

Eurostat/OECD 2018 questionnaire on the methodology underlying labour input data in national accounts

Country: Slovakia

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Part I: Methods

1. Employment in persons

Question 1.1: Please describe the architecture of your estimation method for employment in persons. Please include details of differences in methods and data sources that may exist at different points in the time series (e.g. a break in the series) or due to the timing of the estimate (e.g. flash estimate, regular estimate or annual data). Please also provide links to articles that may be relevant.

The total employment in persons of NA concept (ESA2010) is compiled by balancing of the “supply” of labour force with the “demand” for labour force. The supply of labour force is represented by data obtained by LFS, which are adjusted with regard to the coverage and domestic concept of ESA 2010. The demand for labour force is represented by data from statistical business surveys, which are already expressed in domestic concept. They are combined with administrative sources and expert estimates.

Adjustments on the supply side start with the total number of persons working in the main job from LFS. This number includes also persons who are officially registered as unemployed but take part in the so called activation works getting remuneration in the form of social benefits (within the framework of active measures taken by the Labour Office). These persons are not included on the demand side (i.e. in business surveys), thus their number is deducted from total of persons working.

Within adjustments to the domestic concept the number of persons working abroad (less than 1 year) and the employees of non-resident institutions in the SR (LFS figures) are deducted from LFS data. Non-residents working for resident units (less than 1 year), employees of Slovak embassies and members of Slovak armed forces located abroad are added. Within adjustments regarding the coverage the estimate of number of working persons living in the collective households (students living in dormitories, church workers, clergymen,...) is added.

The data from the business statistical surveys (demand side) already correspond to the domestic concept so from this point of view no further adjustments are needed. The numbers of employees are estimated for particular institutional sectors using the data from surveys or administrative sources. We add the number of “jobs on agreement” (short-term or one-off jobs) expressed in full-time equivalent (jobs on agreement are also a part of LFS employment). The number of persons on maternity leave (taken from LFS) is added as it is not included in the statistical surveys. We add the number of self-employed persons being estimated using administrative sources (Social insurance, Statistical register of SOSR) and compared with the number of self-employed taken from LFS.

Subsequently the adjusted figures from both sides are being compared and balanced. The comparison of longer time series shows that the employment from the supply side (LFS) is always higher than from the demand side (surveys). It is assumed that employment taken from LFS covers better the short-term, seasonal jobs and includes also part of non-observed economy. Thus, the employment from the supply side

is furthermore adjusted within the tolerance of the statistical deviation and the remaining difference is considered as non-registered employment and is added to the number of employees in the households sector on the demand side. The resulting figure is treated as definitive estimate of the total employment for the entire economy.

As regards the whole time series of employment in persons there are no significant breaks due to the change of methods or data sources. If any data source (e.g. an annual business survey) is abolished from any time point, it is substituted by other available source (e.g. quarterly survey or administrative source) with respect to the preceding data in the time series.

At T+45 the flash estimate of total employment is published at the web portal of SOSR and also transmitted to Eurostat. The figure of total employment is not usually revised between the time T+45 (flash) and T+60 (regular) because no more relevant data sources are available between these time points.

The major revisions of employment data occur in September (annual data) and then in November (quarterly data up to 2. quarter of the current year). Usually the total figure for employment remains unchanged while the changes occur within the breakdowns (by industry, sector or region).

Question 1.2: What is the main original source for employment in the national accounts (e.g. administrative source, labour force survey, business survey, other)? Briefly describe this source, its coverage (including over time, range of businesses/households covered, etc.), its availability and whether it is in terms of jobs and/or persons.

Please specify the sources used for different parts of employment (in particular if sources differ between employees and self-employed, and/or between industries, firms of different size, etc.). If sources differ, please provide a clear distinction when answering the questions that follow.

To compile national account employment data in SR the combination of many data sources is used - LFS, business statistical surveys (surveys in enterprises) and administrative sources. The basic source used in terms of construction the total employment (see the bridge table) is LFS.

Labour force survey is the EU harmonized monitoring of labour force based on the direct survey in selected household. The basis for the LFS is the simple random sample of the dwellings covering all districts of the Slovak Republic. The selection of dwellings, the frame of which is represented by the results of the last 2011 population and housing census, is composed as proportional, i.e. the sample size in each district depends on the number of its inhabitants. Quarterly 10 250 dwellings are included into the sample, what represents approximately 0,6 % of the total number of permanently occupied dwellings in the SR. The selected dwelling is part of the sample for five subsequent quarters. Each quarter, 20% of the sample is changed. Data from survey for all persons willing to cooperate are recalculated to the number of population of the SR as of 1 January of the year, taken over from the statistical survey on the population move. For weighting, the post-stratification method, by region, sex and age group, is used.

