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**Joint ECE-EUROSTAT-ILO Seminar on  
Measurement of the Quality of Employment  
(Geneva, 3-5 May 2000)**

### **Topic 3**

#### **EMPLOYMENT-RELATED INCOME**

Invited paper submitted by the International Labour Office<sup>1</sup>

#### **Introduction**

1. Employment-related income is probably the indicator of employment quality that is most often mentioned in the socio-economic literature. The majority of the population, i.e. persons in paid or self-employment and their families, depend almost entirely on the income they derive from their job(s) to provide themselves with food, clothing, housing and all the other necessities of life. The payments in cash and in kind they receive serve as one of the indicators of their level of living. In addition, their relative status in society, their spirits and motivation towards productivity, are conditioned by the income they receive. Pay in the form of minimum wages, collectively agreed wage rates and similar basic remuneration is at the centre of collective bargaining and many other aspects of industrial relations. A clearer indication of the actual development of workers' incomes is provided by earnings figures which, in addition to basic wages and salaries, include elements such as bonuses and overtime pay. In labour statistics, these types of income have been traditionally measured by means of statistics on the level of wages (average wage rates or earnings) of employees, generally characterised by economic activity, occupational group and sex, sometimes by occupation, and by statistics on earnings distributions.

2. During the past decades, remuneration systems have broadened considerably, mainly through two mechanisms: the proliferation of non-wage benefits and forms of compensation offered by employers to attract and retain employees; and the expansion of employment-related social security benefits. Neither aspect, each of which has an impact on income level and security, is reflected in the existing wages statistics. At the same time, the stability of regular wage employment has declined and many workers have had to resort to other types of income-earning activities, such as casual or temporary paid

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<sup>1</sup> Paper prepared by M.T. Dupré, Statistician, ILO Bureau of Statistics.

employment, part-time paid or self-employment, multiple job holding, etc., in either the formal or the informal sector of the economy. Measuring changes in wages or income levels has therefore become a complex task; measuring the quality of these different types of jobs is even more complex. The resolution<sup>2</sup> adopted by the 16<sup>th</sup> ICLS (1998) on the measurement of income related to paid employment seeks to account for the various forms of remuneration which accrue to persons in paid employment by virtue of their current or former involvement in paid employment jobs, whatever the form of employment.

3. The level of earnings and income related to paid employment is influenced by a number of factors: some of them characterise the job (industry, occupation, type and size of enterprise, work duration, whether full- or part-time, etc.), some of them, the individual (age, sex, education and skill level, seniority in job and/or enterprise, number of jobs held, etc.); while other factors are linked to the institutional context in terms of industrial relations and protection of minimum income, such as minimum wage regulations, wage indexation mechanisms, collective bargaining, etc. In addition to statistics on the level of employment-related income, it would be useful to have statistical information on those characteristics which affect the quality of employment. This information could be used to refine measures of income distributions and income inequality, such as gender-specific wage differentials. It would also represent a first step towards the measurement of income-related inadequate employment.

4. The measurement of the incomes of the self-employed presents different problems, compared to that of persons in paid employment. The self-employed comprise a wide range of workers who carry out their activities in various circumstances (such as corporations, individual or household enterprises, professional practices), with or without the help of partners, employees or contributing family workers. When statistics on income generated by self-employment are available, they follow a variety of concepts and methodologies, they are often available only at the household or enterprise level, and little information is available on the relationship between income and the characteristics of the self-employment job. The 1998 resolution on the measurement of employment-related income proposes a definition and measurement method of income related to self-employment at the individual level and by types of components of income. It also proposes to analyse income related to self-employment in relation to some of the factors which affect the quality of self-employment: type, legal status and size of the enterprise, sector, industry, occupation, existence of partners or contributing family workers, duration of employment and time worked, socio-economic characteristics of individuals, etc.

5. As in the case of income from paid employment, it would be useful to have statistical information on the different forms and components of income related to self-employment and on their impact on income security, income distributions, inequality measures, etc. Additional factors, which are not accounted for in the above-mentioned resolution, affect the quality of employment of the self-employed: these include the legal framework within which businesses operate, the administrative and tax systems in force, the access to financial and support services, etc. Further work may therefore be required to refine the quality assessment of self-employment, and in the years ahead, to define and measure the concept of inadequate self-employment in terms of income.

*The objective of this paper is therefore twofold:*

- (a) *to identify and discuss some of the conceptual and methodological issues involved in estimating income related to paid and self-employment, in the light of national experiences (points for discussion are noted in bold and italics); and*

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<sup>2</sup> Resolution concerning the measurement of employment-related income; available on Web-site: <http://www.ilo.org/stat>

- (b) *to exchange views on possible areas of research, in the field of earnings, income related to paid employment and income related to self-employment, in order to assess the qualitative dimension of these two broad forms of employment.*

### **General approach to the concept of employment-related income**

6. The resolution defines the general concept of employment-related income as «the payments, in cash, in kind or in services, which are received by individuals, for themselves or in respect of their family members, as a result of their current or former involvement in paid or self-employment jobs. » It further defines, separately, the concepts of «income related to paid employment» (para. 10 and 12) and «income related to self-employment»(para. 10, and 18-19), and provides guidance on such issues as measurement methods, data requirements and compilation, data sources, analytical measures, etc., with a view to promoting the development of these statistics along sound lines and improve their international comparability.

7. Statistics on employment-related income have a dual objective: (i) to analyze the income-generating capacity of different economic activities, and (ii) to analyze of the economic well-being of individual persons on the basis of the employment opportunities available to them. A distinction is therefore made between the « job-oriented » and the « person-oriented » measurement of employment-related income.

8. The concept of employment-related income is meant to be exhaustive in two ways : (i) it is assumed to cover all the components of income which are generated by an activity and made currently available to income-earners by virtue of their present or former employment situation ; and (ii) it applies primarily to all persons employed - whether in paid or self-employment, with a full- or part-time, permanent or casual job, or with more than one job - but also, where relevant, to persons who are unemployed or not economically active (e.g. the retirees) and who receive an income as a result of their former employment situation.

