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Meeting of Experts on Business Registers

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THE ROLE OF THE BUSINESS REGISTER IN COORDINATING ACCOUNTING AND OTHER ADMINISTRATIVE DATA FOR STATISTICAL USERS

GERMAN BUSINESS REGISTER RE-ENGENEERING: HEADING FOR A TOOL TO ACQUIRE, COMBINE AND CONNECT STATISTICAL DATA SOURCES

Submitted by Federal Statistical Office of Germany

The meeting is organised jointly with the Commission of the European Communities (Eurostat) and the Organisation for Economic Co-operation and Development (OECD)

SUMMARY

The statistical business register in Germany has been built up in the second half of the 1990s following requirements of EU statistical legislation. The Business Register in Germany is organised according to the federal structure of administration in Germany. While the statistical offices of the 16 Länder are responsible for the maintenance of the Business Register, the Federal Statistical Office of Germany (Destatis) provides the methodological framework and co-ordination. Up to now, each of the statistical offices of the Länder has a register of its own, while the methodological framework and the technical platform of the registers are identical.

The economic, social and technological developments assign new tasks to business statistics. At the same time, in Germany the general political framework for official statistics has changed a lot in the last few years. Rising requirements nowadays are contrasted by continuously decreasing budgets and shrinking resources in the statistical offices. 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.

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 a management 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.

I. THE CONCEPTUAL “ENVIRONMENT” OF THE BUSINESS REGISTER

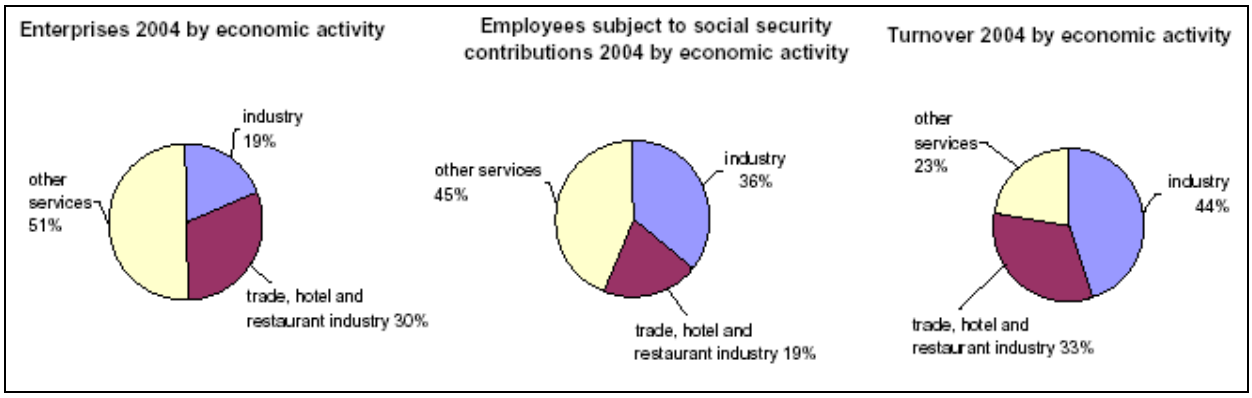
A. A word on today’s Business Register

1. The statistical Business Register in Germany has been built up in the second half of the 1990s following requirements of EU statistical legislation. The Business Register in Germany is organised according to the federal structure of administration in Germany. While the statistical offices of the 16 Länder are responsible for the maintenance of the Business Register, the Federal Statistical Office of Germany (Destatis) provides the methodological framework and co-ordination. Up to now, each of the statistical offices of the Länder has a register of its own, while the methodological framework and the technical platform of the registers are identical.

2. The register has been built up by melting existing registers of the survey departments of the statistical offices and adding information of different administrative sources. For the first time in German public administration, by the statistical Business Register several administrative data files have been integrated in full scale. 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. These data sources, together with information of statistical surveys, serve to update the Business Register on a regular basis. By now, the Business Register contains more than 3.4 million active enterprises and 3.6 million active local units.

3. Since the completeness of the Business Register with respect to the business population meanwhile is archived, the replacement of business censuses by data the Business Register comes into practice. 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.

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



4. At its start, the German Business Register contained data on enterprises (legal units) and local units, but no links or affiliations to enterprise groups. 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.

5. Following the phase of basis construction of the Business Register, recently an initiative has been launched to strengthen quality and up-to-dateness of the Business Register and thus to obtain better support of register based business statistics:

6. To improve co-operation of Business Register and survey departments in the statistical offices, comprehensive guidelines concerning the sampling procedure, the reflux of information from business surveys to the Business Register and the assignment of responsibilities among Business Register section and business statistics sections are being established.

