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## ***The role of the Business Register in reforming German Business Statistics***

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## ***Chapter 1. Objectives and contents of the project “German Business Statistics 2011”***

### ***Background***

The economic, social and technological developments assign new tasks to German business statistics. At the same time, the general political framework for German official statistics has changed a lot in the last few years. Moreover, policy makers require from official statistics to act according to their initiatives of reducing bureaucracy.

With the project “German Business Statistics 2011” (in other words: reforming German business statistics) German official statistics responds to the challenges which are made on modern business statistics. Additionally, the rising requirements involve continuously decreasing budgets and shrinking resources in the statistical offices of Germany. On the other hand the technological development provides official statistics with new and more efficient ways of data processing.

Within this project, the present system of business statistics will be subject to a fundamental review. The project will summarize the activities that are necessary to adapt the system of business statistics to the current requirements.

To realise this, three main steps are planned:

1. description of the objectives and basics of a harmonised system of business statistics (“German Business Statistics 2011”)
2. target/actual comparison of infrastructure, programs and methods with regard to the objectives of the reform
3. development of a detailed catalogue of measures for the different fields of German business statistics

A working group of German official statistics currently deals with the first step, which is why this chapter goes into this question. It describes the objectives, guidelines, maxims and concepts, the general direction in which the system will be developed. Moreover it describes criteria which can verify in how far the objectives of the reform will be fulfilled.

### ***Objective and contents***

The objective of reforming German business statistics is to develop a coherent system of business statistics which fulfils the data requirements of the users and which guarantees that

results are disposable on time and on a sufficient functional and regional level. Data gaps which still exist will be closed and data quality will be maintained or even improved where possible. At the same time, the reform will consider efficiency in data production, political requirements concerning the reduction of bureaucracy and requirements to unburden enterprises from statistical information duties.

One of the main objectives in reforming German business statistics is the development of a **coherent** system of business statistics over all economic activities.

The general guidelines in developing this system are:

- harmonisation of the programs, production processes and methods (coherent system),
- output orientation of the system of business statistics,
- business registers of high quality as a backbone of business statistics,
- obligation to more efficiency in production processes; this implies a mix of sources as a general concept of data collection (this means broad access to and influence in administrative data as well as primary data collection only if existing data are not sufficient for statistical purposes),
- macro instead of micro plausibility checks of data (as a consequence of output orientation),
- data imputation (and other approximations) as substitutes of primary information, as far as they deliver consistent results,
- use of efficient data registration methods (mix of methods),
- enterprise data availability as an orientation when delineating survey characteristics and
- centralised data keeping of micro (single record) data as precondition for flexible use of data.

As a matter of fact, all these guidelines have to be translated into corresponding concepts in order to concretise the reforming steps. This paper will focus on just one of the points listed above: the German business register as the backbone of German business statistics.

The business register is **the** central item and thus the essential structural element for the production process of business statistics. It contains the total business population as basis for the determination of reporting units. It forms the basis for standardised sampling and extrapolation methods, it can be used as an organisation and control instrument for all business surveys and for the structural analysis of the economy. Given these important tasks of the business register, reforming business statistics by the year 2011 can only succeed with a functionable business register of high quality being able to fulfil all the above the requirements.

## Chapter 2 New developments of the business register in Germany

### *The German business register*

The Business Register in Germany is organised according to the federal structure of Germany. While the statistical offices of the Länder are responsible for the maintenance of the Business Register, the Federal Statistical Office of Germany (Destatis) provides the methodological framework and the co-ordination.

Up to now, each of the 16 statistical offices has a register of its own, the methodological framework and the technical platform of the 16 registers are identical. There are standard programs and formats to integrate several administrative data files into the Business Register. Administrative data files are provided by the tax authorities, the Federal Employment Agency, the Chambers of Commerce and Industry, the Chambers of Crafts and the Federal Finance Office. At the end of 2006, the Business Register contained more than 3.4 million active enterprises and 3.6 million active local units (for reference year 2004).

Improvement of the quality and up-to-dateness of the Business Register are the basic prerequisites to obtain better support of register based business surveys. For that purpose, several measures and developments are taken in the field of the German Business Register, which are described in this chapter.

