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## Information of the Federal Statistical Office

Number 2/90

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## The catchword

### Cohort analysis

Apart from cross-sectional analyses, for which only results of a current period of observation are used, population statistics also employ cohort or longitudinal analyses. A cohort consists of the members of a generation, or of a group of individuals who have performed the same act in a specific calendar year, for instance, got married. The observation of the demographic events experienced by such a cohort during their lives is the starting point for cohort analysis. Thus the fact is taken into account that demographic developments are based on long-term processes and influenced by both individual behaviour and general temporal conditions.

Cohort studies are performed, on the one hand, for generations, i.e. birth cohorts, in order to analyse the development of fertility, marriage behaviour and mortality. On the other hand, marriage cohorts are studied for fertility and divorce rates by way of cohort analysis. Besides the examination of specific cohorts (e.g. women of the birth cohorts 1930 to 1935 and 1950 to 1955), cohort analyses provide information on demographic developments which cannot be obtained from cross-sectional studies. Trends derived from the comparison of cross-sectional results for several years may even be misleading. This is due to the fact that for cross-sections members of several birth cohorts are combined or that in several reference years persons of the same age are studied who belong to different birth cohorts. This combination or confrontation is interpreted as if it showed the behaviour of a cohort during a specific period of life. It is presumed that persons of a specific age in the year under review are behaving exactly in the same way as those who have reached this age some years earlier or will reach it a few years later. But this is not necessarily true. If, for example, the average age at marriage increases, a cross-sectional analysis will underestimate the probability of getting married at all. The cohort analysis, on the other hand, which follows up the whole lifetime of a birth cohort, reveals in this case that although the time of marriage is moving up to a higher age, the number of marriages is not declining. Correct assessments of demographic trends as provided by cohort analysis thus play a particularly important role for projections of future processes.

Since population statistics generally record the birth year, basic material for cohort analyses, such as births, marriages, divorces and deaths is available. In part, figures for cohorts are already being published (e.g. age-specific birth rates of certain birth cohorts or marriage duration-specific birth rates). However, more or less complete information is available only for older cohorts. A complete cohort analysis, in fact, requires long time series, which in the ideal case should cover either the whole life span or the period in which relevant events may occur. The definite fertility data for a birth cohort, for instance, cannot be ascertained until the females concerned have reached the age of about 50 years. For a complete analysis of the mortality of a birth cohort it would even be necessary to observe the cohort over a period of about 100 years. Since it is not possible to wait as long as that for the figures required for demographic studies, also "preliminary" information on a cohort, viz. the data available so far, is evaluated and linked to figures from cross-sectional studies. If this is appropriate, the information is thus complemented by topical data for more recent periods.

## Classifications

### New commodity classification has become effective as of 1990

The Commodity Classification for Production Statistics is a major part of the system of official classifications used for recording commodity flows. It has been designed as a general or basic classification for all statistics presenting primarily data on goods produced in the sectors agriculture, forestry, fisheries and production industries. Apart from production statistics, it is also used, among others, for various price statistics and the statistics of intra-German trade. The Commodity Classification thus is a major instrument for monitoring and analysing production as well as cyclical and economic trends.

The present edition of 1989 entered into force on 1 January 1990 and replaces the 1982 edition. As to its structure, the new classification corresponds to the former one. However, a number of items were changed to make proper allowance for the structural changes in the economy. Thus, the new classification, on the one hand, permits a separate statistical recording of goods whose production has been markedly expanding since the former revision (e.g. in the sphere of data processing or modern manufacturing technology, such as robots). On the other hand, specific code numbers for goods that have lost in importance in recent years were omitted. At the same time, the new classification also takes into account the changed demands made on statistical reporting, such as in the sphere of environmental policy.

One of the major concerns of the current revision was to further increase the comparability between the Commodity Classification for Production Statistics and the Commodity Classification for Foreign Trade Statistics. Considerable progress has been made towards this aim. An even more extensive harmonization

that had initially been envisaged was however postponed. For soon after the revision work had begun, it became clear that as part of the creation of the single European market a largely binding commodity classification would have to be considered which will be based directly on the "Harmonized Commodity Description and Coding System" (HS). By postponing the more extensive harmonization it was avoided that possibly differing national and international requirements in two consecutive revisions of the Commodity Classification would lead to substantial gaps in the time series. The 1989 edition of the Commodity Classification for Production Statistics will presumably remain effective until the mid-nineties and then be replaced by a uniform European classification.

## **Further development of the collection, processing and presentation of data**

### **New sample design for the microcensus**

As the largest regular representative survey of population and employment, the microcensus is one of the main sources of information for government and society. Every year it provides socio-economic structural data on the population and furnishes information on its changes. It helps to continuously monitor the labour market and serves as grossing-up frame for numerous surveys of empirical social research. As regards sampling methodology, the microcensus has made a fresh start in 1990. After 18 years of service, the former sample design has been replaced by a new one, and the sample was newly drawn from the data material of the 1987 Population Census.

