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The Catchword

Anonymisation of economic microdata

Empirical economic researchers deplore the lack of access to *economic microdata* of German official statistics: The information potential of surveys conducted by the statistical offices at *enterprises and local units* is only partially exploited. Alternative solutions applied by the research institutes, e.g. in the form of own surveys, are expensive and often of a less satisfactory quality. Moreover, they put an additional burden on the companies surveyed, which may still increase the widespread weariness concerning statistics. Besides, this practice is unsatisfactory from the viewpoint of making optimum use of public resources.

The statistical offices are open-minded about the request of empirical economic researchers to expand the uses of microdata on enterprises and local units. As major information providers, the statistical offices support any endeavours to make extensive use of their data holdings. The path mapped out by the Federal Statistics Law is that scientists and researchers may be provided with *de facto anonymised* microdata. In the area of statistics on households and individuals (Microcensus, Sample Survey on Income and Expenditure, etc.), this path has been pursued for several years. The transmission of de facto anonymised datafiles has proved to be a good form of cooperation between scientists and official statisticians. In this context, the support we have received from the Federal Ministry for Research in generating the datafiles has been vital.

The above-described cooperation is not yet possible as far as microdata on *enterprises and local units* are concerned, whose de facto anonymisation is considered to be more difficult. Closing this gap is our professed aim. On 13 March 2001, the Commission for improving the information infrastructure between science and statistics (KVI) handed over its report to the Federal Minister for Research, Mrs. Edelgard Buhlmann (please see the relevant article below). In that report, the Commission endorses the plans of the official statistics agencies to collaborate with the scientific community in examining the possibilities of anonymising data on enterprises and local units.

The de facto anonymisation of enterprise and local unit data requires sophisticated techniques but, even internationally, is still in its infancy. As a first step in the work on this topic, the Federal Statistical Office is participating in an international methodological project on statistical confidentiality (CASC), which is supported by the EU Commission. The project aims at (further) developing different methods for anonymising microdata and at testing their applicability and efficiency. In that context, various criteria on the protection level of the microdata and the data's analytical validity are taken into account. The developed techniques are integrated in a program package on confidentiality which is to be made available to interested users after the project has been completed in 2004.

Statistics Netherlands (CBS) has taken charge of the management and overall coordination of the CASC-project. The central parts of the project, relating to the development of methods for anonymising local unit microdata, are coordinated by the Statistical Office of the Spanish Province of Catalonia and the Italian Statistical Office (Istat).

The Federal Statistical Office's contribution to the project concerns the masking of microdata. The techniques developed will be checked using microdata from the turnover tax statistics and the cost structure statistics in manufacturing. The checks will focus on both the efficiency of the disclosure protection measures and the relevance of the obtained results for empirical economic research.

In addition, we will keep abreast of our project partners' work, especially in the field of micro-aggregation, and compare their results to the techniques developed at the Federal Statistical Office. Our aim is to create some essential methodological prerequisites for generating de facto anonymised data on enterprises and local units in Germany. On that basis, official statisticians hope to be able to collect and provide such data from surveys conducted in Germany that are of interest to scientists and researchers.

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30 years uniform classifications of public budgets – reliable basis for public finance statistics

The function of public finance statistics

Within the federal structure of the Federal Republic of Germany, the constitution guarantees far-reaching budgetary independence to the various levels of public administration. Public finance statistics have the important function of covering the individual components and combine them to form a consistent overall picture of public finance (overall public budget). Thus they are the basis both for crucial decision-making in general finance, economic, and monetary policies and for a large part of important decision-making in special areas (educational, research, health, social policies, etc.). The importance of well-based and highly comparable finance statistical data was particularly obvious during the phase of reorientation towards stability policy and the required coordination of public budgets through the Stability and Growth Law of 1968. The budget reform implemented in the early 1970s created uniform or at least well coordinated classifications for all public budgets and, consequently, ideal conditions for public finance statistics.

The importance of data from public finance statistics grew considerably in the context of their function as fundamental criteria for the foundation of the European Economic and Monetary Union and its development towards a Community based on the principle of stability (Maastricht criteria: government budget deficit and government debt).

The subject of public finance statistics

The entire *public budget management* is reflected by public finance statistics,

- from budgetary planning (statistics on budget estimates, statistics on financial planning),
- to cash management (cash statistics with monthly and quarterly cash results)
- and to the presentation of accounts (statistics of accounts).

