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#### Contents

	Page
<b>The catchword</b>	
Household forecasts .....	3
<b>Methodology of federal statistics – Further development</b>	
Concept for a system of finance-statistical indicators for the higher education sector .....	4
Estimating the volume and structure of hazardous goods transport .....	5
<b>European matters</b>	
New concept for the collection of data on land cover and land use – National contribution to setting up the EU environmental information system CORINE .....	6
<b>German statistics on foreign trade within the Single European Market</b>	
Preliminary remarks .....	7
1 General survey of statistics on foreign trade within the Single European Market .....	7
2 Intra-Community trade statistics .....	9
2.1 Bases .....	9
2.1.1 Legal bases .....	9
2.1.2 Linkage with VAT .....	9
2.1.3 Application of sophisticated information technology .....	10
2.2 Concept .....	10
2.2.1 Subject-matter of intra-Community trade statistics, and statistical territory .	10
2.2.2 Commodity classifications .....	11
2.2.3 Obligation to provide information and group of respondents .....	11
2.2.4 Frequency .....	12
2.2.5 Data supply .....	12
2.2.6 Statistical information media .....	13
2.2.7 Variables .....	13
2.2.8 Presentation of results .....	14
2.3 Initial stage .....	14
Final remarks .....	15

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## The catchword

### Household forecasts

The Federal Statistical Office has prepared household forecasts at irregular intervals – the latest in 1992. All these forecasts were based on the macroanalytic approach at prognosis which consists in forecasting results for the aggregated data of a basic population (households or household members) using simple and summarized assumptions about the changes. This procedure proceeds on the assumption that there is a close interaction between the structure of households – as part of social structure – and the population development because the social situation has some impact on processes within the population, which in turn contribute to the creation of new social structures and household patterns. Household trends largely depend on demographic factors influencing the population development such as births, deaths, and migration on the one hand, and on behavioural aspects of household formation as, for instance, marriage, divorce, moving out of the parental home in early years and setting up one's own household. All these demographic and social factors have an impact on the processes of household formation, increases or reductions in their numbers, and the dissolution of households. Therefore, it is justified to project the existing distribution of the population among household structures into the future and to derive the future number of households (by sizes) in line with the forecasted population development.

So far, the Federal Statistical Office has relied on the following for its (macroanalytic) forecasting procedure: aggregated data on household members by sex, age, and household size as well as several simple assumptions about the future behaviour of the population in setting up households on the one hand, and the results of the population forecast on the other. The starting point is an analysis of the past development of household structures which is presented on the basis of the annual microcensus results for the distribution of the population among households by sex, age, and household size. In 1992, the Federal Statistical Office used the household member quota method in this type of forecast for households with a German reference person.

The age-specific household member quota provides the percentage share of persons living in households of a specific size in the total number of persons of the same age and sex. In addition to assumptions about the future trend of the household member quotas, this procedure presupposes a forecast of the population ("population in households") in a breakdown by age and sex. The distribution of the German "population in households" – broken down by age and sex – among the individual household sizes reflects the process of household formation at a given time in cross-section form. The past development shows that the dynamics of change in household structures can mainly be attributed to specific population groups. Over the last two decades, there have been the following basic trends in household formation:

- increase of single-person households both in numbers and with regard to their percentage share; these are mainly younger and elderly persons living on their own;
- trend towards smaller households consisting of only two or three persons due to increasing numbers of one-child families, childless married couples, and parental households with children having moved out, and single-parent households;
- strong decline in the number of large households, especially those of five persons and over, because both the average number of children per family and the number of household members not belonging to the family have fallen.

As the impact of the above factors is too complex to be covered entirely by a formal mathematical procedure – whose application would also imply a strong orientation towards the past –, it is not considered at all. Instead, the age-specific household member quotas are extrapolated by means of plausible assumptions about the future course of the trends described, with the sum of the quotas of all household sizes having to amount to 100 % for each age group. In the latest forecast, estimates were first determined for the individual age-specific household member quotas for the year 2000 using trend extrapolations. It was assumed, moreover, that these "target values" are attained in the course of a linear development. For the subsequent time span until the last year covered by the forecast (2010), it was assumed that the values for the year 2000 remain unchanged, so that on the whole there was an approximation to a degressive course of change from 1990 to 2010.

Next, the age-specific household member quotas calculated for the interval covered by the forecast were multiplied by the results of a population forecast (7th Coordinated population forecast) broken down by age groups and related to the "population in households". This produced an estimate of the population living in households of a specific size in this period. The figure estimated for households of a specific size was obtained by dividing the forecasted number of members of individual household sizes by the specific household size. The total number of households is the sum of households of all sizes.

When assessing the results of the forecast, it must be kept in mind that the results are obtained by means of a model calculation characterized by a limited number of variables because of the data material available, and are subject to the same reservation as any forecast: They can describe future dimensions and structures only if the underlying assumptions are correct.

Due to the data material available, the 1992 household forecast was prepared separately for households with German and those with foreign reference persons because the trends of German and foreign households have differed to such an extent that no common procedure can be applied. In addition, a simplified procedure was chosen for the forecast concerning foreign households. The forecasted results relate to the former territory of the Federal Republic as the required data material on households was not yet available for the new Länder and Berlin-East.

For detailed information on the forecasting method applied and the results of the household forecast please refer to the paper of Paul, C., Voit, H., and Hammes, W.: "Entwicklung der Privathaushalte bis 2010" (Household trends until 2010), published in *Wirtschaft und Statistik* No. 9/1992, pp. 620 – 626.

