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## The catchword

### The Gerhard Fürst Award of the Federal Statistical Office

In 1999, the Federal Statistical Office for the first time granted the Gerhard Fürst Award for research papers which study topics that bear relevance to official statistics. The aim the Federal Statistical Office pursues in granting that Award is to further intensify the cooperation between researchers and official statisticians. Also, it is intended to promote official statistical information and topics in university training, enhance the understanding of our work and contribute to a well-aimed use of our information products.

The Gerhard Fürst Award has been named after the first President of the Federal Statistical Office who also functioned as the Chairman of the German Statistical Society for many years. After 1945, he essentially shaped the organisational and legal structure of the system of official statistics in Germany which until today has been characterised by its main pillars of functional concentration and scientific independence. By naming our Award after Gerhard Fürst, we honour a man whose indisputable merit consists in the good reputation German official statistics – whose results are regarded as objective and reliable information by the general public – have acquired at home and abroad.

The Award is granted for outstanding research papers in the areas of statistical theory, economic and social statistics, or economics and social sciences, provided that the authors investigate questions of methodology closely related to the functions of official statistics or that they study empirical issues making intense use of official statistical data. The endowment provided for a doctoral thesis amounts to Euro 5,000 and for a diploma/master's thesis to Euro 2,500. In addition, the Federal Statistical Office also grants promotion awards for excellent papers which enhance the academic discussion in the area of official statistics. Those promotion awards are endowed with Euro 2,000 for doctoral theses and Euro 1,000 for diploma/master's theses. The submission deadline for theses completed in the two preceding years is 31 March each year.

The jury selecting the papers worthy of the Award includes Prof. Hans Wolfgang Brachinger of the Universität Fribourg, Switzerland, Prof. Richard Hauser of the Johann Wolfgang Goethe-Universität Frankfurt am Main, Prof. Ullrich Heilemann of the Rhine-Westphalia Institute for Economic Research, Essen, Prof. Walter Müller of the Universität Mannheim, and Prof. Werner Neubauer of the Johann Wolfgang Goethe-Universität Frankfurt am Main.

In 1999, the following two doctoral theses each won a promotion award of the Federal Statistical Office: "Kernel- and Locally Weighted Regression with Application to Time Series Decomposition", written by Dr. Yuanhua Feng, member of the scientific staff of the Universität Konstanz, and "Education, Social Status and Choice of Partner. An Empirical Analysis of the Change in Marriage Patterns with relation to Education and Social Status", written by Dr. Heike Wirth, member of the scientific staff of the Mannheim Center for Survey Research and Methodology. The Awards were presented on 18 November 1999 at the 8<sup>th</sup> Scientific Colloquium on "Economic research today – Theory, measurement, empirical knowledge", which was organised jointly by the Federal Statistical Office and the German Statistical Society in Wiesbaden.

Further information on the Gerhard Fürst Award can be obtained from the Federal Statistical Office at:

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## Cooperation in research and development

### Ways in which the scientific community may use microdata of tax statistics

The discussion on providing the scientific community with access to microdata of official statistics, which has been intensively waged for some time, reflects – among other things - the technological advancements in the area of data processing. While some years ago, it was only the major institutes and the statistical offices who were in a position to process extremely large amounts of data, now any institution of higher education has the opportunity to make complex analyses based on large volumes of data.

With the creation of the technological preconditions for modelling and analysing very complex interrelations, the requirements regarding the provision of official data have increased as well. In one of the most interesting areas of empirical work, namely microanalytical research, user requests may however be fulfilled to a certain extent only. Data protection provisions and, in the field of tax statistics, additional tax secrecy restrict data access by external scientists. It should however be noted in this context that observing the respondents' right for informational self-determination is not only a legal assignment, but has also build confidence which ensures good data quality in primary statistical surveys to an extent which should not be underestimated.

Nonetheless, data supplies that are tailored to the needs of the users are necessary and feasible in this sensitive area of official statistics, too. To solve the conflict between research requirements and data protection, several methods have been developed in the framework of which external scientists may be permitted access to the information potential of microdata. As regards microdata which are part of tax statistics, the following two procedures have been applied so far:

- specialised analyses of statistical material commissioned by data users, and
- data users provide their own programs for analyses.

Plans have been made to check the application of the following two methods for providing tax statistics access in the future:

- supplies of de facto anonymised microdata of tax statistics,
- temporary stays of external scientists in statistical offices.

The experience gained with respect to specialised analyses of statistical material is manifold after three years of central availability of tax statistics microdata. During that period, analyses have been made in particular for the Federal Ministry of Finance. Besides, evaluations have been made for university research purposes, research institutes and other interested parties. In this context, a very complex analysis of church taxpayers, which was commissioned by the main two Churches, should be mentioned.