The subject of the LFS is each person, aged 15 years and more living in the household of selected dwellings regardless of his/her permanent, temporary or non-registered stay, except for the institutional population (i.e. prisoners, students living in dormitories, members of religious institutions, etc.).

The LFS is based on persons concept. It gives information on the first (main) jobs and secondary jobs of employees and self-employed persons, on actual and usual working hours. The data can be divided into NACE industries, sex, etc.

However the NA employment and hours worked in industries are compiled using the business surveys and administrative sources, i.e. from the demand side of balancing of labour force (see Question 1.1).

Annual and quarterly business statistical surveys are organised by the Statistical Office of the SR in line with the Act of law on state statistics. This group covers survey specifically focused on employment

data (for general government and NPISH units) and surveys focused on production data with the separate module for employment (for financial and non-financial corporations). According to the institutional sectors the surveys cover different units:

- S.11
 - Annual and quarterly questionnaire on business statistics for big non-financial enterprises with 20 employees and more (exhaustive surveys)
 - Annual and quarterly questionnaire on business statistics in small non-financial enterprises with less than 20 employees (sample surveys)
- S.12
 - Annual and quarterly questionnaire on banking and non-banking financial institutions
 - Annual and quarterly questionnaire in insurance (exhaustive surveys)
- S.13, S.15 - Quarterly questionnaire on labour (exhaustive survey for S.13)

The main indicator for the calculation of employment in the statistical surveys is the „average recorded number of employees in physical persons“. In addition, also the following indicators are reported: average number of employees in full-time equivalents, jobs on agreement (short-term or one-off jobs) and hours worked. The advantage of the structural surveys is that the indicators of employment and hours worked are directly linked to the indicators of output and value added.

From the institutional unit's point of view, the concept of employees is in persons (the employee with two jobs within the same firm is recorded only once) but in terms of the whole economy, the concept is rather jobs (one can have two jobs in different firms). For that reason from the total number of employees from the statistical questionnaires we subtract the estimate of the number of secondary jobs (we use the ratio of main to secondary jobs from LFS). Nevertheless we assume that most of secondary jobs are realized through the “jobs on agreement” which are recorded separately in the questionnaires.

The number of self-employed persons are estimated by use of administrative sources – mainly social insurance (managed by Social Insurance Agency) and statistical register of organisations (managed by Statistical office of SR). The numbers and growth rates are compared also with the number of self-employed taken from LFS.

The employees of self-employed (households sector S.14) are not directly covered by statistical questionnaire (the annual questionnaire on self-employed persons not registered in business register was abolished in 2012) so the combination of administrative sources (social insurance, tax returns) and expert estimates is used for the calculation. The significant part of households sector is represented by unobserved economy (i.e non-registered employees) (see Question 1.1 and 1.6).

Question 1.3: Please describe how estimates of annual figures based on higher frequency data (e.g. weekly, monthly, quarterly) are derived. Please also specify, if relevant, how annual figures are derived if survey information is less periodic (e.g. every 5 years)?

The reference period for LFS questionnaire is a week but the processing and evaluation of the results is carried out with a quarterly periodicity. The annual data on employment are computed as simple average of the quarters of the year.

Annual data based on quarterly business surveys are computed as simple average of the quarters. From the definition in the questionnaire the indicator „average recorded number of employees in physical persons“ is computed as daily average of number of employees for the reference period, or alternatively the average of number of employees on the beginning and the end of the period.

Question 1.4: Please describe the adjustments made to pass from jobs to the concept of persons (if the original source is in terms of jobs).

See the answer on Question 1.2 (business statistical surveys)

Question 1.5: Please describe the adjustments made to correct for coverage of the economic territory (see ESA §11.17-11.19)? This refers specifically to residents working for non-resident units abroad non-residents working in resident units. If relevant, please also describe adjustments for military (including conscripts, where applicable) and other collective households not covered by your main source.

As mentioned above (Question 1.1) within adjustments of LFS data to the domestic concept the number of residents working for non-resident units abroad (short-term) and employess of non-resident units in the SR are subtracted (these are LFS figures). Further adjustments figures are taken from administrative sources. The non-residents working for resident units are added (source: Information cards and labour permits for foreigners in the SR). Staff of Slovak embassies abroad (source: Ministry of foreign affairs of the SR) and members of Slovak armed forces located abroad (source: Ministry of defence of the SR) are added. The conscripts are not part of employment since the abolition of compulsory military service in the SR in 2006.

Within adjustments regarding the coverage the estimate of number of working persons living in the collective households (students living in dormitories, church workers, clergymen, working prisoners) is added. These data come from administrative sources: Ministry of education, Ministry of culture, Corps of Prison and Court Guard.