### *New initiative on Business Register quality improvement*

Within German official statistics, a new initiative has been launched to improve the quality and up-to-dateness of the Business Register and thus to obtain better support of register based business statistics.

The aims of this large-scale quality initiative are the improvement of relationships between units (mainly between enterprises and local units, but also the implementation of consistent VAT groups), the quality improvement of activity codes in co-ordination with the NACE Rev. 2 introduction, and the implementation of a system of indicators measuring register quality in different respects. Moreover, the initiative aims at improving Business Register address quality in terms of content and format (also with regard to geocoding the Business Register – see below). The described measures also serve to prepare the migration of units into the new Business Register system (see below).

### *Business Register guidelines for data collections*

To improve the co-operation between the Business Register section and the business statistics sections, comprehensive guidelines were released. They contain recommendations concerning the sampling procedure, the reflux of information from business surveys to the Business Register and the split-up of responsibilities between Business Register section and business statistics sections. The guidelines will contribute to optimising the Business Register as the central steering instrument for all sets of business statistics which represents populations as completely, correctly and up-to-date as possible. Additionally, all reporting units of the different business surveys shall be flagged in the Business Register. This allows both a better support of surveys and the calculation of the burden on businesses (a study in the year 2006 showed that only 15% of the enterprises in Germany are involved in surveys of the statistical offices).

### *Introduction NACE Rev. 2*

With the introduction of the NACE Rev. 2, the previous activity classification will be replaced. Due to its central position within the system of business statistics, a timely transition to the new classification is of particular importance. All arrangements have to be made to guarantee that the units of the Business Register will be transcoded by the beginning of the year 2008. During a transition period, the old and the new activity code have to be stored in the Business Register.

Presumably the activity codes of more than half of the units of the Business Register can be transcoded automatically. For the remaining 1.5 million register units, the activity code cannot be transcoded unambiguously. For those units, the correct classification has to be assured. This will be the starting point for continuous rolling activity code checkings of units which are not part of a survey. In this way, the transition to the new classification will at the same time contribute to improving the quality of the Business Register.

### *Updating the Business Register at intervals of less than a year*

Another important element of Business Register quality improvement is the consistent use of all possibilities to increase up-to-dateness of the Business Register without losing accuracy.

For that purpose, first concepts have been developed to update the Business Register at intervals of less than a year by administrative data becoming available during the fiscal year. These data can reduce the existing time-lag with regard to the integration of new units into the Business Register.

### *Opening up a new data source: the electronic trade register*

While the trade registers in Germany are maintained decentrally, a central electronic trade register for Germany was introduced at the beginning of the year 2007. The law on electronic trade registers provides for data deliveries of the electronic trade register to the statistical offices and will contribute to improving the quality and up-to-dateness of the Business Register. Beside up-to-dateness, the main advantage of trade register data is authentic information. It is planned to use this additional data source to maintain the Business Register by an automated procedure from the year 2008 on.

### *Plans of geocoding the Business Register*

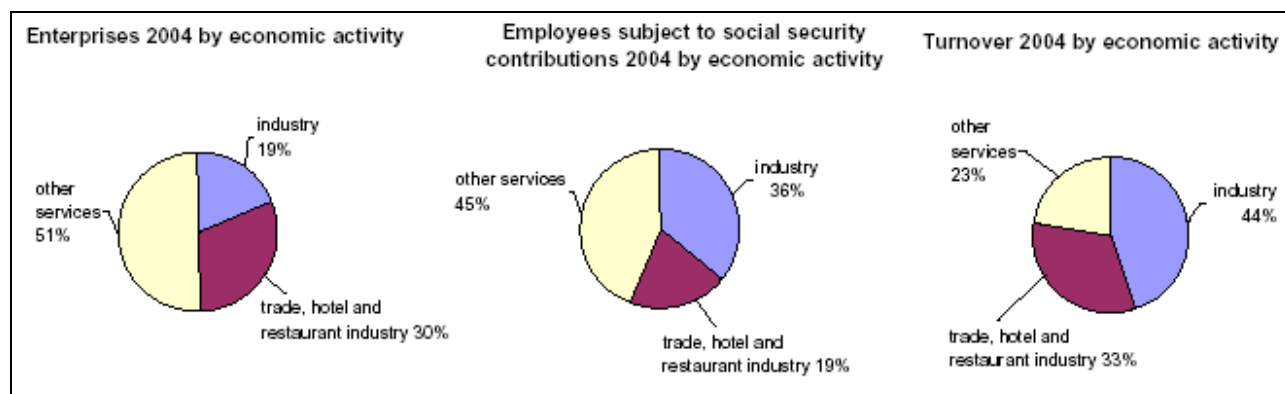
A feasibility study analysing the geocoding of the Business Register was compiled, the result being that there is a need to improve the quality of the addresses of the business locations. This would involve manual treatment which would not be negligible. It has not yet been decided if this investment will be made immediately or in the frame of the new Business Register system.