## Methodology of federal statistics – Further development

### Concept for a system of finance-statistical indicators for the higher education sector

Since the early 1980s, the institutions responsible for higher education planning and policy have increasingly urged statistical offices to calculate additional and informative indicators that could be used for comparisons over time and cross-section analyses. Consequently, the Federal Statistical Office calculated first of all nonmonetary indicators for the higher education sector on the basis of discussions held in the technical bodies (Committee on Higher Education Statistics, Subcommittee on Higher Education Data of the Standing Conference of Ministers of Education and Cultural Affairs of the Länder in the Federal Republic of Germany) and with external experts. These indicators were published in Subject-Matter Series 11, Series 4.3 *Hochschulstatistische Kennzahlen* (Indicators of university statistics) for the first time in early 1992. In August 1992, another contribution on – finance-statistical – indicators was published in the periodical *Wirtschaft und Statistik*, No. 8/1992. The indicators presented in that publication have been integrated into the above-mentioned Subject-Matter Series and will be calculated regularly in order to allow continuous monitoring and analysing of the financial situation of institutions of higher education. The methodology is based on the general tools developed by the Federal Statistical Office, in cooperation with the statistical offices of the Länder and the main users of financial statistics, for the general monitoring and analysis of public budgets. The calculation of indicators is based both on the general annual accounting statistics of public budgets and on the specific statistics of finance of institutions of higher education.

The finance-statistical indicators calculated on the basis of annual accounting statistics provide information on the financial importance of the higher education sector as a whole, of individual types of institutions of higher education, or of individual subject groups, and on the importance of higher education expenditure when compared either between Länder budgets or with the federal budget. For statistical presentation, public budget revenues and expenditures are broken down both by function and by type on the basis of established budget classifications. For the breakdown by functions it must however be taken into account that not all revenues and expenditures concerning the higher education sector are covered under the function of *institutions of higher education*, but part of them are allocated to other functions (e.g. expenditures of the German armed forces institutions of higher education).

The type of expenditure considered as suitable for the indicators are the basic funds (direct expenditures made for the tasks to be performed, plus payments made to other public budgets, minus payments received from other public budgets, minus direct revenues). They show the amounts which the competent body provides from general budget funds for the respective fields of tasks. The various activities performed by institutions of higher education outside the fields of lecturing and – own – research, such as those concerning research financed by third parties, are eliminated by subtracting direct revenues.

Taking the absolute amounts of expenditures as a basis for a comparison between the financial burdens borne by the individual Länder with regard to the higher education sector is not very informative because of the different sizes of the Länder. The basic funds available for lecturing and research are thus brought into relationship with specific figures measured. The reference values applied are the number of inhabitants of a Land, the number of students enrolled at the institutions of higher education for which that Land is responsible, the overall expenditures of the Land, and the gross domestic product. It is generally difficult however to find out whether indicators differ due to different framework conditions or to different financial practices, with the legal and technical preconditions being the same. This is why additional information on the financial background and on the individual structures of institutions of higher education, which differ among the Länder, must be included in an analysis.

The finance-statistical indicators based on annual accounting statistics can cover only those items that refer to an institution of higher education as a whole. The amount of expenditures, however, heavily depends on the structure of subjects and other differences in the activities performed by the institutions of higher education. Additional data broken down by fields of lecturing and research – as supplied by the statistics of finance of institutions of higher education – are needed to derive information on the financial resources of the university chairs or to determine whether the funds available are spent in an economical way. These statistics also cover the expenditures and revenues not only of public institutions of higher education but also of private ones; for the public institutions, these statistics also include the expenditures and revenues for higher education purposes which, in the annual accounting statistics, are not shown under the function of *institutions of higher education*.

In the future, the following indicators will regularly be calculated on the basis of statistics of finance of institutions of higher education: current expenditures (basic funds) made at institutions of higher education for lecturing and research per student, per graduate, and per professorship; and the administrative revenues and third-party funds per professorship. The current expenditures (basic funds) made at institutions of higher education for lecturing and research per student provide information on the amount of current funds available to those institutions per student in the individual subject groups. It is however not possible here to derive information on the costs of a course because institutions of higher education do not perform exact cost accounting which would allow to allocate costs to cost units and output items. The indicator of *current expenditures (basic funds) made at institutions of higher education per graduate for lecturing and research* extends the above-mentioned indicator by the criterion of qualification (final examinations passed), thus forming an indicator of the success of lecturing at institutions of higher education. Important aspects that have to be considered when a new university chair is set up are the overall financial resources required for that chair, the funds that can be earned by the chair, and the amount of third-party funds raised by the professors. To analyse these questions, the basic funds, the administrative revenues, and the third-party funds are brought into relationship with the number of professorships.

The new law on higher education statistics entered into force on 1 June 1992. The informational value of the statistics of finance of institutions of higher education is increased by improvements in the reporting procedure and in the processing of results. It is particularly important that the new law on higher education statistics provides the opportunity to publish data of individual institutions of higher education and to analyse them on the basis of finance-statistical indicators.

### **Estimating the volume and structure of hazardous goods transport**

The objective of this research project financed by the Federal Minister of Transport was to develop an estimation method – whose quality would be better than that of the method used before – for ascertaining the volume and structure of hazardous goods transport. Without placing an additional burden on respondents, this would permit to close quickly and at low cost the data gap in this important sphere of transport by using data available from the statistics of goods transport and by including additional information from official and non-official sources.

The classification by groups of goods that is employed in transport statistics – 175 groups of goods are shown – is not suited for directly ascertaining the volume of hazardous goods transport with a breakdown by hazard classes. The highly aggregated results of transport statistics by groups of goods may however be structured by hazard classes, using the very detailed results of foreign trade statistics that are broken down by commodity numbers. Since 1988, foreign trade statistics have shown the transport volume by branches of transport both for imports and exports; in addition, allocating the 10,000 commodity numbers of foreign trade statistics to the 175 groups of goods used in transport statistics involves almost no overlaps at all. The level of breakdown thus obtained is almost ten times as detailed as that offered by the commodity classification applied in the past (tariff numbers of the German Federal Railway). Another major precondition for applying the foreign trade classification was that foreign trade and goods transport show similar structures in the flows of goods. This applies in particular to international traffic.

