

UNITED NATIONS  
ECONOMIC  
AND  
SOCIAL COUNCIL



GENERAL

E/CN.9/57  
E/CN.3/104  
26 April 1950  
ORIGINAL: ENGLISH

POPULATION COMMISSION  
Fifth session  
Item 10 of the provisional agenda  
  
STATISTICAL COMMISSION  
Fifth session  
Item 6 (d) of the provisional agenda

DEMOGRAPHIC ASPECTS OF EMPLOYMENT, UNEMPLOYMENT  
AND LABOUR SUPPLY

(Memorandum prepared by the Secretariat)

I. INTRODUCTION

1. At its fourth session the Population Commission expressed the belief that a study of the demographic aspects of employment and unemployment is important in connexion with population problems. The Commission requested the Secretariat to examine the scope of work which might be undertaken in this field and submit to the Commission at its fifth session a report describing the relevant work done by other Commissions and specialized agencies, the existing sources of data, and possible types of studies which might be sponsored by the Population Commission.<sup>1/</sup> The present paper has been prepared in response to that request. Because it involves a discussion of the sources of statistics, it is submitted also for consideration by the Statistical Commission.

2. Work on the "demographic aspects" of employment and unemployment may include (a) the development of statistics on demographic characteristics of employed and unemployed workers, such as sex, age, and marital status, and (b) studies of relationships between demographic factors and employment conditions. These two aspects of the topic are discussed in Parts II and III of the paper, respectively.

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<sup>1/</sup> Document E/1313, paragraph 40.

/Part II will  
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Part II will be of interest to both the Population and the Statistical Commissions; Part III primarily to the Population Commission. It is thought that a proper consideration of these topics requires attention to the demographic characteristics of the economically active population as a whole, as well as its employed and unemployed segments, and to studies of the relationships between demographic factors and the size and structure of the economically active group. The scope of the paper is therefore extended somewhat beyond what would correspond to a strict interpretation of the Population Commission's request.

3. Part IV of the paper contains some suggestions regarding the types of work in this field which the Population and Statistical Commissions might wish to sponsor, in addition to those which have previously been recommended.

## II. STATISTICS OF THE ECONOMICALLY ACTIVE POPULATION, THE EMPLOYED, AND THE UNEMPLOYED

### Sources of statistics

4. The population census is the principal source of data on demographic characteristics of the active population and of employed and unemployed workers. Employment and unemployment statistics from other sources do not ordinarily give information on such characteristics as sex, age, and family relationships of the workers. In a few countries, however, data on these characteristics are obtained currently in national sampling surveys of the total and active population and of the employed and unemployed. In some countries, also, such data are produced from the records of social insurance systems.

5. The United Nations Secretariat, in collaboration with the International Labour Office, has made a comparative study of the types of statistics relevant to demographic characteristics of the economically active, employed, and unemployed, obtained in the recent population censuses of various countries.<sup>1/</sup> The survey covered 53 countries; for 47 of these, information was obtained regarding the tabulations, if any, of data on economic activities. Among these 47 censuses, the numbers giving various tabulations on demographic characteristics were as follows:

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<sup>1/</sup> United Nations, Population Division and Statistical Office. Population Census Methods. ST/SOA/Series A, Population Studies, No. 4. (Sales No. 1949.XIII.4) Chapter X-XIII.

31 gave tabulations of the economically active by sex and age groups;  
20 gave tabulations of the economically active by sex and marital status,  
12 giving a further classification by age.

6. The study indicated that great obstacles stand in the way of any international comparisons or analyses of these data, because of differences in the definitions of economically active, employed, and unemployed persons, and because of differences in the forms of classifications by age and marital status.

7. The study was not exhaustive. It covered only independent countries, and only the latest census in each country for which tabulations were available. Special emphasis was placed on the tabulations of the economically active population as a whole; information was not obtained, for example, on tabulations showing demographic characteristics of the employed and unemployed. No systematic investigation was attempted of tabulations showing demographic characteristics of the economically active population other than sex, age, and marital status. For example, records were not made of tabulations on the status of workers within their families (family heads, wives, children, etc.) or on classifications of families by economic activities of their members (number economically active, number employed, etc.).

8. A survey of the types of employment and unemployment statistics obtained from sources other than population censuses has been made by the International Labour Office.<sup>1/</sup> The report of this study includes, inter alia, information as to the data on demographic characteristics of employed and unemployed workers obtained from such sources. It shows that in the United States and Canada, where surveys of population samples are carried out at regular intervals for the purpose of estimating the economically active population, employment, and unemployment, classifications of these estimates by sex, age, marital status, and other demographic characteristics are published from time to time. The report shows also that in Great Britain, where employment and unemployment data are obtained from tabulations of social insurance records, samples of these records are occasionally taken to provide information on demographic characteristics.