The primary aim of the methodological rearrangement of the sample was to ensure that the results can be regionalized with a higher degree of detail. In future, the users of statistics may expect microcensus results of a methodologically acceptable quality also for regional units below the level of federal Laender and administrative districts. This aim which complies with the requests of many users has been reached without an increase or regional differentiation of the sampling fraction of annually 1% of the population.

The basic methodological concept of the microcensus still is a one-stage cluster sample. Complete buildings or parts of buildings were used as elementary units for compiling the clusters (sampling districts). The desired higher degree of regional detail of the results required greater accuracy. As compared with the former concept, these improvements were achieved by reducing the average size of the sampling districts, further restricting the variability of the size of the sampling districts and using a more detailed regional stratification.

In practice, the sampling districts were delimited according to strict pre-set rules, using a "file of buildings" from the 1987 Population Census. This file contained information only on the number of dwellings and persons per house number as well as street codes. Depending on the number of dwellings and persons, the buildings were subdivided for this purpose into four strata. Considering the size of the buildings, a sampling district was then made up either of several and normally adjacent buildings, of a single building or only of a part of a building. The average size of the sampling districts could be substantially reduced as against the former methodological concept, from an average of about 23 dwellings to an average of about 9 dwellings per sampling district. This is a compromise solution making allowance for the growing demands on the quality of the results as well as for aspects of the time and effort involved and the feasibility. The total number of sampling districts in the Federal Republic thus rose from about 12 000 to some 30 000. In order to safeguard the envisaged regional representation, the stratification by the size of buildings was combined with a detailed regional stratification using spatial units with an average of about 350 000 inhabitants.

In all, twenty 1%-samples of the structure outlined above were drawn by random selection from the data material of the 1987 Population Census. They will serve as "stock samples" for the microcensus and can also be used for other purposes (such as a building and housing sample survey). When selecting the stock samples, the former principle of systematic rotation was adhered to. This means that every year one quarter of the survey units are replaced by new ones, so as to confine the burden imposed on the participating respondents to a maximum period of four consecutive years and still enable meaningful evaluations to be made in a comparison over time.

For grossing up the sample data, an estimation procedure is used which is based on auxiliary adjustments to benchmark data derived from the updating of the number of population. What precision may be expected of the sample results, in fact, can only roughly be estimated at the present time. Analyses of the random error with older microcensus data show, however, that the reduction of the cluster effect and the regional stratification are likely to yield a considerable gain in precision. Reliable sample results with a relative standard error of at most 10%, for example, may still be expected for regional strata of about 300 000 inhabitants, provided that they represent groups accounting for larger shares of the population (from approximately 15% of the population upwards).

The quality of the microcensus results is influenced to a high degree also by the fact that changes in the stock of buildings, such as new construction, demolitions and the like, are incorporated in the sample. Changes such as demolitions or transformations of residential buildings which existed at the census date of the 1987 Population Census are directly reflected in the sample results. However, information on, for instance, new construction has to be gathered from external sources. Therefore, the statistics on building activity will be used in future as the data source for updating the sample every year by a supplementary sampling.

### **The register of agricultural holdings – guiding and organizational instrument for surveys of agricultural statistics**

Complete, reliable and up-to-date address files have always been a prerequisite for the execution of statistical surveys. The way of maintaining and processing address material as part of the implementation of statistical surveys depends however on technological developments. When procedures based on electronic data processing (EDP) were introduced in official statistics and especially in official statistics on agriculture, the conventional maintenance and processing of address material, e.g. by way of file cards or addressing-machines, was replaced by an EDP-based register of holdings for agricultural statistics (BRL). For the 1971 Census of Agriculture, some Land statistical offices already introduced registers of agricultural holdings that were based on concepts elaborated by the individual federal Laender. As from the 1979 Census of Agriculture, all statistical offices of the Laender could already use a registration system that was based on a uniform federal concept. Later on, it was necessary from time to time to make conceptual, methodological and technical supplementations until the BRL was fully integrated into the operation of the individual surveys of agricultural statistics.

A legal basis for the BRL was first provided by the Law on Reports on Agriculture of 15 November 1974 for the sphere of holdings liable to provide information for the reports on agriculture. The principles laid down in this Law applied until the end of May 1989. The Law on Agricultural Statistics of 15 March 1989 has been in force since the beginning of June 1989. In Article 53 of this Law, on the one hand, the principles laid down in the Law on Statistics for Federal Purposes of 22 January 1987 concerning the establishment and maintenance of data files and the safeguarding of data protection are transferred to the sphere of the BRL. On the other hand, the field of application of the BRL is extended beyond the reports on agriculture to the other specialized agricultural statistics provided for in the Law on Agricultural Statistics, such as the entire scope of the livestock census, the main survey of land use, the survey of vegetable cultivation, the surveys of viticulture and of horticulture.

In cooperation with the statistical offices of the Laender, the Federal Statistical Office takes care of the preparation and further conceptual, methodological and technical developments of the BRL. It is however used and maintained only at the statistical offices of the Laender where it serves to facilitate the preparation, implementation and processing of the specialized agricultural statistics. It is used primarily

- for determining and recording the survey units to be drawn upon for the individual specialized agricultural statistics,
- for superscribing and dispatching the survey documents,
- for checking the returned survey documents and making queries with the respondents,
- for conducting surveys by current adjustment,
- for determining the burden imposed on the respondents by specialized agricultural statistics as well as
- for classifying agricultural statistics and matching data from those specialized agricultural statistics for which this has been authorized by law.

