

**Fourth Meeting of the Voorburg Group on Service Statistics****Ottawa, 2 - 5 October 1989****Setting up a Statistical Information System on Services****By Günter Kopsch****Statistisches Bundesamt****Federal Republic of Germany****Wiesbaden, September 1989**

## Setting up a Statistical Information System on Services

### 1. Objectives of the Study

In spite of the fact that in modern national economies, services are gaining more and more in importance, yet there is in the great majority of countries still no consistent system of service statistics whose parts are harmonized and interlinked with each other. In the past, the main emphasis of the work - also in the Federal Republic of Germany - was on the development and implementation of individual statistics related to specific fields. These provide statistical data for "classical" spheres of the service sector, e.g. for trade or transport and communications, while for other spheres such data are not available. In view of the emerging structural changes of the economy and the increasing analytical requirements, this situation cannot satisfy the informational demands of the users any longer.

Considering the growing worldwide interlocking and integration of economies, it seems advisable to develop at an early time an internationally adjusted concept in order to close the informational gaps mentioned with data as harmonized as possible. For this purpose, the present paper puts up for discussion a concept which, for the time being, is limited to services intended for the market. This concept is based on the work performed so far by the Voorburg Group and particularly takes into account also the suggestions of the SOEC sectoral programme "Service Statistics" presented at the Group's 3rd meeting. Its main objective is to propose concrete steps for setting up a harmonized system of statistical information on services corresponding to the following requirements:

- The information on services should fit into the overall system of economic statistics and use definitions which are coherent with the other statistics.

- The system of statistical information should provide data covering the whole tertiary sector and provide a complete and non-overlapping overall picture of the service sector on the one hand, while on the other hand it has to furnish also specific information on individual service fields.
- Moreover, the system should provide information on short-term developments as well as on medium to long-term structural changes.

Considering these requirements, the present approach is to provide a framework which enables the individual states to further develop their statistical systems in an internationally harmonized way according to the users' priority needs and in line with the level of progress reached in statistical work.

Taking as a basis the general objectives presented above, the following steps are defined according to their priorities:

- As a first stage, a basic programme of some few central indicators for the entire service sector is suggested which can satisfy the basic informational needs.
- The second stage will include a supplementary catalogue of further indicators, relevant to the whole service sector, which are provided by countries with advanced statistical systems.
- In a third stage - which, however, cannot be described in detail in the present paper - it is intended to agree upon additional indicators which will enable the particularities of individual service sectors also to be taken into account.

## 2. Delimitation of the service sector

### 2.1 Problems of defining services

Although the difficult problem of defining the term "service" and in particular of clearly distinguishing goods from services has often been treated in literature, it has so far not been solved satisfactorily. Though, for drawing up the overall framework, it would be desirable to have a generally

valid and accepted definition of services which would also be operational for statistical purposes, it seems sufficient for the present purpose to use a pragmatic approach.

The informational needs of users of statistics, focussing mainly on the aspects

- services as a result of production
  - service producers
  - process of service production and
  - occupations in the service sector,
- permit to define various points of departure.

An appropriate and practicable basis for the commodity-related delimitation for the coverage of output is provided by the "Central Product Classification (CPC). Though it does not explicitly distinguish between goods and services - since its objective is a systematic allocation of both goods and services for manifold purposes -, there can usually be clearly delimited the sections within the CPC covering goods from those comprising services, even though not by the missing unique service definition but at least by convention and using some largely accepted criteria.

The second main aspect concerns the service producers, i.e. economic units rendering services. Though, in reality, a producer's range of performances often includes both goods and services, the following considerations will be limited to those offerers providing services for the market as their main activity. This does not mean, however, that the coverage of services in manufacturing and agriculture may not be included at a later time in the considerations. An appropriate basis for classifying statistical units according to their economic activities is provided by the "International Standard Industrial Classification" (ISIC Rev. 3). ISIC Rev. 3 does not explicitly differentiate between activities producing services and those producing goods either. According to general convention, however, the tabulation categories G to P can be defined as service spheres to distinguish them from the goods producing industries. At least for the official statistics of the Federal Republic of Germany it is above all important to provide data for all these sectors. The more theoretical question which activities in the economy belong in their entirety to the production of services can be tackled afterwards.

Information on the process of service production will, as a rule, also proceed from the producing economic units. Statistical data on occupations in the service sector are mostly based on statistics originating from persons as enumeration units.

