

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

Country: Sweden

Date: April 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 employment statistics published within the NA framework are the number of employed persons as an annual average and the total volume of hours actually worked. There are no estimates of jobs in the Swedish National accounts employment data.

Estimates of employed persons according to the national concept are not published in Sweden. In the Swedish National accounts employment data are presented according to domestic concept. The official statistics contain domestic employment as an annual average and hours actually worked as the total annual volume.

The main source for total number of employed persons and total volume of hours actually worked is the Labour Force Survey (LFS). The LFS is substituted for other sources on detailed levels of economic activity. Also Central government, Local authorities and Non-profit institutions serving households (NPISH) are estimated by using other labour statistics. When compiling statistics for employees the Structural Business Statistics (SBS) is of major importance. For self-employed persons the LFS is used.

For annual calculations, the levels according to LFS data on employment are used. For quarterly calculations the levels cannot be used, instead data from the latest annual calculations are extrapolated using quarterly changes from the LFS (changes q-4 to q).

The LFS has been used for the entire time series. The harmonization of the LFS to European standards from year 2005 may have affected the time series but efforts have been made to compensate for that. During October 2004 to mars 2005 the LFS was measured according to both old and new definitions. This has helped bridge the time series.

***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.**

The LFS is the main data source for the total employment and the total number of hours worked. This source is harmonized to European standards.

**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.**

For the annual calculations, the following sources are used:

- 1) The Labour Force Survey  
Used as main source for the total employment and total hours worked. Adjustments for cross border workers is made though. Used also for the total number of self-employed.
- 2) Structural Business statistics (SBS)  
Used for distribution of employees in market producers over different industries. The total number of employees in market producers is calculated residually after all other sectors and producers are calculated.
- 3) Labour statistics based on administrative sources  
Used for non residents working inside the economic territory together with information on cross-border salaries. Also used for distribution of self employed over different industries.
- 4) Short-term statistics, salaries, governmental sector (KLS)  
Used for central government.
- 5) Wage and salary structures and employment in the primary municipalities (SLK)  
Used for local government
- 6) Swedish association of local authorities and Regions (SKL)  
Used for local county councils.
- 7) Survey of Non-profit institutions serving households (HIO-undersökningen/Organisationers ekonomi)  
Used for NPISH
- 8) cross-border salaries  
Used for non residents working inside the economic territory

**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)?**

LFS measures every week during the year. Annual figures for employment in LFS is an average of the weeks.

More information on LFS can be found here:

[https://www.scb.se/contentassets/c12fd0d28d604529b2b4ffc2eb742fbe/am0401\\_kd\\_2017\\_eng\\_pb\\_170613.pdf](https://www.scb.se/contentassets/c12fd0d28d604529b2b4ffc2eb742fbe/am0401_kd_2017_eng_pb_170613.pdf)

**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).**

Not relevant.

**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.**

Residents working for non-resident units abroad is excluded from LFS-data by the unit for LFS at Statistics Sweden i.e. before delivery of data to National accounts.

The number of non-residents working in resident units is estimated from data on wages payed abroad. The sum of the wages is divided by the average wage per employed for resident workers.

No other adjustments are made.

**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.)?**

No adjustment is made. This is assumed included in LFS.

**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.)?**

No other adjustments are made.

**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 LFS is used as the main source for the total economy. For distribution of this total on industries and sectors other sources are deemed more reliable. This is the case for example for conscripts, where data from the National Service Administration (NSA) is used. For annual estimates of central government and local authorities administrative sources are used. The main reason is that these sources are total population surveys, and thus are assumed to have a higher quality for these sectors. The LFS data are used for crosschecking.

## **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.

See the answer to question 1.1 since the volume of hours worked on annual as well as quarterly basis is compiled together with the number of employed persons.

**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?

The LFS is the main data source for the total employment and the total number of hours worked. This source is harmonized to European standards. LFS follows the ILO resolution of hours actually worked, thus the definitions of the national accounts is fulfilled. Adjustment are made to cover the economic territory.