9. The survey made by the International Labour Office also was not exhaustive. It covered only a few of the largest countries, and did not attempt to give a complete picture of the statistics on demographic characteristics of workers.

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1/ International Labour Office. Sixth International Conference of Labour Statisticians. Employment and Unemployment. Geneva, 1947

Actions of international agencies aimed at improving the quantity, quality, and comparability of statistics in this field

10. The Sixth International Conference of Labour Statisticians (1947) adopted a number of recommendations regarding the definitions and methods to be used in compiling national statistics on the economically active population, employment, and unemployment, whether obtained from population censuses or other sources.<sup>1/</sup> The Conference recommended that classifications be made by sex, age, and marital status, as well as by characteristics of the economic activity, i.e., industry, occupation, and industrial or social status.

11. The Population Commission at its third session (1948) specified a list of topics which it considered most important for inclusion in the population censuses to be taken by various countries in or about 1950, and recommended certain standard definitions under each topic.<sup>2/</sup> The economically active population was one of the items listed. Employment and unemployment were not included in this list, but the Commission made certain recommendations regarding the definitions of these categories in connexion with the definition of the economically active. The definitions recommended by the Commission were in general agreement with those recommended by the Sixth International Conference of Labour Statisticians. The Statistical Commission at its third session expressed general agreement with these recommendations of the Population Commission.<sup>3/</sup>

12. At its fourth session (1949) the Population Commission made suggestions regarding desirable tabulations of census data,<sup>4/</sup> including the following tabulations relevant to the demographic characteristics of the economically active population:

"A classification of the economically active and the inactive population by age groups should be tabulated for each sex. At least the following age groups are suggested: under 15 years (if any persons under that age are included in the enumeration of the economically active population), 15 to 19, 20 to 24, 10-year groups from 25 to 64, 65 years and over."<sup>5/</sup>

<sup>1/</sup> International Labour Office. The Sixth International Conference of Labour Statisticians. Appendix I, Resolution I. Geneva, 1948.

<sup>2/</sup> United Nations Document E/805, Annex A, pp. 15-21.

<sup>3/</sup> United Nations Document E/CN.3/50, Chapter III, paragraph 53.

<sup>4/</sup> United Nations Document E/1313, Annex II.

<sup>5/</sup> Ibid., Annex II, paragraph 35.

"Where more detailed tabulations can be undertaken, the following are suggested:

- (i) the classification by industrial or social status that by industry, and that by occupation, each tabulated by the age groups specified in [above], by sex;
- (ii) the classification by occupation tabulated for economically active persons in each industry, by sex if possible."<sup>1/</sup>

"Where separate data for employed and unemployed workers or measures of the extent of employment or unemployment during a given period are obtained in the census, such data should be classified by: (i) industry, (ii) occupation, and (iii) age. All such tabulations should be made by sex. In many censuses such tabulations have been limited to persons classified as employees; where that is not done it is desirable, for the sake of international comparability, that the tabulations be made separately for employees (that is, wage or salary workers) and other members of the economically active population."<sup>2/</sup>

The Statistical Commission noted this action at its fourth session.<sup>3/</sup>

13. The Committee on the 1950 Census of the Americas at its third session (February 1950) made recommendations to the American nations planning population censuses in 1950 or 1951, with regard to the definitions and tabulations of the economically active, employed, and unemployed.<sup>4/</sup> The recommendations of the Committee were generally similar to those of the Population Commission.

#### International compilations of statistics

14. The International Labour Office makes annual compilations of statistics on the economically active population, employment, and unemployment for various countries, which are published in its Year Book of Labour Statistics. The data published include the latest census statistics on the economically active population classified by sex, occupation or industry, and industrial or social status; and on the percentages of economically active persons among the male and female population in each of three broad age groups. Employment and unemployment statistics from non-census sources are also presented, with classifications by industry but not by sex and age, etc. The statistics, compiled by ILO referring

<sup>1/</sup> Ibid., Annex II, paragraph 40.

<sup>2/</sup> Ibid., Annex II, paragraph 45.

<sup>3/</sup> United Nations Document E/1312, Chapter V, paragraph 66.

