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The catchword

New base year for the consumer price index

Objective and content

Since the beginning of 2008, the Federal Statistical Office has subjected the consumer price index (CPI) to a regular revision. In Germany, such revisions are traditionally made at five-year intervals. The objective of the measure is to update the data basis for consumer price statistics and to apply internationally recognised methods. The current revision concerns the following major issues:

- to use the 2005 spending patterns as a new weighting basis
- to extend the period of price collection
- to introduce an explicit type-of-shop weighting procedure
- to present the development of health care prices separately for persons subject to statutory health insurance and persons covered by private health insurance

Together with the integration of new spending patterns in the calculation procedure and the introduction of improved methods, the results have been backcast to the beginning of the new base year (January 2005) in Germany. Thus users are provided with time series which, over a period of at least three years, allow observing genuine price changes without the effects of structural modifications or methodological changes. An article in the *Wirtschaft und Statistik* journal[1] analyses in more detail the differences between the previous and the newly calculated results and assigns the differences to the individual measures.

Introduction of the 2005 weighting basis

Using more recent spending patterns is the focus of any index rebasing procedure. To introduce a new weighting basis, the consumption patterns of households were identified for the calendar year 2005. The results of the 2003 sample survey of household income and expenditure and the 2005 continuous household budget survey served as an essential basis for the calculations. Since both surveys are designed as household surveys, the households keep household books and provide detailed information on their private consumption expenditure. Potential undercoverage (e.g. of tobacco products and alcoholic beverages) is balanced by using additional data of tax statistics. Consumption patterns are further specified based on a large number of other statistics, such as the health monitoring system, vehicle licensing statistics of the Federal Motor Transport Authority and statistics of various market regulating and supervising authorities. Non-official statistics like those compiled by business associations or results of market research and economic research institutes are used for this purpose, too. Furthermore the Federal Statistical Office contacts business associations or large enterprises to fill the remaining information gaps. Results of national accounts are used to bring the data of the different sources in harmony with the concepts of consumer price statistics.

Like in previous index rebasing procedures, the updated weighting pattern had only a slight effect on the results: On an annual average, the 2006 rates of price change were slightly revised downwards (an average 0.04 percentage points), while the rates were revised upwards (0.01 percentage points) for 2007. The theoretically expected Laspeyres effect, i.e. a downward revision of the results reflecting the consumers' response to shifts in the price ratios of the products bought, was generally not observed. Probably, such effects are already adequately covered by the current approach of updating the basket of goods and services in the short term.

1 Elbel, G., Egner, U.: Verbraucherpreisstatistik auf neuer Basis 2005. In: Wirtschaft und Statistik no. 4/2008, p. 339 ff.

Extending the period of price collection (temporal coverage)

In accordance with the relevant EU regulation concerning the harmonised index of consumer prices (HICP)[1], measures have been taken to expand the monthly reporting period. Although the regulation concerns only the HICP, it is also of relevance to the German CPI because CPI and HICP are derived from data of the same price survey. As Germany complied largely with the principles laid down in the above regulation in the past, the extent of measures still required in this country has been very small. As regards some goods like, in particular, motor fuels and liquid fuel, a certain smoothing effect could be expected on price fluctuations in the future. However, the modified survey practice regarding package holidays, air passenger transport and rents of holiday dwellings has a systematic impact on the results obtained. Here, the new approach ensures that all high, mid and low season periods are included in the sample in a representative form. As a rule, such moving holidays as the Easter and Whitsun holidays are now included in the price survey, and low season periods are more adequately considered in the month of December.

This methodological improvement has a stronger effect only on the results for the period from March to June (due to the differing dates of the Easter and Whitsun holidays) while, on an annual average, the impact on the annual rates of price increase can be neglected (+0.01 percentage points in 2006 and +0.03 percentage points in 2007).