The legally restricted number of characteristics which can be stored in the BRL is however insufficient for using all the sampling procedures permitted by law.

All those survey units are included in the BRL whose proprietors are liable to provide information for one of the specialized agricultural statistics regulated in the Law on Agricultural Statistics. The survey units are subdivided into holdings and other survey units. Holdings are technical-economic units subject to uniform management which produce agricultural, forestry, fishery and/or horticultural products and have specific minimum sizes of production units. Other survey units which have to provide information, e.g. for the livestock census or the main survey of land use, do not satisfy these criteria and are as a rule too small in size to be covered by the statistics of holdings.

The characteristics whose storage in the BRL is necessary and meaningful are closely related to the tasks the register of agricultural holdings fulfils as regards the organization of data collection and processing for the individual specialized agricultural statistics. In this connection, the assignment and storage of a specific identification number for each survey unit is essential. The number assigned to a holding consists of 7 digits

including one digit for checking purposes and does not contain any data on characteristics from which information could be derived on the survey unit. The statistical offices of the Laender assign a specific number to each new survey unit and store it as long as this survey unit figures in the register of agricultural holdings. The number is required as a means of identification for the preparation, implementation and processing of all those specialized agricultural statistics for which the survey unit has to provide information. In addition, the address and — on a voluntary basis — the telephone number to be printed on the survey documents are stored as well as the code numbers and the designations of the survey units' locations to which later on the statistical data are to be assigned regionally for the presentation of results. Finally, the BRL contains the legal status of the proprietor, the agriculturally used area, the wood area, the participation of the survey units in the individual specialized agricultural statistics as well as several characteristics required for the technical implementation of the surveys.

Fundamental questions of register maintenance are connected with the inclusion of new survey units in the BRL, the modification of the data stored in the BRL, including the treatment of split-ups or combinations of holdings as well as the deletion of data records relating to survey units which have ceased to exist. All material and technical regulations with regard to these issues are compiled by the Federal Statistical Office in the form of a detailed handbook which is updated when required and serves as a working paper for the study groups dealing with the BRL at the Land statistical offices. Finally, the deletion of data records relating to survey units which no longer exist is regulated in the Law on Agricultural Statistics.

The transition from conventional address management and processing to the EDP-based BRL which is fully integrated into the organization of data collection and processing for the individual specialized agricultural statistics has almost been completed. The further development of the register of agricultural holdings will concentrate primarily on organizational and technical measures related to programme development, especially the installation of interactive processing, rather than on conceptual questions. Finally, the expansion of the BRL's field of application to all specialized agricultural statistics should be considered; the relevant legal basis would however first have to be created.

## **Bodies**

### **Constitution of the Scientific Advisory Council on "Environmental Accounting"**

On 16 February 1990, the constituent meeting of the Scientific Advisory Council on "Environmental Accounting" was held at the Federal Ministry for the Environment, Nature Conservation and Nuclear Safety. It will be the main task of this independent advisory body to participate in presenting the economic and ecological interrelations within an integrated system of environmental accounting. The Council is composed of experts from science, economy and administration, and it is also being considered to include representatives from the former GDR. Prof. Dr. Horst Zimmermann of Marburg University was elected chairman, Prof. Dr. Paul Klemmer, President of the Rheinisch-Westfälisches Institut für Wirtschaftsforschung in Essen being deputy chairman.

A discussion of the bases of the working concept showed that the work of the Council will concentrate on the following aspects:

- relationship between ecological calculations and national accounts,
- identification and definition of the relevant characteristics of "environmental accounting", and
- questions of valuation.

The activities of the Council are expected to extend over a period of at least two years.

## **Cooperation with science and research**

### **Project "Expenditure on health research"**

Considering the increasing importance of the health sector within the national economy, great importance is also being attached to research aiming at the improvement and preservation of human health and on the expenditure required for this purpose. At the present time, the recording of the expenditure for health research in the Federal Republic of Germany is however rather incomplete and hardly coordinated. There is only a very vague idea of how much is being spent on health research and how this expenditure is composed. In order to close this gap in the data material, the Federal Minister for Research and Technology (BMFT) together with the Gesellschaft für Strahlen- und Umweltforschung (Association for Radiation and Environmental Research) has entrusted the Federal Statistical Office with the provision of information on the

expenditure for health research. The objective of the project is to develop a concept for determining and presenting the expenditure for health research in the Federal Republic of Germany which enables international comparisons to be made. The project is subdivided into the following four parts or phases:

Part 1: Basic definitions

Part 2: Concept for covering health research expenditure by performing agency (execution concept)

Part 3: Concept for covering health research expenditure by financing agency (financing concept)

Part 4: Concept for linking expenditure data with staff and output data as well as establishing a graduated plan for the improvement of information on health research.

