



REPUBLIC OF BULGARIA
NATIONAL STATISTICAL INSTITUTE

1038 Sofia, 2 P. Volov Str., phone: (+359 2) 9857 700, fax: (+359 2) 9857 640, e-sgn: register@nsi.bg, e-mail: MKotzeva@nsi.bg

USE OF ADMINISTRATIVE DATA IN PRODUCTION OF
BUSINESS STATISTICS IN THE NATIONAL STATISTICAL
INSTITUTE OF BULGARIA

Rome, 18-19 March 2010

Prepared by:

Elisaveta Vladimirova USHILOVA
National Statistical Institute of Bulgaria
2, Panayot Volov Str.
1038 Sofia, Bulgaria
Tel.: +359 2 9857 135
E-mail: evladimirova@nsi.bg

I. Introduction

Legal and institutional framework

The statistical activity of the country is regulated by the Law on Statistics and a number of EC Regulations in the field of Statistics. National Statistical Institute (NSI) is responsible for the preparation of methodological and technical bases, carrying out the survey, compiling, publishing and disseminating the data to Eurostat and to all other users. NSI has a status of a state agency with Head Office, located in Sofia and 28 Regional Statistical Offices located in the district centres. The legal framework, existing at the moment, creates prerequisites for political independence and impartiality in carrying out the activity.

In the past a small part of approximately 400 administrative registers, created and maintained by the state administration on the basis of a legal or administrative act, were used by NSI as a source of producing statistical data. No widespread use of administrative sources for production of statistical information was due to:

- unsettled institutional interrelations concerning the mode and forms of access to the administrative registers data;
- changes in the coverage and contents of the registers, as well as structural changes in the state institutions, that create and maintain the registers;
- incomplete information in some registers, related to licensing and permission regimes – they do not contain other information than identification data;
- inappropriateness of the information for statistical purposes – incompleteness of the scope and contents; differences in the definitions of the administrative data and the respective statistical indicators or the lack of basic identifier that enables matching data from different sources;
- untimely data provision from the administrative sources in relation to the deadlines for production and dissemination of statistical information.

Due to the above-mentioned reasons the administrative data were used mainly for setting up the framework of the statistical survey, having control over the included units, further estimating and verifying the statistical data.

Currently the NSI uses more than 650 administrative sources for statistical purposes. The extended usage is facilitated due to the development of many new electronic systems and registers in the state administration. The access to data from administrative sources is an important barrier to the wider use of such data for statistical purposes.

One of the main achievements to NSS was amendments of the Law on statistics in November 2008, which regulated the mode and forms of access to the administrative registers data, necessary for the production of statistical information.

According to Law on Statistics 'Administrative source' is a register or information system created by law, containing information for the objects of the statistical surveys. Concerning article 4 (4) in order to reduce the administrative burden and the costs when developing and producing official national or European statistical information, the National Statistical Institute and the Bodies of Statistics shall obtain data, including individual data, as well as aggregated information from the administrative sources, created and maintained by other state bodies. Other important provision of the Law on Statistics is that the state institutions, the Bulgarian National Bank and the bodies, maintaining registers and information systems

stipulated by law **shall provide to NSI the data** collected by them, necessary for conducting statistical surveys.

II. Eurostat project “The more effective way of collecting data”

Identification of administrative sources for business statistics were developed due to the Eurostat project of “The more effective way of collecting data” started in September 2008 with duration 12 months.

1. What has been done during the project?

In the framework of the project the most important administrative sources, containing useful data for business statistics, were identified. The main goal of the project was to analyze the available administrative sources and data they contained with respect to identify the registers which could be used for production of business statistics.

The following main new administrative sources for business statistics were investigated:

- trade register;
- tax declarations;
- VAT declarations;
- register of fiscal devices;
- general register of professional builders;
- register of bakers;
- other registers related to licensing, registration and permission.

