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Labour statistics in Bulgaria: Current State and Challenges

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1. Introduction: Framework for Labour (Work Statistics)

1. Labour Statistics describes characteristics of both people and organizations and their behavior in and around the world of work[1]. Traditionally labour statistics focuses on the work that is considered to be directly linked to economic production, in other words labour statistics focuses on economic work. The latter mainly includes paid work and work oriented towards market exchange, but may also include work that contributes to people's subsistence (i.e. household food production). Non-economic work, i.e. the household and voluntary work, is not covered by labour statistics despite of its indirect contribution to the growth and population welfare.

2. Economic work can be considered in the demand/supply market theory framework. On the demand side are employers who use labour as a production factor. On the supply side is the economically active population as a source of labour. The price of labour is measured by a set of earnings indicators. Finally, industrial relations complete the world of labour picture by describing the role of trade unions and other industrial relations organizations in mediating the labour exchange at all stage and areas of the production process. Figure 1 illustrates in a nutshell the labour statistics framework. Each of the four core elements of the labour statistics framework is measured by a set of statistical indicators main of which are shown on the figure.

Figure 1: Labour Market Framework
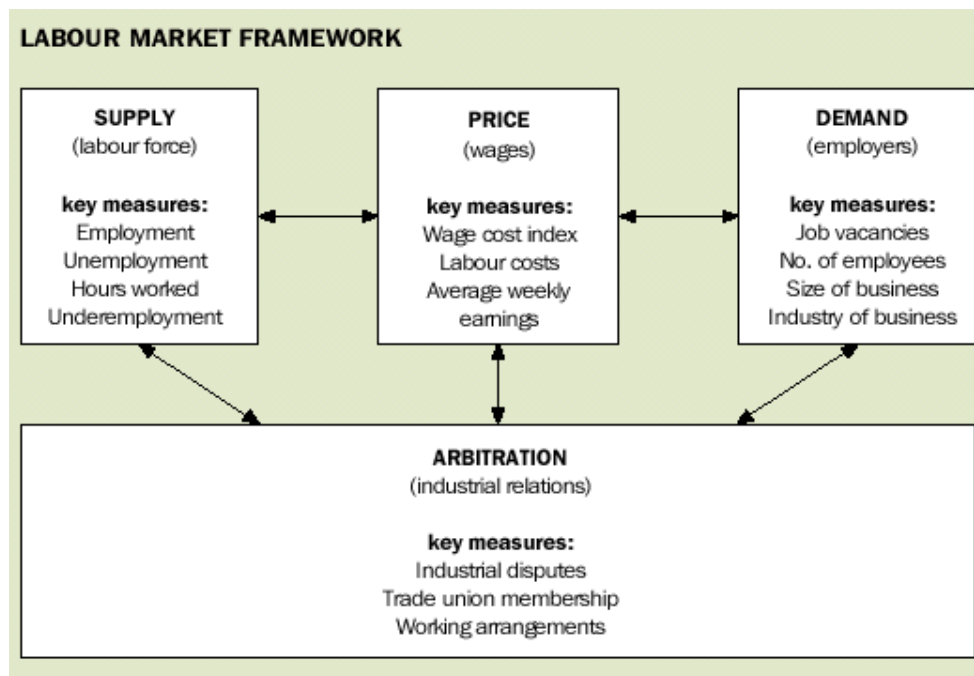
Source: Measuring Wellbeing: Frameworks for Australian Social Statistics, 2001

3. Labour Statistics is extensively used in the analysis, monitoring and evaluation of a wide range of government policies and population groups of particular concern (women, youth, long-term unemployed, etc.). A special need for labour market data appears in relation to the welfare system operation, wage formation and labour market regulations, health and safety requirements and specific training programs of the labour force. On a broader scale, labour statistics are

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[1] Report of the Office for National statistics, United Kingdom of Great Britain and Northern Ireland on labour statistics, presented at the 39 session of Statistical Commission of UN, New York, 2008

required by individuals to identify where vacancies exist and what the levels of pay and hours worked are and by businesses for making assessments of markets through looking at local labour market indicators. The role of governments in setting macroeconomic policies targeted at stimulating employment and economic growth drives additional information needs in the arena of labour statistics. Recent social and economic changes related to globalization, population ageing and free movement of people across borders have imposed new information demands and requirements on the scope, timeliness and comparability of labour market data.