The project further provides for the development of suitable classifications of the research and development (R&D) institutions in the health sector as well as of classifications for the analysis of the R&D expenditure of the health sector (e.g. product groups, socio-economic research objectives, branches of science and technology, etc.). These classifications as well as the collection and presentation concept have to be geared to the specific conditions in the individual spheres of the economy. The significance of the individual sphere for health research should determine the degree of detail.

In developing the overall concept, great importance is also attached to the compatibility with the existing R&D reporting system. This work is based on the definitions in the "Frascati Handbook" published by the OECD, which provides general guidelines for the statistical presentation of the field of research and experimental development. A stocktaking of the existing statistical data will thus be made in cooperation with the BMFT and the SV-Gemeinnützige Gesellschaft für Wirtschaftsstatistik mbH (Donors' Association); the latter will process relevant data relating to the economic sector (mainly non-profit institutions financed by the economy as well as enterprises of the economic sector).

The project work will be supervised by an advisory body. In addition to representatives of the initiator of the project (BMFT), this body comprises several representatives from the field of health research. Part 1 of the project, the basic definitions, was elaborated in the first quarter of 1990 and discussed at a first meeting of the advisory body on 26 April 1990. The concept for covering and presenting health research expenditure is to be presented by the end of 1990.

## Events

### 4th Wiesbaden Talks on tourism in the overall economy

On 28 and 29 March 1990, the Federal Statistical Office held its 4th Wiesbaden Talks on "Tourism in the overall economy". More than 150 participants from the Federal Republic of Germany, the GDR and neighbouring countries had come to attend this meeting. In speeches and discussions, experts of the tourism sector, associations, science and politics dealt with the possibilities of improving tourism statistics.

In several contributions reference was made to the great economic importance of tourism, which however so far had not sufficiently been taken notice of by the general public and politics. In this connection, it was also emphasized that it was necessary to consider tourism to a greater extent also in national accounts.

Several speakers stressed that sufficient and reliable data were the absolute prerequisite for rational planning and decision-making both in the tourism sector and at the competent ministries and public authorities. The existing tourism statistics, however, could not serve these purposes. The participants were agreed that the present cut-off limit in accommodation statistics had to be criticized because a large part of the accommodation volume thus was not covered statistically; they also disapproved of the fact that the obligation to provide information for the microcensus subsample on holiday and recreation trips had been abolished. It was argued that the value of these statistics had thus been reduced considerably although there was an undeniable need for dependable information on tourist activities. Apart from the proposal to extend such enquiries as part of the microcensus with an obligation to provide information, it was also suggested that a separate sample survey on tourism be introduced.

Another subject discussed in several papers were the ecological consequences of tourism and their interrelationships. Nature and landscape often constitute a prerequisite for tourism, but they are also increasingly endangered as a consequence of this tourism. These conflicts were expected to further increase in the future and thus would require a more ecology-oriented tourism planning. This development would create new tasks for tourism statistics.

It was repeatedly stressed that official statistics had to supply reliable framework data in view of providing continuous and reliable information. Although private market and opinion research institutes today offer a large part of the statistics on tourism, it was generally held that the data provided by official statistics were an indispensable basis for this work.

### **International conference on national accounts**

From 21 to 25 August 1989, the International Association for Research in Income and Wealth (IARIW) held its 21st general conference again in the Federal Republic of Germany after 28 years, and the Federal Statistical Office provided organizational support. In Lahnstein, more than 200 scientists from universities and research institutes, statisticians from national and international statistical institutions as well as representatives of politics and ministries from all over the world discussed methods of calculation, the informational value and the further development of national accounts (NA).

For the IARIW, these general conferences are the most important means of promoting and further developing national accounts, enabling users and producers of national accounts to keep in contact. There are also regional conferences on special issues, and articles are published in the quarterly *Review of Income and Wealth*, which has been issued since 1966. The IARIW was founded in September 1947 on the occasion of a conference of the International Statistical Institute, among other reasons in order to improve the bases for decisions to be taken in the countries benefitting from the Marshall Plan. Members of the IARIW are institutions and persons from all over the world working in the field of national accounts as producers, users or in science.

Main subjects of discussion at the general conference were additional accounts, definitions and concepts of income calculations, the potential of production as well as the use of microdata and micro-models for simulation. Working groups treated, among others, the progress made in revising the United Nations' System of National Accounts, the reliability of estimates in national accounts, questions of income distribution accounting and the measuring of state productivity.

Representatives of politics repeatedly emphasized the importance of national accounts as a basis for decision-making requiring topicality and reliability and also stressed the necessity of regionalizing national accounts. It was held that statistics, too, had to take into account recent findings such as the mutual dependence of man and his environment, e.g. by creating a system of environmental reporting in order to demotionalize the political discussion.

In the years to come, the work of the IARIW will concentrate, among others, on the economic-statistical coverage of the environment, which will be the subject of a special conference to be held in the spring of 1991. The next general conference is scheduled for the period 30 August to 5 September 1992 in Switzerland. The main subjects to be discussed there will be time budget studies, the measuring of the capital stock, the financial sector, the measurement of welfare and national accounting. Working groups will deal with the application of the western system of national accounts in centrally planned economies, the comparability of historical NA calculations, the selection of periods for income comparisons as well as the history of national accounts and their concepts.