### **Major issues raised by the definition of « income related to paid employment »**

9. Income related to paid employment consists of "all the payments, in cash, in kind or in services, which are received, over a given reference period, by individuals for themselves or in respect of their family members, by virtue of their involvement in current or former paid employment jobs."

10. This definition comprises all the traditional components of annual earnings in cash and in kind, as measured by establishment or household surveys which aim at measuring annual earnings: In addition, it comprises more recent forms of compensation which are usually not accounted for in earnings statistics, such as profit-related pay and employment-related social security benefits received either directly from the employer, from social security or compulsory insurance schemes or from the State. Table 1 lists the main components of income related to paid employment.

**Table 1 Major components of income related to paid employment**

<b>(a) Total cash remuneration:</b>
(i) direct wages and salaries in cash for time worked and work done: straight-time and overtime earnings, all incentive, shift and premium pay (e.g. for responsibility, unsanitary conditions, danger, work at night, weekends and during other unsocial hours); cost-of-living, housing, transport, language and similar allowances; hardship, mobility, non-resident, expatriation, repatriation, post-adjustment and similar allowances; contractual and non-obligatory regular bonuses and premiums; tips and commissions (with and without a retainer); payments for odd jobs and duties and casual work; fees and salaries of managerial staff; remuneration of trainees and apprentices; and other components of direct wages and salaries;
(ii) remuneration for time not worked: annual vacation and other paid leave; public holidays and other recognized holidays; temporary halt or slow-down of production, short-time working; other time off granted with pay (e.g. for personal and family reasons, civic duties, union responsibilities, training and education); paid sick leave (where not regarded as social security benefit); severance and termination pay (where not regarded as social security benefit); other remuneration for time not worked (e.g. strike pay provided by unions, etc.
(iii) cash bonuses and gratuities: all bonuses and gratuities, whether contractual or non-compulsory bonuses and premiums, year-end and seasonal bonuses (13th, 14th or 15th month's salary, additional vacation pay, etc.); exceptional payments for innovative ideas or work methods; and similar ad hoc payments.
<b>(b) Remuneration in kind and services;</b> Traditional payments such as food, drink, fuel, clothing, footwear, etc.; the imputed rental value of free or subsidized housing; petrol and/or mileage allowance or the imputed value of free or subsidized similar benefits; the imputed value of business vehicles for employees' private use, telephone, electricity and similar utilities; free or subsidized transport to and from work and free car parking; the value covered by the employer of: union, association and club fees, nurseries, crèches, etc. for employees' children, low- or zero-interest loans, subsidized mortgages, etc., the value of output from employer's process of production;(2) as well as the value of other payments in kind, including flexible benefits and other compensation packages for employees.
<b>(c) Profit-related pay:</b> Traditional profit-sharing bonuses; current receipts from profit-related schemes, participation, savings-related share option schemes and similar schemes; the initial market value of shares distributed to employees; other profit-related receipts.
<b>(d) Employment-related social security benefits:</b>
(i) current receipts from the employer: e.g. family, dependants' and similar allowances; educational

allowances; payments in respect of absence from work due to sickness, maternity, occupational injury or disease, etc. (which compensate, in part or in full, for loss of earnings); payments in respect of temporary or partial lay-off or unemployment (which compensate, in part or in full, for loss of earnings); as well as compensation for medical expenditure, provision of free health care (homes, clinics, health services, etc.) and other social security payments received from the employer;

(ii) current employment-related social security benefits received from social security or compulsory insurance schemes or the State: e.g. family, dependants', educational and similar allowances; payments in respect of absence from work due to sickness, maternity, occupational injury or disease, etc. (which compensate, in part or in full, for loss of earnings); payments in respect of temporary or partial lay-off or unemployment (which compensate, in part or in full, for loss of earnings); as well as compensation for medical expenditure, provision of free health care (homes, clinics, health services, etc.) and other social security and assimilated payments for which the employment status is a condition of receipt;

(iii) current social security benefits received as a result of former employment: e.g. unemployment compensation; severance, termination and redundancy pay; occupational and retirement pensions and assimilated benefits.

11. In order to avoid subsequent double-counting, income related to paid employment should be measured after deduction of employees' contributions to compulsory employment-related social security and retirement schemes. This step provides a measure of "semi-gross" employment related income.

12. Net income related to paid employment may be derived by deducting employees' direct taxes, union dues and other obligations. Whenever possible, the different types of deductions should be identified and recorded separately.

13. The resolution further specifies that when the objective is to measure the income-generating capacity of a job, all the components of income related to paid employment provided by the employer should be included. When the objective is to analyse the individual's employment-related well-being, the additional employment-related benefits provided by social security or compulsory insurance schemes or by the State should also be included.

14. It has been noted that some specific components may raise practical measurement difficulties; these concern in particular (i) profit-related pay and (ii) social security benefits.

***Profit-related pay:***

15. In recent years, in industrialized countries, an increasing use has been made of profit-related pay (PRP), workers' participation schemes and share ownership plans which have been introduced in a variety of remuneration contexts. Recent studies (BLS, 1999; IDS Studies) show that a growing number of workers choose, when given the option, to receive a portion of their earnings in the form of stock options, share options, employer contributions to retirement accounts, or other irregular forms of compensation, rather than receiving the same value in the form of higher wages. PRP schemes may take the form of a bonus arrangement, whereby PRP is paid in addition to basic pay; under other schemes, employees put some part of their salary at risk, while benefiting from income or capital gains tax discounts. Plans such as the 401(k) plan in the United States, represent an individual investment vehicle with certain tax advantages commonly used as a source of retirement income.

16. The problem of accounting for these irregular earnings is important, especially if these forms of earnings are becoming more prevalent. If there are sources of earnings that employees choose over cash, those sources need to be taken into account when looking at the changes in income related to paid employment; otherwise, income will be understated. On the other hand, where plans are constituted

through contributions paid by employers, and where employees cannot control these benefit plans or convert them into cash, inclusion of these contributions would imply an overstatement of employment-related income.