4. This paper describes the scope and content of contemporary labour statistics in Bulgaria; key data sources; data collection process (definitions and concepts used, statistical methods, periodicity, classifications, main tabulations); different population groups and geographical level for which data are presented It also outlines the main challenges that official statistics in Bulgaria and in other EU countries are currently facing in response to the growing needs for the extension of the scope of the labour market data and improvement of their quality.

2. Data sources

5. Since 1989 Bulgaria has seen radical economic and social transformation that has had serious implications on the development of social statistics. The transition from central to a market economy has brought phenomenon that had not been of social concern or virtually had not existed under the communist time such as unemployment, poverty, wage bargaining regulated by the free market. In response to the growing needs for accurate and timely data on the state and trends in the development of national and regional labour market the labour statistics has expanded in the last 15 years. Currently Bulgarian NSI produces a wide range of labour statistics –data on population in the working age, including statistics on employment, unemployment and economically inactive; data on earnings, hours of work and labour costs, wage distributions and structures, labour productivity and job vacancies. Bulgarian labour statistics adheres to international standards (definitions, recommendations and guidelines) developed and maintained by the International Labour Organisation (ILO) and United Nations Statistics Division (UNSD). Bulgaria joined the EU in the beginning of 2007. During the pre-accession period Bulgarian NSI had successfully adopted a number of good practices and had harmonized the labour statistics methodologies with those implemented by old-member states.

6. Today, the labour market statistical system in Bulgaria is well established with structural (annual), and short-term (quarterly) enterprise and household surveys conducted by NSI. Other statistical data derived from administrative sources provide additional insight to the state and developments of national and regional labour markets.

7. Labour Force Survey (LFS) and Population Censuses constitute the primary sources for labour statistics about persons and households. Data collected on people provide insight into the supply of labour to the Bulgarian labour market. LFS ensures data on the demographic structure of the working wage population, employed and unemployed by sex, age, family status, educational level and residence place. Survey results are disseminated in Bulgaria and sent to EUROSTAT and ILO for publication in their yearbooks and specialized editions. Since 2003 ad hoc modules, providing more detailed information on a variety of labour market topics have been conducted as attachments to the LFS - Lifelong learning (2003), Work organization and working time arrangements (2004), Reconciliation of work and family life (2005), Transition from work into retirement (2006), Accidents at work and work related health problems (2007), Labour market situation of migrants and their immediate descendants (2008).

8. Enterprise surveys are the primary source of data on employment, earnings and labour costs, all of which provide insight into the demand for labour in the Bulgarian labour market. Survey on Employed, Wages and Other Labour Costs is conducted annually covering exhaustively all enterprises in the country and quarterly over the whole public sector and a sample of private enterprises. The Structure of Earnings Survey (SES) represents EU-wide harmonized structural data on gross earnings, hours paid and annual days of paid holiday leave which are collected every four years under the Council Regulation 530/1999 and Commission Regulation 1916/2000.

9. Administrative data are the primary source of data on registered unemployment, active and passive labour market policy, occupational injury and disease, registered job vacancies. Other data, such as labour productivity data, are derived using a number of NSI sources.

3. Statistical data collection

3.1. Labour Force Survey

10. During transition period Bulgarian government and other national institutions have put the issues of employment and unemployment high on political agenda. As a result, the demand for accurate and timely information on the labour market has been rising progressively. In this context, the Labour Force Survey has gained importance and is currently well recognised as the primary and reliable source of data on labour market state and developments.

