at first appear when used in particular situations such as the estimation of short-term trends. Finally, they concluded that even for absolute levels of unemployment, the trade union statistics are better than one might suppose for the following reasons.

1. In some cases coverage is relatively large. (This may be true of recent times but I feel that it would not be true over time.)

2. There are advantages to having the initial collection and processing of data done by experts like trade union secretaries as opposed to labor force enumerators, on the grounds that the latter are often ill-prepared. (I would submit that the differences in these collection procedures make such a comparison of little use.)

3. Reporting may be more complete in the case of trade union statistics because of a personal advantage, usually monetary, to the unemployed person. (For just this reason, reporting under these circumstances may be *over* complete.)

With this in mind, I return to comments made at the beginning of the paper. Data for international comparisons have no common basis in economic structure or in political and social institutions. I wonder at the usefulness of these data, having due regard to the need for them or the lack of them, and to the inherent qualifications. One wonders whether so much effort might not have been applied to greater advantage in other directions.

For example, the usefulness of *historical* comparisons between nations on a somewhat insecure basis does not appear so great as the usefulness of *current* comparisons on a firmer basis. Comparisons can be made on the more all-inclusive basis of labor force concepts

between the United States and Canada. Similar material is becoming available from other countries—Italy, France, West Germany, and Denmark—and is contemplated in others—Sweden, Norway, and Australia. I would suggest that analysis of these data would yield more useful comparisons. Even here the differences in economic and social climate may be too much for the data.