### *Dissemination of data from the Business Register*

In the frame of the project "Business Statistics 2011" one of the important objectives is the replacement of censuses by the business register. The census of establishments which was conducted in 1987 for the last time, is now replaced by countings from the business register. Currently Destatis investigates the replacement of the regular crafts census by tabulations based on the Business Register.

Structural data from the Business Register have been published since reference year 2001. The following charts show how the enterprises, employees and turnover are distributed among the different economic sections in Germany.

**FIGURE 1. Number of enterprises 2004, number of employees subject to social security contributions 2004 and turnover 2004, by economic activity**



#### *Integration of enterprise groups into the Business Register*

There is an increasing importance of enterprise groups on national and international level. Currently, the Business Register contains data on enterprises (legal units) and local units in Germany, but no links or affiliations to enterprise groups. The affiliation of legal units to enterprise groups can be distinguished from control and ownership relations. As corresponding data are not available from administrative sources, the statistical offices access data of commercial data providers. Based on annual deliveries of information on ownership and links of control, a database on enterprise groups has been built up as a satellite register that is linked to the Business Register.

#### *Integration of NACE sections A, B and L into the Business Register*

The revised EU register regulation provides for the integration of agriculture, forestry, fishing and public administration into the business register after a transitional period of a maximum of five years. Up to now, units of these branches are incompletely represented in the German Business Register due to the administrative files used to maintain the Business Register.

#### *Introduction of a new Business Register system*

The statistical offices in Germany are developing a new Business Register system. This Business Register re-design will implement an enlarged unit model in the register (enterprise, local unit and enterprise group as statistical units, as well as legal units and local legal units). Particularly with regard to business statistics 2011, the New Business Register has to support statisticians as a necessary infrastructure for their work. As the current Business Registers are not connected to each other, it is intended to create a single database in physical terms. The development of the new database system is intended to be completed by mid-2008. Concerning the replacement of the current Business Register by the new Business Register system, we expect an introduction phase of about one year.

The following chapter shows the precise role the Business Register will take in the future system of business statistics.

## Chapter 3. From census based to register based business statistics

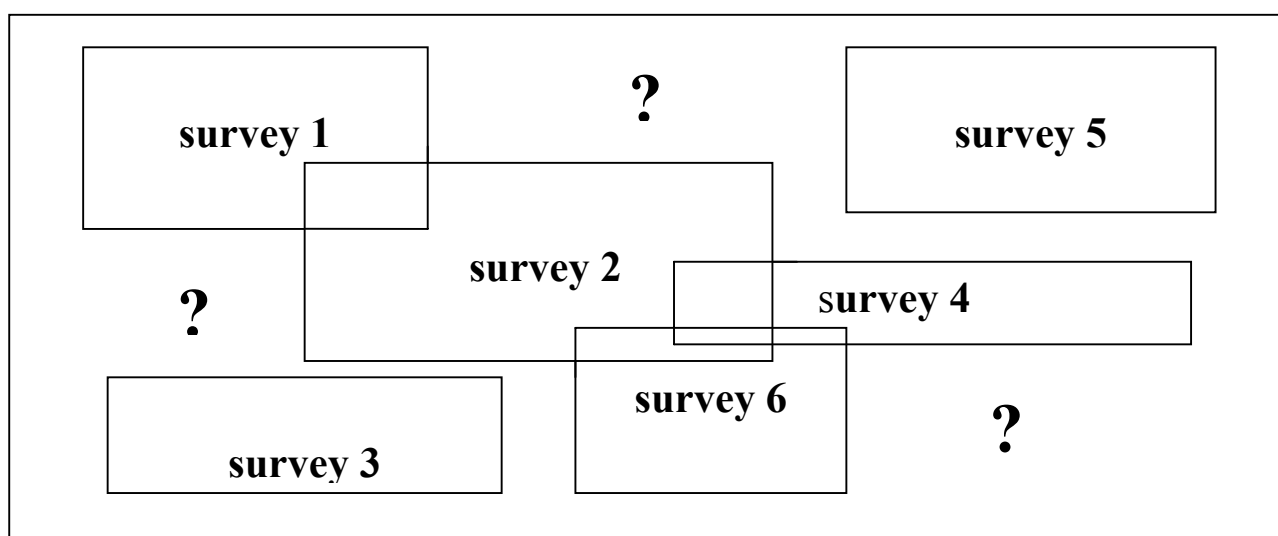
### Chapter 3.1 A new maxim in data collection

