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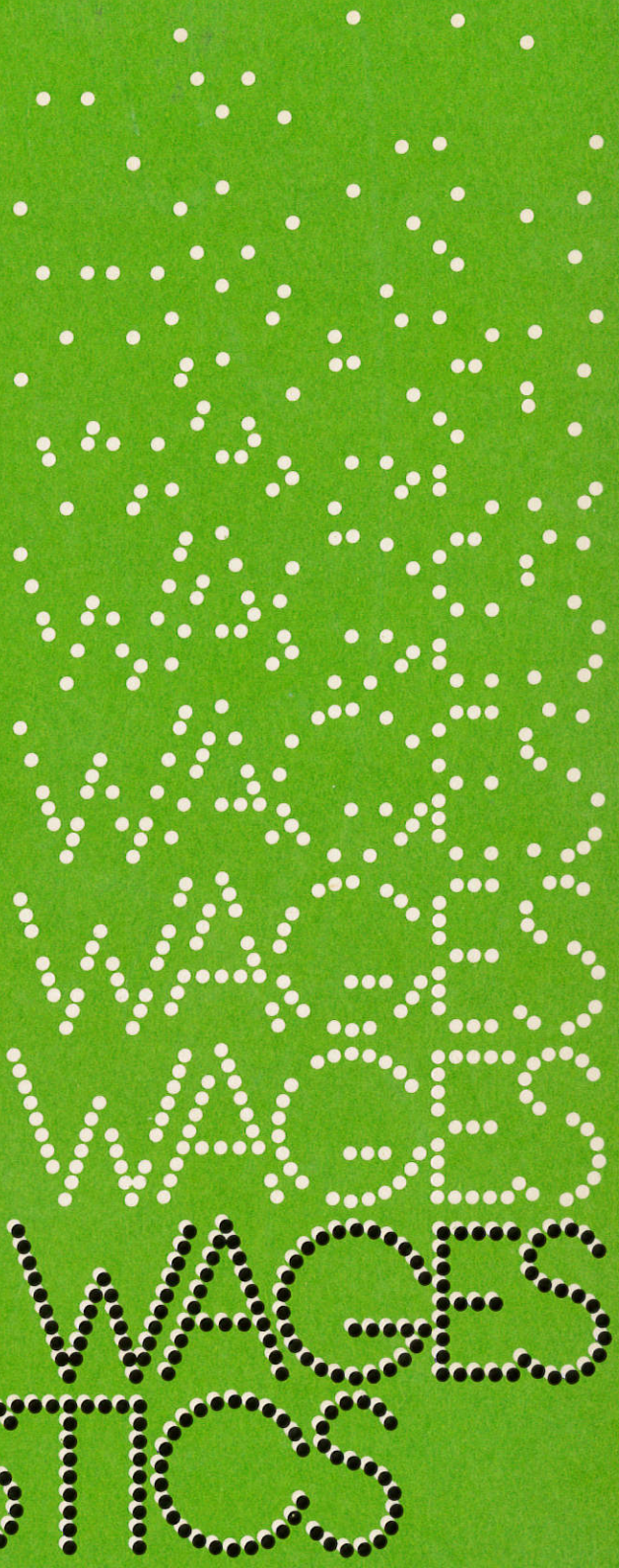

An integrated system of

A manual on methods

An integrated system of wages statistics

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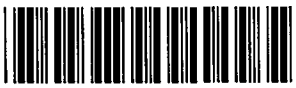
International Labour Office Geneva



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Preface

The International Labour Organisation, from its inception in 1919, has been engaged in the development of wages statistics, which form an important and integral part of labour statistics. The statistical activities of the ILO include, inter alia, the establishment of international standards concerning concepts, definitions, classifications and development of statistical methods for the collection and compilation of various types of labour statistics.

Standardisation of wages and other labour statistics has been carried out through the organisation of International Conferences of Labour Statisticians (ICLS), of which twelve have been held up to the present time. The first Conference was held in 1923 and the twelfth took place in 1973. These conferences, in which all member States of the Organisation may participate, bring together experts appointed by governments. Several of these conferences adopted resolutions covering one aspect or another of wages statistics. In addition, in 1938 a Convention concerning statistics of wages and hours of work (No. 63) was adopted. Countries which ratify this Convention are required by its provisions to compile and publish statistics of wages and hours of work. A number of countries have ratified it and they report regularly to the ILO regarding its implementation. The adoption of this Convention indicates the importance attached to statistics of wages and hours of work. However, although it has served a useful purpose over the years, Convention No. 63 either does not cover, or else covers only inadequately, a number of aspects of wages statistics which have been developed since 1938.

The Twelfth ICLS (1973) adopted a comprehensive resolution concerning an integrated system of wages statistics. This resolution incorporates the relevant recommendations contained in Convention No. 63. In addition, the Twelfth Conference recommended that the ILO prepare, as soon as possible, a manual on methods of statistics concerning wages and hours of work, since such a manual would be of considerable benefit, particularly to developing countries, in following the guidelines adopted by the Conference.

The present manual seeks to clarify and elaborate on the recommendations contained in the above-mentioned resolution. It also brings together the various recommendations embodied in the relevant resolutions of other conferences and in Convention No. 63. In addition, the manual deals in detail with the types of surveys to be undertaken for the collection and compilation of statistics of: *(a)* earnings and hours actually worked; *(b)* wage rates and normal hours of work; *(c)* labour cost; and *(d)* wage structure and distribution. These surveys are designed to compile basic wages statistics in order to meet both the short-term and the long-term needs of different users. The manual also attempts to indicate the methods of construction of wage indices and indices of real wages.

The term "wages statistics" has been used in the resolution of the Twelfth Conference and in this manual in a very broad sense. It covers the statistics of wages of manual workers and the salaries of non-manual employees, including executives, managers, etc. The term incorporates the different measures of wages—wage rate, earnings, compensation of employees, labour cost, employee income—and also derived wages statistics, such as real wages, index numbers of wages, etc. Wages statistics also include statistics of hours of work to the extent that they relate to wage earners and salaried employees. Hours of work represent an effective time unit to which the wage measures may be related or in terms of which they may be expressed. Changes in wage levels need to be studied in conjunction with changes in hours of work.

The manual forms part of the efforts by the ILO to translate international standards into operational programmes. These standards are intended primarily to serve as a basis for the improvement and expansion of national statistics, and for the promotion of their international comparability. It is hoped that the manual will prove useful for the accomplishment of these goals.

The manual has been prepared by Mr. K. M. Bashir, assisted by Mrs. K. M. Hempstead, of the Bureau of Statistics and Special Studies. Mr. K. J. Penniment, former Chief of the Bureau of Statistics, gave valuable guidance at various stages of its preparation.

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Introduction 1

Importance of statistics of wages and hours of work

Statistics of wages and hours of work, one of the more important branches of labour statistics, are essential in evaluating living standards and conditions of work and life. In recent years the need for more complete and reliable information on wages and other forms of remuneration has grown in both the developed and the developing countries; the demand arises especially in connection with the planning of economic and social development, establishing income and fiscal policies, wage structure, manpower planning, labour utilisation, minimum wage regulations, social security, etc. Different types of statistical measures of wages are often needed for these different purposes; they include wage rates, earnings, compensation of employees, labour cost and employee income.

Purpose of the manual

The main purpose of the present manual is to aid national labour statisticians engaged in or proposing to start the compilation of statistics of wages and hours of work. It is also intended to serve as a source of reference for ILO experts in labour statistics assisting developing countries under the technical co-operation programmes.

The principal international recommendations relating to statistics of wages and hours of work are those contained in the resolution concerning an integrated system of wages statistics, which was adopted by the Twelfth International Conference of Labour Statisticians (ICLS), convened by the International Labour Office in Geneva in 1973. The system recommended by the Conference comprises statistics of wage rates, earnings, labour cost, wage structure and distribution and hours of work which would be suitable for both developing and developed countries. These recommendations relate mainly to the production of basic statistics of wages through properly designed sample surveys in order to meet the current and non-current needs of users.

National programmes of wages statistics fall into two broad categories: *(a)* current surveys of earnings, wage rates and hours of work, which are generally compiled on a regular basis (monthly, quarterly, etc.) to provide time series; and *(b)* specialised surveys such as wage structure surveys, occupational wage surveys, labour cost surveys, etc., carried out at longer intervals. In addition to these main sources of wages statistics, there are the industrial, commercial and agricultural censuses and surveys, as well as social security statistics, which frequently provide some wage data. The limitations of such wage data are discussed briefly in Chapter 2 but no attempt is made to discuss the methods used for their compilation as the present manual is primarily concerned with those labour statistics programmes designed specifically to produce statistics of wages and hours of work on a continuing basis.

In determining the need for an integrated system of wages statistics and in formulating a framework, the Twelfth Conference took into consideration a number of factors, in particular national practices with regard to the continually growing demands for various types of wages statistics. Although recent decades have witnessed a number of improvements in this field in many countries, these developments have varied considerably from country to country with regard to the types, coverage and scope of wages data compiled. Even within a country, the development of wages statistics may vary from one industrial branch to another—for instance, wages statistics in the agricultural sector are usually deficient in comparison with the data available for manufacturing. The timeliness of the wages statistics and the extent to which they are up to date also vary from sector to sector and from one country to another.

The past few decades have also witnessed a broadening of the systems of wage payment in many countries by the introduction and liberalisation of supplementary measures, such as cost-of-living allowances, family allowances, various forms of premium pay, payments for time not worked and contribution by employers to social security and pension schemes for employees. Statistics of wage rates or straight-time earnings no longer represent the level of remuneration of employees or the cost to the employer in employing labour. This situation has led to the development of two more statistical measures of wages, namely compensation of employees and labour cost. Wages of employees vary according to their sex, age, level of education, skill, occupation, type of industry, size of establishment, geographical location, etc. Consequently, there has been a need to compile statistics of wage structure and distribution. However, as yet very few countries have regular programmes covering all the main types of wages statistics; in particular, data in respect of labour cost and wage structure and distribution are inadequate.

In addition to the limitations mentioned above, the data compiled on different wage measures (wage rates, earnings, compensation of employees and labour cost) are not always mutually consistent, with the result that these statistics often do not reveal their inter-relationships. This is to a great extent due to the fact that the development of wages statistics (even in the developed countries) has often been the result of response to specific demands and requirements arising from time to time and not of a conscious effort to build a coherent and articulate system of wages statistics to meet the needs of different users. The integrated system of wages statistics recommended by the Twelfth Conference is designed to provide a framework for the collection and compilation of mutually consistent statistical measures corresponding to the concepts of wages as price of labour input, as income of employees and as cost to the employer in employing labour. The integrated system distinguishes between the different types of wages statistics to be compiled on a current basis so as to meet short-term needs and for time series purposes and those types of wages statistics required to build a basic infrastructure of wage information, to serve as benchmark data and for the purposes of structural analysis. The system has been conceived in such a way that it is possible to incorporate future developments in the field of wages statistics.

Wages statistics from secondary sources such as industrial censuses and surveys, social security records, etc., could supplement the integrated system of wages statistics outlined in this manual. The data on wages collected in industrial censuses and surveys correspond in most cases to the wage measure "compensation of employees" and in a few cases to the wage measure "labour cost". The primary objective of the collection of these data is to estimate the value added and the share of wages in this. Data on these measures obtained through industrial censuses and surveys are valuable for computing "compensation of employees" or "labour cost" per unit of output. From the conceptual standpoint there is no difficulty in incorporating wages statistics from secondary sources into the integrated system. However, wages statistics derived from these sources are usually not adequate and detailed enough to meet the various needs of users.

Scope and content of the manual

The programmes for the production of wages statistics envisaged in the integrated system focus on the branches of economic activities—major divisions, divisions, major groups and groups—as defined in the International Standard Classification of All Economic Activities, 1968 (ISIC).*[1] This classification scheme is based on the criterion of grouping units according to kinds of economic activity without regard to the geographical location, size, type of economic organisation, mode of operation or ownership of the units. In other words, the ISIC does not differentiate between industries which are modern or traditional, rural or urban or on the basis of whether the operation is carried out by households, incorporated enterprises or the government. The survey methods described in this manual treat these aspects either as classificatory characteristics or as problems which can be tackled by suitable sampling techniques. For instance, when comprehensive wages statistics are required separately for rural and urban areas or for specified geographical regions, they can be obtained either by suitably increasing the sample size or by organising separate area-industry surveys.

The integrated system makes a major distinction between the non-agricultural sector and the agricultural sector in order to develop suitable programmes for each sector and to determine the types of surveys to be undertaken for the production of current and non-current wages statistics. The underlying reason for such a division is that the agricultural sector presents, as regards the collection and compilation of wages and related data, more difficult problems and requires relatively larger resources than does the non-agricultural sector. The problems of compiling wages statistics in the agricultural sector were the subject of special examination by the Twelfth Conference on the basis of studies made by selected consultants representing the different regions of the world, and the Conference came to the conclusion that in the case of developing countries there was a need to subdivide the agricultural sector into organised agriculture and traditional agriculture for this purpose.

The Conference also considered carefully the survey methods to be employed in order to meet the requirements of the integrated system. It concluded that the establishment survey constituted the best means by which to cover the greater part of non-agricultural industries and that part of agriculture where the economic activity was mainly carried out in establishment-type units employing hired labour. In the establishment survey approach, it is the employer who furnishes the wage data and other information concerning the employees. As industrial and commercial censuses and surveys also use this approach, the organisation of wages surveys on this basis is further facilitated. In principle, the establishment survey approach is applicable to all establishments employing one or more hired workers. However, in practice, very small establishments, i.e. those employing fewer than a specified number of employees, are usually not included in the survey because of the high cost or other considerations. Its review of the problems of the agricultural sector led the Twelfth Conference to conclude that the establishment survey approach would not be feasible for the purpose of covering the traditional sector of agriculture in developing countries since agricultural operations are usually carried out by household enterprises. In addition, the characteristics of agricultural employees often differ from those of non-agricultural employees; for instance, agricultural employees in the traditional sector are usually engaged on a daily or casual basis, and they move frequently from one employer to another. In such situations the employee, and not the employer, is the ideal source for the most complete data on earnings and hours of work, and therefore it is necessary to resort to the household survey approach for the collection of the relevant wages and related statistics.

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* Footnotes will be found at the end of the chapter.

In recent years there has been a demand for statistical data, including wages statistics, for the urban informal sector and for the rural sector (comprising household and small non-agricultural industries) in developing countries. An initial requirement for the collection and compilation of such statistics is the definition of the scope of these sectors by developing operationally feasible criteria. The existing international recommendations do not provide any definitions to demarcate the boundaries of these sectors, nor do they deal with the specific problems of collection and compilation of wages statistics. As regards the urban informal sector, there have been a few exploratory policy-oriented studies sponsored by the ILO in connection with its World Employment Programme (which, incidentally, yielded some statistical data). However, there is a need for further investigation and research in order to develop international recommendations for the collection and compilation of wages statistics in the urban informal sector as well as in the rural household and small non-agricultural industry sector. Pending more information, the available evidence seems to suggest that non-agricultural economic activities are carried out in the two sectors, both in households and in small establishments, with, in varying proportions, a combination of self-employment and hired labour. The situation may call for both the establishment survey approach and the household survey approach; such is the case of the agricultural sector in developing countries discussed in this manual.

The manual consists of 12 chapters. Following the introduction in Chapter 1, in Chapter 2 an attempt is made to evaluate the wages statistics obtained through sources other than wages statistics programmes, such as industrial, commercial and agricultural censuses and surveys, social security statistics, trade union and other sources. The evaluation concludes that wages statistics derived from these sources are usually not detailed enough to meet the various needs of users and that it is still necessary to conduct special surveys which have the compilation of wages statistics as their primary purpose.

The principal uses of wages statistics, discussed in Chapter 3, are: *(a)* measurement of levels of living of employees; *(b)* wage fixing; *(c)* collective bargaining; *(d)* economic planning, analysis and research; *(e)* forecasting economic conditions, market conditions, etc.; *(f)* providing data for estimation of national income; *(g)* income distribution studies; and *(h)* wage, price and income policies.

Concepts and definitions for use in conjunction with wages statistics are discussed in Chapter 4. The definitions of wage rates, earnings, compensation of employees, labour cost and employee income are given, as well as their relationships, together with such related topics as industrial classification, establishment, enterprise and other units, reporting unit, occupation and occupational classification.

Chapter 5 outlines the integrated system of wages statistics recommended in the resolution of the Twelfth ICLS (1973). It consists of current and non-current wages statistics programmes, covering the non-agricultural and agricultural sectors. Special problems of compiling statistics of wages in agriculture, particularly in developing countries, are also discussed.

The core of the manual is contained in Chapters 6 to 10, which provide the practical guidance needed for conducting wage surveys in order to compile: *(a)* monthly or quarterly statistics of average earnings and hours of work in the non-agricultural sector; *(b)* monthly or quarterly statistics of wage rates and normal hours of work in the non-agricultural sector; *(c)* statistics of labour cost in the non-agricultural sector; *(d)* statistics of wage structure and distribution in the non-agricultural sector; and *(e)* wage statistics in the agricultural sector. Each chapter is devoted to a discussion of the specific objectives of one of these types of surveys, its industrial, employee and geographical coverage, the concepts and definitions recommended, the choice of reporting unit and sample design, the questionnaire and methods of collection, processing, classification and tabulation of the results. Model questionnaires and model tables are included as illustrations. Extensive

research on national practices in the field of wages statistics underlies the recommendations on methodology contained in these chapters.

Finally, Chapter 11 describes the types and purposes of wages indices as well as methods of computation, while Chapter 12 outlines the purposes of statistics of real wages, the basic concepts and the method of computation.

Adaptation to national conditions

The methods of producing wage statistics set forth in the present manual may need to be adapted to the special conditions prevailing in some countries or to meet their particular requirements as regards wages statistics. However, each country will profit by pursuing the policy proposed in this manual, namely to aim at producing different statistical measures of wages of good quality in a mutually consistent manner—therein lies the strongest likelihood of providing complete and inter-related data that should meet the short- and long-term needs of a variety of users. The International Labour Office is confident that this manual will prove useful to those responsible for planning and compiling statistics of wages and hours of work and will thereby promote the development of such statistics on a sound basis.

Notes

[1] United Nations, Department of Economic and Social Affairs: *International Standard Industrial Classification of All Economic Activities*, Statistical papers, Series M, No. 4, Rev. 2 (New York, 1968; Sales No.: E.68.XVII.8).

Types and sources of wages and related statistics

2

Wages statistics are obtained from various sources which include payrolls of establishments, households, wage boards and other wage-fixing authorities, trade unions, employers' organisations, social security returns and, in some cases, tax returns. Each of these sources provides certain types of wages statistics and raises different problems of data collection. The most important sources of wages statistics, from the standpoint of data collection and compilation, are the programmes of wages statistics designed as part of labour statistics. In addition, data on wages are frequently obtained in industrial, commercial and agricultural censuses and surveys and from social security returns. Household surveys sometimes provide certain kinds of wages statistics. The types of wages and related statistics available from these sources are indicated below.

Programmes of wages statistics

National programmes of wages statistics usually comprise:

(a) current surveys of earnings, wage rates and hours of work for the purpose of compiling time series, for instance, at monthly or quarterly intervals;

(b) annual, occasional, non-repetitive or infrequent surveys or censuses for the purposes of in-depth studies of such topics as occupational wages, wages structure or labour cost.

The scope and coverage of the wages statistics compiled vary considerably from one country to another. Even within a country the development of wages statistics may vary from one sector of the economy to another. It is therefore difficult to generalise with regard to national practices in the field of wages statistics. Nevertheless, an attempt is made below to describe briefly the scope, coverage and other important features of national statistics of earnings, wage rates, hours of work, wage structure and distribution and labour cost.

Statistics of earnings

Most countries include in their principal earnings series the major industries in their national economies, generally covering manufacturing, mining and quarrying, and certain other important divisions of economic activity in the non-agricultural sector. Infrequently, they also cover agriculture, particularly the modern sector. In some cases, certain major divisions of economic activity are only partially represented. Geographical coverage is usually nation-wide but some surveys are limited to certain cities or regions.

The regular earnings series are often compiled from establishment surveys of employment, earnings and hours of work conducted monthly, quarterly, half-yearly or annually. Most frequently, data are collected from a sample of establishments. Establishments which employ fewer than a specified number of employees are commonly omitted from the surveys or else are covered only periodically.

Payrolls form the source of information in the establishment surveys. In theory, payrolls should permit the collection of wage data relating to each individual employee. In practice, however, only a few countries collect wage data for individual employees in such current and repetitive surveys.

Some countries cover only wage earners in their principal earnings series, while others cover both wage earners and salaried employees. There is a wide variety of practice with regard to the coverage of part-time workers, piece-workers, seasonal workers, casual workers, apprentices and foremen, and also in the treatment of higher supervisory staff, managers and directors. While earnings data are generally collected for both sexes, separately or combined, there is no uniform practice with regard to the inclusion of juveniles.

Information on earnings and hours of work is generally collected by means of specially designed questionnaires but other methods may be used; for example, in certain countries, the information for the principal series of earnings is extracted from monthly payroll tax returns.

Statistics of earnings commonly relate to time paid for; but in a few cases they refer to time actually worked. Different reference periods (e.g. a week, a fortnight, a month, a quarter, a year and a pay-period) are used for the collection of the original data. However, when presenting the results, average earnings may be expressed as an amount per hour, per day, per week, per month or per year.

The majority of regularly compiled earnings series take only cash earnings into account, although a few cover both cash earnings and payments in kind, including principally food, drink, fuel and rent-free or subsidised housing provided by the employer. Premium pay for overtime is invariably included in the earnings, and paid annual vacation and paid holidays are also taken into account in most of the series. Most countries include only regular bonuses, i.e. bonuses paid at each pay period or at frequent intervals, while profit-sharing bonuses are generally excluded. Sometimes, family allowances paid by employers are included in the earnings statistics. The wage data compiled usually relate to gross earnings before deductions for income tax, social security and other contributions paid by the employee.

The regular earnings surveys provide data on aggregate man-days or hours of work which are used for computing average earnings, frequently according to industrial group and sometimes by region and category of employees. Breakdowns by sex, wage earners and salaried employees, according to degree of skill and by size of establishment are available for some countries. In a few cases data are given for selected occupations or groups of occupations.

A few countries, which already have well organised and detailed statistics of gross earnings, find it useful to supplement these series by statistics of net earnings or take-home earnings for different groups of workers. To obtain net or take-home earnings, compulsory and obligatory payments on account of income tax, social security and similar liabilities are deducted from gross earnings. The special groups of workers are usually designated on the basis of number of dependants, such as workers with no dependants, or workers with a specified number of dependants.

Statistics of wage rates

Most statistical series of wage rates relate to rates fixed and reported by wage boards, tribunals, statutory orders or those shown in collective agreements. They are generally

minimum or standard rates for a normal work week, or daily or hourly rates. The figures usually relate to cash wages, including basic straight-time rates, cost-of-living allowances and other cash allowances provided in the agreement or award. They do not include overtime rates or shift or other premiums. Very often wage rates are set according to occupations; and sometimes they are set by degree of skill or for males, females and juveniles respectively. The rates thus fixed are changed from time to time and this is reflected in the series.

In a few countries data on wage rates are also gathered from other sources, such as establishment surveys or other special surveys on occupational wages. The data thus obtained generally relate to the prevailing rates or to averages of the actual rates paid to workers. Production bonuses as well as the premium part of overtime pay are excluded, and rates payable to piece-workers are not normally taken into account.

Statistics of hours of work

Three different types of statistical series of hours of work are found among those commonly compiled. They relate to normal hours of work, hours paid for and hours actually worked. Statistics of normal hours of work are generally compiled in conjunction with data on wage rates, while the statistics of hours paid for or hours actually worked are compiled in conjunction with data on earnings.

The sources of information on normal hours of work are generally collective agreements, wage boards and other wage fixing and regulating authorities. Normal hours of work do not generally change within short periods and consequently they are usually published only at long intervals.

Countries which regularly undertake employment and earnings surveys also generally collect data on hours of work. Such data are collected from establishments and have the same coverage as the earnings statistics. The majority of these series relate to hours paid for, while some relate to hours actually worked. Statistics of hours of work usually show the average number of hours of work per week per wage earner. Average hours actually worked or paid for per week or month are usually computed by taking the total number of man-hours actually worked (or paid for) during a week or month and dividing by the number of workers present (or number on the payrolls) during the same period. Average hours actually worked (or paid for) per day are generally calculated by dividing the total number of man-hours actually worked (or paid for) during the week, fortnight or month by the total number of man-days actually worked (or paid for) during the same period.

In some countries household surveys undertaken to obtain data on the labour force provide data on hours of work, usually relating to estimated hours actually worked. The data obtained on hours worked are used primarily in the analysis of employment and labour force characteristics. They are not normally sufficiently precise to be used in compiling statistics of hourly wages.

Statistics of wage structure and distribution

A few countries (mostly developed economies) conduct in-depth inquiries to collect data on the structure of employment and wages and other relevant information designed to reveal the principal factors influencing the levels and trends of wages. These types of inquiries are variously called wage censuses, occupational wage surveys, wage composition surveys and wage structure surveys.

Some countries conduct these surveys at regular intervals, while others make them on an ad hoc basis. The industrial, geographical and employee coverage differs from one country to another but usually covers manufacturing and mining and quarrying, and in some cases wholesale and retail trade, banking and insurance. In addition to industry-wise wage surveys, some countries carry out area wage surveys in order to obtain wage

data in specified cities or geographical regions, particularly for occupations common to different industries and a variety of labour markets. The surveys usually cover manual and non-manual workers and some cover special occupational categories within broad groups of occupations, such as professional, administrative, technical and clerical workers; they provide much information on salary levels and the distribution of employees in different industries. In some countries occupational wage surveys are carried out according to a phased programme covering certain industries in one year and others in the succeeding years.

Wage structure and distribution surveys are normally based on a sample of establishments. Generally speaking, all very large establishments are included in the sample, while very small establishments employing fewer than a specified number of employees are usually excluded from the survey coverage. The establishment is usually the reporting unit, although in a few cases it may be the enterprise.

An important feature of these inquiries is that information is collected for the establishment as a whole and also for individual employees. The questionnaires employed usually provide for the collection of personal data (sex, age, occupation, skill, education, length of service) and other data, e.g. hours of work, wage rate by components, gross earnings by components, employers' contributions to social security and pension schemes, contributions of employees to social security and pension schemes, taxes paid from wages of employees, etc. Information is often collected on wage payment systems and establishment practices, such as work schedules, shift operations and differentials, payments for overtime, incentive bonuses, paid holidays, vacation practices, etc. Some surveys also provide information on the coverage of labour-management agreements.

A variety of tabulations and cross-tabulations are made from the results of these surveys, enabling cross-section analyses and distributional studies. The published data provide indications of wage differentials between men and women, occupations and industry, establishments of different sizes, and also illustrate the effects of education, skill, and seniority on earnings. The data on the components of wage rates, earnings and compensation of employees provide an insight into the inter-relationship between the different statistical measures of wages. The distribution of employees by wage rates and earnings are valuable for the study of wage differentials.

Statistics of labour cost

Labour cost surveys have been carried out in a number of countries in recent years. Some of these surveys are undertaken at regular intervals; in certain countries labour cost data have been collected as part of surveys of wages and labour conditions.

The industrial coverage of such surveys varies from country to country, generally covering manufacturing, mining and quarrying, construction and, sometimes, transport and communications, wholesale and retail trade, finance and insurance and electricity, gas and water.

Labour cost surveys are establishment surveys conducted on a sample basis. The unit of data collection in most cases is the establishment but the enterprise is also used at times. Usually, small establishments (those establishments employing fewer than a specified number of workers) are excluded. As a rule, these surveys cover wage earners and salaried employees. Persons working at home, directors paid by fees, persons paid by commission only and working proprietors are usually excluded.

In general, labour cost data derived from the surveys include employers' expenditure for wages and salaries, including payments in kind, both obligatory and non-obligatory social security contributions, subsidies, the cost of welfare services and other labour cost such as the cost of recruitment, transport and vocational training. Some countries count as part of labour cost taxes of a social character paid by employers, especially payroll taxes.

The reference period used for data collection in comprehensive surveys of labour cost is one full year, either the calendar year or the business year, depending on national accounting practices or those of the sample firms. However, some countries collect information on a restricted list of components of labour cost on a more frequent basis, such as each quarter.

Most countries which conduct labour cost surveys publish the results in the form of average labour cost per hour actually worked, according to type of industry. Data on labour cost per month per person, or annual labour cost per employee, by industry and size of establishment, are also published by some countries. The published data also show the main components of aggregate labour cost per hour.

Wages statistics from secondary sources

Industrial censuses and surveys

A growing number of countries undertake industrial censuses and surveys, usually covering most of the manufacturing industries and in many cases mining and quarrying; sometimes they also cover electricity, gas and water. Censuses or surveys of a comprehensive nature are undertaken at infrequent intervals, usually of five or ten years, while sample surveys of limited scope are carried out annually in a smaller number of countries. A few countries conduct industrial surveys on a monthly or quarterly basis, which may also provide annual figures. The source of the data is usually the establishment or, in a few cases, the enterprise. In general, a lower limit is set on the size of establishments to be covered.

The items collected in these censuses and surveys include the characteristics of establishments, such as: kind of activity, location, type of ownership and of organisation, etc., employment, man-hours and compensation of employees, other inputs, such as materials and fuel, etc., output, value added, stocks, inventories, assets, capital formation, etc. The main objectives are to estimate the gross and net output of industry and other factual and systematic data which can be used for the study of the structure of the industry and the causal analysis of the various factors influencing the growth of industry in the country.

Industrial censuses or surveys provide data which permit relating the labour input to the value added in manufacturing, or to the gross value of output and other measures of industrial activity. These are basic sources of data for productivity measures describing the relationship between output and the labour time involved in its production. The wage data compiled from these surveys are used for the estimation of the share of wages in the value added in manufacturing and other industries covered by the survey.

The data on wages collected in the industrial censuses and surveys usually correspond to the wage measure "compensation of employees" used in the System of National Accounts, which includes wages and salaries and employers' contributions to social security and pensions schemes. In some surveys the wage data include, in addition to the compensation of employees, other elements of labour cost, such as the cost of welfare systems, vocational training, etc. However, these data are not usually collected in sufficient detail to provide figures for the different components of wages, such as direct wages and salaries, remuneration for time not worked, bonuses and gratuities, payments in kind, etc. Nor is information on age, occupation, skill, education of employees collected in these surveys. With a few exceptions, data on wages are collected for the year as a whole and therefore monthly or quarterly series of earnings or hours of work cannot be computed. Wage data from industrial censuses and surveys, while very useful for certain purposes, could not be considered as a substitute for wages statistics compiled as part of labour statistics.

Social security returns

Statistics of earnings have been developed in a few countries from statistical information obtained by the social security administration. These are generally developed countries which have advanced and comprehensive systems of social security, covering those who are in the labour force as well as those who have retired. The schemes include unemployment insurance, old-age, survivors', disability and health insurance, accident insurance, retirement benefits schemes, etc. The sources of data are usually the returns made by the employers or establishments.

Social security schemes in developed countries have a very wide coverage of employees and the returns usually provide information on employment status, sex, age, skill and sometimes occupation, earnings and number of days or hours of work of individual employees. Estimates of earnings are made using either all returns or a sample, and estimates of average earnings for a year or a part-year can be made, as well as the distribution of employees by level of earnings.

Wages statistics compiled from social security statistics are subject to a number of drawbacks. There is usually an upper wage limit, so that employees above this limit are not included or else only wages up to this limit are taken into account. The definition of earnings used in social security schemes is often different from that adopted in wages statistics programmes. For instance, insured wages do not usually include payments for overtime or efficiency bonuses, etc.; consequently, the data from the social security schemes usually yield lower averages of earnings than those obtained from establishment surveys.

However, data based on social security statistics can be used in conjunction with the information obtained from wages statistics programmes. These data are useful especially as benchmark data for verifying or adjusting the earnings data developed from establishment sample surveys with restricted coverage. They may be of use in certain circumstances to fill gaps in wages statistics and for some investigations on wage structure, as a global indicator for the development of total wages and salaries, and in connection with national income statistics. There may exist some cases where social security statistics provide the only opportunity to collect figures on earnings on a regular basis, especially where it is normally not possible to introduce establishment sample surveys.

Household sample surveys

Some countries, in particular developing countries, resort to the household survey approach for collecting data on wages, employment and other conditions of work and life of certain categories of wage earners, such as agricultural labourers. When the employment is casual and intermittent, or the wage earners move from one employer to another from day to day, the establishment approach is not suitable for collecting data on earnings and hours of work of employees. This type of household survey is usually carried out infrequently, so that time series data on wages and hours of work are not available.

A certain number of countries collect information on wage earners within the framework of multi-purpose household sample surveys, mainly covering the labour force or the population. The data on wages collected from these surveys can be related to demographic and other aspects of individual employees, as well as to the socio-economic characteristics of the household. These surveys also provide information on income from other sources and on living conditions of households which permit a deeper analysis of the general conditions of work and life of employees.

The household income and expenditure survey is another type of household survey which provides information on wages, which are an important source of household income. These surveys differ from country to country with regard to frequency, population and geographical coverage, observation period, method of collection of information and types of classifications.

The household surveys which have been carried out so far have not provided data for an analysis of the trend of wages. Moreover, the information obtained on levels of wage income, earnings or rates of wages, by occupation or industry, frequently has not been of an acceptable level of accuracy, being subject to bias and non-sampling errors. Household surveys are also an expensive method of collecting wages statistics.

Agricultural censuses and surveys

Agricultural censuses and surveys collect, among other things, information on hired labour and sometimes on wages. The unit of enumeration in these inquiries is generally the agricultural holding or establishment. The subjects covered include tenure and type of holding, land utilisation, crops, livestock and poultry, employment in agriculture, agricultural power and machinery and general transport facilities, irrigation and drainage, etc. Agricultural censuses and surveys provide data on the number of employees by sex, age group, nature of employment (permanent, temporary, occasional), number of days or hours worked, etc. Very few surveys have attempted to collect data on wages. Generally speaking, these surveys could provide information on wage rates but it is difficult to obtain comprehensive data on earnings of employees from this source, particularly for temporary and casual workers. However, they do provide a source of data for the distribution of agricultural employees and can serve as benchmark information.

Surveys of the cost of cultivation provide some data on the nature of hired labour, wage rates and the amount spent as wages and salaries. They are conducted on a crop-by-crop basis and the data on wages are collected as an input factor in the production process. In many developing countries, however, a large part of agricultural production is carried out by households, using household labour and some hired labour. The wage information obtained from this source has only limited application.

Trade union sources

Before the development of official wages statistics in an organised and systematic way, trade unions often served as a source of information on wage rates.

In a few countries trade union organisations still compile data on wage rates and related matters. Such information usually includes the number of employees covered by wage agreements, the wage rate for each occupation or trade, the number of union members working or immediately available for work at those rates, normal hours of work, overtime rates, employee payments to social security and pension schemes, vacation and other funds, etc. However, the average rates calculated from the trade union data may not necessarily be the actual wage rates paid to all workers, and the hours specified in the union agreements are not necessarily the hours actually worked. Workers with above-average experience and skill may be employed at rates above the agreed rates.

Annex

ILO October Inquiry on Occupational Wages and Other Wage Data

The ILO conducts an inquiry, in October of each year, into hourly wages and normal hours of work of adult wage earners in 41 selected occupations, monthly salaries and normal hours of work per week of employees in 7 selected occupations and retail prices of 39 selected consumer goods. The data for this inquiry are obtained for the principal cities of different countries from the national statistical offices, through the medium of questionnaires sent by the ILO. The October inquiry was instituted in 1924 following a recommendation made by the First International Conference of Labour Statisticians in 1923. The results of this inquiry are published every year in the second-quarter issue of the ILO *Bulletin of Labour Statistics.*

The ILO also publishes in its bulletin and in the *Year Book of Labour Statistics* statistical series of wages and hours of work for a number of countries. The bulletin presents statistics of earnings or wage rates and hours of work in the non-agricultural sector and in manufacturing. The *Year Book* provides statistics of earnings or wage rates for the non-agricultural sector, all manufacturing industries and by industry: mining and quarrying; construction; transport, storage and communications; and agriculture. Statistics of hours of work are also published for the above industries, except agriculture. Data for the two ILO publications are drawn either from information sent to the ILO by the statistical services of the various countries or from national publications. The ILO also issues a technical guide giving summary descriptions of the coverage, definitions and other main characteristics of the national series of earnings, wage rates and hours of work published in the *Bulletin of Labour Statistics.*

Objectives and uses of wages statistics

3

Statistical series of wage rates, earnings, compensation of employees and labour cost each measure a different aspect of wages. Data for each series are compiled with specified objectives, but they usually serve more purposes than those initially envisaged. In addition, these series together provide a web of inter-related items of information concerning wages. The real usefulness of the wages statistics in a given country depends, however, on a number of factors such as the relevance of the concepts and definitions used, the scope and coverage of the statistics, and the methods of collection, compilation and classification of data.

The objectives of wages statistics have expanded over the years. Formerly, such statistics usually related to wage earners employed in mining, manufacturing and construction industries and in certain sectors of agriculture. Nowadays, wages statistics in many countries cover other branches of economic activity such as electricity, gas and water; wholesale and retail trade; transport, storage and communication; finance, insurance, real estate and business services; and public and other services. The earlier statistics of wages were generally restricted to wage earners, whereas the more recent series cover in many cases both wage earners and salaried employees. The main objectives of wage surveys conducted in earlier days were to ascertain the general level of money wages and to collect data on wage differentials at a particular date. The data are now compiled with a twofold objective, viz. to provide information as to the levels of wages and to indicate their trends. The latter objective leads to the construction of various types of index numbers of wages. Recent wage surveys have established a close connection between statistics of wages and statistics of hours of work, and normally data on employment, wages and hours of work are now collected simultaneously, from the same reporting units.

Formerly, the remuneration of employees could generally be equated with the wage rate or straight-time earnings per unit of time worked or per unit of output. The system of employee remuneration has been broadened considerably in recent decades by the introduction and the liberalisation of supplements in the wage payment systems. Statistics of straight-time wages no longer represent adequately the level of earnings of many employees, since remuneration now includes cost-of-living allowances, family allowances, various forms of premium pay, payments for time not worked and employer contributions to social security and pension schemes for the employees. The statistical measures of wage rates and earnings are not sufficient to describe the wage situation, which has led to the development of statistical concepts of compensation of employees and labour cost.

It is further recognised that the individual fields of wages statistics, viz. wage rates, earnings, compensation of employees and labour cost, are inter-related and that the relationships in some cases are complex. For instance, earnings are related to and vary with

changes in wage rates and hours worked. Average earnings also vary with changes in the sex-age composition of the employees covered and changes in their skill, training, education, occupation and type of industry. Earnings account for the major part of both the compensation of employees and labour cost but these latter may show different trends over time. Wages-statistics programmes, especially in developed countries, aim at providing different wage measures in a mutually consistent manner so that they can throw light on the actual trends and on inter-relationships. They also distinguish current wage surveys, which provide data for short-term use, from in-depth surveys, which give more detailed data to meet long-term needs.

The users of wage statistics are numerous. They include labour administration departments of governments; wage fixing, regulating and arbitration authorities; trade unions, employers' organisations and other parties concerned with collective bargaining; economic, social and manpower planners and policy makers; universities and other research institutions; and many others. The wages statistics are produced primarily to meet national needs but are also used at the regional and international levels by international and intergovernmental organisations. Some of the major uses of wages statistics are briefly reviewed below.

Measurement of level of living of employees

Workers and their families depend almost entirely on wages to provide themselves with food, clothing, housing and all the other necessities of life. The payments in cash and in kind received by the employees as wages serve as one of the indicators of their level of living. In addition, the relative status of workers in society, their morale and their motivation towards productivity are conditioned by wages.

When statistical series of earnings were first compiled in various countries one of the main purposes was to measure the level of and changes in the living standards (or welfare) of the working class as a whole, and of its different sections. Cost-of-living allowances, family allowances, etc., have in many instances been introduced in the wage payment system in order to protect the level of real wages and the living standard of workers and their families. Surveys of wage structure and distribution provide, among other things, data which identify low-wage occupations and those categories of workers below the minimum desirable level of living. Statistics of normal hours of work and hours actually worked provide indicators of the conditions of work and life of wage earners and facilitate the regulation of hours of work, including the establishment of a maximum normal number of working hours per day and per week.

Data on the distribution of wage income received by the employee population, according to class intervals of income, or fractile groups of employees, throw more light on the welfare of workers than do general averages. However, "level of living" is a much wider concept, covering both material and non-material factors, and income or expenditure and hours of work are only two of the many components of its measurement. Even with regard to the income situation of wage earners, wage statistics provide only partial information, since they may also receive non-wage income or have various economic commitments. For the appraisal of the level of living, household surveys of income and expenditure provide more comprehensive data than wage surveys.

Wage fixing

The criteria traditionally employed by wage fixing authorities include the needs of workers and their families, the employers' capacity to pay, wages paid or income received for similar work elsewhere in the economy and also the requirements of economic development. In addition, various methods of fixing wage levels are used in decisions taken

alone by the employer and in individual agreements, collective agreements, voluntary or compulsory arbitration, minimum wage boards, statutory national minimum wages and other forms of regulation. Many countries have some form of legislation on minimum wages, which may be fixed at the national level or industry level, by sex, occupation, skill, etc., and by region.

The statistical data needed for purposes of wage fixing are not limited to wages statistics: for instance, the data required for minimum wage fixing or adjustment also include data on consumption requirements, consumer prices, the labour force (and its breakdown by status, economic sector and region), national income and its breakdown, balance of payments, and so on.

However, the primary need of the wage fixing machinery is for comprehensive statistics of wage rates, earnings, hours of work, compensation of employees, labour cost and wage differentials between sex, occupations, skill, industry, size of establishment, region, etc.

Collective bargaining

Wages and related questions are usually the central issues of collective bargaining. These issues include, for example, the bases adopted for fixing wages, the protection of real wages of employees from inflation, equal pay for equal work, profit sharing, bonuses, social security and pension benefits, etc. A problem which in recent times has attracted considerable attention in many countries is how to share the gains of productivity between labour and capital. This often leads to industrial unrest or disputes between workers and employers, loss of work time and loss of production. The parties concerned in collective bargaining need detailed statistics of wage rates, earnings, bonuses and other supplementary benefits, compensation of employees, labour cost, the share of wages in the value added by economic activity vis-à-vis profits, etc. Experience in many countries has shown that factual, impartial and authentic statistical data on wages reduce the areas of uncertainty and enable meaningful discussion between the different parties, thereby facilitating the collective bargaining process. Conversely, the lack of relevant and reliable statistics has often proved a serious handicap to efforts for the settlement of industrial disputes.

Economic indicators

Statistics of wages and hours of work are among the most important economic indicators compiled by countries. They are aids in forecasting economic and business conditions; for instance, changes in overtime hours and the consequent changes in earnings usually indicate a shift in the level of business activity. Average hours of work per week comprise one of the lead series among the major economic indicators; this indicator reverses direction earlier than others, particularly predating global measures of change in general business activity.

Organisations carrying out studies on consumer income, expenditure and purchasing power find average earnings data essential for their analyses. Industrialists and businessmen examine labour market information, including wages and hours of work data, before deciding on new plant location and before undertaking new business activity.

Income distribution studies

Income from wage employment generally accounts for much more than 60 per cent of the national income in developed countries and for a substantial part of the national income in the developing countries. Studies on income distribution, therefore, attach con-

siderable importance to wage income and its distribution. There are two main approaches to income distribution studies: one is the distribution of aggregate national income by factors of production, i.e. by factor incomes, and the other approach is to study the size distribution of income by income classes or fractile groups.

The wage measure used in the national income accounts is the compensation of employees, which includes wages and salaries and also the employers' contributions to social security and pension schemes for employees. National accounts need only an aggregate estimate of the compensation of employees, which is built up from primary and secondary sources of wages statistics, but these estimates relate to all employees in all sectors of the economy. National account estimates of the compensation of employees and other factor incomes, viz. entrepreneurial income and property income (interest, dividend, rent, royalties, etc.) throw light on the structure of the economy and the relative importance of each factor of production.

The size distribution of wage income by income classes or fractile groups of wage employees serves a number of purposes. It helps to identify the low-paid employees and also provides a better measure of the economic welfare of all employees. The disparity in wage income distribution can be measured by means of different indices of inequality. The size distribution of income has great significance in analytical and research studies; wage income distribution data are generally obtained from wage structure and distribution surveys.

Empirical data and wage theories

Empirical data are used to develop theories of wages and test their applicability. A number of theories have been advanced attempting to explain the economic role of wages and their evolution. The theories very often mentioned are: subsistence wage theory; wages fund theory; marginal productivity theory; bargaining theory; and purchasing power theory. Experience has shown that while the various theories have some validity in certain defined conditions and serve to explain many aspects of the wage situation, none is adequate as a general theory applicable to all circumstances. Economists and sociologists have given much thought and devoted much research to attempting to discover an acceptable general theory of wages that would explain in all circumstances the way in which the levels of wages and changes in wages are determined. No such theory has been worked out because the factors affecting wages are very complex and are very closely linked with the whole economic and industrial system and with social considerations.

Economic, social and manpower planning, research, analysis

Wages and related statistics form part of the data base needed for economic, social or manpower planning, especially for employment promotion and the improvement of income levels of various categories of employees. Planners need detailed data on wage structure and distribution in order to assess the initial wage situation, the choice of strategies for development and for fixing goals and targets in the field of wage employment. There is also a need for current and serial data on levels of and changes in employment as well as on earnings in order to monitor the implementation and evaluate the success or failure of the plan.

Nowadays, the focus of manpower planning, particularly in developing countries, is generally the creation and expansion of productive employment yielding adequate income, in order to solve the problems of poverty and to meet the basic needs of the poor. Such planning requires data on the differences in earning capacity of different types of employment, particularly between wage employment and self-employment, between dif-

ferent occupations and industries and between geographical regions. There is also great demand for wage data on agricultural and rural wages.

Planning requires considerable support from research and analytical studies. The relationships between wages and employment, wage rates and earnings, employee income and labour cost, wages and productivity, wages and prices, wage-induced rural-urban migration, etc., are important areas of economic research and analysis. Different models of development and hypotheses have to be tested before making a choice of strategies and planning techniques. All these purposes call for comprehensive wages and related statistics.

Wage, income and price policies

An important aim of wage and incomes policies is to establish economically correct or viable relationships of the levels of earnings (and other elements of employee remuneration) as between the different sectors, industrial branches, geographical regions and occupations. Unjustified wage differentials often exist because of historical accidents. In recent years many countries have directed their wage policies towards promoting non-inflationary economic growth and towards improving the welfare of the lower working class. The relationship between current levels of wages and salaries and incomes drawn from other sources, particularly in conditions of price inflation, has also been the subject of much debate.

These developments in turn create a demand for more detailed and comprehensive wages statistics.

More specifically, wages and related statistics are made use of for policy decisions and applications of the following nature:

(a) fixing wage and income differentials in order to encourage a more efficient allocation of the labour force (e.g. by increasing premiums for certain skills, reducing those skills in over-supply) and to reduce the disparity in personal income distribution;

(b) adjusting income tax and social security contributions with the aim of redistributing income and consumption;

(c) sharing the gains of productivity between labour, capital and the community in terms of lower prices;

(d) altering the wage structure in order to increase productivity potential;

(e) adopting measures designed to encourage savings and capital formation by regulating disposable income;

(f) assessing the relationship between wages and labour mobility and, in particular, rural urban migration;

(g) assessing the competitive position of a country in the field of international trade vis-à-vis labour costs in different countries;

(h) studying wage drift; wage drift is the extent to which earnings over a period have changed more (or less) than the rates which are fixed by collective agreements, wage boards or awards. The reasons for wage drift are many and include changes in the structure of the labour force, the proportion of skilled workers, the proportion of overtime payment, changes in working hours, etc.

Annex

International users of wages statistics

The ILO is one of the prominent users of wages and related statistics at the international level. The functions of the ILO include, inter alia, the collection and dissemination of information on

wages, hours of work and other conditions of life and work of employees. The ILO has adopted several Conventions and Recommendations concerning wages and hours of work, and these have been ratified or accepted by a number of countries. Data on wages and hours of work are needed by the ILO to review progress in the application of the Conventions ratified. The Industrial Committees of the ILO and other tripartite technical meetings review, from time to time, the wages and working conditions of employees in their respective fields. Some of these committees and meetings have emphasised the need for more comprehensive wages statistics. With the launching of the World Employment Programme by the ILO in 1969 the need for detailed wages statistics at the international level has increased, particularly for the informal sector in the urban areas of the developing countries.

One of the earliest uses of wages statistics at the international level was in connection with inter-country comparisons of real wages. From 1924 to 1953 the ILO computed and published index numbers designed to measure the food purchasing power of wages in the principal cities of a number of countries. The data for the computation of index numbers were obtained from the international inquiry carried out by the ILO in October every year into the hourly wages of wage earners in selected occupations and the retail prices of selected consumption articles. International surveys to establish relationships between prices and earnings of specified categories of employees have been carried out on an ad hoc and limited basis by private organisations. Multinational companies are interested in international wages statistics so as to determine the scale of wages and other remuneration to be paid to their employees posted in different countries in such a way that their levels of living may be comparable.

Another field in which there is growing international interest and need for statisitics is that of labour cost for export industries in different countries and its effect on international trade. The ILO publication *Labour costs in European industry* (Geneva, 1959) illustrates the use of labour cost data for comparative analysis. The Swedish Employers' Confederation publishes data on direct and total wage costs for workers in a number of European countries and for the United States, Canada and Japan.

The Statistical Office of the European Communities conducts harmonised wage surveys in member countries, using uniform concepts, definitions and procedures. The data from these surveys have helped considerably to establish comparable wage data for the member countries. The Organisation for Economic Co-operation and Development is another organisation which has made use of the wage data for studies, research and policy recommendations.

Concepts and definitions

4

The main purpose of this chapter is to analyse the underlying concepts of the various statistical measures of wages and to provide suitable definitions for the collection and compilation of wages and related statistics within the framework of an integrated system. Concepts and definitions relevant to the subject-matter under measurement are fundamental for the production of meaningful statistical data. Those concepts and definitions which are common to the different types of surveys within the integrated system are discussed in this chapter, while those aspects specific to each survey are included in the chapters dealing with each type of survey.

Concepts of wages as price, income and cost

The various theories of wages do not agree on a unique concept of wages applicable in all circumstances. Some economic theories consider wages as the price of the labour or the labour service utilised in the production of goods and services. The term "wages" is used here in its broadest sense; it includes both the wages of manual workers and the salaries of white-collar employees, including those of executives, managers, etc. However, from the social point of view, the concept of wages has a unique character; labour is not a commodity and wages constitute not only the payment for the physical and mental effort of human beings but also provide the means of living for those who supply the effort and their families. Thus, wages represent an important form of income and are divided among a great proportion of the population. In industry, wages account for a large part of the employer's cost of production. Employers consider all expenditure on employing labour, whether in the form of direct wages or fringe or supplementary payments, as well as expenditure on recruitment, vocational training, etc., as part of labour cost. However, not all costs incurred by the employer in employing labour automatically accrue as income to the employees. In view of these different functions of wages, it is essential that the statistical measures of wages should distinguish between the concepts of wages as the price of labour, as income to the employee and as a cost to the employer.

The task of defining the concept of wages gives rise to many difficulties because of the fact that differing views are held concerning the appropriateness of including in employee remuneration such items as fringe benefits or social charges and the various supplementary payments made by employers. The common notion of wages is, however, that of payments to a worker by his employer made regularly (usually at daily, weekly, fortnightly or monthly intervals), including payments in cash and in kind, amounts earned by piece-workers, supplementary earnings under incentive plans, cost-of-living

allowances and regular bonuses. The notion also includes payments for overtime and for work on those days which are normally non-working days (weekends or holidays). These payments are mostly directly related to work performed, but remuneration for time not worked (including paid annual vacations, public holidays, etc.) is also considered as part of wages. According to this notion of wages, employers' contributions to social security schemes (whether compulsory or voluntary, covering sickness, accidents, unemployment, maternity and old age, etc.), the cost of severance payments on termination of employment, end-of-service benefits and retirement allowances are generally considered as fringe benefits or social charges and not as part of wages. The above notion of wages, or rather the dichotomy between wages and fringe benefits or social charges, is not accepted by all those concerned with wage problems. There are differences of view as to whether a number of bonuses form part of normal wages or are gratuitous payments made by the employer. Another area of controversy is whether occupational pensions of employees are to be treated as deferred wages, social security benefits or a combination of both. Accordingly, while it is not easy to provide a formal definition of "wages" acceptable to all, the problem can be tackled for statistical purposes by a component approach. If a particular definition is not fully acceptable for certain uses, the components can be regrouped to arrive at the statistical measures corresponding to the user's requirements.

The terms "fringe benefits" and "social charges" have been used in various ways in the relevant literature and their meaning and connotation are rather flexible. In view of this, these terms are not used in the definitions of statistical measures of wages given in this manual. However, the elements of the "fringe benefits" or "social charges" are included in one or other of the components of the different wage measures.

The resolution concerning an integrated system of wages statistics adopted by the Twelfth ICLS (1973)[1] contains, inter alia, definitions of "wage rates" and "earnings". This resolution also endorses the concept and definition of "labour cost" adopted by the Eleventh Conference (1966),[1] and the definitions of "hours of work" given in the resolution of the Tenth Conference (1962).[1] The wage measure "compensation of employees" was developed in relation to national income estimates. These international recommendations serve as guidelines for suitable definitions for national wages statistics programmes.

Wage rates

The resolution of the Twelfth ICLS recommends the following:

11. The data on time rates of wages should relate to an appropriate time period such as the hour, day, week, month or other customary period used for purposes of determining the wage rates concerned.

12. Wage rates should include basic wages, cost-of-living allowances and other guaranteed and regularly paid allowances, but exclude overtime payments, bonuses and gratuities, family allowances and other social security payments made by employers. *Ex gratia* payments in kind, supplementary to normal wage rates, are also excluded.

13. Statistics of wage rates fixed by or in pursuance of laws or regulations, collective agreements or arbitral awards (which are generally minimum or standard rates) should be clearly distinguished from statistics referring to wage rates actually paid to individual workers. Each of these types of wage rates is useful for particular purposes.

14. Time rates of wages for normal periods of work should be distinguished from special and other rates such as piece rates, overtime rates, premium rates for work on holidays and shift rates.

Wage rates fixed by or in pursuance of laws or regulations, collective agreements or arbitral awards are usually scales, and the compilation of statistics of such rates does not normally take into account changes in the proportion of higher- and lower-paid employees, occupational patterns, changes in the pay of individual workers due to promotion or progressive increments within the limits of existing scales or changes in normal

hours of work and the amount of work available. Due to these and other similar factors, the actual wage rates paid to workers may be different from the wage rates prescribed by wage agreements and laws and regulations.

Time rates of wages refer to the wage rates paid for normal time of work and relate to a time-unit such as an hour, day, week or month. Piece rates apply to those categories of workers whose remuneration is in relation to their output. They may be applied either to individual workers or to teams of workers employed together on a job. There can be differential piece rates, according to which two piece rates may be fixed, the higher one being paid only to those workers who reached a specified standard of output enabling them to gain a higher remuneration. Piece rates can be converted into time rates by assuming an output norm.

Earnings

The statistical measure of earnings is based on the concept of wages as income to the employee. The resolution of the Twelfth ICLS (1973) defines the concept of earnings as follows:

8. The concept of earnings, as applied in wages statistics, relates to remuneration in cash and in kind paid to employees, as a rule at regular intervals, for time worked or work done together with remuneration for time not worked, such as for annual vacation, other paid leave or holidays. Earnings exclude employers' contributions in respect of their employees paid to social security and pension schemes and also the benefits received by employees under these schemes. Earnings also exclude severance and termination pay.

9. Statistics of earnings should relate to employees' gross remuneration, i.e. the total before any deductions are made by the employer in respect of taxes, contributions of employees to social security and pension schemes, life insurance premiums, union dues and other obligations of employees.

However, the resolution did not propose an international standard classification of components of earnings. Suggested below is a list of components that are applicable for compilation of earnings statistics. The definition of earnings states that earnings in kind should be distinguished from cash earnings. Payments in kind could therefore form a major group in which case the first three major groups would relate only to cash earnings. Each major group should be further divided into components for the collection and compilation of statistics of components of earnings, as follows.

Components of earnings

I: *Direct wages and salaries (in cash)*

1. Pay for normal time work.
2. Premium pay for overtime and holiday work.
3. Premium pay for shift work, night work, etc., where these are not treated as overtime.
4. Incentive pay (production bonuses, etc.).
5. Other regularly paid bonuses.
6. Family allowances paid directly by employer.
7. Cost-of-living or dearness allowance.
8. House-rent allowance paid directly by employer.

II: *Remuneration for time not worked (in cash)*

1. Annual vacation and other paid leave, including long-service leave.
2. Public holidays and other recognised holidays.
3. Other time off granted with pay.

III: *Bonuses and gratuities (in cash)*

1. Year-end, seasonal and other one-time bonuses.
2. Profit-sharing bonuses.
3. Additional payments in respect of vacation, supplementary to normal vacation pay, and other bonuses and gratuities.

IV: *Payments in kind*

1. Payments in kind for food and drink.
2. Payments in kind for fuel (coal, coke, electricity, gas, etc.).
3. Imputed rental value of free or subsidised housing.
4. Other payments in kind (e.g. footwear, clothing).

Major group I: Direct wages and salaries represents only cash earnings in the proposed classification scheme. The classification of components is made on the basis of purpose of payment and is applicable to time-rated wage earners, piece-rated wage earners and salaried employees. If, however, time-rated wage earners and piece-rated wage earners are combined into one category for the purposes of the survey, major group I should show separately straight-time pay of time-rated wage earners and earnings of piece-rated workers. The item "premium pay for overtime and holiday work" should also be divided between the two categories of wage earners. Only those family allowances which are directly and regularly paid by the employer should be included as an element of direct wages and salaries. On the other hand, family allowances paid through social security schemes should not be considered as part of earnings.

Major group II: Remuneration for time not worked represents direct payments to employees in respect of annual vacation, and assimilated leave, long-service leave, public and other recognised holidays, other time off with pay granted by the employer, for instance in connection with the birth or death of family members, marriage of employees, union activities, family obligations, functions of titular office, etc. Direct payments by the employer also include purchases by employers of tickets for employees, travel for annual and other vacation, which should not be treated as payments in kind. For purposes of earnings statistics remuneration for time not worked does not include severance and termination pay.

Major group III: Bonuses and gratuities covers seasonal, end-of-year and other one-time bonuses, additional payments in respect of vacation periods supplementary to normal pay, profit-sharing bonuses and similar payments. Bonus payments which are made on a monthly or more frequent basis (such as a pay period) under contractual arrangements and relating to work done should be assimilated with incentive pay under major group I. Special payments made by the employer to certain employees for innovations or ideas for improvements in working methods should not be considered as regular earnings of employees and therefore they do not form part of this major group.