Variables of Interest and Periodicity

10. The main purposes of the Labour Force Survey is to divide the population of working age (15 years and above) into three mutually exclusive and exhaustive groups - persons in employment, unemployed persons and inactive persons - and to provide descriptive and explanatory data on each of these categories. Respondents are assigned to one of these groups on the basis of information collected through a survey questionnaire, which principally relates to their actual activity within a particular reference week. Main analytical indicators calculated from the LFS data are the activity rate[2], employment rate[3] and unemployment rate[4]. The concepts and definitions used in the survey adheres to the Recommendation of the 13th International Conference of Labour Statisticians, convened in 1982 by the International Labour Organisation and with the definition of unemployment stipulated in the Commission Regulation (EC) No 1897/2000. The LFS is based on international classifications (NACE rev. 1 – from 2005 rev.1.1 for economic activity, ISCO 88(Com) for occupation, ISCED 1997 for education and NUTS for regional data).

11. LFS micro data collection started in 1993 in Bulgaria. Up to 1999 the survey had been conducted irregularly - twice or three times per year. In 2000, 2001 and 2002 the survey was conducted every quarter[5]. The reference quarter was the calendar quarter and the reference period was a fixed calendar week running from Monday to Sunday. Since 2004 LFS survey has become continuous quarterly survey. The sample units are distributed uniformly over the quarter so that the quarterly estimates are equivalent to an average week in the quarter.

Coverage and Data Collection

[2] ratio between economically active population and the total population of the same age.
[3] ratio between employed population and the total population of the same age
[4] ratio between unemployed persons and the economically active population (labour force).
[5] usually in the last month of the quarter- March, June, September and December.

12. The LFS result s cover persons in the age group 15 years or older residing in Bulgaria , except persons living in collective or institutional households. Interviewees are asked questions organized in thirteen modules, covering demographic background, labour status, employment characteristics of the main job, hours worked, employment characteristics of the second job, time -related underemployment, search for employment, education and training, previous work experience of persons not in employment, situation one year before the survey, main labour status, income and technical items relating to the interview[6]. Sample design allows for producing representative data at both national and regional level[7].

Sample Design

13. The sample comprises 19 504 non-institutional households (0,065% of the total number of households in the country) or about 44 000 persons aged 15 years and over. The sample is first stratified by districts and urban/rural areas and then a two-stage cluster approach is applied to select households. Enumeration districts of March 2001 Population Census are primary sampling units. 2 438 of them are chosen with probability proportional to the population size. At the second stage 8 households are systematically selected within each enumeration district. The survey employs rotating pattern according to which selected households participate 2 quarters consecutively before leaving the sample. Demographic estimates for the total population by districts, urban/rural areas, sex and age groups are used for weighting and adjustment of the survey results.

Dissemination

14. Data on core variables collected by LFS are available on Internet 52 days after the end of the reference period. Data are disseminated also through press releases, special electronic and paper publications. Additional tables and annonimised micro data can be obtained upon request from the Dissemination Division of NSI.

15. The main advantage of the LFS is that it provides truly comparable data on the labour market across EU and candidate countries. Among the statistical instruments available in the European Union, the LFS is unique for the sample-size it covers, for the length of the time-series which it offers, and for the unrivalled picture it can provide of economic and social developments from the very earliest days of the European Community right up to the present day.

3.2. Survey on Employed, Wages and Other Labour Costs (annually and quarterly)

16. The Survey of Employed, Wages and Other Labour Costs is the oldest among enterprise surveys, providing data on the labour market in Bulgaria. The main purpose of the survey is to collect data on employed under labour contract in national economy and their average monthly earnings. Since 2001 data have been used to calculate quarterly labour cost index (LCI).

Variables of Interest and Periodicity

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6 For detail see Council Regulation (EC) No 577/98 of 9 March 1998 on the organisation of a labour force sample survey in the Community (OJ No L 77/3).
7 Bulgaria is divided into 28 districts that are the basic administrative units.