Business statistics have been carried out in Germany for the last decades mainly according to the following pattern: The preferred data source used by statisticians is survey data: Variables, definitions, respondents, date and frequency of the data collection can be tailored to the needs of the respective statistics. Results are published as a special glimpse on an economic sector respective a special economic aspect. Besides this predominant work pattern, so called secondary statistics use administrative data to a considerable extent. Variables, definitions, reporting units etc. meet the aims of the respective administration that collects the data (and gives it to statisticians for secondary use). The field of national accounts is the only user who builds a consistent picture of the whole economy using and blending the above mentioned pieces of statistical information.

In the last few years a shift in the balance of the role of primary (survey based) and secondary (administrative) data sources has been initiated. Originally, as a reaction to complaints about the growing burden on respondents of statistical surveys, but meanwhile the reduction of the existing burden is a political goal not only as far as statistics are concerned.

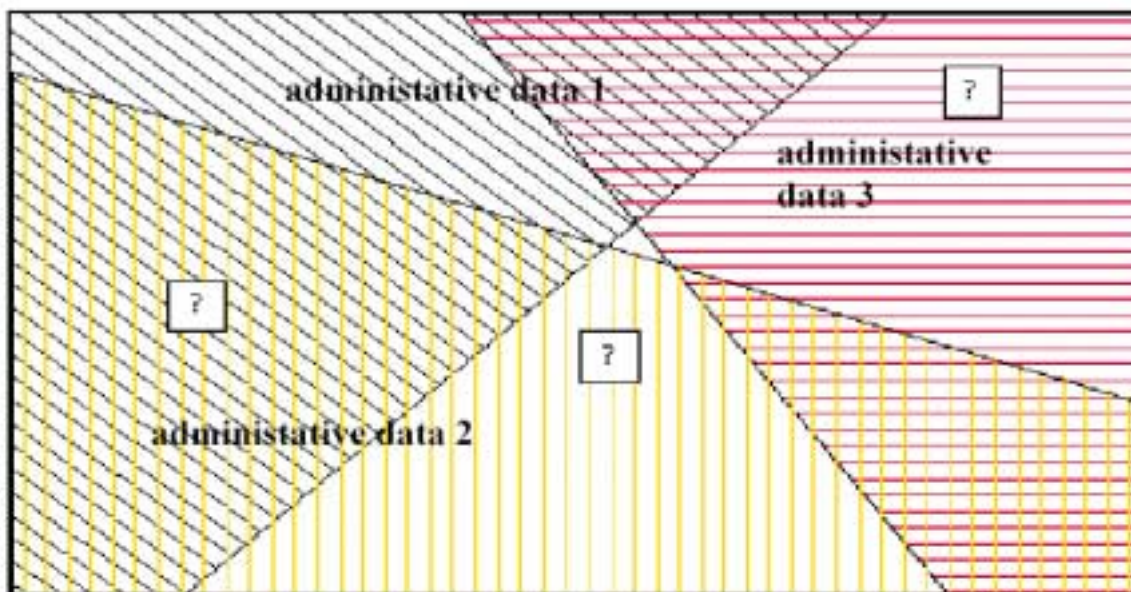
This context gave impetus to new concepts of less-burdening ways to produce statistics. Following examples in the Netherlands, Australia and other countries, an entirely different approach is becoming the new statistical maxim in Germany: According to the new maxim, the starting point for the statistician is the demand for statistical information. While this is not revolutionary in itself, the way to fulfil the demand is indeed remarkably different from the traditional approach: The starting point is administrative data sources, often providing basic information about wide parts of the economy (tax or labour administration). Adjusting the administrative definitions, reporting units etc. to the statistical purpose becomes an integral part of using such data. Additional data sources are to be found and added to the basic information. When all existing sources have been acquired the statisticians may use survey just to fill the remaining gaps.