17. Employee stock options generally have little intrinsic value when issued: the "strike price" is usually the current price at which the stock is trading. Stock options may be distributed free to employees, or at a preferential, discounted value. When stock options are not counted in employment-related income this income is understated.

18. It should be noted that the Meeting of Experts which laid down the basis for the ILO resolution generally agreed that in the case of stock options, shares, etc., employment-related income was represented by the value of the shares at the time of distribution to employees, at the current market rate, net of the amount paid by employees, if any. Neither subsequent capital gains, nor losses, should be included in the concept and measurement of IPE; these should be treated as capital gains or losses, at the time the option is exercised or at the time the employee disposes of the shares.

***If such irregular forms of income are not adequately, nor consistently, accounted for in the income data, then income growth overtime will be incorrect and with the increase in their prevalence, income growth will be continuously understated. Further research will have to be done to resolve the issue of how to account for these forms of irregular income.***

#### ***Employment-related social security benefits***

19. Income related to paid employment includes current social security benefits received either directly from the employer, or from social security or compulsory insurance schemes or the State, provided these benefits are paid by schemes which recognize the employment status as a specific condition for membership.

20. This component is very much dependent on the regulations and financing of social security and tax systems. Consequently, just like in the case of labour cost, both national comparisons over time and international comparisons of employment-related income are affected by such systems.

21. Within a given country, the extent to which the State, employers and employees participate to finance employment-related social security schemes varies over time, governments may change their policies for financing social services, new schemes may be introduced, rates or levels of employees' (and employers') contributions to existing schemes may be adjusted or replaced by general tax systems (as recently in France), and changes may be introduced in the laws and regulations covering the receipt of benefits. Schemes, conditions of receipt and levels of benefits generally differ between the public sector and the private sector. In the informal sector, where employees and the self-employed may not be covered by any employment-related social security or pension schemes, the concept of employment-related income would be limited to that part of income generated by the job itself (i.e. total remuneration in cash and in kind).

22. The above remarks also apply to inter-country comparisons. In addition, in some countries, certain social benefits (e.g. family or dependants' allowances) are granted on a universal basis, without regard to the employment status, with or without means tests – in which cases, receipt of these benefits should be excluded from the measurement of employment-related income. In others, the same benefits may be paid through schemes organized by social security, insurance institutions or the State which recognize the status in employment as a specific condition for membership.

23. Such variations in the application of social security and assimilated schemes have an influence on employment-related income at two levels : (a) the identification and amount of benefits received, and (b) the amount of contributions paid to compulsory employment-related schemes and deducted from « gross » employment-related income in order to avoid double-counting of income.

24. In a recent forum ((PG Meeting, 1999), the participants drew particular attention to two issues raised by the proposed definition of employment-related social security benefits:

(i) The first issue concerned the way some healthcare benefits could be individualised and assessed, especially in countries where benefits are often "invisible" to their recipients (for instance, coverage of hospital expenses, or free medical expenses). The only healthcare benefits that are not problematic in this respect are cash compensations for loss of earnings (in case of sickness, maternity, occupational injury or disease, etc.). International comparisons will therefore be affected by differences in social protection financing systems.

***Should employment-related social security benefits be limited to cash compensation only ? Can the difficulty be overcome simply by having each country providing the relevant documentation on national practices ?***

(ii) The second issue concerned the proper timing for the valuation of pension funds. It was felt that if the valuation was made at the time when benefits are paid out to retirees, these benefits would bear most of the characteristics of property income. Similar arguments could in fact be applied in the case of unemployment compensation and other benefits provided to former employees by virtue of their former employment status.

***It should be noted that the measurement of employment-related income aims at assessing all current benefits received by persons in employment and, separately, by persons not employed or not economically active, by virtue of their former employment status. According to this objective, current employment-related benefits received by the unemployed or the not economically active persons should be represented by the actual payments received, and not by the contributions paid into the fund (in which case, retirees would not receive any employment-related income).***

#### **Major issues raised by the measurement of income related to self-employment :**

25. The resolution defines the self-employed as « primarily the sole owners, or joint owners, of the unincorporated household enterprises in which they work, according to the definition contained in the System of National Accounts.

26. Since it was felt that this definition of the self-employed was too restrictive (as many owner-managers of corporations and quasi-corporations derive an income from their activity with many points in common with owners of unincorporated enterprises), the resolution added that the self-employed "may also include the owner-managers of corporations and quasi-corporations, according to the ICSE-93. »

27. Along the same logic as for income related to paid employment, income related to self-employment is defined as "the income which is received, over a given reference period, by individuals for themselves or in respect of their family members, as a result of their current or former involvement in self-employment jobs." This type of income comprises three major components, as shown in Table 2:

**Table 2. Major components of income related to self-employment**

(a) the profit (or the share of profit) which is generated by the self-employment activity;
(b) where relevant, the remuneration received by owner-managers of corporations and quasi-corporations; and
(d) the amount of employment-related social security benefits received by self-employed persons through schemes recognising the status in employment as a specific condition for membership; these may include all or some of the following benefits:  Those benefits which are paid through schemes organized by social security, insurance institutions or the State, which recognize the status in employment as a specific condition for membership. They may include all or some of the following benefits:  Current employment-related social security benefits received from social security or compulsory insurance schemes or the State; and Current social security benefits received by individuals as a result of their former self-employment jobs.

28. The issue relating to the inclusion of the third component does not differ from the issues examined above in connection with paid employment. The following paragraphs are therefore confined to the problems raised by the first two components:

(a) In the case of (joint) owners of unincorporated household enterprises, the gross profit (or the share of profit) includes an element which rewards the work involved in operating the business, and another element which covers the return to the capital employed. It corresponds to the value of gross output reduced by operating expenses, where:

\* the value of gross output may be defined as the value of all goods and services produced for the market as well as for own final use. Market output corresponds to the value of goods and services sold, bartered or provided free of charge or at reduced prices as payments in kind to hired labour. Production for own final use includes the value of goods and services consumed by the household or retained for use in future production; and

\* operating expenses comprise three types of business expenditure:

- (i) intermediate consumption (excluding, as far as possible, expenditure for purely personal or household purposes),
- (ii) compensation of employees payable, and
- (iii) taxes on production payable, minus subsidies received, if any, as defined in the System of National Accounts.