Data collection for public finance statistics is directly linked to the budgetary, cash and accounting documents of the public authorities, in which both the *expenditure* made to perform public functions and the *revenue* required for their funding are recorded. Generally, expenditure and revenue are recorded in the books of public authorities and, consequently, in public finance statistics at the time of their entering or leaving the cash holdings (liquidity status).

Uniform classifications

An ideal prerequisite for detailed, high-quality and, at the same time, low-burden collection and processing of data for public finance statistics are the *uniform classifications* for the budgets of, first, the Federation and the Länder and, second, communities, community associations, and local authority special-purpose associations. They were set up in the early 1970s as part of the large-scale budget reform with a major involvement of public finance statistics: Uniform budgetary classifications were an indispensable precondition to enable respondents to report their finance statistical data to the statistical offices, using modern data processing technology and keeping response burdens to a minimum; before the budget reform, respondents had much trouble transferring such data from their administrative files to a rigid questionnaire. As statistical requirements were taken into account directly when designing the new uniform budgetary classifications, there is no need now for a separate classification of public finance statistics. Statistical data collection and processing are fully based on the budgetary classification.

classification of public budgets = classification of public finance statistics

After the budget reform had been implemented, all public finance statistics were gradually designed in a way ensuring that *every individual item* of the budgetary classification could directly be collected for

statistical purposes from the public authorities and the data could directly and without further transformation be taken from the computer-based budgetary, cash and accounting files. For 30 years already, it has been standard practice in public finance statistics to make direct and largely low-burden use of existing administrative files – an approach currently envisaged for many other statistics in order to disburden the respondents. Also, the identical breakdown of statistics and budgets has allowed the statistical offices to perform easy and direct checks of the data reported for public finance statistics on the basis of the budget estimates available. Thus a direct qualitative feedback is ensured between statistics and public budgets. Public finance statistics have an important clearing and coordinating function for the classifications of public budgets.

The budgetary classifications – and, consequently, public finance statistics – are designed in a *two-dimensional* way, i.e. they allow all public revenue and expenditure to be broken down simultaneously by

- economic types and
- functions.

The breakdown by types allows in particular to analyse the impact public finance has on the overall economy. Consequently, public finance statistics are a major basis for crucial decision-making in terms of financial, economic and monetary policies and, at the same time, they are the main data source for the general government account and important aggregates of the distribution approach in national accounting. The 10 major types of revenue and expenditure listed below give the basic structure of the classification of community budgets. They are further broken down decimally by some 250 individual types (two-digit and three-digit items). That dimension of the classification is referred to as *classification by object (Gruppierungsplan)*.

Types of revenue and expenditure (classification by object)

0	Taxes, general allocations	**Revenue**
1	Revenue from administration and facilities	
2	Other financial revenue	
3	Revenue from asset management	
4	Staff expenditure	**Expenditure**
5/6	Expenditure on material and equipment for administration and facilities	
7	Allocations and grants (excluding for investment purposes)	
8	Other financial expenditure	
9	Expenditure of asset management	

For the *classification by object*, a distinction is made between

- revenue by major sources (how is general government funded?) and
- expenditure by major economic types (how are resources used by general government?).

Federal and Länder budgets are broken down similarly.

In the second dimension, the *functional breakdown*, revenue and expenditure are broken down by major *functions* (what are the purposes general government uses its resources for?). The 10 major functions listed below give the basic structure of the classification of community budgets, which is referred to as *structural classification (Gliederungsplan)*. They are further broken down decimally by some 300 individual functions (two-digit and three-digit items).

0	General administration
1	Public safety and order
2	Schools
3	Science, research, culture
4	Social security
5	Health, sports, recreation
6	Construction and housing, transport
7	Public institutions, promotion of economic development
8	Economic enterprises, general real estate and special funds
9	General public finance

The classification of federal and Länder budgets has a similar structure; there, the functional dimension of breakdown is referred to as classification by function (*Funktionenplan*).

New budget reform

At the beginning of the new century, a fundamental reform of public budgets is emerging in Germany, as is in other European countries. The new system will be based on double-entry accounting, which is closely related to private business accounting systems. Major pioneers of that reform in Germany are the community budgets.