For each register/information system were analyzed the coverage, the relevance of the units in the administrative sources to the statistical ones, the timeliness and the differences between statistical variables and the relevant variables available in the administrative sources.

Data for employed, employees, worked days and hours, wages and salaries, social and health contributions paid by employers from the Register of Insured persons for 2006 were produced. Differences between annual survey data and relevant administrative data were analyzed. Methods for quality analysis and automatic correction of the errors in Register of Insured persons were developed and also a lot of proposals for improving the quality.

Since 2008 the Register of Insured persons was used for:

- updating of population of enterprises for Survey on the number of employees, time worked, wages and salaries and other labour costs;
- the production of data for employees, hours worked, gross wages and salaries broken down by full-time/part-time and by sex in enterprises with single-entry bookkeeping.

In 2009 data from Register of Insured persons were used in quarterly enterprise survey on the number of employees, time worked, wages and salaries and other labour costs.

Up to March 2009 in the Trade register were not registered data for country/citizenship of foreign partners, country of principal of foreign branches and citizenship of managers and representatives. After NSI' efforts for change of the content of the Trade register these data were added to the register.

2. Results

According to description of the project action the following outputs are provided:

- list of the identified registers used for production of business statistics and for obtain data for the statistical units;
- list of identified variables which could be produced from the sources and short description of other types of implementation;
- producing 2006 data for employees, worked hours, wages and salaries, social contribution paid by employers from the Register of Insured Persons;
- proposals for improvement of the legal framework and the quality of administrative data;
- analysis of the comparison between the data for employment from Register of insured persons and statistical survey.

III. Currently used administrative sources in Business Statistics Department

In the Business statistics department of NSI of Bulgaria we carry out the following surveys: Short term statistics, Prodcom, Labour cost, different type of surveys in transport sector, in construction and tourism, Structural business statistics survey and others for national purposes.

The central link and sample frame for all surveys is derived from the Statistical Business Register, called “Register of Statistical Units”. The rules for access to this register are laid down in inner regulation, in which keeping the confidentiality policy is safeguarded. The Register contains all public and private units, classified in economic activities at the class level (4-digit) in accordance with NACE Rev.1.1. and NACE Rev.2. It provides all data on enterprises’ characteristics - identification 9-digit code, name and address of the enterprises, NACE principle activity code, status code, NUTS code, legal form, type of ownership, source of funds, employment, turnover etc. The overall quality of the Register of Statistical Units is good and possible imperfections have minor impact on the quality of the data. Measures are undertaken in order to solve the problem with non-active enterprises and the existence of some falsely active units.

1. Updating the Statistical Business Register

1.1. Register “BULSTAT”

The main source of updating the Register of Statistical Units is carried out on the basis of the information received from administrative **Register “BULSTAT”**. Till 2008 all legal units carried out an activity on the territory of the country were obliged to register in “BULSTAT”. During the registration they received the **unique 9 or 13 digit identifier (called "BULSTAT Code")**, that should be used in all other registers and information systems in the country. The enterprises included in Register of Statistical Units are identified mainly through this unique code. There is a link between the BULSTAT code and the random generated unique code for the Statistical units (enterprise or local unit). In this way, it is easy to change the responsible unit for a particular enterprise or local unit and to keep track of the changing history.

1.1.1. Historical changes in legislation

BULSTAT was established in 1996 with the aim to register all units carrying out economical or public activity in the country. Until 11 August 2005 the register was maintained by the National Statistical Institute according to the Law on Statistics. Since 11 August 2005 the Registry agency at the Ministry of Justice has been responsible for maintaining the BULSTAT register (according to the Law on BULSTAT register). Since 1 January 2008 a new Trade register has been built and companies, one-man traders, co-operatives, branches of foreign legal units, branches of Bulgarian companies were excluded from coverage of BULSTAT register.

1.1.2. Scope

Since 1 January 2008 the scope of the BULSTAT register has been changed. All entities registered according to the Trade Law are stored in separate register (Trade Register) and should be re-registered in the Trade Register in three years – otherwise they will be ceased in December 2010. All other legal units and natural persons who are registered under different than Trade law are stored in BULSTAT register.