<sup>4/</sup> Second Inter-American Statistical Congress, Bogotá, February 1950, Resolution No. 1, "The Population Census". 1526a (COTA)-1/20/50-400, Resolutions Sub-Committee, Draft Resolution, pp. 11-17.

to the economically active population were published also in the United Nations Demographic Yearbook, 1948, being furnished by the ILO.

15. A complete picture of the demographic characteristics of the active population, the employed, and the unemployed would include the following types of data, which, however, are listed without reference to their availability, or the feasibility of actually obtaining them for different countries.

- a. Absolute numbers of economically active persons in various sex-age groups;
- b. Classifications by detailed age groups;
- c. Cross-classifications of age by occupation or industry, and industrial or social status, which are necessary for an understanding of the problems in international comparisons of totals;
- d. Sex-age classifications of employed or unemployed workers;
- e. Classifications by demographic characteristics other than sex and age, notably marital status.

16. The Population Commission at its third and fourth sessions recommended that unemployment statistics be included in future issues of the Demographic Yearbook.<sup>1/</sup> Accordingly, the International Labour Office has included in its annual questionnaire to Governments this year a request for data on the unemployed by sex and age. Consideration is also being given to the possibility of obtaining data on such characteristics as birthplace or nationality and marital status of the unemployed.<sup>2/</sup>

### III. STUDIES OF RELATIONSHIPS BETWEEN DEMOGRAPHIC FACTORS AND EMPLOYMENT CONDITIONS

Relation of this topic to studies of inter-relationships of demographic, economic, and social factors

17. Following earlier recommendations of the Economic and Social Council and

<sup>1/</sup> United Nations Documents E/805, paragraph 15 and E/1313, paragraph 6.

<sup>2/</sup> Cf. United Nations Documents E/CN.9/49; E/CN.3/92.

the Population Commission,<sup>1/</sup> the Secretariat is engaged in a programme of studying inter-relationships between population trends and economic and social changes. A report on the findings of existing studies in this field has been prepared for consideration by the Commission at its fifth session.<sup>2/</sup> That report contains summaries of the findings of studies on the following topics which are relevant to the subject of the present paper:

- a. The relationship between the total and the economically active population (Chapter VII of the report, section A). The findings on this topic indicate that the size of the population and its structure with respect to age and sex play a major role in determining the number economically active and their sex-age composition. Long-term trends in fertility, mortality, and migration determine the size of the population in the various sex-age groups, and thus set the upper limits for the numbers who can be employed at any age. Social and economic influences largely determine the proportion of the population in any sex-age groups engaged in economic activities. Given statistics or estimates of the population of an area by sex and age groups for current or future dates and appropriate historical data on the proportions of economically active persons within various sex-age categories, it is possible to make fairly reliable calculations of the corresponding economically active population at the current or future dates. This is true in spite of the fact that the economic and social factors which determine the proportions economically active among the various sex-age groups of the population have not yet been fully explored. It is known that nearly all males between 20 and 65 years of age are economically active, the percentages varying from 91 to 96 per cent among the different countries. The proportion of children who are economically active is determined in part by economic factors such as the predominant type and organization of production,

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<sup>1/</sup> See Resolution 41(IV) of the Economic and Social Council, adopted in March 1947, and reports of the first through fourth sessions of the Population Commission (United Nations Documents E/267, paragraphs 37-39; E/571, paragraphs 22-26; E/805, paragraphs 26-27; E/1313, paragraphs 30-33).

<sup>2/</sup> United Nations Document E/CN.9/55.

and by social factors, which, in advanced countries, find expression in legislation prohibiting the employment of persons below a given age. Social and economic factors are also dominant in determining the percentages of persons between 15 and 20 years of age and those over 65 who are at work. Among women, the percentage economically active is determined by such factors as urbanization, the conditions of employment of women in industry, customs relating to marriage, the trends of fertility, the level of living, and the like. Calculations of the economically active population at future dates based on population projects and historical data on the economically active population have been made for a few countries but not for all those which possess the necessary statistics. Lacking such calculations, demographers commonly use statistics of population by sex and age directly to make rough analyses of employment and dependency problems.

b. Relationships of the size of the total and economically active population to the problem of full employment (Chapter VIII, section B and C).