That reform will be a complete reorientation involving difficult transition phases – which unfortunately will be rather long – from the existing cameralistic accounting system to the new system of double-entry accounting. Through the Ministers of the Interior of the Länder (subcommittee on reforming the community budgetary law – UARG – of the working group III of the working party of the Land Ministers of the Interior), the Federal Statistical Office and the statistical offices of the Länder are closely involved in the reform of community budgets, so that reliable statistical reporting on public finance will be ensured also in the future.

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Cooperation in research and development

Ways Towards an Improved Informational Infrastructure – Report of experts of a Commission set up by the Federal Ministry of Education and Research to improve the informational infrastructure by cooperation between the scientific community and official statistics

"Good political decision-making needs good statistical information. This requires a smoothly working infrastructure between the scientific community and official statistics. This is because especially policies and policy analysis depend on consistent and informative data on the situation of the society and the economy." This is what Mrs. Edelgard Bulmahn, Federal Minister of Education and Research said in Berlin on 13 March 2001 when the report of the Commission on improving the informational infrastructure between the scientific and statistical communities was submitted. Chaired by Professor Dr. Hans-Jürgen Krupp and the President of the Federal Statistical Office, Mr. Johann Hahlen, the Commission set up in autumn 1999 by Federal Minister Bulmahn has made far-reaching proposals to improve the cooperation between the statistical and scientific communities. The encouragement to set up the Commission came from a paper on the results that were achieved by the participants in a symposium on the "Cooperation between the scientific community and official statistics – practice and prospects" held in Wiesbaden in summer 1999.

First of all, the Commission made some stocktaking and examined in how far data demand is met. To this end, it commissioned expert opinions on various fields of information and evaluated what those expert opinions contained in terms of perception and judgment with regard to data deficits and data demand. In the report, this is followed by an overview of the informational infrastructure in Germany; it covers official statistics, the process-produced statistics from authorities, ministerial statistics, institutions of economic and social sciences producing data, interdisciplinary data production, private market and social research institutes and commercial information providers. The subsequent section dealing with the interconnections between official, non-official and ministerial statistics on the one hand, and science on the other, the participation of the scientific community in developing data collection and processing programmes, the selection of methods, data collection, processing and archiving as well as educational deficits within and outside the universities. Finally, the report gives a description of the legal framework conditions and the organisational-technological shaping as well as the factual situation of data access in Germany.

Then the Commission shows possible solutions to existing problems by presenting as examples some solutions implemented in other countries. The situation of microdata access is shown in detail for selected countries. The study includes France, the United Kingdom, Canada, the Netherlands, Norway, Austria, the USA, Denmark and Sweden. What is also included is exemplary projects regarding microdata access for the scientific community, i.e. the Family and Fertility Survey (FFS) and the Luxembourg Income Study Project (LIS).

The recommendations include a wealth of concrete proposals as to how data protection of official statistics might better be utilised for empirical social and economic sciences.

What should be implemented in the short term from those recommendations is in particular the setting up of research data centres at statistical offices. There, highly sensitive data than cannot be anonymised without a massive loss of information could be made available for research purposes. One of the functions of such centres should be the development of Scientific Use Files from the data sets that are most important for science, their documentation and transmission to authorised users. Also, possibilities of controlled teleprocessing should be developed and made available there. Through remote computation, scientists could then be enabled to use the data of such research data centres without staying there.

Over the medium term, developing research data confidentiality seems to be the most promising solution to ensure that microdata can be used by the scientific community while safeguarding statistical confidentiality.

The world of official statistics is open to wider participation of the scientific community in survey programme planning. In this context it would be helpful, for instance, if the number of representatives of the scientific community on the Statistical Advisory Committee were increased, as has been recommended by the Commission.

The report has been published by Nomos Verlagsgesellschaft. An enclosed CD-ROM contains, in addition to the full report, an English-language short version and the expert opinions and contributions ordered by the Commission or prepared in the course of the Commission's activities. What is available on the Internet at present is just the short version at http://www.bmbf.de/presse01/A--FIN4_.pdf.

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Methods of federal statistics – Further development

SISIS library management system at the Federal Statistical Office

The library of the Federal Statistical Office has some 500,000 media units and about 1,600 German and foreign current periodicals – it is the largest German library specialising in statistics with a stock of statistical results from all over the world, which is unique in Germany. For about three years, it has been employing the integrated IT library management system SISIS under full load. By providing directly any current information, it electronically supports the entire process from ordering media to supplying them to library users. Thus it forms the central part of increased IT use aimed at pushing ahead with the development towards a multimedia library.

