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

Country: Belgium
Date: March 2018

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 method of compiling the Belgian national accounts is based on two fundamental principles: systematic use of a register of enterprises, and maximum use of administrative data supplemented by statistical information and survey results. An overview of the methodology underlying labour input data in national accounts is available in the GNI methodological inventory (cf. sections 4.7.9 and 4.11.1).

By analogy with what is done for the other national accounts aggregates, the figures of paid employment expressed in persons are obtained by aggregating the individual enterprise data on the number of paid employees, obtained mainly from the national social security agencies databases (NSSO[1] and NSSOPLA[2]), according to the characteristics – branch of activity and institutional sector – indicated in the register of enterprises, so as to ensure that the results are consistent.

An adjustment is made so that workers registered under different national social security agencies are counted only once. This adjustment is based on information from the "Crossroads Bank for Social Security" regarding the number of persons registered with the two social security agencies: for each branch of activity, the proportion of workers registered with both agencies is extrapolated to the actual population of the NSSO and NSSOPLA records and deducted from the total.

An additional adjustment is introduced to avoid double counting between paid employment and self-employment: on the basis of information obtained from the "Crossroads Bank for Social Security", workers whose paid employment is secondary to their self-employed activity are eliminated from the paid employment.

Moreover, an adjustment is foreseen in order to take into account undeclared employment.

Concerning the self-employed workers, their number is estimated on the basis of the data compiled by the National Institute for the Social Security of the Self-Employed (NISSE). As for employees, adjustments are foreseen in order to avoid double counting with employees (principally within the group pursuing a

---

[1] NSSO = National Social Security Office.
[2] NSSOPLA = National Social Security Office for Provincial and Local Authorities, which is known as the Special Social Security Schemes Office (SSSSO) after its merger with the Overseas Social Security Office since 1st January 2015 and which has been absorbed by the NSSO on 1st January 2017.

secondary activity on a self-employed basis) and to exclude self-employed persons who are not actually working (particularly self-employed persons active after retirement age). In practice, those included are determined on the basis of the data from the "Crossroads Bank for Social Security".

Those different administrative data sources are available on a quarterly basis and no sooner than three months after the end of the reference quarter. As a consequence, before this deadline, the estimation process relies on an econometric method to extrapolate the evolution of employment with other available information (value added, bankruptcies, and employment for the previous quarters). This method is used for the publication of the quarterly estimate of employment in persons at two months after the end of the reference quarter.

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.

The administrative sources (mainly data from various social security institutions) are the main statistical sources used to estimate the number of employees and self-employed. The national social security agencies count the number of persons registered as having one (or more than one) job(s) at the end of each quarter. The available data is thus expressed in number of persons (effapr = number of employees in main profession).

The series from 1995 onwards are derived from those sources.

The vast majority of employers active in Belgium reports to the NSSO as this agency is charged with managing social security for the vast majority of employees and officials employed in Belgium. All incorporated and unincorporated enterprises, NPI's etc. employing personnel with a labour agreement (employment contract) are subject to the social security system and are required to pay social security contributions. The data from the NSSO are completed with data from the NSSOPLA which is entrusted with the collection of social security contributions for the members of the staff of the provincial and local administrations. These administrations include municipal authorities and municipal public utilities, public centres for social welfare, local police zones, intermunicipal companies and provincial authorities. Both sources combined allow having a quasi-exhaustive coverage of total paid employment.

On the other hand, every self-employed worker in Belgium has to be registered at a Social Security Fund for self-employed to pay his social security contributions. The Social Security Funds calculate and collect the social security contributions and keep the files of the self-employed worker up to date with the National Institute for the Social Security of the Self-employed. This administrative source is thus exhaustive.

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 periods are the year and the quarter. The latter is obtained as the arithmetical average of the situation at the end of two consecutive quarters. The yearly figures are the arithmetical average of the four quarterly averages.

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).**

No adjustment is necessary: the administrative sources give directly the number of persons.

The Belgian national accounts don't include any statistic on the number of jobs.

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.**

The estimation of the domestic employment is based on all the resident producer units on the Belgian territory. As the sources used are exhaustive, no adjustment is foreseen.

National employment is obtained by adding the balance of border workers, also available from administrative sources.

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.)?**

The information obtained from the national social security agencies does not entirely correspond to the national accounts concepts. An adjustment is made to take into account the undeclared employment and illegal workers, estimated consistently with the adjustments made in the estimation of value added and wages in the national accounts.

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.)?**

Two other additions are made to the number of paid employees thus obtained:
  – workers not liable for contributions/allocated under other social security authorities (seamen, domestic staff and workers employed under an contract from a Local Employment Agency), for whom an estimate is produced on the basis of specific administrative information;
  – working students, who are recorded in a separate register of the national social security agencies.

The number of self-employed workers is adjusted in order to take into account the childminders registered with the NSSO and the NSSOPLA. In the national accounts they are regarded as self-employed workers and not as employees.