7. Activity code checking becomes a topic by the introduction of the NACE Rev. 2. For presumably 1.5 million register units, the activity code cannot be transcoded unambiguously. This will be the starting point for continuous rolling activity code checkings in the Business Register for units which do not participate in surveys. In this way, the transition to the new classification will at the same time contribute to improving the quality of the Business Register.

8. To increase up-to-dateness of the Business Register without losing accuracy, first concepts have been developed. The short-term aim is to reduce the existing time-lag with regard to the integration of new units into the Business Register. Besides tax and labour administration data, is planned to use the central electronic trade register for Germany which has recently been introduced as an additional data source from the year 2008 on.

9. A feasibility study analysing the geocoding of the Business Register was compiled, the result being that as a prerequisite there is a need to improve the quality of the addresses of the Business Register units.

10. 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 lacking information in the administrative files currently used to maintain the Business Register.

B. Designing statistics' future: The project "German Business Statistics 2011"

11. The economic, social and technological developments assign new tasks to business statistics. At the same time, in Germany the general political framework for official statistics has changed a lot in the last few years. Rising requirements nowadays are contrasted by continuously decreasing budgets and shrinking resources in the statistical offices. Moreover, policy makers require from official statistics to act according to their initiatives of reducing bureaucracy.

12. 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.

13. 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 shall be closed and data quality shall be maintained or even improved where possible. Keywords of the project "German Business Statistics 2011" are harmonisation of the programs, production processes and methods (coherent system), output orientation, Business Registers of high quality as a backbone of business statistics, more efficiency in production processes; mix of sources as a general concept of data collection, macro instead of micro plausibility checks of data, data imputation (and other approximations) as substitutes of primary information, as far as they deliver consistent results, availability of data in enterprises as an orientation when delineating survey characteristics and centralised data keeping of micro (single record) data as precondition for flexible use of data..

14. 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 the role the German Business Register as the backbone of German business statistics.

II. FROM CENSUS BASED TO REGISTER BASED BUSINESS STATISTICS

A. A new maxim in data collection

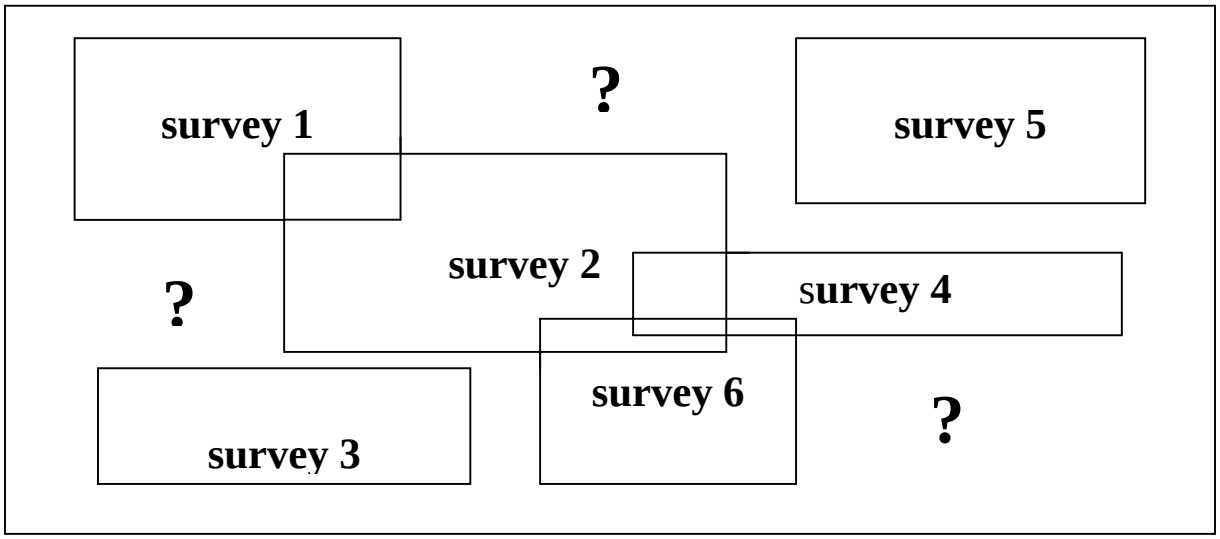
15. Business statistics have been carried out in Germany for the last decades mainly according to the following pattern: The preferred data source used by statisticians is survey data: Variables, definitions, respondents, date and frequency of the data collection can be tailored to the needs of the respective 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.

16. 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.

