

Measuring public sector employment: a review of some methodological issues¹

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Abstract

Employment is one of the most commonly used indicators for the size and importance of establishments as well as for economic sectors. For this reason alone one would expect statistics on public sector employment to be easily available and reasonably comparable internationally, e.g. between the member countries of the European Union. However, one of the more surprising facts about official statistics is that most countries have rather poor statistics on employment in the public sector, and about the characteristics of those working for the public sector. It is also difficult to find statistics on public sector employment which are reasonably comparable over time and between countries, not least because a stable and consistent dividing line between the 'public sector' and the rest of the economy is difficult to draw in practice. This paper reviews some of the reasons for this as well as some of the quality issues involved in measuring public sector employment. It also relates various quality concerns to four types of issues for which such statistics may be desired: describing the importance of public sector employment in national labour markets, as well as the direct impact on public sector employment of variations in public budgets; analyzing the productivity of the public sector; and describing the impact on the affected workers of privatization or sub-contracting of activities which previously have been carried out by (the staff of) public sector units. The hope is that this review can contribute to a better understanding of the issues and eventually also to an improvement of the current situation.

Introduction

In 1994 the OECD published *Statistical Sources on Public Sector Employment*, prepared jointly by its (then) *Public Management Service Unit (PUMA)* and the *ILO Bureau of Statistics* (see *OECD & ILO, 1994*). This publication tried to describe the situation in the then 24 OECD member countries² with respect to available statistics on public sector employment (SPSE), and concluded that "in many countries public employment statistics suffer from being collected by more than one institution without proper coordination"; and that "strict adherence to international standard definitions is the exception rather than the rule". Thus it is not surprising that "comparing national concepts of the public sector is intrinsically difficult, especially in respect of public enterprises and certain forms of public services" and that " .. differences in definition and terminology

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2 Mexico was not included in the review as it joined OECD as its 25th member only in May 1994.

constitute the main difficulty”. The number of sources described for the countries ranged from only one to seven. Four of the countries with only one source indicated that this was the Labour Force Survey. More detailed information was presented for its 25 member countries in *OECD, 1997b*, referring to the situation in the first half of the 1990s.

In 1998 the ILO received SPSE from 84 countries³, having requested on a trial basis such statistics for 1985, 1990, 1995 (or years close to these) as well as for the latest year for which statistics were available. To establish whether these statistics could be provided by countries on a regular basis the trial was repeated in 1999 and in 2001, expanding to 128 the total number of countries and territories for which some statistics of this type is available at the ILO⁴. Results have been presented in *Hammouya, 1999* and *BIT, 2001*, and are available on request from the ILO. The sources that have been indicated for the statistics provided are labour force surveys, establishment surveys, administrative records and ‘combination of different sources’ in almost equal measure, but with the last ‘source’ indicated slightly more frequently than the others, and administrative records slightly less frequently. The statistics that OECD has collected from its member countries have also included statistics on public sector pay (see e.g. *OECD, 1997a* as well as *OECD, 1999* and *2001a*).

This note tries to build on the experiences of these exercises to throw light on the reasons for the difficulties encountered by those who have tried to obtain statistics on public sector employment that are both reasonably comparable over time and between countries, also taking other quality concerns into account. It also tries to relate this discussion to four main descriptive and analytical issues for which statistics on employment in the public sector will be needed, as consideration of what one may consider to be satisfactory quality for such statistics will depend on the questions that they are asked to help answer. The four sets of issues are: (i) describing the importance of public sector employment in national labour markets; (ii) describing the direct impact on public sector employment of variations in public budgets; (iii) analyzing the productivity of the public sector; and (iv) describing the impact on the affected workers of privatization or sub-contracting of activities which previously have been carried out by (the staff of) public sector units.

General observations on quality issues for statistics on public sector employment

The quality of official statistics normally are discussed with reference to the following dimensions, see e.g. the article by Platek & Särndal in the March 2001 issue of the *Journal of Official Statistics* and the comments there by Bailar, Fellegi and Norbotten:

- population coverage;
- units of observation;
- timeliness and frequency;
- geographic resolution;

3 Of the 24 countries that gave methodological information to the OECD/ILO inquiry in 1993 only 13 provided statistics in 1998. Following the 2001 updating this number has increased to 17 of the 24 countries.

4 For two countries, France and Saudi Arabia, the information had not yet been entered into the database when this paper was drafted, and they are therefore not included in the list of countries in the annex.