An external program syntax was used for evaluation purposes for the first time last year. In the context of a project commissioned by the *Forschungsinstitut Freie Berufe* of Lüneburg university, an SPSS syntax-based evaluation tool was applied to analyse the distribution of income among freelancers.

It turned out that this kind of cooperation between the scientific community and official statistics has advantages in various areas compared to merely commissioned jobs. From the perspective of analysing scientists, the advantage consists in the fact that elaborate program procedures, whose elaboration partly requires quite a lot of staff, may be written by themselves. And what is even more, modifications may be made at short notice and in a way relatively independent of the staff potential available at official statistics.

A natural limit to the above procedure is the complex nature of the programs to be applied. It is a task of the specialised statistician to check the program syntax and the result obtained by it for possible secrecy cases. For this reason, it will certainly not be feasible to apply methods and programs where tracing the transformations of the microdata records involved requires an excessive amount of time.

The range of programs used is limited for the same reason. Official statistics will never have at its disposal more than part of the software adequate for tackling those problems. As mentioned before, a specialised statistician must in each case be in a position to follow the program syntax. This, however, is almost impossible as regards the total of analysing programs offered on the market. For this reason, it is only SPSS and SAS which are applied in the area of tax statistics at the moment. As far as more complex simulations are concerned, GAUSS is additionally applied in individual cases.

The production of de facto anonymised microdata is something completely new in the field of tax statistics. It is conceivable that, for concrete purposes, sub-populations of the overall material will be made available to scientists in the form of de facto anonymised data files with a limited set of variables. Because of the diversity of tax statistics, however, the production of a regular de facto anonymised basic data file can rather not be expected.

Stays of guest scientists in the specially protected rooms of official statistical offices and their access to non-anonymised microdata material is an approach not yet applied in the area of tax statistics. If such requests were made, it would have to be checked in each case whether and to what extent that kind of cooperation might be feasible. In this context, experience gained in other areas of official statistics could be relied on.

The data covered by the application of the above methods in tax statistics are centrally available microdata of wage and income tax statistics, corporation tax statistics, turnover tax statistics, and trade tax statistics collected in various survey years. The continuously increasing data pool presently includes about 72 million microdata records with up to 400 variables.

Finally, it should be noted that the opportunities described above to analyse the data available go beyond the basic information services. Consequently, the cost of user-specific evaluations and consultations have to be borne by the data consumers themselves.

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## Cross-section publication

### 50 years of housing in Germany

How many flats are available to the population? What kind of structural condition are the buildings in? Are there substantial regional differences regarding the equipment with bath/shower and toilet? How large are the flats in terms of floor space and number of rooms? Only by answering these and other questions is it possible to gain a clear idea of the conditions in the housing sector and to provide private and public decision-makers with the relevant information.

That is why the tasks of official statistics include the collection and dissemination of data on quantities (e.g. number of buildings, number of flats), qualities/quality deficits (e.g. equipment of the flats with bath, shower, toilet) and on the housing standards of specific groups of the population. The information is gathered by means of exhaustive surveys and representative sample surveys. The quality of those surveys is largely due to a statutory obligation to provide information, which, in turn, is part of the reason why the surveys attain a degree of accuracy and representativeness that can hardly be achieved by non-official statistics. Since 1946, censuses or sample surveys have been held at irregular intervals either separately or together with other surveys. The latest one, entitled "The housing situation of households", was conducted in 1998 as a supplementary component of the microcensus. Further topical information on the housing stock is available from the statistics on building activity. They provide monthly and yearly data on building permits and construction work completed as well as on the volume of unfinished building projects and retirements of buildings. Besides, this information is also used for updating the data on the housing stock.

The planned publication on "50 Years of Housing in Germany" is intended to summarise the results of the different surveys and to present trends in the housing sector in the form of time series. The first part of the publication will explain the statistical bases, methods and approaches, describe the tasks and objectives of official housing statistics and present the relevant concepts and classifications. Further emphasis will be put on the integration of the former GDR's housing statistics into the statistical system of the Federal Republic.

Part 2 of the publication will set out the magnitude and structure of the housing stock. It will provide data, for example, on the development of the size of buildings over the past fifty years, on ownership and age structures, on the size, use and equipment of housing units, on types of heating and the development of rents. Part 2 will also comprise information on the accessibility of selected infrastructural facilities such as public gardens, means of transport or playgrounds, and on environmental strains on the residential surroundings such as traffic, aircraft and industrial noise or odours, dusts and exhaust fumes.

The final part of the publication will illustrate the housing conditions of selected population groups. The development of the size of flats, their equipment and the rents paid for flats occupied by foreigners, elderly people, households with children or one-person households will be documented and commented in comparison to the housing standards of the average population.