Introducing an explicit type-of-shop-weighting scheme

In the past, the representativeness of the sample in relation to the reporting units included was ensured by an implicit weighting procedure. The number of reporting units in the sample determined their impact on price development. Explicit weights were only specified for mail order and internet sales. In the context of changing over to base year 2005, an explicit type-of-shop weighting procedure (breakdown by Länder and product groups) has for the first time been applied in the German consumer price statistics. The following types of shops are distinguished:

- big department and shopping stores
- self-service department stores and consumer markets
- supermarkets
- specialist retail chains and discount stores
- specialised dealers
- other retail stores (e.g. petrol station shops, sales stalls)
- public and private service establishments, letting of dwellings
- mail order and internet sales

The main sources used to derive the weights for the individual types of shops are the annual and monthly trade surveys.[2]

The impact of the above methodological change can only be measured indirectly. For this reason, the relevance of its quantification is somewhat limited. In any case, however, the effects of this measure on the results are more significant than those of any other measures. As a result of introducing an explicit type-of-shop weighting procedure, the rate of price increase declined by

1 Council Regulation (EC) 701/2006 of 25 April 2006 laying down detailed rules for the implementation of Regulation (EC) No 2494/95 as regards the temporal coverage of price collection in the harmonised index of consumer prices (Official Journal of the European Union No. L122, p.3).

2 See also: Linz, S., Dexheimer, V.: Weiterentwicklung der Stichprobe der Verbraucherpreisstatistik. In: Wirtschaft und Statistik no. 6/2005, p. 582 ff.

0.12 percentage points on an annual average in 2006, while it was up 0.13 percentage points in 2007.

Presenting the development of health care prices separately for persons subject to statutory health insurance and persons covered by private health insurance

In consumer price statistics, the approach to measuring health care prices depends decisively on whether the services concerned are provided to persons subject to statutory health insurance or persons covered by private health insurance. In accordance with the national accounts classification[1], the contributions to and services provided by statutory health insurance are regarded as social contributions or social protection services. Hence they are not part of the expenditure on private consumption whose price development is measured by the consumer price index. As for persons subject to statutory health insurance, the development of health care prices is therefore measured exclusively on the basis of their financing contributions (e.g. prescription charges or consultation charges). Regarding persons covered by private health insurance, complete service prices are included in the index computation, irrespective of whether a private health insurance company will finally cover the cost. The relevant index computation has not been modified. For the purpose of more detailed analyses, however, Destatis now presents the development of health service prices separately for persons subject to statutory health insurance and persons covered by private health insurance.

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1 See also: Statistical Office of the European Communities: European System of Accounts (ESA 1995) or Commission of the European Communities-Eurostat, International Monetary Fund, Organisation for Economic Co-operation and Development, United Nations, World Bank: System of National Accounts 1993.

Methods of federal statistics – Further development

Sustainability indicators in GENESIS-Online

At the Federal Statistical Office (Destatis), indicator systems have been studied intensively and worked on for some time now. Those are sets of different indicators to make complex issues transparent and assess them on the basis of facts. Developments over time are of special interest here. For instance, indicator systems to reflect the economic development were established in official statistics some time ago. Structural indicators were introduced a longer time ago especially for the European Union and thus also for Germany to monitor structural changes over the medium and longer term, as well as the Principal European Economic Indicators (PEEI), as they are called, which are to mirror the current economic development. There also are indicator systems for other areas such as innovations. Further indicator systems for topics like the assessment of gender equality or the integration of foreigners are being developed.

A first set of indicators which are important for Germany, the sustainability indicators, as they are called, has now been included also in GENESIS-Online, the Internet database of the Federal Statistical Office (Destatis) (https://www-genesis.destatis.de/genesis/...). It is available to the general public without restrictions and can be handled flexibly.

The national sustainability strategy entitled “Perspectives for Germany” was published by the Federal Government in April 2002. The strategy’s core is a set of 21 indicators relating to four main topics:

I. intergenerational equity

II. quality of life

III. social cohesion

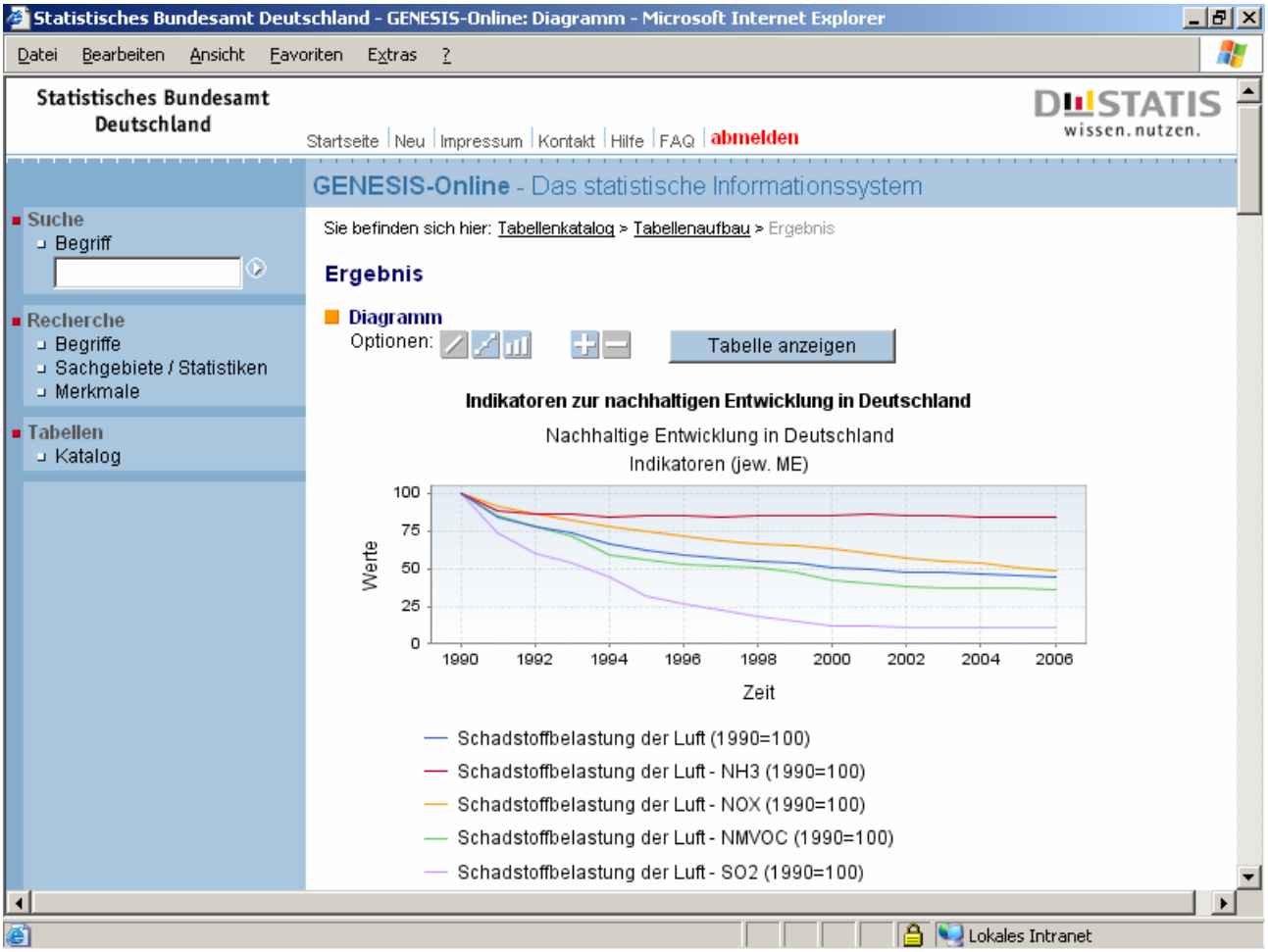
IV. international responsibility.

These indicators are to help monitor the development of the society, the economy and the environment and show whether the trends are in line with the targets pursued over the medium to long term. Quantitative targets were set for the majority of the indicators. The data material for most indicators comes from official statistics. After a first progress report had been published in 2004, an indicator report entitled “Sustainable Development in Germany – Indicator Report 2006” commissioned by the Federal Government was presented by the Federal Statistical Office in 2006. It is to be updated regularly at two-year intervals.