**FIGURE 2. Present situation of business statistics**



?: white spots filled with administrative data

**FIGURE 3. The new maxim of business statistics**



**?: white spots filled with surveys**

The extension and strengthening of the statistical business register in the next few years will have to focus on the needs of business statistics for a tool to acquire, combine and connect data sources that up to date have co-existed isolated from each other. Some steps that the German statistical business register will have to take on its way to become such a tool will be illustrated in the next sub-chapter.

### ***Chapter 3.2 Aspects of business register work: Turning problems into chances***

Business register work in Germany faces some difficulties that may be more or less similar to the situation in other countries as well. Three of them will be tackled here.

The problems...

- a) Following the general rule of the public service in Germany, and therefore official statistics in general, also statistical registers are run in a decentralized manner. At least once a year the 16 registers of the statistical offices of the Länder (federal states) are merged at the Federal Statistical Office. This so called “federal copy” contains a frozen snapshot of the business population and serves as the basis for analysis and survey design of the Federal Statistical Office (whereas the statistical offices of the Länder run their “living” registers and use these as a basis for analysis and survey design).
- b) The main data sources for updating the Business Register are tax and labour administration data (delivering information on legal or local units), chambers of commerce and statistical surveys. Unfortunately, German administration is lacking a unique identifier. Each administrative body uses its own identifier. Furthermore stability over time of these identifiers is not ensured. As a result, the processing of each delivery of administrative data contains a considerable number of units that have to be matched by – not standardized – names and addresses.
- c) Not all economic surveys are designed and supported by using the statistical business register. Intrastat, environmental statistics, transport statistics, price statistics run their own registers for survey support, since the statistical business register does not contain the relevant

information for survey design of these statistics. Consequently statistical reporting is not documented completely in the statistical business register.

The chances...

The Business Register re-design that is currently being undertaken in Germany will bring considerable progress referring to each of the three aspects mentioned:

a) The New Business Register will be a database in a centralised server architecture. That means all participating statistical offices – at federal and at state level – will communicate as clients of the up-to-date database at any time. The workload to run and maintain the register will further on be shared, the technical running of the database will be borne by just one office and financed by all.

The great advantage for the statistical offices of the Länder is to have (reading) access to the complete database of German businesses. Communication about register units referring to different Länder will be much more easy, up-to-date and efficient. The advantage for the Federal Statistical Office is the online access to the real business register database.

By this, the future business statistics will have at its disposal a nationwide database of enterprises and local units, enterprise groups and legal units in accordance to the new Regulation on Business Registers. It will be used not only to tailor and support surveys, but also to serve as a substitute for censuses and to do further analyses.

b) The new centralised system will facilitate the more frequent updating of the register by administrative data. It is intended to use tax and labour administration data on a monthly basis (compared to annual data at present). This will considerably improve the up-to-dateness of the business register information. What will still remain of course is the lack of a unique administrative identifier of the data sources and the instability of these different administrative identifiers. Consequently, in the New Business Register, too, there will be the necessity for matching by names and addresses. The centralized system offers chances at least to harmonize matching procedures and facilitate work-sharing.

While the unfavourable administrative data “environment” makes the running of the business register more difficult and expensive, one has to recognize and take as an asset, that this forces register personnel to continuously train special skills. By this, business statistics will have at its disposal a helping hand that is skilled to cope with data sources of inconvenient shape, namely lacking identifiers. This will show to be valuable in implementing the new business statistics maxim mentioned above.

c) In the New Business Register more information about the participation of respondents in surveys will be available. The central system will facilitate the processing of such information. This information can be used for many purposes. Firstly, it will be possible to consider existing survey participation when designing new surveys. This will help to distribute burdens more evenly among respondents. Secondly, information available from other surveys may help to avoid new surveys or make them leaner. Thirdly, the combination of existing surveys can be used to generate cross-over analysis. Fourthly, information on micro level from surveys can be combined with administrative data about the same respondents. Fifthly, information about a special variable can be combined from different sources for one statistic. This multi-source running of a statistic is being established in Germany for service statistics at the moment. For the bulk of small enterprises, administrative data are used and combined with survey data which are gathered for the big enterprises.