In a first step, hazard classes are allocated to the commodity numbers of foreign trade statistics. Since it is not possible to allocate each commodity number in its entirety to one single hazard class, it is determined what percentages of the commercial weight of the commodity number concerned belong to which hazard class. These percentages are stored together with the individual commodity numbers. The resulting data are then matched with the results of foreign trade statistics. By data aggregation, it is possible to calculate for each branch of transport – on the basis of foreign trade statistics – a matrix of the structure of hazard classes with regard to each group of goods. Using this structural matrix, the corresponding transport volumes of the statistics of goods transport are subdivided by branches of transport, traffic relations, and groups of goods. For the traffic relations of *national traffic* and *transit traffic*, the structures of hazard classes can be determined after adding imports to exports for each commodity number. As results by groups of goods are not shown any more in the aviation branch of transport, the overall volume of transport is directly allocated according to the structural matrix calculated for aviation. In further steps, the rough structures thus determined are corrected by including additional information from official and non-official sources (e.g. data obtained from associations or specialized transport companies).

The above method permits to calculate estimates of sufficient quality in the field of hazardous goods transport broken down by hazard classes, following a largely fixed and automated procedure. Unlike the method applied before, the current procedure allows to determine up-to-date structures of hazard classes for every reference year. Due to the complexity of the data material, not all the particularities of the underlying data sources and applicable provisions on hazardous goods that have an influence on the results can be taken into account in that algorithm. Thus the method described does not permit, for instance, to allocate hazardous goods to different hazard classes for different traffic relations. Another factor that could not be taken account of in the estimation procedure are the different ways goods are classified in the individual ordinances on hazardous goods and, consequently, in the individual branches of transport. The allocation to hazard classes was based on the classification applied in the GGVS (*Gefahrgutverordnung Straße* – Ordinance on hazardous goods concerning road transport) and the ADR (European Agreement Concerning the International Carriage of Dangerous Goods by Road).

The final report of the study which contains not only the results but also a detailed methodological description may be obtained direct from the Federal Statistical Office, Division V C, against a charge of DM 22.-.

## European matters

### New concept for the collection of data on land cover and land use

#### – National contribution to setting up the EU environmental information system CORINE

In 1985, the European Communities initiated the CORINE programme (**Co**ORDination of **IN**formation on the **Environment**). The objective of that programme was to develop a concept for the collection, coordination and harmonization of information on the state of the environment and the natural resources in the Community. Today the abbreviation CORINE stands for the environmental information system of the European Union (EU). In the future, the European Environmental Agency currently being set up will be responsible for maintaining that system.

The information system will be based on a stock of geographical data on land cover and land use – CORINE Land Cover – which will include the whole of Europe. To establish this database, the EU developed a methodological frame concept which for each country has to be adjusted to national particularities. What cannot be used in this context are land use data derivable from the conventional area survey which is conducted according to the Law on Agricultural Statistics. Their breakdown at present is insufficient (14 types of land use) and, moreover, they can be provided only as totals for administrative territorial units. Contrary to this, for the EU concept a breakdown by 44 categories of use is applied and it is planned to show the concrete geographical location of any homogeneously used area (statistical unit), with a threshold of coverage of 25 ha.

Data collection is based on satellite images (Landsat TM), topographical maps, and generally also on panchromatic aerial photographs on a scale of 1 : 70 000. The digital satellite images are geocoded on the basis of the topographical maps, which are available on a scale of 1 : 100 000 (TK100), before they are output as a kind of photographs and enlarged according to the sheet size and scale of the TK100. The land use data are then obtained by visual interpretation of the satellite images. This process is supported by evaluating the other data sources mentioned above and applying methods of automated image classification. This includes documenting the geographical location of the statistical units and the ascertained types of land use by means of a transparent cover foil which has exactly the same size as the enlarged satellite images mentioned above. This "interpretation foil", which might also be referred to as a graphical questionnaire, forms the basis for the subsequent digitalization of the data.

The concept of data collection roughly outlined above permits to set up a stock of land use data which, by means of data processing, can be visualized as a "computer map" on the monitor. As a component of the CORINE geographical information system, this database gains in importance particularly by the integration of further space-related data (e.g. on administrative territorial units, nature reserves, water protection areas) and the resulting opportunities of joint data analyses.

The Federal Statistical Office has been commissioned by the Federal Ministry for the Environment to implement CORINE Land Cover on a national basis. For this purpose, the Federal Statistical Office can draw upon the experience gathered during the pilot study on STABIS (Statistical Information System on Land Use). CORINE Land Cover may be considered as STABIS at a higher level of aggregation. The stock of basic data thus available for a geographical information system is indispensable also for setting up the system of Environmental-Economic Accounting. The data collection as such is carried out by specialized private companies commissioned by the Federal Statistical Office. The large-scale survey, which requires great efforts, started in summer 1993 after a rather long preparatory phase and will be finished in 1996.

## German statistics on foreign trade within the Single European Market

### Preliminary remarks

In 1993, the structure and compilation of German foreign trade statistics changed fundamentally as a result of the establishment of the Single European Market, which required a breakdown of foreign trade statistics into statistics relating to the trading of goods with other EC member states (statistics on foreign trade within the Single European Market) and statistics relating to the cross-border trading of goods with the rest of the world (extra-Community trade statistics). While the conventional concept of foreign trade statistics has largely been maintained for extra-Community trade statistics, statistics on foreign trade within the Single European Market were put on a new basis.

The present paper will outline the results of various EC bodies' long-term discussion of the new statistics on foreign trade within the Single European Market<sup>1)</sup>. In the form of a general survey, the paper will first discuss the necessity to continue statistics on foreign trade within the Single European Market.

The paragraph following the survey will introduce the most important component of statistics on foreign trade within the Single European Market, i.e. statistics on trade between member states (intra-Community trade statistics). In this context, details such as the bases, the concept and compilation of this kind of statistics will be discussed.

The final paragraph of the paper will touch upon both the necessity and potential structure of statistics on foreign trade within the Single European Market after the planned transitional taxation period will have expired in 1996 and a harmonized tax system based on the country-of-origin principle been introduced.