1.1.3. Relevance of the units

The scope of the register covers legal units according to the definition of Council Regulation (EEC) 696/1993 on the statistical units.

The only exception is branches, which in some cases could be treated as local legal units.

In most cases the link between legal unit and enterprise is one to one, but based on the ownership, shares, voting rights and other statistical considerations could be established one to many or many to one links between enterprises and the legal units.

The process of transformation of legal entities to enterprises is done by the expert in Structural Business Statistic Department. In the register is stored history for the important features of all entities and relations between them in case of merging, take up, split or separation.

1.1.4. Accessibility and timelines

The information about all registrations in Bulstat register is transferred automatically and immediately to the Register of Statistical units. No legal and technical obstacles exist for data exchange. Special software is implemented for data processing of new entries in the Bulstat register and their reflection in the Statistical Business Register.

1.2. Trade register

The new electronic **Trade register** was set up on 1 January 2008. The register is maintained by Registry Agency at Ministry of Justice.

1.2.1. Scope

In the scope of the Trade register are included companies, one-man traders, cooperatives, branches of Bulgarian companies and branches of foreign legal units. According to the Law for Trade register all existing entities in the scope of BULSTAT register are obliged to register in the new electronic register in three years, saving their unified identity number (assigned in Bulstat register). So at the end of December 2010 the register will cover all active entities and the coverage of register will be **exhaustive for the economic units registered according the Trade law**. Due to that changes there are many missing data and errors of identification numbers of managers, representatives, owners, country/citizenship of foreign partners and country of principal of foreign branches. NACE code of the legal unit's main economic activity is not mandatory for filling on the first registration. Because of this fact it is not reliable variable for use by Business register.

1.2.2. Relevance of the units

The scope of the register covers mainly legal units according to the definition in Council Regulation (EEC) 696/1993 on the statistical units and in the most cases the link between legal unit and enterprise is the same like in Bulstat register, i.e. one to one but based on the ownership, shares, voting rights and other statistical considerations could be established one to many or many to one links between enterprises and the legal units.

1.2.3. Accessibility and timelines

All information from the Trade register is transferred automatically in **an hour time** to an intermediate database in NSI. No legal and technical obstacles exist for data exchange. Special software is implemented for data processing of new entries in the **Trade register** and their reflection in the Statistical Business Register.

1.3. Register of Insured Persons

The **Register of insured persons** was set up in 2000. Till 2006 the register was maintained by National Social Security Institute. Since 2006 the register has been maintained by National Revenue Agency (NRA).

The register is maintained according to the Code of social insurance and the Ordinance № H-8 for contents, dead-lines, ways and orders of data collection from self-insured persons and from insurers for insured persons.

1.3.1. Scope

The **Register of insured persons** contains data for insured persons (including self-employed persons) and identity code of insurer (legal or natural person). The unique identification number (UIN) is assigned by NRA for legal persons and for natural persons. The coverage of the registers includes all persons with paid (by themselves or on their behalf) social and/or health contributions.

There are different kinds of insured persons - persons working under labour contract, civil servants, persons working without labour contract, persons employed on second/additional labour contract, contractors under contracts for management and control of companies, persons receiving cash benefits for unemployment, persons in maternity leave and receiving compensations for motherhood. The pensioners and children less than 18 years old are only health insured. There are people working abroad who have paid only health contributions for some periods.

Data for employees working in Ministry of Interior, Ministry of Defense, Bulgarian National Bank and their subsidiaries are stored in a special part of register.

1.3.2. Relevance of the units

The scope of the register covers all employed or self-employed persons. The insurer is in most cases the legal unit which has hired/contracted the person and for the self-employed persons this is the person himself/herself. In very rare cases NRA assigns a special internal code for legal persons that are insurers and tax liable persons, but are not registered in the BULSTAT.