The New Business Register will contain information not only on participation in surveys, but will also allow to store some information from this survey or specifics about the design of the surveys. This information will be stored in so called “survey satellites” which form an integral part of the Business Register. By the register identification number the information about the surveys is connectable. This will make it much easier for statisticians to mine relevant data for



their purposes. By the register identification number the trace to the full micro data information of all business statistics can easily be followed.

### ***Chapter 3.3 The role of the New Business Register in the Reformed Business Statistics***

As mentioned in the previous sub-section, the New Business Register architecture will allow generating and storing more information than today's register.

Business Register based surveys so far have mainly been those that focussed on statistical units used in the register: enterprises and local units. These are more or less the surveys that gather information asked for structural business statistics and short term statistics according to European regulations. Surveys that tackle special aspects of the enterprises or special elements of economic behaviour (functional statistics) are a more complex matter, at least from the register's perspective. To identify the set of reporting units surveys like Intrastat, environmental statistics, transport statistics, price statistics need information not contained in the Business Register. Additionally, the relevant units of these statistics (often something like a kind-of-activity unit, branch, etc.) are not contained in the register. So, different information sources have to be explored in order to build up an adequate survey frame by those statistics. In practice this leads to the situation that statistical reporting in these fields is not well documented in the statistical business register. For several reasons it is a strategic aim to change this in the future.

a) Firstly, information of the mentioned surveys can be combined with information on enterprises or local units being held in the Business Register. Since the register contains only a small range of relevant economic variables, it may be even more interesting to combine the variables with variables of other surveys – ideally of the same reporting unit – to build up broader sets of variables for analyses. To be able to do this, the reporting units of all statistical surveys should yield the identification number of the register. If special units (as a branch) are surveyed, the corresponding units in the register (e.g. legal unit) should be identified and their identifier should be added to the reporting unit of the functional survey.

The mutual benefit for the statistics division and the register division will be: The statistical division helps to identify the register units that correspond to the observation units of their surveys and thereby contributes to the informational infrastructure contained in the register. In return, the statistical division has access to additional information – either in the register itself or in the bulk of other statistics – to be used for additional analysis in the field the statistical division is dealing with. Even for statistics for which the register is of no use as far as sample design is concerned, the register can be highly valuable for analysis.

b) Secondly, not only the observation units of the samples should be kept in the register, but the whole population of the surveys from which the samples are taken. With this information, expansion factors not only for the sample of one special statistics can be generated, but for all the data that are generated by data combination of the sample with other micro data. The more this is practised, the more information about a variety of aspects will be added to the units kept in the register. Multiple marking in the register will serve as a basic tool for ad-hoc-analyses that can considerably enrich the information supply of official statistics and allows to respond much more flexibly to user needs.

The mutual benefits mentioned in a) are in principle the same again. The scope indeed will be much broader. Having in mind that sample sizes are under pressure and that statisticians are urged to sacrifice stability of reporting units for more sample rotation, combination and cross-analyses of sample data can sufficiently be employed only if the populations are known.