### 1 General survey of statistics on foreign trade within the Single European Market

On 1 January 1993, the formalities based on customs, foreign trade and payments regulations which until then had characterized the trading of goods within the European Communities (EC) were abolished. Since that time, customs authorities have not been responsible for that kind of trading any more. In the beginning, the idea of doing without statistical surveys of the intra-Community trade in goods seemed to suggest itself. After all, the domestic trade flows between the individual German Länder have not been statistically recorded, either. A closer look, however, reveals fundamental differences between the conditions of a nation's domestic trade and those of intra-Community trade. While domestic trade is based on a single currency and carried out against the background of, among other things, uniform monetary, financial and economic policies, eleven different currencies and only partially harmonized national provisions for taxation (VAT, general tax on consumption, business taxes), product design (safety standards, environmental acceptability), environmental protection (production processes, raw materials used), etc. have to be considered in intra-Community trade. It is an important task of the German parliament, the government and the Deutsche Bundesbank to monitor the impact of these different conditions on the intra-Community trade in goods and consequently on the national economy. Not least because of the above differences, however, trade and industry, i.e. industrial associations and businesses have maintained their great interest in detailed information about the degree and structure of the interpenetration of EC economic areas, be it to early adapt themselves to the new conditions and consolidate traditional sales markets or to study the preconditions for opening up new markets. Finally, the EC Commission and EC Council need to have a thorough knowledge of the details of the intra-Community trade in goods to advance the harmonization of all relevant legal norms and eliminate the imbalances still existing in the Single European Market. Foreign trade statistics are a rich source which this urgently required information can be derived from. For this reason, a concept of "statistics relating to the trading of goods between Member States" was prepared very early<sup>2)</sup>.

As a first step, the minimum requirements to be fulfilled by this concept were specified. A basic criterion was to largely maintain the correspondence with the statistics to be continued on the cross-border trading of goods with non-EC member states, i.e. third countries (same commodity classification and frequency, to the greatest possible extent same catalogue of survey variables with largely corresponding definitions, and an equal quality of the results). Furthermore, it was to be ensured that the continuation of official statistics would not offset the reduction of the burden on businesses achieved by the abolition of customs formalities in the intra-Community trade in goods or even result in an additional load. Hence, the second requirement was to avoid an excessive statistical burden on those participating in EC trade.

In this context, several ideas were discussed, all of them being based on the common understanding that statistics on foreign trade within the Single European Market would have to constitute an independent system of data compilation. After thorough consideration in the European bodies concerned, the idea of integrating this kind of statistics into existing systems of statistics such as the balance-of-payments, transport, production or VAT statistics was

1) See Bergmann, W.: "Erhebung des Warenverkehrs zwischen den Mitgliedstaaten der EG ab 1993" in "Wirtschaft und Statistik" 9/1991, p. 611 ff.

2) See Heimann, J.: "Zur Statistik des Außenhandels zwischen den Mitgliedstaaten der Europäischen Gemeinschaften" in "Wirtschaft und Statistik", 9/1986, p. 717 f.

rejected by the majority of member states. Reasons were a lack of practicability, an excessive burden on trade and industry and the fact that ensuring timeliness of information would not always be possible.

Common to all ideas was the understanding that a register of all parties responsible for providing information and continuous verification of the data stored on the group of respondents and the statistical information submitted would be required for a proper operation of statistics on foreign trade within the Single European Market. There was general agreement that this task could be fulfilled best by fiscal administrations in the way of evaluating the usually monthly VAT returns on delivery and acquisition.

The EC Commission first advocated the compilation of exclusively dispatch-based statistics on foreign trade within the Single European Market. The aim of the following matching of data within the Community was to add the data on arrivals not collected. However, the EC member states did not share this opinion. Right from the beginning, it was obvious that the above "mirror concept" would not be viable due to a non-uniform understanding of commodity allocation, differences in covering variables, different taxation principles and in part even considerably differing views on the required quality of statistical results. Another proposal aimed at an organizational linkage between statistics on foreign trade within the Single European Market and the monthly imposition of VAT. This was considered an adequate approach in particular by France where the fiscal administration has always been responsible for foreign trade statistics. A third approach, however, favoured as the organizational optimum an independent statistical recording of the transactions with other EC member states directly in the businesses concerned. As a result of the discussion of the above ideas, France and Italy and to a certain extent also Great Britain and Northern Ireland decided in favour of a linkage with the imposition of VAT, while the other member states opted for independent recording.

Despite these differences the concept of statistics on foreign trade within the Single European Market is of European nature and applies to all member states in basically the same way. The individual states had the opportunity to be flexible only with regard to adding supplementary variables for national purposes and granting exemptions in line with prevailing national conditions. Thus the principle of applying a uniform concept of foreign trade statistics throughout Europe has not only been preserved but even been consolidated.

The main European legal basis of this concept is the Council Regulation (EEC) No 3330/91 of 7 November 1991 on the statistics relating to the trading of goods between Member States which was published in the Official Journal of the European Communities, No L 316 of 16 November 1991. The Regulation, for reasons of simplification hereinafter referred to as Basic Regulation, first defines the scope of its application and the general obligation to provide information (Chapter I). The details of the new permanent statistical collection system, i.e. the Intrastat system, constitute the core of the Basic Regulation (Chapter II). The system presently applies to the following three types of statistics: statistics on trade between member states (intra-Community trade statistics), statistics of transit trade and storage statistics. Great emphasis is put on the provisions obliging national tax authorities to assist the statistical institutes in establishing and managing business registers covering all intra-Community operators of the statistical territory concerned and to regularly supply them with information as a basis for checking the declarations provided to them. Finally, general principles regarding the frequency of data collection and the information media to be used are included. Chapter III contains the basic provisions for the statistics on trade between member states. The scope of application and the obligation to provide information are defined in greater detail, the statistical information (i.e. survey variables) to be collected are specified and ways of easing the load on businesses are shown, with the volume of EC trade being the decisive criterion. Chapter IV provides for the establishment of an administrative committee composed of representatives of the member states and a Commission representative (committee chairman). The committee's tasks will be to support the implementation of the Regulation and to ensure that its provisions will be continuously adapted to economic or legal changes, and new organizational structures in trade and industry. Chapter V contains the final provisions.