SISIS consists of the following four modules: acquisition, cataloguing, issuing and OPAC (Online Public Access Catalogue). The first three of them are IT tools for library staff, especially for librarians, while OPAC is designed for library users doing research. What is shown in OPAC is mainly literature acquired since 1982. Literature acquired before 1982 is still documented in the traditional filing card catalogue of the library. Library users may use OPAC for specific research by categories, for instance by author, title or keyword – also in combinations –, through "free search" across categories or through "expert search" with logical operators. Apart from researching, OPAC allows users to order literature from the library stock for use in the reading room of the library – which is open to the public – or for borrowing. Through this system, external users living in the Rhein-Main area may also borrow literature and users living in another region may borrow literature by interlibrary loan via a competent library near their place of residence. OPAC also allows to register both extensions of borrowing periods and reservations and to inspect one's personal user account, which is an automatically generated list of media currently borrowed.

OPAC is available to users from inside and outside the Federal Statistical Office in the reading room during the opening hours on Mondays to Thursdays from 9 a.m. to 3 p.m. and Fridays from 9 a.m. to 2 p.m. Through the Office's Intranet, too, the online catalogue is accessible any time to internal users, who may thus use their workstation to do research and order literature for borrowing. For 2002 it is planned to make OPAC available on the Internet, too.

The four SISIS modules described above are integrated with each other so that data from one of the modules may directly be used in the other modules. If, for instance, a book is ordered through a bookshop, the relevant data are first registered in the cataloguing module. As the modules are integrated, the acquisition module and OPAC, too, will then automatically receive the information. So, users of the online catalogue can see that the book concerned is being acquired. When it has been received at the library, it is entered into the acquisition module. Then, the entire cataloguing is done in the cataloguing module, where the book has been registered since it was ordered. Now it is available to library users. If the book was acquired because a user from inside the Office ordered it, it will be issued to him through the issuing module immediately after cataloguing.

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DACSEIS project regarding variance estimation for complex sample surveys

Variance estimation is one of the major data quality aspects for sample surveys. Within the EU, uniform standards are envisaged for data quality, which should be made better comparable. This is what the research project entitled DACSEIS ("Data Quality of Complex Surveys within the New European Information Society") is to deal with. It is planned, first, to study by means of Monte Carlo simulation various methods of variance estimation and, second, to do coordinated theoretical research. What will be studied are, among other things, replication techniques (such as jackknife and bootstrap) for variance estimation as well as variance estimation for

- sampling with variable probabilities,
- combination of register data with sample data,
- rates of change,
- small area estimation, and
- imputations and nonresponse.

Also, standard software packages for variance estimation will be analysed. DACSEIS will focus on person and household samples.

The objective is to compile a catalogue of practicable and suitable recommendations, so that users may choose the variance estimation method best suited for the situation (population structure, sample design). Apart from that "best practice manual", the programme codes of the various methods should be made available to the users. The Federal Statistical Office participates in the project by supplying data as well as applying and evaluating the various methods. It is hoped here that DACSEIS will improve variance estimation, especially in the context of the microcensus and the sample survey of income and expenditure.

DACSEIS is a project of the fifth framework programme on research of the European Commission. Participants in the international consortium are the universities of Tübingen, Linz, Lausanne (EPFL) and Southampton as well as the central statistical institutes of the Netherlands, Switzerland, Finland and Germany. The university of Tübingen is responsible for coordination. The project started last March and is planned to extend over three years. The opening meeting of the consortium members was held in Tübingen from 8 to 10 March. The first and most urgent task is to compile and evaluate information on the structures of national populations and on sample designs, which will serve as a basis for the Monte Carlo simulations.

Further information is provided on the Internet at www.dacseis.de.

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Declaration for intra-Community trade statistics using w3stat on the Internet

As part of the e-government initiatives of the federal and Länder administrations, the w3stat declaration procedure was developed at the Federal Statistical Office. It allows enterprises that are obliged to provide information for intra-Community trade statistics to transmit their data via Internet. Since March 2000, w3stat has been in regular use.