## **New computation of the consumer price index on base 1985**

### **Preliminary remarks**

In a paper published in the April 1988 issue of the monthly review "Wirtschaft und Statistik", the essential aspects of converting price statistics to the new base year 1985 were discussed. In the meantime, the indices of producers' prices for industrial products and of foreign trade prices have been converted to the new base. The new computation of the index of producers' prices for agricultural products will soon be available. It will be followed by the indices of selling prices in wholesale and retail trade as well as of building prices. Up to that time, these indices will continue to be computed on base 1980.

On the occasion of the new computation of the consumer price indices on base 1980, the July 1984 issue of "Wirtschaft und Statistik" reported in detail on the changes as compared to base 1976 and on methodological problems. In the following, only the changes against base 1980 will be dealt with. This concerns the revision of the weighting pattern, the checking of priced item selection and the weighting of the Land average prices and index numbers.



## 1 Index households in 1985

The concept forming the basis of the new index households has not changed as compared to the former index computations. So far, the consumption-statistical surveys have covered only individual households of German residents; institutional households and households of foreigners have not been covered by these surveys.

The consumer price index of all private households indicates the price development with regard to the private consumption expenditure of the total of German domestic individual households. The index thus is based mathematically on the average structure of expenditure of all households. This means that an average household – the so-called index household – representatively buys all goods and services of private consumption. Since, however, actual individual households have their individual consumption patterns, the general price development as shown by the index household cannot immediately be applied to individual households.

The 1983 sample survey on income and expenditure forming the basis for the computation of the 1985 weighting pattern covered all household sizes from one up to several persons. The average household with regard to base year 1985 comprises 2.3 persons, thus being somewhat smaller than the 1980 index household (2.4 persons). This difference is negligible for characterizing the new household as against the old one. The difference has to be taken into account, however, for evaluating the change of the monthly consumption expenditure from DM 2 665 according to the 1980 index to DM 3 105 in the new index, because this increase of average household expenditure by 17 percent is lower than the increase of consumer prices (21 percent). This would mean a decline of the living standard – measured by the expenditure per household member – if the size of the average household had not decreased.

The index households of the three type-related indices (4-person households of officials and salaried employees with higher income, 4-person households of wage earners and salaried employees with medium income, and 2-person households of recipients of pensions and welfare benefits with low income) have remained unchanged. Consumer price indices for other households cannot be computed until the relevant current data of consumption statistics are available.

Table 1: Size and structure of index households and their monthly consumption expenditure

Consumer price index	Household members	Household structure	Consumption expenditure in DM per month and household in base year	
			1985	1980
All private households ....	2.3 <sup>1)</sup>	.	3 105	2 665
Households of officials and salaried employees with higher income 2) ...	4	2 adults 2 children <sup>3)</sup>	4 964	4 148
Households of wage earners and salaried employees with medium income 2) ...	4	2 adults 2 children <sup>3)</sup>	3 044	2 575
Households of recipients of pensions and welfare benefits with low income ...	2	2 elderly adults	1 526	1 192

1) Base year 1980: 2.4 household members. – 2) Urban households. – 3) Including at least one child aged under 15 years.

## **2 Weighting pattern 1985**

### **2.1 Consumer price index of all private households**

#### **2.1.1 Setting up of the weighting pattern**

According to the procedures applied up to now, the sample survey on income and expenditure (Einkommens- und Verbrauchsstichprobe – EVS) is the basis of the weighting pattern for the consumer price index of all private households. The data available were those from the 1983 survey. As had been the practice for earlier index rebasings, these data had to be updated to 1985. For this purpose, the data of the continuous family budget surveys of private households were drawn upon. The development of the expenditure structure from 1983 to 1985 of the about 1 000 households covered by the continuous family budget surveys was applied to the EVS. The raw pattern thus obtained was contrasted with a classification of the purchases of domestic private households according to national accounts. Most of the differences could be explained by the differing concepts. For example, the consumption of private households as computed according to the domestic concept of national accounts includes also the consumption of foreigners and institutional households.

Some minor corrections were made with the results of the sample survey on income and expenditure. For example, part of the amounts spent by private households for beverages and tobacco had to be slightly increased in the light of a comparison made with the figures of excise duty statistics. Applying the procedures used already for earlier new computations, there were also some headings allocated to the consumption of private households which, according to the 1983 version of the Classification of Receipts and Expenditure of Private Households, are not part of it. These are the motor vehicle tax, the voluntary contributions to health insurance, the motor vehicle insurance, the other private insurances and administrative fees. The insurance contributions taken into account for private consumption include not only the service share of the insurers, but the total expenditure.

#### **2.1.2 Weight shares for rents**

The share of rents in total expenditure of private households is ascertained through the sample survey on income and expenditure. For distributing this share to the individual price series (for individual types of dwellings) in the course of the new computations on base 1976 and 1980, the figures used had been those of the updating of the stock of dwellings and the housing sample survey 1978 as well as of the 1980 microcensus. The 1987 census of buildings and housing has shown, however, that these figures contain an excess number of some 1 million dwellings. Moreover, the statistics taken into account in the past did not cover all characteristics that are needed for reliably ascertaining the shares of the five types of dwellings.