As suggested by its name, the aim of the Basic Regulation is to provide a general framework for statistics on foreign trade within the Single European Market without giving detailed instructions. As regards the details, the Regulation indicates other legal bases which are in part enacted directly by the EC Commission (Art. 30). A Commission Regulation of this kind is the Implementing Regulation<sup>3)</sup> comprising very detailed instructions for the member states. It focuses on a more precise definition of the scope of application, followed by more detailed provisions regarding the obligation to provide information, in particular the responsibilities of a third party submitting the statistical declaration on behalf of the party responsible for providing information. The Implementing Regulation contains additional provisions for the cooperation between statistical bodies and fiscal administrations. Furthermore, it stipulates the definitions of the individual variables and the details of their application. Among others, a list of commodities exempted from statistical declaration is attached to the Regulation.

3) Commission Regulation (EEC) No 3046/92 of 22 October 1992, laying down provisions implementing and amending Council Regulation (EEC) No 3330/91 on the statistics relating to the trading of goods between Member States (OJ No L 307, 23.10.1992, p.27).



Two other Commission Regulations make the corpus of regulations complete: the Threshold Regulation<sup>4)</sup> and the Information Media Regulation<sup>5)</sup>. On condition that the defined quality standards be kept, the member states may, on the basis of the Threshold Regulation, partly or completely exempt parties responsible for providing information from their obligation to submit statistical declarations relating to the trade between member states. The quality standards concern the results by commodities and by partner countries (other EC member states) and time series data.

The Information Media Regulation stipulates details of the forms to be used for statistics on trade between member states such as their size (e.g. format of 210 x 297 mm with an accuracy of -5/+8 mm max.) and contents, and the quality of the paper to be used. It furthermore provides for red writing on white paper and machine-readability of the information entered in the forms. As far as magnetic media are concerned, the relevant provisions enacted by the Commission should be thoroughly observed.

The above corpus of EC regulations requires only few national provisions. The tasks of the German legislators are restricted to integrating optional variables conceded to the member states by the European legislators and specifying the thresholds for Germany. The German legal bases applying to the integration of optional variables and the specification of thresholds are the Foreign Trade Statistics Law<sup>6)</sup> (Art. 3) and the pertaining Implementing Ordinance<sup>7)</sup> (Art. 30, para. 4), respectively.

## 2 Intra-Community trade statistics

This paragraph will first outline the legal and organizational bases of intra-Community trade statistics, followed by a detailed description of the concept applied. Finally, an assessment will be made of the first months of compiling intra-Community trade statistics.

### 2.1 Bases

After a description of the legal bases of intra-Community trade statistics (see 2.1.1) and the linkage with VAT (see 2.1.2), the aim of the EC Commission to largely use data processing equipment in collecting, processing and presenting intra-Community trade statistics and its fulfilment at national level will be discussed (see 2.1.3).

#### 2.1.1 Legal bases

Like the former foreign trade statistics, intra-Community trade statistics are largely based on the EC regulations in force while national provisions are required as a basis for the small scope conceded to the individual countries. The first and main EC legal basis for producing intra-Community trade statistics is the above-mentioned Basic Regulation. However, the Threshold Regulation, the Information Media Regulation and the Implementing Regulation to the Basic Regulation which were cited under 1 (General survey) also constitute important EC legal bases for compiling intra-Community trade statistics.

#### 2.1.2 Linkage with VAT

A basic element of Intrastat and hence a feature of the production of intra-Community trade statistics is the integration of fiscal administrations into the work performed (Art. 10 of the Basic Regulation). This principle has been observed by the Federal Statistical Office, too. In the beginning, the German fiscal administration co-operated in establishing a business register including all businesses engaged in EC trade. Throughout the year 1992, businesses were required to indicate dispatches to and arrivals from other EC member states in their monthly or quarterly advance VAT returns. The businesses engaged in EC trade were reported to the Federal Statistical Office at monthly intervals. At the end of 1992, the register comprised approximately 230,000 businesses. However, only those businesses whose EC trade was above the thresholds specified (see 2.2.3) have been included in intra-Community trade statistics.

Since 1993, the fiscal administration has provided the Federal Statistical Office with quarterly data regarding the businesses engaged in EC trade. These data are again based on the revised monthly or quarterly advance VAT returns in which since 1993, the businesses have had to indicate their totals of intra-Community deliveries (dispatches) and intra-Community acquisitions (arrivals). The Federal Statistical Office has been supplied with the addresses of the above businesses and the trade data reported to the fiscal administration. This information serves above all to verify the data stored on the group of respondents for intra-Community trade statistics and, if necessary, to complete this group. Besides the data may be used by the Federal Statistical Office to check the plausibility of the statistical information submitted.

4) Commission Regulation (EEC) No 2256/92 of 31 July 1992 on the statistical thresholds for statistics on trade between Member States (OJ No L 219, 4.8.1992, p. 40).

5) Commission Regulation (EEC) No 3590/92 of 11 December 1992 concerning the statistical information media for statistics on trade between Member States (OJ No L 364, 12.12.1992, p. 32).

6) Law on Statistics on Trade in Goods of 1 May 1957 (BGBl. I, p. 413), amended by Article 9 of the Law of 14 March 1980 (BGBl. I, p. 294).

7) Ordinance for the Implementation of the Law on Statistics on Trade in Goods as published on 18 December 1992 (BGBl. I, p. 2338).