Question 1.6: Which adjustments are made for the unobserved economy (e.g. producers that deliberately do not register, individuals providing their labour that are not required to register, illegal workers, etc.)?

We assume that employment taken from LFS includes also part of non-observed economy. Thus during the stage of balancing and comparing the demand and supply of labour force (see Question 1.1) the estimate of the number of non-registered or unobserved workers is quantified and added to the number of employees in the households sector on the demand side.

Question 1.7: Which, if any, other adjustments are made (e.g. inclusion of resident workers below the age threshold, prisoners, adjustments made to account for statistical deficiencies in the source data, etc.)?

The workers below the age threshold (age of 15 in SR) are not taken into account. Working prisoners are included (see Question 1.5).

Question 1.8: In cases where Labour Force Survey data have not been used as the main source (even if only for some activities or groups of workers), please explain why. Are LFS data used for adjustments or cross-checking? Are differences monitored?

The Labour Force Survey data are used for the compilation of total employment (see Question 1.1). The employees, self-employed and split into industries is then computed using the business surveys data and administrative data because they are harmonized with production data and LFS figures are less reliable or volatile when it comes to industries breakdown.

Concerning hours worked, the LFS data on usual weekly hours worked of self-employed persons are used to compute the hours worked for self-employed NA data (also industries).

2. Hours worked

Question 2.1: Please describe the architecture of your estimation method for hours worked. Please include details of differences in methods and data sources that may exist at different points in the time series (e.g. a break in the series). Please also provide links to articles that may be relevant.

Total hours worked in NA are not constructed by adjustment of LFS data on hours worked. They are compiled separately for individual institutional sectors using data from business statistical surveys and expert estimates. Total hours worked consist of hours worked for the following categories of workers:

- employees (including non-registered)
- jobs on agreement
- working prisoners
- activation work
- self-employed

The source for working hours of employees and jobs on agreement (also for industries) are business statistical surveys (see Questions 1.2 and 2.2). Hours worked of prisoners and activation workers are estimated. Hours worked of self-employed are computed by using the number of self-employed persons and usual weekly working hours of self-employed from LFS.

As regards the whole time series of hours worked there are no significant breaks due to the change of methods or data sources. If any data source (e.g. an annual business survey) is abolished from any time point, it is substituted by other available source (e.g. quarterly survey or administrative source) with respect to the preceding data in the time series.

Question 2.2: What is the main original source for hours worked in the national accounts (e.g. administrative source, Labour Force Survey, Business survey)? Briefly describe this source, its coverage and its ability to reflect the definition of hours worked (see ESA §11.27-11.31). In particular, does it capture a ‘usual’ hours, ‘actual’ hours, or some other concept?

Please specify the sources used for different parts of the employed population (in particular if sources differ between employees and self-employed, and/or between industries, firms of different size, etc.). If sources differ, please provide a clear distinction when answering the questions that follow.

The main source for hours worked are annual and quarterly business statistical surveys (for more details see Question 1.2). The survey questionnaires include the indicators “hours worked of employees” and “hours worked of persons with job on agreement”. The definition of hours worked is the same for all types of questionnaires mentioned above and is in accordance with ESA 2010 definition of hours worked.

It captures the actual hours worked by all employees (i.e. jobs) including these categories:

- hours worked within normal or contractual hours as well as overtime
- paid working time spent on a business trips
- inactive on-call work time spent at the work-place

- short periods of rest during the workday, tea and coffee breaks

The definition excludes hours paid for but not worked, such as paid annual leave, paid public holidays, paid sick leave, parental leave, strikes, etc.,

Hours worked by non-residents working for resident units are recorded by the surveys and the hours worked by residents working abroad for non-resident units are excluded (i.e. out of scope of the surveys)

Question 2.3: Please describe the adjustments made to transform the original source to adapt it to the concept of working hours as defined in national accounts? Please, describe each adjustment separately. These adjustments might include:

- Accounting for holidays and annual leave
- Accounting for sickness leave
- Accounting for strikes and temporary lay-offs
- Accounting for paid but unreported overtime
- Accounting for unpaid overtime

The definition of hours worked from the business surveys mentioned above is in accordance with ESA 2010 definition of hours worked thus no adjustments are needed (see Question 2.2).

Question 2.4: Is a specific adjustment made to account for under- or over-reporting in the source data? Please specify if these adjustments are made for employees and/or self-employed workers.

No specific adjustments are done due to the under- or over-reporting in the source data.

Question 2.5: If an adjustment is made for the number of persons employed in relation to the unobserved economy, what assumption is made regarding the hours worked by these persons?