In Register of Statistical Unit the unique identification number (UIN) is used in the process of assignment of persons employed or employees to their enterprises.

The maximum and minimal monthly amounts of social security income are defined in the Law for the budget of the state public insurance for relevant calendar year. The minimal monthly amount of social security income of hired persons depends of the basic economic activities of employer and qualification groups of professions of insured person.

Using the data of Register of insured persons is difficult due to a lot of quality problems which are planning to be solved in the near future because of the close cooperation between the expert from Labour Market Division of NSI and NRE.

1.3.3. Accessibility and timeliness

Monthly the insurers and the self-insured persons are obliged to submit to the National Revenue Agency the requested data monthly within 10 days after the reference month. Data from declarations are entered in the Register of insured persons and information is available 3 months after the reference period.

Data are received by **written request**. Information from special part of register is received under rules in the Law on Protection of Classified Information.

In the Business statistics department of NSI of Bulgaria we carry out the following surveys: Short term statistics, Prodcum, Labour cost, different type of surveys in transport sector, Structural business statistics, FATS and others for national purposes.

2. Short Term Statistics Survey

Administrative sources are not used directly in STS data production. Their usage for calculation of some STS indicators like turnover and labour indicators is a long-term perspective. STS indicators are very timely and a lot of investigations must be carried out to research the possibilities to use administrative sources for producing data required in STS Regulation like: quality estimation of the administrative sources; timeliness; completeness of the coverage of the administrative data; creation of the methodology (statistical model) how to calculate the indicators from the administrative data and others.

The administrative source that will be studied and might be used in the future is VAT data from National Revenue Agency for the production of turnover indicators (in industry, retail trade and other services).

3. Prodcum

Because of the specific nature of the survey, the data are not available from administrative sources and are obtained through questionnaires completed by enterprises. The NSI receives information about the products "Operation of dairies and cheese making" (NACE Rev.2 class 10.51) which is collected by the Ministry of Agriculture and Food, Agrostistics Directorate.

4. Labour Cost Survey

National Statistical Institute is using indirectly the administrative **Register of Insured Persons** for improving the coverage of the Annual Labour Cost Survey and as an additional source for obtaining the gender breakdown of employees and wages and salaries in the small enterprises, as they fill in simplified statistical form on labour.

The most important problems related to the quality of the data are: duplicate records, due to the submission from the insurer of corrective declaration; extreme values or wrong data for hours worked and over-time hours; missing data for hours worked in case of filling data for days worked; misclassification of the economic activity of the insurer (legal unit), especially for the public sector units. In the statistical surveys the employment and earnings data collection for municipalities (local government) is organized in such way that all their different type of activities (public administration, education, culture, social services) are assigned to the relevant economic activity code, while in administrative register all employees are assigned to the Public administration sector.

Although the Register of Insured Persons is a reach source it is not designed to comply with the statistical concepts and definitions and at this stage it can not be considered as a replacement of the statistical surveys in labour market. For the time being it can not provide complete earnings and labour costs data for all the breakdowns requested by the Commission Regulation (EC) No 1737/2005 as regards the definition and transmission of information on labour costs. In addition there are some problems related with the coverage of the data collected.

Overcoming all problems requires efforts from both NSI and National Revenue Agency in order to improve the coverage and amend the definition of some variables in a way allowing the production of statistical data with a sufficient quality. A very important step towards the

reduction of respondents' burden is the possibility to use in future the administrative register for obtaining employment data for small enterprises.

5. Surveys in Transport sector

The population of the vehicles, on which is based the survey for **Road freight transport**, is obtained from extract of the Register of motor vehicles of **the Ministry of Internal Affairs**. The quality of the received information needs to be improved in the future and the necessary for this organization is made.

Data on **Road accidents and Road motor vehicles** are obtained from **Ministry of Interior**. The quality of the received data is good. The information is given on a base of agreement between the two institutions. In the future in accordance to the increased needs on information from the users a few new indicators will be included, such as: age of the motor vehicles, and vehicles by type of fuel.