The findings concerning this complex question are inconclusive because the available statistics are inadequate for quantitative analysis of the relationships involved. The conclusions of the various authors who have considered this matter are therefore chiefly in the nature of unverified hypotheses, which often conflict. It seems evident, however, that changes in the size of the total population or of the economically active group have little to do with short-term fluctuations in employment and unemployment such as those which accompany cyclical variations of business activity in certain industrial countries. Demographic factors, however, influence the risk of unemployment in industrialized areas over a long period, by affecting the average duration of the various phases of business cycles and the volume of persistent non-cyclical unemployment which may result from long-range deficiencies in investment activity. The relationship is likely to be different in primarily agricultural countries, and in highly developed industrial countries. There unemployment as such is often

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not a major problem, though under-employment, in the sense of inefficient utilization of labour resources, may be very important, and its prevalence may be related to the size of the active population in proportion to physical resources.

- c. Relationships of the age structure of the total and economically active population to the problem of full employment (Chapter VIII, section B). Here, too, the findings of existing studies are somewhat inconclusive, for reasons similar to those mentioned above. It seems fairly well established, however, that the ageing of the economically active population in industrial countries may tend to reduce the flexibility of the distribution of workers among various occupations and industries, thus increasing the risk of unemployment due to changes in the composition of demand for labour.
- d. Influence of employment conditions on population trends (Chapters II and III). It has been demonstrated statistically that cyclical fluctuations in business activity have a substantial influence upon short-term variations of marriage and birth rates, of immigration and emigration, and of internal migration in industrialized countries. Thus high levels of employment are associated with relatively high marriage and birth rates, with increased immigration to the more highly industrialized countries, and with increased movement from rural to urban areas. Apart from cyclical fluctuations, it is possible that long-range trends in the volume of unemployment or in the frequency of unemployment crises may have an influence on the trend of population growth in industrial countries, because married couples may be encouraged to have larger families if they feel economically secure. The statistical evidence on this point, however, is not conclusive. It has also been demonstrated that the trend of the birth rate may be affected, at least under some conditions, by the extent to which women engage in economic activities outside the home, but statistical research on this subject has not yet provided the basis for any broad generalizations.

18. Other projects being planned by the Secretariat in furtherance of the programme of studying inter-relationships between demographic factors and social and economic changes will provide additional information on relationships between population changes and problems of labour supply and employment. One of these projects is a study of relationships between population trends and economic development in India, on the basis of existing official statistics for that country. Another is a field survey, in co-operation with the Indian Government, of population in selected areas of that country which are undergoing economic development.<sup>1/</sup>

Relevant actions of other international bodies

19. The United Nations Conference on Trade and Employment (1948) stated in its report that "... the problems of persistent surplus or shortage of manpower are linked with the attainment of full and productive employment ..." and suggested that "... The Economic and Social Council initiate or encourage studies and recommend appropriate action in connexion with international aspects of population problems as these relate to employment, production and demand".<sup>2/</sup> The Economic and Social Council at its sixth session (March 1948) endorsed the opinion expressed in this resolution of the Conference and requested the Secretary-General to obtain information from governments with regard to full employment policies.<sup>3/</sup> The Secretariat accordingly sent to the various governments a questionnaire on the maintenance of full employment requesting, inter alia, data on the volume and characteristics of present unemployment. The replies were published and summarized in documents which might be useful in analyzing the relation of demographic factors to unemployment and under-employment in various countries.<sup>4/</sup>

20. A report on the welfare of the aged, prepared in response to a request of the Economic and Social Council<sup>5/</sup> to be submitted to the Social Commission and the

<sup>1/</sup> See United Nations documents E/CN.9/44, E/CN.3/33.

<sup>2/</sup> Employment: Resolution of the United Nations Trade and Employment Conference. Document E/635. February 1948.

<sup>3/</sup> Resolution 104(VI) of 3 March 1948.

<sup>4/</sup> United Nations Document E/1111. January 1949; and United Nations Department of Economic Affairs. Maintenance of Full Employment, Like Success. July 1949.

<sup>5/</sup> Resolution 198(VIII) of 2 March 1949.

Commission on Human Rights at their sixth sessions, contain factual information on legislative and other measures for the benefit of aged persons.<sup>1/</sup> A special section of the report is devoted to a discussion of the factors affecting employment of older persons.<sup>2/</sup>

21. The International Labour Office has made studies of the problems connected with the employment of young workers, women, and older workers.<sup>3/</sup> These studies provide materials for the analysis of relationships between the trends in sex-age composition of the economically active population, and the problem of full employment.<sup>4/</sup>

<sup>1/</sup> United Nations Documents E/CN.5/200/Add.1-E/CN.4/362/Add.1.

<sup>2/</sup> Ibid., pp. 58-68; 83.