Hours worked by persons estimated as non-registered employees in the process of balancing of labour force were computed using the average hours worked by employees in small non-financial enterprises (with less than 20 employees) taken from the statistical business survey.

Question 2.6: Which other adjustments, if any, are made?

No other adjustments are made.

Question 2.7: If necessary, please describe any additional calculations needed to derive total hours worked and average hours worked from the sources and adjustments specified above. This includes, but is not limited to, adjustments made to align the coverage of hours worked with that of employment in persons (i.e. the coverage produced by the process followed in section 1).

No other adjustments are made.

Part II: Other work in this area

3. Differences between national accounts and Labour Force Survey estimates

Question 3.1: To what extent do you consider your Labour Force Survey an accurate tool for the measurement of employment and hours worked? Please describe any issues or shortcomings of which you may be aware.

Labour Force Survey is a good source of data from the side of supply of labour force. It gives the first overall estimate of total employment that can be relatively easily adjusted to the coverage and domestic concept of NA methodology. It is also assumed that employment from LFS covers better the short-term, seasonal jobs and includes also part of non-observed economy.

But when it comes to more detailed breakdowns of LFS data, the figures may be less reliable due to the higher relative standard error that follows from the methodology of the sample survey. For that reason, the split into industries is done by use of business surveys data. The hours worked are compiled also from this source because they are directly connected to employment figures.

Question 3.2: If the Labour Force Survey is not the primary source of data used to derive your estimates of employment in persons hours worked: Are you able to quantify, even approximately, what the difference would be between your current national accounts estimates and those you would obtain if you did use the Labour Force Survey data as your primary source?

Not applicable.

Question 3.2.1: Where differences between these estimates exist, can you provide a brief assessment of the source of these differences?

Not applicable.

4. Flash estimates of employment in persons

Question 4.1: Are you currently producing flash estimates of employment (t+30 or t+45)? If so, please describe briefly the methodology, coverage and sources. If you are not producing a flash estimate, do you have plans to start doing so in the future?

We regularly produce the flash estimate of total employment at T+45. This estimate is published at the web portal of SOSR and also transmitted to Eurostat. The total employment is compiled by balancing of the "supply" of labour force (LFS) with the "demand" for labour force (quarterly business surveys, administrative sources) as it is described in detail under the Question 1.1.

Question 4.2: Please provide information on the quality of the estimates (e.g. revision analysis).

The figure of total employment is not usually revised between the time T+45 (flash estimate) and T+60 (regular estimate) because no more relevant data sources are available between these time points. At T+60 more detailed data on employment (split into employees, self-employed and NACE industries, the same with hours worked) are transmitted to Eurostat and afterwards published at national level.

The major revisions of employment data occur in September (annual data) and then in November (quarterly data up to 2. quarter of the current year). Within this revision the data from annual business surveys are taken into account. Usually the total figure for employment remains unchanged while the changes occur within the breakdowns (by industry, sector or region).

5. Other data produced (Optional)

Question 5.1: Do you have plans in the near future to improve or expand the content of national accounts labour input data (e.g. improved alignment with national accounts concepts, extension of the time series, increased industry detail, etc.)?

In the near future there are no plans for extension of the time series or increasing industry details but the sources for employment data are being analysed as to be able to better use the administrative sources (e.g. social insurance data) as a complement (or even substitute) to the statistical surveys. It should lead to a lower burden on respondents and financial budget of statistical institutions.

Question 5.2: Do you produce labour input data other than that already discussed, for example quality adjusted labour input or labour input in terms of full-time equivalents? If so, please provide details and/or links to these data.

Within national accounts we produce only employment data already discussed (employment, hours worked and compensation of employees in industry and region breakdowns). The data can be found in the main database "DATAcube" of SO SR following the path Datacube -> Macroeconomic statistics -> National Accounts.

Question 5.3: Do you produce productivity statistics (e.g. labour productivity for the total economy, further breakdowns of labour productivity, capital productivity, multi-factor productivity, etc.)? If so, please provide details and/or links with regards to these data.

Within national accounts we do not directly produce productivity statistics (however it can be computed from the available data published). Within other domains than NA it is published productivity for selected industries only. See the Datacube database following the path:

Datacube -> Sector statistics -> Industry -> Enterprises -> *Employees, wage and labour productivity for enterprises with more than 20 employees (NACE Rev. 2) [pm1002rs]*

or Datacube -> Sector statistics -> Industry -> Establishment -> *Labour productivity based on turnover by sections and special aggregates of NACE Rev. 2 classification - monthly data [pm2009ms]*

Question 5.4: If there is any other work that you produce currently, or are looking to produce in the future, in the areas of labour input or productivity, please use the space below to inform us about this work.