The indicators of the national sustainability strategy may be accessed from the start page of the Federal Statistical Office at “Datenbanken: GENESIS-Online“. Indicator systems were included in that database as subject area 9. Data from 1990 are available for the indicator set “sustainable development in Germany“, provided that there are figures for the individual indicators. In GENESIS-Online one can not only see the development of each individual indicator but may also select several indicators to look at a specific problem and have their development over time displayed in a graph. Notes on the individual indicators may be accessed directly from the resulting table.

To give an example, the following chart shows the development of the indicator “concentration of air pollution“ over time, which combines four essential pollutants: sulphur dioxide (SO_2), nitrogen oxide (NO_X), ammonia (NH_3) and volatile organic compounds (NMVOC).

The Federal Government aims to reduce emissions of these air pollutants by 70% against base year 1990 until the year 2010.



The “indicator systems“ area of GENESIS-Online is to be extended on a continuous basis. A set of science and technology indicators is already under preparation to be released in GENESIS-Online this year.

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Using administrative data in the compilation of crafts statistics

Basic methodological changes have been introduced in relation to the quarterly crafts report and the census of crafts. In the future, the information required for these statistics will be exclusively derived from administrative data. Data will no longer be directly collected from enterprises.

Using infra-annual administrative data for the quarterly crafts report

The quarterly crafts reports are designed to reflect the short-term economic trends in the crafts sector. In the past, the underlying sample survey covered approximately 41,000 enterprises in the German crafts sector. At quarterly intervals, they were asked to indicate their turnover and the number of persons employed.

From reference year 2008, the quarterly crafts reports are based entirely on infra-annual administrative data so that the response burden will be lifted from the approximately 41,000 enterprises (which are usually small or medium-sized). For the first time, collecting statistical data directly from enterprises in Germany is completely replaced by using administrative data. The changeover in the compilation of the above statistics is governed by Article 4 of the *Gesetz zur Vereinfachung und Anpassung statistischer Rechtsvorschriften* (Act regarding the simplification and adjustment of legal provisions concerning statistics) of 17 March 2008 (Federal Law Gazette I p. 399).

The decision of the statistical offices of the Länder and the Federal Statistical Office to evaluate exclusively administrative data for the purpose of compiling the above statistics was based on a wide range of analyses. The legal basis of the decision was the *Gesetz über die Verwendung von Verwaltungsdaten für Zwecke der Wirtschaftsstatistiken – Verwaltungsdatenverwendungsgesetz* (Act on using administrative data for the purposes of economic statistics) of 31 October 2003 (Federal Law Gazette I p. 2149). This act governs the transmission of administrative data to the statistical offices and the way in which they are to be used there. The administrative data included in the compilation of the above statistics are, on the one hand, turnover data produced in the context of the advance turnover tax return procedure which the fiscal authorities apply to enterprises. On the other hand, information on employees subject to social insurance contributions and on persons in low-income brackets is provided by the Federal Employment Agency based on the relevant social insurance declarations.

Register replaces the crafts census

Plans have been made to replace the data collected in the context of crafts censuses by administrative data from the business register of the statistical offices. The traditional crafts censuses of the past were designed to collect, at larger intervals, structural data on all crafts entrepreneurs. The latest crafts census, which was conducted in 1995, covered a total of 563,000 crafts entrepreneurs. As a result of the planned changeover to an evaluation of the existing data sources, crafts enterprises will no longer be required to submit data for the purposes of compiling these detailed statistics. In this way, the statistical offices will reduce the burden on crafts enterprises to a minimum. First structural crafts sector data based on the business register will presumably be published in 2009.

Advantages of the new system of crafts statistics

Changing over to the use of infra-annual administrative data and register data in the compilation of crafts statistics (quarterly crafts report and crafts census) means that the previous system is replaced by a new one. The new system will in particular lead to a reduction in the statistical response burden on crafts enterprises. However, this is not the only advantage of the new system of producing crafts statistics. Compared to the previous crafts census, the business register provides the opportunity to derive structural data at shorter intervals. Annual register evaluations have been planned for the above purposes. Furthermore, both sets of crafts statistics will rely upon the business register as the latter also serves as an essential basis for the evaluation of infra-annual administrative data in the context of compiling quarterly crafts reports (e.g. to

identify crafts enterprises). The changeover will therefore create a consistent new system of crafts statistics.