29. In principle, profit should be recorded net of consumption of fixed capital, i.e. after deduction of the value of consumption of productive assets (i.e. structures, machinery and equipment, cultivated assets used to produce other products, etc.). However, the resolution recognizes that in enterprises which function with little or negligible capital input, the income received by the self-employed is mostly a return

to their labour input and the gross mixed income of their enterprise is a close approximation to net mixed income.

30. It has been noted that this concept of profit still requires partial clarification. The definition offered makes no reference to expenses other than operating expenses, such as interest payments on loans related to business activities, for instance to start up or maintain the enterprise (after deduction of interest received). It is not unreasonable to admit that such expenditure could be treated in the same way as operating expenses, since this item may be quite important for small enterprises, especially, but not exclusively, in the agricultural sector. It should be noted that in UN-NHSCP-1989, the recommendations include as inputs into household's economic activities "rent, interest payments, brokerage, commissions and fees". The same recommendation appeared in ILO-1990.

31. It appears that in practical terms, the corresponding balance would be closer to the concept of taxable income, which is more likely to be reported in household surveys and to appear in tax records.

***Some countries may therefore find it useful to include this type of expenditure in the "operating expenses" of self-employed businesses, and therefore deduct them from the measurement of self-employment profit – although this constitutes a departure from the System of National Accounts (SNA).***

32. It could also be noted that the resolution makes no reference either to the receipt, by self-employed individuals, of royalties, commissions or fees earned on writings, inventions and similar activities. In CANBERRA-4-4, proposals are made to include this element in the income of the self-employed, for services rendered by the owner. Further thoughts could be ***given to this aspect of income related to self-employment.***

33. It should be noted that where the self-employed run their enterprises independently from other partners and contributing family members, with or without employees, the profit corresponds to both the income generated by the enterprise and the entrepreneur's individual income related to self-employment.

34. Where the self-employed run their enterprises in partnership, the profit represents a joint income and income related to self-employment should correspond to the share of income received by each partner.

35. Since employment-related social security benefits are included among the components of income related to self-employment, any contributions of the self-employed to compulsory employment-related social security or retirement income provision schemes should be deducted from gross profit, in order to avoid subsequent double counting of income.

***It should be noted there that this is a departure from the concept of "mixed income" presented in the SNA, in which the self-employed's personal social contributions are included as part of that mixed income.***

36. Net income related to self-employment may be derived by deducting from gross income related to self-employment, personal direct taxes and other employment-related obligations.

(b) In the case of owner-managers of corporations and quasi-corporations, the resolution merely indicates that gross income related to self-employment consists of « *the remuneration received by owner-managers of corporations and quasi-corporations* », and » *the amount of employment-related social security benefits*".

37. In corporations, the « remuneration » of this group consists of a palette or choice of components which may include a fixed salary (in cash, in kind and/or services), a variable part represented by the receipt of profit or objective-related bonuses, bonus shares, etc., as well as dividends and distribution of profits, stock options, retirement plans, etc. While some of these components are similar to those received by employees (e.g. fixed salary, earnings in kind and services), other forms of income represent property income or capital gains.

38. In quasi-corporations, the owners do not receive dividends ; they may receive a fixed salary, sometimes a variable remuneration based on turnover, social benefits in the form of retirement plans; they may also choose between withdrawing all or part of the profit of the enterprise or re-investing the profit into the enterprise with a view to improving future benefits in the form of stock options or similar schemes (which is particularly the case of the recent « start-ups »)..

39. In practice, the forms taken by the remuneration of owner-managers depends on the size and legal status of the enterprise, as well as on the tax and social security systems in force in a given country. Decisions to adopt one or more of these forms of remuneration are influenced by financial advantages, tax exemptions, expectations of future profits, etc. Tax systems differ among countries and vary from period to period. Over-time and inter-country comparisons of employment-related income are therefore affected by these variations.

40. At the Paris Group Meeting (1999) mentioned earlier, *there was unanimous agreement that the income of owners-managers of corporations and quasi-corporations should include both their salaries and the profits of their enterprises* (De Gimel, 1999), *although it was also noted that this dual form of income is generally very difficult to measure from enterprise accounting data alone* (Rouault, 1999).

41. All the components of income related to self-employment listed in Table 2 are relevant for the analysis of the employment-related well-being of the self-employed. Where the objective is to measure the income-generating capacity of a self-employment activity, employment-related social security benefits may be excluded.

### **Major factors affecting the level and structure of employment-related income**

42. A number of factors influence the level of income and the quality of the relevant employment :

- Some of them characterize the job itself: industry, occupation, type and size of enterprises, sector, full- or part-time job, hours of work, etc..
- Others characterize the individual : age, sex, education and skill level, seniority in job and/or enterprise, number of jobs held, etc.
- Other factors are linked to the institutional context in terms of industrial relations and protection of minimum income (for persons in paid employment), the legal framework within which businesses operate, the administrative and tax systems in force, the access to financial and support services (for persons in self-employment).

43. The resolution concerning the measurement of employment-related income provides guidance on the type of data required depending on the objective of the measurement.

44. When the objective is to assess the quality of income generated by an economic activity, it recommends that consistency be ensured between the data on employment in a given job and the data on income generated by that job. Data should therefore be collected on : (i) the characteristics of the job (industry, occupation, employment status), the type of enterprise (individual enterprise, partnership, corporation, etc.), the employment size and sector (formal or informal, public or private) ; (ii) the volume

of labour input (duration of employment and time worked by all contributing persons) ; and (iii) the amount of income generated by that job.

45. When the objective is to analyse the relationship between employment and the well-being of individuals, detailed data are needed for each person on : (i) each main and secondary job carried out during the reference period ; (ii) the income derived from each of these jobs ; (iii) the socio-economic characteristics of individuals ; and (iv) any spells of unemployment or inactivity that an individual may have experienced during the given reference period.