- consistency with other statistics and over time;
- main and descriptive variables, in terms of :
 - validity and consistency of definitions;
 - resolution and validity of value sets;
 - reliability of measurements;
- costs of production and dissemination.

Delineation of ‘public sector employment’

For a discussion of the quality of SPSE the issue of the validity and consistency of the definition of the main variable, i.e. employment in the public sector, will be equivalent to the issue of population coverage, as the main issues of concern will be (a) how to draw the distinction between ‘the public sector’ and the rest of the economy, and (b) how to define “employment”. For issue (a) we may use as reference the definitions provided by the international guidelines in the *System of National Accounts* (see *United Nations et al, 1993*), where it is said that the *Public Sector (PS)* should consist of “all institutional unit that can be said to be (i) units of central, state or local government; (ii) all social security funds at each level of government; (iii) all non-market non-profit institutions that are controlled and mainly financed by government; and (iv) corporations and quasi-corporations that are controlled by governments, where units of type (i)-(iii) are called ‘general government’ and units of type (iv) are called ‘public corporations’ (see chapter IV of *United Nations et al, 1993*). All persons employed by the PS therefore have to be employed by such units, and they have to be regarded as *employees*.⁵

While the most useful definitions for *national* users of SPSE need not necessarily be the same as the international ones the issue will always be whether (i) the statistics produced will cover and identify separately those units which correspond to the relevant (for the user) definition of PS, and (ii) whether the statistics will include all persons who are to be considered ‘employees’ of these units. To understand why these requirements are surprisingly difficult to satisfy in practice it is necessary to examine the three main types of sources for SPSE: administrative records, surveys of PS units and surveys of households.

Direct use of administrative records on the public sector units (DUAR/PSUs) would seem to be the most obvious and promising source for SPSE: PSUs are formal units that have to keep records to account for how they spend the funds which they are given or earn, and for most of these units the payment of wages and salaries will be the main type of expenditure. These expenditures are (supposed to be) recorded according to standard regulations and subject to careful auditing. However, in practice the following factors may tend to undermine DUAR/PSU as a source for SPSE: (i) There may be no central compilation based on the administrative records for all relevant units; and (ii) if there is a central compilation of records for all units this may be a purely financial one

⁵ For a definition of “employees” see e.g. chapter VII of *United Nations et al, 1993*, which is consistent with the definition of ‘paid employment’ in the *International Classification of Status in Employment (ICSE-93)*, see e.g. *ILO, 2000*. However, this is a definition which is surprisingly difficult to implement precisely, as discussed in this paper and illustrated in the diagrammatic presentation of ICSE-93 in Annex 2, prepared by Adriana Mata Greenwood.

without any information about the type of expenditures or the number of employees involved.⁶ In some countries there will be a central register of government employees, e.g. to manage a health insurance or pension scheme or for personnel management more generally. However, such registers will often be limited to employees with the types of contracts which qualify them for such benefits, or exclude certain types of units or staff, depending on the relevant legislation. An additional, often related, complication is that even units which are covered by the relevant legislation may have the possibility of hiring workers on contracts which makes it seem, from a budgetary and therefore also from an accounting perspective, that these workers are not hired for salaries, but receive payment for the delivery of services. Such workers may therefore not appear in the relevant records as ‘government employees’, even though the terms of their contracts otherwise correspond to those of ‘employees’, e.g. in terms of working hours, basis for payment, the extent to which they are subject to instruction and supervision etc. Thus DUAR/PSUs for the production of SPSE will (i) be a realistic option only in countries where the necessary institutional infrastructure has been established and is functioning well; and (ii) be subject to the same quality concerns as DUAR are for other types of statistics, see e.g. *Hoffmann, 1995* and *ILO/EASMAT, 1997* for further discussions.⁷

Surveys and censuses of ‘public sector’ units, e.g. as part of more general establishment surveys or censuses, will be a possible source for SPSE provided (i) there exists a satisfactory register for such units; and (ii) the units keep records which will make it relatively easy for their administrations to provide the type of information needed for all persons hired as ‘employees’, in the sense required for the statistical descriptions and analysis and not only according to the rules and regulations of financial control and staff management referred to above. It may be necessary to carry out such surveys and censuses by visiting the sites of the PSUs in countries and situations where there is reason to suspect that the records kept by some PSUs will include a significant number of “ghost-workers”, i.e. ‘persons’ to whom salaries are being paid although they do not exist or at least do not do any work for the PSU in question.