Major group IV: Payments in kind, for the purpose of earnings statistics, refers only to those payments in kind (in the form of food, drink, fuel, free or subsidised housing and similar payments) which are made individually to employees and which supplement their earnings. Payments in kind do not include free or subsidised medical care or similar payments under social security schemes. In principle, for purposes of earnings statistics, payments in kind should be measured on the basis of the value accruing to the employee, since earnings are based on the concept of wages as income to the employee. Evaluation of the payments in kind at retail market prices provides a reasonable estimate of the value accrued to the employee. Such an approach is, however, not feasible in an establishment survey, where it is easier for the establishment to furnish data on the money value of payments in kind made to the employees at cost price or producers' price.

Compensation of employees

This wage measure is used in connection with the national accounts. Extracts from the United Nations revised System of National Accounts defining compensation of employees are given below.[2]

7.11 The compensation of employees comprises all payments by producers of wages and salaries to their employees, in kind as well as in cash, and of contributions in respect of their employees to social security and to private pension, casualty insurance, life insurance and similar schemes....

7.12 The compensation of employees is to be classified into payments in respect of civilian employees and payments in respect of members of the armed forces.... The compensation of civilian employees should be subdivided into (i) wages and salaries, in cash and in kind, (ii) employers' contributions to social security schemes on the account of their employees and (iii) employers' contributions to private pension, family allowance, health and other casualty insurance, life insurance and similar schemes in respect of their employees. This classification distinguishes between the actual and imputed compensation of employees....

7.13 Wages and salaries cover all payments which employees receive in respect of their work, whether in cash or in kind, and before deductions for their contributions to social security, withholding taxes, and the like. The wages and salaries should be taken net of any purchase of working tools, equipment and special clothing which employees are contractually obligated to make out of their compensation. Reimbursements of employees for travel, entertainment and other expenditure which they incur in conducting the business of their employers is not to be included in this flow. Covered in wages and salaries are such payments as commissions, tips and bonuses, cost-of-living and dearness allowances, in respect of vacation, holidays, sick-leave and other relatively short absences from work when paid directly by the employer, fees to ministers of religion and members of boards of directors; and the cost to the employers of food, lodging, ordinary clothing, etc., which they provide free of charge, or at a reduced cost, to their employees. Contributions which employers make on the account of their employees to social security schemes or to private funds, reserves or other special schemes in respect of family allowances, lay-off and severance pay, casualties and maternity leave, pensions and the like, are to be classified in the other elements of compensation of employees. If, in the absence of special schemes or reserves, employers make direct payments of this type to their employees, imputed contributions in respect of these obligations should be included in the employers' contributions to the private schemes.

. . . . . .

7.15 Payments in kind of wages and salaries should cover the cost to the employer of goods and services furnished to the employees free of charge, or at markedly reduced cost, which are clearly and primarily of benefit to the employees as consumers. Outlays by employers which are of benefit to them, as well as their employees, should be included in intermediate consumption, not in compensation of employees. Examples of the second type of outlays are expenditure by employers on amenities at places of work, medical examinations, sport and other recreational facilities; and reimbursement by employers of the expenses of travel, entertainment and work clothing, tools and equipment which are incurred by their employees.

Labour cost

The statistical measure of labour cost corresponds to the concept of wages as cost to the employer. The resolution concerning statistics of labour cost adopted by the Eleventh ICLS (1966)[1] defines the concept of labour cost in the following terms:

3. For purposes of labour cost statistics, labour cost is the cost incurred by the employer in the employment of labour. The statistical concept of labour cost comprises remuneration for work performed, payments in respect of time paid for but not worked, bonuses and gratuities, the cost of food, drink and other payments in kind, cost of workers' housing borne by employers, employers' social security expenditures, cost to the employer for vocational training, welfare services and miscellaneous items, such as transport of workers, work clothes and recruitment, together with taxes regarded as labour cost.

The Eleventh Conference also adopted an International Standard Classification of Labour Cost comprising the following major groups:

I. Direct wages and salaries.
II. Remuneration for time not worked.

III. Bonuses and gratuities.
IV. Food, drink, fuel and other payments in kind.
V. Cost of workers' housing borne by employers.
VI. Employers' social security expenditure.
VII. Cost of vocational training.
VIII. Cost of welfare services.
IX. Labour cost not elsewhere classified (such as costs of transport of workers to and from work, cost of work clothes, cost of recruitment, etc.).
X. Taxes regarded as labour cost (for instance, taxes on employment or payrolls).

In certain countries, some items of labour cost, for example social security and vocational training either as a whole or in part, are not chargeable to employers but represent expenditures by the State for social or other reasons. Taxes imposed on employment or on payrolls directly affect the cost to the employers of employing labour. Such taxes should be included in the labour cost on a net basis, i.e. after deducting allowances or rebates made by the State. All the differences between countries in their treatment of the various items of labour cost should be taken into account when making international comparisons. The components of labour cost are discussed in greater detail in Chapter 8 in relation to the collection of data.

Wage payments in kind

Payments in kind, in one form or another, exist in many countries, even in the non-agricultural sector. They include such articles as food, drink, free or subsidised housing, and fuel. In the agricultural sector, especially in developing countries, payments in kind account for a large proportion of employee remuneration. Moreover, under certain conditions, for instance where there is a scarcity of food grain, workers may even insist on their wages being paid in kind.

The resolution of the Twelfth ICLS[1] makes the following recommendation in regard to payments in kind:

15. In view of the dual nature of wages as cost to the employer and earnings of the employee, it may be necessary to evaluate wage payments in kind according to both of these concepts.

16. In principle, for earnings statistics, payments in kind should be measured on the basis of the value accrued to the employee, since earnings refer to the remuneration or income of a specified group of employed persons, whereas for statistics of wage rates and labour cost the evaluation should be done on the basis of cost to the employer since these data refer to the cost of units of work time.

17. Evaluation of remuneration received in kind on the basis of retail market prices generally provides a reasonable estimate of the value accrued to the employee. This method is frequently followed when income data, including wages, are collected through household surveys.

18. When earnings data are furnished by the employer, it is generally easier for him to express the money value of any payments in kind which are included as equal to the cost to him of the goods or services concerned but, if the employer is unable to report the actual cost incurred, it is convenient to use producers' selling prices, or wholesale prices. However, to evaluate the levels of earnings of employees, an adjustment should be made for the difference between cost to the employer and retail prices wherever payments in kind are significant.

Adequacy of wage measures currently in use

Wage rates, earnings, compensation of employees and labour cost, as defined above, are designed to measure different aspects of wages. Producers and users of wages statistics should clearly understand what each one measures and does not measure. Such an understanding would obviate wrong use or misinterpretation of wage data. It would also help to improve existing concepts and definitions or to develop new concepts in order to meet new and emerging data needs.

Wage rates are similar to price quotations and their statistical measurement utilises the ordinary methods of price statistics. There are different kinds of labour, with different occupations, levels of skill, male or female workers, etc., which are remunerated at different rates. Monthly salaries of white-collar employees are also rates. Wage rates differ for work on overtime, weekends, holidays, night shifts and also according to the hardship involved in the work. They need detailed specification to be meaningful and comparable. The wage rate by itself does not represent the income of the employee nor the cost to employers of employing labour. Further, in a number of countries the factors determining wage rates are extremely intricate; for example, part of the wage rate may be fixed on the basis of time worked, part on the basis of production or sales and part on the basis of family status and number of dependants. Despite these limitations, statistics of wage rates are needed to provide norms or guidelines for wage fixing and similar uses.

The wage measure "earnings" represents the remuneration regularly received for time worked or work performed, including payments for annual vacation, public and other holidays and other time off granted with pay. However, earnings do not include benefits received by employees in cash and in kind from social security schemes financed by employers. Wage payment systems have been broadened considerably over the years by the introduction, liberalisation and expansion of social security and other supplementary benefits. In many countries wage-related social security benefits from statutory and non-statutory schemes already account for a substantial part of the income of employees and will continue to grow in importance in almost all countries. Thus, although the wage measure "earnings" is defined on the basis of the income concept, it does not fully measure the income accruing to employees from their employment.

The social security schemes specifically concerning employees may be broadly grouped into: (i) those providing benefits to the employee while in employment or retaining the status of employee; and (ii) those providing benefits either to the employee during retirement or to his survivors. Family allowances, educational allowances, sickness benefit, maternity benefit and unemployment assistance all fall under the first category, while schemes providing old-age, invalidity and survivors' pensions and benefits of a similar kind belong to the second type. Benefits received under schemes of the first type are in many cases received in place of or together with earnings and therefore supplement the regular or normal income of employees.

The social security schemes relating to employees, apart from pension schemes, are designed either to compensate for loss of earnings in certain eventualities (such as sickness, unemployment, etc.) or to augment incomes of employees to enable them to support their families more adequately. The amount of benefits received by employees usually depends on a number of factors, such as family composition, earning status of the spouse and other income of the family, as well as the scale of contributions paid by the employees and their duration of employment. In principle, these schemes are weighted heavily in favour of the lower-paid and disadvantaged employees.

As a rule, the State contributes along with the employer and the employee to finance the wage-related social security schemes, although the extent of state participation varies from country to country. The wage measure "compensation of employees" (System of National Accounts (SNA)) excludes contributions by the State to social security schemes relating to employees in accordance with national accounting concepts. But, from the standpoint of the employee, contributions by the State to wage-related social security schemes help to provide a means of increasing employee income and welfare.

The employers' contributions to social security schemes are generally related to the amount of direct wages and salaries paid to the insured person. It does not follow, however, that the individual employee is paid or can claim the amount his employer contributed on his behalf. In other words, the benefits received are not uniformly proportional to the contributions paid. Some employees who contribute may not receive any benefit from

a certain type of social security scheme (e.g. unemployment insurance) while others may get a large amount, depending on contingencies, needs and qualifying conditions.

From the standpoint of the income of employees, the discussion in the two preceding paragraphs concerning the compensation of employees is also true of labour cost, which comprises compensation of employees (for the most part) together with such items as employers' cost for vocational training, welfare services, payroll taxes and other labour cost (for transport of workers, work clothes, recruitment, etc.). However, none of these additional items is regarded as income of employees. Moreover, labour cost statistics are not intended for use in the analysis of the distribution of income from employment among individual workers.

Need for a wage measure "employee income"

In 1968 the ILO convened a Meeting of Experts on Statistics of Wages and Employee Income, which carefully reviewed the underlying concepts currently in use for the various kinds of statistics in the broad field of remuneration of employees, and came to the conclusion that, in addition to the wage measures "earnings", "compensation of employees" (SNA) and "labour cost", there was a need for a wage measure "employee income" in a system of wages statistics. It observed:

> Employee income could provide a better and more realistic measure of level of remuneration of employees than earnings which represented primarily only the remuneration in cash or kind for time worked or work done. The need for statistics of employee income arose because of the growing importance of social security benefits and of supplementary benefits in wage payment systems. On the other hand, the labour cost of employers was not all income to employees. The estimates of compensation of employees in SNA would also not be fully adequate measures of the level of employee income since they also corresponded to a cost concept. This situation called for a concept of employee income viewed from the standpoint of employees which would measure the remuneration of employees over and above their earnings ... employee income would also provide a better basis of comparison of level of remuneration between industries, regions, wage earners and salaried employees within a country as well as for international comparisons. It would also throw light on the level and nature of certain social security benefits received by employees of different categories and industries and their changes over time. Statistics of employee income would fill the gap in wage statistics programmes between statistics of earnings and of labour cost.[3]

Statistics of employee income could be applied, in particular, to the study of redistribution of wage income through the mechanism of social security schemes. They would also be useful in connection with wage fixing, collective bargaining and certain practical problems of incomes and price policies.

Provisional definition of "employee income"

Employee income may be provisionally defined as all receipts or benefits in cash or kind received by the employee by virtue of his current status as an employee, from employers or social security and insurance schemes or the State. The statistical concept of employee income must be restricted to items which: first, are received by individual employees; second, are unambiguously regarded as a benefit to the worker; and, third, can be expressed in monetary terms. The components of employee income would therefore include:

(a) all the components of "earnings" as described earlier in this chapter under the heading "Earnings";

(b) net current benefits from social security and insurance schemes for employees (such as maternity benefits, health and sickness benefits, casualty (temporary loss of wages) benefits, unemployment benefits, family allowances regarded as social security benefits, severance and termination pay, etc.).

Receipts from social security and related schemes are to be included on a net basis by deducting employees' own contributions. This avoids double counting: earnings are gross, before deduction of social security and insurance contributions. The adjusted figures would be "net social security benefits".

Other income received by the employee but not connected with his current status as employee, such as entrepreneurial income, property income, pension received for past employment, remittances, gifts, etc., would not be included in employee income nor would family allowances and other social security assistance, if paid by the State, without regard to employee status (i.e. not specifically restricted to employees). The proposed definition of employee income does not take into account the value of future pension and similar rights earned by employees. Pension rights, for example, may be transformed into income at some future date only under certain conditions; until that time they represent only an expectation of income; also, the assessment of the current monetary value of pension rights (i.e. the monthly increase in their value) raises insoluble problems.

One derivative of the wage measure "employee income" is "net disposable employee income", which, for example, is sometimes used in nation-wide bargaining in the framework of income policies. It takes account of direct taxation as well as deductions of payments made by employees to social security schemes.

The Twelfth ICLS (1973) expressed considerable interest in the proposal to develop the wage measure "employee income". It was generally conceded that employee income would not be viewed strictly as an independent concept. It is, rather, an extension of the notion of total employee remuneration, which would take into account not only wages and related payments but also certain non-wage receipts that accrue to the employee by virtue of his usual status as employee. Thus it would take into account such current receipts as compensation from unemployment funds, sickness insurance funds and other sources, e.g. allowances received during vocational training, retraining or refresher courses, etc. There are obviously some complex conceptual and methodological problems to be solved before employee income can be included as a wage measure in the integrated system of wages statistics.

Relationship between different wage measures

The table overleaf shows the different components of earnings, labour cost, compensation of employees (SNA) and the provisional measure of employee income.

Groups I-V (with minor exceptions in scope) are common to all the concepts: earnings, labour cost, compensation of employees (SNA) and employee income. Groups VII-X relate to labour cost only but otherwise the main differences in the concepts of labour cost, compensation of employees and the tentative concept of employee income relate to Group VI, where certain differences arise in the treatment of various sub-items. Group VI is subdivided into the four items indicated in the table.

Compensation of employees (SNA) includes VI (1), (2) and (3) but not (4). Labour cost excludes VI (3) and (4). Labour cost statistics, following a business accounting approach, include in VI (1) not only direct payments by employers during the accounting period to current employees but also those to past employees. The latter are excluded from compensation of employees (SNA). The concept of employee income includes VI (1) and (4) but excludes (2) and (3).

Hours of work

The statistical concept of hours of work includes three categories: (i) normal hours of work; (ii) hours actually worked; and (iii) hours paid for. The resolution concerning statistics of hours of work adopted by the Tenth ICLS (1962)[1] gives the definitions of normal hours of work and hours actually worked.

Main components of the wage measures "earnings", "labour cost", "compensation of employees (SNA)" and "employee income"
[+included; −excluded]

Component	Earnings	Labour cost	Compensation of employees (SNA)	Employee income (provisional)
I. *Direct wages and salaries*	+	+	+	+
II. *Remuneration for time not worked*				
(1) Annual vacation, other paid leave	+	+	+	+
(2) Public and other holidays	+	+	+	+
(3) Other time off granted with pay	+	+	+	+
(4) Severance and termination pay	−	+[1]	+	+
III. *Bonuses and gratuities*				
(1) Year-end and seasonal bonuses	+	+	+	+
(2) Profit-sharing bonuses	+	+	+	+
(3) Supplementary vacation pay and other bonuses and gratuities	+	+	+	+
IV. *Food, drink, fuel and other payments in kind*	+	+	+	+
V. *Housing and rent allowances*	+	+	+	+
VI. *Social security, pensions, etc.*				
(1) Direct payments by employer to employees regarded as social security payments	−	+[2]	+	+
(2) Employer's contributions to social security schemes and pension schemes (statutory and other)	−	+	+	−
(3) Imputed contributions of employer in respect of unfunded pension and other social security schemes	−	−	+	−
(4) Current receipts from social security schemes organised on behalf of employees	−	−	−	+
VII. *Employer's cost for vocational training*	−	+	−	−
VIII. *Employer's cost of welfare services*[3]	−	+	−	−
IX. *Employer's other labour cost*[4]	−	+	−	−
X. *Taxes regarded as labour cost*	−	+	−	−

[1] Where not regarded as social security expenditure (as such, included under VI). [2] Including termination pay regarded as social security benefit. Including also assimilated payments in respect of former employees. [3] Including canteens and assimilated services; educational, cultural and recreational facilities and services; grants to credit unions and cost of assimilated services for employees. [4] Including such items as: work clothes, recruitment costs, etc.

Normal hours of work

These are the hours of work fixed by or in pursuance of laws or regulations, collective agreements or arbitral awards. Where not so fixed, "normal" hours of work should be taken as meaning the number of hours per day, or week, in excess of which any time worked is remunerated at overtime rates or forms an exception to the rules or customs of the establishment relating to the classes of workers concerned.

Hours actually worked

Statistics of hours actually worked should include: *(a)* hours actually worked during normal periods of work; *(b)* time worked in addition to hours worked during normal

periods of work and generally paid at higher rates than normal rates (overtime); *(c)* time spent at the place of work on work such as the preparation of the workplace, repairs and maintenance, preparation and cleaning of tools, and the preparation of receipts, time sheets and reports; *(d)* time spent at the place of work waiting or standing by for such reasons as lack of supply of work, breakdown of machinery or accidents, or time spent at the place of work during which no work is done but for which payment is made under a guaranteed employment contract; *(e)* time corresponding to short rest periods at the workplace, including tea and coffee breaks. Statistics of hours actually worked should exclude: *(a)* hours paid for but not worked, such as paid annual leave, paid public holidays, paid sick leave; *(b)* meal breaks; and *(c)* time spent on travel from home to workplace and vice versa.

Hours paid for

The Tenth Conference did not adopt a definition of hours paid for because of the wide difference among countries with respect to wage payments for holidays and other periods when no work is performed. However, many countries find that statistics of hours paid for, while not entirely suitable as a substitute for hours actually worked, are useful for various purposes. Usually, moreover, the data are readily available from payrolls and other records.

Employees and other status groups among the employed labour force

A discussion on concepts and definitions concerning wages statistics should necessarily cover the term "employee" since wages are payments to the employee group in the labour force. According to the United Nations classification, the employed labour force has been divided into five groups based on employment status: (i) employer; (ii) own account worker; (iii) unpaid family worker; (iv) employee; and (v) member of producers' co-operatives. These divisions by employment status are made on the basis of two criteria: the relative position of a person compared with that of other persons, and the mode of remuneration.

Employee

An employee is defined as a person who works for a public or private employer and receives remuneration in wages, salary, commission, tips, piece rates or pay in kind.[4] This definition covers both wage earners and salaried employees. Thus, working proprietors, unpaid family workers, and managerial staff remunerated predominantly by a share of the profits are excluded from the definition of employee.

Different countries use different terms to distinguish wage earners from salaried employees. Wage earners may be called manual workers, operatives, factory workers, production and related workers, piece workers, etc. In general, these categories of workers are paid on hourly, daily or piece-work bases, although many of them are progressively acquiring conditions of work similar to those of salaried employees.

The ILO Convention concerning statistics of wages and hours of work, 1938 (No. 63), stipulates that statistics of earnings and hours of work be compiled for wage earners in specified industries. The Convention does not, however, give a definition of wage earner. The resolution on the Convention adopted by the Seventh ICLS (1949)[1] requests countries to define the meaning of the term "wage earner" and "salaried employee" in presenting statistics of earnings and hours of work. This recommendation may be followed for all wages statistics produced within the framework of the integrated system.

Wage earners may be further divided into time-rated and piece-rated wage earners. Time-rated wage earners are those employees paid on a time basis, whether it be hourly, daily, weekly, fortnightly or any other time unit. Piece-rated wage earners are those whose remuneration is based on their output.

Within the above categories, employees may be further distinguished according to the terms of their employment as permanent, regular, temporary, casual, seasonal, full-time, part-time, etc. These terms will have particular connotations for certain countries. There are no standard international definitions relating to these categories, and national definitions in this regard vary from one country to another. Whatever the definitions used, they should be uniformly used in all the wage and related surveys carried out in the country.

Industry and industrial classification

The definitions and classifications of industry to be used in wages statistics programmes should be the same as those used in other fields such as population, labour force, industrial and distributive trade statistics, national accounts, etc. This facilitates comparisons of relations of the various statistical series.

The term "industry" is used in this manual as conceived in the United Nations International Standard Industrial Classification of All Economic Activities (ISIC).[5]

The ISIC is divided into the following major divisions:

Major division 1: Agriculture, hunting, forestry and fishing;
Major division 2: Mining and quarrying;
Major division 3: Manufacturing;
Major division 4: Electricity, gas and water;
Major division 5: Construction;
Major division 6: Wholesale and retail trade and restaurants and hotels;
Major division 7: Transport, storage and communication;
Major division 8: Financing, insurance, real estate and business services;
Major division 9: Community, social and personal services.

Each major division is further divided into successive "divisions", "major groups" and "groups". These are called respectively: one-digit, two-digit, three-digit and four-digit levels of industry.

The ISIC is a classification of kinds of economic activity which has as its objective to divide data in respect of the economy according to categories of activities whose characteristics are similar. It should be noted that no distinction is made with regard to form of ownership, type of economic organisation or mode of operation.

As the ISIC is designed primarily to meet the requirements for data classified according to internationally comparable categories of kinds of activity, it is not necessarily identical to the classification system of any one country. However, it is desirable for countries to adopt the ISIC as a framework and, as far as possible, to use the same general principles and definitions as are contained in it. This facilitates the classification of data according to categories which are convertible to the ISIC, thus enabling international comparisons of national statistics.

The important units considered for classification in the ISIC are: (i) the establishment; (ii) the kind-of-activity unit; and (iii) the enterprise. These units are relevant to varying degrees for wage surveys. Their definitions are given below:

Establishment. This is ideally an economic unit which engages, under a single ownership or control (i.e. a single legal entity) in one, or predominantly one, kind of economic activity at a single physical location, e.g. an individual farm, mine, workshop, store or office. The establishment sometimes includes certain ancillary units and/or technical

units. Examples of an ancillary unit are a central administrative office, a warehouse, a garage, a repair shop, etc. Departments of a meat-packing plant which produce lard, cure bacon or can meat, and departments of a textile mill which spin yarn, weave cloth and dye the cloth, are all examples of technical units.

Kinds-of-activity unit. This differs from the establishment in that there is no restriction in respect of the geographical area in which a given kind of activity is carried on by a single legal entity. In the case of kinds of economic activity such as construction, transportation and communication, a single legal entity will carry on the same kind of activity over a wide geographical area, and will probably not keep records on the output of, and the inputs into, goods and services classified according to given portions of the area.

Enterprise. This is a legal entity consisting of one or more establishments or kind-of-activity units, e.g. a joint-stock company, corporation, co-operative association, incorporated non-profit association, partnership, individual proprietorship or similar association. The enterprise owns and manages the property of the organisation, enters into contracts, receives and disposes of all its income and maintains independent profit-and-loss and balance-sheet accounts and other records.

Reporting unit

The choice of reporting unit or statistical unit of observation for wage surveys should be the same for each type of survey. The choice has to be made from amongst the possible units, which include the enterprise, undertaking, firm, establishment, department or section within an establishment, etc. The resolution concerning the methods of obtaining statistics of earnings from payrolls adopted by the Seventh ICLS (1949)[1] states that "the basic recording unit should be the establishment in preference to the undertaking, firm or company; when a single establishment comprises several units engaged in distinct activities, separate returns for each unit should be secured wherever possible." Most countries have adopted the establishment as the reporting unit, more or less as defined in the United Nations ISIC, in their surveys of employment, earnings and hours of work. In view of the importance of assigning each reporting unit to its proper industry classification, it is recommended that, wherever possible, the establishment be the basis of returns, and that, in any case, the same practice as that applied to employment statistics be used in the case of payroll and average earnings statistics. In industrial and commercial surveys, also, the reporting unit is the establishment.

The concept of the establishment is applicable in many of the situations encountered in inquiries in manufacturing, mining, distribution, etc. However, in some situations the ideal concept of the establishment as the reporting unit cannot always be employed strictly.

Some undertakings or companies have establishments in different areas, producing the same or different goods and services. Since the aim of the establishment survey is often to obtain data on employment, earnings and hours of work by industry and by geographical area, it is desirable that separate reports be requested for each establishment of the firm or company.

The organisation and record-keeping practices of units engaged in the production of goods and services, and the consequent limitations on the availability of data must be taken into account when formulating the definition of establishments which is to be used in practice. In the case of very large units which engage in a number of activities, efforts should be made to divide them into separate establishments so as to limit the range of activities covered by each unit to that usually included in distinct establishments.

As regards types of economic activity such as construction, transportation and communication, it is possible that a single legal entity may carry on the same kind of activity

over a wide geographical area and may not maintain accounts according to geographical location. In these fields of activity it may therefore be necessary to use the kind-of-activity unit as the reporting unit.

Ancillary units of an establishment, such as warehouses, garages, repair shops and electrical power plants, which primarily serve the parent establishment, may also be included in the establishment reporting unit. However, if the establishment maintains separate payroll records for these ancillary units, they may be treated as separate reporting units for the purposes of the survey.

With regard to the agricultural sector, the resolution of the Twelfth ICLS (1973)[1] states the following:

> 49. In developed countries and for the modern sector in developing countries, statistics of earnings based on payrolls and other records of employers should be collected, using the agricultural holding as the reporting unit. However, agricultural employees, apart from permanent employees, are not necessarily attached to one particular agricultural holding. Notably in developing countries, more especially in the traditional sector of agriculture, prolonged continuous employment with the same employer is relatively rare and, in addition, some workers alternate between working for wages and self-employment, or between agricultural and non-agricultural employment. In such situations, the agricultural holding is not the most suitable reporting unit for collection of certain types of data, especially for comprehensive statistics of average earnings during the year from agricultural employment and for statistics of corresponding hours worked.
>
> 50. Statistics of agricultural wages in the traditional sector may be obtained through household sample surveys....

Occupation and occupational classification

The International Standard Classification of Occupations (ISCO) defines "occupations" as follows:

> An "occupation", for purposes of ISCO, is the narrowest occupational category (i.e. the smallest segment of work) which is specifically identified in the classification system. Each occupation has a five-digit code number, a title and a definition which describes the general functions and the principal duties and tasks of the workers classified under the title and code number concerned.
>
> These definitions identify a type of work but not specifically the individual worker. The definition of an occupation covers various "jobs" or "positions" which are held by individual workers who perform one or another of the different possible combinations of the tasks described. Workers whose principal tasks are identical may be considered as having the same type of "job", but the workers in a particular establishment may be further subdivided according to "positions" for purposes such as fixing individual rates of remuneration within the common scale for the job. "Positions" are distinguished from one another by minor differences in duties, level of responsibility for supervision and other particularities of the work to be performed. The management and supervisory staff of the individual enterprise decide, within certain limitations of a technical or legal or contractual nature, how tasks are to be distributed among its workers, i.e. determine the division of labour. Consequently, classifications according to "job" or "position" is a matter for the particular enterprise and goes beyond the scope of a classification according to occupation.

Thus "occupation" is a wider concept than "job" or "position" and usually includes different jobs. Establishments often fix wages according to jobs and positions based on differences in duties, responsibilities and levels of skill. The jobs and positions falling within the scope of each occupation should be described as far as possible and they should be matched with the jobs existing in the establishments.

The ISCO provides a systematic classification structure covering the occupations of the whole civilian working population. The classification structure has four levels, as follows: major groups, minor groups, unit groups and occupational categories, with each level providing successively finer detail. The major groups comprising ISCO are as follows:

Major group 0/1: Professional, technical and related workers
Major group 2: Administrative and managerial workers

Major group 3: Clerical and related workers
Major group 4: Sales workers
Major group 5: Service workers
Major group 6: Agricultural, animal husbandry and forestry workers, fishermen and hunters
Major group 7/8/9: Production and related workers, transport equipment operators and labourers
Major group X: Workers not classifiable by occupation.

A supplementary major group without code number covers the Armed Forces.

Notes

[1] For the texts of these resolutions see ILO: *International recommendations on labour statistics* (Geneva, 1976).

[2] United Nations, Department of Economic and Social Affairs: *A System of National Accounts*, Studies in methods, Series F, No. 2, Rev. 3 (New York, 1968; Sales No. E.69.XVII.3).

[3] ILO: "Report of the Meeting of Experts on Statistics of Wages and Employee Income" (Geneva, 1968), Doc. WEI/1968/V, para 13.

[4] United Nations, Department of Economic and Social Affairs: *Principles and Recommendations for the 1970 Population Census*, Statistical papers, Series M, No. 44 (New York, 1967; Sales No. 67.XVII.3).

[5] idem: *International Standard Classification of All Economic Activities*, Statistical papers, Series M, No, 4, Rev. 2 (New York, 1968; Sales No. E.68.XVII.8).

[6] ILO: *International standard classification of occupations—revised edition, 1968* (Geneva, 1969).

Framework for an integrated system of wages statistics

5

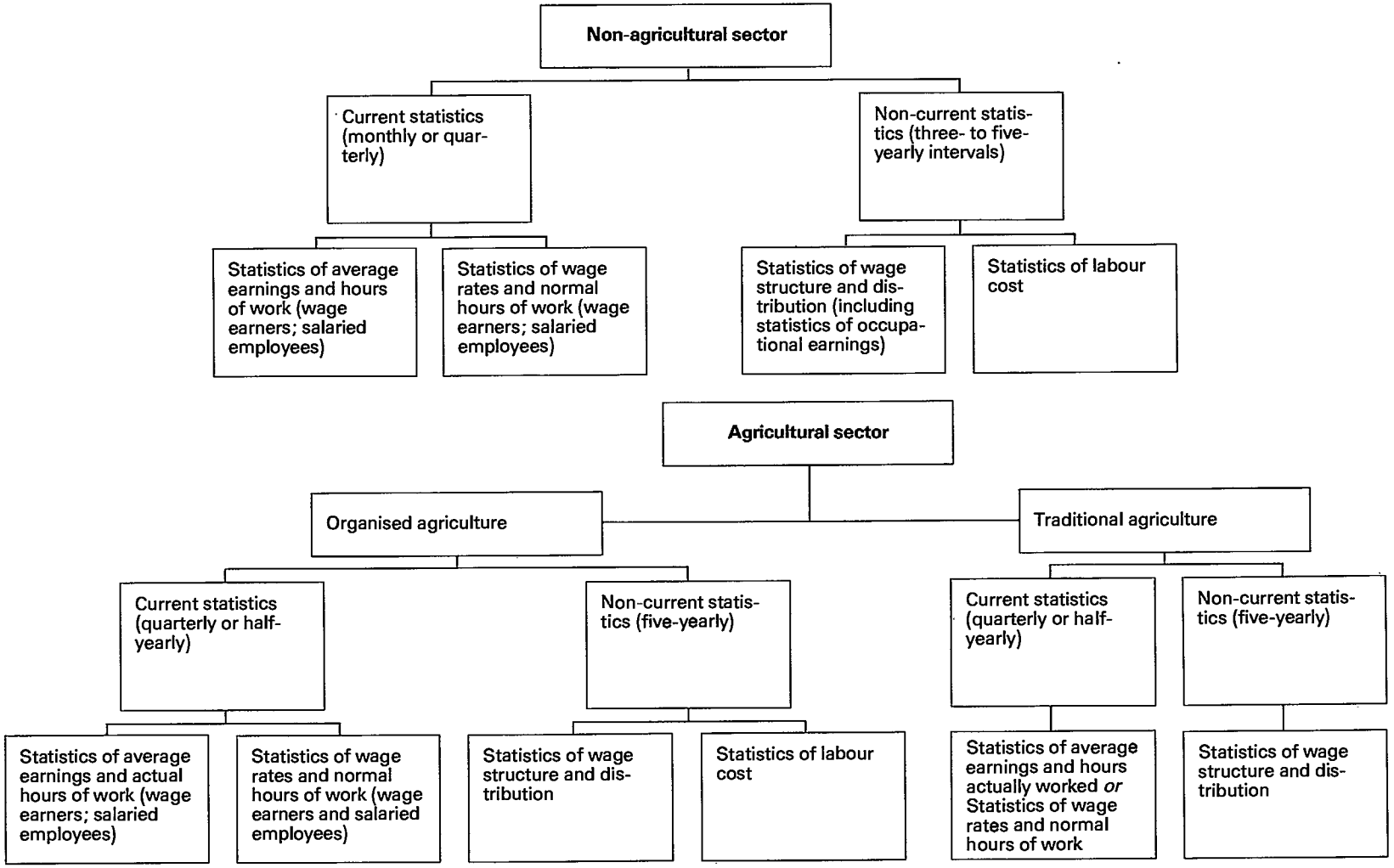
The discussion in the preceding two chapters on objectives, uses, concepts and definitions of wages statistics points to certain major goals to be achieved in establishing a programme for the collection and compilation of basic wages and related statistics. First, the programme should be as comprehensive as possible and cover all major areas of wages and related statistics, such as wage rates, earnings, compensation of employees, labour cost and hours of work. Second, the collection and compilation of the information should be done in such a way that the resulting data will be mutually consistent and also reveal their inter-relationships. Third, the programme should specifically cater for both current and short-term needs and non-current or long-term needs. Such an integrated system should aim at covering all branches of economic activity, geographical regions, and the whole employee population.

The above considerations led the Twelfth International Conference of Labour Statisticians (1973) to adopt a resolution concerning an integrated system of wages statistics. The recommendations contained in the resolution are designed to meet the requirements of both developed and developing countries. The resolution defines the concepts to be used in the compilation of wages statistics and proposes a current wages statistics programme and a non-current wages statistics programme. The distinction between them is primarily based on the type of short-term and long-term needs. The non-current programme envisages compilation of detailed and in-depth data for use in structural and causal analysis of the level and pattern of wages. The current programme envisages regular compilation of essential information at short intervals in order to provide indicators of changes in the levels and trends of wages and hours of work.

The agricultural sector presents different and much more complex problems for the collection and compilation of statistics of wages and hours of work than does the non-agricultural sector. In most of the developing countries the bulk of agricultural operations are run on the basis of household management, mainly using the labour of family members, with few hired labourers who are usually employed on a daily or casual basis. Except on estates and in certain large enterprises, annual employment is rare. Employment relationships and wage payment systems are often different from those existing in non-agricultural industries. While the source of wages statistics for the non-agricultural sector is very often the establishment, a different approach may be needed for the collection of wages statistics in agriculture. For these reasons, the resolution of the Twelfth ICLS recommends a separate programme of wages statistics for the agricultural sector within the scope of the general framework of the integrated system.

The chart overleaf depicts the integrated system of wages statistics recommended in the resolution.

Framework for an integrated system of basic statistics of wages



The elements of the current and non-current programmes are shown under "non-agricultural sector" and "agricultural sector". The chart also indicates the type of wages surveys to be conducted and the periodicity of collection and compilation of data.

Wages statistics programmes in the non-agricultural sector

The wages statistics programmes in the non-agricultural sector are divided into two:
(a) current wages statistics programme;
(b) non-current wages statistics programme.

Current wages statistics programme

The current statistics programme has two constituents: (i) statistics of average earnings and hours of work; and (ii) statistics of time rates of wages and normal hours of work. The main purpose of the current programme is to establish time series of earnings, wage rates and hours of work. The need for speed in collecting and processing data at reasonable cost should be a major consideration in determining the scope and content of the current programme.

The view is often expressed that it might be necessary to give higher priority to the compilation of statistics of earnings and hours actually worked than to statistics of wage rates and normal hours of work. But national needs and circumstances vary greatly in this respect and in some cases it may be necessary to produce statistics of wage rates at relatively short intervals, particularly when inflation or other factors are responsible for frequent changes in wage rates. However, for various important purposes and for international comparisons, statistics of earnings are among the primary economic indicators and therefore need to be developed and improved.

Statistics of average earnings and hours of work

The main objective of this part of the current wages statistics programme is to measure monthly or quarterly changes in the levels of average earnings and hours of work of wage earners and salaried employees in the principal non-agricultural sector industries. Sample surveys of establishments based on payroll records usually provide the best means for the collection and compilation of these statistics. It is often advantageous to combine statistical inquiries of earnings and hours of work with current surveys of establishments aimed at collecting employment data. If any other current surveys lend themselves to the collection of reliable and timely data on earnings and hours of work, they may be exploited also.

Chapter 6 deals in detail with the problems and methods of collecting and compiling current statistics of average earnings and hours of work through surveys of establishments in the non-agricultural sector.

Statistics of wage rates and normal hours of work

Statistics of wage rates and normal hours of work may refer to those fixed by or in pursuance of laws or regulations, collective agreements or arbitral awards, etc., or else they may refer to wage rates actually paid and the normal hours of work actually in force in establishments in different industries. The two types of wage rates should be distinguished not only according to their different meanings and uses but also according to the differences between their sources and methods of collection and compilation. In both cases, the time rates of wages should be distinguished from the piece rates.

The current programme for the compilation of statistics of wage rates and normal hours of work in the non-agricultural sector is further elaborated in Chapter 7, which deals in detail with the collection and compilation of statistics of wage rates actually paid and normal hours of work through sample surveys of establishments.

Non-current wages statistics programme

According to the resolution of the Twelfth Conference, the non-current wages statistics programme comprises: (i) statistics of labour cost; and (ii) statistics of wage structure and distribution.

Statistics of labour cost

International guidelines in the field of statistics of labour cost are provided in the resolution concerning statistics of labour cost adopted by the Eleventh ICLS (1966). This resolution recommends that programmes for statistics of labour cost should be designed essentially to provide reliable measures of the level, composition and evolution of labour cost to the employer. The aim should be to develop statistics of employers' labour cost covering the principal sectors of the economy, especially selected branches of manufacturing, mining, building and construction industries, as well as other economic activities where possible.

The discussion on concepts and definitions in Chapter 4 shows that labour cost is mostly accounted for by the wage measure "compensation of employees". In addition, labour cost and compensation of employees both entail the concept of wages as cost to the employer. The resolution of the Twelfth Conference does not recommend a separate programme for the compilation of data on compensation of employees. It is, however, presumed that data on compensation of employees can be compiled, preferably as part of labour cost statistics.

Statistics of labour cost are compiled through sample surveys of establishments. Chapter 8 deals with the different aspects of the collection, compilation and classification of labour cost data in the non-agricultural sector.

Statistics of wage structure and distribution

In most countries both wage rates and actual earnings of wage earners and salaried employees differ from one region to another and between urban and rural areas, manual and non-manual workers, industries, occupations, establishments of different sizes, etc. They also vary according to the employees' personal characteristics (sex, age, education, level of skill, length of service, etc.) and according to the type of employment (full-time, part-time, seasonal, etc.). An important feature of statistics of wage structure and distribution is that data should be collected with reference to individual occupations and individual employees, thus permitting distribution of employees according to levels of wage rates, earnings and hours of work. Information on establishment practices and wage payment systems also fall within the scope of these statistics.

Wage structure and distribution surveys represent the largest programme proposed in the resolution of the Twelfth Conference concerning an integrated system of wages statistics. In view of the breadth and complexity of wage structure and distribution surveys, it is recommended that such surveys be undertaken at three- to five-year intervals. The various problems to be tackled in carrying out wage structure and distribution surveys are discussed in Chapter 9.

Wages statistics programmes in the agricultural sector

For purposes of collection and compilation of wages statistics, the agricultural sector is divided into two subsectors: "organised agriculture" and "traditional agriculture", of which the latter is particularly important in developing countries. The wages statistics programmes for each subsector consist of a current statistics programme and a non-current programme. The objectives of the current and non-current programmes in the agricultural sector are essentially the same as those of the corresponding programmes in the non-agri-

cultural sector. However, the integrated system of wages statistics should be adapted to suit the differing conditions of the agricultural sector in each country. These and other problems of collection and compilation of statistics of agricultural wages statistics are discussed in Chapter 10.

Relationships between current and non-current wages statistics programmes

The integrated system of wages statistics provides a close link between the current and non-current programmes for the production of basic statistics of wages. While the two current programmes are concerned with the collection of a limited amount of data in order to estimate averages for measuring short-term trends in earnings, wage rates and hours of work, it is the wage structure and distribution survey which furnishes the very detailed and comprehensive data which forms the infrastructure for the wage information system. Comprehensive surveys provide the best source of data required for the sample design of current surveys of earnings and wage rates. The discussion on wage indices in Chapter 11 indicates further the inter-relationships between wage structure and distribution surveys and the two current surveys. For the purposes of computation of index numbers of wage rates and earnings, it has been proposed that the base weights for the indices be derived from the data collected through a wage structure and distribution survey, while the wage relatives should be calculated from the data compiled through current surveys.

The non-current programme concerning statistics of labour cost envisages an interval of five years for undertaking comprehensive labour cost surveys. Until such time as major changes occur in labour cost components due to changes in legislation or other causes, data for the years between two surveys could be estimated wherever suitable data on earnings and other elements of labour cost are available. This requirement should be taken into account in planning labour cost surveys and current surveys of earnings and hours of work.

Scope of the integrated system of wages statistics

Statistics of hours of work are included in the integrated system of wages statistics in order to obtain data in the most meaningful time unit to express or relate to the wage measures of earnings, wage rates, compensation of employees and labour cost. There can be other time units such as a day, a week, a month or a year which may be of interest and relevance for certain purposes.

The integrated system of wages statistics recommended by the Twelfth ICLS does not deal with the problems of computation of real wages, wage indices and similar questions which are of an analytical nature. There is, however, no particular difficulty in bringing these topics, as well as other statistical measures of wages which may be developed in the future, for instance the wage measure "employee income", within the framework of the integrated system.

While recommending the integrated system, the Twelfth ICLS recognised the difficulties involved, whether they concerned the cost of the surveys or the personnel with the requisite expertise. The needs and capabilities of countries differ. The international recommendations are to be construed as guidelines and not as placing obligations on the countries. The proposed integrated system is flexible. In countries whose resources available for statistical work are limited, the integrated system of wages statistics may be established according to a phased programme, depending on the needs felt by the country concerned.

Monthly/quarterly survey of establishments for the compilation of statistics of average earnings and hours of work in the non-agricultural sector

6

One of the components of the integrated system of wages statistics outlined in the preceding chapter relates to a current programme for compiling statistics of average earnings and hours of work in the non-agricultural sector. In this connection, the resolution of the Twelfth International Conference of Labour Statisticians (1973) states that statistical inquiries on earnings and hours of work may often be advantageously combined with a current survey of establishments carried out for the purposes of compiling statistics of employment, using the whole of the sample of establishments or a subsample. In general, the national practices are in line with the above recommendation, although some other current surveys may also lend themselves to the collection of data on earnings and hours of work. The present chapter deals with the different aspects and issues which call for attention in planning and conducting an establishment survey for compiling statistics of employment, earnings and hours of work in the non-agricultural sector on a current and continuing basis. Since the emphasis in this manual is on data of earnings and hours of work, the topic of employment is discussed only to the extent relevant to the statistics of wages and hours of work.

From the standpoint of the collection of data, establishment surveys have certain advantages over other means of obtaining statistics of wages and hours of work, particularly on a current basis and at frequent intervals. In the first place, the establishments which hire and pay workers are in the best position to furnish information on employment, wages paid, hours of work and so on. Establishments can be identified easily by economic activity and by geographical location, which facilitates the collection and compilation of wages statistics by industry and by geographical region. Most establishments are compulsorily registered under laws, ordinances or regulations, and are therefore constrained to maintain records of employment, wages and other particulars. Such records are also necessary or useful for running the business or activity. By and large, the payroll records of establishments serve as a better source of information on wages and hours of work than any other. However, it may be possible that very small establishments, particularly in developing countries, may not consistently maintain accurate and complete payroll records. In such cases, establishments covered in the survey should be persuaded to maintain reasonably reliable records. In the establishment survey the possibility of error in reporting on wages and hours of work is reduced, since the employer supplies information from written records rather than from memory. Finally, the cost of an establishment survey is relatively lower than that of other methods.

As the establishment survey covers only employees, it is well suited for the collection of data on wages and hours of work. However, it is not free from limitations. When a person holds jobs in more than one establishment, he will be counted more than once and

his wages and hours of work will not be shown together. Similarly, a worker who changes his job during the survey period, going from one establishment to another, is counted more than once. The establishment survey technique is efficient only in situations where multiple job holding or changes from one establishment to another within a short time are relatively insignificant. The establishment survey approach is not well suited to providing estimates of total employment in a country, because it includes only employees and excludes important segments of the employed population such as own-account workers, unpaid family workers, domestic workers, etc.

Objectives, scope, coverage and frequency of the survey

Objectives of the survey

The general objective of the current programme, as stated in the resolution of the Twelfth ICLS is to provide essential data at frequent intervals in order to measure trends and short-term changes in average earnings and hours of work and to meet the current needs of the various users of data. However, such a general statement of objective is not sufficient for planning a sample survey of establishments. Precise formulation of objectives is fundamental for success. The objectives should be clearly stated in terms of the specific data to be collected, the industrial, geographical and employee coverage and the types of estimates and classifications to be made from the survey results. Such precise formulation of objectives is also necessary in order to decide on the appropriate sample design, the design of the questionnaire and the method of collection of data and to determine the financial and statistical resources needed for the survey.

In deciding upon the specific data to be collected, careful attention should be given to the demands made on the respondent. Speed and economy of collection and compilation of data are two important considerations in a current survey programme, and establishments can provide readily only that information which is easily obtainable from payrolls, which, in turn, depends on the customary accounting procedures. Generally speaking, data on total employment with certain broad classifications, total wages paid with information on a few components, and total days and hours of work are obtainable from payroll records. However, it is necessary to have prior knowledge of the exact type of information maintained in the payroll records of different types and sizes of establishments. The current programme, conceived as a constituent of the integrated system, does not contemplate the collection of data on earnings and hours of work for individual employees nor for specific occupations. Consequently, the current survey programme discussed in this chapter does not provide data leading to the frequency distribution of employees by level of earnings and hours of work nor the distribution of earnings and hours of work by individual occupations.

As a minimum, the current programme should aim at obtaining data on earnings and hours of work separately for wage earners and salaried employees, so that average earnings and average hours of work can be computed separately for these two categories, as well as combined estimates for all employees.

Wage earners and salaried employees can be further classified on the basis of different characteristics, such as:

(a) demographic characteristics, such as male, female, adult, juvenile, child;

(b) type of employment, such as regular/permanent, casual/temporary, full-time, part-time, seasonal etc.;

(c) mode of payment, such as hourly, daily, weekly, monthly;

(d) level of skill/education, such as manual, non-manual, unskilled, semi-skilled, skilled, etc., or by different levels of education;

(e) occupational groups, such as:
- (i) professional, technical and related workers;
- (ii) administrative and managerial workers;
- (iii) clerical and related workers;
- (iv) sales workers;
- (v) production and related workers, transport equipment operators and labourers.

The decision to collect detailed data of the above type should be made on the basis of a joint consideration of a number of criteria: the relevance of the information to current needs, the ready availability of the information in the payroll records, the willingness of the establishments to provide such information on a monthly/quarterly basis and the speed and economy of collection and processing of data. The recommendation of the Twelfth ICLS in this regard is that, wherever the available data permit, statistics of average earnings and hours of work should be compiled for males and females, for all employees and for wage earners and salaried employees separately, by industry and region.

Industrial coverage

It is difficult to prescribe an internationally standardised list of industries for the purposes of current surveys for the collection and compilation of statistics of average earnings and hours of work. Each country should aim at covering all the principal major groups and groups of industries which are important to its national economy. A major criterion for the inclusion of an industry in the current survey programme is the number of persons employed. Other important considerations for inclusion of industries in this type of survey are: highly capital-intensive production, significance for exports, high ratio of certain categories of labour (such as females) or certain types of professions (such as teachers), or industries which need special attention in connection with economic and social planning and policies.

Due to limitations of financial and statistical resources, some countries may not find it possible to cover all the important industries in their current statistics programme, in which case priority should be fixed in selection. As a rule, the manufacturing industry is given top priority. The coverage of the current survey can be extended gradually to include all the major industry divisions according to a planned programme.

Geographical coverage

At first sight the regional coverage of the earnings series would not appear to raise any special problems, since data have to be collected where the respective industries are located. Nevertheless, various countries have limited the regional coverage of their earnings series to certain districts of special importance or to urban areas, possibly because of the special importance of the industry located there or because of purely administrative and technical reasons. All major areas of the country should be included in the survey, to ensure its representativeness. In addition, full geographical coverage permits comparisons between different regions and districts. However, separate regional figures are more important for larger countries or countries with differing regional characteristics.

Employee coverage

There are a number of practical decisions to be taken with regard to the coverage of employees in the current survey programme. Even if the survey covers both wage earners and salaried employees, the problem still remains as to how the two categories should be distinguished. There are other practical problems to be solved, such as the treatment of higher supervisory personnel (for instance, directors), workers on sick leave, on vacation,

on military service or on strike, workers entering or leaving the establishment during the reference period of data collection, workers employed by contractors, casual workers, part-time workers or workers employed partly or fully outside the plant, piece workers, etc.

It may sometimes be difficult to distinguish clearly between salaried employees and wage earners; but as a rule the distinction can be made according to legal points of view (work contract, deductions made for compulsory social insurance scheme either for wage earners or for salaried employees, trade union affiliation, etc.), by the length of the pay period (daily, weekly, monthly) or by other practical considerations, such as the kind of work performed.

Because of the different conditions and requirements in the various countries, it is difficult to offer specific recommendations as to which types of workers should be included in the series of earnings for wage earners and salaried employees. Nevertheless, since different treatment of important categories can cause serious biases, both with regard to the representativeness of national series and to their international comparability, the following suggestions may prove to be useful:

(1) In accordance with the practice of the majority of countries, part-time as well as full-time workers should be included. Countries which exclude part-time workers from their current series should attempt from time to time to estimate how far the level and trend of this series would change if part-time workers were included in the series.

(2) Piece workers as well as time workers should be included in the series.

(3) The category "wage earners" should include foremen.

(4) Workers on paid vacation should be included, since vacation pay forms part of regular payrolls in most countries.

(5) Workers performing military service and those who are on strike may be included only to the extent that they receive pay as employees from the establishment during the reference pay-period of the survey.

(6) Workers on sick leave should be included when the establishment pays, during the survey reference period, either the full regular wage or a wage only insignificantly lower than the usual remunerations when at work. Workers receiving a significantly lower remuneration during this period should, however, be excluded from the scope of the survey.

(7) If apprentices and juveniles are included in the earnings series it would be of interest to make estimates from time to time as to how far the level and trend of average earnings is influenced by their inclusion.

With regard to salaried employees, those directors and managerial staff remunerated predominantly by a share of the profits should be excluded from the scope of the survey, as should working proprietors, even if they are paid a salary, and other family workers.

Frequency of the survey

It is desirable, and in fact many countries have felt it necessary, to compile statistics of average earnings and hours of work on a monthly basis. However, this does impose a heavy strain on the statistical resources, particularly those of developing countries, and also represents a burden on respondents. On the other hand, bi-annual and annual collection of data on earnings and hours of work do not provide adequate indicators of short-term and seasonal variations of trends. As a minimum, the current programme should aim at compiling statistics of average earnings and hours of work on a quarterly basis. Whether the current survey is to be conducted at monthly or quarterly intervals should be determined by considering a number of factors such as the cost of the survey and the availability of budget resources vis-à-vis the needs, the burden on the respondents and

their willingness to co-operate, and the ability of the statistical agency to process the data and publish the results promptly.

Concepts and definitions

The concepts and definitions concerning an integrated system of wages statistics are given in Chapter 4. However, in the context of a current establishment survey on earnings and hours of work, definitions of certain items call for comment and further clarification. They include: (i) employee, wage earners, salaried employees; (ii) earnings; and (iii) hours actually worked, hours paid for.

Employee

The discussion under "employee coverage" in earlier paragraphs throws light on the various categories of employees to be included in the scope of the survey. Whichever categories of employees are covered and for whom estimates of employment, average earnings and hours of work are required, they should be clearly and unambiguously defined, taking into account national practices and circumstances.

Earnings

For the purposes of monthly/quarterly surveys of establishments which collect data on earnings for a short reference period of one month or less the definition of earnings given in Chapter 4 needs a slight modification. As the main objective of earnings data in a current survey is to measure the short-term trend of average earnings, the figures should include only those elements of earnings which, as a rule, are received regularly. Irregular bonuses such as year-end and other one-time bonuses which accrue over a longer period but are paid during the reference period should not be included.

Hours of work

The concept of hours of work defined in Chapter 4 distinguishes between three categories: normal hours of work, hours actually worked and hours paid for. Only the latter two categories have a direct relationship with earnings. Normal hours of work are related to wage rates and these two items should be considered together for the compilation of statistics.

For the purposes of the current survey of average earnings and hours of work a choice has to be made between the concepts of "hours actually worked" and "hours paid for". Both concepts are used for the collection and compilation of statistics of earnings and hours of work through establishment surveys. The definition of "hours actually worked" is given in Chapter 4. There is, however, no international standard definition of "hours paid for", since the contents of hours paid for vary according to the different laws, regulations or collective agreements and vary greatly from one country to another. Hours paid for correspond to the time for which the workers receive pay, regardless of whether this time is spent at work or not, including hours actually worked, and they cover the man-hours corresponding to paid holidays, paid vacation, paid sick leave, etc. The figures obtained from using the two concepts have different meanings which affect the comparability of series. The level of hourly earnings obtained by using the concept "hours paid for" is lower than that in the case of hours actually worked. Nevertheless, both concepts may yield time series with the same trend when the reference period is selected carefully. However, for purposes of international comparisons, statistics of hours paid for are less useful than statistics of hours actually worked. The resolution concerning statistics of

hours of work adopted by the Tenth ICLS (1962) recommends that, where the data collected correspond to hours paid for, inquiries should be undertaken from time to time to determine for each industry the ratio between the number of hours actually worked and the number of hours paid for.

Overtime hours of work

Overtime hours of work represent the hours worked in excess of normal hours and for which premium payments are made. They may refer to a work-day or work-week or any other pay period. Overtime hours exclude those hours for which other types of premium rates are paid such as shift differentials and premiums for work involving dirt or danger, and discomfort allowances. It is the practice of some countries to consider hours worked during week-ends or holidays as overtime only if premium wage rates are paid.

Reporting unit

Once it has been decided to base statistics of earnings and hours of work on payroll records maintained by employers, the question as to what should be taken as a reporting unit or statistical unit of observation must be resolved. As stated in Chapter 4, the reporting unit should be the same for the current and non-current wage surveys within the integrated system, and it is recommended that, wherever possible, the establishment be used. The definition of establishment is provided in Chapter 4. For certain industries, however (transport, communication and construction), the kind-of-activity unit may have to be retained as the reporting unit, due to the dispersal of a single legal entity's activities over a wide geographical area.

Preparation of list of establishments

The questions of how to prepare a complete list of establishments in each industry which will serve as a sample frame for the survey, and how to keep the list up to date by keeping track of the births and deaths of establishments, are of great importance. The list of establishments should be prepared from the benchmark source, if this is already determined. Alternatively, it may be possible to resort to a variety of sources for compiling the basic list of establishments from which the returns on payrolls will be requested, including administrative and other sources, for instance: factory registration, licensing records, reports of factory inspectors, tax records, social security records, industrial directories, records of employers' and employees' organisations. In certain situations it may be necessary to organise field investigations to list all the establishments.

The list of establishments should contain such information as the name, geographical location, address, mailing address if this is different from the location of the establishment, major product, commodity or service produced and total employment. These data are needed for mailing and receiving questionnaires and for classifying the establishment according to the appropriate industry group. Information on employment is needed particularly for sampling purposes.

The list of establishments prepared during a particular period becomes quickly out of date, depending on economic developments and changes. Establishments which go out of business must be identified and deleted from the list, while the new establishments which come into existence should be added promptly. The methods of bringing the list of establishments up to date include field verification by investigations, mailed questionnaires or sampling methods, or a combination of all these. Undetected births and deaths of establishments can seriously affect the validity of the survey results and therefore every effort should be made to keep the list of establishments up to date.

Since the establishment surveys are carried out for various purposes, it is advantageous to build up a central register of establishments to serve the needs of all departments of the government. A card should be made out for each establishment showing its name and address, area code, industry code, employment size, legal status, form of ownership and principal product or activity. The cards should be properly indexed and maintained up to date. The register should be revised annually. Wherever facilities are available, it is desirable to computerise the register.

In some industries it may be difficult to prepare the list of establishments; for example, in many countries the majority of employers in the construction sector are contractors who do not have regular business establishments at fixed places. The same applies to private carriers operating fleets of lorries and trucks. Efforts should be made to list all such employers, using the methods mentioned previously.

Benchmark

A benchmark for an establishment survey of employment, earnings and hours of work refers essentially to a complete and reliable count of wage earners and salaried employees, classified by different characteristics, as of a particular date. If the source of employment data can also provide corresponding information on earnings and hours of work, the value of benchmark data will be greatly enhanced. The initial benchmark provides a sound starting point for a time series of employment, average earnings and hours of work, and the later benchmarks serve as reference points for measuring the accuracy of the estimates. Benchmark data can also be used to adjust the results derived from sample surveys of establishments, particularly when the average is not complete.

Comprehensive wage structure and distribution surveys carried out periodically, say at three- to five-year intervals, provide the best benchmark data for current establishment surveys for compiling statistics of average earnings and hours of work. In the absence of data from these types of surveys other sources could provide the benchmark information, particularly on employment; such sources include industrial censuses and surveys, commercial censuses and surveys, surveys of government employees, professional groups such as teachers, etc. It may be possible to draw information on total employment in a given industry from administrative or other sources, such as licensing records, factory registrations, reports of factory inspectors, tax records, social security records, industrial directories, records of trade unions, business groups, etc. Regulatory agencies, for instance those in the field of communication and transportation, may be able to provide a reliable count of employment in the industries under their jurisdiction. However, certain sources of data may refer only to large units (small units may not be included in a particular registration system or industrial directory).

Sampling

This manual emphasises the use of a probability sample for establishment surveys of employment, earnings and hours of work. Only a probability sample can provide a measure of the error involved in the estimates due to sampling. However, in the past wide use has been made of non-probability sampling techniques for the collection of statistical data on employment, wages and hours of work. The non-probability sample used in many countries is usually called the cut-off sampling technique, which includes all establishments employing over a specified number of employees in an industry. The point of cut-off varies from industry to industry and from country to country. The main principle in the design of a cut-off sample is that all large establishments are included, since the basic assumption in such a design is that changes in employment, earnings and hours of work

in the largest establishments in a given industry reflect changes in these variables in all establishments in that industry. This approach finds its main justification on grounds of economy and of operational and administrative convenience. However, such a sample can lead to biased estimates of the level and trends of wages and hours of work and involves considerable efforts to obtain unbiased estimates from a biased sample. The efficient procedure of selecting a representative sample of establishments is to adopt probability or random sample techniques.

Sample design and sample size

The design of sample in an establishment survey depends on many factors. These include: the objectives of the survey, the methods of collecting data, the availability of sample frame and benchmark data, etc. Institutional features, such as the legal authority to collect data, the administrative situation, the ability and willingness of the respondents to provide information etc. should also be taken into account. Above all, the funds available for the survey play a crucial role in the size and design of the survey.