46. This raises two particular issues :

(a) ***The measurement of hours of work*** :

47. The measurement of hours of work of employees is generally expressed in terms of either one or the other of the following measures, which very often depends on the source of data used:

- normal hours, i.e. those established by laws or regulations, collective agreement, employment contract, national or establishment practices, etc.,
- hours actually worked, measured essentially with reference to the time spent at the workplace,
- hours paid for, for which no international definition exists, but which are expressed in terms of the wage payments practices for holidays and other periods when no work is performed,
- hours offered, a EUROSTAT concept which reflects the level and volume of economic activity of the enterprises, and
- usual hours of work, a concept often used in household and similar surveys, and generally defined as average hours actually worked per week, month, etc. over a long period of time. Where the typical situation differs from one period to another, there is more than one measure of usual hours of work (e.g. for employees employed under annualized working time contracts).

48. The measurement of hours of work of the self-employed is not covered by any international standard, and most of the concepts applied to employees are not relevant to the self-employed.

- normal hours of work are of little significance : in particular, hours fixed by or in pursuance of laws or regulations will, at best, correspond to the « opening » or « working hours » of shops, trades or professional practices in the formal sector.
- the current definition of hours actually worked is limited to time traditionally spent at the workplace and reflects industrial work patterns. It is not applicable in the case of self-employed people who may work entirely outside a fixed workplace (independent salespersons, taxi drivers, etc.), or combine activities at the workplace and outside the workplace (e.g. visiting clients or patients, preparing accounts or reports).
- the notion of hours paid for includes hours which are not worked but which are paid for under a wage payment system. This concept is not applicable either to self-employed persons who are not « remunerated » during their absence (e.g. on sick or annual leave), unless they are assimilated to « employees » for tax or social security purposes (which may be the case of owner-managers of corporations and quasi-corporations), or the activity continues to be performed by a partner, associate, replacement or household member.
- Usual hours of work is generally the measure used to compile data on the hours of work of the self-employed. However, for this group of workers, the contents of « usual hours of work » is not defined as such. As in the case of employees, there may be more than one measure of usual hours of work. In seasonal activities, for example, there will be one measure of usual hours of work for the peak

season and another for the slack season. In extreme situations of highly irregular working patterns, there may not be a typical situation in any period and the concept of usual hours of work has limited relevance.

*It may be felt relevant to define a measure of the hours of work of the self-employed, taking into account the fact that (a) the hours of work may include both time spent on the job itself (in the occupation), time spent on related or complementary activities, at the workplace or outside the workplace, or time merely waiting for clients or goods and services (« unproductive hours »); and (b) that in a number of jobs, particularly in household enterprises and in jobs performed at home, economic activities may be intermingled with domestic or other activities, either because they are performed simultaneously or because they are similar in nature.*

(b) *The measurement of work duration :*

49. Employment-related income is not only a function of hours spent on the job, but also a function of work duration in terms of days, weeks, months, etc. of activity and work experience of the employed person. This aspect is particularly important in order to analyse the relationship between employment and income, in particular between full-time and part-time, part-year, casual and intermittent employment and low income.

50. For each job or activity considered (whether consecutive or simultaneous), days or weeks worked should refer to the total labour input which has gone into the activity during the reference period. Where this refers to the time spent by several household members on the same activity, work duration should refer to the time worked by all persons concerned.

51. At the individual level, the assessment of employment-related income requires linking the employment status of individuals to their work experience over the reference period. Individuals may combine periods of employment, unemployment and economic inactivity during which some or no employment-related income is received. Each of these periods should be identified, account being taken of all activities performed, including casual or simultaneous activities.

52. Obviously, there is one aspect of employment-related income which cannot be related to work duration or hours of work : that part which consists of employment-related income received by the unemployed or non-economically active persons as a result of their former paid or self-employment activity. Unemployment and assimilated benefits, retirement pensions, etc. have no direct relationship with working time, but with factors such as previous income levels and/or work experience over a lifetime.

*It may be considered useful to enhance data collection on work duration (e.g. by introducing appropriate questions in labour force or household surveys<sup>3</sup>) in order to improve the link between employment-related income and work experience.*

#### **Analytical indicators of employment-related income**

53. Two major indicators of employment-related income were recommended :

- estimates of average annual income, and
- where feasible, estimates of hourly income,

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<sup>3</sup> It is expected that a similar type of investigation will be carried out in Korea and Nigeria, using the labour force survey, with a view to collecting data, for each job held during a one-year reference period, on activity, occupation, work duration and usual hours of work per week, and occupational injuries.

classified at least by economic activity, status in employment and occupation or occupational group.

54. Additional disaggregations would be useful for the analysis of the situation of specific groups of workers: e.g. by sex and age, level of education, level of skill and seniority in job, full- and part-time status, permanent and « non-standard » employment (such as temporary, seasonal or casual employment, on-call work, temporary agency work, etc.)

55. In order to measure the relationship between employment and income, account should be taken of all jobs performed during the reference year, including simultaneous jobs. This requires : (i) assessing the employment experience of individuals through the identification of spells of full- and part-time employment, unemployment or inactivity ; and (ii) at the aggregate level, regrouping the main situations into broad categories which may be relevant to the measurement of employment-related income and individuals' well being, such as :

- Full-year/full-time employment,
- Part-year/part-time employment, with unemployment or inactivity,
- Mainly unemployment with some employment, etc.

56. Where conceptual or measurement difficulties preclude the computation of the value of certain non-wage benefits and various forms of compensation schemes offering current and deferred entitlements to various benefits to persons in paid (and self-) employment, efforts should be made to compile complementary qualitative and quantitative information on these entitlements and benefits. The data should provide information on the incidence and characteristics of the benefits received, in the form of types of benefits offered and number of beneficiaries, employers' and employees' contributions, participation requirements, paid leave provisions, pension benefit formulas, etc. In this case, labour cost surveys could be used to throw light on these compensation packages offered to employees.