The 1987 census of buildings and housing is presented with greater detail than other available sources. Since the characteristics of the selected types of dwellings of price statistics correspond largely to those of the 1987 census of buildings and housing, it seemed most appropriate to use the results of these 1987 statistics for determining the weights.

As before, the survey of rents is conducted on base 1985 for the following five types of dwellings:

- 2 rooms with kitchen, stove heating, without bath, constructed before 1 April 1924;
- 2 rooms with kitchen, stove heating, with bath, constructed between 1 April 1924 and 20 June 1948;
- 2 rooms with kitchen, stove heating, with bath, constructed after 20 June 1948, publicly subsidized housing;
- 2 rooms with kitchen, central heating, with bath, constructed after 20 June 1948, publicly subsidized housing;
- 3 rooms with kitchen, central heating, tiled bath, balcony or loggia, constructed after 20 June 1948, privately financed housing.

The ascertainment of price series for the additional types of dwellings selected as priced items could not be finished yet. Within the scope of statistics on consumer prices, the above-mentioned dwellings therefore remain the basis for computing the index of rents.

#### **2.1.3 Classification of indices and additional presentations**

The concept of presenting the four consumer price indices under different aspects, as it has been developed so far, is applied without changes also for the computation on base 1985. A wide range of long-term series is thus available not only for the more comprehensive commodity groups of the various current classifications, but also for additional presentations and for index classifications which today are no longer considered as being of primary importance. These are the continuous series now available: the overall index for all private

households without fuel oil and motor fuels as from 1976, the motorcar driver price index as from 1968, the index for all private households in the breakdown by uses as from 1962, and the index for 4-person households of wage earners and salaried employees with medium income in the breakdown by groups of demand as from 1950.

## 2.2 Consumer price indices for certain types of households

The price indices for certain types of households, i.e. the indices for 4-person households of officials and salaried employees with higher income, for 4-person households of wage earners and salaried employees with medium income and for 2-person households of recipients of pensions and welfare benefits with low income, are based on the results of the continuous family budget surveys of 1985 as weighting patterns. As has been done for the index for all private households, the above-mentioned corrections as against the concept of the continuous family budget surveys were made also for these three weighting patterns by increasing the amounts spent for beverages and tobacco and adding the items of "Other expenditure" mentioned earlier.

## 2.3 Consumer price index for the minimum standard of living necessary for a child

The weighting pattern of this index is derived from an assumed average need of children and adolescents aged up to 18 years. It was last set up for the computation on base 1976. For the new 1980 computation, no new pattern of needs was ascertained since it was assumed that only marginal changes occurred in the quantity component since 1976, which could be neglected. Only the price development from 1976 to 1980 was taken into account.

The original plan to make a new ascertainment of the 1985 demand could not be implemented because there has been a discussion for years about the regrouping of the shopping basket of welfare benefits, and the demand for the minimum standard of living necessary for a child should to a certain extent be aligned with the demand concerning welfare benefits. Therefore, also for this index computation, the 1976 pattern of needs had to be used again; it was updated with the price development from 1980 to 1985. The following weight shares are thus ascertained for base 1985:

Consumer price index for the minimum standard of living necessary for a child

Major groups	Weight shares 1985, per thousand
Food, beverages .....	444.99
Clothing, footwear .....	239.22
Rent, power (excl. motor fuels) .....	168.18
Furniture, household appliances and other goods and services for household operation .....	50.38
Goods and services for health and personal care .....	32.44
Goods and services for transport and communications .....	30.55
Goods and services for education, entertainment, leisure time (excl. services of the hotel and restaurant industry) .....	23.41
Goods and services for personal effects, services of the lodging trade as well as other goods and services .....	10.83
Overall index .....	1 000

## 3 Index headings and priced items

Changes in the shopping basket between 1980 and 1985 were insignificant. When compared with the rapid developments in the 1950s and 1960s, supply and demand of consumer goods have developed much more slowly in the first half of the 1980s. No substantial changes thus occurred in the volume and composition of the shopping basket and in the weighting of the individual groups of expenditure.

The 1985 shopping basket includes 751 items, which is two less than in the 1980 shopping basket, and there were 81 new inclusions and 83 cancellations as compared with the 1980 shopping basket. This means that about 10 percent of the commodities contained in the shopping basket were changed.