The general percept of a good sample design is to obtain the maximum accuracy at a given cost. However, other considerations are also important in the choice of a sample design. The survey statistician should determine, in terms of the survey objectives, the minimum acceptable and the maximum possible precision required for estimates of employment, earnings and hours of work. He must estimate the probable accuracy and costs for alternate sample designs and then arrive at a balance between precision and budget resources.

In designing a sample, maximum use should be made of any additional knowledge about the universe. The most important of the many ways of designing a sample are stratification of the universe and ratio estimating. In stratification, the universe is divided into classes whose members are as homogeneous as possible, and each class is sampled separately. Estimates are prepared separately for each class and are combined to form the final estimate. In ratio estimating, advantage is taken of the fact that many characteristics of the establishment are correlated. For example, payrolls and the number of employees are highly correlated among establishments; to estimate total payrolls, the ratio of payrolls to employment in the sample is estimated from the sample and the ratio is then multiplied by the total employment. Ratio estimates are especially valuable in estimating changes from one point in time to another.

Another problem the statistician must solve is the size of the sample, which depends upon a number of factors: the required precision of estimates, stratification of the universe, estimating formulae, and population characteristics such as the number of establishments in the population and the variability and correlation between the population characteristics. Experience of establishment sampling in many countries has shown that stratification of establishments according to size, i.e. according to the number of employees, is an efficient procedure. In many instances stratification of the establishments into three or four strata according to the size of the establishment will reduce the sample required to one-half or one-third of the size needed when stratification is not used; sometimes the saving is even greater. Stratification is of greater value when the universe is relatively large. The sample design favoured by many statisticians is the stratified cut-off probability sample. This design comprises a census of large establishments combined with a probability sample of small establishments stratified by size-groups. It gives more weight to the larger establishments while providing proper representation of all size-classes of establishments. In this way, every establishment in the universe has a preassigned probability of inclusion in the sample.

Stratified cut-off random sampling requires that, for each industry, establishments should usually be classified up to the four-digit level and arranged in ascending order of number of employees. If small establishments account for the major part of the employ-

ment in the industry, there should be many size-classes with small ranges for the lower size-groups and few classes with larger ranges for the upper size-groups, e.g. 0-4, 5-9, 10-19, 20-49, 50-94, and 100 and above. All larger establishments, i.e. all establishments above the cut-off point, will be included in the survey, while an appropriate random sample will be drawn from each size-class or stratum of establishments.

Estimates of employment, earnings and hours of work are normally needed with precision up to the four-digit level of industrial classification. The sample design should be capable of meeting this requirement at minimum cost, or, alternatively, if the budget is fixed, the aim should be to obtain the maximum precision at the given cost. As earnings and hours of work are highly correlated to employment, it is generally sufficient to fix the efficiency and adequacy of the sample design in relation to the variable, employment. The study of the sample design should include two inter-related aspects: *(a)* the size of sample required, and *(b)* the manner of allocation of the given sample size to the different strata. With regard to the problem of sample size in relation to the precision of estimates, the position needs to be examined primarily at the four-digit level of industrial classification because, once the desired precision is ensured at this level, precision at higher levels is automatically ensured. To study optimum allocation in a stratified design, it is necessary to have advance estimates of stratum standard deviation. Ideally, distributions from the frame from which samples are to be drawn would be the best material for the study of standard deviation. Optimum allocation, in the simplest terms, means that sample size in a stratum should be proportional to the product of the size of the stratum and the standard deviation of the stratum. Studies of establishment sampling have shown that the optimum allocation design in which sampling fractions are proportionate to the average measure of size is deemed to be practical when there is considerable stability in the size of the units to be sampled and the characteristics to be measured are highly correlated with the measure of size. This situation is generally typical of establishment statistics. This method for approximating the optimum allocation is also applicable for ratio estimates such as the change in employment between two periods.

The sample design should take into account the possibility of non-response due to a variety of reasons, such as the establishment going out of business, being unwilling to supply information, etc. There should therefore be an additional list of sample establishments drawn on the same probability basis, so that substitutions can be made for the defaulting establishments.

Another problem to be tackled is whether the sample should be fixed or should change from survey to survey. A fixed sample would in principle assure full comparability of the data since it would compare periodic data on earnings and hours of work reported by the same establishments. But at the same time, a changing sample would also appear necessary since statistics of earnings and hours of work should reflect the changes in the growth and composition of the industries under consideration, as well as changes brought about by births and deaths of establishments. However, such changes may not be so great as to warrant changing the sample of establishments for a monthly/quarterly survey within a period of one year. The question of changing the sample should be reviewed every year, taking into account the possible changes in the establishments.

Reference period of data collection

Considerable care should be taken in deciding the appropriate time reference period for collecting data on employment, earnings and hours of work. It should be clearly understood that this period is generally different from the time period for which the data are tabulated and presented; for example, earnings of wage earners may be tabulated and presented as earnings per hour, per day, per week or sometimes per month, while the ref-

erence period of data collection may be a pay period of a calendar week or a fortnight. Earnings of salaried employees are normally compiled per month in a current survey; if earnings data are calculated for wage earners and salaried employees together they should refer, in general, to one month. The reference period of data collection should be such that there should be one-to-one correspondence between the data on earnings and the data on hours of work and that calculation of earnings and hours of work can be made for different units of time (such as a day, week, month) for the different categories of employees covered by the survey.

The extreme case is to choose the entire month as reference period in a monthly survey and every one of the three months in a quarterly survey. Such an approach in a quarterly survey will increase considerably the burden on the respondents and add to the workload of the statistical office in processing the data; such a large amount of data may not even be necessary for current needs and for measuring short-term changes. Reference periods can be shorter than a month, such as a week, fortnight or pay period, but a reference period of one day is not suitable for reliable data on wages and hours of work. Before deciding on the appropriate reference period, the pay periods and the customary book-keeping procedures of establishments in the different industries must be studied. Limiting the length of the reference period of data collection to a payroll period has advantages; in particular, it will increase the co-operation of responding establishments since in general very little additional work is occasioned by supplying information on employment and wages for an entire payroll period.

When the reference period of data collection is less than one month, for example a pay period of a week, 10 days or a fortnight, it is important to ensure that it reflects typical rather than abnormal conditions. The reference period should be chosen in such a way that it does not contain many holidays or other days when employment or hours of work are slack. Radical changes in the number of working days within the reference period will distort the resulting data and vitiate the comparisons of levels of economic activity. It is normal practice to specify the particular week or pay period of the month or quarter for which data are to be collected. For example, if a week is adopted as the reference period of data collection in the monthly survey, the week chosen could be the first week, the last week, or the week falling nearest to a given date within the month, say the middle of the month. In a quarterly survey the month and the reference period of data collection within the month should be fixed in a similar way.

Method of data collection

The surveys of employment, earnings and hours of work invariably utilise a questionnaire as the means of obtaining information from the sample establishments. There are two main methods of gathering the information prescribed for the survey; one is the mail questionnaire method, in which the questionnaire is mailed to the establishment for completion and return to the statistical office. The other method consists of personal interviews, in which investigators visit the sampled establishments and either complete the questionnaire themselves after consulting the records of the establishment, or assist the establishment in completing it in accordance with the specifications laid down.

The choice between the two methods depends upon the circumstances of the country. The mail survey is the cheapest and fastest under certain conditions; for instance, the mail service must be reliable and speedy, and the respondents must be willing and able to fill in the questionnaire in the way prescribed. Usually, developed countries use the mail survey method, while many developing countries may need to use the method of personal visits by investigators to assist in filling in the questionnaire.

The use of investigators, particularly in developing countries has certain advantages. The investigators are usually drawn from the field offices of the labour departments or

statistical departments and are more familiar with the requirements of the questionnaire. This method is found useful in locating establishments, in enlisting the co-operation of respondents and also in cutting down non-response. The investigator can explain to the respondent the purpose of the survey and provide other information which the respondents may need for the proper understanding of the questionnaire. It provides an opportunity to probe into the reasons for hesitation or refusal to co-operate and the planners of the survey can benefit by such information in redesigning the survey. However, the use of investigators is expensive and the aim should be gradually to reduce the use of investigators as the respondents become accustomed to filling in the questionnaire in successive surveys.

Questionnaire

The questionnaire is the means by which all the objectives of the survey are realised. Great care, therefore, must be taken in designing it. Keeping the data needs of the survey in mind, the design of the questionnaire should take two factors into account: (i) the feasibility of furnishing the data easily by the responding establishments, and (ii) the requirements of data processing, depending on the method used, e.g. manual, mechanical or electronic processing.

The format, content and organisation of the questions and the accompanying instructions all greatly influence the success and efficiency of the survey. The questionnaire should clearly state that the information furnished by the establishment will be kept confidential and be used only for statistical purposes.

The guiding principle in designing the questionnaire for a monthly/quarterly survey of employment, earnings and hours of work should be to limit questions to those items which are easily obtainable from payroll records. Respondents should not be asked to work out averages or distributions when filling in the questionnaire. The question should be so framed that the answers require only statements of fact rather than judgements on the part of the respondents or field investigators. The organisation of questions also needs great attention: questions which follow a logical sequence enable the respondents to answer more easily without making errors and also help during the process of checking the internal consistency of the data furnished by the establishments.

Clear instruction should accompany the questionnaire, explaining exactly how to fill it in. These instructions are needed regardless of whether the data are collected by means of mailed questionnaires or through field investigations. The questions, as well as the instructions, should be written in simple language which can be easily understood by the respondents; there should not be any possibility of misinterpreting them.

An illustrative questionnaire for a monthly/quarterly survey of establishments for the collection of data on employment, earnings and hours of work is given at the end of this section. The questionnaire is divided into two parts: A and B.

Part A of the questionnaire relates to the identification particulars and certain characteristics of the establishment. Identification particulars include: name of establishment, location and address. The information concerning characteristics of the establishment relates to a description of the main activity of the establishment in order to classify it in the appropriate industrial group; further items relative to the national situation may be added. This part also provides for the collection of information during the reference period on the number of days the establishment worked, the number of public and other holidays and the number of days closed due to other reasons; this furnishes a check on the consistency of certain data requested in Part B of the questionnaire.

Part B relates to the main data to be collected in order to meet the objectives of the survey. A tabular format is used for recording the data. First, the reference period is to be noted, giving the starting and ending days. Information on employment, earnings and

hours of work for this reference period is to be obtained separately for wage earners and for salaried employees, and then combined information for all employees. Each category is divided into regular employees and casual employees and further divided into male and female. The term "casual" is used to refer to those workers hired for specific short-term work on a daily or other basis. The same workers could be employed by different employers for different short periods in the same month. Other classifications of workers, e.g. adult, juveniles and children, are also possible. The extent of the classifications of wage earners and salaried employees depends on the data which are readily available for each category from the payroll records and also on the need for such data for current and short-term uses. Information is to be recorded in the vertical columns of the table on the following items:

(i) Number of employees: This should relate to the number of employees on a specified day of the reference period; alternatively, it could be the average number of employees per working day during the reference period, in which case the column heading should be altered accordingly;

(ii) Number of man-days actually worked;

(iii) Number of hours actually worked/paid for: either the concept of hours actually worked or that of hours paid for should be used;

(iv) Number of overtime hours worked;

(v) Earnings for overtime work;

(vi) Gross earnings including overtime earnings: This is subdivided into earnings in cash and earnings in kind; it is for the countries themselves to decide whether earnings in kind are to be shown for each category of workers.

Items (ii) to (vi) relate to the entire reference period which may be, for instance, a month or a pay period. Part B also includes a question seeking an explanation of any large variation from the report of the previous month/quarter with regard to employment, man-days, hours of work and earnings. Variations may be due to such diverse factors as seasonal changes, changes in overtime, short-time work, strikes, lockouts, unpaid holidays, increases in wage rates, commissions and bonuses, changes in shift work, etc.

As stated earlier, the questionnaire should be accompanied by instructions or an explanatory note. These should provide, in simple language, the definitions of the various terms used in the questionnaire and indicate the manner in which each question is to be answered and each column filled in. As national circumstances differ so widely, no attempt is made here to give model instructions or explanatory notes which would be applicable to all countries.

ILLUSTRATIVE QUESTIONNAIRE

Name and address of the statistical authority

_____

_____

All information furnished by the respondent will be held in strict confidence and used only for statistical purposes.

Monthly/quarterly sample survey of establishments in non-agricultural sector

Employment, earnings and hours of work

(Please complete this questionnaire and return it before _____)

Survey identification particulars of establishment

_____

_____

_____

Name of establishment official furnishing the information for completion of the questionnaire

_____

Signature _____ Official title _____ Date _____

Name of investigator _____

Signature _____ Date _____

Date of despatch of questionnaire to statistical authority _____

A. General establishment information

(a) Identification particulars of establishment

(1) Name _____

(2) Address _____

_____

(3) Telephone number (if any) _____

(b) Characteristics of establishment

(1) Description of main product/activity/business (i.e. the product/activity/business which accounts for the major portion of gross output or which occupies the major proportion of employment)

_____

_____

(2) _____

(3) _____, etc.

(c) Work particulars of establishment during the reference period (month/pay period/etc.)

Give the following information for the reference period from _____

to _____

(1) Number of days actually worked by the establishment _____

(2) Number of days of public and other paid holidays _____

(3) Number of days the establishment was closed due to strikes, economic reasons or any other reasons _____

B. Data on employment, earnings and hours of work

Category of employee	Number of employees on ____ of the reference period (month/pay period/etc.)	The information below is requested for the entire reference period (month/pay period/etc.) from ____ to ____ (inclusive of both dates)						
		Number of man-days worked	Number of hours actually worked/ paid for (including normal and overtime hours)	Number of overtime hours worked	Earnings for overtime work (currency)	Gross earnings, including overtime earnings		
						In cash (currency)	In kind[1] (currency)	Total (currency)
1	2	3	4	5	6	7	8	9
(1) *Wage earners*								
(a) Regular: Males								
Females								
(b) Casual: Males								
Females								
(2) *Salaried employees*								
(a) Regular: Males								
Females								
(b) Casual: Males								
Females								
(3) *All employees*								
(a) Regular: Males								
Females								
(b) Casual: Males								
Females								

[1] Earnings paid in kind: when it is not possible to give data for individual groups (e.g. by sex or regular or casual) give them for totals.

C. Comments

Explanation of large variation, if any, from the report of the previous month/quarter in employment, man-days, man-hours of work or earnings.

Examples are:

Seasonal variations
Strike or lockout
Unpaid holidays or vacations
Pay increase
Overtime
Short-time
Commission
Bonuses
Shift work changes,
etc.

Processing of the data

The processing of data includes a number of operations, such as scrutiny, editing and coding of the completed questionnaires received from establishments, transferring of data from the questionnaire for computation and tabulation, etc. Data processing is carried out manually, mechanically or electronically, according to the facilities available in the national statistical offices.

An establishment survey is subject to many potential sources of error: errors of definition and classification, non-response, etc. Mistakes may occur in completing the schedules, in transferring the data to worksheets, punch-cards or tapes, as the case may be, and in computing and tabulating. These errors are additional to any sampling error. The non-sampling errors can often be greater in magnitude than the sampling errors. It is, therefore, essential to predict the possible sources of error, and to develop methods of detecting mistakes at each stage of the operation and correcting them promptly.

Scrutiny, editing and coding of the data

As soon as the completed questionnaires are received at the statistical office from the establishments or from the field investigators, they should be thoroughly examined for completeness and to detect inconsistent answers. This scrutiny should be followed by editing and coding of the data. Editing serves many purposes: *(a)* to detect any change in the name, location or address of the establishment; *(b)* to discover any change in the industrial activity of the establishment which may lead to a change in its industrial classification; *(c)* to verify reliability and consistency of information furnished as employment, earnings and hours of work and other related aspects; *(d)* to detect typical establishments, seasonal establishments, new establishments or establishments which did not submit returns, etc. The editor should also determine whether the explanations given in the questionnaire regarding abnormal features are satisfactory and acceptable. If scrutiny and editing reveal serious errors and omissions, the matter may be referred back to the establishment or field investigator for clarification and rectification where necessary.

The editor is also responsible for the coding, which is usually carried out by assigning numbers, letters or symbols to the various items on the questionnaire. When the establishments report earnings and hours of work for pay periods of different lengths, the data must be converted to a common period, e.g. a week, using appropriate conversion factors. Once editing and coding are complete, the data contained in the questionnaire are ready for transfer to work-sheets, punch-cards or tapes for computation and tabulation.

Estimation procedures

In a probability sample the computation of averages and totals, as well as the estimation of sampling errors, generally follow the sample design used for the survey. When stratification is adopted, the averages and totals are first calculated for each stratum and then combined to obtain the averages and totals for the industry as a whole, using the appropriate weights, usually estimated employment for the different strata. Some countries which use the non-random cut-off sampling technique make adjustments to the estimates of employment by means of benchmark data on total employment obtained from other sources. However, benchmark adjustments are not made in respect of the estimates of earnings and hours of work.

Usually, average hourly earnings are computed by dividing the total payrolls for the pay period by the total number of man-hours worked (or paid for) during that pay period. Average earnings per week, per month, etc., can be obtained by dividing the total payroll for the time period concerned (i.e. week, month etc.) by the number of employees reported during the period. There are other ways of estimating average earnings per week,

per month, etc. For instance, average weekly earnings can be estimated as the product of hourly earnings and average weekly hours. Average weekly hours are obtained by dividing total weekly man-hours by the number of employees. Before this, the data on earnings and hours of work for pay periods which do not correspond to a week must be individually adjusted for each establishment, using the appropriate conversion factors. The questionnaire provides for the collection of information separately for overtime earnings and overtime hours of work. It is therefore possible to make separate estimates of average hourly overtime earnings. Similarly, it is possible to calculate hourly earnings for normal-time work.

The calculation of average hourly earnings poses no problem, since total payrolls and total man-hours are recorded in the questionnaire for the same employees. In the formula used for the computation of average earnings per week or per month the denominator comprises the number of employees, which may sometimes vary from day to day during the reference week. It is normal practice therefore to fix on a particular day of the pay period, for instance at the beginning, middle or end of the month, and report the number of employees on that day; alternatively the average number of employees during the reference period is reported. If day-to-day variation in employment is negligible, the method may not result in any error. On the other hand, any significant fluctuations in the level of employment within the reference period may affect the reliability of the estimates.

The division of total payrolls by total hours of work or total employees in every observation period means implicitly that current weights are used in the estimates. This is usually done at the four-digit level of industries. At the next and higher levels of combinations, the estimated number of workers in the major group (three-digit) and division (two-digit) levels are applied as weights. This procedure may also compensate for a possible lack of representativeness of the sample of establishments. Similar adjustments of average figures will perhaps become necessary if the representativeness of the sample of establishment is doubtful with regard to regional coverage, size of establishment, etc.

As stated earlier, the current establishment survey aims mainly at providing estimates of average earnings and hours of work by major industry groups. As data are not collected on earnings and hours of work for individual employees nor for occupations, the current survey will not provide estimates of the distribution of employees by level of earnings and hours of work or of the distribution of occupational earnings.

Tabulation

A number of tables can be generated from the data collected in the questionnaire. The general principle in designing tables is that each one should be uncomplicated, so as to convey as clearly as possible to the user the meaning and significance of the data presented. There should be summary tables, followed by detailed tables showing classifications and cross-classifications of data.

Seven illustrative tables and their format are given at the end of this chapter. They comprise the following types: one summary table, and three more detailed tables, showing employment, average earnings, average hours of work and average man-days worked, for the different categories of employees, for industries; two tables showing average earnings and hours of work and average overtime earnings and hours of work for wage earners, for industries; and one table showing a time series of average earnings, for industries. Similar tables may be prepared showing further cross-classifications according to the different employee characteristics; for the whole country and for the different geographical regions; and for the different sizes of establishment. In addition, tables showing time series, similar to the last table, may be prepared for statistics of employment, earnings and hours of work; average hours of work; average man-days worked; and average earnings and hours of work of wage earners.

Publication of the results of the survey

The main justification for conducting a monthly/quarterly survey of establishments is that data on employment, average earnings and hours of work are required by different users and serve a number of purposes. It follows, therefore, that the results of the survey should be published promptly. Some countries may even need to release the results of the survey even before the publication of the final report. This is often done in the form of press releases containing a brief summary of the major findings of the survey.

The survey report comprises statistical tables and a text. The types of tables shown at the end of this chapter might form the main body of the published report. In addition to publishing current data on employment, average earnings and hours of work, it is useful to publish comparable data for the previous periods, since many users of these data are interested in trends. Table 7 at the end indicates the format for presenting serial data.

The text of the report should contain a full description of the concepts, definitions, sample design and methods used in the collection and compilation of the data. Attention should be drawn to any limitations or shortcomings of the data. The usefulness and effectiveness of the report will be enhanced considerably if the text contains an analysis of the data and the main findings.

ILLUSTRATIVE TABLES

Table 1. Statistics of employment, earnings and hours of work[1] of all employees, wage earners and salaried employees in non-agricultural industries, in major industry divisions (1-digit level of ISIC) in non-agricultural sector, month/quarter-year (Whole country)

Major industry divisions (1-digit level of ISIC)	Total employees reported as at			Average earnings per time period[2] (currency)			Average hours of work[1] per time period[2]		
	All employees	Wage earners	Salaried employees	All employees	Wage earners	Salaried employees	All employees	Wage earners	Salaried employees
1	2	3	4	5	6	7	8	9	10
Mining and quarrying									
Manufacturing									
Electricity, gas and water									
Construction									
Wholesale and retail trade, restaurants and hotels									
Transport, storage and communication									
Financing, insurance, real estate and business services									
Community, social and personal services									
Total non-agricultural sector									

[1] Hours of work: either actually worked or hours paid for. [2] Possible time periods: day, week, fortnight, month, etc.

Similar tables may be prepared for geographical regions and important urban areas and also for cross-classifications according to sex, size of establishment (e.g. 0—10 employees, 11—20 employees, etc.), regular or casual employees.

Table 2. Average earnings per time period[1] of all employees, wage earners and salaried employees, by sex, major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC) in non-agricultural sector, month/quarter-year
(Whole country) (currency)

Major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)	Average earnings per time period[1] of:								
	All employees			Wage earners			Salaried employees		
	Both sexes	Males	Females	Both sexes	Males	Females	Both sexes	Males	Females
1	2	3	4	5	6	7	8	9	10
Mining and quarrying									
Coal mining, crude petroleum and natural gas production									
etc.									
Manufacturing									
Food manufacturing									
Beverage industries									
etc.									
Electricity, gas and water									
Electricity, gas and steam									
Water works and supply									
Construction									
Wholesale and retail trade, etc.									
Wholesale trade									
Retail trade									
etc.									
Transport, storage, etc.									
Land transport									
Water transport									
etc.									
Total non-agricultural sector									

[1] Possible time periods: hour, day, week, fortnight, month, etc.

Similar tables may be prepared for geographical regions and important urban areas and also for cross-classifications according to size of establishment (e.g. 0—10 employees, 11—20 employees, etc.), regular or casual employees.

Table 3. Average hours of work[1] per time period[2] of all employees, wage earners and salaried employees, by sex, in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC) in non-agricultural sector, month/quarter-year
(Whole country) (currency)

Major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)	Average hours of work[1] per time period[2] of:								
	All employees			Wage earners			Salaried employees		
	Both sexes	Males	Females	Both sexes	Males	Females	Both sexes	Males	Females
1	2	3	4	5	6	7	8	9	10
Mining and quarrying									
Coal mining, crude petroleum and natural gas production									
etc.									
Manufacturing									
Food manufacturing									
Beverage industries									
etc.									
Electricity, gas and water									
Electricity, gas and steam									
Water works and supply									
Construction									
Wholesale and retail trade, etc.									
Wholesale trade									
Retail trade									
etc.									
Transport, storage, etc.									
Land transport									
Water transport									
etc.									
Total non-agricultural sector									

[1] Hours of work: either hours actually worked or hours paid for. [2] Possible time periods: day, week, fortnight, month, etc.

Similar tables may be prepared for geographical regions and important urban areas, and also for additional cross-classifications according to size of establishment (e.g. 0—10 employees, 11—20 employees, etc.), regular or casual employees.

Table 4. Average man-days worked per time period[1] by all employees, wage earners and salaried employees, by sex, in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC) in non-agricultural sector, month/quarter-year (Whole country) (man-days)

Major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)	Average man-days worked per time period[1] by:								
	All employees			Wage earners			Salaried employees		
	Both sexes	Males	Females	Both sexes	Males	Females	Both sexes	Males	Females
1	2	3	4	5	6	7	8	9	10
Mining and quarrying									
Coal mining, crude petroleum and natural gas production									
etc.									
Manufacturing									
Food manufacturing									
Beverage industries									
etc.									
Electricity, gas and water									
Electricity, gas and steam									
Water works and supply									
Construction									
Wholesale and retail trade, etc.									
Wholesale trade									
Retail trade									
etc.									
Transport, storage, etc.									
Land transport									
Water transport									
etc.									
Total non-agricultural sector									

[1] Possible time periods: week, fortnight, month, etc.

Similar tables may be prepared for geographical regions and important urban areas, and also for additional cross-classifications according to size of establishment (e.g. 0–10 employees, 11–20 employees, etc.), regular or casual employees.

Table 5. Average earnings and hours of work[1] per time period[2] and average hourly earnings of wage earners, by sex, in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC) in non-agricultural sector, month/quarter-year (Whole country)

Major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)	Average earnings per time period[2]			Average hours of work[1] per time period[2]			Average hourly earnings (currency)		
	Both sexes	Males	Females	Both sexes	Males	Females	Both sexes	Males	Females
Mining and quarrying									
Coal mining, crude petroleum and natural gas production									
etc.									
Manufacturing									
Food manufacturing									
Beverage industries									
etc.									
Electricity, gas and water									
Electricity, gas and steam									
Water works and supply									
Construction									
Wholesale and retail trade, etc.									
Wholesale trade									
Retail trade									
etc.									
Transport, storage, etc.									
Land transport									
Water transport									
etc.									
Total non-agricultural sector									

[1] Hours of work: either hours actually worked or hours paid for. [2] Possible time periods: day, week, fortnight, month, etc.

Similar tables may be prepared for geographical regions and important urban areas, and also for additional cross-classifications according to size of establishment (e.g. 0—10 employees, 11—20 employees, etc.), regular or casual employees.

Table 6. Average overtime earnings and overtime hours per time period[1] and average hourly overtime earnings of wage earners, by sex, in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC) in non-agricultural sector, month/quarter-year
(Whole country)

Major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)	Average overtime earnings per time period[1] (currency)			Average overtime hours per time period[1]			Average hourly overtime earnings (currency)		
	Both sexes	Males	Females	Both sexes	Males	Females	Both sexes	Males	Females
1	2	3	4	5	6	7	8	9	10
Mining and quarrying									
Coal mining, crude petroleum and natural gas production									
etc.									
Manufacturing									
Food manufacturing									
Beverage industries									
etc.									
Electricity, gas and water									
Electricity, gas and steam									
Water works and supply									
Construction									
Wholesale and retail trade, etc.									
Wholesale trade									
Retail trade									
etc.									
Transport, storage, etc.									
Land transport									
Water transport									
etc.									
Total non-agricultural sector									

[1] Possible time periods: day, week, fortnight, month, etc.

Similar tables may be prepared for geographical regions and important urban areas, and also for additional cross-classifications according to size of establishment (e.g. 0–10 employees, 11–20 employees, etc.), regular or casual employees.

Table 7. Time series of average earnings per time period[1] of all employees, wage earners and salaried employees in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC) in non-agricultural sector
(Whole country)

Major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)	Average earnings per time period[1] of:								
	All employees			Wage earners			Salaried employees		
	Current month/ quarter *(a)*	Previous month/ quarter *(b)*	Month/ quarter *(a)* of previous year	Current month/ quarter *(a)*	Previous month/ quarter *(b)*	Month/ quarter *(a)* of previous year	Current month/ quarter *(a)*	Previous month/ quarter *(b)*	Month/ quarter *(a)* of previous year
1	2	3	4	5	6	7	8	9	10
Mining and quarrying									
Coal mining, crude petroleum and natural gas production									
etc.									
Manufacturing									
Food manufacturing									
Beverage industries									
etc.									
Electricity, gas and water									
Electricity, gas and steam									
Water works and supply									
Construction									
Wholesale and retail trade, etc.									
Wholesale trade									
Retail trade									
etc.									
Transport, storage, etc.									
Land transport									
Water transport									
etc.									
Total non-agricultural sector									

[1] Possible time periods: hour, day, week, fortnight, month, etc.

Similar tables may be prepared for geographical regions and important urban areas, and also for additional cross-classifications according to sex, size of establishment (e.g. 0–10 employees, 11–20 employees, etc.), regular or casual employees.

Similar tables may be prepared showing time series of: employment, earnings and hours of work; average hours of work; average man-days worked; average earnings and hours of work of wage earners.

Monthly/quarterly survey of establishments for compilation of statistics of wage rates and normal hours of work in the non-agricultural sector

7

The integrated system of wages statistics described in Chapter 5 includes, inter alia, a current programme for the compilation of statistics of wage rates and normal hours of work. The question arises as to the type of wage rate for which statistics have to be compiled on a current basis. In general, two types of wage rates need to be taken into consideration. The first relates to wage rates fixed by or in pursuance of laws, regulations, collective agreements or arbitral awards, etc. The second refers to rates actually paid by employers to their employees, which do not necessarily correspond closely to those fixed by law or collective agreement. Statistics of both types of wage rates are of value and find application. For purposes of wage fixing, information may be needed on wage rates for different occupations and categories of employees which correspond to the basic price of labour, whereas for the study of wage drift and purposes of wage, income and price policies information concerning wage rates actually paid is more relevant.

It is relatively easier to compile statistics relating to the first type of wage rates, since the relevant information is normally available in the records of collective agreements, awards of arbitration tribunals and decisions of wage fixing and regulating authorities. Although useful and necessary for some purposes, the statistics of wage rates fixed by law or collective agreement are usually subject to a number of limitations. Their scope is often limited to those economic activities and geographical regions where wages are fixed by collective agreement or by government authorities and the extent and scope of collective agreements vary from country to country. A further limitation arises from the lack of complete or accurate information on the number of workers covered by the different wage rates. The most important limitation is that wage rates actually paid by the employers need not necessarily be the same as those fixed by or in pursuance of laws, regulations, collective agreements or arbitral awards.

As regards the statistics of wage rates actually paid and normal hours actually offered by the establishments, these can be obtained only through surveys of employers, a complex operation involving considerable cost. The present chapter concentrates on the problems of compiling statistics of wage rates actually paid and the normal hours of work on a current basis, by conducting sample surveys of establishments.

Sample survey of establishments for the compilation of current statistics of wage rates and normal hours of work

Establishment sample surveys offer the best means of collecting and compiling statistics of wage rates actually paid and normal hours of work actually in practice in establishments in various industries in the non-agricultural sector. In this section an attempt is

made to analyse the various problems involved in, and to indicate certain guidelines for, the compilation of current statistics of wage rates and normal hours of work through monthly/quarterly sample surveys of establishments. The topics covered include: objectives of the survey, scope and coverage, concepts and definitions, sampling, methods of collection, classification and tabulation of data. An illustrative questionnaire and a number of illustrative tables are also included.

Objectives, scope, coverage and frequency of the survey

Objectives of the survey

The integrated system of wages statistics outlined in Chapter 5 conceives of the current survey of establishments for the compilation of statistics of wage rates and normal hours of work as a follow-up operation to a periodic comprehensive survey of wage structure and distribution. The data obtained from the comprehensive survey should form the basis for planning the current survey, while the data from the current survey provide, in addition to specific objectives, valuable information to up-date and supplement the results of wage structure and distribution surveys undertaken at longer intervals.

The main objective of the current survey of establishments is to collect data in order to compile statistics of average wage rates actually paid and the average normal hours of work actually in practice in the principal industries. Occupations which are usually classified on the basis of trade, profession or type of work performed by the individual employee provide the best unit for which data can be obtained from establishments. A representative selection of occupations for each industry should be made in order to provide data for the calculation of average wage rates for the industry. The data collected from the establishments should also permit the compilation of statistics of average wage rates and normal hours of work for the key or most important occupations or groups of closely related occupations in each of the principal industries. The survey should provide data on time rates of wages of wage earners, wage rates of piece-workers and salary scales of salaried employees. The objectives of the current survey should also include the presentation of data on average wage rates and normal hours of work separately for adults and juveniles, classified by male and female.

One aim of the current programme should be to compile data which would permit the computation of indices in order to measure the trend and changes in average wage rates and normal hours of work. The problems of computation of wage rate indices are discussed in Chapter 11.

In the actual planning of the survey, the objectives must be described in very great detail. The statement of objectives should include a detailed list of specific data to be collected, the list of industries and occupations to be covered, the categories of employees to be included, the geographical coverage, the classifications and tabulations, the degree of precision needed for estimates of different characteristics and also the frequency with which the survey is to be conducted. Information on individual employees or detailed breakdowns of the components of wage rates are not usually collected in a monthly/quarterly survey.

Industrial coverage

The factors to be considered in the selection and coverage of industries for the purpose of current surveys of wage rates and normal hours of work are essentially the same as those mentioned in Chapter 6 concerning current statistics of average earnings and hours of work. The aim should be to include all industries which are important to the national economy. The list of industries should start from the four-digit level and cover

major divisions 2 to 9 of the International Standard Industrial Classification of all Economic Activities (ISIC).[1]

Occupational coverage

The occupational structure usually varies from one establishment to another within an industry, and also between industries. Part of the planning of the current survey is to prepare a complete list of occupations from which key and representative occupations are to be selected for the purposes of collection of wage rate data. The source for the complete list of occupations is ideally the comprehensive wage structure and distribution survey carried out periodically. If such a survey is not carried out, the list of occupations should be built up from data from any other available source, such as employment surveys showing occupations, industrial and commercial censuses, etc. Ad hoc inquiries can also be made to obtain data on the occupational pattern of industries.

A major criterion for the selection of key and representative occupations is the numerical importance of employees in the occupation. There can be other considerations, such as high ratio of certain types of labour (e.g. female workers), historical importance of the occupations in the wage structure, stability in terms of the number of workers from period to period, feasibility of clear definition of the occupation, etc. New occupations which have a growth potential could also be included in the list, which should represent a reasonably complete range of wage rates prevailing in the industry being studied. The occupational pattern may change over time, particularly as a result of technological change, and the list should therefore be revised periodically.

Geographical coverage

The current survey should, ideally, cover the whole country in order to ensure the representativeness of the data. It is important for larger countries, or countries with differing regional characteristics, that the current survey provide statistics of wage rates and normal hours of work to meet regional needs. The current survey can be designed in such a way as to serve both as an industry survey and an area survey of wage rates and normal hours of work.

Employee coverage

The main categories of employees to be covered in the survey are time-rated and piece-rated wage earners and salaried employees. Within these categories, adults and juveniles of both sexes should be included. The time-rated employees cover all employees paid on a time basis, whether this be hourly, daily, weekly, fortnightly, monthly or annually.

Certain categories of employees are usually excluded from the current survey. These include apprentices, handicapped workers, learners, beginners and trainees, workers on probation, part-time workers, workers employed for short periods or on a purely temporary basis and similar categories. Employees whose duties and tasks do not fit in with the scope of the selected occupations may also be excluded.

Establishment coverage

It seems desirable, and indeed practical, to include only those establishments above a certain size in the current survey. In the first place, establishments below a specified size may account for only a small proportion of paid workers in the industry and thus the number of persons employed in the occupation selected for the survey will be very limited. In very small establishments the workers often do not perform the specialised duties which are characteristic of a particular occupation. There may not always be strict

adherence to regular work schedules and normal hours of work. If very small establishments are included, the cost of the survey is likely to increase considerably.

The minimum size of establishment to be covered by the survey is to be determined for each industry and should be established after a study of the possible effects on the results. The implied assumption in applying a size limit is that a probability sample drawn from the remaining universe of establishments can provide representative and useful results in regard to wage rates and normal hours of work.

Frequency of the survey

Compilation of statistics of wage rates actually paid by establishments and the corresponding normal hours of work on a recurring basis through establishment sample surveys is a complex operation which needs considerable resources in terms of statistical personnel and finance. Furnishing the information in the prescribed form also throws a considerable burden on the establishments. With regard to the frequency of the survey, the resolution of the Twelfth ICLS recommends the following:

> For compilation of time rates of wages actually paid by establishments and the corresponding hours of work, sample surveys of establishments normally should be undertaken at yearly intervals in respect of important occupations in the principal industries in the country, wherever the facilities and resources available permit. It is possible to cover the same ground by undertaking an annual cycle of monthly surveys each covering a certain selection of occupational groups. The data thus obtained provide valuable up-to-date information to supplement the results of wage structure and distribution surveys undertaken at longer intervals.

The above recommendation is made on the assumption that the main purpose of the current survey is to update and supplement the data obtained from periodic in-depth surveys of wage structure and distribution. But, for the purpose of computation of wage rate indices on an up-to-date basis, it is necessary to institute a system of continuing surveys starting with the base period. The frequency of such surveys depends on the periodicity of the index numbers to be compiled. If the index numbers are to be compiled on a monthly or quarterly basis, the current survey is also to be carried out monthly or quarterly, covering at the same time all the industries included in the index numbers of wage rates and normal hours of work.

Concepts and definitions

Certain aspects of the general concepts and definitions relevant to the wages statistics programme given in Chapter 4 require further clarification in the context of the current survey of wage rates and normal hours of work. These include: (i) occupation; (ii) employee: wage earners and salaried employees; (iii) wage rate: time rates, piece rates and salary rates; and (iv) normal hours of work. Another item which is central to the current survey is the concept and definition of establishment, which is also given in Chapter 4, and further referred to under the sub-heading "Reporting unit".

Occupation

Establishments often prescribe wages according to jobs and positions which are based on differences in duties, responsibilities and levels of skill. The definition of occupation given in Chapter 4 is a wider concept than the job or position, and often includes several jobs. Therefore, for the purposes of the current survey of wage rates and normal hours of work, the jobs and positions coming within the scope of each occupation should be described in detail and matched with the jobs existing in the establishments.

It is desirable for the purposes of this survey to subdivide occupations which include a wide range of duties, responsibilities or tasks requiring demonstrably different levels of skill or experience. For instance, there can be lower-division clerks and upper-division

clerks, junior secretaries, and senior secretaries, etc. For the compilation of statistics, a distinction may be made between men and women employed in the same occupations, where necessary, and data may be collected separately for each sex.

Employee

For the purposes of the current survey of wage rates and normal hours of work, each country should make a distinction between wage earners and salaried employees, and should define each category in such a way as to be meaningful with regard to national conditions. Wage earners should be further divided into time-rated and piece-rated wage earners. For the purposes of the wage rate survey, time-rated wage earners include workers on all shifts who are paid on a time basis without regard to output. Piece-rated wage earners are remunerated in proportion to their output. In certain industries, e.g. tobacco manufactures, large numbers of piece-rated wage earners are employed.

Wage rate

For the purposes of the current survey of establishments, wage rates and salary rates refer to the rates actually paid by the establishment for the specified occupations during the reference period for the survey. The wage rates and salary scales in force in an establishment may or may not be the same as those fixed by or in pursuance of laws or regulations, collective agreements or arbitral awards. If basic wages, cost-of-living or dearness allowances and other guaranteed and regularly paid allowances include a significant part in the form of wage rates paid in kind, they should be evaluated at cost to the employer and be included in the wage rates. Wage rates in kind are important in certain industries; for instance, workers in hotels and restaurants may receive meals and accommodation free of charge as part of their wages. Where board and lodging are customarily provided without charge as part of the wage rate system, their monetary value should be included in the wage rate. However, *ex gratia* payments in kind supplementary to normal wage rates should not be included in wage rates.

A distinction should be made between time rates of wages and piece rates of wages. For the purposes of the current survey described in this chapter, the piece rate relates to the payments for output for the normal time of work and the rates applying to the individual worker. Piece rates for the purposes of statistics have to be determined by dividing the estimated straight-time or normal-time earnings of the piece-worker in the particular occupation during the reference period by the corresponding estimated time units actually worked. This approach may not be fully satisfactory, but given the complexity of piece rate systems, it is difficult to propose a better procedure.

Normal hours of work

It is possible that practice in the establishment may not be the same as the normal hours of work fixed by law or by collective agreement. For the purpose of the current survey, normal hours refer to the hours of work offered by the establishment for each occupation and beyond which overtime premium is payable. It does not refer to the normal hours actually worked by individual employees, which may be affected by absenteeism, bad weather, strike, etc. As a rule, normal hours of work offered may relate to a day as well as a week.

Reporting unit

The main objective of the survey is to obtain data on wage rates and normal hours of work by industry and also by geographical area. To achieve the above objective, the establishment is the appropriate reporting unit. As stated in Chapter 4 and referred to in

Chapter 6, wherever possible the basic recording unit for the current survey on wage rates should be the establishment in preference to units such as the enterprise, undertaking, firm or company.

The concept of the establishment, as defined in the International Standard Industrial Classification of All Economic Activities (ISIC) is given in Chapter 4. However, as stated in that chapter and in Chapter 6, it my be necessary in certain fields of activity to retain the kind-of-activity unit as the reporting unit, instead of the establishment. This applies to industries such as construction, transport and communication.

Benchmark

The current survey aims at building up estimates of average wage rates and normal hours of work by collecting data on wage rates and normal hours of work for representative occupations. The benchmark for the current survey therefore refers to complete and reliable occupational wage data for wage earners and salaried employees. The comprehensive survey of wage structure and distribution envisaged in the integrated system of wages statistics provides the necessary benchmark data for the current surveys.

Sampling

The purpose of using sampling techniques in this current survey is to obtain the best results in terms of the survey objectives at a minimum or given cost and also as speedily as possible. Cost is, by far, the major consideration in determining the sampling procedure. Various elements enter into the cost of the survey, such as the cost of preparing the sampling frame, the cost of data collection and of processing and tabulation of data, etc. The cost of data collection is usually a major component in the total cost of occupational wage surveys, which often require the employment of qualified investigators to visit the sample establishments and collect the data. This fact plays a major role in the choice of sample design and determination of sample size.

A major requirement of the sample design is that the estimates of averages should be available with sufficient precision up to the specified level of industry, sometimes the three-digit or even the four-digit level. The sample design and sample size discussed here with regard to the current survey apply only to the sampling of establishments and not to sub-sampling of employees within the establishments.

The first step in the application of sampling techniques is the preparation of the universe to serve as the sampling frame. The universe for the current survey should consist of all establishments in each of the industries which the survey is intended to cover. The list of establishments, as a rule, should be prepared at the four-digit level of industry for each major division of industry in the non-agricultural sector. As stated earlier, the current survey is envisaged after a comprehensive survey of wage structure and distribution has been conducted, in which case there is already a list of establishments which may only need updating. If no comprehensive survey on wage structure and distribution has been conducted, a complete list of establishments should be built up for the purposes of the current survey, drawing information from different sources, including factory registrations, tax records, social security records, industrial directories, records of trade unions and employers' organisations, etc. In certain situations it may even be necessary to organise field investigation to list all the establishments in a particular industry. The universe, thus compiled, should be kept up to date, taking into account the births and deaths of establishments.

The sample design used in this type of survey is invariably highly stratified. The first level of stratification is the industry group or major group (four-digit or three-digit level) for which separate estimates are to be published. Within these groupings, a further stratifi-

cation is usually made by size of establishment and sometimes also by product. If regional estimates are needed for the above classifications, cross-stratification can be done according to geographical regions.

Two main aspects of the sample design to be studied are: the sample size required and the manner of allocating it to different strata. A number of factors influence the size of the sample (i.e. the number of establishments to be included), the major factors being the total number of establishments in the industry, the diversity of occupations studied and their distribution, the relative dispersion of wage rates between establishments, the distribution of establishments by size, the geographical and other breakdowns needed and the degree of precision generally required for the estimates of average wage rates.

The problem of sample size in relation to the required precision of estimates should be studied primarily at the four-digit level of industry because once the required degree of precision is ensured at this level precision at higher levels is automatic. The size of the sample may be decided after joint consideration of the number of establishments in a particular industry and of the coefficient of variation of the item being measured which, in the present survey, refers to wage rates for selected occupations. Here, the results of any previous survey of occupational wage rates covering the same industry would provide an indication of the coefficient of variation of average wage rates. If such information is lacking, the possibility of estimating the coefficient of variation from information from other surveys of a similar nature should be explored. The coefficient of variation or the relative dispersion of wage rates changes very little from year to year. National experience shows that in surveys based on stratified random sampling design, with a considerable degree of breakdown up to three- or four-digit level of industry, the relative dispersion in the sub-universe is somewhat smaller than in the whole universe.

Next follows the problem of the manner of allocation of the given sample size to different strata. This is usually done according to the principle of optimum allocation, by which every establishment in the particular industry has a chance of being included in the sample in approximate proportion to its size where the size is measured in terms of employment. It may happen that the sample size arrived at by this approach is very large and that funds and other resources are not available to undertake a survey of such a large sample of establishments. An alternative approach may be to predetermine the total sample of establishments that can be surveyed with the funds provided and other available resources and then allocate the predetermined sample size to the industry strata, and within each industry, to size strata in proportion to total employment. In such a situation, the sampling error of the estimates of wage rates should be carefully examined before any decision is made concerning the sample size.

Reference period of data collection

It may be necessary to fix different reference periods for time-rated and piece-rated wage earners and for salaried employees for the collection of data. It is also necessary to distinguish the time reference period of data collection from the time units in which wage rates or salary rates are fixed in the establishment. Wage rates can be established for different time units such as an hour, a day, a week or a month. Similarly, salary scales can be fixed for a month or a year. But the reference period of data collection for the survey is usually fixed as a specified period within the month or quarter.

The reference period for the data collection should relate to a normal working period. It should be a period in which there were no strikes, lay-offs or other abnormal conditions which seriously curtailed the operation of the establishment.

For the collection of data on wage rates of time-rated wage earners and the corresponding number of wage earners, it is sufficient to relate the information to a day within the reference period, for instance the first or last working day of the reference period.

Normal weekly hours of work for the time-rated wage earners may be requested with reference to the week.

As regards piece-workers, the wage rate is to be calculated from their earnings for normal time of work. For this purpose, the data on earnings and normal hours worked should be collected for the entire reference period, viz. pay period/month.

For salaried employees, the month is usually the appropriate reference period for data collection and can be used even if salaries are established on an annual basis.

Method of data collection

The method of data collection should fulfil efficiently the objectives of the current survey, which, for reasons of economy and speed, are limited to the collection of data for the estimation of average wage rates actually paid and normal hours of work. The current survey does not, therefore, envisage collecting wage data for individual employees, which would involve much greater effort, time and cost. However, there should be a suitable unit of observation for wage rates and normal hours of work. Wage rates are usually quoted for specified occupations, and normal hours of work are also fixed on the basis of occupations. Therefore, the occupation may serve as an appropriate unit of observation for the collection of data on wage rates and normal hours of work. Further, keeping the occupation as the unit for data collection in successive rounds of the survey ensures the comparability of the data and also meets the requirement for the computation of wage rate indices in order to measure the changes in average wage rates over time.

Data on wage rates are collected in the current survey only for selected occupations, with the selection being done on an industry basis. The criteria for selection have been discussed earlier under the heading "Occupational coverage". Sometimes, certain occupations have to be further subdivided in order to create more homogeneous groups to facilitate data collection. If men and women are employed in the same occupations in significant numbers, the occupation should be subdivided according to sex, since the objectives of the survey require estimates of average wage rates by sex.

The selection of occupations for the current survey should be done in such a way as to meet the data requirement for the construction of wage rate indices. Therefore, all occupational families should be represented and the weights of those occupations excluded may be imputed to the selected occupations within the appropriate occupational families. In order to construct indices the list of occupations and method of data collection should be kept constant over the period covered by the wage rate indices.

The occupational classifications to be used in the current survey should be defined in advance. An important prerequisite for the collection of reliable and comparable data on wage rates actually paid is that jobs, positions, tasks and other categories existing in each establishment in the sample should be matched correctly with jobs described under each occupation selected for the survey. Functions, duties and responsibilities associated with jobs must be carefully compared and matched with those included in the occupational categories for the survey. This is a complex and arduous task which cannot be left to the establishment. A well-designed questionnaire is essential and most establishments will need direct assistance from qualified persons in completing it. Therefore, qualified and well-trained investigators should be employed to collect the data. As stated earlier, the use of field investigators will naturally increase the cost of conducting the survey.

The method of data collection should take account of the distinct characteristics in the wage payment system of the three categories of employees covered by the survey, i.e. time-rated and piece-rated wage earners and salaried employees. The questionnaire should have different sections so that data may be collected separately for each category.

Another point to be resolved is the manner in which data on wage rates for time-rated wage earners and salary rates of salaried employees should be collected, i.e. as

ranges showing minima and maxima or as absolute figures. As the main purpose of the survey is to estimate the average wage rate or salary rate, data on ranges are not suitable. It is not normally advisable to ask establishments themselves to calculate the arithmetic averages of wage rates or salary rates for each occupation, so that the alternative seems to be to list all identifiable jobs, positions or tasks falling within the scope of each selected occupation in the sample establishment. For each such job, position or task, information on the wage rate of time-rated earners in one absolute figure could be collected, together with the number of time-rated wage earners receiving that specified wage rate. A similar approach is possible in the case of salaried employees, where the different steps or levels in the salary rates should also be taken into account. As regards piece-rated wage earners, the method of data collection is similar to that for the compilation of statistics of average earnings and hours worked, except that the figures of earnings relate to straight-time work and do not include earnings for overtime.

It is easier for establishments to report data on wage rates or salary rates for the unit for which they were established. This may be the hour, day, week, month or even a year, and may differ from occupation to occupation within the establishment and between establishments. The questionnaire should therefore make provision for collecting wage rate and salary rate data for the different time units.

Questionnaire

The design of the questionnaire calls for careful attention since it is the medium through which all the data required to meet the objectives of the current survey are collected from the sample establishments. The objectives of the current survey, as stated earlier, normally require adequate data in order to estimate average wage rates actually paid and normal hours of work in practice for industries and for selected key and representative occupations, and separately for time-rated and piece-rated wage earners and for salaried employees. The objectives also include the presentation of data broken down by male and female, adult and juveniles, and according to size of establishment. The questions should be limited to the items for which data can be furnished easily from payroll and other records of the establishments. The framing of questions should be such that the answers require only clear statements of fact and not judgements on the part of the respondents or field investigators, nor should respondents be asked to work out averages or distributions. The discussions in the preceding paragraphs clearly show that the problems involved in the collection of data on occupational wage rates actually paid by the establishments and the corresponding normal hours of work in practice are complex and demand more time, effort and co-operation from the establishments than those required for the current survey of statistics of average earnings and hours of work. Therefore, it is envisaged that the current survey be carried out employing qualified and well-trained investigators. There should be a detailed manual of instructions for filling in the questionnaire, explaining every term clearly and fully. As far as possible, job descriptions falling within the scope of selected occupations for the survey should be printed in the questionnaire itself. There should be no possibility of misinterpreting the questions or instructions.

An illustrative questionnaire for a monthly/quarterly survey of establishments for the collection of data on wage rates actually paid and normal hours of work in practice is shown at the end of this section. It is divided into four parts: A, B, C and D.

Part A refers to general establishment information which includes identification particulars and characteristics of the sample establishment. Identification particulars relate mainly to the name and address of the establishment, thus providing information on the geographical location. Information needed under the item "characteristics of the establishment" covers: the main product or activity of the establishment, number of persons

employed, method of wage payment, number of normal days and normal hours of work per week and coverage by collective agreements or statutory wage rates. Further items relevant to the national situation may be included. The number of persons employed is to be shown separately for wage earners and salaried employees, and by male and female. Information on the method of payment of wages is to be obtained separately for time-rated and for piece-rated wage earners, according to sex. Time-rated wage earners are further classified according to whether the rates are hourly, daily, weekly or monthly.

Part B of the questionnaire is designed to collect data on time-rated wage earners for the specified reference period, usually a pay period. Information on time rates of wages actually paid and the normal hours of work offered per week by the establishment for each selected occupation is to be entered in this part. For the purposes of data collection, occupations are subdivided by sex, i.e. when men and women are engaged in the same occupation they are to be shown separately in the questionnaire. Wage earners are further classified into adult wage earners and juvenile wage earners. As an occupation selected for the survey may comprise different jobs, positions and tasks for which there are different wage rates, provision has been made in the questionnaire for showing them separately under each occupation. For each job, position or task within the occupation, the questionnaire is designed to collect data on time rates of wages actually paid and the corresponding number of wage earners receiving that rate. Wage rates are to be shown as single figures and not as a range. If, however, the job, position or task provides for more than one wage rate, the figure to be recorded is that of the rate applicable to the largest number of wage earners. A column is provided in the questionnaire to show the time period to which the wage rate relates. The method of collection of data envisages obtaining the information on wage rates in the time unit in which they were fixed in the establishment. There is no provision in the illustrative questionnaire for showing the components of wage rates, including wage rates in kind. However, in industries where wage rates in kind form a significant part of the rate, it may be useful to show separately the monetary value. The normal hours of work to be recorded in the questionnaire refer to the normal hours per week fixed for each occupation in the establishment and not the hours actually worked by individual employees. The hours actually worked during the normal time can be influenced by absenteeism or by other reasons.

Part C relates to piece-rated wage earners. The format is similar to that of Part B, with one basic difference. This part requires information on aggregate earnings for normal-time work and aggregate number of normal hours worked by piece-workers engaged in the selected occupation during the reference period. From these two sets of figures, wage rates per hour of piece-workers can be calculated for the different occupations.

Part D of the questionnaire is designed to collect data for salaried employees. The format of Part B is slightly modified in Part D to suit the recording of information on salary scales of occupations relating to salaried employees. The jobs, positions and categories included in the selected occupation can have salary scales with a number of steps or levels. A column is provided in Part D to show the number of employees and the salary rate corresponding to each step or level of the salary scale relating to jobs, positions or category coming under each selected occupation.

The occupations shown in Parts B, C and D are purely illustrative and may differ from industry to industry. While certain occupations will be industry-specific, others may be common to several or all industries covered by the survey.

ILLUSTRATIVE QUESTIONNAIRE

Name and address of statistical authority

_____

_____

All information furnished by the respondent will be held in strict confidence and used only for statistical purposes.

Sample survey of establishments in non-agricultural sector
Wage rates and normal hours of work
for the month/quarter _____

Please complete this questionnaire for the reference period from _____ to _____ (specify) and return it before _____ (specify date).

Sample identification particulars of establishment

_____

_____

Name of establishment official furnishing the information for completion of the questionnaire

_____

Signature _____ Official title _____ Date _____

Name of investigator _____

Signature _____ Date _____

Date of despatch of questionnaire to statistical authority _____

A. General establishment information

(a) Identification particulars of establishment

(1) Name _____

(2) Address _____

_____

(3) Telephone number (if any) _____

(b) Characteristics of establishment

(1) Describe main product/activity/business of establishment (i.e. the product/activity/business which accounts for the major part of output or which occupies the major part of employment)

_____

_____

(2) Number of persons employed in establishment as on _____ of reference period (specify):

	Male	Female	Total
Wage earners			
Salaried employees			
Total employees			

(3) Method of payment of wage earners: state number of wage earners who are:

Time rated:	Male	Female
Hourly rated		
Daily rated		
Weekly rated		
Monthly rated		
Piece rated		

(4) What are the normal number of days of work and the normal number of hours of work per week for the majority of your employees (after which overtime conditions apply) for:

	Number of days per week	Number of hours per week
Wage earners?		
Salaried employees?		

(c) (i) Statutory/fixed wage rate coverage

(1) Do you have any statutory/fixed wage rate covering the following groups of employees? (Yes/No)
Salaried employees _____; Wage earners _____;
Any other special category (specify) _____

(2) State the number and type of employees covered _____

(ii) Collective agreement coverage

(3) Do you have any collective agreement covering the following groups of employees? (Yes/No)
Salaried employees _____; Wage earners _____;
Any other special category (specify) _____

Industry: _____
(Specify — e.g. Manufacture of Dairy Products — ISIC Code No. 3112)

B. Wage rates of time-rated wage earners during the reference period from _____ to _____

Occupation, by sex		Job/position/task/etc. in the establishment included in the scope of the occupation (describe)	Adult wage earners				Juvenile wage earners			
			No. of employees as on _____ of reference period (specify date)	Wage rate		Normal hours of work per week (hours)	No. of employees as on _____ of reference period (specify date)	Wage rate		Normal hours of work per week (hours)
ISCO Code No.	Title of category[1] by sex			Amount[2] (currency)	Time period (hour/day/ week/ month)			Amount[2] (currency)	Time period (e.g. hour/ day/week/ month)	
1	2	3	4	5	6	7	8	9	10	11
Illustrations:										
7-75.10	Dairy product processor (male)									
7-75.10	Dairy product processor (female)									
7-75.20	Dairy product pasteuriser (male)									
7-75.20	Dairy product pasteuriser (female)									
7-75.30	Butter maker (male)									

[1] Descriptions of each occupation should be either included in the questionnaire or given in an annex. [2] In industries where wage rates paid in kind are significant, space should be provided in the questionnaire to show separately the monetary value of wage rates paid in kind. *Ex gratia* payments in kind should not be included.

Industry: _____
(Specify — e.g. Manufacture of Wearing Apparel, except footwear — ISIC Code No. 3220)

C. Earnings of piece-rated wage earners during the reference period from _____ to _____

Occupation, by sex		Job/position/task/etc. in the establishment included in the scope of the occupation (describe)	Adult wage earners				Juvenile wage earners			
			No. of employees as on _____ of reference period (specify)	Earnings[2]		Normal hours actually worked during time unit in col. 5	No. of employees as on _____ of reference period (specify)	Earnings[2]		Normal hours actually worked during time unit in col. 9
ISCO Code No.	Title of category[1] by sex			Total amount (currency)	Total no. of hours of work actually worked per week			Total amount (currency)	Total no. of hours of work actually worked per week	
1	2	3	4	5	6	7	8	9	10	11
Illustrations:										
7-91.20	Tailor, made-to-measure garments (male)									
7-91.20	Tailor, made-to-measure garments (female)									
7-91.30	Tailor, ready-to-wear garments (male)									
7-91.30	Tailor, ready-to-wear garments (female)									
7-94.20	Garment pattern maker (male)									
7-94.20	Garment pattern maker (female)									

[1] Descriptions of each occupational category should be either included in the questionnaire or given in an annex. [2] Earnings: comprise total earnings of all employees within that particular job/position/task/etc., excluding overtime bonuses and earnings.

Industry: _____
(Specify: e.g. Manufacture of Metal and Woodworking Machinery — ISIC Code No. 3823)

D. Salary rates for salaried employees during the reference period from _____ to _____

Occupation, by sex		Job/position/ category/etc. in the establishment included in the occupation (describe)	Normal hours of work[2] per time unit	Time unit for which salary is paid (month/ year)	Step/Level 1		Step/Level 2		Step/Level 3			Step/Level 10	
ISCO Code No.	Title of category[1] by sex				No. of employees as on ____ of reference period	Salary (currency)	No. of employees as on ____ of reference period	Salary (currency)	No. of employees as on ____ of reference period	Salary (currency)		No. of employees as on ____ of reference period	Salary (currency)
1	2	3	4	5	6	7	8	9	10	11		24	25
Illustrations:													
3-21.10	Stenographer-typist (general) (male)												
3-21.10	Stenographer-typist (general) (female)												
3-21.20	Stenographic secretary (male)												
3-21.20	Stenographic secretary (female)												
3-21.40	Typist (male)												

[1] Descriptions of occupations should be either included in the questionnaire or given in an annex. [2] It is assumed that the time unit and normal hours of work will be the same for each step/level within a particular job/position/category of an occupation.