#### **Additional indicators of income-related quality of employment:**

##### **(a) *The Impact of Minimum Wages on the level of earnings and income related to paid employment***

57. One of the factors affecting the level of earnings and income related to paid employment is the institutional context in terms of industrial relations and protection of minimum income, such as minimum wage regulations, wage indexation mechanisms, collective bargaining, etc.

58. Minimum wages can be set through various mechanisms: in some countries, they consist of national or statutory minimum wages, which generally apply to most if not all economic activities; they may be restricted to the private sector, while public sector employees are covered by different sets of minimum wage scales and mechanisms. In other countries, minimum wages are determined through collective negotiation with fairly universal coverage. In a large number of developing countries, minimum wages are fixed by collective agreements, wage boards, etc. and apply to specific occupations, occupational groups or even at the branch or enterprise levels.

59. Whatever their form, the two major objectives of minimum wages have traditionally been to pay workers a fair compensation for their work and efforts, and to raise the standard of living of low-paid workers and their families. Minimum wages, collectively-agreed minimum wage rates, or similar minimum wages set by collective bargaining therefore have an impact on employment<sup>4</sup> and on the distribution of earnings and income, both at the individual level and at the household level.

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<sup>4</sup> The impact of minimum wages on the level of employment is deliberately omitted from this paper which concentrates on their effect on earnings and income.

60. Numerous empirical studies (see OECD, 1998) have shown that minimum wages could affect the earnings distribution in various ways:

- i) by reducing the proportion of the workforce earning below the minimum,
- ii) by increasing the proportion of workers earning exactly the minimum,
- iii) by having a spill-over effect on workers initially earning above the new minimum,
- iv) by narrowing the earnings differentials across demographic groups: this effect appears, for instance, to be strong in the cases of gender and age differentials, because the incidence of employment at low wages is generally greater for women than for men and for younger workers than for older ones.

61. Various indicators could be used to assess the impact of minimum wages on earnings and income. They include, among others:

- the ratio of minimum wages to average or median wage rates or basic rates of pay: probably the most relevant type of ratio, but difficult to obtain as many countries do not compile statistics of basic wage rates;
- the ratio of minimum wages to average or median gross earnings or income: since these earnings and income include some or all supplementary payments received by workers, there is a risk of underestimating the relative importance of minimum wages;
- the ratio of net minimum wages to average or median net earnings or income: this is perhaps the most relevant measure from the workers' viewpoint; whereas the value of minimum wages relative to total or average labour costs may appear more relevant to employers.

62. Whenever possible, these measures should be compiled for different groups of workers, according to various characteristics (sex, age groups, occupations, etc.) and various economic sectors.

63. Attention should also be paid to certain groups of workers, such as those working in new, non-standard, atypical, precarious, irregular, informal, etc. forms of employment, who may not be covered by labour legislation or collective agreements, or covered by special clauses explicitly made for them. Examples include workers engaged in part-time employment, on-call work, jobs arranged by temporary employment agencies or contract firms, casual employment, outwork or homework, etc. As a result, the workers concerned tend to have less rights than workers in full-time regular wage employment, in terms of entitlement to non-wage benefits, coverage by social security and income support schemes, etc.

64. Statistics and analyses are therefore needed to show the extent to which the security of employment and the level of income of persons on non-standard forms of employment are affected or protected through minimum wage regulations and wage indexation mechanisms.

65. Studies could also be carried out to assess whether minimum wages have a systematic effect on the income distribution of "poor households", taking into account the level of income of individual members of the household (for instance, poor families may have no one working, while minimum wage workers may live in households with above average incomes).

(b) *Gender wage/income differentials*

66. One of the aspects of men and women's performance in the labour market is their relative position in terms of wages/income. This is the focus of the attention of scholars, international organisations and governmental bodies interested in the upgrading of women's position.

67. Women receive lower pay than men throughout the world. This is true in all regions of the world, whether the comparison is made at the level of hourly, weekly or monthly earnings, and whatever sector is analyzed (e.g. non-agricultural sector or manufacturing) (ILO, Anker, 1998).

68. Gender wage/income differentials may be explained by a wide variety of factors, such as occupation, age, education, work experience and seniority in job, training, occupational segregation, etc. Ideally, one should attempt to disentangle the variety of causes.

Gunderson (1994) identifies five sources of male-female pay differentials:

- (i) differences in human capital endowments such as education and experience (caused mainly by non-labour market factors);
- (ii) differences in pay within the same occupation (caused by pure discrimination and dual labour markets);
- (iii) differences in pay for work of "equal value" (caused by the relationship between pay level in an occupation and the degree to which this occupation is a "female" occupation);
- (iv) differences in jobs desired; and
- (v) differences in jobs available.

69. The first two sources play an important role in determining wage/income differentials, while the other three emphasize the occupational segregation aspect.

70. Numerous empirical studies have analysed the determinants of male-female income differences. They mainly aim at separating out the proportion attributable to:

- (i) differences in productivity-related variables, including human capital: variables which are typically used include education, field of study, training, experience in the enterprise, experience in the labour market, age, size of firm, hours of work and health;
- (ii) other factors which affect income differences, such as economic activity, establishment size, sector (whether public or private), region, city size, whether unionized or not, etc.;
- (iii) differences in the returns men and women receive for their endowments.

71. The first two sets of factors are felt to measure justifiable differences in earnings/income, whereas the third set of variables is seen as measuring gender discrimination (OAXACA, R., 1973).

72. Analyses of gender earnings/income differentials are greatly affected by the available level of disaggregation of the wages/income statistics, as well as by the wage measure used:

73. The most common statistics are average (or median) wage rates or earnings by economic activity, disaggregated by sex. Less frequent are average (or median) wage rates or earnings by occupational group. Both measures provide an indication at one point of the wage distribution of both sexes. The problem with averages by economic activity is that the data include a mix of a wide range of occupations without providing any information on these occupations and their relative distribution between men and women, which has an influence of the indicator.

74. Averages/medians by broad occupational group (if possible cross-classified by economic activity) are already more useful, in that the occupations which constitute each group are expected to present broadly similar or comparable characteristics, such as education, qualification or skill level, etc.