17. The main variables of interest collected by questionnaires are the number of employees under employment contract[8], broken down by full-time/part-time employment and total employment expressed in full-time units, gender, economic activity (NACE Rev. 1.1), occupation (ISCO-88 classification); number of persons employed under non-labour contract, self-employed persons and business owners; inflows and outflows during the month; outflows because of closing down of the enterprise; hours worked[9], broken down between full-time/part-time employees; days worked and days not worked by reasons (i.e. paid holidays, unpaid leave, sick leave); gross wages[10]; non-wage labour costs[11]. Statistical units are enterprises – companies, ministries, departments, political, religious, and public and other organizations that perform economical activities in Bulgaria and have at least one employee under labour contract during the reference period.

Coverage and Data Collection

18. The annual survey covers all enterprises in both public and private sector. The same questionnaire used for annual survey is used to collect quarterly data. Quarterly survey covers exhaustively the whole public sector and a random sample of enterprises in the private sector. Both annual and quarterly information collected is widely used by various users groups - government, trade-unions, international organizations, scientific organizations, citizens, firms. Respondents' deadline to fill and return the forms is 20 days after the reference period.

19. The monthly average number of employees under labour contract (in full time units) is an average of the daily number of employees (sum of daily number of employees divided by the number of days from the reference month). The annual average number of employees under labour contract (in full time units) is an average of the monthly average number of employees (sum of monthly average number of employees divided by twelve months). The average gross (monthly/annual) wage is the total amount of earnings accrued during the reference period divided by the average (monthly/annual) number of employees under labour contract excluding those on maternity leave.

Sample design

20. The sample of enterprises in the private sector is a stratified random sample without replacement. The main factors, taken into account in calculating sample size are distribution of enterprises by region (28 districts, NUTS3); classification by economic activity (2-digit level of NACE, rev.1) and number of employees at the end of the last reference period for which the statistical register is updated. Target population is stratified in four strata according to the number of employees, namely - first strata – up to 10 employees, second strata - 11 to 20 employees; third strata - 21 to 49 employees; fourth strata - 50 and more employees. The sampling probability in first strata is 7%, in second – 50%, in third – 60%, in fourth – 100%.

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[8] The number of employees is defined as all persons who work for an employer, have an employment contract, and receive compensation in the form of wages or remuneration in kind.

[9] According to our national practice, they include hours actually worked during contractual normal working hours, overtime hours worked, time, spent at the working place for preparation, repairs and maintenance, preparation and cleaning tools and machines, making out of receipts and reports and the time corresponding to short periods of rest (i.e. tea and coffee breaks).

[10] Gross earnings (before any deduction of employees' contributions to social security or tax deductions, and employees' personal taxes) comprise basic wage, additional payments for night or shift work, work during weekends and public holidays, for overtime work, bonuses.

[11] Non-wage labour costs include social security contributions paid by the employerq other social expenditure (including in kind ones) and compensations under the Labour Code or other legislative acts paid by the employer to the employees.

Dissemination

21. Current figures from the survey are available 35 days after the reference quarter on the web page of NSI. Data are disseminated also through press releases, special electronic and paper publications. Additional tables and annonimised micro data can be obtained upon request from the Dissemination Division of NSI.

3.3. Structure of Earnings Survey (SES)

22. The Structure of Earnings Survey (SES) provides data on gross earnings, hours paid and annual days of paid holiday leave which are collected every four years under the Council Regulation 530/1999 and Commission Regulation 1916/2000. The objective of this legislation is to provide accurate and harmonised data on earnings in EU Member States and Candidate Countries for policy-making and research purposes. There has been a legal obligation for the Member States to carry out Structure of Earnings Surveys since 1999.

Variables of Interest and Periodicity

23. Two SES have been conducted so far under the Council Regulation 530/1999 and Commission Regulation 1916/2000. The first one refers to the year 2002 and the second one to the year 2006. The results from the year 2006 have already been published on the Bulgarian NSI web page. The results for all EU and candidate countries, including Bulgaria , are expected to be published soon on the Eurostat web page. The SES provide detailed and comparable information on relationships between the level of remuneration, individual characteristics of employees (sex, age, occupation, length of service, highest educational level attained, etc.) and their employer (economic activity, size and location of the enterprise).