Scrutiny, editing and coding of the data

The initial scrutiny of the completed questionnaires should be done at the field level before they are sent to headquarters. For this purpose, the field organisation should include supervisors to make on-the-spot inspections and scrutiny of the completed forms. The purpose of field scrutiny is mainly to ensure completeness of entries and to detect gross errors and inconsistencies. If necessary, the supervisor should contact the establishment to verify and correct the entries.

Each completed questionnaire should be subjected to a thorough technical review at the statistical office to ascertain whether the entries are complete, consistent and in accordance with the specifications. If the completed questionnaire does not measure up to the necessary standards, it should be returned to the field staff for verification and rectification of errors. Once the data furnished are found acceptable, they should be coded and transferred to work sheets, punch cards or tapes, according to the methods and equipment used for data processing.

The staff engaged in scrutiny, editing and coding should be provided with detailed and clear instructions on carrying out the work in a uniform manner. The usual practice is to prepare a detailed manual on scrutiny, editing and coding of the data collected through current surveys of wage rates and normal hours of work.

Estimation procedures

The main purpose of the current survey is to obtain reliable estimates of averages of wage rates actually paid by establishments and the corresponding normal hours of work for the principal occupations and for the industry as a whole. As it is envisaged that the survey will be carried out by probability sampling, the computations of averages and of the sampling error in the estimates of averages are made from the data provided by the sample. The formulae to be used are determined by the sample design used for the survey. When stratification is adopted, the averages are first calculated for each stratum and then combined to obtain the average for the industry as a whole, using appropriate weights, which are usually the inverse of the sampling rate assigned to the stratum.

The computation of averages also depends upon the manner in which data are collected in the questionnaire. For instance, it is envisaged that data on wage rates will be collected in the time unit in which they are quoted by the establishment for each job, position or task included under each occupation. These rates should first be converted to a common time unit before the calculation of average wage rates. The next step is to work out the wage rate for each selected occupation in the sample establishment as a weighted average, using the number of employees in each job, position or task as the weight. The averages for the sample establishments are weighted in accordance with the probability of selecting the unit in order to obtain unbiased estimates of averages for the stratum and for the industry.

The sample establishments furnish the data on normal hours of work per week with reference to the selected occupations. Average normal hours of work are obtained by multiplying the number of normal hours by the corresponding number of employees in the occupation in each establishment and dividing the sum of the products by the total number of employees in that occupation in all establishments. Average normal hours for all occupations in the establishment and for different strata within the industry and for the industry as a whole are estimated, using the appropriate probability weights assigned to the sample establishments.

The sampling errors of the estimates of average wage rates for different occupations may vary widely depending on the frequency with which the occupation occurs and the dispersion of wage rates or salary scales. Although it may not be practical to calculate

sampling errors monthly or quarterly, it is essential to work out the sampling errors of estimates of important characteristics for the first round of the survey. Thereafter this should be done at periodic intervals in order to ensure the desired precision of the estimates.

The computation of indices of wage rates and normal hours of work call for special attention. This subject is dealt with in Chapter 11.

Tabulation

The types and the number of tables that can be generated are determined by the basic data and the form in which they are collected in the questionnaire. The questionnaire should provide for the classification and cross-classification of the data for tabulation purposes. The tabulation programme should take into account all the objectives of the survey and the preparation of the tabulation programme should form part of the planning of the survey.

The purpose of the current survey is usually to build up serial data of average wage rates and normal hours of work in absolute figures as well as in the form of indices. It is therefore necessary to follow uniform methods of tabulation and presentation of data for successive rounds of the survey.

The current survey combines the features of an industry survey with those of an area survey. The statistics of average wage rates and normal hours of work for selected occupations should be tabulated for each of the principal industries and, to the extent possible, for geographical areas. Classification and cross-classification of data may be done by male and female, cross-classified by adult and juvenile wherever necessary. Tabulation of data can be made with reference to establishment characteristics, in particular by size of establishment.

The illustrative questionnaire included in this chapter provides data which permit the preparation of a number of tables. As an illustration, twelve tables, and their format, are given at the end of the chapter. They comprise four summary tables relating to industry and presenting wage or salary rates, normal hours of work and the number of employees; five tables showing occupational rates and the corresponding normal hours of work for the different industries; one table showing occupational rates and normal hours of work for different sizes of establishment in the different industries; one table showing index numbers of industry wage rates; and one table showing time series of normal hours of work for the different industries. Where appropriate, similar tables may be prepared for the different geographical regions, and by sector. Tables 5 to 10 relate to occupations. However, the occupations shown in these tables need not necessarily include all those selected for the survey. The presentation of data by occupation will depend on the sampling errors of the estimates of average wage rates. The tabulation of data on wage rates and normal hours of work for the different sizes of establishment depends on the sample design and sample size used in the survey. It is possible that the sample will be too small to permit a large number of classifications of establishments by size. The size classifications should be decided on the basis of sampling errors of the estimates of average wage rates and normal hours of work within each size class. While tables 2 to 4 present data on wage rates and normal hours of work, the corresponding information on the number of employees is shown in table 1. This is done in order to present the data in a concise and manageable way.

The index numbers of wage rates and time series of normal hours of work are presented differently by the different countries. In general they represent the industry averages by sex, and for different points of time. For instance, in certain countries they are presented for the current month or quarter, the previous month or quarter and for the same two months or quarters of the previous year; in others, annual averages are given

for a number of years up to the previous year, and then monthly or quarterly averages for the previous year up to the current month or quarter. In the illustrative tables (tables 11 and 12), index numbers and time series are shown for the current month/quarter and previous month/quarter, and the corresponding periods of the previous year.

Publication of the results of the survey

Prompt publication of the results is an essential requirement of a current survey. The periodicity of publication is normally related to the periodicity of collection of data. A monthly series loses much of its current usefulness when it is published only quarterly or yearly or with a long time lag. The planning of the survey should lay down as a goal the tabulation and publication of the data collected in a month or quarter during the following month or quarter.

There are different ways of releasing the results of the survey. Sometimes a mimeographed advance release is prepared for distribution to a limited number of users, including official authorities. More elaborate data are subsequently made available in printed form for general distribution. In general, frequent publication of results is limited to certain items which represent the key series, while detailed breakdowns and cross-classifications are published at longer intervals.

The report of the current survey usually comprises statistical tables and a text. If the survey results are used for the computation of indices of wage rates and normal hours of work, the report should contain such indices showing the movement of wage rates and normal hours of work. A full description of the objectives, scope and coverage, concepts and definitions, sample design and methods of collection and compilation of the data should be given either in the text of the report or as an annex to the text. The users should be informed of the limitations and shortcomings of the data, if any, and therefore these should also be given in the text of the report. If it is possible to include an analysis of the results and the main findings, it will considerably help the users of statistics of wage rates and normal hours of work compiled through the current survey.

Notes

[1] United Nations, Department of Economic and Social Affairs: *International Standard Industrial Classification of All Economic Activities*, Statistical papers, Series M, No. 4, Rev. 2 (New York 1968; Sales No. E.68.XVII.8).

ILLUSTRATIVE TABLES

Table 1. Number[1] of time-rated wage earners, piece-rated wage earners and salaried employees, by sex, in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC) in non-agricultural sector, month/quarter-year (Whole country)

Major industry groups (3-digit level of ISIC) in major industry divisions[2] (1-digit level of ISIC)	Number of employees												
	All employees			Time-rated wage earners				Piece-rated wage earners				Salaried employees	
				Adult		Juvenile		Adult		Juvenile			
	Total	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
1	2	3	4	5	6	7	8	9	10	11	12	13	14
Mining and quarrying Coal mining Crude petroleum and natural gas production etc. Manufacturing Food manufacturing Beverage industries etc. Electricity, gas and water Electricity, gas and steam Water works and supply Construction Wholesale and retail trade, etc. Wholesale trade Retail trade etc. Transport, storage, etc. Land transport Water transport etc.													
Total non-agricultural sector													

[1] The number of employees refers to those reported in the selected occupations in the industries covered by the survey. [2] The data should be presented at the 3- or 4-digit level of industry within each major industry division (1-digit level of ISIC).

Similar tables may be prepared for geographical regions where required.

Table 2. Average wage rates per time unit[1] (hour/day/week) and average normal hours of work per week[1] of time-rated wage earners, by sex, and adult/juvenile, in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC) in non-agricultural sector, month/quarter-year
(Whole country)

Major industry groups (3-digit level of ISIC) in major industry divisions[2] (1-digit level of ISIC)	Average wage rate per time unit[1] (hour/day/week) (specify) (currency)				Average normal hours of work per week[1] (hours)			
	Adult		Juvenile		Adult		Juvenile	
	Male	Female	Male	Female	Male	Female	Male	Female
1	2	3	4	5	6	7	8	9
Mining and quarrying Coal mining Crude petroleum and natural gas production etc.								
Manufacturing Food manufacturing Beverage industries etc.								
Electricity, gas and water Electricity, gas and steam Water works and supply								
Construction								
Wholesale and retail trade, etc. Wholesale trade Retail trade etc.								
Transport, storage, etc. Land transport Water transport etc.								
Total non-agricultural sector								

[1] The average rates and normal hours of work refer to those of employees in selected occupations in the industries covered by the survey. [2] The data should be presented at the 3- to 4-digit level of industry within each major industry division (1-digit level of ISIC).

Similar tables may be prepared for geographical regions where required.

Table 3. Wage rate[1] per time unit (hour/week)[2] and average normal hours of work per week[2] of piece-rated wage earners, by sex and adult/juvenile in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC) in non-agricultural sector, month/quarter-year
(Whole country) (currency)

Major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)[3]	Average wage rates[1] per time unit (hour/day/week) (specify)[2]				Average normal hours of work per week[1] (hours)			
	Adult		Juvenile		Adult		Juvenile	
	Male	Female	Male	Female	Male	Female	Male	Female
1	2	3	4	5	6	7	8	9
Total mining and quarrying								
Coal mining								
Crude petroleum and natural gas production								
etc.								
Total manufacturing								
Food manufacturing								
Beverage industries								
Tobacco manufactures								
etc.								
Total electricity, gas and water								
Electricity, gas and steam								
Water works and supply								
Construction								
Total wholesale and retail trade, restaurants and hotels								
Wholesale trade								
Retail trade								
etc.								
Total community, social and personal services								
Public administration and defence								
Sanitary and similar services								
etc.								
Total non-agricultural sector								

[1] The average wage rate of piece-rated workers is calculated by dividing the total straight-time earnings reported by the total number of hours actually worked. [2] The wage rates and normal hours of work refer to those of employees in the selected occupations and industries covered by the survey. [3] The data should be presented at the 3- to 4-digit level of industry within each major industry division (1-digit level of ISIC).

Similar tables may be prepared for geographical regions where required.

Table 4. Average salary rates per month/year[2] and average normal hours of work per week[2] of salaried employees, by sex, in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC) in non-agricultural sector, month/quarter-year (Whole country)

Major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)[1]	Average salary rate per month/year (specify)[2] (currency)		Average normal hours of work per week[2] (hours)	
	Male	Female	Male	Female
1	2	3	4	5
Total mining and quarrying Coal mining Crude petroleum and natural gas production etc.				
Total manufacturing Food manufacturing Beverage industries Tobacco manufactures etc.				
Total electricity, gas and water Electricity, gas and steam Water works and supply				
Construction				
Total wholesale and retail trade, restaurants and hotels Wholesale trade Retail trade etc.				
Total community, social and personal services Public administration and defence Sanitary and similar services etc.				
Total non-agricultural sector				

[1] The data should be presented at the 3- to 4-digit level of industry within each major industry division (1-digit level of ISIC). [2] The salary rates and normal hours of work refer to those of salaried employees in the selected occupations in the industries covered by the survey.

Similar tables may be prepared for geographical regions where required.

Table 5. Average wage rates per time unit (hour/day/week), average normal hours of work per week and number of time-rated wage earners, by sex, in selected occupations in industry groups (4-digit level of ISIC) in non-agricultural sector, month/quarter-year (Whole country)

Industry group[1] (4-digit level of ISIC) and occupational category	Numbar of time-rated wage earners reported				Average wage rates per time-unit (hour/day/week) (specify) (currency)				Average normal hours of work per week (hours)			
	Adult		Juvenile		Adult		Juvenile		Adult		Juvenile	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
1	2	3	4	5	6	7	8	9	10	11	12	13
Coal mining												
Miner (general)												
Cutting-machine operator												
Drilling-machine operator												
All selected occupations												
Crude petroleum and natural gas production												
Derrickman												
Rotary driller												
All selected occupations												
etc.												
Manufacture of pulp, paper and paperboard												
Paper-making machine operator (wet end)												
Paper-making machine operator (back end)												
Paper-maker (hand)												
All selected occupations												
Printing, publishing and allied trades												
Hand compositor												
Linotype operator												
etc.												

[1] Data should be presented at the 3- to 4-digit level of industry.

Similar tables may be prepared for geographical regions where required.

Table 6. Average wage rates[1] per hour/week and average normal hours of work per week of piece-rated wage earners, by sex, in selected occupations in industry groups (4-digit level of ISIC)[2] in non-agricultural sector, month/quarter-year
(Whole country)

Industry group[2] (4-digit level of ISIC) and occupational category	Number of piece-rated wage earners reported				Average wage rates[1] per hour/week (specify) (currency)				Average normal hours of work per week			
	Adult		Juvenile		Adult		Juvenile		Adult		Juvenile	
	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female	Male	Female
1	2	3	4	5	6	7	8	9	10	11	12	13
Manufacture of made-up textile goods except wearing apparel												
Hand and machine sewer (general)												
Sewing-machine operator												
All selected occupations												
Manufacture of wearing apparel, except footwear												
Tailor, made-to-measure garments												
Tailor, ready-to-wear garments												
Dressmaker												
All selected occupations												
Manufacture of footwear, except vulcanised or moulded rubber or plastic footwear												
Shoemaker (general)												
Orthopaedic footwear maker												
Shoe repairer												
All selected occupations												
Manufacture of furniture and fixtures, except primarily of metal												
Cabinetmaker,												
etc.												

[1] Average wage rates of piece-rated wage earners are calculated by dividing the total straight-time earnings reported by the number of hours actually worked. [2] Data should be presented at the 3- to 4-digit level of industry.

Similar tables may be prepared for geographical regions where required.

Table 7. Average salary rates per month/year and average normal hours of work, and number of salaried employees, by sex, in selected occupations in industry groups (4-digit level of ISIC)[1] in non-agricultural sector, month/quarter-year
(Whole country)

Industry groups[1] (4-digit level of ISIC) and occupational category	Number of salaried employees reported		Average salary rates per month/ year (specify) (currency)		Average normal hours of work per week (hours)	
	Male	Female	Male	Female	Male	Female
1	2	3	4	5	6	7
Coal mining						
Production manager						
Stenographic secretary						
Bookkeeper						
All selected occupations						
Spinning, weaving and finishing textiles						
Production manager						
Stenographer-typist						
Stenographic secretary						
All selected occupations						
Iron and steel basic industries						
General manager						
Stenographic secretary						
Typist						
All selected occupations						
etc.						

[1] Data should be presented at the 3- to 4-digit level of industry.

Similar tables may be prepared for geographical regions where required.

Table 8. Average wage rates per time unit (hour/day/week), average normal hours of work per week, and number of time-rated wage earners, by sex, in selected occupations in non-agricultural sector, month/quarter-year
(Whole country)

Major occupational group and occupational category	Number of time-rated wage earners (number)		Average wage rate per time unit (hour/day/week) (specify) (currency)		Average normal hours of work per week (hours)	
	Male	Female	Male	Female	Male	Female
1	2	3	4	5	6	7
Sales workers Wholesale trade salesman Retail trade salesman Demonstrator etc.						
Service workers Head cook Cook, except private service Waiter, general Bartender Janitor Charworker Launderer Dry-cleaning machine operator Laundry pressing machine operator etc.						
Production and related workers, transport equipment operators and labourers Miner (general) Quarryman (general) Cutting-machine operator (mine) Blast furnaceman (ore smelting) Open-heath furnaceman (steel) Hot-roller (steel) etc.						
Total selected occupations						

Similar tables may be prepared for geographical regions where required.

Table 9. Average salary rates per month/year, average normal hours of work per week, and number of salaried employees, by sex, in selected occupations in non-agricultural sector, month/quarter-year
(Whole country)

Major occupational group and occupational category	Number of salaried employees (number)		Average salary rate per month/year (specify) (currency)		Average normal hours of work per week (hours)	
	Male	Female	Male	Female	Male	Female
1	2	3	4	5	6	7
Professional, technical and related workers						
Chemist (general)						
Analytical chemist						
Mechanics physicist						
Electronics physicist						
Civil engineer (general)						
Building construction engineer						
Extractive metallurgist						
Mining engineer (general)						
Draughtsman (general)						
Mechanical draughtsman						
Lithographic artist						
Mining technician (general)						
Petroleum and natural gas extraction technician						
etc.						
Administrative and managerial workers						
General manager						
Production manager						
etc.						
Clerical and related workers						
Clerical supervisor						
Stenographer-typist (general)						
Stenographic secretary						
Typist						
Card and tape-punching machine operator						
etc.						

Similar tables may be prepared for geographical regions where required.

Table 10. Average wage rates per time unit (hour/day/week), average normal hours of work per week, and number of time-rated wage earners, by sex, and size of establishment,[2] in selected occupations in industry groups (4-digit level of ISIC)[1] in non-agricultural sector, month/quarter-year
(Whole country)

Industry group[1] (4-digit level of ISIC), size of establishment[2] and occupational category	Number of time-rated wage earners (number)		Average wage rate per time unit (hour/day/week) (specify) (currency)		Average normal hours of work per week (hours)	
	Male	Female	Male	Female	Male	Female
1	2	3	4	5	6	7
Coal mining						
Establishments with fewer than 50 employees[2]						
Miner (general)						
Cutting-machine operator						
Drilling-machine operator						
All selected occupations						
Establishments with 50–100 employees[2]						
Miner (general)						
Cutting-machine operator						
Drilling-machine operator						
All selected occupations						
Establishments with 101–200 employees[2]						
Miner (general)						
Cutting-machine operator						
Drilling-machine operator						
All selected occupations						
Establishments with over 200 employees[2]						
Miner (general)						
Cutting-machine operator						
Drilling-machine operator						
All selected occupations						
Crude petroleum and natural gas production						
Establishments with fewer than 50 employees[2]						
Derrickman						
etc.						

[1] Data should be presented at the 3- to 4-digit level of industry. [2] The sizes of establishment given in the table are illustrative; the sizes are dependent on the size and composition of the sample used in the survey; in some cases, the size of the sample will be too small to permit classification by size of establishment.

Similar tables may be prepared for geographical regions where required.

Table 11. Index numbers of average wage rates per time unit (hour/day/week) of time-rated wage earners, by sex, in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)[1] in non-agricultural sector, month/quarter-year
(Whole country) Base: Average month/quarter-year = 100

Major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)[1]	Index numbers of average wage rates per time unit (hour/day/week) (specify)							
	Males				Females			
	Current month/ quarter *(a)*	Previous month/ quarter *(b)*	Month/ quarter *(a)* of previous year	Month/ quarter *(b)* of previous year	Current month/ quarter *(a)*	Previous month/ quarter *(b)*	Month/ quarter *(a)* of previous year	Month/ quarter *(b)* of previous year
1	2	3	4	5	6	7	8	9
Total mining and quarrying								
Coal mining								
Petroleum and natural gas production								
etc.								
Total manufacturing								
Food manufacturing								
Beverage industries								
Tobacco manufactures								
etc.								
Total electricity, gas and water								
Electricity, gas and steam								
Water works and supply								
Construction								
etc.								
Total community, social and personal services								
Public administration and defence								
Sanitary and similar services								
etc.								
Total non-agricultural sector								

[1] Data should be presented at the 3- to 4-digit level of industry within the major industry divisions (1-digit level of ISIC).

Similar tables may be prepared for geographical regions, where required.

Table 12. Time series of average normal hours of work per week of time-rated wage earners, by sex, in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)[1] in non-agricultural sector, month/quarter-year to month/quarter-year
(Whole country)

Major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)[1]	Average normal hours of work per week of:							
	Male				Female			
	Current month/ quarter *(a)*	Previous month/ quarter *(b)*	Month/ quarter *(a)* of previous year	Month/ quarter *(b)* of previous year	Current month/ quarter *(a)*	Previous month/ quarter *(b)*	Month/ quarter *(a)* of previous year	Month/ quarter *(b)* of previous year
1	2	3	4	5	6	7	8	9
Total mining and quarrying								
Coal mining								
Crude petroleum and natural gas production								
etc.								
Total manufacturing								
Food manufacturing								
Beverage industries								
Tobacco manufactures								
etc.								
Total electricity, gas and water								
Electricity, gas and steam								
Water works and supply								
Construction								
etc.								
Total community, social and personal services								
Public administration and defence								
Sanitary and similar services								
etc.								
Total non-agricultural sector								

[1] Data should be presented at the 3- to 4-digit level of industry within the major industry divisions (1-digit level of ISIC).

Similar tables may be prepared for geographical regions where required.

Labour cost surveys in the non-agricultural sector (Non-current wages statistics programme)

8

The level and changes in labour cost are issues central to wage negotiations and wage policies, and they are also factors which play a crucial role in domestic and foreign competition in the field of trade. Expenditures on social security and wage supplements in addition to pay for working time comprise a substantial part of the cost of employing labour. The increasing prevalence of paid holidays, family allowances, social security and pension schemes and other amenities of a social character has altered the structure of labour cost over the years.

There are two levels at which the notion of labour cost can be applied: the level of the whole economy, or the level of the industry, which in operational terms means the establishment or enterprise. The government and other public authorities in many countries participate to varying degrees with employers and employees in financing social security and pension schemes on behalf of the employees. In some countries expenses for certain elements of labour cost are not chargeable to employers but are met by the State out of general taxation. In view of these and other diversities, the two approaches can lead to significantly different estimates of labour cost. From the operational point of view, the determination of labour cost for the whole economy runs into complex problems of cost allocation. Various sources of accounting at the enterprise level as well as at the national level need to be used for this purpose. It is not feasible at the present stage to employ such an approach for the regular compilation of labour cost statistics. The Meeting of Experts on Statistics of Labour Cost convened by the ILO in 1964 and the Eleventh International Conference of Labour Statisticians (ICLS) (1966), considered this point and concluded in favour of compiling statistics of labour cost based on the concept of the cost incurred by the employer in the employment of labour. However, for purposes of international comparisons, statistics of labour cost of employers have to be supplemented by particulars of social security financing, tax system, etc.

Labour cost borne by the employer can be measured per unit of labour input or per unit of output. Inter-industry and inter-country productivity differences are reflected in statistics of labour cost per unit of output and therefore such statistics are regarded as key data for labour cost comparisons. But the collection of data on labour cost per unit of output is beset with many practical problems. The most serious difficulties stem from the fact that labour cost data are available for the industry while output is reported by product, and since nearly all industries produce a number of products, it requires a great deal of information and knowledge to allocate labour cost between the different products. While various attempts have been made to combine the different outputs of a given industry into an aggregate figure and to relate the result to the total labour cost, it does not seem to be possible to include such types of statistics in the regular operating pro-

grammes of statistical offices. The measurement of labour cost per unit of labour input in terms of time unit of work is relatively easier. It is this approach of measurement of labour cost which was recommended by the Eleventh ICLS (1966). The resolution of Eleventh Conference concerning statistics of labour cost states: "Each country should compile statistics of average labour cost per unit of time (cost of labour input). In particular, data should, wherever possible, be compiled showing average labour cost per hour actually worked."

Data on labour cost per hour worked are useful in the analysis of certain industrial problems, and for questions of international economic co-operation and international trade. However, differences in labour cost per unit of time do not necessarily determine the relative competitive positions of different establishments or of similar industries in different countries. Labour cost may vary substantially among establishments where different combinations of the production factors are used. Differences in labour productivity (output per man-hour) may outweigh any competitive advantage in respect of labour cost per man-hour. Moreover, especially in considering international competitiveness, additional factors have to be taken into account, for instance other operating costs such as raw materials, fuel, rent, subsidies, taxation, exchange rate, etc. Some of the differences in costs between two countries may be explained by the fact that certain social security costs are financed in one country through general taxation and are therefore excluded from labour cost but are financed through direct contributions by establishments in the other country.

Labour cost per unit of output is equal to hourly labour cost divided by output per man-hour. But, since suitable data on output per man-hour expressed in absolute terms are not available for many industries, the practical possibilities of utilising this simple arithmetical relationship are limited.

The establishment is the best source of data on labour cost. However, establishment surveys designed to collect comprehensive statistics of labour cost are complex and require large-scale operation. It is therefore not often feasible to combine major labour cost surveys with industrial censuses or other inquiries, although the usefulness of labour cost data for analysis of particular economic problems would be greatly enhanced if certain kinds of information, especially on value added, were available for the same reference period. The question also arises as to whether labour cost surveys can be combined with surveys of wage structure and distribution. There may appear to be some advantage in combining the two surveys, especially from the organisational point of view. In practice, however, it is extremely difficult for establishments to provide data on wage structure as well as annual data on wages and other components of labour cost and data on hours of work classified by a number of variables such as sex, employment status, age group, occupational or skill category, etc. The problems of labour cost surveys are different from those of wage structure and distribution surveys. It is therefore more advantageous to undertake separate surveys to collect labour cost and related statistics.

The remainder of this chapter deals with the methods of compilation of statistics of labour cost by conducting sample surveys of establishments in industries in the non-agricultural sector. The survey forms one constituent of the non-current wages statistics programme within the framework of the integrated system of wages statistics described in Chapter 5. The topics discussed include objectives, scope and coverage, concepts and definitions, classifications, sampling and methods of collection, compilation, tabulation and publication of data. An illustrative questionnaire for the collection of data from establishments and some illustrative tables for presenting tabulated data are also included.

Objectives, scope, coverage and frequency of the labour cost survey

Objectives of the survey

The general objective of the labour cost survey is to compile statistics, essentially for the purpose of providing reliable measures of the level, composition and evolution of labour cost to the employer. Such a general statement of objective is, however, not sufficient for the purposes of a statistical inquiry. The survey objectives should be formulated in detail and in terms of specific data to be collected from establishments, the industries to be covered by the survey, the types of estimates and classifications needed, etc. The objectives should specify whether estimates of labour cost for each industry are required for geographical regions and by size and other characteristics of establishments. Such a specification of objectives is needed in order to design the questionnaire, to determine the sample design and sample size and also to estimate the financial and other resources needed for the survey.

Particular emphasis is placed on the use of the data collected in the survey for the analysis of the structure of labour cost. The relative importance of the employers' expenditure under each of the components and their relationships are of particular interest to users of the data. The specific data to be collected should cover both total labour cost and its various components. The data thus collected should permit the estimation of aggregate labour cost as well as average labour cost for the industry. An essential objective of the survey is to collect from the source data on hours of work corresponding to the labour cost figures, in order to measure labour cost in terms of the time unit of labour input. If data on hours of work are obtained from other sources, there is a risk of error in the computations of average labour cost per hour, arising from lack of uniformity as regards observation period, scope, coverage and sampling procedures between the labour cost survey and the hours of work survey.

Great importance is attached to the analysis of labour cost according to wage earners and salaried employees. The labour cost survey, therefore, should aim at collecting data on labour cost separately for these two categories. It is also desirable, and even necessary, to collect data on the number of wage earners and salaried employees corresponding to the data on labour cost and hours of work, especially when the survey objective requires estimates of labour cost according to size of establishment. For certain types of analysis, it may be useful to obtain information according to ownership of establishments, for instance private industry, state industry and co-operatives.

Labour cost surveys provide an opportunity to collect supplementary information on establishment practices and policies which have a bearing on the level, composition and evolution of labour cost. The system of payments for time not worked, social security and pension schemes and methods of financing them, payroll taxes and similar items fall under this category. Information on these items throws much light on labour cost and enhances the usefulness of labour cost statistics. In addition, such information is needed in its own right.

At the same time, labour cost surveys provide data on the compensation of employees, which is the wage measure used in the System of National Accounts. Labour cost mostly comprises compensation of employees, and the additional items of labour cost, as may be seen from Chapter 4, are few; they include employers' expenditure for vocational training, welfare services, cost of recruitment and other miscellaneous items and taxes regarded as labour cost. The integrated system of wages statistics described in Chapter 5 does not envisage a separate programme for compiling statistics of compensation of employees because these statistics can be compiled as part of the labour cost statistics programme.

All the elements included in the concept of the wage measure "earnings" form part of the labour cost. However, statistics of average earnings compiled on a monthly, quarterly

or six-monthly basis do not include annual or infrequent bonuses and sometimes not even payments in kind. Labour cost surveys can provide data throwing light on the part of workers' income derived from employment, for instance direct wages, supplementary wage elements not covered by regular wage statistics, average annual earnings, etc. To the extent possible, a close correspondence should be established between the labour cost data obtained from periodic labour cost surveys and the more frequently compiled earnings data so that it is possible to derive labour cost figures by extrapolation for the intervening years.

Industrial coverage

The resolution concerning statistics of labour cost adopted by the Eleventh ICLS (1966) recommends: "Each country should aim to develop statistics of employer's labour cost covering the principal sectors of the economy, especially selected branches of manufacturing, mining, building and construction industries, as well as other economic activities where possible." In principle, inquiries into labour cost can be made in all industries where suitable records are available showing data on wages, salaries and other labour cost items, as well as hours of work. The selection of an industry for the labour cost survey is to be made on the basis of its importance, measured in terms of employment, significance for export or any other suitable criterion. The industries are usually selected at the major group (three-digit) or even group (four-digit) level of ISIC.

Geographical coverage

In labour cost surveys designed on an industry basis, data should be collected from establishments where the industries are located. Separate regional figures are more important for bigger countries or countries with differing regional characteristics. Industry-based labour cost surveys covering the entire country can provide regional data by using sample sizes appropriate for the purpose.

Employee coverage

All employees in respect of whom the labour cost has been incurred should be included in the labour cost survey. They include all wage earners and salaried employees of both sexes. Part-time, casual and seasonal workers should be included, as well as apprentices and trainees. However, managerial staff remunerated predominantly by a share of profits should be excluded from labour cost statistics.

Frequency of the survey

Large-scale, nation-wide labour cost surveys covering all the principal industries involve considerable effort and cost. Such surveys place a great burden on the establishment as regards furnishing comprehensive labour cost data according to the specifications laid down by the survey planners. These considerations normally preclude the possibility of conducting a labour cost survey on an annual basis. In addition, the structure of labour cost would not normally change from year to year. The recommendation of the Eleventh ICLS (1966) in this regard envisages labour cost surveys conducted at intervals not exceeding five years.

For the period between two labour cost surveys, attempts could be made to estimate labour cost per time unit by linking data from other sources. Some important items of labour cost, for instance social security contributions and various other payments, are usually made in proportion to earnings of employees and it might be possible to use this relationship to extrapolate for a limited period, provided that reliable statistics of earnings with a comparable scope are available. In some situations special investigations of limited scope during the interim period may provide a satisfactory basis for estimates of certain components of labour cost.

Concepts and definitions

The points in respect of which clear definitions are particularly needed for the purposes of planning and conducting labour cost surveys are the concepts of labour cost and its various components, hours of work and, in particular, hours actually worked, employee and establishment. The concept and definition of labour cost and its relationship to other statistical measures of wages are given in Chapter 4. This also gives the definition of hours of work and that of employee. "Establishment" is defined in Chapter 4 and also referred to in Chapters 6 and 7. The discussion here is therefore directed at those points which need further clarification. They mainly concern the criteria for identifying the labour cost elements and the classification of labour cost according to components.

Labour cost and its components

In the resolution adopted by the Eleventh ICLS (1966) labour cost has been defined as the cost incurred by the employer in the employment of labour. But this concept should relate to the actual cost to the employer in the sense that it is treated by the employers as cost. Profit forgone by the employers in allowing employees to use certain facilities at reduced charges or to purchase goods from the establishment store at a special discount, but not below the employer's buying price, should not be treated as labour cost. In principle, free services, such as free travel facilities provided by railways, bus services, etc., should not be taken into account as labour cost since employers, as a rule, do not treat them as costs.

Benefit to workers is one, but not the sole, criterion that is to be used in deciding whether or not to include specified employer expenses in labour cost. Under this criterion, all payments by the employer which accrue as earnings of the employees are clearly labour costs. The remaining part of the labour cost is to be included on a net basis, i.e. after deduction of amounts, if any, paid by the employees, grants-in-aid by the State, etc. Thus, the net cost is to be used in respect of items such as payments in kind, housing, social security, welfare services, etc.

Indemnities incurred by the employee on behalf of his employer and paid or reimbursed by the latter should not be regarded as labour cost. An example of this type of expenditure is per diem and other travelling costs of employees in carrying out employers' instructions or business. These are not primarily costs relating to the employment of labour but are incurred in furtherance of the interest of the business of the employer. Similarly, payments such as tool allowances should not be included as labour cost, if these are simply reimbursement of expenditure for workers' own equipment. However, if a tool allowance is paid regularly, which augments the earnings of workers, there is a case for assimilation with wages. Although the benefit or non-benefit character of an indemnity may sometimes not be easy to assess in practice, it is difficult to find a better criterion for the separation of labour cost from general costs of establishments. Complete exclusion or inclusion of all indemnities, which appears to be an easy practical solution, could lead to markedly biased results in particular cases. Taking into account the prevailing form of indemnities and conditions of payment, it should be possible to determine in advance a list of those to be included in labour cost.

The scope of the statistical concept of labour cost can be better illustrated by describing the various components which make up the total labour cost of the employer. An International Standard Classification of Labour Cost was adopted by the Eleventh ICLS (1966) and was annexed to the resolution concerning statistics of labour cost adopted by that Conference.This standard classification comprises ten major groups of components and a number of components within major groups.[1]

Major group I: Direct wages and salaries: in this classification, direct wages and salaries relate only to cash remuneration. However, it is possible that in developing countries pay-

ments in kind may be linked to direct wages and salaries. But showing payments in kind separately does not normally present any difficulty, since the figures can be combined with other items where appropriate.

Direct wages and salaries comprise four components representing cash remuneration for current work performed. A distinction is made between the direct wages and salaries of time-rated and of piece-rated workers, as well as between straight-time pay and premium pay for overtime, late shift and holiday pay. Incentive pay of time-rated workers is kept as a separate component. It also includes monthly and other regularly paid bonuses which are related to work performed or to current output. Direct wages and salaries also include the pay of trainees and apprentices and that of the personnel employed in establishment-run housing services, medical and health services, vocational training and welfare services.

Major group II: Remuneration for time not worked: comprises direct payments to workers in respect of annual vacation and assimilated leave, long-service leave, public and other recognised holidays, other time off with pay granted by the employer, for instance in connection with birth or death of family members, marriage of employee, union activities, family obligations, functions of titular office, etc. In some countries payments in respect of vacations are made from social security schemes for some categories of employees. In such situations, employers' contributions to the vacation fund take the place of normal vacation pay and it is appropriate to include the expenditure under major group VI, employers' social security expenditure. Similarly, some countries regard severance and termination pay as social security payments. In that case, they should be shown under major group VI. Otherwise they should be shown as a separate item of major group II, remuneration for time not worked. It is to be pointed out that severance and termination pay are not included in the earnings statistics.

Major group III: Bonuses and gratuities represent payments made at annual or longer intervals and should be distinguished from monthly or more frequently paid remuneration. Employers and workers have different views or attitudes concerning certain items described as bonuses and gratuities. The former might not necessarily agree that bonuses, even if traditionally paid at the end of the year and also perhaps in mid-year, constitute an acquired right rather than a voluntary distribution of profit and therefore could be subsumed under direct wages and salaries. There is no doubt, however, that all types of bonuses, premiums and payments to workers for special services or ideas, improvements in working methods, etc., form part of labour cost and are to be included in one or other of the classifications of labour cost components. The criterion may be that if bonus payments are made on a monthly or more frequent basis under contractual arrangements and relate to work done, they should be assimilated with incentive pay under major group I, direct wages and salaries.

Major group IV: Payments in kind represent the value of goods and services given to the worker by the employer as part of his remuneration. Payments in kind do not cover general amenities provided by the employer such as canteen and other welfare services. For the purposes of classification, major group IV does not include free or subsidised housing provided by the employer or free or subsidised medical services provided either directly by the employer or through social security schemes. The former item should be shown under major group V, cost of workers' housing borne by the employer, and the latter under major group VI, employers' social security expenditure. The concept of payments in kind to be used in connection with labour cost measurement should relate to employers' cost and not according to the benefit accruing to the worker. Following this principle, the evaluation of payments in kind may be made on the basis of production cost when the goods concerned are produced within the establishment, or at acquisition prices, such as wholesale prices, when the goods are purchased and given to the employee.

Major group V: Cost of workers' housing borne by the employer: this represents the actual cost to the employer in the form of cost of repairs, maintenance, interest, depreciation on building and equipment, but not capital investment on building, equipment or land. The amount classified under housing cost borne by the employer does not correspond to the amount for free or subsidised housing included in earnings statistics. In earnings statistics housing is seen as income to the employee. The income element is usually equated to the rental value to the employee reduced by the rent, if any, paid by him.

Net cost for establishment-owned housing comprises: maintenance expenditure, fees, property taxes, insurance, interest, depreciation and other costs, less grants-in-aid, tax rebates, etc., received from public authorities and rents and other receipts from workers in respect of housing. Maintenance costs of housing owned by the establishment include the amounts of bills for maintenance carried out by other firms and the cost of materials, energy, etc., used in connection with work. Interest imputed on capital invested for workers' housing is a cost item, since profit is forgone to the extent that that capital, if invested elsewhere, would have earned interest or dividends. Depreciation is also recognised as a cost. It accounts for the diminution of service yield from a fixed asset or fixed asset group that cannot or will not be restored by repairs or replacements of parts caused by wear and tear from use, disuse, poor maintenance, obsolescence and inadequacy.

When the establishment has ceded land for the benefit of the personnel to construct their own housing, the rental value of such land may be regarded as labour cost. It may be difficult to assess the rental value because, for instance, the land may be subject to restrictions regarding its use or may be reserved for future expansion of the enterprise and thus there may be virtually no rental value.

Sometimes the establishment or enterprise may have a housing department of its own to attend to the maintenance and other aspects of establishment-owned houses. It must be clearly understood that major group V does not include any wages and salary cost of, or social security expenditure for, personnel employed by the establishment for maintenance and other work related to establishment-owned houses. The various components of the staff cost should be shown under major groups I to VI respectively.

Establishments sometimes give monthly or other regular house-rent allowances to the employees in lieu of the provision of housing. Such house-rent allowances should be recorded under this major group for the purposes of labour cost classification. However, it must be noted that in earnings statistics monthly or regular house-rent allowances are shown under direct wages and salaries.

Major group VI: Employers' social security expenditure: the five components listed under this major group cover all social security and pension schemes, whether statutory, collectively agreed or voluntary. Some of these schemes provide benefits to the employees while in employment or retaining the status of employee, while others provide benefit to the employee after retirement or to his survivors. For the purposes of labour cost statistics, the social security expenditure incurred during the reference period is considered as labour cost. The expenditure could be incurred as contributions to funds set up for the purpose, or as direct payment by the employer to the employee from the current revenue of the establishment. This major group covers severance and termination pay only if they are regarded as social security payments. Otherwise they should be shown under major group II.

The cost of medical care and health services does not cover capital investment but includes the cost of material depreciation on buildings and equipment, interest, repair, maintenance and other costs. Depreciation, interest, etc., are to be valued according to the same principles as indicated for employees' housing borne by the employer. The wages, salaries and other personnel costs for medical care and health service personnel employed by the establishment should be shown under major groups I to VI. The cost is to be shown

on a net basis, deducting from the gross expenditure grants-in-aid, tax rebates, etc., received from public authorities and receipts from workers.

Major group VII: Cost of vocational training covers the net cost of the following items: fees, salaries and other payments for services of outside instructors, raw materials, energy, small tools, teaching materials etc., cost of repairs and maintenance as depreciation and interest with respect to buildings and equipment used. Assimilated to these costs are payments made to outside training institutions on behalf of the workers in the establishment and the reimbursement of school fees, etc., to workers. The term "vocational training" should be taken in a wide sense to include training in health and safety measures and in languages. Wages and salaries of personnel should be shown under major groups I to IV, housing expenditure under major group V and social security expenditure under major group VI.

Major group VIII: Cost of welfare services: this major group brings together services such as canteens and other food services, educational, cultural, recreational and related facilities and services, grants to credit unions and related services for employees. The cost to be recorded under this group relates to the net cost after taking into account grants-in-aid, tax rebate, etc. It includes depreciation on buildings and equipment, repairs and maintenance. Interest forgone on interest-free loans to workers should be regarded as labour cost. The cost of staff employed in connection with welfare services should be shown under major groups I to VI.

Major group IX: Labour cost not elsewhere classified: the cost of transport of workers undertaken by the establishment is on the borderline between labour cost and general cost of establishments. The benefit character to workers of this free transport may nevertheless justify its inclusion in labour cost. It must, however, be recognised that the criterion of benefit to workers does not provide a clear-cut distinction between facilities with a labour cost character and those which should be regarded as general cost. As labour cost, one might consider facilities which have as their primary objective the workers' benefit. Facilities which have as their primary objective the normal functioning of the enterprise should rather come under overhead costs, as they are part of the work environment. The cost of sanitary facilities, showers, parking facilities and similar items might therefore be regarded as overheads and not as labour cost.

The cost of work clothes and protective clothing is considered as labour cost. It may be argued that the provision of certain forms of protective clothing is part of the work environment, particularly where the employer is under a legal obligation to supply such clothing. However, as employers may not record separately the cost of safety and other work clothes and the distinction is not clear-cut, they are included under labour cost.

Items covered under recruitment cost are of the following type: travel expenses paid for interviews of new recruits, the cost of advertisements, fees paid to public and private employment services in connection with recruitment, removal expenses, per diem and installation allowances paid to newly recruited workers and members of their families, the cost of documents, legal fees and similar expenses borne by the employer. Travel expenses included in recruitment cost are of quite a different nature from those of salesmen employed by the establishment, reimbursement of which is not regarded as labour cost.

Major group X: Taxes regarded as labour cost: the treatment of taxes in the context of labour cost statistics is one of the most complex of conceptual problems. General taxes (such as income or corporation taxes levied on profits) paid by companies are not regarded as labour cost to the employer, although the revenue may be used partly to finance social programmes benefiting workers as well as other members of the community. It is very difficult to establish a simple criterion for deciding which taxes should be

regarded as labour cost. Following logically from the definition of labour cost as the cost to the employer of the employment of labour, all taxes which are incurred by the employer in direct connection with the employment of labour should be regarded as labour cost. Taxes which are imposed on employment or on payrolls directly affect the cost to the employer of employing labour. In countries where these taxes are considered as labour cost they should be identified separately in order that they may be included or excluded for different purposes. The taxes should be included on a net basis, i.e. after deduction of allowances or rebates.

Uses and limitations of the Standard Classification of Labour Cost by components

In the Standard Classification of Labour Cost the establishment and all its activities are regarded as one unit. Hence cost items such as direct wages and salaries, remuneration for time not worked, bonuses and gratuities, housing expenditure and social security contributions all cover expenditures of the same kind, irrespective of whether they are made for workers in production and related activities or for those engaged in housing services, welfare services, social security programmes or vocational training. Such a classification scheme serves, among other things, two main purposes. First, major groups I to V in the Standard Classification cover much the same scope as earnings statistics, compiled at monthly, quarterly or six-monthly intervals. The main differences are: *(a)* the latter generally exclude annual and infrequent bonuses and gratuities; *(b)* the treatment of housing expenditure borne by the employer is different in the case of earnings statistics: monthly or regularly paid house-rent allowances are assimilated with direct wages in the earnings statistics; *(c)* the earnings statistics include direct payments to employees compensating for loss of earnings during sick leave, which have been placed under social security expenditure in the Standard Classification of Labour Cost; and *(d)* the family allowance paid regularly and directly by the employer is included in the earnings statistics as part of direct wages and salaries. Provided that these particular items are separately identified, a close correspondence could be established between the periodic labour cost data and the more frequently compiled earnings data, thus facilitating the extrapolation of labour cost for the intervening years.

The second and very important purpose which is served by the Standard Classification is that it delineates clearly the wage measure "compensation of employees" from labour cost. The major groups I to VI fully encompass the concept of compensation of employees. Data on compensation of employees are needed in their own right. Compensation of employees is the wage measure used in the System of National Accounts and it is also used for many national and international wage studies.

The main limitation of the Standard Classification is that it does not show the total labour cost of certain establishment programmes, such as housing for employees, medical care and health services, welfare services and vocational training. The costs shown for these services in the Classification do not include wages, salaries, social security or other costs of the personnel of the establishment running these services. Wages, salaries and other staff costs account for a major share of the cost of these services. The Eleventh ICLS (1966) took the view that, where possible, countries should, in addition to the requirements of the Standard Classification, try to compile data on total labour costs of such activities as housing, vocational training as well as medical care and health services, embracing wages and salaries, social security and other cost of personnel in the establishment running these programmes. The total cost of vocational training also includes wages and salaries of trainees and apprentices. The main use of such a classification is that it reveals the full dimension of the cost of the principal establishment programmes connected with the employment of labour. Average total labour cost per employee for such programmes in the different industries surveyed will be of particular interest for national

and international comparisons. The programme approach poses difficult practical problems of cost allocation and separation of accounting data. If it is operationally feasible, the labour cost survey could aim at collecting information in such a way as to permit additional classification of labour cost between the different sectors of programmes within the establishment.

Classification of labour cost statistics by industry, size group of establishment, region and category of employees

The classifications used for labour cost statistics should provide information on important factors influencing the level and composition of labour cost and changes over time. Of primary interest in this respect are classifications of labour cost according to components, industry, size of establishment, geographical region and category of employees, according to wage earners and salaried employees. The classification of labour cost according to components has already been dealt with in the previous section.

Labour cost surveys, as a rule, are designed on an industry basis and generally provide data on labour cost either for the group (four-digit) or major group (three-digit) level of industry. To promote the development of internationally comparable statistics of labour cost by industry, use of the United Nations International Standard Classification of All Economic Activities (ISIC),[2] or a classification convertible to it, is recommended.

The classification by size of establishment should be consistent with the classification used in other wage surveys as well as with that used in the industrial censuses and surveys. However, the number of size groups that can be formed in labour cost surveys depends on the sampling design adopted for the survey and on other considerations such as the cost involved.

The classification of labour cost statistics by geographical regions depends very much on local conditions. Generally, the influence of geographical region on labour cost is greater in large countries or countries with great regional variations in wages and other conditions of work. Considerable interest is also attached to cross-classification of labour cost statistics by industry, by size group of establishment and by geographical region. However, it is to be recognised that these classifications might require relatively larger samples of establishments.

Difficulty of classification of labour cost statistics by status of employees and by sex

The level and composition of labour cost in an industry vary between wage earners and salaried employees. Classification of labour cost and its components by industry in conjunction with the status of employee (wage earners and salaried employees) is, therefore, of major interest in the analysis of labour cost. Labour cost surveys should collect data on labour cost and its components and on hours of work separately for wage earners and salaried employees in order to facilitate such classification.

There arises the question as to whether separate labour cost data are needed for employees of each sex. The distributions of male and female workers according to occupations, levels of skills, supervisory responsibilities, etc., are often dissimilar and therefore comparisons of labour cost data between male and female could lead to erroneous conclusions. Further, many establishments do not maintain separate data for males and females for a number of labour cost components. The resolution concerning statistics of labour cost adopted by the Eleventh ICLS (1966) did not recommend the compilation of labour cost statistics according to sex of the employee.

It has not yet been possible to reach international agreement on the definitions of wage earners and of salaried employees respectively. No single criterion has been found which could be applied in statistical operations in all countries. Pending adoption of an international standard definition, the distinction between wage earners and salaried employees should be based on the criteria which appear to be the most suitable for statistical purposes under the conditions in each country. Since the problem of defining these categories concerns not only labour cost statistics but also statistics of earnings, hours of work, employment, etc., it should be considered in a wider context.

Reporting unit

The establishment as defined in the ISIC is given in Chapter 4 and serves as an appropriate reporting unit for the labour cost survey in respect of most industries in the non-agricultural sector. The advantages of choosing the establishment as the reporting unit in wage surveys, where possible, in preference to the enterprise, firm, undertaking, etc., have been pointed out in the preceding chapters.

Sampling

It is not the aim in this manual to prescribe any particular sampling procedure with respect to labour cost surveys, particularly since the statistical resources and field conditions vary greatly from country to country. However, there are certain points to which attention may be drawn.

As the labour cost survey is costly and time-consuming, the maximum effort should be made to obtain fully representative and reliable data. However, certain practical considerations have to be taken into account when deciding whether very small establishments should be included in the coverage. Small establishments often do not possess sufficiently detailed records of labour costs other than wages and salaries. In addition to incomplete response among small-sized establishments, there is a possibility of greater non-response, which is liable to introduce bias in the results. The inclusion of very small establishments would increase disproportionately the cost of data collection. The size limit of establishments not to be covered by the survey should be determined for each industry taking into account the size of employment and other characteristics of the industry concerned. The small establishments which are excluded from the scope of the survey would ordinarily account for only a very small portion of employment in the industry.

An essential requirement for the use of sampling techniques is the preparation of the universe to serve as the sampling frame. The universe consists of all establishments above the size limit in each of the industries which the survey covers. As with the case of other wage surveys, the list of establishments, as a rule, should be at the group (four-digit) level within the major division of industry. If such a list is not readily available, it should be built up for the purposes of the labour cost survey, drawing information from such sources as factory registrations, tax records, social security records, industrial directories, records of trade unions and employers' organisations, etc.

Labour cost surveys usually employ the stratified sampling technique. Stratification serves two main goals: often the stratum itself is of sufficient importance to require separate estimates of labour cost in accordance with the survey objectives; second, it improves the efficiency of sampling in terms of the precision of the estimates, and also reduces the cost of the survey since the sample size would be, as a rule, smaller than that in an unstratified sample. The universe, which for the purpose of labour cost survey comprises the major divisions of industry, is first stratified according to the group or major group

(four-digit or three-digit) levels of industry. Usually the survey objectives require separate estimates of labour cost at the group or major group levels. Within these groupings, further stratification is done according to size of establishment. A third level of stratification according to geographical region is made when regional estimates of labour cost are needed.

The stratified sample design used in labour cost surveys usually comprises two parts: the first includes all large establishments above a specified size, while the second comprises samples of establishments drawn from each of the size strata using the appropriate sampling fractions. A chief requirement of the sample design is that the estimate of average labour cost per hour should be available with a given degree of precision for the industry level specified by the objectives of the survey.

The sample size required for obtaining the estimates with the desired precision and the manner of its allocation are two main aspects of the sample design which need careful study. The question of sample size in relation to the precision of estimates should be studied at the four-digit or three-digit level of industries, for which separate estimates of labour cost are required. The factors which influence the size of the sample include the coefficient of variation of labour cost and its components and the number of establishments in an industry stratum. The results of any previous labour cost survey covering the same industry would provide an indication of the coefficient of variation of average labour cost per hour. In the absence of any previous labour cost survey, information from other wage surveys could also be used to estimate the variability of labour cost. Next, the sample size should be allocated to the different strata, according to the principle of optimum allocation, by which the chance of an establishment being selected is roughly proportional to its employment size.

Reference period of data collection

Labour cost data for a short reference period such as a pay period or a month do not entirely reflect either the full extent of the expenditure incurred by the employer or the number of hours worked or paid for. Holidays, vacations, etc., are usually spread unequally throughout the calendar year, and certain types of expenditures are incurred by the employer only annually or irregularly. Thus, there can be wide variations in the labour cost patterns between different parts of the year. Comprehensive labour cost surveys should aim at collecting labour cost data relating to a full year. In this connection, the Eleventh ICLS (1966) recommends that the observation period in comprehensive labour cost surveys should cover the 12 months of the calendar year, whenever possible, or else the usual accounting year, in order to take account of expenditures which occur only annually or irregularly.

Method of data collection

From the standpoint of data collection, the main feature which distinguishes labour cost surveys from other wage surveys is that they are surveys in which establishments are required to furnish data on annual totals of labour cost and its components and of hours of work. Generally, no single record would be sufficient to provide the different information sought in a labour cost survey. Sometimes several records have to be summarised and various allocations made to arrive at annual totals. Employers should be given sufficient advance notice of the labour cost survey so that they are familiar with the problems of the survey and able to organise the data in the manner prescribed in the survey questionnaire. In view of the complexity of the labour cost survey, many countries may not be able to

rely purely on the mail questionnaire method but may have to employ field investigators for the collection of data from sample establishments. Even in those countries which use mail inquiries, it may often be necessary to have intensive field work, direct advising of establishments and clarification of doubtful entries in order to avoid serious systematic errors, and also to reduce non-response.

The survey objectives require that data on annual totals of labour cost and its components and on hours of work be collected separately for wage earners and salaried employees. Establishment records would generally provide separate data for wage earners and salaried employees in respect of major groups of labour cost components I to III. For costs such as those of housing services, medical care and health services, canteens and other welfare services of various sorts, it may be necessary to allocate the total cost between the two categories of employees using appropriate criteria. The cost in question may be allocated, for example, according to total wages and total salaries paid or according to the numbers of persons receiving wages or salaries or some other method, depending on the nature of the cost under consideration.

Sometimes, certain types of expenditure may be incurred on an enterprise basis, involving a broader grouping of employees than that covered in the sample unit under investigation. In such cases, an approximation of the cost can be made on a pro-rata share of the employees in the sample establishment on the basis of employment, hours of work or payroll, whichever is more appropriate.

Hours actually worked represent the most relevant measure of labour input in relation to labour cost. Data on hours actually worked should be obtained in accordance with the standards laid down in the resolution on statistics of hours of work adopted by the Tenth ICLS (1962). Hours actually worked include normal-time hours worked and overtime hours worked, including hours worked during public and other holidays. Information should be obtained on total man-hours worked in the reference year, separately for wage earners and salaried employees. Establishments usually experience more difficulty in reporting hours actually worked in the case of salaried employees than in the case of wage earners, primarily because of incomplete records of overtime and short-time work of salaried employees. The practice followed in this regard in many labour cost surveys is to estimate the hours worked on the basis of the normal hours of work of salaried employees in the establishment, although such a procedure introduces an element of approximation into the data on labour cost per hour.

It is also useful to collect data on total hours paid for. This is the sum of hours actually worked and hours relating to paid absences. Hours paid for but not worked include vacations, holidays, sick leave, leave for civic duties or personal reasons, etc. Usually the data obtained in the labour cost surveys on hours paid for but not worked will be in the nature of approximations, since they refer to man-days not worked, which have to be converted into man-hours according to normal (or usual) duration of the working day.

Information on the number of employees covered by the labour cost is very useful for certain types of analysis, and it also provides a control over the reported data, particularly on hours of work. This information is necessary when separate estimates of labour cost are required by size groups of establishments. As the labour cost data relate to a full year, the data on the number of employees should relate to the same period and should refer to all employees, including part-time, casual and seasonal employees and also apprentices and trainees.

Data should be collected separately for wage earners and salaried employees, classified by male and female. Since the number of employees varies over the year, the usual practice is to give an average of the number of employees during the year under each category. One method of obtaining this average is to total the number of persons under each category on the establishment payroll in each pay period during the reference year and divide it by the number of pay periods in the year.

The data on the various components of labour cost should be obtained on a net basis. This is particularly important in respect of components such as payments in kind, housing services, medical care and health services, welfare services and vocational training. The problems involved have already been discussed earlier while dealing with the standard classification of labour cost components. All figures should relate to the year of reference and should not include expenditures or costs applied to another year.

As pointed out earlier, the International Standard Classification of Labour Cost does not adequately show the level of total labour cost in respect of certain labour cost components, such as housing services, medical care and health services, vocational training and welfare services. The cost of personnel running these social programmes is merged with that of all employees and shown under the different components in the Standard Classification. It must be clearly understood that the cost of personnel of the establishment-run social programmes comprises not only direct wages and salaries but also other costs included under the major groups II to VI of the Standard Classification. A special attempt is needed to collect data on the total labour cost of establishment-run programmes, in which case it may be necessary to make certain approximations while allocating indirect labour cost between personnel engaged in social programmes of the establishment and those engaged in the production process. Care should be taken to avoid double-counting or short-counting when collecting data on total labour cost of establishment-run social programmes.

Questionnaire

The purpose of a questionnaire for the labour cost survey is to enable the sample establishments to furnish the required data and information in accordance with uniform concepts, definitions and procedures prescribed for data collection by the planners of the survey. The principles of designing the labour cost questionnaire are similar to those applied to other wage surveys and discussed in other chapters. The questionnaire should include only such items as are essential and relevant to the survey objectives and should be accompanied by instructions explaining how it should be completed. All concepts, definitions and other terms used in the questionnaire should be explained clearly and unambiguously. The feasibility of collecting data in the prescribed manner should be tested under actual field conditions before finalising the questionnaire.

The questionnaire for the labour cost survey should be designed in such a way as to provide, in addition to the total labour cost, data on the wage measures, "compensation of employees" and "annual earnings". These objectives can be broadly achieved if the questionnaire is designed to collect data according to the International Standard Classification of Labour Cost components. If necessary, the questionnaire should also provide for the collection of data on the total labour cost of establishment-run programmes such as vocational training, housing services, medical care and health services and welfare services.

An illustrative questionnaire for the collection of labour cost and related statistics from sample establishments is given at the end of this section. The questionnaire consists of three main parts, A, B and C, and an annex. They are briefly explained below.

Part A relates to general establishment information. It is divided into two main items: identification particulars and characteristics of the sample establishment. Characteristics of the establishment cover the main product or the main activity of the establishment and the average number of employees during the reference year, classified according to wage earners and salaried employees and also by sex. Further items relevant to the national situation may also be included.

Part B refers to the data concerning labour cost and its components. The reference period for which the data are to be collected is one year, preferably the calendar year.

Four columns are provided to record the data. Column 1 shows the components of labour cost within the framework of the International Standard Classification of Labour Cost. The Standard Classification is further subdivided in respect of certain components. The purpose of this subdivision is to disaggregate certain elements, so that it is possible to aggregate them with other elements in order to have a measure of annual earnings with a close correspondence to the concept of earnings used in regular earnings statistics. Columns 2, 3 and 4 are designed to record the amount for each labour cost component separately for wage earners and salaried employees and the combined figures for all employees.

Part C is designed to collect data on hours of work corresponding to the labour cost data. The reference period for collection of data on hours of work is the same year as for labour cost data. Information should be obtained separately for wage earners and salaried employees. In the last column the total for the two categories should be shown, representing the hours of work for all employees. This section is designed so that data on hours actually worked may be shown separately from data on hours paid for but not worked. The total number of hours actually worked comprises the number of normal-time hours worked and the number of overtime hours worked, including hours worked during public and other holidays. The item "number of hours paid for but not worked" is divided into five categories: vacation, holiday, sick leave, civic and personal leave, and other leave (to be specified).