From Ministry of Transport, Information technology and Communications is received annual information on:

- length of river Danube on the territory of Republic Bulgaria. (source of data is Executive Agency Exploration and Maintenance of the Danube);
- number of passengers carried and transport performance for the free of charge journeys by the railway transport (source of data is Executive Agency National Bulgarian Railway company);
- number of railway accidents;
- length of the railway lines by type (source of data is National Company Railway infrastructure).
- taxi operators and number of taxi motor vehicles; enterprises with license to carry out international and national passenger and freight transport (source of data is Executive Agency "Automobile administration");

From National Agency Road infrastructure annual information on:

- road network length by type of road and type of pavement;
- road traffic – the survey is conducted every 5 year.

6. Surveys in Construction and Tourism

Administrative sources are not used directly for the statistical surveys in construction and investment. Information from Trade register about the country of the foreign owners in the capital of the enterprises and the foreign share of the capital is used in Foreign direct investment survey which is base for FATS data.

Statistical data on **Trips of Bulgarian residents in abroad and arrivals of visitors from abroad to Bulgaria** are produced on the basis of monthly information received from the **Ministry of Interior** and sample survey of the NSI about Bulgarian and foreign citizens passing the border check points.

Statistical survey of the accommodation establishments - Ministry of Economy, Energy and Tourism (Tourism policy directorate) send annually a list about Categorized Accommodation establishments from National Tourist Register. Ministry of Economy, Energy and Tourism and NSI develop information system, which includes the National Tourist Register and information for statistical data of tourism in accordance with the requirements of the Eurostat and World Tourism Organization.

7. Structural Business Statistics Survey

Structural Business Statistics survey is a census mandatory annual survey, included in the National Statistical Programme and in the 5 year Strategy for Development of the National Statistical System of the Republic of Bulgaria.

The only source for production of both preliminary and definitive SBS data series is information collected through a set of accounting and statistical questionnaires. In the production of SBS data sets on financial annexes, other institutional bodies - National Bank and Financial Supervision Commission - are also involved. As a Body of statistics the information from the National Bank is not considered as an administrative.

SBS data collection is carried out through two types of questionnaires with different complexity (number of surveyed variables), depending on the size of the enterprises and their type of book-keeping system:

- “Annual Report of non-financial enterprises” – a detailed questionnaire provided to the NSI by the enterprises with annual turnover of more than 50 thousand Euro and with double entry book keeping system (mostly large and medium sized). The report is composed by a set **of accounting and statistical questionnaires.**

Accounting questionnaires are:

- balance sheet;
- report on enterprise revenues and expenditures;

The main **statistical questionnaires** used for Business statistics are:

- questionnaire required information for enterprise and local unit;
- questionnaire on employed, wages and salaries;
- questionnaire on expenditure on acquisition of tangible fixed assets;
- questionnaire on foreign direct investment;
- questionnaire on the revenues of construction enterprises by type of building;
- questionnaire on turnover from trading activities of purchase and resale and intermediary activities;

The “Annual Report of non-financial enterprises” also includes statistical questionnaires containing information that can be used for different types of surveys conducting in other departments in NSI:

- Department of Macroeconomic statistics for the purposes of the National accounts;
- Department of Demographic and Social statistics for the purposes of Energy and Environment statistics and also for Research, Development and Innovation activity.
- “Annual Report of the enterprises that do not compile balance sheet”- a simplified questionnaire which is provided mostly by the enterprises with single entry book-keeping. It contains also accounting information for revenues and expenditures, as well as additional statistical data on employment, wages and salaries, fixed assets etc.

Due to the established legislative practise in NSI of using the **companies annual accounting** information in the area of SBS we feel that we get the most accurate and high quality information necessary for conducting the survey which in other countries is considered as the **main administrative source.** The content of all set of questionnaires included in Annual Report of the enterprises is reviewed annually. Changes and improvements are made in order to fully implement the EU and national requirements of conducting the different type of annual survey.