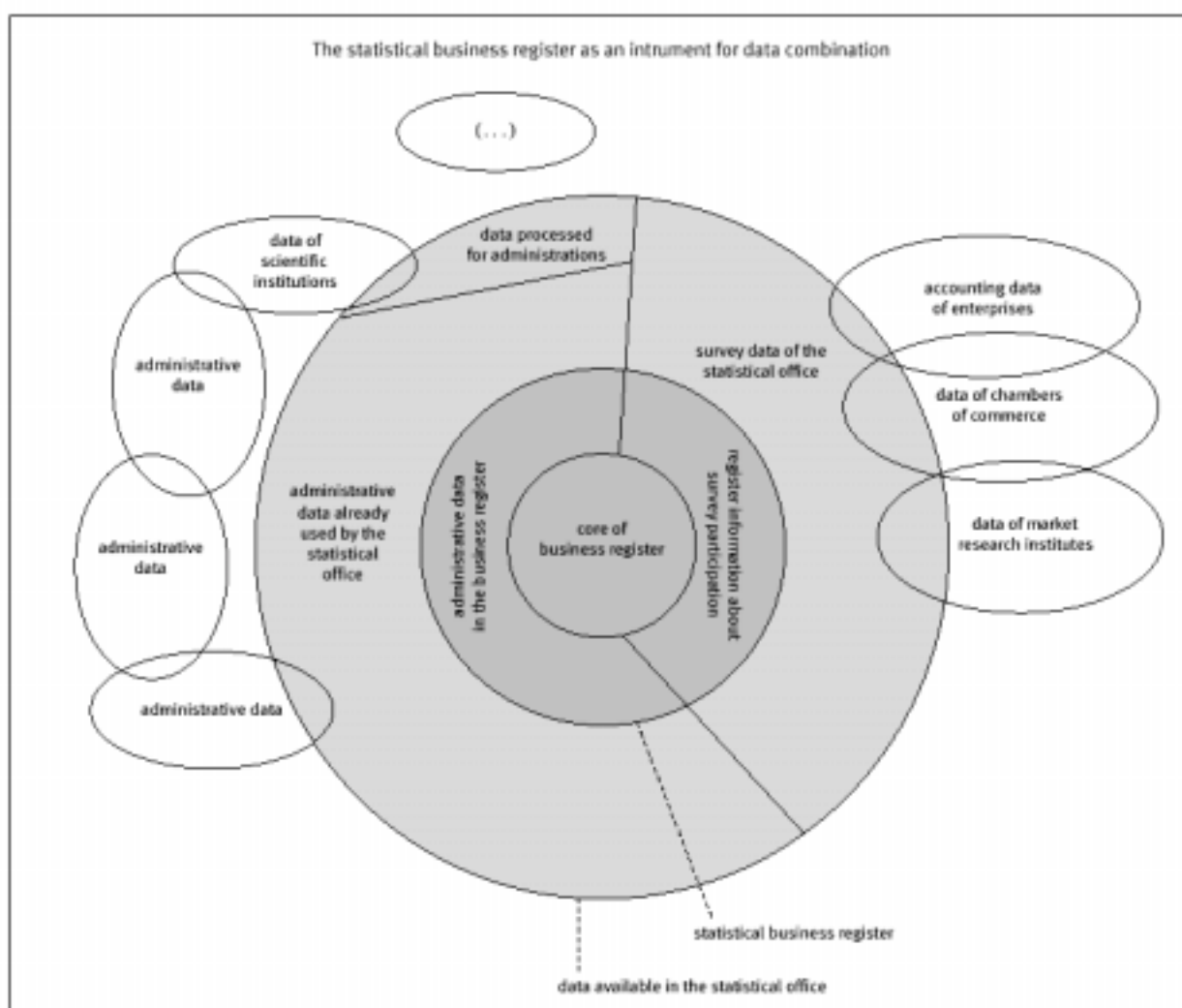
c) Thirdly, multiple marking not only allows to connect and combine information gained from (sample) surveys, but also to combine such information with data from administrative sources that may already be available in the statistical office. To use administrative data often has the advantage that sample size is not the limiting factor since the data results from other purposes and therefore do not imply statistical burden. Again, to exploit those “full scale data”, full scale

marking in the register of the relevant populations is necessary. The multiple marking again adds to the mutual benefits described in a) and b).

d) Fourthly, markings in the register can serve as junctions for the acquisition of further administrative data sources. Such data of public administration should be exploited as far as statisticians have good knowledge about their existence. Such knowledge is being built up in the Federal Statistical Office in Germany which is presently doing a large scale inventory exercise about information obligations of businesses towards public administration.

Meta data and partly also micro data about information sent by businesses to administrative bodies as one element and the described markings in the register as the other element could in the future provide a good infrastructure for statisticians to work according to the new maxim described in section 3.1. Full exploitation of existing sources would take precedence over the implementation of new surveys. All existing data for a statistical purpose could be detected, qualified and connected for the relevant statistical observation units. An adequate multi-source data design should be the result of such work. Surveys could be tailored to the missing information spots, could be managed by register information and their results be amalgamated with the other information sources.

**FIGURE 4. The statistical business register as an instrument for data collection**



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