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 main reasons for using administrative data are:
- their exhaustiveness (99% of paid employment);
- the consistency with the estimation of the other aggregates (value added and wages).

Moreover, the quarterly and yearly evolutions of the Labour Force Survey are too volatile (due to the sampling error existing for each survey) to be used to estimate employment in the national accounts.

The Labour Force Survey is a good tool for cross-checking and for obtaining information on the structure of employment in terms of age, education level, professional situation, and so on. Differences are monitored but not systematically.

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.**

For the calculation of the number of hours worked by employees, only the national social security office (NSSO) records provide any, unfortunately incomplete, information. To gross up the data based on the National Social Security Office individual statistics per enterprise, conversion ratios are obtained by estimating the number of hours declared to the NSSO and dividing that figure by the number of persons recorded in the same register. These ratios are applied on the measured employment figure to estimate the number of hours worked by employees.

For self-employed workers, there are no administrative sources available allowing to measure directly the number of hours worked. As a consequence, an indirect estimate is realized on the basis of the information available in the labor force survey (LFS) about the average number of actual weekly hours of work by economic activity. On the basis of this source, it is possible to define a multiplicative factor by branch giving the relation between the average number of hours worked by a self-employed worker and the average number of hours worked by an employee. It is then possible to produce the number of hours worked by self-employed by combining the average number of hours with the number of self-employed workers. As there is a break in the LFS data in 1999, this method could not be implemented for the estimates before 1999.

The number of hours worked by employees are estimated on a quarterly basis and published for the first time at 4 months after the end of the reference quarter, using the above-described method.

The number of hours worked by self-employed workers is diffused on a yearly basis only.

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 is the administrative information collected by the national social security office.

For employees registered by the NSSO, who represent over 91% of paid employment, the application of the conversion ratio (like described above) gives the same result that would be obtained by direct compilation of the number of hours. The conversion ratio is further used for persons not registered in the social security office (NSSOPLA workers and undeclared employment, f.i.), for whom this indirect estimation method is used.

For the self-employed workers, we use an indirect method combining information from the LFS and the average number of hours worked by employees.

The administrative sources from the social security office provide data about the days (for full-time workers) and hours paid (for part-time workers) that we convert into hours actually worked.

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**

Holidays and annual leaves are taken into account on the basis of information collected from the collective agreements, detailed by activity and by institutional sector.

The sickness leaves are taken into account when the payments are assumed by a mutual insurance company. There are no adjustments for short term leaves.

There are no adjustments for strikes and temporary lay-offs.

The unreported overtime (paid or unpaid) is not taken into account.

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.**

An adjustment is made to take into account the undeclared hours worked by employees, estimated consistently with the adjustments made in the estimation of value added, wages and employment in the national accounts.

For self-employed workers, there is no specific adjustment for undeclared hours worked because such adjustment is foreseen for employees whose average number of hours worked are part of the method for the estimation of hours worked for the self-employed.

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?**

The assumption made is that the number of hours worked by the persons employed in the unobserved economy is the same as for persons employed in the observed economy (derived from the administrative data sources) by using the same conversion ratios.

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

A correction for calendar days is applied. As the ratios used to estimate the hours worked by employee are obtained by using amongst others information on the number of working days, one extra working day on a quarterly basis and even on a yearly basis will have a mechanical impact on the aggregate. It is this impact we try to eliminate by including a correction for calendar days in our method for the quarterly and for the annual calculation.

The seasonal adjustments on the quarterly figures are made with TRAMO-SEATS, for the number of employees and for the number of hours worked.

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).**

There is no additional calculation.

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.**

As the administrative sources for employment and hours worked are exhaustive and timely available, we do not need to consider using the LFS to estimate employment expressed in persons and hours worked.

Moreover, as stated earlier, the quarterly and yearly evolutions of the Labour Force Survey are too volatile (due to the sampling error existing for each survey) to be used to estimate employment in the national accounts.

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?**

This exercise has never been made.

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

Recently, an internal study revealed that the main explanatory variable for the different evolution of employment expressed in persons according to LFS and according to national accounts was the measurement of the number of persons working as temporary workers. For this category of workers, it is probably more difficult for the LFS to measure the number of persons employed as the length of their work contract can be of a very short duration.

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?**

As member of the Task Force Employment flash estimates, we contribute to the test estimates. The methodology used has been described in this context.

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

Cf. question 4.1

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.)?**

It is foreseen to improve the measurement of employment and hours worked for unobserved economy in order to take into account the latest revisions in the estimation for value added.

It is also foreseen to complete the yearly series for hours worked by self-employed workers for the period 1995-1999.

Those revisions should be implemented in our next occasional revision in October 2019.

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.**

We do not produce other labour input data.

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**.

We do not produce productivity statistics.

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

There is no other work foreseen.