With the w3stat declaration system, a crucial step has been taken in intra-Community trade statistics towards statistics production without switches between media, from data collection all the way to the publication of results, as is defined as a goal of the *Statistik 2000* initiative. The first area switching to paperless work in the past was data processing in intra-Community trade statistics, introducing the *Automatisierte Sachbearbeitung im Intrahandel* (*ASI* – automated processing in intra-Community trade

statistics). Today, many results of foreign trade statistics are disseminated through electronic media – in part via Internet. The introduction of w3stat has now bridged the remaining gap on the way to statistics without switches between media since especially many small and medium-sized businesses have changed over from using paper forms to declaring their data by online forms. Intra-Community trade statistics thus is the first area of official statistics shaped entirely by electronic means from the declaration of data to the publication of results.

When using the w3stat system, respondents may choose from among three different options of declaration.

Declaration by online forms

With this way of declaration, one online form per direction of trade (arrivals and dispatches) is made available to users on the screen. The structure of that form is largely that of the intra-Community trade form N, that is the paper questionnaire. While inputting the data, the respondent has an online connection with the Federal Statistical Office, so that the declarations are compiled direct on the w3stat server. The declarations have to be confirmed record by record. For reasons of data security, communication with the w3stat server is encrypted. This option is offered especially to businesses which so far have declared their movements of goods on paper, generally reporting just a few movements per month.

Transmission of declaration files

This way of declaration enables the declarant to create files offline and then transmit them via Internet to the Federal Statistical Office. The relevant data must have a record format authorised by the Federal Statistical Office. Businesses which so far have transmitted their declaration files on diskette or magnetic tape may continue creating their files offline and just switch from sending data carriers to transmitting the files online. Businesses wishing to do their declarations by data files for the first time have to send a test file first in order to be authorised as file declarants after the test file has undergone a checking procedure.

Declaration through the w3stat data entry programme

Strictly speaking, this is not another way of declaration but a special form of file declaration. The w3stat data entry programme is a new interactive data entry programme, which since the beginning of 2001 has replaced the CBS-IRIS software package that was used before and has not been integrated in w3stat. With the support of help functions, the w3stat data entry programme allows to enter declaration data. Also, the programme can import data from other files, such as accounting files, through an ASCII or CSV interface and store them as input records.

The w3stat data entry programme was developed in the object-oriented Java programming language. In order to run the programme, JRE (Java Runtime Environment) version 1.3 is needed. It is installed on the user's computer together with the data entry programme. The w3stat application may be run as a classical programme or as an applet in the Internet browser. Minimum system requirements are a Pentium II processor with 233 MHz and 64 MB of main memory. The operating system must be Windows 95/98/2000 or Windows NT with a standard Internet browser. The hard disk space needed for the basic version is 50 MB. The space needed grows with the data volumes to be processed and stored. Using the w3stat-specific data entry programme guarantees that the data records conform to the record structure required for properly importing the declared data at the Federal Statistical Office, thus ensuring their smooth further processing at the Office.

Data security

Using the Internet as a transmission channel for intra-Community trade data obviously involves the issue of data exchange security, that is authentication and confidentiality. Confidentiality in data exchange is achieved through data encryption. The SSL Protocol (Secure Socket Layer) is used here to establish a tap-proof connection between the declarant's computer and the server of the Federal

Statistical Office. In the past, a 40-bit encryption was used. Although data encrypted in this way can be decrypted only with great time and computing input, encryption has been done with a 128-bit code since April 2001.

However, connection security involves not only the encryption of data transmitted but also the authentication of both participants. First, it must be ensured for the declarant that he can really contact a server of the Federal Statistical Office at the address http://w3stat.destatis.de. To this end, the w3stat server of the Federal Statistical Office has been certified by an official Trust Center. It must also be ensured for intra-Community trade statistics, however, that the sender of the declarations is the holder of the tax ID number as registered in the administrative database. To this end, the secret user ID with the relevant password is sent by mail to the registered party after checking the request for registration with the intra-Community trade register. This procedure ensures that only the real holder of the tax ID number is able to transmit data under the allocated ID.

Currently some 5,000 businesses make online declararations for intra-Community trade statistics via the w3stat system. There are about 500 new users every month. About 20% of all declarations for intra-Community trade statistics are made online now. The development shows that w3stat has great growth potential. It is expected that in 2002 nearly half of all intra-Community trade declarations will be made through w3stat. The w3stat system and the way it works are described at http://w3stat.destatis.de.

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Online transmission of foreign trade data using the ATLAS system

In September 1999, the German customs administration put into service a new data processing system called ATLAS (Automated Tariff and Local Customs Clearance System). This system is to enable all parties involved in customs clearance procedures to exchange information electronically and to dispense with paper forms. At the present stage, however, only imports can be cleared through customs by means of this system. Yet, in future all customs clearance operations concerning imports and exports of goods are to be automated as far as possible so that they can be conducted using that modern information technology.