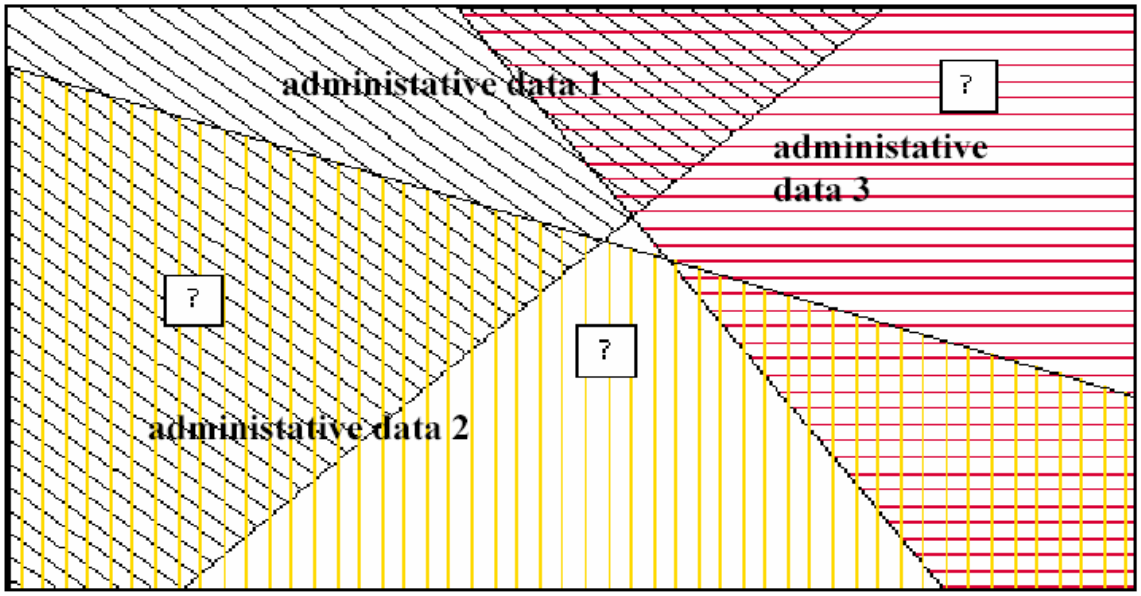
17. This context gave impetus to new concepts of less-burdening ways to produce statistics. Following examples in the Netherlands, Australia and other countries, an entirely different approach is becoming the new statistical maxim in Germany: According to the new maxim, the starting point for the statistician 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.

18. 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.

B. Aspects of Business Register work: Turning problems into chances

19. 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.

(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.

20. 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.

C. The role of the New Business Register in the Reformed Business Statistics

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

22. 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.

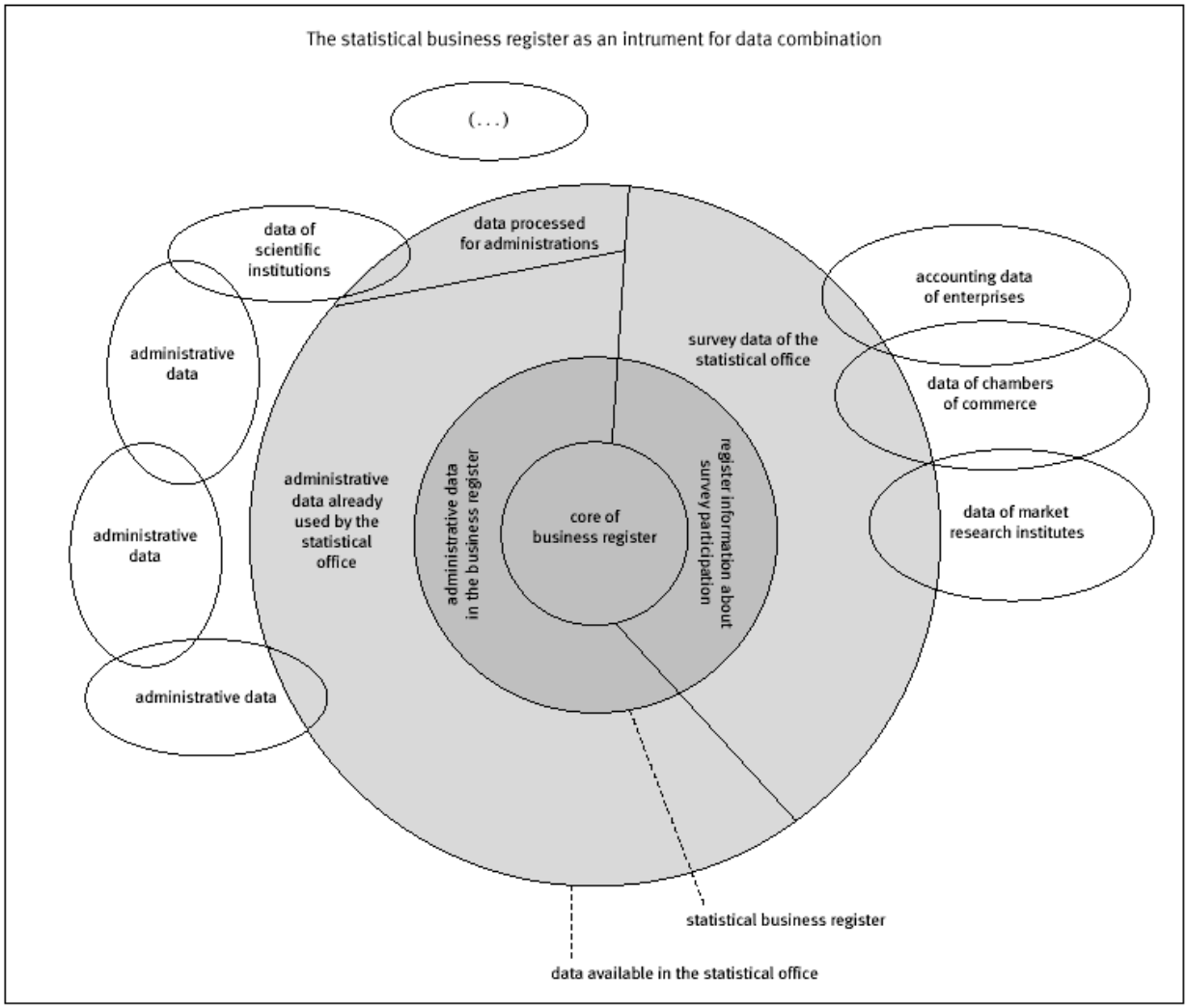
(c) Thirdly, multiple marking not only allows to connect and combine information gained from (sample) surveys, but also to combine such information with data from administrative sources that may already be available in the statistical office. To use administrative data often has the advantage that sample 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 2.1. 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