If information on establishment practices and policies is needed, another section can be added to the questionnaire. However, this is not attempted here since the practices and policies with regard to social and pension schemes, leave and holidays, etc., vary considerably from country to country.

The illustrative questionnaire also includes an annex which shows the format for the collection of data on total labour cost of important establishment programmes, such as housing services, medical care and health services, vocational training and welfare services. The vocational training programme is used in the annex as an illustration. The total cost of vocational training comprises two parts: the first is the cost of vocational training other than the cost of personnel running the programme; this cost is already recorded in the main part of the questionnaire under major group VII "cost of vocational training", and the same amount is to be recorded here. The second part relates to the cost of staff running the establishment programme on vocational training; this is spread over all the major groups I to VI of the Standard Classification and should be worked out and entered in the annex. The figures of total labour cost on vocational training should be shown separately for wage earners and salaried employees. The same approach is applicable to other establishment programmes, if required.

ILLUSTRATIVE QUESTIONNAIRE

Name and address of the statistical service

_____

_____

All information furnished by the respondent will be held in strict confidence and used only for statistical purposes.

Labour cost survey in non-agricultural sectors

Industry: _____
(Specify: e.g. Manufacture of Bakery Products. ISIC No. 3117)

Please complete the questionnaire for the reference year _____ to _____ and return it before _____

Sample identification particulars of establishment

_____

_____

Name of establishment official completing the questionnaire _____

Signature _____ Official title _____ Date _____

Name of investigator _____

Signature _____ Date _____

Date of despatch of questionnaire to statistical service _____

A. General establishment information

(a) Identification particulars of establishment

(1) Name _____

(2) Address _____

_____

(3) Telephone number (if any) _____

(b) Characteristics of establishment

(1) Description of main product/activity/business (i.e. the product/activity/business which accounts for the major portion of gross output or which occupies the major portion of employment)

_____

_____

_____

(2) Average number of employees during the reference year

	Male	Female	Both sexes
Wage earners			
Salaried employees			
Total			

B. Data on labour cost during the reference year _____

Nature of expenditure on labour cost	Amount for: (currency)		
	Wage earners	Salaried employees	All employees
1	2	3	4
I. Direct wages and salaries (paid in cash) (including those of trainees and apprentices)			
(1) Straight-time pay of time-rated workers[1]*			
Total,			
of which — Direct wages for normal-time work			
— Direct wages for overtime			
(2) Incentive pay of time-rated workers			
(3) Earnings of piece-workers (excluding overtime premiums)[1]			
(4) Premium pay for overtime, late shift and holiday work			
Total,			
of which — Paid to time-rated workers			
— Paid to piece-workers			
Total direct wages and salaries (in cash)			
II. Remuneration for time not worked			
(1) Annual vacation and other paid leave, including long-service leave			
(2) Public holidays and recognised holidays			
(3) Other time off granted with pay (e.g. birth or death of family member, marriage of employee, family obligations, functions of titular office, union activities, etc.)			
(4) Severance and termination pay where not regarded as social security expenditure (otherwise to be classified under VI.5)			
Total remuneration for time not worked			
III. Bonuses and gratuities			
(1) Year-end and seasonal bonuses			
(2) Profit-sharing bonuses			
(3) Additional payments in respect of vacation supplementary to normal vacation pay, and other bonuses and gratuities			
Total bonuses and gratuities			

* Footnotes at end of questionnaire.

1	2	3	4
IV. Food, drink, fuel and other payments in kind (1) Payments in kind for fuel (coal, coke, gas, electricity, etc.) (2) Other payments in kind (drinks, food, footwear, clothing, etc.)			
Total payments in kind			
V. Cost of workers' housing borne by employers (1) Cost for establishment-owned dwellings[2]* (including property taxes) (2) Cost for dwellings not establishment-owned (housing allowances, grants, etc.) (3) Other housing costs (i) Housing rent allowances paid directly to employees (ii) Others			
Total cost of workers' housing			
VI. Employers' social security expenditure (1) Statutory social security contributions Total, of which – old-age, invalidity and survivors' pension – sickness and maternity insurance – employment injury insurance – unemployment insurance – family allowances – other (specify) _____ _____ _____ (2) Collectively agreed, contractual and non-obligatory contributions to private social security schemes and insurance Total, of which – old-age, invalidity and survivors' pension – sickness and maternity insurance – employment injury insurance – unemployment insurance – family allowances – other (specify) _____ _____ _____			

* Footnotes at end of questionnaire.

1	2	3	4
(3) *(a)* Direct payments to employees in respect of absence from work due to sickness, maternity or employment injury, to compensate for loss of earnings *(b)* Other direct payments to employees regarded as social security benefits (4) Cost of medical care and health services[2]* (5) Severance and termination pay where regarded as social security expenditure			
Total employers' social security expenditure			
VII. Cost of vocational training[2] (included are fees and other payments for services of outside instructors, training institutions, teaching materials, reimbursement of school fees to workers, etc.)			
VIII. Cost of welfare services (1) Cost of canteens and other food services[2] (2) Cost of education, cultural and recreational and related facilities and services[2] (3) Grants to credit unions and cost of related services for employees			
Total cost of welfare services			
IX. Labour cost not elsewhere classified[2] (such as cost of transport of workers to and from work undertaken by employers; included are reimbursements of fares, etc., cost of work clothes, cost of recruitment and other labour cost.)			
X. Taxes regarded as labour cost (for instance, taxes on employment or payrolls; such taxes should be included on a net basis, i.e. after deduction of allowances or rebates made by the State.)			
Total expenditure on labour cost			

* Footnotes at end of questionnaire.

C. Data on hours of work during the reference year _____

Category of hours of work	Number of hours of:		
	Wage earners	Salaried employees	All employees
1	2	3	4
I. Total number of hours actually worked			
(1) Number of normal-time hours worked			
(2) Number of overtime hours worked, including hours worked during public and other holidays			
Total hours actually worked			
II. Total number of hours paid for but not worked			
For:			
(1) Vacations			
(2) Holidays			
(3) Sick leave			
(4) Leave for civic duties and personal reasons			
Other (specify) _____			
_____			
Total hours paid for but not worked			
Total number of hours paid for			

Annex. Employer's total labour cost expenditure in the provision of vocational training for the reference year _____

(A similar format may be used when collecting total labour cost expenditure in the provision of medical and health services, canteens and other food services, education, cultural and recreational and related facilities and services, services related to credit unions, and housing services.)

Nature of employer's labour cost expenditure	Amount for: (currency)		
	Wage earners	Salaried employees	All employees
1	2	3	4
I. Vocational training cost, other than staff cost (The same as reported under question VII of the main questionnaire.)			

1	2	3	4
II. Staff cost (for those employed in the provision of vocational training) (1) Direct wages and salaries (paid in cash), including those of trainees and apprentices (2) Remuneration for time not worked (3) Bonuses and gratuities (4) Food, drink, fuel and other payments in kind (5) Cost of workers' housing borne by the employer (6) Employer's social security expenditure			
Total staff cost			
Total labour cost expenditure in the provision of vocational training			

[1] Including responsibility premiums, dirt, danger and discomfort allowances, cash indemnity for meals, sandwiches, etc., payments under guaranteed wage systems, cost of living allowances and other regular allowances which are regarded as direct wages and salaries. [2] Other than wages and salaries for personnel in the provision of the service; e.g. the depreciation on building and equipment, interest, repairs and maintenance and other cost, *less* grants-in-aid, tax rebates, etc., received from public authorities, and receipts from workers. Capital investment made during the year is to be excluded.

Processing of the data

Data on labour cost collected through a sample survey of establishments are subject to both sampling and non-sampling errors. It is possible that the non-sampling errors may outweigh the sampling errors in many situations. Non-response is a serious error and every effort should be made to reduce it as much as possible. Definitions and classifications can be misinterpreted by those furnishing or collecting information from the establishments. Mistakes can occur at every stage—in filling in the questionnaire, in transferring the data to work-sheets and in the process of tabulation.

The completed questionnaire should be examined thoroughly for completeness of information and to detect any inconsistent or abnormal figures. If scrutinising and editing reveal serious errors or omissions, the questionnaire may be referred back to the establishment or investigations may be made through the field staff. The data should be accepted for further processing only after their reliability and consistency have been ensured.

Estimation procedures

The formulae to be used in computing totals, averages and sampling errors are determined by the sample design employed for this survey. The formulae should yield unbiased estimates of totals and averages of labour cost, hours or work and number of employees. Labour cost surveys usually employ a stratified sample design with the four-digit or three-digit level of industry as the first level of stratification, within which establishments are stratified according to size. Estimates of average labour cost per man-hour of work are required usually at the major group (three-digit) level of industry. However, estimates of average labour cost per man-hour of work according to size of establishment are generally prepared only at the major division (one-digit) level of industry. The sample size, as a rule, does not permit reliable estimates of labour cost by size-group within the three-digit or even two-digit level of industry.

Estimation procedure should take into account the problems of non-response. Even when there are great efforts to eliminate non-response either through a follow-up inquiry or by substitution through a sub-sample of establishments, it is possible that there can still be non-responding establishments. One recourse often resorted to in such circumstances is to assign the probability weight of the non-responding establishments to units in the sample with the most similar industry-size-location characteristics.

Information from other sources, if they are more comprehensive and reliable, is sometimes used as a benchmark to adjust the estimated totals derived from the sample data in a labour cost survey. The benchmark in this regard usually relates to the total employment or hours of work derived from more comprehensive sources, including censuses of manufactures, social security data, etc. However, the data used for the benchmark adjustments must relate to the same reference year and cover the same industries as the labour cost survey. The need for such adjustment arises only when the sample size used in the labour cost survey is not adequate to provide the estimates with the desired precision at the different levels of industry.

Sampling errors associated with the estimates may vary from one major component of labour cost to another. The degree of variability is likely to be less in respect of wages and salaries and social security expenditures than certain other items, since these types of expenditures are usually incurred by all establishments. In some other categories, however, establishments within the same industry and size class may show variations in their expenditure. It is possible that, in a size stratum, a high proportion of the establishments may have incurred no expenditure on a particular item, while a few may report a large amount. This has a profound effect on the reliability and meaningfulness of the results when expressed as average amounts per hour or per employee, both in the case of the size stratum and that of the industry as a whole combining all size strata of establishments.

Tabulation

Labour cost surveys provide data for detailed tabulation of the wage measures "labour cost", "compensation of employees" and "annual earnings". The tables should present data showing the structure and composition of these wage measures by giving figures for the various components according to the Standard Classifications. The data are usually shown in the form of averages in absolute figures as well as percentage distributions for components. The first priority in the tabulation programme is to present the figures for groups or major groups (four-digit or three-digit levels) of industry, classified by wage earners and salaried employees and also combined for both categories of employees. Further tabulations may be made by classifying the data according to size of establishments and for geographical regions, depending on the sample size and need for such cross-classification. Data on hours of work also permit similar tabulation. The information on number of employees and other characteristics of establishments could also be used for tabulation purposes.

The illustrative questionnaire given earlier in this chapter provides for the collection of data which enable the establishment of a certain number of tables. Seventeen such illustrative tables and their format are given at the end of the chapter. These tables comprise the following:

Employment pattern: Two tables showing the number of employees reported, by sex, for the different industries and the different sizes of establishments in the different industries. The tables are based on the information obtained from Part A of the questionnaire.

Labour cost: Three tables showing average labour cost per hour worked, for the different industries, with averages in absolute figures and their percentage distribution by components, for the different industries and the different sizes of establishment in the different industries. The tables are based on the information obtained from Part B of the questionnaire.

Compensation of employees: Three tables showing average compensation of employees per hour worked, for the different industries, with averages in absolute figures and their percentage distribution by components, for the different industries and the different sizes of establishment in the different industries. The tables are based on the information obtained from Part B of the questionnaire.

Annual earnings: Three tables showing average annual earnings per employee for the different industries, with averages in absolute figures and their percentage distribution, by components, for the different industries and the different sizes of establishment within the different industries. The tables are based on the information obtained from Part B of the questionnaire.

Hours of work: Two tables showing the number of hours actually worked per employee for normal-time hours and overtime hours, for the different industries and the different sizes of establishment within the different industries. The tables are based on the information obtained from Part C of the questionnaire.

Two tables showing the number of hours paid for but not worked per employee, for vacations, holidays and other types of leave, for the different industries and the different sizes of establishment within the different industries. The tables are based on the information obtained from Part C of the questionnaire.

Vocational training cost: Two tables showing the employers' cost of providing vocational training services, divided according to vocational training cost excluding personnel cost (the same as that shown in the other tables as item VII: vocational training cost) and cost of personnel employed in the provision of vocational training, for the different industries and different sizes of establishment in the different industries. These tables are based

on the information collected in the annex to the questionnaire. Similar types of tables may be prepared, where appropriate, for the employers' cost of providing other services, such as housing services, medical care and health services, canteens and other food services, educational, cultural, recreational and related services and facilities, and so on.

The different sizes of establishment used in the tables depend on the sample design and sample size used in the survey, and should be determined on the basis of sampling errors of labour cost, compensation of employees, etc., within each size class. Where required, similar tables could be prepared to show the above data for the different geographical regions. Many more tables could be prepared using the data collected during the survey with different cross-classifications.

Publication of the results of the labour cost survey

The results of the labour cost survey are presented mostly in the form of statistical tables. In addition, the report of the survey should include methodological descriptions. It should also aim at analysing further the figures presented in the tables and indicate the main findings. The attention of users should be drawn to any limitations or shortcomings of the data. The results of the survey should be published as promptly as possible.

The guidelines on the publication of the results of the labour cost survey are given in the resolution concerning statistics of labour cost adopted by the Eleventh ICLS (1966). They are as follows:

20. (1) A description of the concepts and methods used in any important new national labour cost inquiries should be published by the responsible statistical office.

(2) The description should indicate the difference (if any) between the classification of labour cost by components utilised in the national survey and the International Standard Classification.

(3) The methodological description should:

(a) mention the types of bonuses (if any) which have been regarded as wages and included in the national labour cost data relating respectively to direct wages and salaries and to remuneration for time not worked;

(b) give a description of any profit-sharing bonuses included in the national inquiry;

(c) indicate the nature of taxes included.

(4) To facilitate analysis of the data, especially at the international level, the major report of the results of the national inquiry of the labour cost to the employer should give particulars of the national system of financing statutory social security schemes for workers and, more especially, of the proportion of the cost covered by employers' contributions. Information should also be given on welfare services provided for workers by the State.

21. Countries which have made studies of the structure of wages and salaries and other elements of labour cost should communicate their results to the International Labour Office in order to facilitate international comparisons and interpretations of statistics of labour cost.

Notes

[1] For the text see ILO: *International Recommendations on Labour Statistics* (Geneva, 1976).

[2] United Nations, Department of Economic and Social Affairs: *International Standard Classification of All Economic Activities*, Statistical papers, Series M, No. 4, Rev. 2 (New York, 1968; Sales No.: E.68.XVII.8).

ILLUSTRATIVE TABLES

Table 1. Number of wage earners, salaried employees and all employees reported by sex, in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)[1] in non-agricultural sector, year
(Whole country)

Major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)[1]	Number of:								
	Wage earners			Salaried employees			All employees		
	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes
1	2	3	4	5	6	7	8	9	10
Mining and quarrying									
Coal mining									
Crude petroleum and natural gas production									
etc.									
Manufacturing									
Food manufacturing									
Beverage industries									
etc.									
Electricity, gas and water									
Electricity, gas and steam									
Water works and supply									
Construction									
Wholesale and retail trade, etc.									
Wholesale trade									
Retail trade									
etc.									
Transport, storage, etc.									
Land transport									
Water transport									
etc.[2]									

[1] The data should be presented at the 3- to 4-digit level of industry within the major industry divisions (1-digit level of ISIC). [2] This table continues, showing all the major industry groups in all the major industry divisions covered in the survey.

Similar tables may be prepared for geographical regions where required.

Table 2. Number of wage earners, salaried employees and all employees reported, by sex and by size of establishment[1] in major industry divisions (1-digit level of ISIC) in non-agricultural sector, year
(Whole country)

Major industry divisions (1-digit level of ISIC) and size of establishment[1]	Number of:								
	Wage earners			Salaried employees			All employees		
	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes
1	2	3	4	5	6	7	8	9	10
Mining and quarrying									
Establishments with:									
x to 49 employees									
50 to 199 employees									
200 to 499 employees									
500 employees or more									
Manufacturing									
Establishments with:									
x to 49 employees									
50 to 199 employees									
200 to 499 employees									
500 employees or more									
Electricity, gas and water									
Establishments with:									
x to 49 employees									
50 to 199 employees									
200 to 499 employees									
500 employees or more									
Construction									
Establishments with:									
x to 49 employees									
50 to 199 employees									
200 to 499 employees									
500 employees or more									
etc.[2]									

[1] The sizes of establishment shown in the table are purely illustrative; usually, small establishments below a certain size (*x* employees) are assumed not to be covered by the survey. [2] The table continues, showing all the major industry divisions covered by the survey.

Similar tables may be prepared for geographical regions where required.

Table 3. Average labour cost per hour worked for wage earners, salaried employees and all employees in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)[1] in non-agricultural sector, year
(Whole country) (currency)

Major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)[1]	Average labour cost per hour worked for:		
	Wage earners	Salaried employees	All employees
1	2	3	4
Mining and quarrying			
Coal mining			
Crude petroleum, etc., production			
etc.			
Manufacturing			
Food manufacturing			
Beverage industries			
etc.			
Electricity, gas and water			
Electricity, gas and steam			
Water works and supply			
Construction			
Wholesale and retail trade, etc.			
Wholesale trade			
Retail trade			
etc.			
Transport, storage, etc.			
Land transport			
Water transport			
etc.[2]			

[1] The data should be presented at the 3- to 4-digit level of industry within the major industry divisions (1-digit level of ISIC). [2] This table continues, showing all the major industry groups in all the major industry divisions covered by the survey.

Similar tables may be prepared for geographical regions where required.

Table 4. Average expenditure per hour worked on components of labour cost, amount and as a percentage of expenditure on total labour cost, for wage earners, salaried employees and all employees in major industry groups (3-digit level of ISIC)[1] in non-agricultural sector, year
(Whole country)

Major industry groups (3-digit level of ISIC)[1] and components of labour cost	Average expenditure per hour worked for:					
	Wage earners		Salaried employees		All employees	
	Amount (currency)	As % of total	Amount (currency)	As % of total	Amount (currency)	As % of total
1	2	3	4	5	6	7
Manufacture of textiles						
I. Direct wages and salaries						
(1)						
(2)						
etc.						
II. Remuneration for time not worked						
(1)						
(2)						
etc.						
III. Bonuses and gratuities						
(1)						
(2)						
etc.						
IV. Food, drink, fuel and other payments in kind						
(1)						
(2)						
etc.						
V. Cost of workers' housing borne by employers						
(1)						
(2)						
etc.						
VI. Employer's social security expenditure						
(1)						
(2)						
etc.						
etc.						
Total labour cost[2]		100		100		100

[1] The data should be presented at the 3- to 4-digit level of industry. [2] The table will show all the major industry groups in the major industry divisions (1-digit level of ISIC) covered by the survey.

Similar tables may be prepared for geographical regions where required.

Table 5. Average expenditure per hour worked on components of labour cost, amount and as a percentage of expenditure on total labour cost for wage earners, salaried employees and all employees, by size of establishment[1] in major industry divisions (1-digit level of ISIC) in non-agricultural sector, year
(Whole country)

Major industry division (1-digit level of ISIC), size of establishment[1] and components of labour cost	Average expenditure per hour worked on components of labour cost for:					
	Wage earners		Salaried employees		All employees	
	Amount (currency)	As % of total	Amount (currency)	As % of total	Amount (currency)	As % of total
1	2	3	4	5	6	7
Mining and quarrying						
Establishments with *x* to 49 employees[1]						
I. Direct wages and salaries:						
(1)						
(2)						
etc.						
II. Remuneration for time not worked:						
(1)						
(2)						
etc.						
III. Bonuses and gratuities:						
(1)						
(2)						
etc.						
IV. Food, drink, fuel and other payments in kind:						
(1)						
(2)						
etc.						
V. Cost of workers' housing borne by employers:						
(1)						
(2)						
etc.						
VI. Employers' social security expenditure:						
(1)						
(2)						
etc.						
VII. Cost of vocational training						
(1)						
(2)						
etc.						
etc.						
Total labour cost						
Establishments with 50-199 employees[1]						
I. Direct wages and salaries						
(1)						
(2)						
etc.						
etc.						

[1] The sizes of establishment shown in the table are purely illustrative; usually, small establishments below a certain size (*x* employees) are assumed not to be covered in the survey.

Similar tables may be prepared for geographical regions where required.

Table 6. Average annual compensation[1] of employees per hour worked for wage earners, salaried employees and all employees in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)[2] in non-agricultural sector, year (Whole country)

Major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)[2]	Average annual compensation[1] per hour worked for (currency):		
	Wage earners	Salaried employees	All employees
1	2	3	4
Mining and quarrying			
Coal mining			
Crude petroleum, etc., production			
etc.			
Manufacturing			
Food manufacturing			
Beverage industries			
etc.			
Electricity, gas and water			
Electricity, gas and steam			
Water works and supply			
Construction			
Wholesale and retail trade, etc.			
Wholesale trade			
Retail trade			
etc.			
Transport, storage, etc.			
Land transport			
Water transport			
etc.[3]			

[1] Labour cost components I to VI correspond closely to compensation of employees given in this table. For the purposes of compensation of employees (SNA) however, VI — Social security expenditure — also includes imputed contributions of employers in respect of unfunded pensions and other social security schemes, which are excluded from VI — Employers' social security expenditure — for the purposes of the labour cost survey. [2] The data should be presented at the 3- to 4-digit level of industry within the major industry divisions (1-digit level of ISIC) covered by the survey. [3] The table continues, showing all the major industry groups in all the major industry divisions (1-digit level of ISIC) covered by the survey.

Similar tables may be prepared for geographical regions where required.

Table 7. Average annual compensation of employees[1] per hour worked, by components, amount and percentage distribution, for wage earners, salaried employees and all employees in major industry groups (3-digit level of ISIC)[2] in non-agricultural sector, year
(Whole country)

Major industry groups[2] (3-digit level of ISIC) and components of compensation of employees[1]	Average annual compensation of employees per hour worked for:					
	Wage earners		Salaried employees		All employees	
	Amount (currency)	As % of total	Amount (currency)	As % of total	Amount (currency)	As % of total
1	2	3	4	5	6	7
Beverage industries (ISIC No. 313)						
I. Direct wages and salaries						
(1)						
(2)						
etc.						
II. Remuneration for time not worked						
(1)						
(2)						
etc.						
III. Bonuses and gratuities						
(1)						
(2)						
etc.						
IV. Food, drink, fuel and other payments in kind						
(1)						
(2)						
etc.						
V. Cost of workers' housing borne by employers						
(1)						
(2)						
etc.						
VI. Employers' social security expenditure						
(1)						
(2)						
etc.						
Tobacco manufactures (ISIC No. 314)						
I. Direct wages and salaries						
(1)						
(2)						
etc.[3]						

[1] Labour cost components I to VI correspond closely to the compensation of employees given in this table. For the purposes of compensation of employees (SNA), however, VI — Social security expenditure — also includes the imputed contributions of employers in respect of unfunded pensions and other social security schemes, which are excluded from VI — Employers' social security expenditure — for the purposes of the labour cost survey. [2] The data should be presented at the 3- to 4-digit level of industry within the major industry divisions (1-digit level of ISIC). [3] The table continues, showing all major industry groups in major industry divisions (1-digit level of ISIC).

Similar tables may be prepared for geographical regions where required.

Table 8. Average annual compensation of employees[1] per hour worked, amount and percentage distribution, by size of establishment,[2] for wage earners, salaried employees and all employees in major industry divisions (1-digit level of ISIC) in non-agricultural sector, year
(Whole country)

Major industry divisions (1-digit level of ISIC), size of establishment,[2] and components of compensation of employees[1]	Average annual compensation of employees[1] per hour worked of:					
	Wage earners		Salaried employees		All employees	
	Amount (currency)	As % of total	Amount (currency)	As % of total	Amount (currency)	As % of total
1	2	3	4	5	6	7
Mining and quarrying						
Establishments with *x* to 49 employees:[2]						
I. Direct wages and salaries						
(1)						
(2)						
etc.						
II. Remuneration for time not worked						
(1)						
(2)						
etc.						
III. Bonuses and gratuities						
(1)						
(2)						
etc.						
IV. Food, drink, fuel and other payments in kind						
(1)						
(2)						
etc.						
V. Cost of workers' housing borne by employers						
(1)						
(2)						
etc.						
VI. Employers' social security expenditure						
(1)						
(2)						
etc.						
Establishments with 50 to 199 employers:[2]						
I. Direct wages and salaries						
(1)						
etc.[3]						

[1] Labour cost components I to VI correspond closely to the compensation of employees given in this table. For the purposes of compensation of employees (SNA), however, VI — Social security expenditure — also includes the imputed contributions of employers in respect of unfunded pensions and other social security schemes which are excluded from VI — Employers' social security expenditure — for the purposes of the labour cost survey. [2] The sizes of establishment shown in the table are purely illustrative; usually, small establishments below a certain size (*x* employees) are assumed not to be covered in the survey. [3] The table continues, showing all the sizes of establishment in the major industry divisions (1-digit level of ISIC) covered by the survey.

Similar tables may be prepared for geographical regions where required.

Table 9. Average annual earnings per hour worked for wage earners, salaried employees and all employees in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)[1] in non-agricultural sector, year
(Whole country)

Major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)[1]	Average annual earnings per hour worked of:		
	Wege earners	Salaried employees	All employees
1	2	3	4
Mining and quarrying			
Coal mining			
Crude petroleum and natural gas production			
Metal ore mining			
Other mining			
Manufacturing			
Food manufacturing			
Beverage industries			
Tobacco manufactures			
Manufacture of textiles			
Manufacture of wearing apparel except footwear			
Manufacture of leather and products of leather, leather substitutes and fur, except footwear and wearing apparel			
Manufacture of footwear, except vulcanised or moulded rubber or plastic footwear			
Manufacture of wood, and wood and cork products, except furniture			
Manufacture of furniture and fixtures, except primarily of metal			
Manufacture of paper and paper products			
etc.			
Electricity, gas and water			
Electricity, gas and steam			
etc.[2]			

[1] The data should be presented at the 3- to 4-digit level of industry within mejor industry divisions (1-digit level of ISIC). [2] The table continues, showing all the major industry groups in all the major industry divisions covered by the survey.

Similar tables may be prepared for geographical regions where required.

Table 10. Average annual earnings[1] per hour worked, by components, amount and percentage distribution, for wage earners, salaried employees and all employees in major industry groups (3-digit level of ISIC)[2] in non-agricultural sector, year (Whole country)

Major industry groups[2] (3-digit level of ISIC) and components of earnings[1]	Average annual earnings[1] per hour worked of:					
	Wage earners		Salaried employees		All employees	
	Amount (currency)	As % of total	Amount (currency)	As % of total	Amount (currency)	As % of total
1	2	3	4	5	6	7
Manufacture of textiles (ISIC No. 321)						
I. Direct wages and salaries						
(1)						
(2)						
(3) Family allowances paid directly to employees						
etc.						
II. Remuneration for time not worked (excluding severance and termination pay)						
(1)						
(2)						
etc.						
III. Bonuses and gratuities						
(1)						
(2)						
etc.						
IV. Food, drink, fuel and other payments in kind						
(1)						
(2)						
etc.						
V. Housing rent allowances, etc.						
(1)						
(2)						
etc.						

[1] Labour cost components I to V correspond closely to the annual earnings given in this table. For the purposes of annual earnings, however, family allowances paid directly to employees are included under "Direct wages and salaries" (I); Severance and termination pay are excluded from "Remuneration for time not worked" (II); Housing allowance, etc., paid directly by the employer is, in fact, the same as "Cost of workers' housing borne by employer" (V for labour cost purposes). This differs from the normal annual earnings concept, since it includes the whole cost of workers' housing, and not just the amount of house-rent allowances paid directly to employees and the imputed value of housing provided free for workers. [2] The data should be presented at the 3- to 4-digit level of industry, and show all industry groups in major industry divisions (1-digit level of ISIC) covered by the survey.

Similar tables may be prepared for geographical regions where required.

Table 11. Average annual earnings[1] per hour worked, by components, amount and percentage distributions, for wage earners, salaried employees and all employees, by size of establishment[2] in major industry divisions (1-digit level of ISIC) in non-agricultural sector, year
(Whole country)

Major industry divisions (1-digit level of ISIC), size of establishment[2] and components of earnings[1]	Average annual earnings[1] per hour worked of:					
	Wage earners		Salaried employees		All employees	
	Amount (currency)	As % of total	Amount (currency)	As % of total	Amount (currency)	As % of total
1	2	3	4	5	6	7
Mining and quarrying						
Establishments with *x* to 49 employees						
I. Direct wages and salaries						
(1)						
(2)						
(3) Family allowances paid directly to employees						
etc.						
II. Remuneration for time not worked (excluding severance and termination pay)						
(1)						
(2)						
etc.						
III. Bonuses and gratuities						
(1)						
(2)						
etc.						
IV. Food, drink, fuel and other payments in kind						
(1)						
(2)						
etc.						
V. Housing rent allowances, etc.						
(1)						
(2)						
etc.						
etc.[3]						

[1] Labour cost components I to V correspond closely to the annual earnings given in this table. For the purposes of annual earnings, however, family allowances paid directly to employees are included under I — Direct wages and salaries. Severance and termination pay are excluded from II — Remuneration for time not worked. House-rent allowance, etc., are in fact the same as in V — Cost of workers' housing borne by employers. This differs from the normal annual earnings concept, since it includes the whole cost of the workers' housing and not just the amount of house-rent allowance paid directly to employees and the imputed value of housing provided free for workers. [2] The sizes of establishment shown in the table are purely illustrative; usually, small establishments below a certain size (*x* employees) are assumed not to be covered by the survey. [3] The table continues, showing all the different sizes of establishment in all the major industry divisions covered by the survey.

Similar tables may be prepared for geographical regions where required.

Table 12. Average number of hours actually worked, average number of normal-time hours worked and average number of overtime hours worked during the year per employee, for wage earners, salaried employees and all employees in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)[1] in non-agricultural sector, year
(Whole country)

Major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)[1]	Average number of hours actually worked by:			Average number of normal-time hours worked by:			Average number of overtime hours worked by:		
	Wage earners	Salaried employees	All employees	Wage earners	Salaried employees	All employees	Wage earners	Salaried employees	All employees
1	2	3	4	5	6	7	8	9	10
Mining and quarrying									
Coal mining									
Crude petroleum and natural gas production									
Metal ore mining									
Other mining									
Manufacturing									
Food manufacturing									
Beverage industries									
Tobacco manufactures									
Manufacture of textiles									
Manufacture of wearing apparel except footwear									
Manufacture of leather and products of leather, leather substitutes and fur, except footwear and wearing apparel									
Manufacture of footwear, except vulcanised or moulded rubber or plastic footwear									
Manufacture of wood and wood and cork products except furniture									
Manufacture of furniture and fixtures except primarily of metal									
Manufacture of paper and paper products									
etc.									
Electricity, gas and water									
Electricity, gas and steam									
etc.[2]									

[1] The data should be presented at the 3- to 4-digit level of industry within major industry divisions (1-digit level of ISIC). [2] This table continues, showing all the major industry groups in all the major industry divisions covered by the survey.

Similar tables may be prepared for geographical regions where required.

Table 13. Average number of hours actually worked, average number of normal-time hours worked, and average number of overtime hours worked during the year, per employee, for wage earners, salaried employees and all employees in major industry divisions (1-digit level of ISIC) by size of establishment[1] in non-agricultural sector, year
(Whole country)

Major industry divisions (1-digit level of ISIC) and sizes of establishment[1]	Average number of hours actually worked by:			Average number of normal-time hours worked by:			Average number of overtime hours worked by:		
	Wage earners	Salaried employees	All employees	Wage earners	Salaried employees	All employees	Wage earners	Salaried employees	All employees
1	2	3	4	5	6	7	8	9	10
Mining and quarrying									
Establishments with:									
x to 49 employees									
50 to 199 employees									
200 to 499 employees									
500 or more employees									
Manufacturing									
Establishments with:									
x to 49 employees									
50 to 199 employees									
200 to 499 employees									
500 or more employees									
Electricity, gas and water									
Establishments with:									
x to 49 employees									
50 to 199 employees									
200 to 499 employees									
500 or more employees									
Construction									
Establishments with:									
x to 49 employees									
50 to 199 employees									
200 to 499 employees									
500 or more employees									
Wholesale and retail trade, retaurants and hotels									
Establishments with:									
x to 49 employees									
50 to 199 employees									
200 to 499 employees									
500 or more employees									
etc.[2]									

[1] The sizes of establishment shown in the table are purely illustrative; usually, small establishments below a certain size (*x* employees) are assumed not to be covered in the survey. [2] The table continues, showing all the major industry divisions covered by the survey.

Similar tables may be prepared for geographical regions where required.

Table 14. Average number of hours paid for but not worked during the year, per employee, for wage earners, salaried employees and all employees in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)[1] in non-agricultural sector, year
(Whole country)

Major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)[1]	Average number of hours paid for but not worked for:														
	Vacations			Holidays			Sick leave			Civic and personal leave			Other leave		
	Wage earners	Salaried employees	All employees	Wage earners	Salaried employees	All employees	Wage earners	Salaried employees	All employees	Wage earners	Salaried employees	All employees	Wage earners	Salaried employees	All employees
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Mining and quarrying															
Coal mining															
Crude petroleum and natural gas production															
Metal ore mining															
Other mining															
Manufacturing															
Food manufacturing															
Beverage industries															
Tobacco manufactures															
Manufacture of textiles															
Manufacture of wearing apparel except footwear															
Manufacture of leather and products of leather, leather substitutes and fur, except footwear and wearing apparel															
Manufacture of footwear, except vulcanised or moulded rubber or plastic footwear															
Manufacture of wood, and wood and cork products, except furniture															
Manufacture of furniture and fixtures, except primarily of metal															
Manufacture of paper and paper products															
Printing, publishing and allied industries															
etc.															
Electricity, gas and water															
Electricity, gas and steam															
etc.[2]															

[1] The data should be presented at the 3- to 4-digit level of industry within the major industry divisions (1-digit level of ISIC). [2] This table continues, showing all the major industry groups in all major industry divisions covered by the survey.

Similar tables may be prepared for geographical regions where required.

Table 15. Average number of hours paid for but not worked during the year, per employee, for wage earners, salaried employees and all employees, by size of establishment[1] in major industry divisions (1-digit level of ISIC) in non-agricultural sector, year (Whole country)

Major industry divisions (1-digit level of ISIC) and sizes of establishments[1]	Average number of hours paid for but not worked for:														
	Vacations			Holidays			Sick leave			Civic and personal leave			Other leave		
	Wage earners	Salaried employees	All employees	Wage earners	Salaried employees	All employees	Wage earners	Salaried employees	All employees	Wage earners	Salaried employees	All employees	Wage earners	Salaried employees	All employees
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Mining and quarrying															
Establishments with:															
x to 49 employees															
50 to 199 employees															
200 to 499 employees															
500 or more employees															
Manufacturing															
Establishments with:															
x to 49 employees															
50 to 199 employees															
200 to 499 employees															
500 or more employees															
Electricity, gas and water															
Establishments with:															
x to 49 employees															
50 to 199 employees															
200 to 499 employees															
500 or more employees															
Construction															
Establishments with:															
x to 49 employees															
50 to 199 employees															
200 to 499 employees															
500 or more employees															
Wholesale and retail trade, restaurants and hotels															
Establishments with:															
x to 49 employees															
50 to 199 emloyees															
200 to 499 employees															
etc.[2]															

[1] The sizes of establishment shown in the table are purely illustrative; usually, small establishments below a certain size (*x* employees) are assumed not to be covered in the survey. [2] This table continues, showing all major industry divisions covered by the survey.

Similar tables may be prepared for geographical regions where required.

Table 16. Average annual expenditure per employee on components of vocational training cost, for wage earners, salaried employees and all employees in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)[1] in non-agricultural sector, year
(Whole country) (currency)

Major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)[1] and components of vocational training costs	Average annual expenditure per employee for:		
	Wage earners	Salaried employees	All employees
1	2	3	4
Mining and quarrying			
Coal mining			
(1) Vocational training cost other than personnel cost			
(2) Cost of personnel running the programme			
Total			
Crude petroleum and natural gas production			
(1) Vocational training cost other than personnel cost			
(2) Cost of personnel running the programme			
Total			
Metal ore mining			
(1) Vocational training cost other than personnel cost			
(2) Cost of personnel running the programme			
Total			
Other mining			
(1) Vocational training cost other than personnel cost			
(2) Cost of personnel running the programme			
Total			
Total mining and quarrying			
(1) Vocational training cost other than personnel cost			
(2) Cost of personnel running the programme			
Total			
etc.[2]			

[1] The data should be presented at the 3- to 4-digit level of industry within the major industry divisions (1-digit level of ISIC). [2] The table continues, showing all major industry groups in the major industry divisions covered in the survey.

Similar tables may be prepared for geographical regions where required.

A similar format may be used for presenting data on the cost of providing the following services: housing services, medical care and health services; canteens and other food services; education, cultural, recreational and related services and facilities; services related to credit unions; transport, recruitment, and so on.

Table 17. Average annual expenditure per employee on components of vocational training costs, by size of establishment,[1] for wage earners, salaried employees and all employees, in major industry divisions (1-digit level of ISIC) in non-agricultural sector, year
(Whole country) (currency)

Major industry divisions (1-digit level of ISIC), size of establishment[1] and components of vocational training costs	Average annual expenditure per employee for:		
	Wage earners	Salaried employees	All employees
1	2	3	4
Mining and quarrying			
Establishments with *x* to 49 employees			
(1) Vocational training cost other than personnel cost			
(2) Cost of personnel running the programme			
Total			
Establishments with 50 to 199 employees			
(1) Vocational training cost other than personnel cost			
(2) Cost of personnel running the programme			
Total			
Establishments with 200 to 499 employees			
(1) Vocational training cost other than personnel cost			
(2) Cost of personnel running the programme			
Total			
Establishments with more than 500 employees			
(1) Vocational training cost other than personnel cost			
(2) Cost of personnel running the programme			
Total			
Manufacturing			
Establishments with *x* to 49 employees			
(1) Vocational training cost other than personnel cost			
(2) Cost of personnel running the programme			
Total			
etc.[2]			

[1] The sizes of establishment shown in the table are purely illustrative; usually, small establishments below a certain size (*x* employees) are assumed not to be covered by the survey. [2] The table continues, showing all major industry divisions (1-digit level of ISIC) covered by the survey.

Similar tables may be prepared for geographical regions where required.

A similar format may be used for presenting data on the cost of providing the following services: housing services; medical care and health services; canteens and other food services; education, cultural and recreational services and facilities; services related to credit unions, transport, recruitment, etc.

Wage structure and distribution surveys in industries in the non-agricultural sector

9

Wage structure and distribution survey forms a core programme in the integrated system of wages statistics recommended by the Twelfth ICLS (1973). It is conceived as an in-depth inquiry into the structure and distribution of wages and conditions of work. The statistics compiled through the survey should reveal the principal factors influencing the level, differentials, distribution and trend of wages. This type of survey embodies wage inquiries variously known as wage censuses, occupational wage surveys, wage composition surveys, wage structure, distribution and similar surveys.

The main focus of attention in a wage structure and distribution survey is the individual employee, and information on wages is collected with reference to a number of employee characteristics such as sex, age, education, level of skill, length of service, nature of employment and occupation. Wage structure and distribution surveys provide detailed data on wage rates with reference to individual occupations and on earnings and hours of work with reference to the employee.

Establishments which normally maintain payroll and other records concerning their employees are the best source of the information needed in a wage structure and distribution survey in industries in the non-agricultural sector. However, the time and expense involved in a complex operation of this nature preclude the possibility of carrying out a census of all establishments for the compilation of such statistics. The alternative course is to carry out a representative and properly designed sample survey of establishments in order to compile the required statistics.

Objectives, scope, coverage and frequency of the survey

Objectives of the survey

The objectives and scope of the wage structure and distribution surveys are stated in the following terms in the resolution adopted by the Twelfth ICLS (1973).

37. Wage structure and distribution surveys, including wage censuses, large-scale ad hoc occupational wage surveys and similar inquiries, provide comprehensive benchmark data for use in the compilation of current statistics of average earnings, hours of work, time rates of wages and normal hours of work and detailed data permitting the compilation of:

(a) statistics of wage rates, earnings and hours of work of wage earners and salaried employees to indicate wage differentials between branches of industry, geographic regions, occupations, males and females, establishments of different sizes and possibly also age groups, educational levels and types of vocational training or qualifications of employees;

(b) detailed data on the composition and components of earnings and wage rates;

(c) statistics showing the distribution of wage earners and salaried employees according to levels of wage rates, earnings and hours of work respectively, classified by various important characteristics of employees.

The resolution also recommends that statistics of wage rates, earnings and hours of work by occupations be compiled in as much detail as possible.

The objectives of wage structure and distribution surveys may also include gathering information on establishment practices and wage payment systems, such as particulars of work schedules, shift operations and differentials, payments for overtime, incentive bonuses, annual bonuses, paid holidays, vacation practices, sickness pay, contributions to pension and social security schemes, and particulars of statutory wage regulations, orders or collective agreements, etc.

Wage rates and earnings are the two wage measures covered in wage structure and distribution surveys. In view of the wide range of detailed data to be collected in such a survey, particularly for a large number of individual employees, it is not usually feasible to extend the scope of the survey to collect data on either compensation of employees or labour cost.

Industrial coverage

In principle, the wage structure and distribution survey should cover all industries irrespective of their importance, since the survey is intended to build the statistical infrastructure in the field of wages and conditions of work. All industries in the non-agricultural sectors, starting from the group level (four-digit level) or even lower levels of industry are eligible for inclusion in the survey. However, for various reasons, national practices differ. The wage structure and distribution survey usually covers manufacturing, mining and quarrying and, in some cases, wholesale and retail trade, banking and insurance.

Geographical coverage

Wage structure and distribution surveys should cover the whole country in order to ensure the representativeness of the data compiled. Sometimes there is a high concentration of certain industries in particular regions, which may require the compilation of separate statistics for each area. Regional statistics of wage structure and distribution are often required by large countries and countries with great regional disparities in wages and conditions of work.

Employee coverage

The wage structure and distribution survey should cover all employees of both sexes, appearing in the payrolls of establishments. They include time-related and piece-rated wage earners and salaried employees, covering within each category permanent, regular, temporary, casual, seasonal and part-time employees. Apprentices, learners, beginners, trainees, probationary workers, etc., are also to be included, provided that they appear in the payrolls and are treated as paid employees by the establishment. In cases where children are also included among the employees of the establishment, they should also be covered. Working proprietors and unpaid family workers should not be considered as employees. However, they should be identified in the survey.

Occupational coverage

The occupational structure usually varies from one establishment to another within an industry and also between different industries. One of the objectives of the wage structure and distribution survey is to compile an inventory of the occupations in the various

industries and to obtain data on wage rates, earnings and the number of employees in each occupation. This information provides the benchmark for the current survey of wage rates and normal hours of work.

Frequency of the survey

In terms of scope, coverage, variety and amount of detailed data collected, the wage structure and distribution survey is the biggest programme recommended in the integrated system of wages statistics. The expense, time and effort needed to carry out a complex and large-scale survey of this nature are very great and therefore it cannot normally be undertaken on an annual basis. The resolution adopted by the Twelfth ICLS (1973) recommends a periodicity of three to five years for undertaking wage structure and distribution surveys.

Concepts and definitions

The concepts and definitions relevant to wage structure and distribution are reviewed below although they are basically the same as those given in Chapter 4 and referred to in the chapters on current surveys concerning statistics of average earnings and hours of work and statistics of wage rates and normal hours of work. The main items which need clarification are establishment, employee, occupation, wage rate, earnings and hours of work.

Establishment

The concepts and definitions of "establishment" to be used in the wage structure and distribution survey should be the same as those used in the current surveys and labour cost surveys described in the previous chapters, as well as in industrial and economic censuses and surveys.

Employee

The definition of "employee" used in the surveys already described, and referred to in Chapters 6 to 8, is applicable to wage structure and distribution surveys. This type of survey is intended, inter alia, to obtain benchmark data on all categories of employees. These include wage earners and salaried employees, divided according to the relevant employment characteristics, such as permanent, regular, temporary, casual, full-time, part-time and so on. All these categories should be defined clearly in the light of the situation in each country.

Occupation

The distinction which arises from the definition adopted in the ISCO[1] between "occupation" and "job" is important because the methods of data collection use both units in a wage structure and distribution survey. For instance, data on earnings are collected for individual employees which relate, as a matter of course, to the job the individual holds. However, for the tabulation of data on earnings, the unit used is not the job but the occupation in which the job is included. In the case of data on numbers of employees and their distribution, the data are collected and tabulated with reference to occupation.

A number of countries, particularly developing countries, do not have national standard classifications of occupations, while in other countries the classifications at present in use are inefficient because they consist solely of a list of selected occupational titles with code numbers but without definitions of the scope of each title, so that there is

much room for error in their application. There ISCO can serve as a very useful framework for building up national classifications of occupations adapted to statistical application. The occupational structure in each country has its own special characteristics, related to such factors as climate, natural resources exploited, level of economic development, level of technology and capital equipment employed, work organisation in the different enterprises, etc. Despite all these variations, it should be possible, in the great majority of cases, to match the occupational definitions contained in the ISCO with national occupational categories.

Wage rate

The definition of wage rate given in Chapter 4 is further elaborated in Chapter 7 in connection with current surveys of establishments for the compilation of statistics of wage rates and normal hours of work. This definition is applicable in wage structure and distribution surveys. The unit to which data on wage rates can be related is either the occupation or the individual employee.

Earnings

As stated in Chapter 4, the wage measure "earnings" is based on the concept of wage as income to the employee. However, an analysis of the concepts and definitions provided in the resolution clearly shows that the wage measure "earnings" does not fully represent the level of income derived by the employee from the employment since it does not include receipts from wage-related social security schemes. The need to develop another wage measure, viz. employee income, in addition to the existing wage measures of wage rate, earnings, compensation of employees and labour cost, is emphasised in Chapter 4. The proposed wage measure "employee income" would include, in addition to earnings, the income received from wage-related social security schemes and it would be particularly useful in measuring the size distribution of wage income. However, there are some complex conceptual and methodological problems to be solved before the proposed wage measure "employee income" can be used in practice in wage structure and distribution surveys. Pending the development of the wage measure "employee income" the collection of data in wage structure and distribution surveys should be confined to earnings.

For the purposes of the wage structure and distribution survey, the suggested list of components of the major groups of earnings, including a major group comprising payments in kind, elaborated in Chapter 4, has been retained.

Hours of work

The statistical concept of hours of work distinguishes three measures of hours of work: *(a)* normal hours of work; *(b)* hours actually worked; and *(c)* hours paid for. Definitions of normal hours of work and hours actually worked are contained in the resolution concerning statistics of hours of work adopted by the Tenth ICLS (1962). The Tenth ICLS did not adopt a definition of hours paid for because of the wide differences among countries with respect to wage payments for holidays and other periods when no work is performed. Hours paid for represent those hours for which workers receive pay, regardless of whether these hours are spent at work or not, including hours actually worked. All three measures should be used for the compilation of data for the purposes of the wage structure and distribution survey.

Reporting unit

The choice of reporting unit for wage surveys in the non-agricultural sector has been discussed in Chapter 4 and further referred to in Chapters 6 to 8. The reporting unit

should be the same for the current and non-current wage surveys in the non-agricultural sector.

Most countries have adopted the establishment as the reporting unit more or less as used in the ISIC,[2] not only for wage surveys but also for industrial and commercial censuses and surveys.

In certain situations it may be necessary to use the kind-of-activity unit instead of the establishment as the reporting unit, as stated in Chapter 4.

Sampling

Probability sampling techniques are invariably used in carrying out wage structure and distribution surveys. The main reason for the use of sampling techniques is to reduce the unit cost of data compiled and to maintain the required standards of reliability of the estimates made from the data collected. A probability sample provides a quantitative measure of the sampling errors associated with the estimates.

The present manual does not deal with any specific sampling procedure since the choice of sampling technique depends on a number of factors, such as the specific objectives of the survey, the availability of sample frame, the methods of collection of data, the precision required for various estimates and also the financial and other resources available for the survey. In view of the complexities of wage structure and distribution surveys, it is essential to enlist the expert services of a sampling specialist to advise on all aspects of sampling. The few comments made here are limited to certain general aspects of sampling which are common to most countries and relate to such matters as frame, design and size of the sample.

A basic requirement in the application of sampling is the preparation of a suitable sample frame. As in the case of the three types of wage survey described in Chapters 6 to 8, the sample frame for the wage structure and distribution survey generally consists of a complete and up-to-date list of establishments in each industry to be covered by the survey. However, an alternative approach is possible for building a different sample frame; for instance, in some countries social security schemes or other sources may provide a complete list of employees with identification particulars of the establishments where they are employed. In this approach, a sample of employees may be selected first, and their current employers may be identified for the purpose of soliciting the detailed information for the survey. However, most countries follow the former approach, i.e. they use a complete list of establishments as the sample frame.

Since the wage structure and distribution survey as envisaged in the integrated system of wages statistics should also serve the purpose of a wage census, in principle all establishments employing one or more paid workers should be covered by the survey. However, in practice, very small establishments employing fewer than a specified number of employees are usually excluded from the survey. The size limit for the exclusion of establishments should be determined for each industry and the sample frame should include all establishments above the size in each of the industries covered by the survey.

The list of establishments should contain certain essential information for the purposes of sampling and for classifying establishments according to the appropriate industry groups. The information needed includes the name of the establishment, its geographical location, address, major product, commodity or service produced, and total employment. Sometimes such a list has already been prepared for other purposes, such as industrial or commercial censuses and surveys; in this case, care should be taken to see that it is complete and up to date. Many countries may experience considerable difficulty in building up a complete, up-to-date and accurate list of establishments, particularly in certain industries such as construction, transport, wholesale and retail trade, repair and other services. The difficulty is more acute in developing countries. Since establishment

surveys constitute an efficient tool for gathering a variety of economic statistics, the statistical programmes should aim at building up and maintaining a central register of establishments to serve the survey needs of different departments. If, however, a complete and up-to-date list of establishments is not readily available, it should be built up for the purposes of the wage structure and distribution survey. All sources of information should be tapped to build up such a list, e.g. records of factory registration, licensing records, sales tax and other tax records, social security records, industrial directories, records of employers' and employees' organisations, etc. In certain situations, it may even be necessary to organise field investigations to list all the establishments.

The usual practice in wage structure and distribution surveys is to use a multi-stage stratified sample design. Multi-stage sampling is required because in wage structure and distribution surveys, unlike other wage surveys described in earlier chapters, wage information is needed for individual employees in order to compile statistics of distribution of earnings, wage rates and hours of work. Except for very small establishments, it is not normally feasible to collect information for each individual employee. The purpose is served if a representative sample of employees is selected from each of the sample establishments. In such an approach, the primary sampling unit is the establishment and the secondary sampling unit is the individual employee. Within this framework, stratification can be applied. According to the survey objectives, separate data would usually be required at the four-digit or three-digit level of industry, which could constitute the first level of stratification. A further stratification is usually made according to size of establishment or sometimes by product. Stratification should be done in such a way that it improves the efficiency of sampling in terms of the precision of estimates and also reduces the cost of the survey for the given precision. Cross-stratification can be carried out according to geographical areas when separate data are needed by regions.

The sample size is to be determined in terms of both the first-stage unit (establishment) and the second-stage unit (individual employee). A number of factors have to be taken into account, such as the total number and distribution of establishments, by size, distribution of employees by occupation, relative dispersion of wage rates and earnings between establishments, geographical and other breakdowns needed and the level of precision generally required for the estimates. The problem of sample size in relation to the precision of estimates should be studied at the lowest level of industry for which separate data are to be compiled. Usually this will be at the group or major group (four-digit or three-digit) level of industry. Once precision is ensured at this level, precision at higher levels is automatic.

The first stage of sampling consists of the selection of a sample of primary sampling units, i.e. establishments. The usual practice is that establishments in each industry stratum are first divided into two groups according to their size; the first group consists of large establishments and the second group of all other establishments. All establishments in the first group are included in the sample, i.e. the probability of selection is one. The smaller-size group is further stratified into a reasonable number of strata according to size, and a sample of establishments is selected from each size stratum, using as a rule progressively decreasing sampling fractions.

The selection of second-stage sampling units, i.e. individual employees, may be accomplished in a variety of ways. Since the survey objectives generally require compilation of data separately for time-rated wage earners, piece-rated wage earners and salaried employees, it is appropriate that the sampling should be done separately for the three categories. The sampling procedure at this stage should also take into account another survey objective, which concerns the compilation of comprehensive statistics of occupations. The method which is sometimes used in this connection is, first, to list all occupations in the sample establishment, together with information on the total number of employees in each occupation, classified by sex, nature of employ-

ment and category of employee. This list would then serve as a sample frame for the selection of employees to represent the occupations and different categories of employees. The number of employees to be selected from an occupation would depend on the total in that occupation. The sampling fraction for the second stage usually varies inversely with the size of the establishment, i.e. employees in smaller establishments are assigned a higher probability of selection.

The rate of non-response is usually greater in wage structure and distribution surveys, particularly because of their wide scope and coverage, but it can be also due to deficiencies in the sampling frame. It is possible that a sample unit no longer exists or that its line of production may have changed. The sample design should minimise the effect of non-response as far as possible. Non-responding establishments can be replaced by others from a separate but properly drawn sample. Alternatively, the sample size required for a given precision could be suitably increased to allow for the anticipated volume of non-response in respect of different industries, regions and size-groups of establishments.

Reference period of data collection

The choice of time reference periods of data collection for various items assumes particular importance in a wage structure and distribution survey, especially since it is usually conducted at long intervals. This problem is particularly important in the case of earnings and hours of work, which can vary from one time period to another in a year. Different reference periods may be required for time-rated wage earners, piece-rated wage earners and salaried employees.

Data on earnings and data on hours actually worked or paid for should both relate to the same time reference period in order to express earnings in terms of the appropriate time unit of work. Earnings and hours of work may vary from one month to another due to various reasons, such as fluctuations in overtime work, short-time work, etc. Further, earnings received during a pay period or month may not include all possible elements, for instance year-end, seasonal and other one-time payments, profit-sharing bonuses, etc. A time reference period of one year is ideal in respect of data relating to distribution of earnings and hours actually worked. Such a reference period is also ideal for obtaining valid information on the composition of earnings. However, such an approach for collecting annual earnings by components for individual employees would greatly increase the burden on respondents and could prove impractical for purposes of data collection. In respect of small establishments, especially in developing countries, the required records showing all this detailed information would not be available. Therefore, it may be necessary to choose a pay period or a month as the reference period for collection of data on earnings and hours of work. It should be ensured that the pay period/month chosen as the reference period is representative of the year and is not subject to any abnormal conditions such as strikes, lockouts, lay-offs etc. Attempts are sometimes made to improve the validity of earnings data compiled with a short reference period by collecting additional data on those elements of earnings which are paid to the individual employees annually or irregularly. These include year-end and seasonal bonuses, profit-sharing bonuses and similar payments.

The reference period chosen for earnings statistics would be applicable to the collection of data on wage rates and normal hours of work. However, as regards data on wage rates of time-rated wage earners, it is sufficient to relate the information to a particular day within the reference period, for instance the first day or the last working day of the reference period. Normal weekly hours of work for time-rated wage earners should be collected with reference to a week. For salaried employees, the month is the appropriate reference period for collection of data on salary scales and weekly hours of work.

Method of data collection

An important question to be settled at the outset is whether the survey will rely on a mail questionnaire method of data collection or whether field investigators should be employed to visit each sample establishment in order to collect the required information in a prescribed questionnaire. The amount and variety of information to be collected in a wage structure and distribution survey are very great. Since it is a very large-scale survey, usually conducted at long intervals, every effort should be made to ensure that the data collected are reliable and are in accordance with the prescribed concepts, definitions and procedures. Further, as stated in the section dealing with sampling, the multi-stage sampling design usually adopted requires the preparation of a sample frame and selection of the second-stage sampling units (i.e. selection of sample employees) to be made at the establishment in accordance with the procedures laid down by the planners of the survey. Therefore, it is usually necessary to employ qualified field investigators to collect the data. These investigators should be given thorough training in the concepts, definitions, and procedures of the survey. The field work should be closely supervised at the different stages. An inquiry of the magnitude envisaged in a wage structure and distribution survey would normally require the setting up of an adequate field organisation for collection of data.

The data and information collected in such a survey fall broadly under three categories, using respectively the establishment, the occupation and the individual employee as the unit of observation. Information using the establishment as the observation unit refers to the characteristics of establishments, wage payment systems, establishment practices, etc. The survey objectives require a complete inventory of occupations, the number of persons employed in each occupation classified by sex, nature of employment, etc. For this purpose, the occupation serves as an appropriate observation unit. Data on normal hours of work can also be collected with reference to each occupation. However, the bulk of the information to be collected in a wage structure and distribution survey refers to individual employees. It also includes information on the occupation of the employee, wage rate, earnings, hours of work and a number of demographic and employment characteristics of the employee. There should be a clear demarcation between the items of information to be collected using the occupation and the individual employee as the observation units and unnecessary duplication of information should be avoided. For instance, information on wage rates and earnings relating to an individual employee is applicable at the same time to his occupation. It is easier to collect data on wage rate and earnings with reference to the job of an individual than with reference to an occupation which includes a number of jobs.

The availability of a national standard classification of occupation will considerably facilitate collection of occupational information. Each field investigator should be provided with the standard list of occupations showing the title, code and description of the occupations. Occupations in the establishment should be matched with those given in the standard list, which is an arduous task and needs careful evaluation of the functions, duties and responsibilities associated with the jobs, position and tasks under each occupation. In cases where a national standard classification of occupations is not available, the difficulties of collection of occupational information are further increased. In such a situation the survey could be used to build up a complete list of occupations by appropriately orienting the focus of data collection to obtain a detailed description of the jobs, positions and tasks to come under the different occupations in the sample.

Questionnaire

A well-designed questionnaire is needed to collect data from the sample establishments in accordance with the concepts, definitions and procedures laid down by the plan-

ners of the survey. The questionnaire should be accompanied by detailed instructions explaining clearly and unambiguously every term used as well as the manner of recording information.

An illustrative questionnaire for collection of data on wage structure and distribution is given at the end of this chapter. The questionnaire consists of the following parts: Part A: General establishment information; Part B1: Occupational data relating to time-related wage earners; Part B2: Occupational data relating to piece-rated wage earners; Part B3: Occupational data relating to salaried employees; Part C1: Data for individual employees—time-rated wage earners; Part C2: Data for individual employees—piece-rated wage earners; Part C3: Data for individual employees—salaried employees; and Part D: Establishment practices and policies.