Coverage and Data Collection

24. The statistics of the 2002 SES refers to enterprises with at least 10 employees in the areas of economic activity defined by sections C-K of NACE Rev.1.1. The inclusion of sections L-O is optional for 2002, as is the inclusion of enterprises with fewer than 10 employees. The 2006 survey covers local units with 1 or more employees belonging to enterprises with 1 or more employees and employees with earnings during October 2006, having at least 1 working day paid by the employer at a full rate. The following classifications and nomenclatures are employed in the SES: i) National Classification of Economic Activities 2003 - fully compliant with the European classification NACE R ev. 1.1.; ii) National Classification of Occupations and Duties - consistent with the International Standard Classification of Occupations ISCO-88 (COM); iii) Nomenclature of Educational Levels - in compliance with the International Standard Classification of Education ISCED'97 and iv) C lassification of Territorial Units for Statistical Purposes - national version, in force since 2005, in compliance with the European classification NUTS 2003.

Sample design

25. The sampling procedure used for the SES contains two stages. At the first stage, a stratified random sample of local units without replacement is drawn. Stratification criteria used include economic activity (at the 2-digit level of NACE Rev.1.1), the number of employees in the local unit, regional breakdown at NUTS1 level of national Classification of Territorial Units for Statistical Purposes, in force since 2005. At the second stage, a systematic sample of employees is taken within each of the selected local units.

26. Methodology and the basic results are published in section "Labour market" on the web site of NSI: http://www.nsi.bg. Specialized detailed publication "Structure of Earnings 2006" – in both paper and electronic format is under preparation.

27. Structural Business Statistics (SBS, annual data) and the Labour Force Survey (quarterly data) are surveys that partly measure similar or identical variables, such as "number of employees" or "wages and salaries". Whilst the National Accounts (NA) and the Labour Cost Survey (LCS) are closely related, certain coherence problems should be taken into account when comparing data relating to the same variables from the four different sources (LCS, SBS, Structure of Earnings Survey (SES), NA).

3.4. Labour Costs Statistics

28. Labour Cost Index is a short-term Euro indicator aiming to measure quarterly development of hourly labour costs incurred by the employers as a result of engaging the labour work force. Indices are based on Regulation (EC) No450/2003 of the European Parliament and of the Council concerning the European Union Labour Cost Index. According to requirements of this Regulation indexes should be available for total labour costs and its main components: wages and salaries, and labour costs other than wages and salaries (non-wage costs). All statistics are based on a harmonised definition of labour costs. Labour Cost Index (LCI) is defined as Laspeyres index of labour costs per hour worked with base year 2000=100. It is calculated broken-down by economic activity at NACE Rev.1.1 section level. Quarterly Survey of Employed, Wages and Other Labour Costs is the main source used for the labour cost index data calculation.

3.5. Job Vacancies Statistics

29. This domain includes available national statistics on the number of job vacancies, number of occupied jobs and job vacancy rates in enterprises belonging to sections A to O of the European classification of economic activities (NACE Rev 1.1). Activities of households, and extra-territorial organisations and bodies are excluded. There is currently no legal basis regulating the production and dissemination of job vacancy statistics from EU and EFTA Member States to Eurostat. The reporting of countries to Eurostat is the result of a gentlemen's agreement in March 2002. In Bulgaria, data collection on job vacancies is based on information submitted voluntarily by employers to the local labour offices (branches of National Employment Service).

4. Lessons to be learned and challenges ahead

30. Labour statistics programme in Bulgaria has expanded rapidly over last 15 years in response to both rising national and EU demands. As a result, currently the country has a comprehensive system of labour statistics that is indispensable part of European Statistical System (ESS). Labour statistics relies on a mix of data sources - sample surveys, administrative sources and Population and Housing Census. Drawing on the experience with the expansion of labour statistics during the transition from planned to a market economy, a number of good practices and lessons learned can be shared that might be useful for the other countries and for further development of international co-operation:

- Social statistics must focus on social phenomenon rather than on data and should be driven by the key information needs of policy-makers, media and other users in a wider community. The Open Method of Co-ordination introduced in the EU is excellent example of an approach that requires comparable and commonly agreed indicators to monitor progress achieved towards policy targets. Bulgarian experience supports the view that active engagement of users in the development and dissemination of labour statistics is a precondition for the successful meeting of the new data demands without imposing additional burden to the respondents.
- In an evidence-based policy making environment NSI has to play a pro-active role in achieving social policy relevance in its work. It has to present statistics that speak about the social issues by making statistical products user-friendly and figures understandable, explaining them without loosing statistical objectivity. Bulgarian NSI's strategy of intensifying communications (including training) with media and policy makers has yielded an increased confidence in official statistics.
- European approach of using a set of common surveys and/or common modules, implemented in Bulgaria, (i.e.LFS, SES, labour costs index) proves the usefulness of the idea of harmonization of inputs (data collection) rather than harmonization of outputs from national statistical systems.
- Although harmonization of inputs proved to be successful in some regions, especially in EU, providing a set of key labour statistics that are internationally comparable seems to require a top priority given the diversity in the stages of development and in data collection approaches to labour statistics in different countries. Currently the development of social statistics varies greatly among countries with some of them relying primarily on population censuses and a few sample surveys and others increasingly relying on administrative sources. It is realistic to continue working on the provision of comparable internationally labour data by using harmonized concepts and definitions of a set of key labour indicators (common to the main international organizations compiling and disseminating labour statistics – ILO, UN, Eurostat, and OECD) while keeping diversity in data collection.
- As a former communist country without strong traditions in labour statistics Bulgaria had gained a lot of the technical support and know-how transfer during the pre-accession period. Help in carrying out a national review of labour statistical system, expert consultancies on a broad range of specific issues (sample design, matching data, imputation techniques, etc.), technical manuals and guidelines, training on the spot has proved to be extremely beneficial for the NSI staff.

A lot has been achieved over the last 15 years in Bulgaria, but challenges related to all stages of official labour statistics – development, production and dissemination, still remain:

- As the society becomes more complex and global, new social concerns continuously arise. Despite of the progress achieved in improving quality and relevance of labour statistics in Bulgaria, information gaps and data inconsistencies still exist. Therefore it is essential to identify the emerging issues in the society that affect the content and methods of data collection and to respond to those needs without imposing additional burden on the respondents. Examples of new social phenomena imposing new requirements to labour statistics are globalization, population ageing, innovation and technological changes, increasing importance of life-cycle approach and new patterns in family composition.
- There is an increasing demand for access to micro data to support a range of research and secondary data analysis and for using data matching techniques to link data from different sources to form composite sets, and thereby to expand their analytical potential. Bulgarian NSI has recently reconsidered its approach with the aim of increasing access

to micro data while maintaining the institutions reputation of safeguarding statistical confidentiality. In particular, BNSI is currently developing procedures and policies for its involvement in data linking activities. The institute will continue working on both remote and on-site data laboratory arrangements for releasing anonymised micro data from the main social surveys.

- There is an increasing demand for interlinkages between social, economic and environmental statistics driven by the rising number of cross-cutting policy issues that affects people's wellbeing and by the shift to evidence-based policymaking and search for a complete and balanced picture of the national progress. In this respect BNSI has to put further efforts and to launch concrete actions on bringing together statistics from different fields to provide a deeper insight into the functioning and general wellbeing of the society. For example, a hot issue of high social concern in Bulgaria that requires linking of labour, demographic and education statistics is the increase in the school drop rate in the last 10 years.

- A challenge ahead for Bulgarian NSI is the integration of the existing various sources of labour statistics and a wider use of administrative sources so as to provide as complete as possible information to guide policy with minimum burden on respondents.

- There are a number of challenges related to the concrete aspects of production of labour statistics among which improvement of the quality of labour market statistics, including developing of a set of quality indicators, implementation of quarterly job vacancy statistics, developing annual labour force ad hoc modules, regular dissemination of data on regional labour markets, providing consistency of labour data from national accounts with those collected by LFS.