The publication will be complemented by a comprehensive list of sources and a bibliography providing an overview of the Federal Statistical Office's major publications on housing statistics from 1950 to 1999.

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## Events

### 14th meeting of the Voorburg Group on service statistics

*The Voorburg Group is an expert body of service statisticians from national and international statistical offices as well as international organisations (WTO, IMF, OECD, World Bank). Its 14th meeting was organised by the New Zealand statistical office (Statistics New Zealand) and was held in Christchurch from 11 to 15 October 1999.*

First convened in 1986 following an initiative of the statistical offices of Canada and the United Nations (UN), the Voorburg Group was named after its first venue, which was Voorburg, the headquarters of the Netherlands Central Bureau of Statistics. Initially, its main goal was to support the activities of the UN statistical office in setting up the Central Product Classification (CPC) for the service sector. Later the activities were extended to include the improvement of statistical methods and surveys regarding the service sector. Every year, the results of empirical and theoretical work are discussed at a one-week meeting and are published in a conference volume.

At the 1999 meeting, the following issues were dealt with in nine sessions:

1. Product classification

Following the decision of the United Nations Statistical Commission to prepare a coordinated revision of ISIC (International Standard Industrial Classification) and CPC, the Voorburg Group has been assigned a continued advisory function for the service sector. Regarding an updating of the CPC version 1.0 envisaged for 2002, the statistical offices are performing various activities. Canada and France reported about their studies on the service branches of engineering, business consulting, data processing, real property and housing, temporary work, telecommunication and audiovision and presented proposals on how to reclassify those branches in statistical terms. As far as requirements of price statistics are concerned, service packages should be taken into account more seriously than in the past. The Italian statistical office submitted proposals as to how to classify specialised and non-specialised retail trade.

2. Product classification and international trade in services

For the new GATS (General Agreement on Trade in Services) round of negotiations due to begin in 2000, statistical data on services will be expected to be available. The statistical offices will be able to supply only part of such data because for many service branches statistical surveys are not in place yet. In the 5<sup>th</sup> edition of the balance of payments manual, the product classification used there has now been linked to the CPC version 1.0. Critical questions from the IMF point of view were asked on CPC application, e.g. regarding the treatment of tourism, electricity supply, service packages in connection with large-scale projects in the construction industry, etc. It is obvious from such questions that the CPC needs updating.

3. Non-market services

The studies submitted on non-market services in the areas of education, health, social matters and culture have shown that there is considerable need for research, especially regarding the issues of how to quantify and evaluate the services and how to define the institutional units (there is a great variety of units of private and public law, especially at an international level). There are particular problems concerning services for collective needs, e.g. public security, defence. It is becoming apparent that the services can be measured only indirectly, i.e. by the number of employees and their activities. Here, it must be examined whether surveys among the service providers (institutional approach) or household surveys are best suited.

4. Information society, use of information and communication technology (ICT) in businesses

Although internationally binding definitions of the terms "information society, information economy, electronic information society" have not been established yet, there is urgent demand for statistical data about that area. In the submitted reports based on pilot studies, concrete proposals were made in this context. A statistical definition of e-commerce (order, and relevant confirmation, of goods and services in an open network) has been agreed upon for future surveys. Other proposals developed during the discussion and regarding the delimitation of sectors and products will be submitted to the relevant OECD working party (WPIIS). Parallel to that, the Scandinavian countries conducted several pilot surveys, developing and testing a questionnaire suited to measure the use of ICT in enterprises. It is intended to reach an international agreement ensuring international comparability of results.

5. Acquired services

Within the rough classification of acquired services by subcontracting, outsourcing and purchasing traditional services (e.g. telephone services), the most important issues are those regarding outsourcing, that is the question of whether service production should be done within the enterprise or be separated out. In the USA and Canada, relevant questions have been included in statistical surveys for years already; recently, it has been attempted to use delimitations according to CPC headings. The submitted studies inform about experience acquired with regard to specific economic branches; it shows that, due to a lack of records, enterprises have much more difficulty with that than with turnover breakdowns. Therefore, the general question arises whether asking for cost data should be adjusted more closely to the accounting framework used in the enterprises. This also applies to the relevant project planned by Eurostat.

6. Production price indices for services

Extending the coverage of production price indices to include the service area has been pushed forward in recent years by some statistical offices. Several contributions reported about the latest calculation methods and results for the service branches of banking, telecommunication, computer services and legal consulting. Apart from that, the US Bureau of Labour Statistics (BLS) and the Australian statistical office follow an all-encompassing approach aimed at combining the production price indices for goods and for services, which would then form a single index. The aim of those efforts is to obtain a comprehensive measure of inflation. In the conference document of the BLS, three possible aggregation methods are presented and, in addition, the calculation of a combined service price index (CSPI) is suggested for discussion.

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