In organizational terms, the work of the fiscal administration is integrated into the work of the statistical authority via VAT codes which are part of the auxiliary variables used for the purposes of intra-Community trade statistics. Unfortunately, the number of digits and the structure of German VAT codes differ between the individual Länder (federal states). Some Länder have nine-, ten- or even eleven-digit taxation codes, two or three digits usually forming the codes of the local tax offices. In Bavaria and Berlin, however, the local tax offices have internal codes only so that the taxation codes known to the parties responsible for providing information consist of not more than eight digits. The Land as such cannot be identified by the VAT code. The fact that the Länder insisted on individual taxation codes and structures also with regard to federal taxes caused considerable delays and problems in establishing the register and will continue to impose an additional burden particularly on the parties responsible for providing information. Besides, the Federal Revenue Administration and the Federal Statistical Office have to make a great effort to produce taxation codes harmonized for the whole Federation from the Länder taxation codes in order to ensure a proper compilation of intra-Community trade statistics as a central component of statistics.

Very often the VAT code used by the statistical authority in co-operating with the fiscal administration is mixed up with the VAT identification number assigned by the Federal Tax Agency at Saarlouis. The latter number, however, serves taxation control purposes only. Statistical bodies are interested neither in the number nor the quarterly data to be reported under this number to the Federal Tax Agency.

### **2.1.3 Application of sophisticated information technology**

The Community authorities very early recognized that the production of intra-Community trade statistics can serve as an appropriate pilot project to integrate highly sophisticated information technology into the work of authorities supplying, processing or using information. The past few years characterized by a continuous advancement of information technology have seen an increasing preparedness of administrations, trade and industry to apply this technology. For the above reasons, considerations of this kind were incorporated into the preparatory work for intra-Community trade statistics at a very early stage. IDEP<sup>8)</sup> stands for the effort to supply businesses responsible for providing information with a PC software allowing them to store the data obtained successively on a monthly disk to be submitted to the Federal Statistical Office by the deadline specified. This software running on all personal computers equipped with the MS-DOS operating system is EC standardized. It is user-friendly, incorporates a user interface and mask, and numerous control functions preventing the transmission of invalid codes right from the start. The PC software will be further developed by the Community authorities to facilitate an uncomplicated integration into existing mainframe systems. This would make the businesses' manual entry of statistical data via monitors unnecessary.

Projects of data transmission include STADIUM, STATEL and IDA<sup>9)</sup> whose aims are to extend remote data transmission and to link producers and users of intra-Community trade statistics by a network. The obvious advantages of these developments are a considerable acceleration of data transmission and shortening of processing periods.

In addition, machine-readability of the forms for intra-Community trade statistics is part of the planned computer-assisted statistics system. In view of the 800,000 forms for German intra-Community trade statistics received every month, the easing of the load of data entry the Federal Statistical Office expects from machine-readability is considerable.

Apart from the European endeavour to make better use of highly sophisticated technology during the stages of collecting, processing and presenting intra-Community trade statistics, the Federal Statistical Office has intensified its effort to rationalize particularly the processing work by applying adequate equipment.

## **2.2 Concept**

As, despite all apparent and actual correspondence with the conventional foreign trade statistics, intra-Community trade statistics constitute an independent system, the details of its concept will be discussed in the following.

### **2.2.1 Subject-matter of intra-Community trade statistics, and statistical territory**

Intra-Community trade statistics cover the trade in Community goods and, under certain conditions, also non-Community goods between EC member states. In this context, it does not make any difference whether the goods exchanged are moved from one member state directly to another or temporarily pass the EC external borders (e.g. goods moved from Germany to Italy via Austria).

Community goods include

- goods entirely obtained or produced in the EC statistical territory
- goods from outside the EC statistical territory having been released for free EC circulation.

8) Intrastat Data Entry Program.

9) STADIUM - Statistical Data Interchange Universal Monitor; STATEL - Statistiques Télétransmission; IDA - Interchange of Data between Administrations.

Non-Community goods covered by intra-Community trade statistics are

- goods subject to inward processing arrangements and, in the case of dispatch, routed to another member state after processing or, in the case of arrival, received from another member state before processing
- goods subject to processing under customs control and, in the case of dispatch, routed to another member state after processing under customs control or, in the case of arrival, received from another member state before processing under customs control.

The Community's statistical territory is defined by customs-based territorial delineation rather than political or geographical borders. Consequently, all trading of goods between states within the customs territory of the European Communities will be covered by intra-Community trade statistics.

### 2.2.2 Commodity classifications

The data of intra-Community trade statistics are collected and processed in a breakdown corresponding to the eight-digit Combined Nomenclature of the European Communities (CN). In addition, the data are processed and published by commodity groups and subgroups of the Food industry and general trade and industry (EGW), and of the Standard International Trade Classification (SITC).

The CN is based on the six-digit Harmonized Commodity Description and Coding System (HS) of the Customs Cooperation Council (CCC).

The three-digit EGW is the oldest commodity classification used in German foreign trade statistics. It came into force in 1936 and since then has been used in an almost unrevised form. It hence is an important basis for compiling long-term series of foreign trade statistics. For this reason the EGW, though undoubtedly needing revision and adaptation to modern technological and economic developments, has not been modified yet. Despite this all, a revision will be required in the next few years. Hopefully, the EGW Rev.1 can be interlinked with the original in a way allowing the continuation of long-term series to a justifiable extent.

Until 1988 when the HS was introduced, the five-digit SITC, Rev. 4 of 1986 had been the only foreign trade classification on the basis of which worldwide comparisons of the results of foreign trade statistics could be made. With the existence of the HS, the importance of the SITC will continuously lessen in the next few years. However, as long as – usually for technical reasons – the HS cannot yet serve as the underlying classification for data collection and presentation in many countries particularly of the Third World, the SITC will for several years have to continue to fulfil its task as the only commodity classification for foreign trade statistics applied in all countries of the world<sup>10</sup>.