<sup>3/</sup> See, for example, the following ILO reports: Equal Remuneration for Men and Women Workers for Work of Equal Value (Report prepared for the Thirty-third session of the International Labour Conference, Geneva, 1950). Report V(1) and V(2); Protection of Young Workers on Inland Waterways (Report prepared for the Third session of the Inland Transport Committee) 1949. Report III; The Protection of Young Workers Employed Underground in Coal Mines (Report prepared for the Third session of the Coal Mines Committee) 1949. Report II; Children and Young Persons under Labour Law. 1935. Series I, No. 3; The Law and Women's Work: A Contribution to the Study of the Status of Women. 1939. Series I, No. 4; The War and Women's Employment. 1946. New Series, No. 1; Protection of Children and Young Workers (Report prepared for the Twenty-ninth session of the International Labour Conference), 1946; The Organization of Employment in the Transition from War to Peace (Report prepared for the Twenty-sixth session). 1944; Partial Revision of the Minimum Age (Industry) Convention (Report prepared for the Twenty-third session). 1937; Unemployment among Young Persons (Report prepared for the Nineteenth session). 1935; and The Age of Admission of Children to Employment in Non-Industrial Occupations (Report prepared for the Sixteenth session). 1932.

<sup>4/</sup> In this connexion, see also Woodbury, Robert M. "Occupational Changes in Relation to the Increasing Age of the Population in the U.S., "Congrès international de la population. Paris, 1937. Vol. VII, "Facteurs et conséquences de l'évolution démographique." Paris, Hermann et Cie, Editeurs, 1938. pp. 108-117.

#### IV. POSSIBLE LINES OF FUTURE WORK

##### International compilation of statistics

22. The Population and Statistical Commissions may wish to recommend that the Secretariat, in consultation with the International Labour Office, consider the possibilities of compiling and publishing additional statistics needed for analysis of demographic characteristics of the economically active population, the employed, and the unemployed. It would seem that an effort to obtain additional statistics on this subject should be considered as a prerequisite to any more detailed analysis of the demographic aspects of employment, unemployment, and labour supply problems at the international level. Not all of the statistics compiled for purposes of analysis would necessarily be presented in international statistical publications. The question of the desirability of publishing at the international level statistics which are not fully comparable must also be considered. It is necessary to take into account the uses which may be made of such data even though they are not strictly comparable, and of the fact that their publication may help to focus attention on the need for greater comparability, thus encouraging the standardization of procedures in future censuses.

23. In paragraph 16 it has been pointed out that steps have already been taken to provide data on the unemployed classified by age and sex. Certain additional steps can be proposed as among the possibilities to be considered in providing the statistics needed for the types of analyses discussed in this paper:

- a. Further development of tables showing age and sex classifications of the economically active population to show as many age groups as feasible, giving absolute figures as well as percentages for all of the countries for which data are available or for which reasonable estimates can be made. The main difficulties in providing these data are that the age classifications are not uniform and do not agree with the standard age groups recommended by international bodies.
- b. Development of tables showing the number of women in the economically active population by marital status and age. At present these data are available for only a small number of countries.
- c. Development of tables showing cross-classifications of industry and

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of industrial or social status by sex and age. In compiling such statistics consideration would have to be given to the possibility of fitting existing data into the standard international classifications of industry and status. The possibility of compiling similar tables by occupation could be considered later after the ILO standard occupational classification has been applied in the censuses of a number of countries.

Analysis of relationships between total and economically active population

24. At its second session,<sup>1/</sup> the Population Commission recommended that estimates of the economically active population for current and future dates be made in collaboration with the International Labour Office, but gave a lower priority to this work than to the estimates of total population by sex and age groups which the Secretariat has been compiling. Estimates of the economically active population could be made for those countries for which estimates of the total population by sex and age groups are available for current and future dates, together with appropriate census statistics on the percentages of economically active persons within various sex-age groups. In preparing such estimates it would be necessary to undertake a statistical analysis of variations and trends in the proportions of economically active population within various sex-age classes of the total population in different countries. This work could be carried out for those countries having recent census statistics on the total and the economically active population classified by sex and age. It would involve making appropriate adjustments for differences in the definitions of the economically active group in the censuses of various countries, in so far as the data available permit such adjustments.

25. With its present personnel and with the existing priorities of various projects recommended by the Population Commission, the Secretariat would be able to make only slow progress with the project mentioned in paragraph 24. The absence of recent census data for some countries will also tend to delay the work. For those countries where the most recent census data on the economically

<sup>1/</sup> United Nations Document E/571, Annex IV.

active population are rather old and where new censuses are to be taken in the near future, it may be preferable to postpone the preparation of the estimates for current and future dates until data from new censuses are available.