## 2.2 Statistical units

The selection of the relevant statistical units to be observed determines the definition of the field of observation and is derived from the main task of official statistics: the providing of data for manifold purposes and various groups of users. Despite the problems of selecting the "proper" statistical unit, the distinction ISIC Rev. 3 makes mainly between four possible units of observation - enterprise, kind-of-activity unit, local unit and establishment - seems to be a good point of departure. There is, however, no statistical unit appropriate for all studies, and no statistical unit can meet all requirements of the analysis. It is, therefore, necessary to provide the possibility for combining economic units in economic statistics. If this is not possible in individual branches due to limited possibilities of data collection comparable data at least for one statistical unit should be presented for the entire service sector and preferably for the enterprise.

## 3. Economic indicators for the entire service sector

### 3.1 Indicators of the basic programme

The basic programme is to create the preconditions for a comparable database covering the whole service sector. It has to provide information particularly on

- the number of economic units by branch of economic activity and size,
- the output of the economic units,
- the prices of the services sold on the market,
- the factor input and the most important production costs.

The following explanations on the indicators proposed are related to the sphere of market services, i.e. the services sold at a price usually covering at least the cost in the medium or long term. The definitions of indi-

cators which cannot be presented here in great detail, have to be coherent as far as possible with other statistics, particularly with the National Accounts System.

The correspondence of the definitions used in service statistics with those of the System of National Accounts is of special importance for two reasons:

- The general indicators of the basic programme are provided particularly for the national accounts;
- the definitions of the System of National Accounts constitute already an internationally harmonized system, i.e. the difficult international co-ordination process has already been achieved.

- (1) Number of economic units by kind of economic activity and size classes (as determined by the economic result or the number of persons employed)

The economic units to be used in the basic programme are first of all enterprises as the smallest legally independent units. The basis for allocating them by kind of economic activity according to their main economic activity should be the ISIC (for the classification by size see below). A complete enumeration of all service enterprises can for practical reasons be carried out at longer intervals only. For the intermediate years, a permanent adjustment of the total number has, therefore, to be planned by means of statistics of foundations, transformations and cancellations.

- (2) Output of economic units by kind of economic activity

An obviously appropriate measure of the output of service enterprises is the gross output of national accounts, whose contents for many service branches is limited to turnover as proceeds from the sale of services because changes in stocks and products for use on own account are not relevant. For some partial sectors, particularly the financial institutions and also trade, problems of definition exist which have been solved in national accounts by international agreements, and it seems reasonable to apply these solutions for service statistics, too. Apart from these problems of definition there are no major conceptual difficulties in covering the output value of service enterprises.

(3) Prices of services sold on the market

The quantitative presentation of services as a rule poses considerable problems, i.e. if possible at all it often is feasible only by means of ancillary values. An obvious solution is the deflation of values which requires suitable price indices in a detailed breakdown by kind of services. For this purpose, a price observation system has to be drawn up, similar to the one of goods production. This requires detailed sector-specific investigations in order to be able to take due account of the deflation requirements.

(4) Factor input and production costs by kind of economic activity

a) Economically active persons

Data on economically active persons provide important basic information for studies and measures related to labour market and social policies. By comparisons with data for other economic sectors, it is possible to particularly emphasize the importance of the service sector. According to the definitions of national accounts, economically active persons comprise dependently employed persons as well as working proprietors and unpaid family workers, irrespective of the working time. Personnel for hire should be covered in the sectors where they actually work.

b) Wages and salaries

With the total wages and salaries the most important cost factor is shown, particularly in the service sectors which are usually wage-intensive. As a rule, data on the gross wages and salaries in the economic sectors represent the most important basis for drawing up the income distribution account within national accounts. The definition of total gross wages and salaries in service statistics should, therefore, fully correspond to the one used in national accounting.

c) Gross fixed capital formation

Data on gross fixed capital formation provide information for analysing the formation of real assets in the national economy and are, in general, one of the most important items of national accounts; among others, they serve

the computation of the capital stock. Though gross fixed capital formation does not play a major role for all service sectors, it should - due to its particular importance for the national economy - nevertheless be included in the basic programme of service statistics covering all spheres, and the definition should follow closely the one of national accounts.