Surveys and censuses of households will be a possible source provided the employed persons can be asked questions about their work contract and their place of work with response alternatives which make it possible to determine (i) whether or not they are ‘employees’; and (ii) whether or not their employer is a ‘public sector’ unit. Neither of these provisions is trivial, i.e. easy to implement, see e.g. *Gilbert, 2001* or *United Nations & ILO, 2002*. The most difficult units to classify correctly are probably those non-profit institutions that are controlled and/or mainly financed by governments. Whether this is the case for the unit employing them may not be evident to those

6 It is quite common that (some) government units will have both a financial budget and a ‘staff budget’, where the latter is a specified total number of ‘posts’ of different types which they are allowed or supposed to fill. However, the number of such ‘posts’ will not necessarily correspond to the number of ‘employees’, either because some are unfilled or because persons can be engaged on different forms of contracts depending on whether the ‘wage’ funds or funds for the purchase of goods and services are being used for their payment. When using the latter funds the contracts will usually be for a limited period only, but they may be subject to several renewals. An additional problem is that ‘staff budgets’ will normally not specify any personal characteristics of the employees (except when there are quotas for certain types of employees, e.g. by rank or type of pay scale), or where quotas for certain population groups have to be satisfied.

7 Note that registers of all employees or all employed persons in a country, kept e.g. for national social insurance schemes or by tax authorities, may also be a possible source, **provided** public sector units can be identified as a separate type of ‘employer’.

working for them, especially if formal ownership rests with a private organization. The most difficult contractual situations to establish correctly are again those where the persons are not hired as regular 'public employees', e.g. for budgetary reasons, but as some form of 'outworker' as mentioned above (see also e.g. paragraphs 7.26-7.30 in *United Nations et al, 1993*).

Timeliness

The timeliness of statistics based on the three types of sources mentioned above will depend on a number of factors: For statistics based on DUAR the timeliness will generally depend on (i) the reporting frequency to the central register(s); (ii) the delays in sending the reports; and (iii) the time needed by the administrative system to process the reports it receives and to make them available for the production of statistics. The reporting for public sector employees (PSE) will be either a continuous reporting of hirings and separations, or the reporting at set intervals about the movements of staff during a defined period and/or the number of staff at the end of that period. For the former type of reporting factor (i) will not be relevant, but the other two factors may influence the timeliness to a significant degree. The timeliness of survey results depends on the objectives and the resulting designs for the surveys and the capacity of the survey organisation.

Frequency

For statistics based on DUAR the possible frequency will again depend on the type of reporting system used. With continuous reporting of hirings and separations one can in principle imagine a very high frequency for the statistics, e.g. that new statistics could be produced every week or every month. For periodic reporting systems the possible frequency will be determined by the reporting periods. Statistics based on surveys of SPSU or on households can only be produced with the frequency with which these surveys are undertaken (or, in the case of continuous surveys, by which the results are being prepared).

Geographic resolution

Two factors will determine whether SPSE based on DUAR or SPSU can be produced for local labour markets: The first is the geographic detailing provided by and for the reporting (employing) units and the second is the limitations set by any confidentiality requirements. The latter may be as relevant for public sector units (PSUs) as they are for private establishments, as some PSUs operate in markets and others have e.g. tasks linked to national security or intelligence that are so sensitive that even their size, as indicated by their total employment, must be kept confidential. The former factor depends on how the records of the PSUs are organised and their content: A multi-site operation like the Postal Services may have centralised the personnel management functions to a few locations, and this may mean that from the reports submitted it may seem that these are the only locations where the Postal Services have employees.⁸ For statistics based on surveys of PSU or households the main determinant for geographic specifications will (also) be the limits imposed by the size and design of the sample. It should also be noted that while statistics based on DUAR and SPSU normally will give statistics according to the location of the place of work, the statistics based on a LFS normally will be according to the employees' place of residence.

Consistency over time

⁸ This example has been taken from the experience with an actual reporting system. The situation was corrected.