D. The New Business Register in the statistical production process

23. Statistical data are passing through several phases in the statistical production process in the statistical office, starting with their collection, followed by checking and processing, and ending with publication of statistical results. FN: Of course, data are also processed on their way

to the statistical office and when they have been passed on to the users, but these phases in the „lifecycle“ of data are out of the scope of this paper. FN-end. Conceptually, it may be helpful to structure the steps that data is passing through as Input data base, Processing data base and Output data base. The possible employments of the register tackled with in the previous section belong to all of these data bases.

(a) Obviously, the register is used in generating raw data. This has already been tackled with the keywords sample design, survey support, combining variables of different sources on micro level, multiple marking and multi-source survey design. The result of such raw data collection is a system of interrelated and connected (or at least connectable) data bases. The sum of these data bases results in enormous volumes of data, so the storage in a single data bank may not be advisable. Rather the ability to physically bring together those data actually relevant for some special analysis seems to be adequate. The availability of the decentralized stored data will be ensured by two tools: One is the register which holds the identificators of the statistical units, the relations between statistical units and some variables on the statistical units. The other is the metadata base available in the statistical office which stores the necessary description of the content of the decentralized stored raw data.

(b) In the process of checking and processing statistical data, the register helps to do plausibility checks with variables stored in the register as well as with data from other sources that are connectable by the register identifier. In case of multi-source data, the register information may help to harmonize and give consistency to the data. The relations between statistical units allow to transform the data on observation units (e.g. legal units) to data on statistical units (e.g. enterprises ore enterprise groups). To some extend such transformation processes are done in the register environment itself, e.g. in the delineation/creation of turnover and employment variables for enterprise groups.

(c) On the way to the publication of results, the Business Register facilitates the expansion of survey results to the whole population, in some sense the counterpart to its role in sample design. Additional information gained about populations by the survey allow to correct expansion factors. The register and the metadata help to combine and connect survey results also on macro level. This opens new ways to react on ad-hoc demands for statistical information that become virulent. Last but not least the register itself contains information worthwhile publication: starting point in Germany was basic information about the business population according to occupation, size classes and kind of statistical units. This can only be seen as a starting point for much richer analysis and publication of the content of the register itself.

24. The New Business Register not only serves as infrastructure for the statistical departments, but it itself actively takes part in all the three phases of the production process. It stores original raw data, e.g. turnover and employees as delivered by administrative sources. It also stores information already processed like turnover and employees as known from statistical surveys; and besides that the register department itself does processings as well, e.g. for VAT groups of enterprises. And the register provides users with statistical results from its data und by this actively participates in the process of reaching more consistency and coherency of statistical information.

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