### 3.2 Indicators of the supplementary programme

The supplementary programme comprise further indicators which are important for the whole service sector and whose ascertainment as well as national and international provision may follow in a second stage (extension stage) according to the capacities of the individual national statistical offices. It is intended to supply data on

- the structure of enterprises and local units,
- the economic result,
- the factor input and the production costs.

As can easily be seen, the supplementary indicators follow closely the basic programme. As a rule, they break down further the less detailed data of the basic programme.

#### (1) Structure of enterprises and local units

Important supplementary data on the structure of the service sector are provided by the indicators on

- a) Number of local units by kind of economic activity and size (measured by the number of employees)
- b) Entries and exits of enterprises and local units by kind of economic activity

Particularly under regional aspects, the number of local units as a supplement to the number of enterprises is of considerable importance in nearly all service fields (particularly trade, banks, insurance). By explicitly showing the entries and exits of service enterprises and local units in a breakdown by kind of economic activity (and, if possible, also by the age of the enterprises withdrawing), it is much easier to realize and analyse



the structural changes than it would be possible by showing just the net changes; this is true particularly of the service sector which, in many partial fields, has considerable fluctuations.

A differentiated presentation of fluctuations in the case of enterprises and local units - separately by entries and exits - requires a permanent adjustment of the total number as recorded by complete enumerations at intervals of several years. An appropriate means for this purpose will be - also under the aspect of reducing the burdens to be placed on the respondents - the exploitation of secondary statistical sources, such as the turnover tax declarations available to the tax authorities.

## (2) Economic results

As an indicator supplementing the enterprise gross output included in the basic programme there should be shown the

- value added of the various service sectors.

Though data on the output of service enterprises - often identical with the turnover - provide important information on the kind of economic activity and on the kind of services produced, there are certain limitations of comparability both within individual service sectors and between different sectors due to greatly varying input structures. In trade, this problem has in part already been solved by applying the output definition of national accounts instead of just using the turnover as output measure. In other service sectors, however, the differences in the proportion of preproducts (mostly services, too) in the own turnover often are also considerable, so that changing over to the economic result in the form of the value added yields data of much better comparability. The value added is defined as the turnover adjusted to changes in stocks less purchases of goods and services for further sale (including the placing of sub-contracts) and less non-durable goods and services used up in production. The value added defined in this way corresponds to the same item in national accounts. It measures the value of the services obtained by the producing unit itself.

## (3) Factor input and production costs

Following the basic data on the production factors labour and capital as used in the production process which are provided for in the basic pro-

gramme, the supplementary programme extends these data for further-going analyses and, moreover, includes the presentation of intermediate consumption.

a) Active persons by employment status, sex and full or part-time employment

The classification of active persons by various criteria enables detailed analyses to be made on the structure of employment in the service sectors. In particular, a differentiation of the active persons by their employment status is required. A distinction may be made between a) working proprietors and family workers, b) salaried employees and wage earners and c) apprentices. Because of the high percentage of women and the wide-spread part-time employment, these items should be taken into due account in order to obtain significant data in this regard. As part-time employees are considered here all persons working (at a fixed date) who are employed for performing fewer weekly working hours than is normal in the respective place, branch of industry or local unit.

b) Working hours

The indicator 'working hours' serves for determining the actual labour input and for computing productivity index figures. Working hours are mostly defined as hours actually worked (not necessarily paid for) by the active persons.

c) Social expenditure

Social expenditure represents a high proportion of the enterprises' total expenditure for the production factor labour which has been increasing for years. In national accounts they represent, together with gross wages and salaries, the gross compensation of employees. More specifically, social expenditure comprises the employers' social contributions to social security schemes, to professional associations, etc. as provided by law, and the social benefits based on collective agreements, local unit or branch of industry conventions or which are paid voluntarily.

d) Rented and leased fixed capital goods

Because of the growing importance of leasing, it is necessary to obtain data not only on purchases but also on rented and leased fixed capital goods. One of the figures to be obtained in this context is the value of durable goods newly rented or leased by medium to long-term lease contracts from leasing companies, directly from the producer or from enterprises of the same concern (e.g. holding companies). The allocation of fixed capital formation according to the user concept represents a better basis for sector-related computations and analyses of fixed assets, of capital coefficients and of the production capacities than would be the case with an allocation according to the owner concept. The current expenditure for rented and leased fixed capital goods, however, provides important information on the extent to which leasing is being used and on the costs of this part of capital input.

e) Intermediate consumption

In some service fields, the value of intermediate consumption represents an important cost factor, so that the recording of this value is indispensable for a rather complete analysis of the cost and revenue situation of the service enterprises. Also the computation of the value added already requires data on the intermediate consumption of enterprises. As for the definition, reference can be made to the definition used in national accounts. It would be desirable to have a breakdown, however crude, of intermediate consumption by kinds of goods and services.