Part A, relating to general establishment information, is divided into three main items: *(a)* identification particulars of establishment; *(b)* characteristics of establishment; and *(c)* work particulars of the establishment during the reference period. Identification particulars refer to the name, address and telephone number of the establishment. Characteristics of the establishment include a description of its main product, activity or business. Further items relevant to the national situation may also be included. Work particulars of the establishment relate to the number of days actually worked during the reference period, the number of public and other holidays and the number of days closed due to strikes, economic reasons or other reasons.

Part B refers to occupational data. It is divided into three sub-parts, B1, B2 and B3, relating respectively to time-rated wage earners, piece-rated wage earners and salaried employees. The main purpose of this section is to obtain a complete inventory of the occupations in the establishment and the number of employees in each occupation, classified by demographic and employment characteristics. Other information required relates to wage rates, normal hours of work and days normally worked per week. As regards piece-rated wage earners, provision is not made in B2 for showing wage rate information, since the figure is to be derived from actual earnings for normal-time work. Information on wage rates of time-rated wage earners and salary rates of salaried employees is restricted in this sub-part to minimum and maximum rates applicable to the occupations. This information gives an indication as to the range of wage rates but is not intended to provide an estimate of the average wage rate.

Part C is designed to gather data for a sample of employees from the establishment using the individual employee as the unit of observation. It is subdivided into three sub-parts, C1, C2 and C3, in order to collect separately information relating to time-rated wage earners, piece-rated wage earners and salaried employees. Items for which information is required in respect of each sample employee are: (i) sex; (ii) age; (iii) level of education; (iv) level of skill; (v) length of service; (vi) occupation; (vii) type of employment; (viii) wage rate and its composition; (ix) earnings and their composition; (x) whether earnings are affected by absence; and (xi) hours actually worked and paid for.

Sub-part C2, concerning piece-rated wage earners, includes all items relating to the personal characteristics of the employee but does not envisage the collection of data on wage rates, since wage rates for piece-work are not quoted with reference to an employee. Wage rates of piece-rated workers are usually obtained by dividing earnings for normal-time work by normal hours actually worked during a specified time period. Sub-part C2 provides for collection of data on earnings according to normal-time and overtime earnings. The part relating to hours of work in sub-part C2 is similar to that of sub-part C1. Sub-part C3, relating to salaried employees, is identical to sub-part C1 except for one item, viz. level of skill, which is not included.

The items included in Part D relating to establishment practices and policies are as follows:

1. Wage and salary payment practices:
   (a) method of wage and salary fixing/revision;
   (b) basis of wage payment;
   (c) mode of wage payment;
   (d) payments in cash or in kind;
   (e) cost-of-living or dearness allowances.
2. Practices relating to remuneration for time not worked:
   (a) paid vacations;
   (b) paid holidays;
   (c) paid sick leave;
   (d) other time off with pay.
3. Social security schemes:
   (a) statutory social security schemes;
   (b) private social security schemes;
   (c) medical care and health services.
4. Vocational training programmes.
5. Welfare services:
   (a) canteen or other food services;
   (b) education, cultural, recreational or related facilities or services;
   (c) services related to credit unions;
   (d) housing services;
   (e) any other facilities or services such as transport to and from work, etc., (specify).

Processing of the data

The magnitude of the quantitative and other data collected in a nation-wide and comprehensive wage structure and distribution survey is such that careful thought should be given to the methods and equipment used for data processing. This is the type of survey where electronic data processing is the most suitable and the speediest. While electronic data processing is, as a rule, employed in developed countries, adequate facilities do not exist in all developing countries. The alternative is to use mechanical data processing, with punch-card equipment. As the capability is limited, it usually takes considerable time to complete the various data processing operations. Manual methods relying on desk calculators would not usually be adequate to cope with the data processing needs of a comprehensive wage structure and distribution survey covering all industries in a country. In fact, the scope and coverage as well as the planning of the survey are very much influenced by the data processing facilities available in the country.

The use of computers should not be limited to the traditional data processing functions of editing, checking, correcting and tabulating the data. The advances in computer technology have changed the traditional approach to data processing and retrieval of and general access to the information collected through large-scale inquiries. In the past, the main aim of data processing was to reduce the vast quantity of information collected through censuses and surveys to manageable proportions, usually in the form of pre-specified tabulations. In general, once the tabulations were made, the original data were not used any further. This position has changed with the expansion of computer capabilities. It is now possible to retain the traditional tabulation of the survey data and also to preserve the primary data at the level of original observation. The possibility of access to primary data in the original form has greatly increased the potential future uses of such data. The information on individual employees collected in wage structure and distribution surveys could be preserved after tabulation in order to provide a data base for wage information systems, and it is particularly useful for wage and income distribution studies and analyses using econometric models.

Experience has shown that even when well-qualified field investigators are employed for data collection in a wage structure and distribution survey, the data are likely to contain errors. Errors occur due to a variety of reasons: misinterpretation of concepts, definitions, classifications, non-maintainance of records by establishments, mis-recording of information in the questionnaires, etc. The initial scrutiny of the completed questionnaires should be done by the field supervisor before they are sent to headquarters. This is mainly to ensure completeness of entries and to detect gross errors and inconsistencies.

Even after scrutiny of the questionnaire at the field level, there can still be errors. The statistical office should critically review each questionnaire and verify that the entries are complete, consistent and according to specifications. If the information furnished in the questionnaire does not meet the required standards, it should be returned to the field supervisors for reinvestigation of the establishment in order to rectify the mistakes.

The scrutiny of the questionnaire should reveal whether the establishment information used in the sampling frame is correct. This applies particularly to the industrial classification of the establishment and the number of employees shown in the establishment list. If a substitution of establishments is made in lieu of non-response, this must be done according to the prescribed sampling procedures.

Errors can also occur in coding or transferring data from questionnaires to worksheets, punch cards or tapes as the case may be, depending on the methods of data processing used. The staff engaged in scrutiny, editing, coding and various other operations connected with data processing should be thoroughly trained and should be provided with clear and detailed instructions to carry out the different operations in a uniform manner.

Estimation procedures

The estimates to be made from the data obtained from wage structure and distribution surveys are in the form of totals, averages, percentages or proportions and distributions. Since estimates are derived from the sample data, they are subject to sampling errors. The sampling errors are also estimated from the sample data.

The precision of any estimate made from the sample depends both on the method by which the estimate is calculated from the sample data and on the sample design. The formulae and methods to be used to estimate different wage and related measures form part of the sampling problems of wage structure and distribution surveys. As already mentioned in the section dealing with sampling, the estimation procedures should be determined by a sampling expert. Non-sampling factors also influence the validity of the estimates made from the sample data. The properties of a good estimate are that it should be consistent, unbiased and with minimum variance.

Deficiencies in the list of establishments which served as the sample frame give rise to bias in estimates and to an increase in the variance of estimates. Defects in the list are due to a variety of reasons, such as insufficient up-dating, not taking account of the births and deaths of establishments, absence of information on employment, wrong industrial classification of establishments, etc. Non-response is another source of bias and usually increases sampling errors. It is partly due to deficiencies in the list of establishments, such as wrong address, retention in the list of establishments which no longer exist, etc., and partly due to the unwillingness of sample establishments to furnish the information. In spite of all the care taken at the field level, it is possible that some of the data collected in the questionnaire is unacceptable for one reason or another. The estimation procedures should take into account all these contingencies and the estimates should be adjusted suitably.

Estimates of average earnings are expressed as average earnings per hour, day, week, month or year, although the data have been collected in a different way. The length of the

reference period for data on earnings and hours of work may vary from one sample establishment to another. The figures should be reduced to a common time period before the estimates are made. Certain elements of earnings such as year-end bonuses are collected with a reference period of one year. These figures should also be reduced to the same time unit on a pro-rata basis and be included in the earnings. Sometimes the earnings of employees, particularly those of wage earners, are affected by absence or reduced hours of work during the reference period. If the proportion of such employees is large, it could affect the level and distribution of earnings and hours of work. Recourse is sometimes had to tabulating separately average earnings and hours of work of employees whose earnings and hours of work were not affected by absence or short-time work during the reference period. For certain types of comparisons and analyses, such a measure is more appropriate.

The data on wage rates for occupations of individual employees recorded in the questionnaire refer to the time units in which they are fixed by the establishment. These time units may differ from one establishment to another. It is necessary to convert the wage rates to a common time unit before calculating the averages. It would be useful to have estimates of occupational earnings expressed in the same time unit as that of wage rates so that the relationship between the two wage measures is easily revealed.

The composition of average earnings and wage rates could be estimated and expressed either in absolute figures or in percentages of the average. When estimates are expressed as average earnings per hour, per week, etc., care should be taken that the structural relationship between the components of earnings is not altered because of the different methods of calculating average earnings per hour and average earnings per week.

A basic objective of the wage structure and distribution survey is to estimate the size distribution of earnings and wage rates for different categories of employees. The distribution of individuals within a group can be presented in various ways, e.g. by showing the numbers whose earnings or wage rates are below specified amounts. These numbers can also be expressed as percentages of the total of the group. Estimates of average earnings, wage rates and hours of work can also be made by fractile groups of employees. The distribution of earnings by fractile groups of employees has the advantage of permitting comparisons over time, which distribution by earnings class does not permit because of the price effect on the class interval itself. Sometimes the spread of earnings of individuals within a group is given according to the amounts earned by the higher, lower and medium earners.

Tabulations and classifications

The quantitative data collected in the wage structure and distribution survey permit a wide range of tabulations and classifications. The primary concern in the tabulation programme is to present the data and estimates in suitable tables in order to meet the survey objectives and the perceived needs of different users. The classification scheme used in the tabulation of data should enable, among other things, information to be obtained on the factors influencing wage differentials, levels, composition and distribution of wage rates and earnings.

The workload involved in tabulating the data collected in such a survey is extremely heavy. Experience has shown that even when electronic computer facilities are available it takes considerable time to complete the tabulation programme. It is therefore necessary to give careful thought to formulating the tabulation programme and the time-frame within which it is to be completed. A set of priorities should be established with regard to the types of tables to be completed in the different phases of the tabulation.

The topics for tabulation of quantitative data include employment, wage rates, earnings and hours of work. The focus of the tabulation is the industry. Statistics from the wage structure and distribution survey are usually required at the group (four-digit) level of industry. Separate tabulation is also necessary for important geographical regions. Certain tables have to be prepared separately for wage earners and salaried employees. In industries where the proportion of piece-rated wage earners is significant, time-rated wage earners should be distinguished from piece-rated wage earners in the tabulations. Within this framework, data should be presented using different classifications and cross-classifications of a number of variables for which information is collected. The classificatory variables include establishment characteristics (such as size of establishment), occupation, characteristics of individual employees (e.g. sex, age, level of education, level of skill, length of service, nature of employment), etc. Levels of earnings, wage rates and hours of work need to be divided into a number of class intervals for presenting the data in tables showing size distributions.

Thirty illustrative tables are given at the end of this chapter. These are not, however, exhaustive and additional tables can be generated by using different ways of classifying and cross-classifying the data collected in the survey. The tables comprise the following topics:

(a) distribution of employees according to various characteristics—four tables;

(b) list of occupations and occupational employment pattern—four tables;

(c) composition of average occupational wage rate—four tables;

(d) composition of average occupational earnings—four tables;

(e) composition of average hours of work by occupation—two tables;

(f) distribution of employees and composition of wage rates by levels of wage rates—two tables;

(g) distribution of employees according to type of employment by levels of wage rates—two tables;

(h) distribution of employees and composition of earnings by levels of earnings—two tables;

(i) distribution of employees according to types of employment by level of earnings—two tables;

(j) distribution of employees according to type of employment by levels of hours of work—two tables;

(k) distribution of employees by levels of earnings and by levels of hours of work—two tables.

For each topic mentioned above, tables are designed to show data for industries at the group or major group level and for sizes of establishments in industries at the major division level of ISIC.

Publication of the results of the wage structure and distribution survey

Careful thought should be given to the preparation and publication of the results of the wage structure and distribution survey. It is not usually feasible to give all the results of the survey in one report, since there is such a profusion of data. The publication of the results of this survey is similar to that of census results, in the sense that there is often a series of reports phased over a stipulated time period, comprising, first, a general report covering all or important industries and geographical regions, followed by detailed reports dealing separately with each industry or geographical area. Separate reports could also be prepared on different topics covered by the survey, such as qualitative information relating to establishment practices, wage payment systems, etc.

The report of the survey normally consists of a set of tables and a text. This text is an essential part of the report and it should contain: *(a)* a description of the survey, covering objectives, scope, coverage, concepts, definitions, sampling, methods of collection, classification and tabulation of data; *(b)* an analysis of the main results and important findings; and *(c)* the limitations and shortcomings of the data, including the effect of sampling and non-sampling errors on the survey results.

Advanced planning is needed for the timely publication of the reports. If the results are not made available to the users within a reasonable period of time the data will become outdated and will not serve the purposes for which they were collected.

Notes

[1] ILO: *International Standard Classification of Occupations, revised edition 1968* (Geneva, 1968).

[2] United Nations, Department of Economic and Social Affairs: *International Standard Industrial Classification of All Economic Activities*, Statistical papers, Series M, No. 4, Rev. 2 (New York, 1968; Sales No.: E.68.XVII.8).

ILLUSTRATIVE QUESTIONNAIRE

Name and address of statistical authority

_____

_____

Information supplied by respondents will be held in strict confidence and used only for statistical purposes.

Survey of wage structure and distribution in non-agricultural sector

Please complete this questionnaire for the reference period from _____ to _____

Sample identification particulars of establishment

_____

_____

Name of establishment official supplying the information _____

Signature _____ Date _____

Name of investigator _____

Signature _____ Date _____

Date of despatch of questionnaire to statistical authority _____

A. General establishment information

(a) Identification particulars of establishment

(1) Name _____

(2) Address _____

_____

(3) Telephone number (if any) _____

(b) Characteristics of establishment

(1) Description of main product/activity/business (i.e. the product/activity/business which accounts for the major portion of gross output or which occupies the major portion of employment)

_____

_____

(2) _____

_____

(3) _____

_____, etc.

(c) Work particulars of establishment during reference period (pay period/month) from _____ to _____

Give the following information for the reference period from _____ to _____

(1) Number of days actually worked by the establishment _____

(2) Number of public holidays and other holidays _____

(3) Number of days the establishment was closed due to strikes, economic reasons or any other reasons _____

B1. Occupational data relating to time-rated wage earners

Occupation			Number of time-rated wage earners as on _____ of the reference period (pay period/month)																										
			Full-time										Part-time										Wage rate for the occupation			Normal hours of work[1]		
			Regular					Casual					Regular					Casual											
			Adult		Juvenile			Adult		Juvenile			Adult		Juvenile			Adult		Juvenile									
Code No.	Title as per standard list of occupations	Designation or description of the occupation in the establishment	Male	Female	Male	Female	Total	Male	Female	Male	Female	Total	Male	Female	Male	Female	Total	Male	Female	Male	Female	Total	Unit of time (hour/day/week)	Amount (currency) Maximum	Amount (currency) Minimum	Time period (day/week/month)	Number of hours	Number of days normally worked per week[1]
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
Total (for all occupations)																												

[1] Normal hours of work and number of days normally worked per week should be reported as those applying to the majority of full-time employees.

B2. Occupational data relating to piece-rated wage earners

Occupation			Number of piece-rated wage earners as on _____ of the reference period (pay period/month)																			Salary rate for the occupation			Normal hours of work[1]		
			Full-time									Part-time															
			Regular					Casual				Regular					Casual										
			Adult		Juvenile			Adult		Juvenile			Adult		Juvenile			Adult		Juvenile							
Code No.	Title as per standard list of occupations	Designation or description of the occupation in the establishment	Male	Female	Male	Female	Total	Male	Female	Male	Female	Total	Male	Female	Male	Female	Total	Male	Female	Male	Female	Total	Unit of time (hour/day/week)	Amount (currency) Maximum	Amount (currency) Minimum	Time period (day/week/month)	Number of hours	Number of days normally worked per week[1]
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
Total (for all occupations)																												

[1] Normal hours of work and number of days normally worked per week should be reported as those applying to the majority of full-time employees.

B3. Occupational data relating to salaried employees

Occupation			Number of salaried employees as on _____ of the reference period (pay period/month)																			Salary rate for the occupation			Normal hours of work[1]		
			Full-time										Part-time														
			Regular					Casual					Regular					Casual										
			Adult		Juvenile			Adult		Juvenile			Adult		Juvenile			Adult		Juvenile								
Code No.	Title as per standard list of occupations	Designation or description of the occupation in the establishment	Male	Female	Male	Female	Total	Male	Female	Male	Female	Total	Male	Female	Male	Female	Total	Male	Female	Male	Female	Total	Unit of time (hour/day/week)	Amount (currency) Maximum	Amount (currency) Minimum	Time period (day/week/month)	Number of hours	Number of days normally worked per week[1]
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29
Total (for all occupations)																												

[1] Normal hours of work and number of days normally worked per week should be reported as those applying to the majority of full-time employees.

C1. Data for individual employees — time-rated wage earners (earnings, wage rate, hours of work and related data)

Identification of employee (name/number/etc.)	Sex M—Male F—Female	Age[1]	Level of education (code)[2]	Occupation: According to standard list: Level of skill S—Skilled SS—Semiskilled U—Unskilled	Occupation: According to standard list: Length of service in establishment (number of years)	Occupation: According to standard list: Code no.	Occupation: According to standard list: Title	Occupation: As used in establishment: Job title	Occupation: As used in establishment: Description of job	Type of employment: F—Full-time P—Part-time	Type of employment: R—Regular C—Casual S—Seasonal	Wage rate: Unit of time (hour/day/week)	Wage rate: Amount (currency): Basic wage	Wage rate: Amount (currency): Cost of living or dearness allowance	Wage rate: Amount (currency): Other guaranteed or regularly paid allowance	Wage rate: Amount (currency): Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17

[1] *Age* (according to United Nations, Department of Economic and Social Affairs: *Principles and Recommendations for the 1970 Population Censuses*, Statistical papers, Series M, No. 44 (New York, 1967; Sales No.: 67.XVII.3))

Either: (i) Date of birth
or (ii) Age at last birthday
or (iii) Age-group.

[2] *Level of education* (according to *International Standard Classification of Education (ISCED) Three-Stage Classification System* (UNESCO, 1974))

0. Education preceding the first level
1. Education at the first level
2-3. Education at the second level
5-6. Education at the third level, first stage
7. Education at the third level, second stage
8. Education not definable by level.

C1. Data for individual employees — time-rated wage earners (earnings, wage rate, hours of work and related data) *(cont.)*

Earnings for the reference period (pay period/month) from ____ to ____																						Irregularly paid bonuses and gratuities for the reference year from ____ to ____[4]				Earnings affected by absence[5]	Hours of work for the reference period (pay period/month) from ____ to ____								
Earnings in cash															Earnings in kind													Hours actually worked			Hours paid for but not worked						
Direct wages										Remuneration for time not worked																								
Pay for normal-time work	Premium pay for overtime	Premium pay for shift work, etc.	Incentive pay	Other regular bonuses	Family allowances	Cost-of-living or dearness allowance	House-rent allowance	Other	Total direct wages	Annual vacation, etc.	Public and other holidays	Other time off with pay	Total remuneration for time not worked	Bonuses and gratuities paid regularly[3]	Total earnings in cash	Food and drink	Fuel	Free or subsidised housing	Other	Total earnings in kind	Total earnings for reference period	Year-end, seasonal and similar bonuses	Profit-sharing bonuses	Others	Total irregularly paid bonuses and gratuities for year	1. Earnings affected by absence 2. Earnings not affected by absence	Normal-time hours	Overtime hours	Total hours actually worked	Vacation	Holiday	Sick leave	Civic or personal leave	Other paid leave	Total hours paid for but not worked	Total hours paid for
18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53	54

[3] *Bonuses and gratuities paid regularly* refer to: seasonal and similar bonuses, profit-sharing bonuses, additional payments in respect of vacation, supplementary to normal vacation pay, and other bonuses and gratuities, which are paid regularly each pay period and which are not included under "Direct wages". Irregularly paid bonuses and gratuities should be reported separately in columns 40 to 43.

[4] *Irregularly paid bonuses and gratuities for the reference year* refer to the totals of those bonuses and gratuities which are not paid regularly each pay period, paid during the whole of the reference year, whether in cash or in kind.

[5] *Earnings affected by absence* refer to whether or not the earnings, other than overtime earnings, of the employee were affected by short-time working, holiday, sickness or other absence, or because employment only lasted for part of the period.

C2. Data for individual employees — piece-rated wage earners (earnings, hours of work and related data)

Identification of employee (name/number/etc.)	Sex M—Male F—Female	Age [1]	Level of education (code) [2]	Level of skill S—Skilled SS—Semiskilled U—Unskilled	Length of service in establishment (number of years)	Occupation				Type of employment R—Regular C—Casual S—Seasonal
						According to standard list		As used in establishment		
						Code No.	Title	Job title	Description of job	
1	2	3	4	5	6	7	8	9	10	11

[1] *Age:* (according to *Principles and Recommendations for the 1970 Population Census*, op. cit.)

Either: (i) Date of birth
or (ii) Age at last birthday
or (iii) Age-group.

[2] *Level of education* (according to *International Standard Classification of Education (ISCED), Three-Stage Classification System*, op. cit.) coded as follows:

0. Education preceding the first level
1. Education at the first level
2-3. Education at the second level
5-6. Education at the third level, first stage
7. Education at the third level, second stage
8. Education not definable by level.

C2. Data for individual employees — piece-rated wage earners (earnings, hours of work and related data) *(cont.)*

Earnings for the reference period (pay period/month) from ____ to ____							Irregularly paid bonuses and gratuities for the reference year from ____ to ____[4]				Earnings affected by absence[5]		Hours of work for the reference period (pay period/month) from ____ to ____								
Earnings for normal time					Earnings for overtime	Total earnings for the reference period							Hours actually worked			Hours paid for but not worked						Total hours paid for
Direct wages (cash)	Remuneration for time not worked	Regularly paid bonuses and gratuities[3]	Payments in kind	Total earnings for normal time			Year-end, seasonal and similar bonuses	Profit-sharing bonuses	Others	Total irregularly paid bonuses and gratuities for year	1. Earnings affected by absence	2. Earnings not affected by absence	Normal-time hours	Over-time hours	Total hours actually worked	Vaca-tion	Holiday	Sick leave	Civic or personal leave	Other paid leave	Total hours paid for but not worked	
12	13	14	15	16	17	18	19	20	21	22	23		24	25	26	27	28	29	30	31	32	33

[3] *Regularly paid bonuses and gratuities* refer to seasonal and similar bonuses, profit-sharing bonuses, additional payments in respect of vacation, supplementary to normal vacation pay, and other bonuses and gratuities, which are paid regularly each pay period and which are not included under "Direct wages". Irregularly paid bonuses and gratuities should be reported separately in columns 19 to 22.

[4] *Irregularly paid bonuses and gratuities for the reference year* refer to the totals of those bonuses and gratuities which are not paid regularly each pay period, paid during the whole of the reference year, whether in cash or in kind.

[5] *Earnings affected by absence* refer to whether or not the earnings, other than overtime earnings, of the employee were affected by short-time working, holiday, sickness or other absence, or because employment only lasted for part of the period.

C3. Data for individual employees — salaried employees (earnings, salary rate, hours of work and related data)

Identification of employee (name/number/etc.)	Sex M—Male F—Female	Age[1]	Level of education (code)[2]	Length of service in establishment (number of years)	Occupation				Type of employment		Salary rate				
					According to standard list		As used in the establishment		F—Full-time P—Part-time	R—Regular C—Casual S—Seasonal	Unit of time (month/year)	Amount (currency)			
					Code No.	Title	Job title	Description of job				Basic salary	Cost-of-living or dearness allowance	Other guaranteed or regularly paid allowance	Total
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16

[1] *Age:* (according to *Principles and Recommendations for the 1970 Population Censuses*, op. cit.)

Either: (i) Date of birth
or (ii) Age at last birthday
or (iii) Age-group.

[2] *Level of education* (according to *International Standard Classification of Education (ISCED), Three-Stage Classification System*, op. cit.) coded as follows:

0. Education preceding the first level
1. Education at the first level
2-3. Education at the second level
5-6. Education at the third level, first stage
7. Education at the third level, second stage
8. Education not definable by level.

C3. Data for individual employees — salaried employees (earnings, salary rate, hours of work and related data) *(cont.)*

Earnings for the reference period (pay period/month) from _____ to _____

Earnings in cash															Earnings in kind						Irregularly paid bonuses and gratuities for the reference year from ____ to ____[4]				Earnings affected by absence[5]	Hours of work for the reference period (pay period/month) from _____ to _____								
Direct salary										Remuneration for time not worked																Hours actually worked			Hours paid for but not worked						
Pay for normal-time work	Premium pay for overtime	Premium pay for shift work, etc.	Incentive pay	Other regular bonuses	Family allowances	Cost-of-living or dearness allowance	House-rent allowance	Other	Total direct salary	Annual vacation, etc.	Public and other holidays	Other time off with pay	Total remuneration for time not worked	Bonuses and gratuities paid regularly[3]	Total earnings in cash	Food and drink	Fuel	Free or subsidised housing	Other	Total earnings in kind	Total earnings for reference period	Year-end, seasonal and similar bonuses	Profit-sharing bonuses	Others	Total irregularly paid bonuses and gratuities for year	1. Earnings affected by absence 2. Earnings not affected by absence	Normal-time hours	Overtime hours	Total hours actually worked	Vacation	Holiday	Sick leave	Civic or personal leave	Other paid leave	Total hours paid for but not worked	Total hours paid for
17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32	33	34	35	36	37	38	39	40	41	42	43	44	45	46	47	48	49	50	51	52	53

[3] *Bonuses and gratuities paid regularly* refer to: seasonal and similar bonuses, profit-sharing bonuses, additional payments in respect of vacation, supplementary to normal vacation pay, and other bonuses and gratuities, which are paid regularly each pay period and which are not included under "Direct salary", irregularly paid bonuses and gratuities should be reported separately in columns 39 to 43.

[4] *Irregularly paid bonuses and gratuities for the reference year* refer to the totals of those bonuses and gratuities which are not paid regularly each pay period, paid during the whole of the reference year, whether in cash or in kind.

[5] *Earnings affected by absence* refers to whether or not the earnings, other than overtime earnings, of the employee were affected by short-time working, holiday, sickness or other absence, or because employment only lasted for part of the period.

D. Establishment practices and policies

1. Wage and salary payment practices

(a) Method of wage and salary fixation/revision of wages and salaries

What is the method used in the establishment for fixing/revising wages and salaries for the majority of employees (according to the list below)?

(i) Collective bargaining agreement between employer and group of employees
(ii) Individual agreements between employer and individual employees
(iii) Employer's decision
(iv) Agreement between employer and employees' union
(v) Statutory wage or salary fixing authority, such as Wages Board, etc.
(vi) Government order, such as Minimum Wages Act, etc.
(vii) Other (specify).

	Method (specify)
Time-rated wage earners:	_____
Piece-rated wage earners:	_____
Salaried employees:	_____

(b) Basis of wage payment

State whether the wage rate is fixed on an hourly, daily, weekly or fortnightly basis for the majority of wage earners

	Basis
Time-rated wage earners:	_____
Piece-rated wage earners:	_____

(c) Mode of wage payment

Give the mode of wage or salary payment for the majority of employees, i.e. whether the wage or salary is paid daily, weekly, fortnightly or monthly, etc.

	Mode of payment
Time-rated wage earners:	_____
Piece-rated wage earners:	_____
Salaried employees:	_____

(d) Payments in cash or in kind

State whether the wage or salary rates are paid wholly in cash, partly in cash and partly in kind, or wholly in kind, for the majority of employees:

	Wholly in cash	Partly in cash and partly in kind	Wholly in kind
Time-rated wage earners	Yes/No	Yes/No	Yes/No
Piece-rated wage earners	Yes/No	Yes/No	Yes/No
Salaried employees	Yes/No	Yes/No	Yes/No

(e) Cost-of-living or dearness allowance

Are there any cost-of-living or dearness allowances fixed for the majority of:

Time-rated wage earners?	Yes/No
Piece-rated wage earners?	Yes/No
Salaried employees?	Yes/No

D. Establishment practices and policies *(cont.)*

(e) Cost-of-living or dearness allowance *(cont.)*

If cost-of-living or dearness allowances are fixed for the majority of employees, give the method by which they are fixed, according to the list below:

(i) Collective bargaining agreement between employer and group of employees
(ii) Individual agreements between employer and individual employees
(iii) Employer's decision
(iv) Agreement between employer and employees' union
(v) Statutory wage or salary fixing authority, such as Wages Board, etc.
(vi) Government order, such as Minimum Wages Act, etc.
(vii) Other (specify)

	Method (specify)
Time-rated wage earners:	
Piece-rated wage earners:	
Salaried employees:	

Give the amount of cost-of-living or dearness allowances which are payable to the majority of:

	Amount	per time unit
Time-rated wage earners:		
Piece-rated wage earners:		
Salaried employees:		

2. Practices relating to remuneration for time not worked

(a) Paid vacations

Does the establishment grant paid vacations for the majority of:

Time-rated wage earners?	Yes/No
Piece-rated wage earners?	Yes/No
Salaried employees?	Yes/No

If yes, give the number of days of paid vacation to which the majority of employees were entitled for the reference year from _____ to _____, as follows:

	Number of days of paid vacation
Time-rated wage earners:	
Piece-rated wage earners:	
Salaried employees:	

(b) Paid holidays

Does the establishment grant paid holidays for the majority of:

Time-rated wage earners?	Yes/No
Piece-rated wage earners?	Yes/No
Salaried employees?	Yes/No

If yes, give the number of days of paid holiday granted to the majority of employees during the reference year from _____ to _____, as follows:

	Number of days of paid holiday
Time-rated wage earners:	
Piece-rated wage earners:	
Salaried employees:	

D. Establishment practices and policies *(cont.)*

(c) Paid sick leave

Does the establishment grant paid sick leave for the majority of:

Time-rated wage earners? Yes/No
Piece-rated wage earners? Yes/No
Salaried employees? Yes/No

If yes, give the number of days of paid sick leave to which the majority of employees were entitled during the reference year from _____ to _____, as follows:

	Number of days of paid sick leave
Time-rated wage earners:	
Piece-rated wage earners:	
Salaried employees:	

(d) Other time off with pay

Does the establishment grant any other time off with pay for any other reasons (such as birth or death of family member, marriage of employee, functions of titular office, union activities, etc.) for the majority of:

Time-rated wage earners? Yes/No
Piece-rated wage earners? Yes/No
Salaried employees? Yes/No

If yes, give the entitlement (number of days off with pay) for each reason, for the majority of employees, as follows:

	Time-rated wage earners	Piece-rated wage earners	Salaried employees
for: Birth of family member			
Death of family member			
Marriage of employee			
Functions of titular office			
Union activities			
Other (specify)			

3. Social security schemes

(a) Statutory social security schemes

Does the establishment contribute to any of the following statutory social security schemes covering the majority of employees, as follows?

	Time-rated wage earners	Piece-rated wage earners	Salaried employees
Old-age, invalidity and survivors'	Yes/No	Yes/No	Yes/No
Sickness, maternity	Yes/No	Yes/No	Yes/No
Employment injury	Yes/No	Yes/No	Yes/No
Unemployment	Yes/No	Yes/No	Yes/No
Family allowances	Yes/No	Yes/No	Yes/No
Other (specify)	Yes/No	Yes/No	Yes/No
_____			
_____			

D. Establishment practices and policies *(cont.)*

3. *(a)* Statutory social security schemes *(cont.)*

If the establishment does contribute to such schemes for the majority of employees, give the way in which these schemes are financed (e.g. financed wholly by employer, mainly by employer but with contributions from employees, mainly by employer but with contributions from the State, etc.), and the percentage of total contributions given by each contributor:

Old-age, invalidity and survivors' _____
Sickness, maternity _____
Employment injury _____
Unemployment _____
Family allowances _____
Other (specify) _____
_____ _____
_____ _____

(b) Private social security schemes

Does the establishment make any collectively agreed, contractual or non-obligatory contributions to any of the following private social security schemes or insurances covering the majority of:

	Time-rated wage earners	Piece-rated wage earners	Salaried employees
Old-age, invalidity and survivors'	Yes/No	Yes/No	Yes/No
Sickness, maternity	Yes/No	Yes/No	Yes/No
Employment injury	Yes/No	Yes/No	Yes/No
Unemployment	Yes/No	Yes/No	Yes/No
Family allowances	Yes/No	Yes/No	Yes/No
Other (specify)	Yes/No	Yes/No	Yes/No

_____
_____

If yes, give the way in which these schemes or insurances are financed (e.g. wholly by employer, partly by employer and partly by employee, etc.) and the percentage of total contributions given by each contributor, as follows:

Old-age, invalidity and survivors' _____
Sickness, maternity _____
Employment injury _____
Unemployment _____
Family allowances _____
Other (specify) _____
_____ _____
_____ _____

(c) Medical care and health services

Does the establishment provide any medical care or health services for the majority of its employees?

Yes/No

If yes, give the type of medical care or health services provided, and any other details (such as category of employee entitled to the services, whether family members are eligible for such services, etc.)

_____
_____
_____
_____

D. Establishment practices and policies *(cont.)*

4. Vocational training programmes

Does the establishment provide any vocational training facilities for any of its employees?

Yes/No

If yes, give details of the vocational training facilities, as follows:

(a) Number of employees who received vocational training during the reference year from _____ to _____ _____

(b) Type of training provided (subject, level of training, whether training is given in establishment or in outside institution, etc.) _____

(c) Type of employee eligible for training (e.g. time-rated wage earners, piece-rated wage earners, salaried employees, age, sex, educational level, etc.) _____

(d) Length of training _____

(e) Do employees receive remuneration during training? Yes/No

(f) Does the establishment guarantee employment after training? Yes/No

(g) Any other details _____

_____

_____

5. Welfare services

Does the establishment provide any of the following services for its employees?

(a) Canteen or other food services Yes/No

(b) Education, cultural, recreational or related facilities or services Yes/No

(c) Services related to credit unions Yes/No

(d) Housing services Yes/No

(e) Any other facilities or services, such as transport to and from work, etc. (specify) Yes/No

_____

_____

ILLUSTRATIVE TABLES

Table 1.1 *(a)*. Number of employees, by wage earners (time-rated and piece-rated) and salaried employees, by adult and juvenile and by sex, in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)[1] in non-agricultural sector, for the period _____
(Whole country) (number)

Major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)[1]	All employees			Wage earners																		Salaried employees						
				All wage earners			Time-rated							Piece-rated[2]									Adult		Juvenile		Total		
							Adult		Juvenile		Total			Adult		Juvenile		Total											
	M	F	T	M	F	T	M	F	M	F	M	F	T	M	F	M	F	M	F	T		M	F	M	F	M	F	T
1	2	3	4.	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21		22	23	24	25	26	27	28
Illustrations:																												
Mining and quarrying																												
Coal mining																												
Crude petroleum and natural gas production																												
etc.																												
Manufacturing																												
Food manufacturing																												
Beverage industries																												
Tobacco manufactures																												
Manufacture of textiles																												
etc.																												
Electricity, gas and water																												
Electricity, gas and steam																												
Water works and supply																												
Construction																												
Wholesale and retail trade, etc.																												
Wholesale trade																												
Retail trade																												
etc.																												
Total non-agricultural sector																												

[1] The data may be presented at the industry group level (4-digit level of ISIC) where possible. [2] Piece-rated wage earners are shown only for those industries where they are in significant numbers.

Similar tables may be prepared for geographical regions where required, and also for additional cross-classifications according to full-time and part-time and regular and casual.

Table 1.1 *(b)*. Number of employees, by wage earners (time-rated and piece-rated) and salaried employees, by adult and juvenile, and by sex, according to size of establishment[1] in major industry divisions (1-digit level of ISIC)[2] in non-agricultural sector, for the period _____ . (Whole country) (number)

Size of establishment[1] in major industry divisions (1-digit level of ISIC)[2]	All employees			Wage earners																		Salaried employees						
				All wage earners			Time-rated							Piece-rated[3]								Adult		Juvenile		Total		
							Adult		Juvenile		Total			Adult		Juvenile		Total										
	M	F	T	M	F	T	M	F	M	F	M	F	T	M	F	M	F	M	F	T	M	F	M	F	M	F	T
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Illustrations:																											
Mining and quarrying																											
Establishments with:																											
x to 19 employees																											
20 to 49 employees																											
50 to 99 employees																											
100 to 199 employees																											
200 or more employees																											
Manufacturing																											
Establishments with:																											
x to 19 employees																											
20 to 49 employees																											
50 to 99 employees																											
100 to 199 employees																											
200 or more employees																											
Electricity, gas and water																											
Establishments with:																											
x to 19 employees																											
20 to 49 employees																											
50 to 99 employees																											
100 to 199 employees																											
200 or more employees																											
etc.																											

[1] The sizes of establishment shown in the table are purely illustrative; usually, small establishments below a certain size (*x* employees) are assumed not to be covered in the survey. [2] The data may be presented at the division, major group or group level of industry (2-, 3-, or 4-digit level of ISIC) where possible. [3] Piece-rated wage earners are shown only for those industries where they are in significant numbers.

Similar tables may be prepared for geographical regions where required, and also for additional cross-classifications according to full-time and part-time and regular and casual.

Table 1.2 *(a)*. Percentage distribution of employees, by sex and age group, in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)[1] in non-agricultural sector, for the period _____
(Whole country)

Major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)[1]	Number of employees	Percentage distribution of employees by:																								
		Male													Female											
		All ages	— 15	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65 +	All ages	— 15	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65 +
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Illustrations:																										
Mining and quarrying																										
Coal mining																										
Crude petroleum and natural gas production																										
etc.																										
Manufacturing																										
Food manufacturing																										
Beverage industries																										
Tobacco manufactures																										
Manufacture of textiles																										
etc.																										
Electricity, gas and water																										
Electricity, gas and steam																										
Water works and supply																										
Construction																										
Wholesale and retail trade, etc.																										
Wholesale trade																										
Retail trade																										
etc.																										
Total non-agricultural sector																										

[1] The data may be presented at the industry group level (4-digit level of ISIC) where possible.

Similar tables may be prepared for geographical regions where required, and also for additional cross-classifications according to full-time and part-time, regular, seasonal and casual, level of education, level of skill and length of service.

Separate tables may be prepared for wage earners (time-rated and piece-rated) and salaried employees.

Table 1.2*(b)*. Percentage distribution of employees, by sex and age group, according to size of establishment,[1] in major industry divisions (1-digit level of ISIC)[2] in non-agricultural sector, for the period _____
(Whole country)

Size of establishment[1] in major industry divisions (1-digit level of ISIC)[2]	Number of employees	Percentage distribution of employees by:																								
		Male													Female											
		All ages	— 15	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65 +	All ages	— 15	15-19	20-24	25-29	30-34	35-39	40-44	45-49	50-54	55-59	60-64	65 +
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28
Illustrations:																										
Mining and quarrying																										
Establishments with:																										
x to 19 employees																										
20 to 49 employees																										
50 to 99 employees																										
100 to 199 employees																										
200 or more employees																										
Manufacturing																										
Establishments with:																										
x to 19 employees																										
20 to 49 employees																										
50 to 99 employees																										
100 to 199 employees																										
200 or more employees																										
Electricity, gas and water																										
Establishments with:																										
x to 19 employees																										
20 to 49 employees																										
50 to 99 employees																										
100 to 199 employees																										
200 or more employees																										
Construction																										
Establishments with:																										
x to 19 employees																										
etc.																										

[1] The sizes of establishment shown in the table are purely illustrative; usually, small establishments below a certain size (*x* employees) are assumed not to be covered in the survey. [2] The data may be presented at the division, major group or group level of industry (2-, 3- or 4-digit level of ISIC) where possible.

Similar tables may be prepared for geographical regions where required, and also for additional cross-classifications according to full-time and part-time, regular, casual and seasonal, level of education, level of skill and length of service.

Table 2.1 *(a)*. List of occupations, according to major occupational groups, number of employees, by full-time and part-time, regular and casual, adult and juvenile, and sex, number of normal hours of work per week and number of days normally worked per week for each occupation, in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)[1] in non-agricultural sector, for the period _____
(Whole country)

List of occupations according to major occupational groups in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)[1]	Number of employees																											Number of normal hours of work per week	Number of days normally worked per week
	Total	Full-time														Part-time													
		Regular							Casual							Regular							Casual						
		Adult		Juvenile		Total			Adult		Juvenile		Total			Adult		Juvenile		Total			Adult		Juvenile		Total		
		M	F	M	F	M	F	T	M	F	M	F	M	F	T	M	F	M	F	M	F	T	M	F	M	F	M	F	T		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Illustrations:																															
Mining and quarrying																															
Coal mining																															
Professional, technical and related workers																															
1.																															
2.																															
3.																															
etc.																															
Administrative and managerial workers																															
1.																															
2.																															
3.																															
etc.																															
Clerical and related workers																															
1.																															
2.																															
3.																															
etc.[2]																															

[1] The data may be presented at the group level of industry (4-digit level of ISIC) where possible. [2] The table continues, showing all occupations according to major occupational categories in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC) covered in the survey.

Similar tables may be prepared for geographical regions where required.

Table 2.1 *(b)*. List of occupations, according to major occupational groups, number of employees, by full-time and part-time, regular and casual, adult and juvenile, and sex, number of normal hours of work per week and number of days normally worked per week, for each occupation, by size of establishment[1] in major industry divisions (1-digit level of ISIC)[2] in non-agricultural sector, for the period _____
(Whole country)

List of occupations according to major occupational groups by size of establishment[1] in major industry divisions (1-digit level of ISIC)[2]	Number of employees																											Number of normal hours of work per week	Number of days normally worked per week
	Total	Full-time														Part-time													
		Regular							Casual							Regular							Casual						
		Adult		Juvenile		Total			Adult		Juvenile		Total			Adult		Juvenile		Total			Adult		Juvenile		Total		
		M	F	M	F	M	F	T	M	F	M	F	M	F	T	M	F	M	F	M	F	T	M	F	M	F	M	F	T		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	32
Illustrations:																															
Manufacturing																															
Establishments with:																															
x to 19 employees																															
Professional, technical and related workers																															
1.																															
2.																															
3.																															
etc.																															
Administrative and managerial workers																															
1.																															
2.																															
3.																															
etc.																															
Clerical and related workers																															
1.																															
2.																															
3.																															
etc.[3]																															

[1] The sizes of establishment shown in the table are purely illustrative; usually, small establishments below a certain size (*x* employees) are assumed not to be covered in the survey. [2] The data may be presented at the division, major group or group level of industry (2-, 3- or 4-digit level of ISIC) where possible. [3] The table continues, showing each occupation according to major occupational group by size of establishment in all major industry divisions (1-digit level of ISIC) covered in the survey.

Similar tables may be prepared for geographical regions where required.

Table 2.2*(a)*. Percentage distribution of employees in each occupation, according to major occupational groups, by sex, full-time and part-time, and regular, casual and seasonal, in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)[1] in non-agricultural sector, for the period _____
(Whole country)

Occupations according to major occupational groups in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)[1]	Number of employees	Percentage distribution of employees by:													
		Male							Female						
		Total	Full-time			Part-time			Total	Full-time			Part-time		
			Regular	Casual	Seasonal	Regular	Casual	Seasonal		Regular	Casual	Seasonal	Regular	Casual	Seasonal
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Illustrations:															
Electricity, gas and water															
Electricity, gas and steam															
Professional, technical and related workers															
1.															
2.															
3.															
etc.															
Administrative and managerial workers															
1.															
2.															
3.															
etc.															
Clerical and related workers															
1.															
2.															
3.															
etc.															
Sales workers															
1.															
2.															
3.															
etc.[2]															

[1] The data may be presented at the industry group level (4-digit level of ISIC) where possible. [2] The table continues, showing occupations according to major occupational groups in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC) covered in the survey.

Similar tables may be prepared for geographical regions where required, and also for additional cross-classifications according to age group, level of education, level

Table 2.2*(b)*. Percentage distribution of employees in each occupation according to major occupational groups, by sex, full-time and part-time, and regular, casual and seasonal, by size of establishment[1] in major industry divisions (1-digit level of ISIC)[2] in non-agricultural sector, for the period _____
(Whole country)

Occupations according to major occupational groups by size of establishment[1] in major industry divisions (1-digit level of ISIC)[2]	Number of employees	Percentage distribution of employees by:													
		Male							Female						
		Total	Full-time			Part-time			Total	Full-time			Part-time		
			Regular	Casual	Seasonal	Regular	Casual	Seasonal		Regular	Casual	Seasonal	Regular	Casual	Seasonal
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Illustrations:															
Construction															
Establishments with:															
x to 19 employees															
Professional, technical and related workers															
1.															
2.															
3.															
etc.															
Administrative and managerial workers															
1.															
2.															
3.															
etc.															
Clerical and related workers															
1.															
2.															
3.															
etc.[3]															

[1] The sizes of establishment shown in the table are purely illustrative; usually, small establishments below a certain size (*x* employees) are assumed not to be covered by the survey. [2] The data may be presented at the division, major group or group level of industry (2-, 3- or 4-digit level of ISIC) where possible. [3] The table continues, showing all occupations according to major occupational groups in major industry divisions (1-digit level of ISIC) covered in the survey.

Similar tables may be prepared for geographical regions where required, and also for additional cross-classifications according to age group, level of education, level of skill and length of service.

Table 3.1 *(a)*. Average occupational wage rates per time unit (hour/day/week/month/etc. — specify), total and composition, for wage earners (time-rated and piece-rated), by occupation, according to major occupational groups, in major industry groups (3-digit level of ISIC)[1] in non-agricultural sector, for the period _____
(Whole country)

Occupations according to major occupational groups in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)[1]	Wage earners											
	Time-rated						Piece-rated[2]					
	Number of time-rated wage earners	Average wage rate (currency)	Composition of average wage rate			Standard error of average wage rate	Number of piece-rated wage earners	Average wage rate (currency)	Composition of average wage rate			Standard error of average wage rate
			Basic wage	Cost-of-living or dearness allowance	Other regular allowances				Basic wage	Cost-of-living or dearness allowance	Other regular allowances	
1	2	3	4	5	6	7	8	9	10	11	12	13
Illustrations:												
Wholesale and retail trade, etc.												
Wholesale trade:												
Sales workers												
1.												
2.												
3.												
etc.												
Service workers												
1.												
2.												
3.												
etc.												
Production and related workers, transport equipment operators and labourers												
1.												
2.												
3.												
etc.[3]												

[1] The data may be presented at the group level of industry (4-digit level of ISIC) where possible. [2] Data are shown for piece-rated wage earners only in those industries and occupations where they are in significant numbers. [3] The table continues, showing occupations according to major occupational groups in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC) covered in the survey.

Similar tables may be prepared for geographical regions where required, and also for additional cross-classifications according to sex, age group, full-time and part-time, regular, casual and seasonal, level of education, level of skill and length of service.

Table 3.1 *(b)*. Average occupational wage rates per time unit (hour/day/week/month/etc. — specify), total and composition, for wage earners (time-rated and piece-rated) by occupation, according to major occupational groups, by size of establishment[1] in major industry divisions (1-digit level of ISIC)[2] in non-agricultural sector, for the period _____
(Whole country)

Occupations according to major occupational groups by size of establishment[1] in major industry divisions (1-digit level of ISIC)[2]	Wage earners											
	Time-rated						Piece-rated[3]					
	Number of time-rated wage earners	Average wage rate (currency)	Composition of average wage rate: Basic wage	Composition of average wage rate: Cost-of-living or deamess allowance	Composition of average wage rate: Other regular allowances	Standard error of average wage rate	Number of piece-rated wage earners	Average wage rate (currency)	Composition of average wage rate: Basic wage	Composition of average wage rate: Cost-of-living or deamess allowance	Composition of average wage rate: Other regular allowances	Standard error of average wage rate
1	2	3	4	5	6	7	8	9	10	11	12	13
Illustrations:												
Transport, storage and communications												
Establishments with:												
x to 19 employees												
Sales workers												
1.												
2.												
3.												
etc.												
Service workers												
1.												
2.												
3.												
etc.												
Production and related workers, transport equipment operators and labourers												
etc.[4]												

[1] The sizes of establishment shown in the table are purely illustrative; usually small establishments below a certain size (*x* employees) are assumed not to be covered in the survey. [2] The data may be presented at the division, major group or group level of industry (2-, 3- or 4-digit level of ISIC) where possible. [3] Data are shown for piece-rated wage earners only in those industries and occupations where they are in significant numbers. [4] The table continues, showing occupations according to major occupational groups in major industry divisions (1-digit level of ISIC) covered in the survey.

Similar tables may be prepared for geographical regions where required, and also for additional cross-classifications according to sex, age group, full-time and part-time, regular, casual and seasonal, level of education, level of skill and length of service.

Table 3.2*(a)*. Average occupational salary rates per time unit (month/year/etc. — specify), total and composition, for salaried employees, by occupation, according to major occupational groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)[1] in non-agricultural sector, for the period _____
(Whole country)

Occupations according to major occupational groups in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)[1]	Salaried employees											
	Male						Female					
	Number of employees	Average salary rate (currency)	Composition of average salary rate			Standard error of average salary rate	Number of employees	Average salary rate (currency)	Composition of average salary rate			Standard error of average salary rate
			Basic salary	Cost-of-living or dearness allowance	Other regular allowances				Basic salary	Cost-of-living or dearness allowance	Other regular allowances	
1	2	3	4	5	6	7	8	9	10	11	12	13
Illustrations:												
Financing, insurance, real estate, etc.												
Financial institutions												
Professional, technical and related workers												
1.												
2.												
3.												
etc.												
Administrative and managerial workers												
1.												
2.												
3.												
etc.												
Clerical and related workers												
1.												
2.												
3.												
etc.[2]												

[1] The data may be presented at the group level of industry (4-digit level of ISIC) where possible. [2] The table continues, showing occupations according to major occupational groups in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC) covered in the survey.

Similar tables may be prepared for geographical regions where required, and also for additional cross-classifications according to age group, full-time and part-time, regular, casual and seasonal, level of education and length of service.

Table 3.2*(b)*. Average occupational salary rates per time unit (month/year/etc. — specify), total and composition, for salaried employees, by occupation, according to major occupational groups, and by sex, according to size of establishment[1] in major industry divisions (1-digit level of ISIC)[2] in non-agricultural sector, for the period _____
(Whole country)

Occupations according to major occupational groups by size of establishment[1] in major industry divisions (1-digit level of ISIC)[2]	Salaried employees											
	Male						Female					
	Number of employees	Average salary rate (currency)	Composition of average salary rate			Standard error of average salary rate	Number of employees	Average salary rate (currency)	Composition of average salary rate			Standard error of average salary rate
			Basic salary	Cost-of-living or dearness allowance	Other regular allowances				Basic salary	Cost-of-living or dearness allowance	Other regular allowances	
1	2	3	4	5	6	7	8	9	10	11	12	13
Illustrations:												
Community, social and personal services												
Establishments with:												
x to 19 employees												
Professional, technical and related workers												
1.												
2.												
3.												
etc.												
Administrative and managerial workers												
1.												
2.												
3.												
etc.[3]												

[1] The sizes of establishment shown in the table are purely illustrative; usually, small establishments below a certain size (*x* employees) are assumed not to be covered in the survey. [2] The data may be presented at the division, major group or group level of industry (2-, 3- or 4-digit level of ISIC) where possible. [3] The table continues, showing occupations according to major occupational groups, by size of establishment, in major industry divisions (1-digit level of ISIC) covered in the survey.

Similar tables may be prepared for geographical regions where required, and also for additional cross-classifications according to age group, full-time and part-time, regular, casual and seasonal, level of education and length of service.

Table 4.1 *(a)*. Average occupational earnings per time unit (hour/day/week/etc. — specify), total and composition, of wage earners, by occupation, according to major occupational groups, in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC) in non-agricultural sector, for the period _____
(Whole country)

Occupations according to major occupational groups in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)[1]	Number of wage earners	Average earnings (currency)	Composition of average earnings																				Standard error of average earnings
			Direct wages										Remuneration for time not worked				Bonuses and gratuities paid regularly	Earnings in kind					Irregularly paid bonuses and gratuities	
			Pay for normal time worked	Premium pay for overtime	Premium pay for shift work, etc.	Incentive pay	Other regular bonuses	Family allowances	Cost-of-living or dearness allowance	House-rent allowance	Other	Total	Annual vacation, etc.	Public and other holidays	Other time off with pay	Total		Food and drink	Fuel	Free or subsidised housing	Other	Total		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Illustrations:																								
Mining and quarrying																								
Coal mining																								
Sales workers																								
1.																								
2.																								
3.																								
etc.																								
Service workers																								
1.																								
2.																								
3.																								
etc.																								
Production and related workers, transport equipment operators and labourers																								
1.																								
2.																								
3.																								
etc.[2]																								

[1] The data may be presented at the group level of industry (4-digit level of ISIC) where possible. [2] The table continues, showing occupations according to major occupational groups in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC) covered in the survey.

Similar tables may be prepared for geographical regions where required, and also for additional cross-classifications according to sex, age group, full-time and part-time, regular, casual and seasonal, level of education and length of service.

Separate tables may be prepared for time-rated wage earners and piece-rated wage earners for those industries and occupations where piece-rated wage earners are

according to major occupational groups, by size of establishment[1] in major industry divisions (1-digit level of ISIC)[2] in non-agricultural sector, for the period _____
(Whole country)

Occupations according to major occupational groups by size of establishment[1] in major industry divisions (1-digit level of ISIC)[2]	Number of wage earners	Average earnings (currency)	Composition of average earnings																					Standard error of average earnings
			Direct wages										Remuneration for time not worked				Bonuses and gratuities paid regularly	Earnings in kind					Irregularly paid bonuses and gratuities	
			Pay for normal time worked	Premium pay for overtime	Premium pay for shift work, etc.	Incentive pay	Other regular bonuses	Family allowances	Cost-of-living or dearness allowance	House-rent allowance	Other	Total	Annual vacation, etc.	Public and other holidays	Other time off with pay	Total		Food and drink	Fuel	Free or subsidised housing	Other	Total		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Illustrations:																								
Manufacturing:																								
Establishments with *x* to 19 employees																								
Sales workers																								
1.																								
2.																								
3.																								
etc.																								
Service workers																								
1.																								
2.																								
3.																								
etc.																								
Production and related workers, transport equipment operators																								
etc.[3]																								

[1] The sizes of establishment shown in the table are purely illustrative; usually, small establishments below a certain size (*x* employees) are assumed not to be covered by the survey. [2] The data may be presented at the division, major group or group level of industry (2-, 3- or 4-digit level of ISIC) where possible. [3] The table continues, showing occupations according to major occupational groups in major industry divisions (1-digit level of ISIC) covered in the survey.

Similar tables may be prepared for geographical regions where required, and also for additional cross-classifications according to sex, age group, full-time and part-time, regular and casual and seasonal, level of education, level of skill and length of service.

Separate tables may be prepared for time-rated wage earners and piece-rated wage earners for those industries and occupations where piece-rated wage earners are in significant numbers.

Table 4.2*(a)*. Average occupational earnings per time unit (month/year/etc. — specify), total and composition, of salaried employees, by occupation, according to major occupational groups, in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)[1] in non-agricultural sector, for the period _____
(Whole country)

Occupations according to major occupational groups in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)[1]	Number of salaried employees	Average earnings (currency)	Composition of average earnings																					Standard error of average earnings
			Direct salaries										Remuneration for time not worked				Bonuses and gratuities paid regularly	Earnings in kind					Irregularly paid bonuses and gratuities	
			Pay for normal time worked	Premium pay for overtime	Premium pay for shift work, etc.	Incentive pay	Other regular bonuses	Family allowances	Cost-of-living or dearness allowance	House-rent allowance	Other	Total	Annual vacation, etc.	Public and other holidays	Other time off with pay	Total		Food and drink	Fuel	Free or subsidised housing	Other	Total		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Illustrations:																								
Electricity, gas and water																								
Electricity, gas and steam																								
Professional, technical and related workers																								
1.																								
2.																								
3.																								
etc.																								
Administrative and managerial workers																								
1.																								
2.																								
3.																								
etc.																								
Clerical and related workers																								
1.																								
2.																								
3.																								
etc.[2]																								

[1] The data may be presented at the industry group level (4-digit level of ISIC) where possible. [2] The table continues, showing occupations according to major occupational groups by major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC) covered in the survey.

Similar tables may be prepared for geographical regions where required, and also for additional cross-classifications according to sex, age group, full-time and part-time, regular, casual and seasonal, level of education and length of service.

Table 4.2*(b)*. Average occupational earnings per time unit (month, year etc. — specify), total and composition, of salaried employees, by occupation according to major occupational groups, by size of establishment[1] in major industry divisions (1-digit level of ISIC)[2] in non-agricultural sector, for the period _____
(Whole country)

Occupations according to major occupational groups by size of establishment[1] in major industry divisions (1-digit level of ISIC)[2]	Number of salaried employees	Average earnings (currency)	Composition of average earnings																				Standard error of average earnings
			Direct salaries										Remuneration for time not worked				Bonuses and gratuities paid regularly	Earnings in kind					Irregularly paid bonuses and gratuities	
			Pay for normal time worked	Premium pay for overtime	Premium pay for shift work, etc.	Incentive pay	Other regular bonuses	Family allowances	Cost-of-living or dearness allowance	House-rent allowance	Other	Total	Annual vacation, etc.	Public and other holidays	Other time off with pay	Total		Food and drink	Fuel	Free or subsidised housing	Other	Total		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Illustrations:																								
Construction																								
Establishments with: *x* to 19 employees																								
Professional, technical and related workers																								
1.																								
2.																								
3.																								
etc.																								
Administrative and managerial workers																								
1.																								
2.																								
3.																								
etc.																								
Clerical and related workers																								
1.																								
2.																								
3.																								
etc.[3]																								

[1] The sizes of establishment shown in the table are purely illustrative; usually, small establishments below a certain size (*x* employees) are assumed not to be covered in the survey. [2] The data may be presented at the division, major group or group level of industry (2-, 3- or 4-digit level of ISIC) where possible. [3] The table continues, showing occupations according to major occupational groups, by size of establishment in major industry divisions (1-digit level of ISIC) covered in the survey.

Similar tables may be prepared for geographical regions where required, and also for additional cross-classifications according to sex, age group, full-time and part-time, regular, casual and seasonal, level of education and length of service.

Table 5.1 *(a)*. Average occupational hours of work per week, total and composition, of wage earners, by occupations according to major occupational groups in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)[1] in non-agricultural sector, for the period _____
(Whole country)

Occupations according to major occupational groups in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)[1]	Number of wage earners	Average hours of work per week	Composition of average hours of work per week									Standard error of average hours of work per week
			Hours actually worked			Hours paid for but not worked						
			Normal time hours	Overtime hours	Total	Vacation	Holiday	Sick leave	Civic or personal leave	Other paid leave	Total	
1	2	3	4	5	6	7	8	9	10	11	12	13
Illustrations:												
Wholesale and retail trade, etc.												
Wholesale trade												
Sales workers												
1.												
2.												
3.												
etc.												
Service workers												
1.												
2.												
3.												
etc.												
Production and related workers, transport equipment operators and labourers												
1.												
2.												
3.												
etc.												
Retail trade												
Sales workers												
etc.[2]												

[1] The data may be presented at the group level of industry (4-digit level of ISIC) where possible. [2] The table continues, showing occupations according to major occupational groups in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC) covered in the survey.