**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.**

### **Sources**

The following sources are used, in annual calculations, for total volume of hours actually worked:

1) The Labour Force Survey

Used as main source for total hours worked. Adjustments for cross border workers, unobserved economy and conscripts are made though. LFS is also used for the total number of hours worked for self-employed. To estimate the total number of hours worked in general government the average number of hours worked per person in LFS in general government is used together with the calculated number of employees in general government. Similar calculations using the average number of hours worked per person in LFS is made for NPISH, for non-residents working in Sweden and for conscripts.

2) National accounts data on wages and salaries

Used together with data on hourly wages from the survey *Short-term statistics, wages and salaries, private sector (KLP)* to estimate the distribution of hours worked for employees in market producers over the different activities. The total hours worked for market producers is calculated as a residual when the other producers are subtracted from the LFS-total. Imputed wages and salaries are also used for estimating the non-observed economy.

3) Short-term statistics, wages and salaries, private sector (KLP).

Used for employees in market producers as described in point 2 above.

4) Short-term statistics, salaries, governmental sector (KLS)

Used for central government. The estimated figure is however adjusted so that the total number of hours worked for general government is equal to the figure described in point 1 above.

- 5) Short-term statistics, salaries, in the municipalities (KLL)
- Used for local government. The estimated figure is however adjusted so that the total number of hours worked for general government is equal to the figure described in point 1 above.
- 6) Short-term statistics, salaries in the county councils (KLL)
- Used for local county councils. The estimated figure is however adjusted so that the total number of hours worked for general government is equal to the figure described in point 1 above.

### ***Methods***

In the annual calculations three main methods are used to calculate the volume of hours worked in the Swedish economy:

- Direct method, the total hours actually worked are estimated according to LFS
- Accounts method 1, data on the number of employed persons are combined with average working time per employed person in LFS (hours worked = number of employed \* average working time per employed. )
- Accounts method 2, data on different totals for wages and salaries are combined with average salary per employed person (hours worked = sum of wages and salaries \* average wage per employed. )

***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**

Adjustments are made for non-observed economy, residents working outside the economic territory, non-residents working inside the economic territory and for conscripts.

***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 adjustments are made.

***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 in the hidden economy are based on estimates of wages and hourly earnings paid in the hidden economy. The Swedish National Audit Office has given a report on illicit work in Sweden during 1997. The study concerned the extent of hours worked, compensation and the structure of illicit work in Sweden. The report is the base for calculations of the total amount of hours worked as well as hours worked by industry. The amount of hours is based on compensation of employees and estimates of hourly earnings (compensation by industry/hourly earnings=number of hours worked).

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

No further adjustments.

**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).**

## ***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.**

The estimates for different sectors and different activities is quite volatile and the confidence intervals are quite large. However for the total economy the source is considered quite reliable.

**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?**

The LFS is our primary source.

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

### **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?**

For the second quarter a flash estimate of hours worked and number of employed is made at t+30 to help the government in its budget work. The normal quarterly calculation methods are used but slightly adjusted to the availability of source data.

The LFS is available at that time. However, the normal source for the number of employees for market producers (The Short-term employment survey) is not available. For general government only two month of source data for employment is available. These two facts make the distribution over sectors and activities less reliable for both hours worked and number of employed. The total hours worked and the total number of employed is as reliable as usual however.

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

See above.

## **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.)?**

We may be able to use the administrative labour data better in order to get better estimates of market producers, especially the distribution over industries.

**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.**

Quality adjusted labour input is estimated as a part of calculating Multifactor productivity. This can be found here:

<https://www.scb.se/en/finding-statistics/statistics-by-subject-area/national-accounts/national-accounts/national-accounts-quarterly-and-annual-estimates/>

**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.**

Quality adjusted labour input is estimated as a part of calculating Multifactor productivity. This can be found here:

<https://www.scb.se/en/finding-statistics/statistics-by-subject-area/national-accounts/national-accounts/national-accounts-quarterly-and-annual-estimates/>

***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.**