For statistics based on DUAR/PSU consistency over time may be undermined by (i) changes to the type of institutions which are included in the reporting system; and (ii) changes to the rules about the type of staff (employment contracts) which should be included in the reporting. Particularly vulnerable to such changes are the reporting of those employees who are to be included as a function of particular types of contracts and/or membership in specific insurance or pensions schemes. Changes to the coverage of such rules and schemes may happen quite frequently, and the new groups to be included or the groups to be excluded may frequently be large enough to create serious inconsistencies in the time series, unless great care is taken to ensure that consistent results are presented.⁹

Consistency with other statistics

SPSE frequently need to be consistent with statistics on other aspects of public sector activities, e.g. total expenditure by purpose, as well as with statistics on other forms of employment. The former because labour and human capital are the most important inputs used by these activities, and the latter because the PS is employing a (very) large proportion of the most important national resource, its labour force. It seems clear that it will be a significant advantage for the combined use of statistics on public sector employment and expenditures, e.g. for preparing estimates for the *national accounts*, if the basic data for both sets of statistics can be extracted from (consistent) records of the same units. However, for the description and analysis of PSE as a part of total employment it will be better if those employed in the PS can be identified separately in statistical sources which cover all employed persons. Otherwise the issues of how to best combine (labour) statistics from different sources will become urgent, see e.g. *Hoffmann, 2000*.

⁹ Not acceptable is just a listing of changes that have taken place, with the comment that "these changes must be remembered when using statistics for different years".

Main and descriptive variables

Statistics on employment always involve as a key variable a count or estimate of the ‘number of persons’ who are members of the group of interest. This means that the unit of measurement for this variable is ‘one person’. However, because persons can be employed to different degrees during the reference period, expressed e.g. by the ‘number of hours actually worked’, it is often considered as relevant to measure the latter variable¹⁰ as well or instead of the total number of persons employed. Information on ‘actual hours worked’ is normally easier to obtain with a labour force survey than with the other data collection instruments, as the latter normally only provide approximations from information about whether the employees have a full time or a part time contract, or on the total number of time units paid for, some of which may represent absences (e.g. vacation or sick leave) or bonuses. In most countries the issue of distinguishing between a ‘head count’ employment variable and a variable reflecting the amount of work performed during the reference period is even more important with respect to SPSE than with respect to other statistics on employment, because the public sector tends to be more ‘flexible’ in the working time arrangements than other employers.

The above mentioned ‘groups of interest’ among the PSEs are those which can be described by demographic variables and ‘educational attainment’, as well as those describing the type of work being done, i.e. ‘occupation’, and the type of activity, i.e. ‘industry’. The need for a good description of the contractual situation has already been mentioned.

Costs of production and dissemination

As frequently observed, e.g. in *Hoffmann, 1995*, the costs to the statistical agency of producing statistics is to a large extent a direct function of the number of informants which have to be contacted to get the primary data. This is a main reason why DUAR often is seen as representing the most cost-effective way of producing official statistics where such sources are available to the statistical agency. As indicated one would expect this to be the case also with SPSE, but the methodological problems outlined will mean that to obtain the type of SPSE needed will entail significant costs in processing the available administrative records. Because of this it may be more cost effective to design general statistical data collection instruments for statistics on employment that will make possible the separate identification of those employed by the public sector, and to include the capture of information needed to identify separately different categories of such workers. In this connection it is significant that following the 2001 updating of the ILO Public Sector Employment Database (PSEDB) the statistics presented there are based on results from Labour Force Surveys and Population Censuses for 37 percent of the countries. For 23 percent of the countries the statistics have been based on surveys of public sector units or establishment surveys. Only 17 percent of the countries reported that the statistics were based on DUAR/PSU only.

Quality issues for statistics needed to describe the *share of employment in the public*

¹⁰ Note that e.g. “full time equivalents”, “full work-weeks” or “work-years” are just less precise representations of this variable. Both *Mata-Greenwood, 2001* and chapter 4 of *OECD, 2001b* discuss issues related to the estimation of total hours actually worked during a reference period.

sector in total employment

It is perhaps a bit surprising that most (popular) discussions about the size of the public sector use the share of a country's *Gross National Income* that is channeled through the public sector as the main indicator, as long as the above *cliché* that a country's workforce is its main resource holds true. One reason for this may be that national accounts estimates are more popular/prestigious and well known among economists and those participating in such debates than statistics about employment. It may also be relevant that it is much more difficult to assess the quality of the former estimates than of the latter statistics.

Measuring the share of public sector employment in total employment, for the country as a whole or for specific groups of interest, will involve the measurement of total employment as well as being able to clearly identify those who are employed by public sector units and to distinguish those persons who work for these institutions as *employees* from those who do so with other forms of contract. As indicated above in the comments on the problems of delineating public sector units and 'employees' with the different sources, the latter two tasks are not necessarily trivial: in particular if the ambition is to find solutions that will make possible reliable estimates of changes to public sector employment as the difference between the stock estimates at two different reference periods.¹¹ That the most appropriate definition of 'public sector' and 'employed by' will tend to depend on the particular analytical objective of an analysis will be an added complication, touched upon below.