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First results of the test runs of the electronic coding system IRIS in the causes of death statistics

General remarks

For the causes of death statistics, the textual information given by physicians on the medical certificate of death are evaluated applying complex rules of the WHO[1], and the cause of death that was the origin of all other causes of death (underlying cause of death) is transformed into an ICD-10 code[2]. This involves two disadvantages: First, a lot of information regarding further causes of death is lost and, second, the manual (and therefore subjective) selection of the underlying cause of death and the subsequent coding may lead to results of limited comparability.

In a European co-operation project, IRIS has been developed as the first language-independent coding system for the causes of death statistics using the ACME[3] selection tables of the USA to identify the underlying cause of death as recommended by the WHO. It is based on the current ICD-10 rules and guidelines. Using a dictionary stored in the system, diagnosis texts can be identified electronically when entered in the relevant language. IRIS allows national adaptations to adjust the system to national peculiarities. The surface can be translated into the national language and show the medical certificate of death used.

Test conditions

From version 3.0, IRIS has included a first national adaptation for the Federal Republic of Germany. For application in the statistical offices of the Länder, a German user surface has been implemented, which is based on the 15 different medical certificates of death used in the Länder. In close co-operation with the DIMDI[4], a German dictionary with over 400,000 entries has been compiled. To improve identification quality, language standardisation with currently some 2,000 entries is applied in addition.

In 2007, a 6-month field test was performed in the four Land statistical offices of Baden-Württemberg, Hessen, Sachsen and Thüringen. Except for Sachsen, only input data, (short data records) from population statistics were used. As the medical certificates of death are completely covered for the cancer register in the public health offices of Sachsen, it was possible there to test the system by using the electronic delivery of the medical certificates of death through eSTATISTIK.core.

1WHO: World Health Organization.

2ICD-10: International Statistical Classification of Diseases and Related Health Problems, 10th Revision.

3ACME: Automated Classification of Medical Entities.

4DIMDI: German Institute of Medical Documentation and Information, Cologne.

The purpose was to test the feasibility of IRIS and its organisational integration into the work processes of the statistical offices of the Länder under the different conditions of the individual Länder and under everyday conditions. Special attention had to be paid to the different framework conditions in the Länder and all forms of partial and mixed use had to be taken into account.

Variants of IRIS use

Due to the different situations in the various Länder and the flexibility of the system, the most different variants of use were tested. Mixed use of all variants was possible at any time, both at the level of *Kreise* (administrative districts) or municipalities and at the level of the individual medical certificates of death. Gradual or partial introduction of IRIS is thus ensured.

It turned out that the only variant feasible in the Land offices – apart from the maximum variant (coding of the individual textual diagnoses) – is the minimum variant (IRIS as a coding support). Minimum use means that only the underlying cause of death is coded manually, as has been the case so far. This can be done either in IRIS or in BASIS[1]. It does not change anything either in the organisational process or in the data quality of the causes of death statistics and absolute cost neutrality is ensured. IRIS is used only as a coding support here and, in difficult cases, it can minimise time-consuming search in the ICD rules. In addition, with IRIS, the statistical offices of the Länder for the first time have a system with uniform reference coding.

Generally, IRIS has been developed for the maximum variant, where the individual textual diagnosis and the underlying cause of death are coded electronically. Here all benefits provided by the system can fully be utilised. Maximum coding consistency and transparency are achieved. Complete multicausal evaluation of causes of death, including individual textual diagnosis, is possible. In addition, the data obtained can be used for warning systems, mortality and cancer registers and other health policy information systems.

Identification rates

During the entire test, rates of individual diagnosis identification of over 80 percent were achieved. Considering that the system was in the test phase, that identification quality is far above the international average.

Most of the diagnoses not identified by IRIS involve misspellings distorting the content, unclear abbreviations and items created by the physicians. To improve the quality, better training of the physicians should be envisaged.

Active use of IRIS in statistics production and close co-operation with the DIMDI will further enhance the German dictionary and the relevant language standardisation.