3.3 Provision of sector-related indicators

Apart from the basic and the supplementary programme, indicators should be provided and integrated into the survey system, in order to take into account and show the sector-related particularities of individual service sectors. This objective is just mentioned here, but will not yet be treated in detail. While in most countries with advanced statistical systems there are already comprehensive data on a number of service fields which, above all, need to be harmonized internationally, hardly any data at all exist for other fields. For this reason and, among others, also because for these fields a survey programme can be drawn up at once in a harmonized way, it

seems necessary to first compile a list of indicators for the sector of the so-called modern, enterprise-related services. One major reason is also the fact that these are mainly prospering branches of industry playing key roles in the development and for the competitiveness of national economies.

To be included in this part of the work is also the further development or, in some cases, just the harmonization of the sector-specific statistics on the other services intended for the market, and finally also the inclusion of the non-market services into the investigation.

It is necessary for each individual sector to outline its particularities, to determine the sector-specific data demand, to check the suitability of indicators covering all sectors for satisfying the sector-specific data demand by field-specific analysis as well as to develop field-specific indicators and in particular also quantity indicators. At the same time, the information demand on specific service flows, such as the international trade in services, should be taken into account.

It should be the purpose of the investigation to develop for each individual sector a sector-specific basic programme and a sector-specific supplementary programme of indicators. Similar to the approach followed for the indicators covering several sectors, the data of the basic programme would then have to be provided by all states in which the relevant sector is of some importance, while the provision of data for the supplementary programme would just be optional.

#### 4. Recommendations for a system of statistics on the service sector

By means of the basic and the supplementary programme of indicators and of the sector-related indicators still to be developed in detail, the information demand on the service sector can largely be satisfied in the medium to long term. From the three (or four) catalogues of indicators, the individual states could choose - similarly to a module system - those which suit their requirements and particularities (with the exception of the basic programme).

As a further step, the indicators have to be transformed into survey topics, and there will have to be drawn up or further developed the relevant surveys whose results are comparable on the international, intersectoral and intertemporal levels. One objective in this context is that in the industrialized countries the basic and the supplementary programme are implemented rather completely if there is an obvious need for the relevant information on the part of the users.

For the system of surveys in the service sector, it will be an important basis for controlling the survey organization, for combining the results of the various survey units and individual statistics and also as an evaluation instrument to draw up and continually update a register of enterprises including the local units. In this way it will also be possible to always keep recording of the number of economic units.

Not only with respect to contents but also in terms of periodicity of the surveys, a system of service statistics would have to be developed by stages. In partial surveys to be conducted at intervals of less than one year (quarterly or even monthly) the number of active persons, the turnover (for the trade as well as for banks and insurances, however, the components of gross output) as well as the wages and salaries should be covered without any breakdown. This will satisfy the short-term basic demand, especially for purposes of short-term observation of economic trends.

Yearly sample surveys should provide at least the data required for the basic programme, but, if possible, also those required for the supplementary programme, both for purposes of national accounts and for branch-specific analyses of the individual service sectors. Where further specifications are provided for in the supplementary programme, such as for the data on intermediate consumption by types of commodities, it should as a rule suffice to conduct surveys at intervals of several years in order to keep the burdens to be placed on the respondents within justifiable limits.

Considerations concerning the periodicities desirable for the recording of the field-specific indicators can be made only after the relevant catalogues have been compiled. Possible are yearly surveys for particularly important topics and surveys at intervals of several years for supplementary topics. Yearly surveys could then cover in a single operation for the enterprises of the various service sectors both the joint basic and supplementary programme applying for all service sectors as well as the sector-specific programme.

As a rule, the current surveys should be conducted as sample surveys, perhaps supplemented by censuses at intervals of 5 to 10 years for updating the sampling basis. Censuses could be substituted, however, by a register solution, if the register can be constantly updated by readily accessible and reliable secondary statistical sources.