Quality issues for statistics needed to describe the *direct employment impact of variations in public sector budgets*

One of the major functions of the public sector's expenditures is to regulate the total activity in the economy. The actual impact on the total activity of the economy in general and on the total, local and sectoral distribution of employment in particular are among the main questions which are frequently discussed in connection with a government's budget proposals. Most macro-economic models will have been designed to provide projections of the total and sectoral economic impact of such changes. Some of these models have modules for projecting the impacts on total and sectoral employment. These will reflect but not identify separately the direct impacts that come through the hiring (or retrenchments) of government employees as well as the indirect effects through changes in consumption because of the resulting increase (reduction) in income among government employees as well as among those producing services and goods purchased by the government. However, much of the discussion of concrete budget proposals is linked to the direct impact on employment in local labour markets or among particular groups of workers, and the statistics available to discuss these are often less than adequate for the task. Similarly the fact that empirical studies which separate the direct from the indirect employment effects are so difficult to find may be a reflection of the inadequacy of SPSE which can describe such direct impacts. For such direct impacts to be described the SPSE must not only be available for relevant reference periods as well as for regional and institutional breakdowns that can be related to the changes in budget allocations, they must also

¹¹ Estimates of changes can in principle be based on the net effect of hirings and separations, but the necessary information for this strategy does not seem to be available in any country.

make it possible to cover all those who are ‘public sector employees’ according to a relevant analytical definition. This means that it should be possible to identify separately all those who have ‘non-regular’ employment contracts with public sector units from those who have ‘regular’ ones.

From the comments above about the possible sources for SPSE it seems warranted to conclude that none of them on their own are particularly well suited to produce statistics which satisfy these requirements. The direct changes to public sector employment as a consequence of budget changes are not likely to be large enough to be measured reliably by Labour Force Surveys, and sources which rely on the financial records of PSUs and/or regular administrative registrations used to manage e.g. pension systems, are not likely to be able to capture those employed on ‘non-regular’ contracts. Thus for studies of the direct employment effects of variations in public sector budgets it would seem necessary to make use of surveys of PSUs which are specially designed to cover all ‘paid employees’, regardless of their type of contract.

Quality issues for employment statistics needed to describe *productivity in the public sector*

Discussions about how to measure productivity in the public sector tend to focus on all the difficulties which exist in finding a meaningful and complete set of measures of relevant outputs.¹² Mostly ignored has been the fact that in order to arrive at estimates of the productivity with which these outputs are being produced it is also necessary to have reliable and relevant estimates of the productive factors used to provide these outputs. As employed persons represent the most important of these productive factors in most public sector activities it is clear that reliable and relevant measurements of this factor are essential for all productivity estimates, whether it is labour productivity or total factor productivity that is being estimated.

Although *OECD, 2001b* includes chapters on both the measurement of labour input (chapter 4) and the treatment of intermediate inputs (chapter 6) for productivity estimates there is no discussion of the issue mentioned above concerning the purchase of labour input services under other forms of contract than ‘regular’ contracts for employees; nor of any possible consequences for the most appropriate way of measuring labour inputs for estimates of productivity, as well as for measured changes over time and/or productivity differences between sectors. Such discussions would seem highly relevant, in particular when estimating productivity and discussing productivity changes in sectors where sub-contracting and different forms of contracts are frequent and changing, such as in construction and in different parts of the public sector. In order to be able to carry out such studies it will be necessary to get statistics on those who are employed on regular contracts as well as those who are engaged on other contracts to carry out very similar tasks as the staff who have (or had) regular contracts.

Improved efficiency or productivity and reduced overall costs are the usual arguments for privatizing the provision of services which are being provided to (parts of) the population by public sector units, or for ‘outsourcing’, i.e. sub-contracting certain functions related to the provision of

¹² *Farrell, 1957* is often quoted as an important contribution.

such services (security, cleaning and catering being mentioned most frequently). To investigate whether such effects have in fact resulted from these reforms it will be necessary to have consistent statistics on production and value added as well as on employment. Only with such statistics it will be possible to study total productivity developments for the economy as well as productivity development in the various sectors, including their publicly owned parts.