Since statistics relating to the trading of goods of the Community and its Member States with third countries still have to be compiled on the basis of the customs procedures, the German foreign trade statisticians cannot and do not want to be detached from ATLAS, all the more so as the customs offices also serve as data collection offices for foreign trade statistics. As part of the customs clearance operations, foreign trade data are collected on the basis of the Single Administrative Document. In future, the relevant data collected at ATLAS-equipped customs offices will no longer be transmitted on paper media, but online through a standardised, daily EDIFACT transmission (format X.400) from the computer centre of the Federal Revenue Administration in Frankfurt to the Federal Statistical Office. As far as the clearance of imports is concerned, at present 42 customs offices have the ATLAS technology available. Until the end of 2001, a total of about 70 customs offices are to be equipped with the ATLAS system.

As regards the actual procedures, a distinction is made between "data entry by users" and "data entry by declarants". In the case of "data entry by users", the import data recorded on the official forms are entered into the ATLAS system by the customs officers. However, this is a very labour-intensive way of data capture and therefore not the most favoured one. Rather, the declarants are expected to transmit their declarations online to the competent ATLAS-equipped customs office. Yet, very few companies are making use of that possibility because the technology and procedures currently do not entirely meet the businesses' requirements.

Another differentiation is made regarding the "data entry by declarants". The ATLAS system offers the possibility of clearing goods through customs using either the "normal procedure" (individual

declaration) or the "simplified procedure" (collective declaration). The first ATLAS-based import data resulting from the simplified declaration procedure were received at the Federal Statistical Office for the reference month April 2001.

Today, more than 80% of all sets of import data are already supplied for foreign trade statistics on magnetic data media instead of paper forms. As of 1 December 2001, ATLAS will replace the existing automated procedures ALFA (Automated Air Freight Clearance Procedure) and DOUANE (DP Support for Customs Clearance after Import), which account for about a fifth of the declarations submitted on magnetic data media. Hence, the number of ATLAS-based datasets transmitted monthly to the Federal Statistical Office will rise distinctly beyond the current 25,000 to 30,000 datasets. The bulk of import data, however, continues to be supplied through the ZADAT procedure (Customs Declaration on Data Media). A timetable for reorganising that declaration procedure and integrating it into the ATLAS system has not been established yet.

As far as foreign trade statistics are concerned, ATLAS will significantly reduce the time and effort involved in data processing as compared to the declaration of data on paper forms (sorting and coding, data capture and filing will no longer be necessary). On top of that, improvements in data quality can be expected since the ATLAS system only accepts the entry of complete and plausible (valid) data. The present share of extra-Community import and export data provided to the Federal Statistical Office other than by paper forms will steadily and markedly increase as the ATLAS system is further extended.

Secure predictions on the future progress and developments in the areas "export" and "customs procedures with economic impact" (customs warehouses, processing transactions) are not possible at present, not least because of the delays that have occurred in the sphere of "imports" up to now. Given the new project structure and increasing political support, however, there are at least better prospects for realising the next stage, i.e. introducing the ATLAS system for the clearance of imports throughout Germany.

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Publications

Reports on Mathematical Methodology

The Federal Statistical Office has launched a new publication series in German language entitled "Methodenberichte" which is designed to present the mathematical methodology applied in official statistics. These Methodological Reports, on the one hand, are intended to describe new mathematical-statistical methods developed to cope with current tasks of official statistics. On the other, they are aimed at promoting the communication and cooperation between the interested public, especially scientists and researchers, and the Federal Statistical Office. The reports will focus on the areas sample survey planning and analysis, component decomposition of economic time series, and statistical confidentiality of microdata and tabular data.

Every volume of the publication series will deal with a topical mathematical-statistical subject. One or two volumes will be issued every year with irregular periodicity. The volumes are available as printouts and on the web-site of the Federal Statistical Office (http://www.destatis.de) as free downloads under the item "Produkte & Service/Online Publikationen".

Issued in May 2001, the first volume of the series provides detailed information on the new sampling method of the 1998 Sample Survey of Income and Expenditure and discusses the problems that arose during its application. The especially innovative element in the sample design of this survey was the data expansion procedure developed by Professor Merz (Lüneburg University). Based on the principle of marginal information losses, this expansion procedure was put into practice by statisticians from the Federal Statistical Office's Division "Mathematical-Statistical Methods".