Table 2: Shares of major groups of the 1980 and 1985 shopping baskets

Major group	ALL private households			4-person households of officials and salaried employees with higher income			4-person households of wage earners and salaried employees with medium income			2-person households of recipients of pensions and welfare benefits with low income		
	1980	1985	1985 against 1980	1980	1985	1985 against 1980	1980	1985	1985 against 1980	1980	1985	1985 against 1980
	%	%	%	%	%	%	%	%	%	%	%	%
Total cost of living .....	1 000	1 000	—	1 000	1 000	—	1 000	1 000	—	1 000	1 000	—
Food, beverages, tobacco ..	249.33	229.89	- 7.8	211.59	201.81	- 4.6	281.55	259.54	- 7.8	332.94	304.19	- 8.6
Clothing, footwear .....	81.93	69.47	- 15.2	84.72	79.93	- 5.7	88.00	76.97	- 12.5	66.18	52.42	- 20.8
Rents, power (excl. motor fuels) .....	213.28	250.29	+ 17.4	190.84	226.45	+ 18.7	217.21	253.22	+ 16.6	306.32	337.48	+ 10.2
Rents .....	148.15	177.77	+ 20.0	141.56	171.83	+ 21.4	155.53	184.82	+ 18.8	219.98	239.68	+ 9.0
Power (excl. motor fuels) .....	65.13	72.52	+ 11.3	49.28	54.62	+ 10.8	61.68	68.40	+ 10.9	86.34	97.80	+ 13.3
Furniture, household appliances and other goods and services for household operation .....	93.64	72.21	- 22.9	86.72	62.05	- 28.4	77.49	66.01	- 14.8	75.19	62.44	- 17.0
Goods and services for health and personal care ..	40.50	40.99	+ 1.2	55.64	55.91	+ 0.5	27.65	29.41	+ 6.4	47.15	48.42	+ 2.7
Goods and services for transport and communications .....	142.63	144.03	+ 1.0	139.69	144.87	+ 3.7	132.47	139.30	+ 5.2	70.75	85.45	+ 20.8
Goods and services for education, entertainment, leisure time (excl. services of the hotel and restaurant industry) .....	84.68	83.71	- 1.1	102.41	97.27	- 5.0	93.38	94.07	+ 0.7	56.58	57.42	+ 1.5
Goods and services for personal effects, services of the lodging trade as well as other goods and services .....	94.01	109.41	+ 16.4	128.39	131.71	+ 2.6	82.25	81.48	- 0.9	44.89	52.18	+ 16.2

Only the minority of newly introduced commodities have first appeared on the market since 1980 and have gained a major importance in consumer behaviour, such as unleaded regular petrol, unleaded supergrade petrol and the video camera.

Most of the other newly introduced commodities were on the market already before – some of them for a long time – and they also accounted for a considerable share in the budget of the average household, so they could already have been included in earlier index computations. Only recently, however, indications by other institutions or studies conducted by the Federal Statistical Office itself have shown that these commodities ought to be included in the shopping basket because in the long run they cannot be reliably represented for price statistics by other commodities. This refers, for example, to the following commodities whose inclusion in the shopping basket was meant, at the same time, to take into account the increased importance of the relevant sector: dietetic margarine and carrot juice (as health food or dietetic food), sports shorts, a tennis racket and an expander (as goods for the further representation of sports activities), window decoration, the hiring of a video film and a small advertisement (as additional representatives of the service sector). Moreover, some goods have been included in the shopping basket because they are better suited than the priced items used before to represent a whole commodity group for price statistics.

Commodities included in the shopping basket in exchange for others are, for example, a UV chest skin-tanning device replacing a sun-ray lamp, a cassette player replacing a cassette recorder, and a file case replacing a briefcase.

Another reason for the inclusion of new price series is the improvement of the original statistical data. The 1983 sample survey on income and expenditure and the continuous family budget surveys have been processed according to the 1983 Classification of Receipts and Expenditure of Private Households. The presentations of the private households were thus improved, which permitted price series that had been compiled for the index of retail prices already in 1980 to be newly introduced into the consumer price index. Examples for this are maps and hiking maps or notes. Moreover, headings that on base 1980 still had to be grouped can now be shown in detail (e.g. air travels, camping site charges).

Cancellations have been made also for some commodities which proved less suited for a price representation of the respective commodity groups and for other commodities whose market importance has strongly declined and for which no alternative items had to be newly introduced because other items already included are also suited for representing the price development. Among those cancelled items are, for instance, mashed potatoes, edible peas, cocoa, a set of plumeau cases of blended fabrics, a fuel oil can, a black-and-white TV set, a narrow film camera, a film projector, a super-eight colour narrow film and a skate roller.

In addition, some items of the 1980 shopping basket have been left out which – though still important for consumption when viewed separately – are not needed for price representation in addition to the other items remaining in the shopping basket. Some examples are: Tilsit cheese, dessert apples grade II, long-grain rice, grape juice, an overall, men's pyjamas, men's shoes (box sides), an upholstered suite, a highboard, hair tonic, shaving cream.

A long-term comparison of price series has shown that these items are represented by other index headings, such as Edam cheese, dessert apples grade I and boys' pyjamas.

The headings covered centrally by the Federal Statistical Office, i.e. commodities with uniform prices all over the federal territory, have also been checked for their representativity. Some medicaments and periodicals, for instance, whose importance for consumption had decreased as compared with 1980 have been replaced by better-selling articles.

#### **4 New computation of Land weights**

The prices of certain goods and services are collected at selected survey points of the 118 reporting communities within the federal territory and are grouped unweighted to community and Land averages. These Land averages, however, are then weighted with the weight of the population of the respective Land to federal average prices and index numbers.

For the base years 1962 and 1970, the results of the population census of the respective year could be used. The Land weights of base 1976 have been taken over unchanged from the 1970 index computation, while the 1980 population adjustment formed the basis for ascertaining the shares of this base year.