IV. Implementation of the Information system “Business Statistics”

1. Past activities

Until the reference year 2007 the above mentioned Annual reports of non-financial enterprises (both compiling and non-compiling balance sheets), were available for the respondents on paper and in electronic format. The electronic version of the questionnaires was accessible on the web site of the NSI for downloading and filling in off-line by the enterprises. The filled questionnaires were received in the NSI electronically by e-mail.

The new information system ‘**Business Statistics**’ **started to work in January 2009**. For the first time were implemented electronic on-line collection of the Annual reports of non-financial enterprises containing accounting and statistical information for the reference year 2008.

For the aim of Business statistics we used all those information to produce the data for:

- Eurostat’s surveys: SBS; FATS, LCS;
- updating Business register;
- conducting specific national surveys;
- meeting the requirements of our users.

2. Ongoing work

From the beginning of this year we completed the created information system by developing and including additional accounting and statistical information:

- Financial reports on equity and Cash flow statements;
- Report of Public administration and bank institutions;
- Annual questionnaire for Prodcom survey.

3. Important achievement

Our enterprises were obligated to send the Annual reports of non-financial enterprises to the National Revenue Agency for the aim of tax obligation and also to the National Statistical Institute. One of the most important achievements last year was a common project of NSI and NRA for a **single entry point** for submitting the annual report of the enterprises. It was as result of a very good collaboration between the 2 institutions which significantly reduce the burden of enterprises and the administrative production costs by using modern technology leading to the production of **high quality reliable and timely information**.

The main reason of using administrative sources from NSIs is the reduction of burden of the enterprises and the production costs. This is a real example how the opposite presses can be possible by creating the so called ‘Data Warehouse’ which information can feed other administrations and state institutions. This is one of the main visions for the next decade concerning the Communication from the Commission to the European parliament and the Council on the production method of EU statistics.

4. Advantages

The main advantages of the new way of submitting the annual report of the enterprises through the information system Business statistics are:

- saving time and resources to companies having 24 hours uninterrupted online access for the submission of annual reports
- the respondents have access to their annual reports from the previous years;
- increasing the quality of information due to the arithmetic and logical controls and automatically validation of the input data;

- safe communications - communication between users' computers and servers of the system is encrypted
- reducing the time for data processing and high information productivity by using of modern information technologies;
- the system allows to obtain statistical outputs in various formats – **XLS, PDF, XML, HTML, RFT, CVS**

V. Future plans

National Statistical Institute plans to continue the work on the implementation of a more efficient way of collecting data by the usage of administrative sources. One of the main tasks and activities by priorities in the Strategy for Development of the National Statistical System of the Republic of Bulgaria, 2008 - 2012 is to reduce response burden by wider use of administrative sources. We are going to study and analyze the possibilities of using the national reporting system of VAT declarations for the aim of Short-term business statistics.

We are planning to develop the Information system Business Statistics and to include all other annual reports of: non-profit enterprises; financial intermediation and financial auxiliaries; insurance enterprises; pension companies and funds; specialized investment enterprises and of health insurance companies.

Usage of administrative sources in the production of statistics is closely related to the quality of administrative data. Part of the problems identified in the quality of administrative data could be solved through the combined use and integration of data from several administrative sources or by a change in software that supports the administrative register/system. However, some of the quality problems could be overcome only by change of legislation concerning content and structure of administrative register or system. **Currently NSI of Bulgaria is working to improve the cooperation and communication between statistical and administrative authorities.** As result of these efforts now 35 signed agreements between NSI and state institutions are updating and complementing that will significantly achieve the optimal organization for assuring a smooth flow of data, and minimizing any problems or misunderstandings.

The proposals for improvement of the legal framework and the quality of administrative data will be discussed with the relevant institutions. It is extremely important for institutions to understand the benefits of using administrative sources for statistical purposes and usefulness of the proposed changes.