From the diagnosis part of the medical certificate of death, which is entirely covered, IRIS succeeded in more than 40 percent of the cases in immediately identifying an underlying cause of death and in definitely coding it, irrespective of the input method. Where the data were entered by qualified medical staff at the public health office and transmitted electronically, the coding rate rose to over 50 percent. In an international comparison, these are top results for a system in the test phase.

The majority of cases rejected in the electronic coding process were due to non-identification of a (usually single) diagnosis or a diagnosis part of the medical part of the medical certificate of death. About 5 percent of the rejects are deaths with external causes where an additional code (which in Germany is compulsory) of chapter XIX of the ICD-10 must be coded manually.

1 BASIS: *Bevölkerungsstatistik – Automatisiertes Steuerungs- und Informationssystem* (automated control and information system for population statistics).

Electronic allocation of that code is not supported by the coding core component, which comes from the USA (MMDS[1]); due to the complexity, this will not change in the future.

The remaining 3 to 4 percent of the rejects are, first, credibility errors, which must be checked manually by experts. Second, for rare and difficult diagnoses there are minor gaps in the MMDS, which will be closed in the next versions through close co-operation with the USA.

Also, in the test phase, the underlying cause of death that had been allocated electronically was counter-coded manually by coders. This revealed some minor errors in the MMDS which were transmitted to the USA. Most of the differences between underlying causes of death coded electronically and manually, however, are due to different national and international interpretations of causes of death coding, which in the past could not occur because of individual manual coding without reference coding in 15 different Land offices. In national[2] and international studies on manual coding, which can be used for comparison, the differences in coded underlying causes of death are higher.

Results

As the user surface is based on the existing medical certificates of death, IRIS is nearly self-explanatory for the coders in the statistical offices of the Länder and does not require much training. What is particularly convincing is the surface adaptability to Land-specific characteristics and functions. After the test phase, all four test Länder were very much satisfied with the user surface and handling.

Both ways of electronic data input were optimised in the test phase and work smoothly. The checking of data received, which is integrated in IRIS, also allows selected import regarding registrar's offices or *Kreise*, which easily permits partial application in the statistical offices of the Länder.

To ensure the monthly production of population statistics, the underlying causes of death coded in IRIS can electronically be exchanged with BASIS at any time. A technical solution for electronic return transmission of the underlying causes of death to the public health offices has also been implemented and can be used as soon as the legal framework conditions have been created.

Recommendations

As the Federal Statistical Office has been closely involved in IRIS development, Germany has the first national adaptation already now, which – from aspects of technology and work organisation – can be used in statistics production from 2008. The test phase has shown that IRIS fits well into the various organisational processes of the statistical offices of the Länder. If we wish to fully utilise the capacities of IRIS and thus to considerably improve the quality, information content and possible uses of German causes of death statistics, it is necessary to work towards a situation existing, for example, in Sachsen where all medical certificates of death are supplied electronically.

Conclusion

The identification rates achieved in test phase for diagnoses and allocations of the underlying cause of death are clearly above average in an international comparison regarding a system prior to its introduction in statistics production. According to experience acquired by international partners, an further improvement of the current identification rates by optimising the dictionary and language standardisation can be achieved only through active utilisation.

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1 MMDS: Mortality Medical Data System.

2 Giersiepen, Kl., Geiser, E.: *Verschlüsselung von Todesursachen für Mortalitätsstatistiken – Vergleich von Signierergebnissen in verschiedenen statistischen Ämtern der Bundesrepublik Deutschland und West-Berlins. Das öffentliche Gesundheitswesen 51*, (1989), pp. 40-47

By developing IRIS, an electronic coding system for the causes of death statistics has been created which can also be used in the highly different working environments in Germany. Internationally, IRIS has become available to the whole world with an English standard surface since May 2008. As, due to its user-friendliness and independence from languages, it is unique and superior to any other existing system, it will be introduced in some European countries already in 2008 and 2009. It is expected that IRIS will shortly become the international standard for coding causes of death.

Introducing IRIS allows to produce sustainable and flexible causes of death statistics with a view to future national and international developments. Therefore, the Organisation and Implementation Committee in February agreed to the introduction of IRIS in all statistical offices of the Länder.

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