Events

Scientific conference on "Aspects of international and intercultural surveys"

Every two years, the Federal Statistical Office organises a scientific conference jointly with the *Arbeitskreis Deutscher Markt- und Sozialforschungsinstitute e. V. (ADM)* and the *Arbeitsgemeinschaft Sozialwissenschaftlicher Institute e. V. (ASI)*. This year's fourth joint conference held on 12 and 13 June 2001 dealt with selected aspects of international and intercultural surveys and was chaired by Matthias Stahl, managing director of ASI.

In his introductory paper, Prof. Dr. Heiner Meulemann (*Universität zu Köln*) discussed prospects and problems of international surveys and concluded his contribution by examining international surveys as multi-level analyses. This provided the transition to the paper by Prof. Dr. Wolfgang Jagodzinski (*Zentralarchiv für empirische Sozialforschung an der Universität zu Köln*), who illustrated the benefits of multi-level analysis in international surveys by giving concrete examples.

After the lunch break, Roland Günther presented the international research project CHINTEX, which is coordinated by the Federal Statistical Office and focuses on comparing methods of input harmonisation and ex-post harmonisation. Then Robert Strötgen (*Informationszentrum Sozialwissenschaften, Bonn*) and Rolf Uher (*Zentralarchiv für empirische Sozialforschung an der Universität zu Köln*) presented the ISSP DataWizard, which is a system for computer-aided combination and archiving of international survey data. The first day of the conference was concluded by the paper by Hella Glagow (*INRA Deutschland GmbH, Mölln)* on the organisation of multi-country surveys.

The second day was introduced by Dr. Janet A. Harkness (*ZUMA/ISSP, Mannheim),* who illustrated by means of numerous examples the relevance of culture, language barriers and translation for international surveys. The paper by Dr. Rudolf Sommer (*RSG Marketing Research, Düsseldorf*) on global brand policies and cultural differences used various global brands to examine the problems for a uniform international marketing strategy that are due to cultural differences.

Taking the European System of Social Statistics as an example, Lothar Jensen of Eurostat in Luxemburg described the efforts aiming at a harmonisation of socio-economic variables in European statistics. The conference was concluded by two contributions on quality management in international studies; Erich Wiegand of ADM presented the international quality standards in market research and Dr. Manfred Ehling of the Federal Statistical Office reported on quality assurance measures within the European Statistical System.

The volume containing the papers of this scientific conference will again be published by the Federal Statistical Office as part of its series *Spektrum Bundesstatistik*.

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Symposium on "Hedonic methods in price statistics"

An international scientific symposium held in Wiesbaden on 21 and 22 June 2001 dealt with issues of price monitoring in official statistics. The event was organised jointly by the Federal Statistical Office and the Deutsche Bundesbank and was chaired by Prof. Dr. Hans Wolfgang Brachinger of the University of Fribourg in Switzerland. The focus was on using "hedonic" techniques of price monitoring, especially for complex technological products.

Based on comprehensive and detailed data stocks and using complex mathematical models, hedonic techniques may be applied to quantify the relations between the changes in a product's quality and price. Price monitoring should result in price indices showing "pure" price changes – excluding possible improvements or deteriorations in quality. Eliminating quality changes is of great importance for international comparisons, for instance of price trends and real economic growth.

For the calculation of official price indices in Germany, the Federal Statistical Office uses quality adjustment procedures that have proven to be suitable and are accepted at an international level. With a view to continuously improving the tools of price statistics, the Federal Statistical Office and the Deutsche Bundesbank invited experts from the USA, Canada, France and Sweden; in those countries, hedonic techniques are applied already now for selected products.

The experience acquired as presented at the symposium by top experts have shown that, under specific conditions, hedonic techniques – which are highly staff-intensive – allow to obtain additional information especially for products with sharp surges in innovation, such as personal computers. Here, hedonic methods of price monitoring provide the opportunity to enlarge and complete the basis of statistical information. Such additional information in sub-sectors, however, is contrasted by immense additional efforts required for data collection and processing and by further burdens placed on businesses.

The Federal Statistical Office has started implementing in its price monitoring system the knowledge gained by experience in other countries. However, the considerable resources required for an overall introduction of hedonic techniques are not available in Germany for the time being.

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