Similar tables may be prepared for geographical regions where required, and also for additional cross-classifications according to sex, age group, full-time and part-time, regular and casual and seasonal.

Separate tables may be prepared for time-rated wage earners and piece-rated wage earners for those industries and occupations where piece-rated wage earners are in significant numbers.

Similar tables may be prepared to show average occupational hours of work of salaried employees [illegible]

Table 5.1 *(b)*. Average occupational hours of work per week, total and composition, of wage earners, by occupation according to major occupational groups, by size of establishment[1] in major industry divisions (1-digit level of ISIC)[2] in non-agricultural sector, for the period _____
(Whole country)

Occupations according to major occupational groups by size of establishment[1] in major industry divisions (1-digit level of ISIC)[2]	Number of wage earners	Average hours of work per week (number)	Composition of average hours of work per week									Standard error of average hours of work per week
			Hours actually worked			Hours paid for but not worked						
			Normal time hours	Overtime hours	Total	Vacation	Holiday	Sick leave	Civic or personal leave	Other paid leave	Total	
1	2	3	4	5	6	7	8	9	10	11	12	13
Illustrations:												
Transport, storage and communication												
Establishments with:												
x to 19 employees												
Sales workers												
1.												
2.												
3.												
etc.												
Service workers												
1.												
2.												
3.												
etc.												
Production and related workers, transport equipment operators and labourers												
1.												
etc.[3]												

[1] The sizes of establishment shown in the table are purely illustrative; usually, small establishments below a certain size (*x* employees) are assumed not to be covered in the survey. [2] The data may be presented at the division, major group or group level of industry (2-, 3- or 4-digit level of ISIC) where possible. [3] The table continues, showing occupations according to major occupational groups by size of establishment in major industry divisions (1-digit level of ISIC) covered in the survey.

Similar tables may be prepared for geographical regions where required, and also for additional cross-classifications according to sex, age group, full-time and part-time, regular and casual and seasonal.

Separate tables may be prepared for time-rated wage earners and piece-rated wage earners for those industries and occupations where piece-rated wage earners are in significant numbers.

Similar tables may be prepared to show average occupational hours of work of salaried employees by occupation and size of establishment.

Table 6.1 *(a)*. Average wage rate per time unit (hour/day/week/etc. — specify) and percentage composition of average wage rate of wage earners (time-rated and piece-rated) according to level of wage rate per time unit, in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)[1] in non-agricultural sector, for the period _____
(Whole country)

Levels of wage rates in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)[1]	Wage earners											
	Time-rated						Piece-rated[2]					
	Number of employees	Average wage rate (currency)	Percentage composition of average wage rate			Standard error of average wage rate	Number of employees	Average wage rate (currency)	Percentage composition of average wage rate			Standard error of average wage rate
			Basic wage	Cost-of-living or dearness allowance	Other regular allowances				Basic wage	Cost-of-living or dearness allowance	Other regular allowances	
1	2	3	4	5	6	7	8	9	10	11	12	13
Illustrations:												
Financing, insurance, etc.												
Financial institutions												
Level 1												
Level 2												
Level 3												
etc.												
Insurance												
Level 1												
Level 2												
Level 3												
etc.												
Real estate												
Level 1												
etc.[3]												

[1] The data may be presented at the group level of industry (4-digit level of ISIC) where possible. [2] The data are presented for piece-rated workers only in those industries where they are in significant numbers. [3] The table continues, showing levels of wage rates in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC) covered in the survey.

Similar tables may be prepared for geographical regions where required, and also for additional cross-classifications according to sex, age group, full-time and part-time, regular, casual and seasonal, level of education, level of skill and length of service.

Similar tables may be prepared to show average salary rates of salaried employees according to levels of salary rates.

Table 6.1 *(b)*. Average wage rates per time unit (hour/day/week/etc. — specify) and percentage composition of average wage rates of wage earners (time-rated and piece-rated) according to level of wage rate per time unit, by size of establishment[1] in major industry divisions (1-digit level of ISIC)[2] in non-agricultural sector, for the period _____
(Whole country)

Levels of wage rates by size of establishment[1] in major industry divisions (1-digit level of ISIC)[2]	Wage earners											
	Time-rated						Piece-rated[3]					
	Number of employees	Average wage rate (currency)	Percentage composition of average wage rate			Standard error of average wage rate	Number of employees	Average wage rate (currency)	Percentage composition of average wage rate			Standard error of average wage rate
			Basic wage	Cost-of-living or dearness allowance	Other regular allowances				Basic wage	Cost-of-living or dearness allowance	Other regular allowances	
1	2	3	4	5	6	7	8	9	10	11	12	13
Illustrations:												
Mining and quarrying												
Establishments with:												
x to 19 employees												
Level 1												
Level 2												
Level 3												
etc.												
Establishments with:												
20 to 49 employees												
Level 1												
Level 2												
Level 3												
etc.[4]												

[1] The sizes of establishment shown in the table are purely illustrative; usually, small establishments below a certain size (*x* employees) are assumed not to be covered in the survey. [2] The data may be presented at the division, major group or group level of industry (2-, 3- or 4-digit level of ISIC) where possible. [3] The data are presented for piece-rated wage earners only in those industries where they are in significant numbers. [4] The table continues, showing all levels of wage rate by size of establishment in major industry divisions (1-digit level of ISIC) in the survey.

Similar tables may be prepared for geographical regions where required, and also for additional cross-classifications according to sex, age group, full-time and part-time, regular, casual and seasonal, level of education, level of skill and length of service.

Similar tables may be prepared to show average salary rates of salaried employees according to level of salary rates and size of establishments.

Table 6.2*(a)*. Percentage distribution of wage earners (time-rated and piece-rated), by sex and full-time and part-time, according to level of wage rates, in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)[1] in non-agricultural sector, for the period _____
(Whole country)

Levels of wage rates in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)[1]	Number of wage earners	Percentage distribution of wage earners by:													
		Time-rated							Piece-rated[2]						
		Male			Female			Total time-rated	Male			Female			Total piece-rated
		Full-time	Part-time	Total	Full-time	Part-time	Total		Full-time	Part-time	Total	Full-time	Part-time	Total	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Illustrations:															
Transport, storage and communications															
Land transport															
Level 1															
Level 2															
Level 3															
etc.															
Water transport															
Level 1															
Level 2															
Level 3															
etc.															
Air transport															
Level 1															
Level 2															
Level 3															
etc.[3]															

[1] The data may be presented at the industry group level (4-digit level of ISIC) where possible. [2] The data are presented for piece-rated wage earners only for those industries where they are in significant numbers. [3] The table continues, showing all levels of wage rates in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC) covered in the survey.

Similar tables may be prepared for geographical regions where required, and also for additional cross-classifications according to age group, regular, casual and seasonal, level of education, level of skill and length of service.

Similar tables may be prepared to show the percentage distribution of salaried employees according to levels of salary rates.

Table 6.2*(b)*. Percentage distribution of wage earners (time-rated and piece-rated), by sex and full-time and part-time, according to level of wage rates, by size of establishment[1] in major industry divisions (1-digit level of ISIC)[2] in non-agricultural sector, for the period _____ (Whole country)

Levels of wage rates by size of establishment[1] in major industry divisions (1-digit level of ISIC)[2]	Number of wage earners	Percentage distribution of wage earners by:													
		Time-rated							Piece-rated[3]						
		Male			Female			Total time-rated	Male			Female			Total piece-rated
		Full-time	Part-time	Total	Full-time	Part-time	Total		Full-time	Part-time	Total	Full-time	Part-time	Total	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Illustrations:															
Construction															
Establishments with: *x* to 19 employees															
Level 1															
Level 2															
Level 3															
etc.															
Establishments with: 20 to 49 employees															
Level 1															
Level 2															
Level 3															
etc.															
Establishments with: 50 to 99 employees															
etc.[4]															

[1] The sizes of establishment shown in the table are purely illustrative; usually, small establishments below a certain size (*x* employees) are assumed not to be covered in the survey. [2] The data may be presented at the division, major group or group level of industry (2-, 3- or 4-digit level of ISIC) where possible. [3] The data are presented for piece-rated wage earners only for those industries where they are in significant numbers. [4] The table continues, showing all levels of wage rates by size of establishment in major industry divisions (1-digit level of ISIC) covered in the survey.

Similar tables may be prepared for geographical regions where required, and also for additional cross-classifications according to age group, regular, casual and seasonal, level of education, level of skill and length of service.

Similar tables may be prepared to show the percentage distribution of salaried employees according to levels of salary rates and size of establishment.

Table 7.1 *(a)*. Average earnings per time unit (day/week/month/etc. — specify) and percentage composition of average earnings of wage earners, according to level of earnings, in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)[1] in non-agricultural sector, for the period _____
(Whole country)

Levels of earnings in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)[1]	Number of wage earners	Average earnings (currency)	Percentage composition of average earnings																					Standard error of average earnings
			Direct wages										Remuneration for time not worked				Bonuses and gratuities paid regularly	Earnings in kind					Irregularly paid bonuses and gratuities	
			Pay for normal time worked	Premium pay for overtime	Premium pay for shift work, etc.	Incentive pay	Other regular bonuses	Family allowances	Cost-of-living or dearness allowance	House-rent allowance	Other	Total	Annual vacation, etc.	Public and other holidays	Other time off with pay	Total		Food and drink	Fuel	Free or subsidised housing	Other	Total		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Illustrations:																								
Manufacturing																								
Food manufacturing																								
Level 1																								
Level 2																								
Level 3																								
etc.																								
Beverage industries																								
Level 1																								
Level 2																								
Level 3																								
etc.																								
Tobacco manufactures																								
Level 1																								
Level 2																								
Level 3																								
etc.[2]																								

[1] The data may be presented at the group level of industry (4-digit level of ISIC) where possible. [2] The table continues, showing all levels of earnings according to major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC) covered in the survey.

Similar tables may be prepared for geographical regions where required, and also for additional cross-classifications according to sex, age group, full-time and part-time, regular, casual and seasonal, level of education, level of skill and length of service.

Separate tables may be prepared for time-rated wage earners and piece-rated wage earners for those industries where piece-rated wage earners are in significant numbers.

Similar tables may be prepared to show average earnings of salaried employees according to levels of earnings.

Table 7.1 *(b)*. Average earnings per time unit (hour/day/week/etc. — specify) and percentage composition of average earnings of wage earners, according to level of earnings, by size of establishment[1] in major industry divisions (1-digit level of ISIC)[2] in non-agricultural sector, for the period _____
(Whole country)

Levels of earnings by size of establishment[1] in major industry divisions (1-digit level of ISIC)[2]	Number of wage earners	Average earnings (currency)	Percentage composition of average earnings																					Standard error of average earnings
			Direct wages										Remuneration for time not worked				Bonuses and gratuities paid regularly	Earnings in kind					Irregularly paid bonuses and gratuities	
			Pay for normal time worked	Premium pay for overtime	Premium pay for shift work, etc.	Incentive pay	Other regular bonuses	Family allowances	Cost-of-living or dearness allowance	House-rent allowance	Other	Total	Annual vacation, etc.	Public and other holidays	Other time off with pay	Total		Food and drink	Fuel	Free or subsidised housing	Other	Total		
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25
Illustrations:																								
Electricity, gas and water																								
Establishments with:																								
x to 19 employees																								
Level 1																								
Level 2																								
Level 3																								
etc.																								
Establishments with:																								
20 to 49 employees																								
Level 1																								
Level 2																								
Level 3																								
etc.[3]																								

[1] The sizes of establishment shown in the table are purely illustrative; usually, small establishments below a certain size (*x* employees) are assumed not to be covered in the survey. [2] The data may be presented at the division, major group or group level of industry (2-, 3- or 4-digit level of ISIC) where possible. [3] The table continues, showing all levels of earnings according to sizes of establishments in major industry divisions (1-digit level of ISIC) covered in the survey.

Similar tables may be prepared for geographical regions where required, and also for additional cross-classifications according to sex, age group, full-time and part-time, regular, casual and seasonal, level of education, level of skill and length of service.

Separate tables may be prepared for time-rated wage earners and piece-rated wage earners for those industries where piece-rated wage earners are in significant numbers.

Similar tables may be prepared to show average earnings of salaried employees according to levels of earnings.

Table 7.2 *(a)*. Percentage distribution of wage earners (time-rated and piece-rated), by sex and full-time and part-time, according to level of earnings, in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)[1] in non-agricultural sector, for the period _____
(Whole country)

Levels of earnings in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)[1]	Number of wage earners	Percentage distribution of wage earners by:													
		Time-rated							Piece-rated[2]						
		Male			Female			Total time-rated	Male			Female			Total piece-rated
		Full-time	Part-time	Total	Full-time	Part-time	Total		Full-time	Part-time	Total	Full-time	Part-time	Total	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Illustrations:															
Manufacturing															
Food manufacturing															
Level 1															
Level 2															
Level 3															
etc.															
Beverage industries															
Level 1															
Level 2															
Level 3															
etc.															
Tobacco manufactures															
Level 1															
Level 2															
Level 3															
etc.[3]															

[1] The data may be presented at the group level of industry (4-digit level of ISIC) where possible. [2] The data are presented for piece-rated wage earners only for those industries where they are in significant numbers. [3] The table continues, showing all levels of earnings in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC) covered in the survey.

Similar tables may be prepared for geographical regions where required, and also for additional cross-classifications according to age group, regular, casual and seasonal, level of education, level of skill and length of service.

Similar tables may be prepared to show percentage distribution of salaried employees by levels of earnings.

Table 7.2*(b)*. Percentage distribution of wage earners (time-rated and piece-rated), by sex and full-time and part-time, according to level of earnings, by size of establishment[1] in major industry divisions (1-digit level of ISIC)[2] in non-agricultural sector, for the period _____ (Whole country)

Levels of earnings by size of establishment[1] in major industry divisions (1-digit level of ISIC)[2]	Number of wage earners	Percentage distribution of wage earners by:													
		Time-rated							Piece-rated[3]						
		Male			Female			Total time-rated	Male			Female			Total piece-rated
		Full-time	Part-time	Total	Full-time	Part-time	Total		Full-time	Part-time	Total	Full-time	Part-time	Total	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Illustrations:															
Community, social and personal services															
Establishments with: *x* to 19 employees															
Level 1															
Level 2															
Level 3															
etc.															
Establishments with: 20 to 49 employees															
Level 1															
Level 2															
Level 3															
etc.[4]															

[1] The sizes of establishment shown in the table are purely illustrative; usually, small establishments below a certain size (*x* employees) are assumed to be excluded from the coverage of the survey. [2] The data may be presented at the division, major group or group level of industry (2-, 3- or 4-digit level of ISIC) where possible. [3] The data are presented for piece-rated wage earners only for those industries where they are in significant numbers. [4] The table continues, showing all levels of earnings by size of establishment in all major industry divisions covered in the survey.

Similar tables may be prepared for geographical regions where required, and also for additional cross-classifications according to age group, regular, casual and seasonal, level of education, level of skill and length of service.

Similar tables may be prepared to show the percentage distribution of salaried employees according to levels of earnings.

Table 8.1 *(a)*. Percentage distribution of wage earners (time-rated and piece-rated), by sex and full-time and part-time, according to level of hours of work per week, in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)[1] in non-agricultural sector, for the period _____
(Whole country)

Levels of hours of work per week in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)[1]	Number of wage earners	Percentage distribution of wage earners by:													
		Time-rated							Piece-rated[2]						
		Male			Female			Total time-rated	Male			Female			Total piece-rated
		Full-time	Part-time	Total	Full-time	Part-time	Total		Full-time	Part-time	Total	Full-time	Part-time	Total	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Illustrations:															
Transport, storage and communications															
Land transport															
Less than 15 hours															
15 to 34 hours															
35 to 39 hours															
40 to 47 hours															
48 hours or over															
Water transport															
Less than 15 hours															
15 to 34 hours															
35 to 39 hours															
40 to 47 hours															
48 hours or over															
Air transport															
Less than 15 hours															
15 to 34 hours															
35 to 39 hours															
40 to 47 hours															
etc.[3]															

[1] The data may be presented at the group level of industry (4-digit level of ISIC) where possible. [2] The data are presented for piece-rated wage earners only for those industries where they are in significant numbers. [3] The table continues, showing levels of hours of work in all major industry groups (3-digit level of ISIC) in all major industry divisions (1-digit level of ISIC) covered in the survey.

Similar tables may be prepared for geographical regions where required, and also for additional cross-classifications according to regular, casual and seasonal.
Similar tables may be prepared to show the percentage distribution of salaried employees according to level of hours of work.

Table 8.1 *(b)*. Percentage distribution of wage earners (time-rated and piece-rated), by sex and full-time and part-time, according to level of hours of work per week, by size of establishment[1] in major industry divisions (1-digit level of ISIC)[2] in non-agricultural sector, for the period _____
(Whole country)

Levels of hours of work per week by size of establishment[1] in major industry divisions (1-digit level of ISIC)[2]	Number of wage earners	Percentage distribution of wage earners by:													
		Time-rated							Piece-rated[3]						
		Male			Female			Total time-rated	Male			Female			Total piece-rated
		Full-time	Part-time	Total	Full-time	Part-time	Total		Full-time	Part-time	Total	Full-time	Part-time	Total	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Illustrations:															
Construction															
Establishments with:															
x to 19 employees															
Less than 15 hours															
15 to 34 hours															
35 to 39 hours															
40 to 47 hours															
48 hours or over															
Establishments with:															
20 to 49 employees															
Less than 15 hours															
15 to 34 hours															
35 to 39 hours															
40 to 47 hours															
48 hours or more															
etc.[4]															

[1] The sizes of establishment shown in the table are purely illustrative; usually, small establishments below a certain size (*x* employees) are assumed not to be covered in the survey. [2] The data may be presented at the division, major group and group levels of industry (2-, 3- or 4-digit level of ISIC) where possible. [3] The data are presented for piece-rated wage earners only for those industries where they are in significant numbers. [4] The table continues, showing levels of hours of work by size of establishment in all major industry divisions (1-digit level of ISIC) covered in the survey.

Similar tables may be prepared for geographical regions where required, and also for additional cross-classifications according to regular, casual and seasonal.
Similar tables may be prepared to show the percentage distribution of salaried employees according to levels of hours of work.

Table 9.1 *(a)*. Percentage distribution of wage earners, by sex, according to level of earnings and level of hours of work per week, in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)[1] in non-agricultural sector, for the period _____. (Whole country)

Levels of earnings in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC)[1]	Number of wage earners	Percentage distribution of wage earners														
		Under 15 hours			15 to 34 hours			35 to 39 hours			40 to 47 hours			48 hours or over		
		Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Illustrations:																
Wholesale and retail trade etc.																
Wholesale trade																
Level 1																
Level 2																
Level 3																
etc.																
Retail trade																
Level 1																
Level 2																
Level 3																
etc.																
Restaurants, cafés, etc.																
Level 1																
Level 2																
Level 3																
etc.																
Hotels, etc.																
etc.[2]																

[1] The data may be presented at the group level of industry (4-digit level of ISIC) where possible. [2] The table continues, showing levels of earnings in major industry groups (3-digit level of ISIC) in major industry divisions (1-digit level of ISIC) covered in the survey.

Similar tables may be prepared for geographical regions where required, and also for additional cross-classifications according to age group, full-time and part-time, regular, casual and seasonal, level of education, level of skill and length of service.

Separate tables may be prepared for time-rated wage earners and piece-rated wage earners for those industries where piece-rated wage earners are in significant numbers.

Similar tables may be prepared to show the percentage distribution of salaried employees according to levels of earnings and hours of work.

Table 9.1 *(b)*. Percentage distribution of wage earners, by sex, according to level of earnings and level of hours of work per week, by size of establishment[1] in major industry divisions (1-digit level of ISIC)[2] in non-agricultural sector, for the period _____
(Whole country)

Levels of earnings by size of establishment[1] in major industry divisions (1-digit level of ISIC)[2]	Number of wage earners	Percentage distribution of wage earners														
		Under 15 hours			15 to 34 hours			35 to 39 hours			40 to 47 hours			48 hours or over		
		Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes	Male	Female	Both sexes
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17
Illustrations:																
Construction																
Establishments with: *x* to 19 employees																
Level 1																
Level 2																
Level 3																
etc.																
Establishments with: 20 to 49 employees																
Level 1																
Level 2																
Level 3																
etc.																
Establishments with: 50 to 99 employees																
Level 1																
etc.[3]																

[1] The sizes of establishment shown in the table are purely illustrative; usually, small establishments below a certain size (*x* employees) are assumed not to be covered in the survey. [2] The data may be presented at the division, major group or group level of industry (2-, 3- or 4-digit level of ISIC) where possible. [3] The table continues, showing levels of earnings by size of establishment in all major industry divisions (1-digit level of ISIC) covered in the survey.

Similar tables may be prepared for geographical regions where required, and also for additional cross-classifications according to age group, full-time and part-time, regular, casual and seasonal, level of education, level of skill and length of service.

Separate tables may be prepared for time-rated wage earners and piece-rated wage earners for those industries where piece-rated wage earners are in significant numbers.

Similar tables may be prepared to show the percentage distribution of salaried employees according to levels of earnings and hours of work.

Agricultural wages statistics

10

The importance of the agricultural sector, in terms of persons employed and share in the gross national product, varies greatly between countries at different stages of development. In almost all countries hired labour plays a very significant role in agriculture, although its relative importance in the agricultural labour force differs from country to country. Nevertheless, in most countries statistical information on wages and hours of work of agricultural employees is deficient, both in quantity and quality, compared with wages statistics available for the non-agricultural sector. There are several reasons for this: some can be attributed to problems of concepts and definitions, while others are connected with practical difficulties of data collection. In addition, the production of agricultural wages statistics is much more difficult and costly than it is for their equivalent in the non-agricultural sector.

The Twelfth ICLS (1973) examined the special problems concerning the collection and compilation of statistics of wages and hours of work in agriculture. The Conference recommended, within the framework of the integrated system, a separate programme for the collection and compilation of agricultural wages statistics covering wage rates, earnings, labour cost, wage structure and distribution and hours of work, adapted to the requirements of both developed and developing countries. The present chapter is designed to contribute to the implementation of the recommendation of the Twelfth Conference concerning agricultural wages statistics. In particular, it deals with: demarcation of the agricultural sector for purposes of collection and compilation of statistics of wages and hours of work; review of the concepts and definitions to be used in wages statistics programmes in agriculture; and adaptation of the wages statistics programmes to suit the conditions of countries, in particular developing countries. The discussion on the above topics is preceded by a review of the chief characteristics of the agricultural sector in countries with differing socio-economic systems and at different levels of development and a review of the national practices in the collection and compilation of agricultural wages statistics.

Characteristics of employment and wage payment systems in agriculture

The problems to be tackled in connection with the collection and compilation of wages statistics in agriculture in a given country are linked with the structure and organisation of agricultural production, seasonal and other characteristics of agricultural operations, the technology used and the employment pattern and wage payment systems in force in the agricultural sector. From the standpoint of collection and compilation of

wages statistics, three broad groups of countries may be distinguished: *(a)* developing countries of Asia, Africa and Latin America; *(b)* countries with developed market economies, and *(c)* countries with centrally planned economies. The salient characteristics of employment and wage payment systems in agriculture in these groups of countries, which have a bearing on the collection and compilation of wages statistics, are reviewed below.

Developing countries

It should be pointed out at the start that great differences in social and economic conditions exist between developing countries, which may also be at different stages of development. However, agriculture is a predominant economic activity in most developing countries. Usually there exist two sectors of agriculture: a traditional sector of peasant farms, mostly of relatively small scale but accounting for the greater part of the agricultural labour force; and a smaller "modern" sector of relatively highly organised plantations and farms, often of a large scale, growing mostly commercial crops, such as tea, coffee, cocoa, coconuts, ground-nuts, bananas, sugar, rubber, sisal, corn or engaged in forestry, etc., or specialising in a particular kind of livestock raising, such as cattle ranches or fishing co-operatives, etc.

Wage earners on these plantations, commercial farms and ranches are usually employed on a regular or permanent basis, although casual labourers are also engaged for certain specific tasks, including harvesting. The employees may perform different tasks according to the different seasons. In some countries certain types of workers are employed by contractors for work on larger farms. Employees in this sector may often be organised in trade unions which engage in collective bargaining and may frequently be protected by labour legislation with regard to wages and conditions of work; in some cases they are also covered by social security schemes. Wages are paid mainly in cash, although payments in kind in the form of rent-free or subsidised housing, food and other articles of consumption are not uncommon. Wages are often fixed in this sector by wage boards or by other statutory bodies; sometimes they are fixed on the basis of collective bargaining. The employer-employee relationships, wage payment systems and other conditions of work are thus more or less similar to those applying in manufacturing and some other branches of the economy. Plantations and commercial farms usually maintain payrolls and other records which could serve as sources of wages and related statistics. However, on some large-scale farms and plantations, in certain countries, the labour force employed is predominantly casual or seasonal, since the nature of the work performed does not require a large number of permanent or regular employees. In these cases the employees are not generally organised in trade unions, nor do they enjoy the conditions of work available to regular employees on other large-scale farms or plantations. Thus, although the labour is usually wage earning, and although the plantations and farms may be on a large scale, these cannot be considered as belonging to the "modern" or organised sector of agriculture.

In the traditional sector of agriculture the bulk of the labour input for agricultural and livestock production is supplied by self-employed farmers and members of their families. The operations are mostly carried out by manual labour. The intensity of work during different periods of the year is determined by the seasonal cycle and by climatic conditions. The demand for labour may outstrip the supply during peak periods, while only intermittent work may be performed in the off-seasons. The wage-earning labour force in this sector consists mainly of temporary and casual employees who are engaged by employers on a day-to-day basis and who move from one employer to another during the same season. Some peasant farmers also seek occasional wage employment in agriculture or elsewhere in order to supplement their incomes, while, on the other hand, some workers who depend mainly on agricultural wages have small plots of land from which

they derive some additional income. During slack seasons they, too, may sometimes take up temporary non-agricultural wage employment.

The wage payment pattern in the traditional sector of agriculture is governed to a considerable degree by local practices and customs, often without much regard to economic considerations, and is influenced by local systems of reciprocal relations and services. Modes of wage payment also vary widely. Wages are paid wholly in cash or wholly in kind, or partly in cash and partly in kind, by the day/week/month or on a piece rate basis and with or without supplements or perquisites. There may be wide disparities in wage levels between regions, seasons or crops. Casual or temporary workers are generally paid by the day, while permanent labourers are paid at longer intervals such as a month, the end of an agricultural season, etc., frequently with some advance payments. Permanent employees may in some cases earn a share of the production or be given some land for their own cultivation.

Wage payments in kind form an important feature of the wage payment systems in the traditional sector of agriculture in most developing countries. They may consist of supplements to cash wages in the form of food, drink, tobacco, grain, vegetables, hay or housing. In some countries labourers working on the harvesting of certain crops, especially cereals, are customarily paid their entire wages in the form of a share of the crop harvested. In some cases, such payments in kind are preferred by employees, particularly when they receive a share of food crops in periods of high prices. In other countries it is the practice to provide certain perquisites (clothes, tobacco, cattle-feed, etc.), which are regarded as additional to the normal wage.

Daily hours of work are not well defined in the traditional sector of agriculture in many developing countries. As a rule, the work is neither performed nor paid for in terms of hours and there is no fixed hour of commencement or termination of work. The working day may be from dawn to dark, and its length depends on the vagaries of weather, the urgency of the work or the amount of work available per worker.

Wage earners in the traditional sector of agriculture are frequently not covered by social security schemes and do not qualify for sick leave or holidays with pay. Often, they are not organised in trade unions and there is no effective collective bargaining to establish their wages and other conditions of work. Although minimum wages are fixed by statute in some countries, they are not always enforced and are, in fact, not easily enforceable. In the peak periods of agricultural operations when the demand for labour outstrips the supply, wages above the minimum may be offered, while in the off-season wages below the legal minimum rate may be accepted by workers.

Countries with developed market economies

In the more industrialised countries the agricultural sector has witnessed in recent years rapid structural changes as a result of economic, social and technological progress. The total number of agricultural holdings has gradually diminished, and there has been a considerable reduction in the number of small and medium-size holdings, with an increase in the number of larger ones. The trend has been towards specialisation in production, mechanisation and intensive cultivation. Farms have become more and more "commercialised" and are organised and operated like economic enterprises in the non-agricultural sector.

The structural changes in agriculture have been accompanied by changes in the size and structure of the agricultural population. This population has been decreasing in absolute as well as in relative terms, although agricultural output has increased, often spectacularly. Self-employed persons continue to constitute the predominant group among the agricultural labour force. Mechanisation has reduced the demand for agricultural labour and the workers are increasingly geared to using complex machinery and new farming

methods. Wage levels and conditions of work of agricultural workers have generally shown considerable improvement.

Among hired farm employees, there are those who are steadily employed by the same employer all year round, those who usually work all the year but move from one farm to another and those who are mostly employed in other sectors of economic activity but work on farms during a short period of the year. Housewives and students who are not normally in the labour force may undertake farm work for a few weeks in the harvest season. Seasonal employees may include three groups: local workers, domestic migratory workers and temporary immigrants, i.e. foreign workers. A feature of the employment of hired labour in some countries is that seasonal employees outnumber regular agricultural employees because the latter have decreased relatively more than seasonal employees. In some countries certain types of farm operations are carried out by agricultural contractors, for example, muck spreading, heavy ploughing, ditching, land clearing, sheep shearing, sugar-cane cutting, draining, fertiliser spreading and spraying, etc.

Agricultural employees are paid on the basis of time rates, piece rates and a combination of both. The time units used are the hour, day, week and month. Obviously, piece rates can be applied only for set tasks where "work units" completed are measurable. In some regions agricultural employees receive part of their remuneration in non-cash form, such as free board and lodging, fuel, clothing, laundry services and free use of land plots, agricultural materials and equipment. Collective agreements or awards of tribunals sometimes prescribe the goods and services coming under the purview of wage payments in kind and their prices or method of evaluation. Minimum wage rates are fixed in awards and collective agreements according to type of work, occupation and level of experience and skill; commonly, separate rates are fixed for men, women and young workers. Normal hours of work in agriculture are laid down and supplementary and overtime hours are regulated in almost all the industrialised countries. In practice, actual working hours are often somewhat more flexible than in non-agricultural enterprises and different limits of normal hours of work may be fixed according to the season. Agricultural employees are generally entitled to paid leave. Other conditions of work are also commonly negotiated between employers and trade unions and are incorporated in collective agreements or industrial awards. In most industrialised countries social security schemes have been extended to cover agricultural workers, especially regular employees.

Countries with centrally planned economies

Agricultural enterprises in countries with centrally planned economies include state farms, collective farms (agricultural co-operatives) and small private farms. In addition, members of collective and state farms cultivate small personal agricultural plots, mainly to provide products for personal consumption. State farms frequently specialise in particular crops, or livestock or dairy products. The relative importance of state farms varies but in most socialist countries they employ large numbers. Collective farms are co-operatives of peasants who hold in common the means and implements of production, who work on the farm and who share in the results of agricultural operations.

As a rule the bulk of agricultural output is produced in the socialised sector (state farms and collective farms), and wage employment in this sector is principally on state farms and is mainly on a permanent basis, although some temporary and seasonal workers are also employed.

The relative importance of private farms owned by individuals varies from one socialist country to another. In some cases their number is now negligible while in others they are still numerous. In either case they rely almost exclusively on labour provided by the farmer and his family.

In some socialist countries employees of state farms and collective farms are organised in trade unions. They are covered by state social security schemes and are protected

by labour legislation in regard to their employment, wages and conditions of work. Co-operatives may have, in addition, their own social security schemes. Workers on state farms are guaranteed a minimum wage under labour legislation and payments in kind are generally negligible. Members of co-operatives are usually remunerated monthly for their labour input, sometimes partly in kind. At the end of the year they also share in the results of the economic activity of the co-operative. In some socialist countries members of collective farms qualify for a guaranteed mimimum monthly income.

National practices in the collection and compilation of wages statistics in agriculture

Programmes specially designed to compile agricultural wages statistics are usually limited to either wage rates or earnings. In some cases statistics of hours of work are also compiled. The scope, coverage, methods of collection and compilation of these statistics differ greatly from one country to another and even between different divisions of agriculture.

National statistics of wage rates are compiled from various sources, such as decisions of wages boards, reports of village officials, sample surveys of farms, reports of plantations and large-scale farms, etc. In some series the coverage is limited to particular categories of employees, such as general farm-hands, day labourers, unskilled labourers, permanent or regular employees, seasonal employees, etc. Statistics of wage rates in some of the developing countries are compiled for only a few geographical areas, while in certain countries they are compiled for selected agricultural operations, such as ploughing, sowing, weeding, harvesting, etc. Statistics of wage rates relate to minimum rates, prevailing rates paid, average rates or some other rate, and they are compiled monthly, quarterly, half-yearly or annually. Wage rates are also expressed according to a variety of time units such as hourly rates, daily rates, weekly rates, monthly rates, etc., and are often given separately for male, female and non-adult workers, sometimes by geographical regions. Some countries include in wage rate statistics the value of payments in kind while others report only the cash rate, a fixed additional amount being sometimes allowed for rations or other allowances in kind.

National statistics of earnings are generally derived from one of two sources. In the case of plantations and large-scale farms in the developing countries, state and collective farms in the socialist countries and agricultural enterprises in general in the industrially advanced countries, the employer (i.e. the establishment or agricultural holding) provides data from payrolls or other records. Statistics of earnings derived from this source are generally compiled at annual or more frequent intervals and thus provide time series on earnings. The techniques of collection of these data are similar to those used in establishment surveys covering manufacturing and other non-agricultural industries. But these series often cover only the regular or permanent agricultural employees, leaving out casual and seasonal employees of agricultural contractors. In developing countries regular employees constitute a relatively small proportion of total employment in agriculture, and in many cases statistics of agricultural earnings derived from regular establishment surveys do not include payments in kind, although such payments may be fairly common.

For the traditional sector of agriculture in developing countries, household surveys of agricultural employees are the main source of data on earnings, and they generally cover all categories of agricultural employees. Where the great majority of agricultural employees are either casual or seasonal and most agricultural holdings are small, the household survey method is a practical one for collection of data on agricultural earnings and time worked. However, one important limitation of agricultural wages statistics com-

piled through such surveys, conducted at intervals of several years, is that short-term trends in levels of earnings are not revealed. The data collected in these surveys often relate to the survey year as a whole, although separate information for the different parts of the year is desirable in view of seasonal variations in earnings and hours of work. The data may also be subject to other limitations: for example, as employees do not normally keep a record of the periods during which they worked or the wage payments received, information relating to the rather long reference period is subject to errors caused by significant memory lapse, as well as other response biases. Repetitive household surveys undertaken at short intervals, such as quarterly surveys which utilise a short reference period of a week or a month, also encounter problems when agricultural wages are not paid weekly or monthly but at longer intervals, such as at the end of the season. The statistics of earnings compiled through household surveys usually include most of the payments in kind which could be given an imputed value.

Statistics of hours of work are usually compiled either as part of the national series of wage rates or as part of those on earnings. The latter relate either to hours actually worked or to hours paid for. Statistics of normal hours of work are generally available for countries where hours are fixed by laws, arbitral awards, collective agreements, etc. The information collected on time worked in the traditional sector of agriculture in many of the developing countries relates to days worked per worker per month rather than to hours worked. Countries which collect data on earnings through household surveys frequently also collect data on hours or days actually worked. The data thus collected also suffer from the various deficiencies mentioned earlier in respect of earnings.

Scope of the agricultural sector

The scope of the agricultural sector for purposes of the wages statistics programme needs to be defined. The national practices in this regard vary greatly. Some countries cover only production of certain types of crops, while others include both crop and livestock production.

Agriculture, hunting, forestry and fishing are included in major division 1 of the ISIC. They are further classified as follows:

Division	Major group	Title of category
11		Agriculture and hunting
	111	Agriculture and livestock production
	112	Agricultural services
	113	Hunting, trapping and game propagation
12		Forestry and logging
	121	Forestry
	122	Logging
13	130	Fishing

The question to be decided at the outset is whether or not it is meaningful and practical to cover all the ISIC major groups within the scope of the agricultural sector for the purposes of collection and compilation of statistics of wages and hours of work.

In agricultural censuses the agricultural sector is demarcated in terms of agricultural holdings. The FAO defined "agricultural holdings" for the purposes of the 1970 World Census of Agriculture, in the following terms:

> A holding, for census purposes, is all the land which is used wholly or partly for agricultural production and is operated as one technical unit by one person alone, or with others, without regard to title, legal form, size or location.

Establishments and other units not including any agricultural land but producing livestock or livestock products (piggeries, hatcheries, poultry batteries, dairies, feed lots, livestock kept by nomadic tribes, rabbitries, apiaries, etc.) are also to be considered as holdings, whether they are located in rural or urban areas.

. . . . . .

Agricultural production for census purposes includes the growing of field crops, fruits, grapes, nuts, seeds, tree nurseries (except those of forest trees), bulbs, vegetables and flowers, both in the open and under glass; production of coffee, tea, cocoa, rubber; and the production of livestock and livestock products, poultry and poultry products, honey, rabbits, fur-bearing animals, silk worm cocoons, etc.

Forestry and fishery production carried on as an ancillary activity on an agricultural holding is also considered as agricultural production. However, if agricultural activity is carried on as an ancillary activity in a unit, the major activity of which is forestry, the forest area and production should be excluded from the census but the area devoted to agriculture should be included.

Establishments producing only forest products, race horses, fish, frogs, dogs or wild game are not to be considered as agricultural holdings.[1]

Thus, for the World Census of Agriculture, the agricultural sector corresponds to major group 111 of the ISIC relating to agricultural and livestock production. Agricultural services rendered on a fee or contract basis generally by establishments (or contractors) are not covered in the agricultural censuses. They cover agricultural, animal husbandry and horticultural services specified in major group 112 of ISIC.

112 Agricultural services

Agricultural, animal husbandry and horticultural services on a fee or contract basis, such as harvesting, baling, threshing, husking and shelling; preparing of tobacco for auctioning; animal shearing; pest destroying and spraying; seeding and spraying by aircraft; pruning; picking of fruits and vegetables and packing on the farm and on the account of the producers elsewhere; and the operation of irrigation systems. The provision, on a fee or contract basis, of agricultural equipment along with the services of drivers and other attendants of the equipment, is covered in this group, but the letting of agricultural equipment solely is classified in major group 833 (Machinery rental and leasing). Veterinary services on a fee or contract basis are classified in group 9332 (Veterinary services); establishments primarily engaged in the transportation of farm products are classified in the appropriate group of division 71 (Transport and storage); and the operators of horse and dog racing stables are classified in group 9490 (Amusement and recreation services, not elsewhere classified).

The general practice in population censuses, household surveys and establishment surveys is to treat persons engaged in agricultural services as belonging to the agricultural sector. In view of these considerations, the Twelfth ICLS (1973) recommended in its resolution concerning an integrated system of wages statistics that agriculture should comprise major group 111 (Agriculture and livestock production) and 112 (Agricultural services) of the ISIC. As the factors affecting wages, hours of work and other conditions of employment in hunting, trapping and game propagation (major group 113 of the ISIC), forestry and logging (division 12) and fishing (division 13) are generally different from those concerning agriculture, these activities should normally be excluded from the scope of agricultural wages statistics. Programmes of wages statistics covering the above activities should be formulated separately.

Concepts and definitions

The Twelfth ICLS (1973) reviewed the concepts and definitions to be used in the collection and compilation of statistics of wages and hours of work in the agricultural sector and in particular the adaptations needed for their application in the traditional sector of agriculture in developing countries. In addition to the different measures of wages and hours of work, it is also necessary to define agricultural work and agricultural employee.

Agricultural work

The resolution concerning an integrated system of wages statistics adopted by the Twelfth ICLS (1973) recommends that the definition of "agricultural work" established for the 1970 World Census of Agriculture should be adopted for the purposes of wages statistics, as far as possible. The FAO definition of agricultural work is as follows:

> By agricultural work or agricultural activities, is meant any farm work or planning necessary to the operation of the holding. It includes feeding and caring for livestock and poultry; working in the field; working in the market or kitchen gardens; planning farm work; supervising other agricultural workers; keeping farm records; taking farm products to market; bringing feed, fertiliser, or other supplies from town to the holding; repairing fences, farm equipment, machinery, etc.; constructing buildings and fences with farm help, and related activities. Land reclamation and improvements, if carried out by the farmer and his labour force, should be considered as agricultural work. It excludes work related to the operation of the home, contract construction work done by persons employed specifically to do such work, labour performed by inmates of institutions, workers employed by a contractor, and handicraft work.[1]

The above definition of agricultural work relates to work in agricultural holdings which corresponds only to major group 111 of the International Standard Industrial Classification of All Economic Activities (ISIC) (Agriculture and livestock production). For the purpose of compilation of wages statistics in agriculture, agricultural work should also include agricultural services (major group 112 of the ISIC) defined earlier.

Agricultural worker and agricultural employee

Agricultural workers are those persons employed in agricultural work. They include, according to the FAO World Census of Agriculture: *(a)* the holder, regardless of the amount of time he has spent in agricultural work; *(b)* members of the holder's household not receiving full wages in money or in kind and who are engaged in agricultural activities (mainly family workers); *(c)* participants in co-operative, collective and communal holdings; and *(d)* all persons working for pay on the holding. Only the last category constitutes "agricultural employees". Members of the holder's household who work on the holding and receive full wages in money or in kind for their work are also to be classified as agricultural employees. Also to be included are those who are employed in agricultural services (major group 112 of ISIC) as wage earners and salary earners.

The question concerning the definition of agricultural employee is particularly important when wages statistics are compiled through household surveys of agricultural employees, especially in the traditional sector of agriculture in developing countries. The difficulty of definition arises because workers in the traditional sector of agriculture alternate between agricultural employment and non-agricultural employment and between wage employment and self-employment. In this connection, the Twelfth ICLS (1973) recommended that the principal-activity criterion should be used for defining agricultural employee, and a person would be considered to be an agricultural employee if the principal source the income accrued to him during a specified reference period were agricultural wages.

The FAO Program for the 1970 World Census of Agriculture established definitions for permanent, temporary and occasional agricultural workers on the basis of time worked on the reporting holding. Although the data on employment in agriculture collected in the census refer to one week only, the classification of workers as permanent, temporary and occasional is based on the amount of time they worked on the same holding during the entire year or during a shorter period where agricultural work is generally performed during only part of the year. According to the FAO definitions, permanent agricultural employees are those who have been employed on the holding for a total period of at least half of the working time during the year; temporary agricultural employees are those who have been employed on the holding for a total period of less

than one-half but for at least one-third of the working time during the year. Occasional workers are those who have not worked on the holding before the census week and others who have been employed on the holding for a total period of less than one-third of the working time during the year.

The above definitions of permanent, temporary and occasional employees are based on the concept of an agricultural employee as a person attached to a particular agricultural holding. They are not always suitable, especially for application in the traditional sector of agriculture in developing countries where persons move very frequently from one agricultural holding to another and also change their employment status. On this point, the Twelfth ICLS (1973) concluded that it was not necessary to give precise definitions at the international level, but the countries could adopt suitable definitions of "permanent", "temporary", "casual" or any other category of agricultural employee in the light of their own particular circumstances.

Earnings

The definition of earnings given in Chapter 4 is generally suitable since it is adaptable to the conditions of the agricultural sector, including the traditional sector of agriculture in developing countries. Payments in kind constitute an important component of earnings in agriculture, but certain other components are negligible in most countries, for example remuneration for time not worked, bonuses and gratuities, and family allowances paid directly by the employer. These circumstances, however, do not affect the applicability of the general concept of earnings.

Wage rates

Two types of wage rates are distinguished in Chapter 4. The first type relates to wage rates fixed by or in pursuance of laws or regulations, collective agreements or arbitral awards. These rates refer to prescribed amounts payable for normal work-periods such as an hour, a day, a week, a month or a year. The second type of wage rate relates to the actual amount paid to employees for normal work-periods. The prescribed rates and the actual rates usually differ and the gap between the two varies greatly between slack periods and peak periods of the agricultural season. Although both types of wage rates are relevant to the agricultural sector, wage rates calculated on the basis of actual payments are generally likely to be more meaningful.

One distinguishing feature of the agricultural sector is that wage payments in kind can form a significant part of the wage rate. Wage rates can also be quoted wholly or substantially in kind, particularly in respect of certain agricultural operations in the traditional sector of agriculture in developing countries. Where necessary, payments in kind should be included in wage rates for the purposes of compilation of statistics. Sometimes the rates quoted may include both the wage rate and hire charges for workers' own equipment, implements or working animals. In such cases adjustments should be made to exclude hire charges from the quoted wage rates in order to obtain the actual wage rate.

Labour cost

The concept and definition of labour cost contained in the resolution of the Eleventh ICLS (1966) and given in Chapter 4 and referred to in Chapter 8 are designed to measure the cost per unit of time incurred by the employer in the employment of labour for producing goods and services. They are suitable for the collection and compilation of labour cost statistics relating to agricultural enterprises in the organised sector of agriculture such as plantations, agricultural service establishments, etc., in which the major part of the labour input is from hired labour. However, in the traditional sector of agriculture

in developing countries hired labour forms only a part of the labour input in agricultural holdings and a major part of the labour input is provided by family members. Thus, in this case the concept and definition of labour cost given in Chapter 4 may not be applicable.

Labour cost mostly comprises compensation of employees as defined in the System of National Accounts so that the above discussion on labour cost also applies to the wage measure "compensation of employees".

Wage payments in kind

Wage payments in kind are significant and widespread in both developing and developed countries. Moreover, such payments are particularly important in the traditional sector of agriculture in developing countries. Payments in kind may be made on a daily basis or at longer intervals. Sometimes wages take the form of bulk "payments" at the end of the season and may consist mainly of food grains, although payment in other agricultural commodities is not uncommon. All commodities received by employees as part of wages are not necessarily utilised by them for direct consumption; a part may be sold currently or at a later date and the proceeds used to buy other goods and services. Such wage payments in kind are clearly of a different nature and should be distinguished from those which supplement cash wages but as a rule form only a small part of the total wage. This latter type of payment in kind, which is typical of developed countries and the organised sector of agriculture in developing countries, takes the form of food, housing, transport and other services, etc., given free or at concessional rates, usually on a regular and continuing basis.

Payments in kind are to be valued at cost to the employer for purposes of statistics of wage rates, compensation of employees and labour cost. On the other hand, for evaluating the wage income of employees, e.g. in connection with household surveys, the general practice is to take the value accrued to the employee as a consumer. It is desirable to apply the same method of evaluation for purposes of statistics of earnings.

In view of the dual nature of wages as cost to the employer and income to the employee, it follows that frequently there is a need to evaluate payments in kind according to both these conceptual bases. This is particularly true of the agricultural sector, where wage payment in kind according to the concept used encounters serious practical difficulties. Generally speaking, it is easier for the employer to provide information on the money value of payments in kind according to the concept of cost to the employer. For evaluation on this basis farm prices, producers' selling prices or wholesale prices usually provide suitable estimates. On the other hand, valuation of payments in kind on the basis of local retail-market prices furnishes suitable estimates of the value accrued to the employee.

Hours of work

The definitions of hours of work contained in the resolution of the Tenth ICLS (1962) and given in Chapter 4 are generally applicable to agriculture in developed countries and the organised sector of agriculture in developing countries. However, collection of reliable data on hours of work is far more difficult in agriculture than in other industries such as manufacturing.

In the traditional sector of agriculture in developing countries, work is not normally conceived of in terms of "hours" and wages are not paid on a "per hour" basis. It is more usual to engage labour and pay wages by the day. Wage rates and earnings per man-day would be useful for most purposes served by such statistics. However, the length of the working day can vary between seasons, peak periods and slack periods, geographical

regions, etc. Despite the practical difficulties, an attempt should be made in wage surveys of the traditional sector to collect data on hours of work in the traditional sector of agriculture.

Programmes of agricultural wages statistics

A programme of wages statistics in agriculture is proposed in Chapter 5, covering statistics of earnings, wage rates, hours of work, wage structure and distribution, along with that proposed for the non-agricultural sector. As stated in Chapter 5, the agricultural sector is divided into an organised sector and a traditional sector and the wages statistics programme for each subsector comprises a current statistics programme in order to meet current and short-term requirements and a non-current programme to build infrastructure information and to meet long-term needs. The national programme of current and non-current agricultural wages statistics should be developed within the framework of the integrated system of wages statistics recommended by the Twelfth ICLS (1973) covering all sectors of the economy.

The objectives of statistics of wages and hours of work in agriculture are basically the same as those described in Chapter 3. However, in determining its programme for agricultural wages statistics, each country must determine priorities among the different parts of the integrated system. In addition, apart from the special problems of collection of information on certain items for the agricultural sector, the resources needed are usually greater than those required for an equivalent programme in the non-agricultural sector, particularly if the traditional sector of agriculture is covered. Priorities should be carefully determined to ensure smooth and satisfactory progress of the national programme of wages statistics.

The review of the employment, wage payment systems and national practices in the collection and compilation of wages statistics suggests that the application of the integrated system should take into account the differing conditions of the agricultural sector in each country. In developing countries there is a need to divide the agricultural sector into two subsectors, viz. organised agriculture and traditional agriculture, for purposes of the wages statistics programme. Thus is because the majority of agricultural employees in the traditional sector are either casual or seasonal, most agricultural holdings are small and employed persons alternate between agricultural employment and non-agricultural employment and between working for wages and self-employment. The data collected in the two subsectors should, as far as possible, be suitable for combination to produce statistics for the agricultural sector as a whole. As regards developed market economy countries and countries with centrally planned economies, division of the agricultural sector into organised and traditional sub-sectors is not normally necessary for purposes of collection and compilation of wages statistics.

As stated earlier, for purposes of wages statistics, the agricultural sector should comprise major groups 111 (Agricultural and livestock production) and 112 (Agricultural services) of the ISIC. The employment conditions in agricultural services establishments (as defined in ISIC major group 112) are often quite different from those for workers engaged in agricultural and livestock production (as defined in ISIC major group 111). Agricultural services grow rapidly and tend to cover a diversity of agricultural operations, especially in developed countries. While statistics of agricultural wages should cover major groups 111 and 112 of the ISIC, it may be desirable in certain circumstances to compile data separately for each of these major groups.

After a careful review of the concepts and definitions, the Twelfth ICLS (1973) came to the conclusion that the concepts and definitions of wage rate, earnings and hours of work applied to the non-agricultural sector would generally be applicable to the agricul-

tural sector. Such adaptations as may be necessary in particular countries to meet special conditions of agriculture would not normally be of a fundamental character. As regards the concept of labour cost, while the international definition of labour cost is applicable to the organised sector of agriculture, statistics of labour cost in the traditional sector of agriculture are not very meaningful, since hired labour constitutes only a minor part of total labour input.

Wage payments in kind take different forms. Their nature and extent and their changes over time are of particular interest for developing countries. The wages statistics programme in the agricultural sector should be designed to compile selected statistics separately for agricultural employees who are paid wholly in cash, for those paid wholly in kind and for those paid partly in each medium. In addition, information should be given on the amounts for major components. Payments in kind supplementary to cash wages, e.g. food, drink or housing, should be distinguished from other forms of wage payments in kind. The problems of evaluation of payments in kind for wage rates, earnings and labour cost are referred to in the section dealing with concepts and definitions.

Programme of current agricultural wages statistics

The main purpose of the current programme is to compile statistics of time series in order to measure the trends in the average levels of wages and hours of work in agriculture. The current statistics programme for organised agriculture could be similar to that for the non-agricultural sectors. It comprises: *(a)* current statistics of wage rates and normal hours of work; and *(b)* current statistics of average earnings and hours of work. As regards the traditional sector of agriculture, the scope of the current wages statistics programme may be limited either to statistics of wage rates and normal hours of work or to statistics of average earnings and hours of work since, in view of the heavy cost involved, it may not be possible for many developing countries to undertake frequent and regular sample surveys to compile both types of statistics.

Current statistics of wage rates and normal hours of work

The wage rates actually paid and the hours normally worked in agriculture often differ from those fixed by or in pursuance of laws or regulations, collective agreements or arbitral awards. As there may not be frequent revisions of wage rates and normal hours of work fixed by statute or collective agreement, frequent compilation of such statistics may not always be necessary. As the source of information on such wage rates comprises official and other central records, the compilation of such statistics does not present great operational problems. However, statistics of wage rates actually paid and hours normally worked are meaningful for many uses. Each country, especially those which do not compile current regular series of earnings and hours of work, may aim at undertaking well-designed surveys as a basis for compiling current statistics of wage rates actually paid and hours normally worked in agriculture. A quarterly survey may provide information on the movement of wage rates and seasonal changes in hours normally worked.

Agricultural holdings are suitable reporting units for the collection of data on wage rates and normal hours of work. The current survey should normally cover only wage earners engaged by the selected agricultural holdings. Wage rates are usually quoted with reference to the type of work or occupation. The survey should cover the principal occupations in agriculture and, if possible, provide information on wage rates for full-time and part-time employees, permanent and casual employees and employees engaged on an hourly, daily, weekly or monthly basis. If piece-rated workers are also covered in the survey, their rates should be distinguished from time rates of wages and shown separately. Statistics of average rates and normal hours of work should be given separately for males, females and non-adults, as well as for geographical regions or agricultural zones and for

broad groups of agricultural employees such as ISCO unit groups of agricultural occupations. Wherever possible, the data on wage rates and normal hours of work may be classified according to broad types of agricultural holdings such as dairy, poultry, livestock, field crops, mixed farms, etc.

Current statistics of average earnings and hours of work

The main emphasis in the current programme is to measure the changes in the levels of earnings and hours or man-days of work for agricultural employees. The intra- and inter-season variations in the levels of earnings and hours or man-days of work are greater in the agricultural sector than in other sectors. This fact should be taken into account when deciding on the frequency of compilation of statistics of average earnings and hours of work. It might not be practicable in many countries to conduct monthly surveys for the compilation of these statistics, but there is a strong case for compiling statistical series of earnings and hours of work on a quarterly basis. However, since the relative importance of agriculture differs from country to country, the periodicity of collection of current data on earnings and time worked should be determined in the light of the needs of each country. Some developed countries carry out annual large-scale surveys of agriculture for deriving, inter alia, their principal statistical series of earnings. It may be useful to design these surveys in such a way as to obtain separate estimates in order to reflect seasonal and other variations in wages and hours of work. A different situation applies in most of the developing countries, where very large numbers of agricultural employees are engaged in agriculture, and where there are great seasonal variations in earnings and hours of work, especially in the traditional sector of agriculture. The frequency of survey for the compilation of statistics of earnings and time worked should not be less than half-yearly.

In the traditional sector of agriculture in developing countries, and to some extent elsewhere, agricultural employees' work is commonly intermittent or irregular with many workers being engaged on a casual or daily basis and even changing employers from day to day. In such a situation it is the employee and not the employer who is in a position to furnish complete data on earnings and time worked during a specified reference period. In this case the method of data collection should be to use the household of the agricultural employee as the reporting unit. In organised agriculture, covering plantations and large-scale commercial farms, and also where farm workers are employed on much the same basis as employees in non-agricultural industries such as manufacturing, it is possible to collect the data on earnings and hours of work following the establishment approach.

Household sample surveys for the collection of data on the earnings of and time worked by agricultural employees would be too expensive to undertake on a recurring basis solely for the purpose of wages statistics in agriculture. Where a country has a continuing and frequent household sample survey for compiling labour force statistics, attempts could be made to collect data on earnings and hours of work of agricultural employees at a reasonable cost, although this might pose sampling and other problems.

The current survey on earnings and time worked should aim at covering all important categories of agricultural employees, including those paid wholly in cash, wholly in kind or both in cash and in kind. However, those employees whose remuneration is not paid regularly at daily, weekly or monthly intervals, but may consist, for example, of a share of the crop with or without some cash wages should be excluded from the current statistics of earnings. The main criterion to be used for deciding on the coverage of the employees in the survey is whether the reporting unit (agricultural holding, establishment or household) could give a complete and reliable account of earnings and time worked with reference to the specified reference period of data collection.

Statistics of average earnings should relate to a meaningful time unit in the context of the user's needs. In the traditional sector of agriculture in developing countries the common practice is to engage labour and pay wages by the day, since work is not normally conceived of in terms of "hours" and wages are not paid on a "per hour" basis. National practices and the practicability of data collection should be taken into account when deciding on the unit of "time worked", i.e. whether "hour" or "day" is to be used for collection of data. The choice of reference period of data collection should be based on local practices and conditions. In regular current surveys the reference period is normally a week, pay period or a month; however, a particular week may not always be typical of the amount of time worked or earnings received in a selected quarter.

The amount of detail normally collected in a regular current survey will provide only a limited number of classifications of average earnings and man-days or hours of work. Certain components of earnings should be distinguished, wherever possible, in particular cash earnings and payments in kind. Separate estimates of average earnings and man-days or hours of work should be given, wherever possible and necessary, for males, females and non-adults, for full-time and part-time employees, for geographical regions or agricultural zones and for different types of farms engaged in agricultural production and livestock production.

Programme of non-current agricultural wages statistics

The non-current statistics of wages in agriculture comprise: *(a)* statistics of labour cost; and *(b)* statistics of wage structure and distribution. As regards the organised sector of agriculture, the collection and compilation of these two types of statistics should take the same form as in the wages statistics programme in the non-agricultural sector, i.e. sample surveys based on the establishment survey approach would provide statistics of labour cost and wage structure and distribution.

In the traditional sector of agriculture in developing countries the amounts paid as earnings to hired workers, including the cost of wages in kind, account for nearly all the labour cost of employers since, as a rule, there is little or no expenditure by employers on social security, welfare services, vocational training, etc., for their employees. In these circumstances the collection of statistics of labour cost is not proposed as a separate item in the wages statistics programme for this sector.

The Twelfth ICLS (1973) states in its resolution that statistics of wage structure and distribution and labour cost should be compiled for the organised sector of agriculture at five-yearly intervals, based on the results from agricultural establishments. As regards the traditional sector no specific periodicity of compilation was proposed but there appeared to be a general support for a five-yearly compilation of wage structure and distribution statistics.

Agricultural holdings in developed countries commonly employ temporary and casual workers along with permanent employees. The total earnings of temporary and casual employees from agricultural work for the reference period of data collection in a wage structure and distribution survey may not be fully reflected in the payroll records of the agricultural holding. In such circumstances the survey techniques should be suitably adapted to obtain information from both the employer (i.e. agricultural holding) and the employee. The agricultural holding can furnish information on the payments made to each employee and the labour input, while the employees can furnish supplementary information on any additional earnings they received in respect of paid agricultural work on other agricultural holdings during the reference period. Data on hours of work corresponding to the additional earnings mentioned above should also be collected.