75. The wage measure used also has its importance in such comparisons. Wage rates per time unit do not reflect the influence of changes in wage supplements, nor the influence of hours of work. They are usually compiled using the employment structure of a given year as weights. On the other hand, average

earnings show fluctuations which reflect the influence of both changes in wage rates and supplementary payments, changes in hours of work (and the concept used to measure them) and changes in the employment structure. As a basis, average hourly earnings should be preferred to other wage measures, in order to, as a minimum, take account of the differences in working time.

76. Ideally, analyses of gender wage/income differentials should be based on statistics of occupational wages (either wage rates, earnings or employment-related income), together with data on hours of work by occupation. Occupations can be taken as a proxy to similar or comparable levels of education, skills, etc. if not seniority in the job. The problem is that very often, the corresponding data on occupational employment are not available.

77. Various indicators and methodologies can be used to analyse gender wage/income differentials, which depend on the availability of data and on the possibility to measure the factors affecting income differentials (see ILO 1993 and ILO 1995).

78. The most commonly used measure of wage/income differential is the wage ratio of  $wf / w_m * 100$ , where women's average income is shown as a percentage of men's average income.

79. Another possibility is to show the average wage/income gap  $(1 - wf / w_m) * 100$ , which here shows the ratio of the absolute wage differential to the average men wage;

80. Where data on the occupational structure are available, these indicators, weighted by the relative number of men and women in each group/category/occupation, etc., can express the relative wage differential between men and women. These ratios can be calculated using the occupational structure of men, or the occupational structure of women, or the average of the occupational structures of men and women, as weights.

81. Another common form of presenting information on income differentials takes the form of distributions. These may show, for instance,

- the percentage distribution of men and women (together with the cumulative distribution) by wages/income levels, thus showing, for instance, the concentration of women in the bottom of the distribution or their exclusion from the top ;
- the distribution of average wages/income of men and women by fractiles (quartiles, deciles, etc.) of the income distribution, thus showing the percentage of women and men earning less than a given amount ;

etc.

82. There exist, of course, many other methods, such as :

- the decomposition of the change in the overall relative differential, which requires data sets where separate data for occupations, employee categories, industrial sectors, etc. are available – and shows the evolution of women's relative wages according to different components ;
- regression analysis,
- the Theil index, etc.

all of them often requiring micro data on occupational structure and wages or income, with detailed characteristics of individuals by education/qualification level, age, and other factors which have an impact on wage differentials.

83. For a detailed assessment of gender/income differentials, countries should therefore endeavour to collect and compile statistics on occupational employment and wages or income, as this is done, for example, through the EC Structure of Earnings Survey, or the Japan Basic Survey on Wage Structure.

#### **A step towards the measurement of income-related inadequate employment**

84. The ILO Resolution concerning the measurement of underemployment and inadequate employment situations (October 1998) provides basic guidance on the measurement of income-related inadequate employment and indicates the types of factors that may limit the generation of adequate income, such as low levels of organization of work or productivity, insufficient tools, equipment or training for the assigned tasks, prolonged non-payment of wages; deficient infrastructure, recurring work stoppages because of delivery failures of raw material or energy long overdue payments from customers, etc. Other institutional factors may also have an impact on the quality of self-employment in terms of income, such as the legal framework within which businesses operate, the lack of access to financial and support services, the administrative and tax systems in force, etc.

85. Efforts have been made in a number of specific surveys, such as informal sectors surveys or labour flexibility surveys carried out by the ILO, to identify some of these factors.

86. However, to a large extent, the statistical definitions and methods necessary to assess these factors and describe these situations of inadequate employment (including the type of income threshold above which persons do not qualify for inclusion) still have to be developed further.

87. Further research could lead to analytical indicators such as the following:

- Number of persons in income-related inadequate employment, expressed as a percentage of the employed, by economic activity, employment status and sex;
  - Average inadequate income, expressed as a percentage of mean or median employment-related income, by economic activity, employment status and sex,
  - Income distributions and measures of inequality,
- according to significant demographic, social and economic characteristics of the employed population.

#### **Main sources of employment-related income and quality of employment**

88. In principle, data on employment-related income can be derived from a number of sources, which present various advantages and limitations. Three general approaches may be used, and as suggested in the resolution, a combination of several sources may be used to promote the collection of data on employment-related income. The following tables summarize the benefits and shortcomings of the three types of sources :

##### **(a) The « enterprise approach »**

<b>Advantages</b>	<b>Limitations</b>
<p><i>Main source of statistics of earnings ;</i> Often considered (together with administrative sources) as providing more reliable data than household and similar surveys ;</p> <p>Usually, high response rate (unless respondents overburdened by volume of</p>	<p>Coverage often limited to :</p> <ul style="list-style-type: none"> <li>- Large and medium-size establishments in the private formal sector (i.e. excluding the self-employed with a limited number of employees, household enterprises, public sector enterprises, etc.),</li> <li>- Certain categories of employees (excluding owner-managers, managerial</li> </ul>

<p>surveys);</p> <p>Depending on the type of survey, May provide data on : All the components of earnings in cash,in kind and services paid by employer, including current social security benefits paid by employer, Occupation, Employees' characteristics (sex, age, qualification/educational level, conditions of employment, etc.) ;</p> <p>Provides statistical data related to the job ;</p> <p>Can provide data on work duration (weeks, months) and hours of work (normal hours, hours actually worked or paid for) ;</p> <p>Most suitable surveys : occupational and/or structural surveys which provide data on (a) the components of total « earnings » as part of employment-related income, (b) the characteristics of employees which affect income ;</p> <p><i>Labour cost surveys :</i> Throw light on that part of employees' income paid directly by employer, as a proxy of income related to PE ;</p>	<p>staff (i.e. high-income earners), or casual or intermittent workers, income earners on jobs which have finished before the end of the reference period, etc.) ;</p> <p>Evaluation of benefits in kind at cost to the employer, or producers' prices, or tax value ;</p> <p>Excludes current employment-related benefits received by employees from other sources ;</p> <p>Does not provide data on additional jobs, multiple-job holders and total income accruing to individuals from various jobs ;</p> <p>Employer-oriented measurement with regard to: Benefits in kind, Profit-related bonuses Social security benefits (includes employers' contributions and excludes the benefits actually received) ;</p> <p>Not intended for the analysis of the distribution of income from PE among individuals or groups of workers :</p> <p>Employers' costs does not necessarily represent an income to the employee and the value an employee derives does not necessarily equal the employer's expenditure.</p>
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***Recommendations to improve this type of source::***

1. Extensive coverage in terms of establishment size and sector, employee coverage and characteristics of employees' working patterns ; where relevant, coverage of owner-managers, high-income earners, etc.
2. Combination of data from enterprise surveys and data from other sources (e.g. tax and social security records, labour force/household surveys) : this requires a direct relationship between the sets of persons covered by both sources.