When the new computation of the index was carried out, the data of the 1987 population census were available, but the 1985 population adjustment revised on the basis of that census was not finished yet. The new computation of the Land weights was thus based on the results of the 1987 population census. As was expected, these figures differ only slightly from the revised adjustment data that are now available. For comparison, the weights of bases 1980 and 1970 are listed below.

	Shares of the total population in %		
	Base 1985 <sup>1)</sup>	Base 1980 <sup>2)</sup>	Base 1970 <sup>3)</sup>
Schleswig-Holstein .....	4.2	4.4	4.2
Hamburg .....	2.6	2.6	2.9
Lower Saxony .....	11.7	12.2	11.6
Bremen .....	1.1	1.1	1.2
North Rhine-Westphalia .....	27.4	27.5	28.0
Hesse .....	9.0	8.9	8.9
Rhineland-Palatinate .....	5.9	6.1	6.0
Baden-Württemberg .....	15.2	14.6	14.6
Bavaria .....	17.9	17.9	17.3
Saarland .....	1.7	1.8	1.8
Berlin (West) .....	3.3	2.9	3.5
Federal territory .....	100	100	100

1) According to the 1987 population census. - 2) According to the 1980 population adjustment. - 3) According to the 1970 population census.

## 5 Results of the new computation

Commodities of a certain sector whose prices increase faster than the prices of other commodities of the same sector tend to be demanded less often than those other commodities (and vice versa). This tendency is more or less pronounced, depending on whether the commodities in question relate to a rather elastic demand or a less elastic one. Accordingly, it has to be taken into account that, in the course of a price index updating, commodities with stronger price increases get lower weighting figures than other commodities and that the new index thus shows a slower increase than the former index.

The shift of weights towards index headings showing lower price increases does, however, not necessarily result in a lower increase of the new overall index as compared with the old one. If an index reform consists not only in adjusting the weights of the commodities contained so far in the shopping basket to the more current structure of expenditure but also in extensively checking these commodities for their suitability for price representation, which leads to a large-scale exchange of commodities, it is well possible that the above-described effect of a mere shift of weights is overcompensated by the effect of the inclusion of commodities whose prices temporarily or even permanently increase more strongly than those of the rest of the shopping basket. This happened in the case of the new computation of the index on base 1980. In connection with the current index conversion to base year 1985, however, the general rule has again been confirmed according to which the index on the new basis usually increases somewhat less strongly than the index on the old basis; this is true at least of the months of January to September 1989 as compared to the respective months of the previous year. For the time before, however, some rates of the previous year were higher than with the old index and some were lower.

If the new and the old (overall) index of all private households are compared, the differences are rather slight, i.e. as a rule they are around 2/10 (cf. Table 3).

This is not surprising since the differences between 1980 and 1985 concerning the structure of consumption of private households are not as great as to suggest major influences on the index development. This is true in a similar way also of the selection of commodities in the new shopping basket whose composition on the whole corresponds to the one of the 1980 shopping basket.

A comprehensive publication of the new computation results in a detailed breakdown by groups and sub-groups is contained in the monthly report of Subject-Matter Series 17, Series 7 "Consumer prices and consumer price indices". The 1989 annual report of this series includes for all breakdowns the monthly figures from January 1985 to December 1989.

Table 3: Consumer price indices on bases 1980 and 1985  
Annual rates of change in percent

Price indices	Base	1985	1986	1987	1988	1989								
		Annual average				Jan.	Feb.	March	Apr.	May	June	July	Aug.	Sept.
Consumer price index	1985	x	-0.1	+0.2	+1.3	+2.3	+2.5	+2.6	+2.9	+2.9	+2.9	+2.8	+2.8	+2.9
All private households ...	1980	+2.2	-0.2	+0.2	+1.2	+2.6	+2.6	+2.7	+3.0	+3.1	+3.1	+3.0	+2.9	+3.1
4-person households of officials and salaried employees with higher income .....	1985	x	+0.1	+0.5	+1.5	+2.4	+2.5	+2.6	+2.8	+2.9	+2.8	+2.7	+2.6	+2.7
	1980	+2.4	-0.1	+0.4	+1.5	+2.5	+2.5	+2.5	+2.8	+2.9	+2.9	+2.8	+2.7	+2.8
4-person households of wage earners and salaried employees with medium income .....	1985	x	-0.2	+0.1	+1.1	+2.4	+2.6	+2.8	+3.1	+3.1	+3.0	+2.9	+2.8	+3.0
	1980	+2.1	-0.2	+0.1	+1.0	+2.5	+2.6	+2.7	+3.0	+3.1	+3.1	+3.0	+2.9	+3.1
2-person households of recipients of pensions and welfare benefits with low income .....	1985	x	+0.3	-0.3	+1.0	+2.4	+2.5	+2.7	+2.9	+3.1	+3.0	+3.0	+3.0	+3.1
	1980	+2.0	+0.2	-0.4	+0.9	+2.4	+2.6	+2.6	+2.9	+3.1	+3.3	+3.4	+3.4	+3.6

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