In the traditional sector of agriculture in developing countries the number of employees attached to agricultural holdings for all or most of the year is low compared to

the number of temporary and casual labourers who move from one employer to another, including on a day-to-day basis. In these circumstances, the wage structure and distribution survey takes the form of a sample survey of households of agricultural employees. The scope of a household survey of agricultural employees is not usually limited to wages and hours of work but also covers total household income, household expenditure and information on various aspects of the conditions of life of agricultural employees. For the survey purpose, it is necessary to define "agricultural employee" and "agricultural household", since a household can consist of persons with different employment status and economic activities. The principal-activity criterion, determined on the basis of wage income derived, should be used for identifying agricultural households. If there is more than one agricultural employee in a sample household, data on wages and hours of work should be obtained separately for each employee. The types of data to be collected include wage rates and normal hours of work, earnings and hours or man-days actually worked. The earnings data should in principle relate to a full year. However, the sample may be assigned in such a way as to provide monthly or quarterly estimates of earnings, hours or man-days worked. Data on personal characteristics of the employee, which have an influence on the level of earnings, should be collected. These include sex, age, occupation, skill, nature of employment, etc. Information on composition of wage rates, earnings and hours of work is also needed.

The types of tabulations and classifications to be made from the data collected in the non-current surveys in the agricultural sector are similar to those to be made for the non-agricultural sector, described in Chapters 8 and 9. Statistics of wage rates, earnings and hours of work collected in a wage structure and distribution survey should be classified according to components and presented for the country as a whole and by geographical regions or agricultural zones. Data should be given for males and females, distinguishing between adults and juveniles whenever possible, and for all important occupations. As far as possible, data should be shown separately for employees who are paid wholly in cash, wholly in kind or in a combination of both; separate details should be given for major items of payments in kind such as food and housing. In addition, the data should be classified according to categories of employees (for example permanent, temporary and casual, or full-time, part-time, etc.) and by types of agricultural holdings (dairy, poultry raising, livestock raising, field crops, mixed farms), when feasible. Distributions should be calculated showing employees according to ranges of earnings, wage rates, days and hours of work respectively.

Sometimes comprehensive wage data are collected within the framework of or in conjunction with quinquennial or decennial censuses of agriculture using the agricultural holding as the unit of enumeration. This approach provides wage data compatible with other information concerning agricultural holdings. The data from this source should be carefully examined in order to ascertain how far they meet the requirements of statistics of wage structure and distribution envisaged in the integrated system of wages statistics. The feasibility of combining the two approaches could also be explored.

Notes

[1] FAO: *Program for the 1970 World Census of Agriculture* (Rome, 1965).

Index numbers of wages

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The preceding chapters have been concerned with the production of basic wages and related statistics in absolute figures for current and non-current purposes. The wage measures dealt with are wage rates, earnings, compensation of employees and labour cost. The measures of time unit covered are normal hours of work, hours actually worked and hours paid for. The figures are to be compiled in the form of totals, averages, distributions, proportions and percentages. These absolute figures are required for various purposes, such as those described in Chapter 3. It is equally important, particularly for policy purposes, to have a knowledge of the trends of wages over time. In recent years, inflationary trends in the economy in most countries have heightened interest in the measurement of trends in wages, which can be expressed in different forms, i.e. trends in wage rates, earnings, compensation of employees and labour cost. Index numbers of wages are the devices by which the trends or changes in the level of wages are measured, and they are useful for the study of secular trends, seasonal variations, business cycles, wage drifts, etc.

If statistics of wages are compiled at regular intervals—monthly, quarterly, half-yearly or annually—the comparison of data thus currently computed yields information which can be used to study the movement of wages over time. If, for instance, information on average rates of wages or earnings are available by sex, by skill or for separate occupations or industries, the compilation of wage index numbers will be easy. The simplest way to arrive at an index number of wages is to consider each series separately. The value at one point of time is taken as the base (= 100) and the other values of the same series are expressed as percentages of this base value. This simple conversion of absolute figures into index numbers provides information on the movement of wages over time in a particular industry, occupation or service. The situation is more difficult when attention is focused not on the movement of separate series, but on the movement of wages in general, in other words when the aim is to calculate general index numbers of wages. The problems connected with such series raise certain features and all the problems in the general theory of index numbers have to be faced.

The problem of wage trends can be approached from different angles, and therefore the compilation of index numbers may proceed along different lines according to the purposes for which index numbers are intended.

Following the concepts of wages as price of labour service, as income to workers and as cost to the employer or to the economy, different indices of wages need to be compiled, each of which presents different problems of choice of data and methods of computation. Index numbers of wage rates are traditionally regarded as an economic index measuring changes in the price of labour paid by employers. However, from the price or cost point

of view, a more relevant index for certain purposes seems to be either compensation of employees or labour cost. When it is a question of measuring the variations in the income or level of living of wage earners and salaried employees, or any other sub-groups or categories of employees, it is the index numbers of earnings that have been commonly compiled. Sometimes index numbers of wages are used to measure the changes in the share of wages in the national income and the appropriate wage measure to be used for the computation of the index should be compensation of employees. Labour cost is the wage measure required for the construction of index numbers to measure employers' expenditure in the employment of labour.

Among the difficulties to be faced in the construction of wage indices are: (i) clear statement of the purpose for which the index is primarily designed; (ii) definition of the scope of the index in terms of industrial, employee and geographical coverage and selection of individual series for inclusion in the index; (iii) choice of data and selection of sources of data; (iv) system of weighting and method of combining data, i.e. the choice of the formula to be used for computation, which includes the problem of imputation; and (v) choice of the base. One of the crucial requirements for the maintenance of wage indices is the compilation of relevant basic wage data on a current basis, i.e. monthly, quarterly, half-yearly or annually. In the integrated system of wages statistics which forms the basis of this manual, the production of current wage data is envisaged only in respect of wage rates and average earnings and the corresponding hours of work. Consequently, the problems concerning the construction of index numbers of these two wage measures only are dealt with in this manual.

There are many different formulae available for the construction of an index number. It is not the intention here to enter into the theoretical aspects of index number formulae; for that purpose text books and other literature on the subject may be consulted. Historically, the most important are the Laspeyres and Paasche formulae. Using the terminology of consumer price indices, the two formulae can be stated in the following manner:

Laspeyres's formula: $$\frac{\sum q_0 p_i}{\sum q_0 p_0} \times 100 = \frac{\sum q_0 p_0 \times \frac{p_i}{p_0}}{\sum q_0 p_0} \times 100$$

Paasche's formula: $$\frac{\sum q_1 p_1}{\sum q_1 p_0} \times 100 = \frac{\sum q_1 p_0 \frac{p_i}{p_0}}{\sum q_1 p_0} \times 100$$

where q_0, p_0 are, respectively, the quantity and price in the base period 0, and q_1, p_1 are, respectively, the quantity and price in the current period 1.

Both represent a weighted aggregative form of index. The difference is that the Laspeyres formula is associated with base period weights, while the Paasche formula uses current period weights. Both formulae have their relevance in measuring the percentage changes between two periods, but they always differ in any particular situation in as much as the variables used as weights change from one period to another. The choice of an appropriate index formula depends on the purpose for which it is intended. Depending on the actual situations and needs, it may be necessary to choose between the Laspeyres and the Paasche index, or between arithmetic, geometric or harmonic means. A geometric average of the Laspeyres index and the Paasche index is Fisher's index, which is considered an ideal formula:

$$\sqrt{\frac{\sum q_0 p_1}{\sum q_0 p_0} \times \frac{\sum q_1 p_1}{\sum q_1 p_0}} \times 100$$

However, in this case difficulty arises because its meaning is not easily understood by users of wage indices. Nevertheless there are purposes for which it is especially well suited, such as the analysis of value changes into constituent price changes and quantity changes.

Index compilers sometimes use a chain index method to construct index numbers. In its simplest form, this is an index in which the figures for each period are first expressed as percentages of those for the preceding period, and the resulting percentages are linked together by successive multiplication to form a chain index. This procedure has certain advantages, under certain conditions, e.g.: *(a)* any index item can be readily dropped if it is no longer relevant; *(b)* new items can be introduced without affecting the trend; and *(c)* weights can be changed. Thus, in an index of wages, account can be taken of basic changes in occupations, establishments, categories of employment, and other similar changes that cannot be readily handled with a fixed base index number. The main disadvantage of the chain index method is that, while the percentages of previous-period figures give accurate comparisons of period-to-period changes, the long-range comparisons of the chained percentage are vitiated due to accumulation of errors in the chaining process.

Availability of the required statistical data on a continuing basis is often a crucial factor in determining the choice of formula. In the case of wages statistics, data available on a current basis are generally limited and do not permit weights to be changed on a current basis. On balance, it is the base weight aggregative formula represented by the Laspeyres formula which is used more frequently by index makers in most countries.

Index numbers of wage rates

The main emphasis in the present discussion is on problems of computation of wage rates actually paid, which for various reasons may differ from legally fixed or collectively agreed wage rates. However, a number of countries compile index numbers of wage rates fixed by or in pursuance of laws, regulations, collective agreements or arbitral awards, etc. The main features of the indices of this type of wage rate are briefly mentioned below. The problems of compilation of index numbers of wage rates actually paid or prevailing wage rates are dealt with in more detail.

Index numbers of wage rates fixed by law or collective agreement

The indices of wage rates fixed by law or collective agreement compiled by most countries refer to minimum or standard rates. For the purposes of index compilation, a change in rates of wages is usually defined as a change in the standard or minimum rate of wages for a specified time unit, such as a week or an hour, for a particular class of employees. The index of wage rates sometimes refers to adult males and females and juveniles among the wage earners in selected industries. As a rule, the Laspeyres formula with fixed base weights is used in the construction of the index numbers. The weights usually relate either to the wage bill in the base period represented by the product of the number of employees and the wage rate, or to the number of employees in the base period. The employment weight sometimes refers to the number of employees covered by the collective agreements and statutory orders only, or in some cases to all employees in the industry, including those who are not directly covered by these provisions.

Official records and collective agreements form the source of data on wage rates. In developed market economy countries, there are many different collective agreements in force setting the wage rates for various categories of wage earners and salaried employees. The wage rates set for occupations or categories of employees may not be single-point rates but may vary within certain ranges. For reasons of practical convenience, the indices are often based on a relatively small sample of single-point rates, for instance either the end points or the mid-point of the wage-rate scale. A considerable number of collective agreements can usually be omitted from the index computations since they cover only a relatively small number of workers, and as a rule the movement of their wage rates is likely to follow the general trend; but even where this is not the case, their influence will be almost negligible in view of the limited number of persons involved.

Collective agreements often specify steps or grades in the wage rate scale according to occupation, age, seniority, skill, etc. Since new agreements usually entail a proportional change of rates in all grades and steps, etc., the sample of individual rates can be limited to some principal groups only. The wage groups are normally selected corresponding to certain steps or points in the wage scale, which often refer to the lowest and highest limits of the wage rate scale and some important intermediate points. The continuity of the single-rates series is frequently endangered when the structure of the wage scale is changed in new collective agreements. This is especially true when the number of grades and steps has been changed. When a group which has been used for index computation is eliminated from the new agreements, it is usual to link it to a new wage group whose specifications come close to that of the former group.

Some difficulties arise in the evaluation of certain forms of reduction of normal hours of work. When the reduction of working hours takes place by a decrease in normal hours of work combined with a corresponding increase in hourly rates of pay, the indices will reflect the wage change. However, when the hours of work are changed by an increase of days paid for but not worked, without a change of the hourly rates, the index does not automatically show the rise in wage rates. In order to reflect the indirect improvement of wage rates, the additional days paid for but not worked should be taken into account. Where only index numbers of rates of wages per hour or of rates of wages per week are compiled, it is necessary to compile an index of changes in normal hours of work constructed on the same basis.

Index numbers of wage rates actually paid

Purpose of the index and choice of data

Wage rates actually paid and their movement over time are influenced by a number of factors, including real changes in wage rates, changes in the occupational structure and changes in the demographic and other characteristics of the labour force. The problem of premium rates for overtime work arises in certain situations when it is necessary to deal with a composite price for labour services, covering both wage rates for normal time and wage rates for overtime. In the present context, the purpose of wage rate index numbers is defined as measuring only the real changes in the average rates actually paid by employers to their employees for normal-time work, i.e. without taking into consideration overtime wage rates, changes in the occupational structure, changes in the composition of the labour force or other extraneous factors. This leads to a fixed base type of index in which the occupational structure and distribution of employees are held constant with reference to the base period of the index.

The definition of the wage rate is given in Chapter 4 and referred to again in Chapters 7 and 9. The general definition of wage rates paid covers both time rates and piece rates. If there is reason to believe that the trend of piece rates is similar to that of time rates, it may not be necessary to include piece rates in the index. Alternatively a separate

index of piece rates actually paid may be compiled and then combined with the index of time rates actually paid.

As wage rates are usually quoted for specific occupations, the most appropriate unit of observation for wage-rate changes is the occupation, but sometimes occupations may need further subdivision in order to create more homogeneous groups. For example, if, within an occupation, there are predominant sections of both male and female employees, it will be desirable to subdivide the occupation by sex. For purposes of comparability, the occupations in question should be the same in the two situations; this calls for close attention to both job description and job content. The comparison should also represent the wage structure of the industries covered by the index.

Industrial coverage

The indices of wage rates are usually required for individual industries at the group (four-digit) or major group (three-digit) level of industry. The factors to be considered in the selection and coverage of industries in the index are the same as those mentioned in Chapter 7, concerning current surveys of statistics of wage rates and normal hours of work. Practical considerations also play an important role in deciding the scope of individual industries to be covered in the index.

Geographical coverage

Indices of wage rates, by industry and geographical region, are usually required when there are geographical concentrations of industries or when there is a significant influence of geographical regions on the movement of wage rates. These considerations are particularly important for large countries with known regional differences in wage rates and conditions of work.

Employee coverage

The current survey of wage rates and normal hours of work as described in Chapter 7 includes in its coverage time-rated wage earners, piece-rated wage earners and salaried employees of both sexes, both adult and juvenile, but excludes apprentices, handicapped workers, learners, beginners and trainees, probationary workers, part-time workers, workers employed for short periods or on a purely temporary basis and other similar categories. Usually, wage rates paid to the latter categories of employees are different and may also have different rates of change over time. Either they should be excluded from the scope of the index altogether or they should be shown under a separate subdivision within the index if their number is appreciable.

Establishment coverage

As regards the coverage of establishments in each industry, an argument can be made in favour of restricting the scope of the index to establishments of more than a minimum size. This is because the contribution of excluded establishments will in many cases be negligible, and, in addition, employees in small establishments often do not perform the specialised duties associated with the occupation, which are essential for the compilation of an index of wage rates.

Structure and design of the index

Having delimited the industrial, geographical and employee coverage, the next step is to define the structure and design of the index. The structure of the index for each industry is to be specified, taking into account the actual conditions in the industry and a

fixed system of weights established. The process will generally consist of the following steps: *(a)* determination of the subdivisions of the index, which refer to occupations, subdivisions of occupations or combinations of occupations; and *(b)* preparation of specifications of the subdivisions to identify the boundaries clearly. The changes in average wage rates actually paid are to be measured at the level of each subdivision represented by the occupation and the magnitude of these changes will be weighted to give a combined measure of the change for the industry. The indices of wage rates for individual industries are then combined, using appropriate weights, into a single index representing divisions, major divisions or all economic activities for the country as a whole and for geographical regions.

Index formula

It has already been mentioned that the Laspeyres base weighted aggregative formula is the one which is generally favoured for the construction of wage rate index numbers. This formula for a wage rate index for an industry can be written according to the following algebraic expression:

$$I_{0t} = \frac{\sum N_i^0 \; R_i^t}{\sum N_i^0 \; R_i^0} \times 100$$

where I_{0t} represents the index of wage rates for a given industry, for time-period t, with reference to the base time-period 0 taken as 100;

N_i^0 represents the total number of employees in the ith occupation during the base period. If an occupation is subdivided, each subdivision is treated as an occupation for the present purpose;

R_i^t represents the average wage rate actually paid to employees in the ith occupation at current time-period t;

R_i^0 represents the average wage rate actually paid to employees in the ith occupation at base time-period 0.

In the above form, the formula shows that the index is a percentage ratio of how much the employees, in a given and fixed set of occupations in the base time-period 0, are paid at wage rates prevailing at time-period t, to the amounts they were paid at the wage rates prevailing during the base period 0.

The same formula can also be expressed as:

$$I_{0t} = \frac{\sum N_i^0 \; R_i^0 \times \frac{R_i^t}{R_i^0}}{\sum N_i^0 \; R_i^0} \times 100 = \frac{\sum w_i^0 \times \frac{R_i^t}{R_i^0}}{\sum w_i} \times 100$$

where $w_i^0 = N_i^0 R_i^0$, which represents the total wage rates paid to all employees in the ith occupation in the base time-period 0; and

$\frac{R_i^t}{R_i^0}$ is the wage rate relative for the ith occupation.

Thus the index becomes a weighted average of wage rate relatives, where the weight is $\frac{wi}{\sum wi}$ for the ith occupation, and $\sum \frac{wi}{\sum wi} = 1$.

The formula can be extended for computation of an index for several industries together. With subscripts 1, 2, 3 ... denoting different industries, the formula becomes:

$$I_{0t} = 100 \times \frac{\sum N^0_{1i} R^t_{1i} + \sum N^0_{2i} R^t_{2i} + \sum N^0_{3i} R^t_{3i} + \cdots}{\sum N^0_{1i} R^0_{1i} + \sum N^0_{2i} R^0_{2i} + \sum N^0_{3i} R^0_{3i} + \cdots}$$

$$= 100 \times \frac{\sum N^0_{1i} R^0_{1i} \times \frac{N^0_{1i} R^t_{1i}}{N^0_{1i} R^0_{1i}} \times \sum N^0_{2i} R^0_{2i} \times \frac{N^0_{2i} R^t_{2i}}{N^0_{2i} R^0_{2i}} + \sum N^0_{3i} R^0_{3i} \times \frac{N^0_{3i} R^t_{3i}}{N^0_{3i} R^0_{3i}} + \cdots}{\sum N^0_{1i} R^0_{1i} + \sum N^0_{2i} R^0_{2i} + \sum N^0_{3i} R^0_{3i} + \cdots}$$

$$= \frac{\sum N^0_{1i} R^0_{1i} \times I^1_{0t} + \sum N^0_{2i} R^0_{2i} \times I^2_{0t} + \sum N^0_{3i} R^0_{3i} \times I^3_{0t} + \cdots}{\sum N^0_{1i} R^0_{1i} + \sum N^0_{2i} R^0_{2i} + \sum N^0_{3i} R^0_{3i} + \cdots}$$

$$= \frac{W_1 I^1_{0t} + W_2 I^2_{0t} + W_3 I^3_{0t} + \cdots}{W_1 + W_2 + W_3 + \cdots}$$

where $W_1 = \sum N^0_{1i} R^0_{1i}$ is the total wages paid to employees represented by the occupations during the base-period 0 in industry 1;

$W_2 = \sum N^0_{2i} R^0_{2i}$ is the total wages paid to employees represented by the occupations during the base period 0 in industry 2 and so on; and

I^1_{0t}, I^2_{0t}, I^3_{0t}, etc., are the indices for industries 1, 2, 3 and so on.

Thus, to compute an index for several or all industries together, a weighted average of indices for individual industries will have to be taken, the weights being in proportion to total wages paid to employees in each industry during the base period. This derivation provides a short-cut to the problem of computing index numbers for broader sections of industries.

Practical application of the formula

One of the important properties of the formula is that only wage rate trends come under measurement. These are subject to much less dispersion than absolute wage rates and hence a relatively small sample, properly chosen, can adequately reflect the trends, once the weights have been determined on the basis of a comprehensive inquiry. Further, studies and assumptions regarding the behaviour of trends can substantially reduce the field of measurement. For example, if there are two occupations with two different weights but with the same trend of wage rates, the formula permits the weights of the two to be merged and thus only one of the two occupations is needed. This principle is known as imputation of weights. In the absence of studies on wage trends, which require time series over a long period, informed judgement can be used in applying this principle. Generally, imputations should be made within a family of occupations because assumptions regarding similarity of wage rate trend is most likely to be valid within such a family. An extension of the principle of imputation is the exclusion of certain occupations from the index on the assumption that their wage trends will follow the trend of the index as a whole. Usually, occupations which do not individually have significant weights in the index are assumed to follow the wage trend of the index as a whole, and thus they are excluded from the index by proportionately distributing their weights to other occupations.

It is therefore clear that not all occupational and employee categories need to be directly represented in the index. Those having appreciable weights and/or distinctive wage trends should be included and, of the remainder, some will be imputed to those included, and others will be omitted. The assumption is that the wage trend of an imputed occupation will follow the wage trend of the occupation to which it is imputed. The weight of the former can be added to the latter. In the case of excluded occupations, it is

assumed that the wage trend of all such occupations will follow the combined wage trend of all included or imputed occupations, i.e. the trend of the wage rate for the industry as a whole. The weights of the excluded occupations can be distributed proportionately to those occupations which are included. This is the same as excluding their weights from the industry and including them in the weight of the industry as a whole, while combining the indices for several industries. These assumptions do not hold strictly true, and to this extent some errors will be contributed to the index. However, in practice, these errors will not be sufficient to impair the validity of the index. From the practical point of view, imputation and exclusions should be kept to the minimum.

The formula permits subdivision of an included occupation with a given weight. For example, in one occupation included in the index, most of the employees may be male but there may also be a small proportion of women employees. The wage rate trend for the occupation as a whole may be determined on the basis of changes in average wage rates of male employees only on the assumption that the wage rate trends of female employees will follow accordingly. Even if the trend is somewhat different, the error contributed to the index will be negligible because of low weightage of female employees. This process of selecting a particular specification for determining wage rate trends often helps to measure pure wage rate changes. For example, if in the above situation there is a substantial wage rate differential between male and female employees, and if wage rates of both men and women are to be included in calculating average wage rates and in measuring changes from one period to another, such averages will be subject to the influence of the varying proportions of male and female employees which usually arises over a long period. In other words, even if the wage rates have remained unchanged, the average wage rate will be affected and the index will record a movement if the relative proportion of male and female workers has changed. This will be a spurious change which should be avoided in the index.

Data requirements

The formula for the wage index divides the data requirements into two parts: *(a)* data for determination of weights for the base period; and *(b)* data for the computation of wage rate relatives. The base-period survey for determining weights needs a larger coverage than the current and continuing survey, for which a relatively small sample suffices. The focus of attention of the two types of survey is also somewhat different. The base-period survey should concentrate on all occupations and categories of employees, while the current and continuing survey needs to concentrate only on the occupations and subdivisions chosen for the wage rate index. The integrated system of wages statistics outlined in Chapter 5 envisages the production of both types of basic data needed for the construction of wage indices. The wage structure and distribution survey described in Chapter 9 is designed to provide, among others things, data for the weighting diagram for wage rate indices for the non-agricultural sector. The current and continuing data needed for computing wage rate relatives can be obtained from the current survey described in Chapter 7. For the agricultural sector the data needs for the construction of the index can be obtained from the surveys discussed in Chapter 10.

Index numbers of earnings

Purposes of the index

Indices of earnings are compiled with various objectives. They have been used in the past as a tool to measure changes in average earnings as one of the main factors which determine the level of living of the wage and salary earning population. In this approach,

earnings are regarded primarily as income of employees. The fluctuations in average earnings are measured not only for employees as a whole but also for different industries, occupations or geographical regions. This may be due to variations in the numerical importance of different industries or occupations or to changes in the location of industries. Another purpose for the compilation of an index of earnings has been to measure the changes in average earnings per time unit, e.g. per hour, per day, per week, per month or per year, in respect of the same or similar work of comparable character and efficiency. The above two objectives should be kept in mind while deciding on the scope, coverage and choice of formula for the compilation of index numbers of earnings. The index of earnings is sometimes used as an element in economic forecasting and analysis and, in particular, in relation to other economic variables such as prices, productivity, employment, unemployment, etc. Indices of money earnings are a necessary prerequisite for the compilation of indices of real wages. The problems of construction of real wages are discussed in the next chapter.

Definition of earnings

The definition and components of earnings are given in Chapter 4 and referred to again in Chapters 6 and 9. The question arises as to whether earnings for the purposes of the index should refer only to money earnings, or should also include payments in kind. Many national indices of earnings cover only money wages. If payments in kind form only a small part of the earnings, the effect of their exclusion will not be serious. However, in certain industries, such as agriculture, hotels and restaurants, etc., payments in kind form a substantial part of earnings and it is not normally justifiable to exclude them from the measurement of trends. In such industries it is desirable to compile separate series of cash earnings and payments in kind and then combine these into a single index.

Another important element which distorts comparisons of trends comprises earnings from overtime work, which are subject to great fluctuations. In addition to a principal index of changes in average actual earnings including overtime earnings, it is desirable to construct subsidiary indices of earnings for normal-time work and indices of overtime earnings. These subsidiary indices should all be based on statistics of earnings derived from the same wage surveys.

Industries and categories of employees to be included

The industrial and employee coverage of the earnings indices for the non-agricultural sector is the same as described in Chapter 6 concerning current surveys of average earnings and hours of work. There should be separate indices of earnings for the agricultural sector, since it presents different problems of collection of wage data, which are discussed in Chapter 10.

It is necessary to take into consideration the industries and categories of workers for which variations in actual earnings are the most sensitive. The index of earnings should be prepared first at the group (four-digit) level or major group (three-digit) level of industry, and progressively aggregated to a higher level of industry. There should be separate indices of earnings for wage earners and for salaried employees which can be combined to form an index for all employees. Within the categories of wage earners and salaried employees, separate indices can be prepared for males, females, young persons or any other category of employees. Sometimes, practical considerations will impose certain constraints limiting the scope of the index to certain selected industries and categories of employees. To the extent possible these industries and categories of employees should be selected in such a way as to be representative of the movement of earnings of the employees as a whole. In such cases it will be necessary to indicate clearly the industries and categories of employees covered by the statistics.

Geographical coverage

Ideally, the index of earnings should cover the whole country but where this is not possible geographical regions or districts should be chosen so as to represent the whole country. This aspect should be taken into account in planning the current survey of earnings and hours of work described in Chapter 6. If adequate consideration is not given to this very important point, there is a danger that an index of earnings will be compiled which is not representative of the actual situation, either with regard to levels of earnings of employees or with regard to changes therein.

Frequency of computation of the index

From the users' viewpoint, it would appear reasonable that the frequency of compilation of the statistics should be determined in relation to the stability of economic conditions, compilation being less frequent when these conditions are more stable. From the point of view of facility of collection and for the purpose of ensuring accuracy, there may be certain justifications for the compilation of statistics at frequent intervals even when economic conditions are stable. In the integrated system of wages statistics as described in Chapter 5, the compilation of current statistics of average earnings and hours of work on a monthly or quarterly basis is envisaged.

Index formula and its practical application

The formula to be used for the computation of indices of earnings will vary somewhat, depending on whether earnings are to be regarded as remuneration for the same or similar work or primarily as income of employees. These two approaches are dealt with separately below.

Approach 1. When earnings are regarded as remuneration for the same or similar work, the problems of computation of indices of earnings can best be tackled along the lines discussed under the subheading "Index formula", using the occupation as the basic unit of observation. The approach consists of selecting a representative set of occupations in each industry in the base time-period and using the Laspeyres fixed base weighted formula. The formula can be expressed as follows:

$$I_{0t} = \frac{\sum N_i^0 \; E_i^t}{\sum N_i^0 \; E_i^0} \times 100 \quad \frac{\sum N_i^0 \; E_i^0 \times \frac{E_i^t}{E_i^0}}{\sum N_i^0 \; E_i^0} \times 100$$

where I_{0t} represents the index of earnings for a given industry for the current time-period t with reference to base time-period 0 taken as 100;

N_i^0 represents the total number of employees in the ith occupation during the base time-period 0;

E_i^t represents the average earnings of employees in the ith occupation at current time-period t;

E_i^0 represents average earnings of employees in the ith occupation at base time-period 0.

From the above two forms of the formula, the index can be viewed as: *(a)* a percentage ratio of the amount which employees in a given and fixed set of occupations at base time-period 0 earn at time-period t, to the amount they earned at base time-period 0; *(b)* a weighted average of earnings relatives, the weights being in proportion to the total wage bill for each occupation during the base time-period 0. As shown earlier, the formula can be extended for the computation of an index covering several industries. It becomes a weighted average of indices for individual industries. The weights will be in proportion to the total earnings of employees in each industry during the base time-period.

In this approach, the occupation in an industry forms the basic subdivision for the index. The principles, imputation of weights and other properties of the formula mentioned under the subheading "Index formula" are applicable in the case of the earnings index. The index formula measures changes in average earnings independently of the influence of shifts in the relative importance of individual industries, occupations or changes in the distribution of employees. Average earnings include overtime earnings, which are subject to greater variations than normal earnings. The principal index of changes in average actual earnings can be divided into two component indices: one relating to average earnings without overtime earnings and the other to overtime earnings. It is also necessary to compile index numbers of normal hours actually worked and hours of overtime on the same basis as indices of earnings.

Approach 2. National practices show that in most cases indices of earnings are compiled using the individual industry, and not occupations, as the basic subdivision of the index. The formula used for the construction of the index is the base weighted Laspeyres formula which is expressed as follows:

$$I_{0t} = \frac{\sum N_i^0 E_i^0 \times \frac{E_i^t}{E_i^0}}{\sum N_i^0 E_i^0} \times 100$$

where N_i^0 represents the total number of employees in the ith industry during the base time-period 0;

E_i^0 represents the average earnings of employees in the ith industry during the base time-period 0;

E_i^t represents the average earnings of employees in ith industry at time-period t;

I_{0t} represents the index of average earnings for industry divisions or major divisions for time-period t with reference to base time-period 0 taken as 100.

The product $N_i^0 E_i^0$ is the weight used in the formula which represents the total earnings of employees in the ith industry in the base time-period 0.

The average earnings E_i^t in an industry used in this formula are influenced not only by pure changes in earnings but also by changes in the occupational structure in the industry, changes in the distribution of employees and changes in overtime earnings etc.

In some cases indices of earnings are constructed on the basis of current employment weights and earnings relatives, using the following formula:

$$\frac{\sum N_i^t \frac{E^t}{E_0}}{\sum N_i^t}$$

Current employment figures are estimated from the data obtained, often together with the wage data from the sample of establishments included in the wage survey. Such indices, which do not use fixed weights, measure changes in earnings represented by the combined effects of a number of factors including: *(a)* increases in rates of wages; *(b)* changes in the number of hours actually worked, and the proportion of hours paid for at overtime rates; *(c)* changes in the incentive payment schemes; *(d)* changes in the proportions of males, females, boys and girls in different occupations; and *(e)* changes in the proportion of workers employed in different industries.

Data requirements

Among the approaches discussed above, Approach 1 requires more comprehensive data, particularly data on occupational earnings divided into normal-time earnings and overtime earnings, and the corresponding normal hours of work and overtime hours of work. Two types of data are needed; one for determining the weighting diagram, selection of occupations for the index, etc., and the other for the calculation of earnings relative to each selected occupation. The data for the weighting diagram of the index of earnings for industries in the non-agricultural sector can be obtained from the wage structure and distribution survey described in Chapter 9. For the current data it is necessary to use the type of current survey described in Chapter 7, concerning wage rates actually paid, which is based on the occupation as the observation unit. The survey design and questionnaire can easily be adapted to collect data on earnings for normal time and overtime and the corresponding hours of work for each occupation included in the index of earnings. The same principles can be extended to the organised sector of agriculture.

When the index of earnings is compiled according to Approach 2 the source of data for calculating earnings relatives on a continuing basis for industries in the non-agricultural sector can be the current survey of average earnings and hours of work described in Chapter 6. The wage structure and distribution survey elaborated in Chapter 9 is appropriate for providing the data needed for the weighting diagram and related aspects. The agricultural sector requires careful examination before deciding on the construction of the index numbers. Chapter 10 focuses attention on the problems of collection of data on earnings, particularly in the traditional sector of agriculture. The organised sector of agriculture should be covered first in the index of average earnings.

Index revision

Index numbers of wage rates or earnings computed on a fixed base become outdated as time passes: the weighting pattern changes, specifications become less representative and errors accumulate in the index. The indices do not take into account new occupations, new lines of production, the creation of new establishments, movements of employees from one industry to another and from one occupation to another, and changes in the demographic and other characteristics of the workforce. When the universe is changing rapidly, the index series will need to be revised completely, possibly once every five years. When the revision of the series is undertaken, the planning process must be repeated for the selection of industries and of occupations and for the specifications. A base period wage structure and distribution survey should be conducted and current surveys should be remodelled. Such revisions offer an opportunity for improving upon the structure and reliability of the index because past behaviour of wage trends can be studied on the basis of data collected for the old series for more objective standards for imputation of weights, selection of new occupations, sampling, etc. The old index should be continued up to the new base period and the old and new series should be linked suitably in order to provide reasonable continuity over time.

Real wages

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Statistical series of nominal wages, whether in the form of absolute figures or in the form of index numbers, throw no light on the changes in the amount of goods and services which can be purchased with wages, since the purchasing power of money wages differs greatly over time, between different regions or rural and urban areas within a country and between various countries. Statistics of real wages are not primary statistics because they need the combination of three types of primary statistics: wages, prices of goods and services consumed by workers and the consumption patterns of workers' families. In studies of real wages the problems of consumer prices and consumption patterns are as important as those of wages. They require a great deal of analysis and it is beyond the scope of the present manual to enter into detail on the concepts, definitions and methods of collection and compilation of price and consumption statistics. The main concern in this chapter is to define real wages and to identify the nature and characteristics of the wage data needed, as well as to indicate the methods of computation of real wages in order to meet different requirements. The ILO publication *International comparisons of real wages—a study of methods* (Geneva, 1956) provided a detailed analysis of the problems and methods of compiling statistics of real wages.

Definition and purposes of real wages

Real wages have been defined in the resolution concerning the international comparison of real wages adopted by the Eighth ICLS (1954) as the goods and services which can be purchased with wages or are provided as wages. This definition establishes a useful basis for computation of real wages and their comparison between one period of time and another or between one country or area and another.

Comparisons of the movement of real wages over time in a country yield a measure of the material progress (or otherwise) of the population of wage and salary earners. Real wage index numbers are valuable in establishing historical relationships between wages and other economic variables such as employment, production, income and consumption. They are also useful in business-cycle analysis, economic planning, forecasting, formulation of economic theories, etc.

Real wage comparisons between rural and urban areas or between geographical regions within a country are often needed in connection with the establishment of regional wage differentials by collective agreements or by administrative wage-fixing procedures. A fundamental concern of workers and trade unions is to protect the purchasing power of wages, particularly in periods of high inflation, and this is often

done by linking money wages to consumer price indices and by compensating for differences in living costs over time and between places.

Statistical data designed to provide place-to-place comparisons of real wages are of special importance, since they afford a means of comparing wages between areas with greater objective validity. Money wages converted to a common currency by using official exchange rates are not reliable indicators of the purchasing power of wages in different countries. Real wage comparisons provide a measure of the relative material status of labour in different countries and are of value for economic analysis, planning and forecasting. Comparisons between countries of the movement of real wages over time provide an equally important measure; they are used in analysing the international flow of goods and population and establishing wage, price and tariff policies.

Statistics of real wages are used in the study of many specific problems: governments, international organisations and private employers frequently encounter the problem of fixing the wages and salaries of employees stationed in different countries so as to provide substantially the same purchasing power at all stations. Another example of the significance of real-wage data is that prospective migrants and administrators of migration programmes are interested in the material standards that wages will purchase in the country of immigration as compared with those in the country of origin.

Real wages and related concepts

It is necessary to distinguish between real wages and a number of related concepts with which they are often associated. While real wages provide a certain indication as to levels of living, the two concepts are by no means identical. "Level of living" is a broader concept of which aggregate consumption of goods and services forms only a part. It is also not entirely a monetary concept or even purely an economic concept. The monetary concept that most closely approximates to the level of living is that of real income, which relates to the total income of individuals or families and to the cost of the goods and services they purchase.

In the past a number of studies have used the food purchasing power of wages as an indication of the differences in their purchasing power in the whole range of goods and services consumed by the working class. It is doubtful whether comparisons of food prices have ever provided an indication of international differences in the prices of all items of consumption. The past decades have witnessed a steady progress in the living standards of workers in developed countries; consequently, in these countries the proportion of food expenditure to the total consumption expenditure of working class families has steadily decreased. Because of the wide fluctuations of prices, together with the existence of various forms of price controls and subsidies for the different types of goods and services, comparison of food prices has become less indicative of the general purchasing power of wages.

A change in the index of real wages is sometimes interpreted as an equal change in the consumption of goods and services by workers. Such an interpretation is not valid for two reasons: first, the level of consumption of a worker's family is determined by the total income from all sources, of which wages form only a part; second, statistics of average earnings usually relate to gross earnings, while the amounts of goods and services consumed are determined by the spendable income—in other words, by gross earnings minus deductions for income tax, social insurance contributions, etc., plus income received from public and other institutions.

The consumption patterns of the working class or the population as a whole are determined by various factors and not merely by wages or income. They are influenced by different socio-economic structures, cultural differences and values of life. This situation further complicates the problem of interpreting the differences in the purchasing

power of wages between different countries. Generally speaking, it is advisable to make comparisons of real wages between countries which have similar social and economic characteristics, which is often true of countries in the same geographical regions. Real wage comparisons involving markedly different types of countries, for instance developing countries and highly industrialised countries, may give misleading results.

Real wage series relating to wage rates or earnings are sometimes used for measuring changes in labour cost in real terms. Such a procedure is open to question, since wage rates or earnings represent only part of labour cost and the movements over time of average wage rates and average earnings need not necessarily be identical with those of total labour cost. Further, the concept of labour cost per unit of time, such as man-hour, may not be the most useful or significant data for the business enterprise, compared with labour cost per unit of output. An increase, for example, in the hourly wages of labour compensated by a decrease in the man-hours expended per unit of product may mean no change at all in the labour cost per unit of output. If the efficiency or output of labour per man-hour varies substantially from country to country, it is not appropriate to make place-to-place comparisons even at a single point of time.

Data needs for real wages

The data needs for the computation of real wages are: *(a)* a wage measure expressed in monetary terms; *(b)* a series of prices of goods and services commonly purchased by the employees; and *(c)* data on the consumption pattern of employees. The early researchers into real wages concentrated on problems related to prices and consumption pattern, and there has been a tendency to assume that real wage comparisons merely involve the application of an appropriate price-consumption formula to whichever set of wage data is readily available. The choice of an appropriate wage measure is extremely important in real wage calculations, because of the conceptual differences in wages statistics. These differences are dealt with in greater detail in Chapter 4.

The wage measure to be used will depend in part on the basic purpose of the real wage comparison. In this context a fundamental distinction must be made between comparisons of wages as remuneration for a given contribution of time, energy, skill, etc., and as a major indicator of workers' level of income. The question therefore arises as to whether real wage comparisons are primarily intended to determine differences in wages received for the same or equivalent work, or to compare wages as an element of income, independent of the work performed. The choice of the wage measure, the nature of the data to be collected and the manner of their utilisation will be considerably influenced by the answer. It is possible that the results obtained from the two approaches may differ appreciably in particular situations even to the extent of leading to divergent conclusions. However, both approaches are needed for the different purposes.

Comparisons of real wages as remuneration for the same or similar work

For some purposes comparisons of wages for the same or equivalent work are clearly indicated, e.g. in collective bargaining or wage determination, for which comparisons ordinarily relate to work involving a given degree of hardship and skill, measured for a stated period of time and associated with specific privileges, responsibilities, etc. For such purposes wage differences between dissimilar jobs or associated with important differences in hours or conditions of work are at best difficult to interpret and may be almost meaningless.

International employers who wish to maintain equal scales of real wages in different countries must obviously take account of job content. Wage gains associated with rising productivity can properly be measured with reference to the same or equivalent work. International wage comparisons in connection with migration purposes should apply to similar jobs if they are to provide any useful guidance.

In studies of remuneration for the same or equivalent work, it is necessary to identify similar jobs. In practical terms, this may mean grouping the workers by occupation. Studies requiring great precision may even distinguish between skill groups within a single occupation. In international comparisons it is necessary to ensure that similar occupational titles do not obscure important differences in actual job content. Wage comparisons covering a large number of occupations may involve great practical difficulties. The practical problems of collection of occupational wage data have been discussed in Chapters 7 and 9 for the non-agricultural sector and in Chapter 10 for the agricultural sector.

Wages for individual occupations are most commonly available in the form of wage rates and, in particular, wage rates fixed by or in pursuance of laws or regulations, collective agreements and arbitral awards. It has already been mentioned in earlier chapters that these rates are usually the minimum or standard rates and generally differ from the wage rates actually paid to the workers by the employers. Where the data on wage rates correspond with actual levels of rates paid, they provide an extremely useful measure. Since wage rates are free from the disturbing influence of premium payments, etc., they may be even better suited to the comparison of wages for the same or equivalent work within a country. In international comparisons, however, this advantage is more than offset by the fact that the definition and scope of wage rates are not usually comparable between countries. Average earnings, on the other hand, represent a much more uniform wage measure. Earnings for purposes of comparisons of remuneration for the same or equivalent work should refer to remuneration for normal-time work without the influence of overtime or other premiums for holiday work, since these tend to increase average earnings and thereby distort comparisons between periods or countries in which different amounts of overtime are worked.

Wage comparisons undertaken to reveal differences in remuneration for the same or equivalent work should ordinarily be made in terms of wages per hour, since the "same work", other things being equal, may usually be taken to mean work for the same duration. Wages per week, month or other unit of time can be compared equally well if adjustment is made for differences in the length of the working week, month, etc. A working week differing substantially in length, however, cannot be taken as representing the same or equivalent work. Account should also be taken of differences in the method of wage payment, such as time-rates or piece-rates, since such differences often imply a difference in the nature or intensity of work.

Comparisons of real wages as a major item of income of workers

Many comparisons of real wages have been concerned with wages as an element of income and the Eighth ICLS (1954) expressed great interest in such comparisons. In the economic analysis of consumer purchasing power and in market analysis in general, the amount of wage income per head or in aggregate has great significance, regardless of the type of work performed by the wage earner. The measurement of wage income irrespective of the job performed is also significant in developing social security programmes and for other welfare or administrative purposes.

Many of the studies dealing with real wages as income independent of the work performed, however, are designed primarily to estimate differences in levels of living of the

wage- and salary-earning population. There is widespread interest in such comparisons and the studies have yielded significant results. The limitations of wages as an indicator of levels of living should be clearly understood. Comparisons involving remote periods or countries in which different conditions prevail may give rise to misleading conclusions.

Studies of real wages designed primarily to compare wages as an element of income of workers should endeavour to cover all employees, or at least a representative sample. Statistics of real wages may cover all employees, wage earners or salaried employees, in all industries or in a particular industry to which interest is attached. The industrial, geographical and employee coverage of real wage statistics is similar to that discussed in connection with the production of basic wages statistics within the framework of the integrated system. The resolution of the Eighth ICLS (1954) recommends that comparison of real wages may relate to specified occupations or industries or may refer to broader groups of wage earners and, in particular, separate real wage comparisons may be made for juveniles and females.

The wage measure "earnings" corresponds to the concept of wages as income of employees. However, as analysed in Chapter 4, earnings do not adequately represent the level of income received by the employees from employment, since they do not include receipts from wage-related social security schemes or other schemes. In view of the limitations of this wage measure as regards adequate representation of income, the need for developing a new wage measure, "employee income", is stressed in Chapter 4. This proposed wage measure would include, in addition to earnings, receipts from wage-related social security schemes and other supplementary receipts from the wage payment system. Pending the development of such a wage measure, earnings should be used for comparisons of wages as income of workers.

The statistics of earnings usually compiled represent gross earnings before deduction of pension and social security contributions of employees and of income tax and other taxes. The question arises as to how to treat these deductions for purposes of real wage comparisons. As regards social security contributions of employees, in principle it appears possible to justify their deduction only if account can be taken of the corresponding receipts from the pension and social security schemes. As the benefits from these schemes are not taken into account, there does not seem to be any need to deduct the contributions from the gross earnings.

The treatment of income and other direct taxes levied on wages raises problems for the comparison of real wages. Views differ on this matter and there is some doubt as to whether their deduction can be justified in the comparisons of real wages unless account is taken of certain benefits which the tax payments bring. From the practical point of view, it needs in-depth analysis of the tax structure and sometimes it is extremely difficult to make adjustments for the income and other direct taxes in the statistics of average earnings. Indirect taxes enter into comparisons of real wages to the extent that they are included in the prices paid by employees.

In comparisons of wages as an element of income, the time unit to be used to measure average earnings should ideally be a year, although weekly or monthly earnings may also be useful. As far as income is concerned, variations in the length of the working week and the duration of unemployment may be as important as the hourly rate of pay. The use of hourly earnings would not reflect the influence of the length of the working week, short-time work or unemployment and might yield misleading results.

Computation of real wages

Computation of real wages over time within a country raises fewer difficulties than place-to-place comparison of real wages. To provide an indication of the changes in the purchasing power of wages resulting from changes in prices of consumer goods and ser-

vices, the wage data are combined with a consumer price index. According to this method the index number of nominal wages is divided by the index number of consumer prices, the base of both series being the same. Ideally, the wage index series and consumer price index series should cover the same population group and have the same geographical coverage. The real wage series are affected if there are serious deficiencies in the consumer price indices used for the computation.

For computation purposes the concept of the real wage, defined as the goods and services purchased by wages or provided as wages, can be expressed in mathematical form. If W stands for the wage level and P for the price level, with subscripts 0 and 1 representing the two situations compared, the real wage ratio is represented by R_{01}:

$$R_{01} = \frac{\frac{W_1}{W_0}}{\frac{P_1}{P_0}} \quad \text{or alternatively} \quad \frac{\frac{W_1}{P_1}}{\frac{W_0}{P_0}}$$

The two situations can be either two time-periods within a country or two different countries.

The formulae and the methods of computation of wage indices and price indices for comparisons of real wages over time and between countries are explained in detail in Chapter III of *International comparisons of real wages—a study of methods*[1] part of which is given as annex at the end of this Chapter. The indices of wage rates actually paid and indices of earnings discussed in the previous chapter are designed to suit, or can be easily adapted to suit, the needs of computation of indices of real wages.

Annex[1]

A theoretically desirable formula

The basic concept of the real wage, defined as the goods and services purchased by wages or received as wages, can be expressed in two different but algebraically equivalent ways. If W stands for the wage level and P for the price level, with the subscripts 0 and 1 representing the two situations compared, the real wage ratio R_{01} between the two situations can be expressed as the ratio

$$\frac{\frac{W_1}{W_0}}{\frac{P_1}{P_0}} \quad \text{or alternatively as} \quad \frac{\frac{W_1}{P_1}}{\frac{W_0}{P_0}}$$

It should also be noted that the reciprocal of the real wage ratio, $\frac{1}{R_{01}}$, gives the ratio of the period (hours) of work necessary to buy a given set of goods and services, H_{01}. Since the wage and price sections of the real wage ratio present different problems, the convenient formulation

$$\frac{\frac{W_1}{W_0}}{\frac{P_1}{P_0}}$$

has been adopted for this study, and the wage and price ratios are discussed separately below.

A theoretically desirable money wage ratio

The formula used to describe the money wage ratio will vary somewhat depending on whether wages are to be regarded as remuneration for the same or similar work or primarily as an element of income. In the following paragraphs attention will first be given to wages as remuneration for similar work. In the light of the discussion in the preceding chapter, it will be assumed that the data employed consist of average hourly earnings in specific occupations.

The ratio of money wages in any given occupation in two situations, w_{01}, equals $\frac{w_1}{w_0}$, where w_1 and w_0 represent the average wages in the occupations in the respective countries or at the respective dates compared. It should be noted that, for purposes of comparability, the occupation in question must be the same in the two situations—which calls for close attention to both nomenclature and job content. This does not mean that the comparison should be restricted to single occupations except in special circumstances. Reliance on the single occupation "tractor driver in timber haulage" would result in a strongly atypical comparison between the lumbering industries of highly mechanised countries on the one hand and underdeveloped countries on the other, assuming that such a comparison could be made at all. Even a more widespread and common occupation such as "cook, lumber camp" cannot be expected to represent the wage structure of the industry in the two countries.

In certain circumstances, e.g. in collective bargaining, special interest may be taken in a single key occupation or group of occupations. In general, however, it is desired to compare the wage structure of the industry as a whole, and the occupations chosen for comparison must therefore not only be present in the industry in the two situations, but must also represent the wage structure of the industry. The theoretically desirable money wage ratio W_{01}, then, commonly stands for a combination of occupations which represent so far as possible both the occupational structure of employment and the occupational wage structure in the situation concerned.

The choice of representative occupations

The principle governing the choice of representative occupations, for which average hourly earnings are to be computed in the wage ratio W_{01}, can be illustrated on the basis of a single industry. If interest extends to broader categories of economic activity, the same principles apply.

For the industry to be compared, census or other detailed statistics of the occupational structure of employment can provide a first basis for choice. The analysis of employment in the various occupations of the industry can serve as a screening process to provide a list of occupations that are *(a)* common to the industry in both situations compared, and *(b)* quantitatively important. A simple procedure would be to make an array of all the occupations common to the two situations compared. From this array the marginal occupations representing a negligible percentage of total employment in the industry could be eliminated immediately. For the remaining occupations, detailed information on average earnings would be needed. These occupations could be reviewed a second time in terms of wage structure, and those occupying positions markedly differing from the median (the use of the mean as a measure of central tendency would involve the problem of weighting) could then be dropped.[2] The remaining occupations, by elimination, would be those which were *(a)* common to the industry in both situations compared; *(b)* quantitatively important in terms of numbers employed; and *(c)* occupying roughly the same relative positions in the wage structure in the two situations. In all probability these occupations would give adequate representation to highly paid, middle-range and lower-paid jobs.

In certain circumstances other methods can be employed with greater facility. In countries where the wage-fixing process (whether collective bargaining or administrative wage-fixing procedures) uses key occupations in the wage structure for purposes of wage determination, it may be sufficient to have information for the key occupations. This technique is often appropriate for time comparisons within a given country, but less frequently for place-to-place comparisons, since the key jobs commonly differ from country to country. In situations where occupational wage relationships in a given industry are frozen by law or tradition into a definite hierarchy, comparisons may be made in terms of almost any small group of occupations, with reservations for place-to-place use.

Whichever technique is applied, however, the result will be a representative set of average wages for specific occupations. The problem is then to combine these representative occupations into the single wage ratio W_{01}.

Combining occupations into a single ratio

The simplest combination of the representative occupations is the unweighted average of occupational wage ratios

$$\frac{\sum \left(\frac{w_1}{w_0}\right)}{N}$$

Here N stands for the number of occupations. This technique might be adopted when inspection of the array of individual ratios $\frac{w_1}{w_0}$ shows symmetry and limited dispersion about the central value. When there is a significant and non-symmetrical variation about the central value, a weighted average should be calculated.

A weighted average of occupational wages takes the form

$$\frac{\sum w_1 e}{\sum w_0 e}$$

where e represents the numbers of persons employed in the occupations. If different numbers are employed in the respective occupations in the situations compared, several procedures are possible. If the differences are small, the e of one or other country alone may be used in weighting. If the differences are greater, the two ratios

$$\frac{\sum w_1 e_1}{\sum w_0 e_1} \quad \text{and} \quad \frac{\sum w_1 e_0}{\sum w_0 e_0}$$

should be computed.[3]

A ratio for comparing wage incomes

The techniques described above utilise a single set of weights for the computation of average earnings, i.e. a single complex of occupations. This is done to ensure that differences in the averages obtained for the two situations compared are true differences in wages for the same or similar work, and do not result simply from differences in the jobs themselves.

Where, as often happens, it is desired to compare wages in two different situations, regardless of the work performed, the ratio takes the form

$$\frac{\frac{\sum w_1 e_1}{\sum e_1}}{\frac{\sum w_0 / e_0}{\sum e_0}}$$

Here two sets of weights are used, representing employment structure in the two countries or periods of time. The scope of the comparison may well extend to all occupations and to many industries.[4]

Needless to say, whichever formula is chosen, the comparison should be made on the basis of average earnings as defined in Chapter II of *International comparisons of real wages*, in order to fit the wage ratio W_{01} for the computation of real wages.

A theoretically desirable consumer price ratio

A theoretically desirable consumer price ratio would be a pure measure of consumer prices in terms of identical quantities of identical goods and services. Using the symbols p for price and q for quantity, with the subscripts 0 and 1 as in the money wage formula, such a consumer price ratio would take the form

$$\frac{\sum p_1 q_1}{\sum p_0 q_0}$$

This formula, however, can be used only if identical consumption patterns are compared in the two situations, i.e. if the q_1 and q_0 are the same.

If the consumption patterns are not identical, the comparison of prices may be made in terms of the weights of one situation alone, as

$$\frac{\sum p_1 q_0}{\sum p_0 q_0} \quad \text{or} \quad \frac{\sum p_1 q_1}{\sum p_0 q_1}$$

which are the Laspeyres and Paasche formulae, respectively. The Laspeyres formula is commonly used for time comparisons within a given country in the short run, but in spatial comparisons there is no particular justification for using one country as a base rather than another. Indeed, the spatial analogues of the Laspeyres and Paasche expressions are meaningless, since the index which is a Laspeyres expression with respect to country A is the reciprocal of a Paasche index with respect to country B. Since, in practice, differences in consumption between countries make it impossible to calculate a pure consumer price ratio of identical quantities of identical goods and services, the Laspeyres and Paasche formulae provide different answers. These answers are often regarded as limits, between which a true index number that estimates the pure consumer price ratio is believed to lie.

The significance of the formulae in establishing limits in spatial comparison can be illustrated in the following way. Suppose that a worker from country A migrates to country B. In country A his consumption pattern, in conjunction with local prices, results in an expenditure of $\sum p_a q_a$. On arrival in country B, his consumption pattern in conjunction with local prices results in an expenditure of $\sum p_b q_a$. The price ratio between the two countries for this worker then takes the Laspeyres form

$$\frac{\sum p_b q_a}{\sum p_a q_a}$$

The longer the worker stays in country B, however, the more probable it is that his consumption pattern will adjust itself to local conditions (i.e. to reach a higher level of total satisfaction with a given income to spend at local prices). Eventually his expenditure reaches an optimum adjustment to the new conditions and takes on the B pattern $\sum p_b q_b$, which can no longer be compared directly with $\sum p_a q_a$. For the individual worker, of course, the two prices can be compared in terms of the new consumption pattern, and the price ratio is

$$\frac{\sum p_b q_b}{\sum p_a q_b}$$

a Paasche index with respect to country A.

When, however, it is desired to compare workers in country A (who remain in their own country) with workers in country B (who also remain in their own country), the analyst is confronted with two sets of weights representing two different patterns of consumption. When a true index is assumed to lie between the Laspeyres and Paasche figures, a common technique of estimating this index is the use of Fisher's "ideal" formula, which is simply a geometric average of the

Laspeyres and Paasche expressions. It should be noted, however, that despite the popularity of Fisher's formula for place-to-place comparison, it has no objectively verifiable claim to superiority over other average-weighted formulae, except in its ability to satisfy the rather arbitrary factor-reversal and time reversal (or place-reversal) tests.

Certain restrictions apply to the use of the Fisher and other compromise-weighted measures. If the Laspeyres and Paasche expressions result in answers of opposite sign (i.e. if country A ranks higher than country B with one set of weights and lower than country B with the other) the true answer is indeterminate. If the difference between the two answers is small, it may be possible to reach a subjective decision that price levels are roughly equal in the two situations, but if the difference is large, no such answer is possible. Even when one country ranks higher than another with each set of weights, a substantial difference between the two results casts doubt on the advisability of using a single figure. For this reason it is common to present two comparisons based on the different sets of weights, so as to emphasise that a zone with Laspeyres and Paasche limits, rather than a single hypothetical point, provides the most valid answer.

Finally it should be noted that in theory it is not necessary to have separate information on physical quantities consumed. When the price indices are computed as weighted averages of price relatives, the equivalent of the Laspeyres formula is

$$\frac{\sum \left(\frac{p_1}{p_0}\right) p_0 q_0}{\sum p_0 q_0}$$

and that of the Paasche formula is

$$\frac{\sum p_1 q_1}{\sum \left(\frac{p_0}{p_1}\right) p_1 q_1}$$

The weights are $p_0 q_0$ and $p_1 q_1$, and can be obtained from family expenditure studies without separate computation of physical quantities. In practice, however, the weighted average of price relatives is not necessarily identical with the weighted aggregative index.[5]

The real wage ratio and its significance

The real wage ratio R_{01} between two countries or dates is obtained by dividing the money wage ratio W_{01} by the consumer price ratio P_{01}. The general form of the comparison is

$$R_{01} = \frac{\frac{\sum w_1 e}{\sum w_0 e}}{\frac{\sum p_1 q}{\sum p_0 q}}$$

The employment weights in the wage ratio and the consumption weights in the price ratio should ideally represent identical conditions in the two situations compared. When the situations differ with respect to the occupational structure of employment or the nature of the goods and services consumed, the Laspeyres and Paasche formulae (and their spatial analogues) provide limiting measures. In so far as prices are involved, both formulae should be computed. In the case of differing occupational structure this may also be desirable, but it is often sufficient to use an average of the two sets of employment weights or to adopt some other intermediate solution.

The meaning of the real wage ratio R_{01} is this: depending on the wage series used, it measures, in two different situations, the difference in the goods and services that can be bought with the

remuneration for a given quantity (hour) of a given type of work, or the difference in the goods and services that can be bought with the worker's remuneration, regardless of the type of work performed. Differences in the number of wage earners per family and in the sources and kinds of non-wage income make for differences between real wage and real income comparisons. Differences in the social and physical conditions of life and work account for additional differences between comparisons of real wages and of levels of living.

Subject to these reservations, the real wage ratio R_{01} can be used as an international measure of the differences in the goods and services that can be bought with money wages. It has a clear advantage of being more comprehensive than the more limited concept of the food purchasing power of wages and—because exchange rates cancel out when the same rate is used to express both prices and wages—it is free from the embarrassments of exchange rate adjustment.

Notes

[1] ILO: *International comparisons of real wages—a study of methods*, Studies and Reports, New Series, No. 45 (Geneva, 1956), Ch. III, pp. 30-38.

[2] The chief purpose of this step would be to eliminate occupations which, while carrying the same title in the two situations, were not actually the same.

[3] It may be noted in passing that the problems involved in selecting a "bundle" of occupations and assigning weights to them are similar to those involved in selecting and weighting commodities for pricing, discussed below. It would not appear illogical, for example, to distinguish between the Laspeyres and Paasche approaches in the weighting of occupational earnings.

In practice, the selection and weighting of occupations generally receives much less attention than the selection and weighting of commodities for pricing. This is partly due to the fact that the price data may be much more widely used than the wage data (e.g. for real wage comparisons in many industries). Technological factors admittedly tend to maintain some similarity in occupational structure from country to country and from one period of time to another in the same industry, but there are limits to the extent to which they can be relied upon to do so.

[4] Such a comparison is usually made, in fact, without reference to occupational averages. A convenient alternative formula is

$$\frac{\frac{\sum s_1}{\sum e_1}}{\frac{\sum s_0}{\sum e_0}}$$

where s_1 and s_0 represent aggregate earnings of workers in individual establishments in two given situations, and e_1 and e_0 the numbers of workers employed in the establishments.

[5] Cf. A. P. Ruderman: "A neglected point in the construction of price index numbers", in *Applied Statistics* (London, Journal of the Royal Statistical Society), Vol. III, No. 1, Mar. 1954, pp. 44-47.

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