**(b) The « household approach »**

<b>Advantages</b>	<b>Limitations</b>
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***Recommendation::***

89. To enhance labour force and household surveys in general through additional questions and variables in order to improve the link between the characteristics of employment (type of occupation, type of contract, skill level, duration of employment and unemployment, seniority, etc.) and employment-related income.

**(c) Administrative sources (including administrative enterprise reports)**

<b>Advantages</b>	<b>Limitations</b>
Often thought to record earnings and income more accurately than household surveys and surveys of individuals ;	Generally affected by rules or laws governing the administrative process (therefore less suitable for international comparisons);
Individuals can generally be divided into employees and self-employed according to their main source of income or by their status for administrative purposes ;	Administrative variables (observation units, classifications, etc.) may differ from statistical variables;
Readiness of information ;	Tax records : omission of income that falls below a tax threshold and income components which are not subject to tax ;
Reduced costs ;	Social security records : omission of income below some threshold and higher income above a ceiling (not liable to social security contributions) ;
High response rate ;	Limited to private sector income-recipients (public sector may be covered by different schemes)
May provide data on work duration (weeks, months, etc.) and/or full-time, part-time status ;	Generally do not record data on hours of work ;
	No indication that the recorded activity is the main one or the only one.

**Recommendation :**

1. To use administrative records and reports after adjustments in order to achieve coherence with the required statistical variables (concepts, classifications, etc.);
2. Enhance the type of experiences carried out in some countries like Canada, France, the Netherlands, the United Kingdom, to combine relevant administrative and survey-type sources – in the light of the desired accuracy and level of detail required from the results and on the basis of cost-benefit analyses.

**Conclusion :**

The new guidelines on the measurement of employment-related income are still at the developmental stage. The ILO is involved in further refining of these issues, with a view to improving the implementation of the guidelines and enhancing the international comparability of statistics on employment-related income. Further work will be required to test their applicability, the problems of measurement and the validity of the statistics produced. Obviously a balance has to be established between the concept and the feasibility of practical measurement. In addition to the issues raised in this paper, other areas may require clarification and/or testing, such as the influence of seniority and experience on the level of employment-related income and the measurement of life-time income (through panels, longitudinal surveys, etc.). The ILO envisages to prepare a manual which would provide technical guidelines on the contents of the resolution and national experiences and contributions will be duly taken into account in the preparation of this manual.

Additional suggestions have been made which are not covered by the resolution on the measurement of employment-related income, but which reflect some aspects of income-related quality of employment. They are submitted for exchanging views and where possible national experiences, and for pointing out possible areas for further work at the national and international level.

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**Bibliography**

CANBERRA GROUP (Expert Group on Household Income Statistics): *Papers and Final Report of the Second Meeting on Household Income Statistics*, Voorburg, 1998; and contributions to the Third Meeting on Household Income Statistics, Ottawa, 1999.

CANBERRA-4-4: Draft Chapter on *Reconciliation of micro-macro concepts and terminology*; Prepared for the Fourth Meeting on Household Income Statistics, Luxembourg, 2000.

BLS, 1999: *Issues concerning the treatment of irregular forms of compensation in NIPA earnings data*. Paper prepared by Thomas Beers for the Paris Group meeting, November 1999.

De Gimel, 1999: *Difficulties raised by the concept of employment-related income*; Paper prepared for the Paris Group meeting, November 1999.

EUROSTAT: *The European Community Household Panel (ECHP)*, Luxembourg, 1996; Methods

GUNDERSON, M.-1994: *Comparable worth and gender discrimination; An international perspective* (Geneva, ILO, 1994)

- ILO-1990: *Surveys of economically active population, employment, unemployment and underemployment – An ILO manual on concepts and methods.*
- ILO-1993: *Statistical Measurement of Gender Wage Differentials*, Working paper prepared for an interdepartmental project on Equality for Women in Employment, ILO, 1993
- ILO-1995: *Measuring gender wage differentials and job segregation*, Working paper prepared for an interdepartmental project on Equality for Women in Employment, ILO, 1995.
- ILO, ANKER, 1998: *Gender and jobs: Sex segregation of occupations in the world*, Geneva, 1998.
- Incomes Data Services Ltd: *IDS Studies*, various issues, including “Flexible Benefits”, London, 1998; and “Share options”, London, February 2000.
- INSEE: *Economie et Statistique*, Dossier: Les Indépendants, les PME, No. 319-320, Paris, 1998; and *Synthèses: Les Revenus d’activité non salariée*, No. 25, Paris, 1999.
- OAXACA, R., 1973: *Male-Female Wage Differentials in Urban Labour Markets*, in *International Economic Review*, No. 14, Philadelphia, 1973.
- OECD, 1998: *Making the most of the minimum: statutory minimum wages, employment and poverty*, in *Employment Outlook*, June 1998
- PG Meeting, 1999: *Draft Scientific Report of the Third Session*, Paris Group Meeting, November 1999;
- Rouault, 1999: *The French experience in recording income related to self-employment with reference to the guidelines of the ILO: methodological issues and future directions*”; Paper prepared for the Paris Group meeting, November 1999.
- Statistics Canada: *Labour Income Estimates* (quarterly review), Ottawa;
- UN-NHSCP, 1989: *National Household Survey Capability Programme – Household income and expenditure surveys: A technical study*; United Nations, New York, 1989.