Quality issues for statistics needed to describe *the impact of privatization and outsourcing on total as well as public sector employment, and on the situation of public sector employees*

The direct net employment effects of privatization of existing public sector units, e.g. in telecommunications, postal services or water supply, should in principle be reflected in statistics on the total employment in the relevant industry groups and its distribution between public and private sector units. This is why the ILO Database on Public Sector Employment (DBPSE) did request SPSE by industry, i.e. the tabulation categories of ISIC, rev. 3 and NACE, rev. 1. However, as indicated in the annex, only half of the countries reporting some SPSE could provide such statistics for industry categories.

Statistics which can describe the total net employment effects of outsourcing or subcontracting are much more difficult to obtain, both in principle and in practice. This is because it will be necessary to observe the employment effects on the “outsourcing” units and industry groups as well as on the units and industry groups which are being contracted to do the work being “outsourced”. E.g. the outsourcing of cleaning and catering services from public sector hospitals and educational institutions will in principle reduce the public sector employment in ISIC Division 80 (education) and 8511 (hospital activities) and increase private sector employment in ISIC classes 5520 (restaurants, bars, canteens), 7493 (building cleaning activities) and 9301 (washing and (dry-)cleaning of textile and fur products). Even taking into account the possibilities of analyzing establishment based statistics on the extent to which certain forms of services are being purchased, i.e. by using the *Central Products Classification (CPC)* codes 63230 (catering services), 85330/40 (cleaning services general/special) and 97130 (laundry services), it is difficult to see that regularly produced statistics, or the input/output tables produced from them, are likely to provide the degree of detail and precision in measurements which will be needed for these types of studies.

The workers affected, the social partners and the policy makers are not only interested in net employment effects. They are also likely to request studies with statistics that can throw light on the effects on those who were working in the activities which were privatized or outsourced, as well as on workers for which the re-organization of these activities would represent new opportunities. This will normally mean that it will be necessary to design carefully “tracer-studies” to can track effects on the workers directly affected as well as effects on the contracting units and establishments which are contracted to provide the out-sourced services. Obviously such surveys will need to cover both employment and variables describing conditions of work, e.g. type of contracts, wages and hours of work.

Concluding remarks

Quality dimensions such as timeliness and frequency; geographic resolution; consistency with other statistics and over time; validity and consistency of definitions; resolution and validity of value sets; reliability of measurements; and the costs of production and dissemination of the statistics will be important for SPSE in almost all contexts. Nevertheless, the above comments on the statistical requirements for the four descriptive and analytical issues have focussed mostly on issues related to the need to, and difficulties of, getting statistics for all relevant forms of employment relationships which individuals may have to the PSUs in the latter's capacity as employers as well as purchasers of services. This to signal that here is an issue on which those producing SPSE will need to pay particular attention in order to obtain statistics that will serve important descriptive and analytical needs. Furthermore, it is clear that this issue is important not only for SPSE: changes to the contractual relationships between 'employers' and those workers who provide productive services to them have for a long time been said to be important for improving the 'flexibility' of labour markets in economically advanced countries. It seems to be a 'conventional wisdom' that to make easier, i.e. less costly, 'necessary' adjustments to the number of persons employed with a particular employer, public or private, in response to changes caused e.g. by new technologies and new international trading patterns, will be necessary to maintain satisfactory economic growth and ensure full employment in the long run.¹³ Thus 'new' contractual forms between 'employers' and workers can be expected to (have) become important throughout the economies that experience such changes. This (will) have important consequences for the capacity of the traditional data sources to provide statistics that will validly and reliably measure levels and changes in employment, wages and productivity in different types of economic activities (sectors). Potentially there also seems to be important implications for validity of the SNA's distinction between 'compensation of employees' and 'operating surplus and mixed income' in the distribution of primary income.¹⁴ Given the increased (re-) recognition of the importance of human capital acquired through education, trainings and experience as a factor of production and a source of economic growth, it may, however, be appropriate to regard an increasing proportion of the primary income that accrues to private households as representing a reward for the services provided by its human capital as well by any physical capital it owns. If this is the case, then the validity of a pure "compensation of employees" concept may prove to be very limited, and it may be more relevant to consider all employment-related income as a return to human capital.

¹³ See e.g. the OECD's 'jobs study', *OECD, 1994*. It may be relevant to observe that to 'flexibility' and lower costs of adjustments for employers may mean higher costs for workers and the society at large, in the form of having to carry a higher share of the economic risks and costs of such adjustment.

¹⁴ See chapter VII in *United Nations et al, 1993*. In sectors and countries with less well developed standard employment contracts than those assumed by the SNA this distinction have always been rather difficult to apply with any degree of precision.

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