In its Chapters 98 – Complete industrial plants, and 99 – List of various commodities, the CN used in Germany still contains national elements which the Community authorities will continue to concede to the member states. For Chapter 98, the Federal Statistical Office calls for a more detailed breakdown of the uses of complete industrial plants at the 8-digit level. To define the purpose for instance as energy management does not meet the requirements at national level. Here, it is also of interest whether the industrial plant concerned will be used in mining, the production and distribution of electricity or the production and potential distribution of other energy carriers. Chapter 99 has an exclusively national background. Upon approval by the Federal Statistical Office, the parties responsible for providing information may use the items specified in this chapter to facilitate declaration matters, provided the batch dispatched or arriving comprises a large variety of commodities of small individual values which would make separate declaration unreasonable. The national statistical institutes will probably continue to use this scope conceded to them to different extents, which might slightly hamper the achievement of the harmonization goals in foreign trade statistics though.

### 2.2.3 Obligation to provide information and group of respondents

As a general rule, all natural and legal persons engaged in the trading of goods between member states are responsible for providing information (Art. 8 of the Basic Regulation). The cases in which the obligation to provide information will lead to an obligation to submit statistical declarations for the purposes of intra-Community trade statistics are laid down in Art. 20 of the Basic Regulation. In accordance with this provision, the obligation to submit statistical declarations is limited to persons who are liable to pay taxes under the national VAT laws. Hence, private individuals are mainly exempted from this obligation. Under certain conditions, however, small entrepreneurs and farmers subject to taxation at a flat rate, both of whom are exempted from submitting VAT returns, will not be obliged to provide information for the purposes of intra-Community trade statistics, either. As for small entrepreneurs, the maximum amount of the annual total turnover of a business (exemption threshold) laid down in the national VAT law concerned is decisive. This exemption threshold has been DM 25,000 in Germany.

In addition, there is a factual exemption. All businesses whose annual turnover is above the exemption threshold, but whose scope of dispatches to other EC countries or scope of arrivals from other EC countries in the year before

10) For further details of commodity classifications see "Systematiken in der Außenhandelsstatistik 1990" subject-matter series 7, ser. S. 6 of the Federal Statistical Office.

did at the same time not exceed a defined level (assimilation threshold of dispatches and assimilation threshold of arrivals, respectively) are not required to submit a declaration for the purposes of intra-Community trade statistics, either (Art. 28, para. 4 of the Basic Regulation). However, the advance VAT returns of these businesses provide rough information about their EC trade, though the data indicated are broken down neither by commodities nor partner countries. Each member state defines its own assimilation thresholds in correspondence with the Threshold Regulation and its stipulation to minimize the loss of quality in compiling statistics while at the same time aiming at a maximum reduction of the burden on the parties responsible for providing information (whereas of the Threshold Regulation). The German assimilation thresholds of dispatches and arrivals are fixed at DM 200,000 (about 100,000 ECU) each.

Consequently, a business will be required to declare all dispatches to other EC countries if its dispatch total exceeded the assimilation threshold of dispatches in the previous year. It will not have to provide data on arrivals if they were below the assimilation threshold of arrivals in the preceding year.

In some member states the assimilation thresholds of dispatches and arrivals differ, in others the assimilation thresholds are higher or lower than in Germany.

Member state	Dispatch	Arrival
	in 1,000 ECU	
Belgium .....	101	101
Denmark .....	102	64
France .....	36	36
Greece .....	30	20
Great Britain and Northern Ireland .....	186	186
Ireland .....	651	130
Italy .....	97	97
Luxembourg .....	36	36
Netherlands .....	77	77
Portugal .....	96	45
Spain .....	30	27

The Basic Regulation permits a further division of the businesses whose EC trade is above the assimilation threshold. Businesses whose EC trade (considered each for dispatches and arrivals) remains below a threshold of DM 200,000 (simplification threshold) will have to submit a simplified declaration only. The statistical information to be provided is limited to the value of the goods moved, and the member state of destination (for dispatches) or the member state of consignment (for arrivals) (Art. 28, para. 5 of the Basic Regulation). This simplified declaration procedure does not apply to Germany where the assimilation and simplification thresholds coincide.

Transactions free of payment, too, have to be considered at their estimated value in determining the amount of dispatches to and arrivals from other EC member states during the preceding year, which the obligation to submit a declaration depends on. The price which, under conditions of free competition, would presumably have been agreed between a mutually independent buyer and seller may serve as a basis for estimating the value of a commodity.

If deliveries against payment between interlinked contracting parties are executed at considerably reduced prices, the latter will have to be adjusted to the market prices in the aforementioned way.

#### 2.2.4 Frequency

Intra-Community trade statistics are compiled at monthly intervals. They cover all dispatches to and arrivals from other EC member states to be reported for the reference period.

#### 2.2.5 Data supply

In principle, the parties responsible for providing information have to submit their data directly to the Federal Statistical Office. The declarations must be dispatched on the fifth working day after the end of the reference month at the latest. Keeping the deadline mentioned, the above parties may also submit their declarations to a customs office from where they will be passed on to the Federal Statistical Office.

However, the data may also be supplied at shorter intervals (weekly or every ten days), which will ensure an uninterrupted and hence shorter information processing procedure at the Federal Statistical Office. In the declarations

submitted, transactions which are identical with regard to the member state of destination, Land (federal state) of origin, nature of the transaction, mode of transport, port or airport of loading, commodity code and statistical procedure (for dispatch), or member state of consignment, Land (federal state) of destination, nature of the transaction, mode of transport, port or airport of unloading, commodity code, country of origin and statistical procedure (for arrival) may be combined. However, separate declarations may be submitted as well.

### 2.2.6 Statistical information media

The EC Information Media Regulation specifies the media to be used for supplying statistical information. These are first of all forms of which separate versions are available for dispatches and arrivals. A point in preparing the forms was to avoid notable deviations from the size and design of the Single Administrative Document. This document, a copy of which has served statistical purposes, is still used for settling the customs formalities of the cross-border trading of goods with third countries. However, the colour of the forms for intra-Community trade statistics differs from that of the Single Administrative Document. Instead of green, they are reddish as this colour has proved to be adequate for machine-reading.

The Information Media Regulation also provides for the use of magnetic media (disks, magnetic tapes and magnetic tape cassettes). The transmission of intra-Community trade data on magnetic media has been strongly supported by both the Community authorities and the Federal Statistical Office. With the aim of making the storing of statistical information on disks easier and ensure an uninterrupted process of work, the Community authorities in the first half of 1993 intended to supply the businesses responsible for providing information with special software free of charge. A potential integration of the program into larger computer systems is planned for a later stage of development.

### 2.2.7 Variables

The variables used are based on the functions of foreign trade statistics. Most important are the amounts and values of the commodities routed to or acquired from other EC member states in line with the CN breakdown including about 10,000 eight-digit items. The general unit of measurement is kilogram. Besides, the amounts of a large number of commodities are specified in other units of measurement, e.g. pianos in pieces, platinum in grams, fabric in square metres, ships in gross registered tons, gloves in pairs and wine in litres.

The values inquired are the statistical value and the invoiced amount. The statistical value or value free at border will be used, on the one hand, for the purposes of national accounts and, on the other, for balance-of-payments computations by the Deutsche Bundesbank. As mentioned above, the invoiced amount will be required for comparison with the values stated by businesses in their advance VAT returns.

Usually, the statistical value is a fictitious quantity derived from the invoiced amount. The statistical value and invoiced amount only coincide for dispatches e.g. on f.o.b. basis or arrivals on c.i.f. basis. Otherwise, the transport and insurance costs relating to that part of the journey which takes place on domestic territory will have to be fictitiously added to the invoiced amount (for ex works dispatches) or the costs relating to that part of the journey which takes place on foreign territory be fictitiously deducted from the invoiced amount (for free domicile dispatches). As regards arrivals, the computation is just reverse. For simplification purposes, mathematical factors may be used which, of course, have to take into consideration the different volumes and weights of commodities, the partner country in question and the means of transport used. The factors may be kept unchanged as long as freight rates and insurance premiums remain unchanged.

An equally important piece of information includes the member state of destination (for dispatches), and the member state of consignment and the country of origin (for arrivals). In addition, the Land (federal state) of origin (for dispatches) and the Land (federal state) of destination (for arrivals) are inquired for regional analyses.

The nature of transaction and the statistical procedure are variables which are important for the following computations and analyses. In particular the Deutsche Bundesbank needs to know for its computations whether the transaction behind a given dispatch or arrival is against or free of payment, whether it is a final purchase/sale, a barter or a leasing transaction, and whether the dispatch or arrival concerned is connected with any processing activity or repair work. As far as the statistical procedure is concerned, the following three types of transactions are coded separately: final dispatch/arrival, redispach after processing/temporary arrival for processing, temporary dispatch for processing/rearrival after processing.

The active means of transport with which the goods have left Germany or entered the country is inquired for transportation analyses. The active means of transport is that with which the goods concerned are moved across the border. If, for instance, goods are loaded onto a truck which in turn will be transported on a cargo ship from Bremen to Lisbon, the seagoing vessel will be regarded as the active means of transport.

In sea and air transport, the port of loading or unloading is inquired, too.

## Foreign-Language Publications

### English

#### **Survey of German Federal Statistics**

The present edition primarily comprises updated summary contributions on the organization of federal statistics, their legal foundations, tasks and objectives as well as their implementation, on public relations work and the cooperation with international organizations.

Published at irregular intervals.

#### **Federal Statistics – Users and Purposes \*)**

Non-recurrent publication.

#### **Zahlenkompaß – Key Data on Germany**

This brochure presents a selection of major benchmark figures from all subject fields along with comparative figures for back years.

Annual publication.

#### **Statistics in the Democratic Process at the End of the 20th Century**

Anniversary publication for the 40th Plenary Session of the Conference of European Statisticians (CES).

Non-recurrent publication.

#### **Foreign Trade according to the Standard International Trade Classification (SITC-Rev. 3) – Special Trade**

This publication comprises the foreign trade figures according to the SITC-Rev. 3 with data by countries of origin/destination.

Annual publication.

#### **Studies on Statistics**

Published at irregular intervals. Issues which are still available:

No.	Title
23	The German Microcensus
37	Surveys and Registers
39	Concentration Statistics
40	Kind-of-Activity Units in Mining and Manufacturing
41	Dissemination of Statistical Information
42	Indices of Orders Received and Orders on Hand
43	Calendar Adjustment of Time Series
44	Information Campaign for the Population Census 1987

### French

#### **Aperçu de la statistique fédérale allemande**

Cette édition abrégée de 1976 a été préparée surtout à l'intention des utilisateurs désireux de se renseigner sur les grandes lignes des activités statistiques plutôt que sur tous les détails. Elle contient donc de la version intégrale l'ensemble des textes décrivant les buts, les bases, les méthodes et les résultats de la statistique fédérale.

Publié à intervalles irréguliers.

#### **Boussole des chiffres 1991**

Cette brochure comprend une sélection des principaux chiffres de référence de tous les domaines ainsi que des chiffres comparatifs pour des années antérieures.

#### **La France et l'Allemagne en bref \*)**

Brochure bilingue de 1994 regroupant les principales données sur la société et l'économie de chaque pays.

### Russian

#### **Introduction of Federal Statistics in the New Federal Länder**

Publication series "Forum of Federal Statistics", Volume 23.

Non-recurrent publication.

### Spanish

#### **Guía Estadística 1991**

Este folleto contiene una selección de datos importantes en todos los campos así como los datos comparativos de los años anteriores.

### Trilingual

#### **List of Major International Abbreviations (German – English – French)**

Published at irregular intervals (latest edition 1993).

The publications of the Federal Statistical Office may be obtained direct from the publishers Metzler-Poeschel Verlag, Delivery: Hermann Leins GmbH & Co. KG, Postfach 11 52, D-72125 Kusterdingen. A detailed list of publications may be ordered from the Federal Statistical Office.

\*) To be obtained direct from the Federal Statistical Office.