

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

Country: Spain
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.

Estimates are undertaken separately by industry, and consequently added to get the total domestic employment. For each industry, the most reliable source (or combination of sources) is used, and adjusted as necessary for conceptual differences with NA, lack of coverage, exhaustiveness, etc.

This is a short summary of sources:

NACE	Source used
A	LFS completed by other sources like Affiliation to Social Security (administrative data)
B	LFS, SBS surveys and mining statistics produced by Ministry of Energy, Tourism and the Digital Agenda
C	LFS, SBS surveys and Affiliation to Social Security (administrative data)
D	LFS and SBS surveys completed by other sources like statistics of distribution of electricity and fuel in cities from the Ministry of Energy, Tourism and the Digital Agenda
E	LFS and SBS surveys completed by data of Hydrographic Confederations. Separate estimates are used for the employment of non-market producers.
F	LFS and Construction Industry Structure Survey from the Ministry of Public Works
G to S	LFS and SBS surveys completed by data of other sources in special cases. Separate estimates are used for the employment of non-market producers.

In market activities, for the base year 2010, the number of jobs and persons by industries were calculated using three main sources: LFS, Affiliation to Social Security (administrative source) and businesses statistics. The source with the highest data was chosen in each industry, trying to collect all the employment (observed and non-observed). Several adjustments were done in both aggregates for taking

into account the conceptual differences between LFS and NA. From that year variation indexes are applied for calculating the number of jobs in each industry using the same source (LFS, Affiliation to Social Security and businesses statistics) already chosen for year 2010. The calculation of the number of persons from 2010 comes from the total of jobs multiplied by a ratio calculated using LFS data for each industry.

In sections D, J, M, O, P, Q, R part of the employment comes from non-market producers.

The estimates on the employment of the General Government units is mainly based on two sources of administrative data:

- Statistics on Employees in General Government Institutional Sector Affiliated to Social Security, published by the Ministry of Employment and Social Security, by months and by NACE (two digits).
- Number of active members affiliated to the civil servants mutual insurance companies: ISFAS (personnel associated with Defense service), MUGEJU (personnel associated with Justice service) and MUFACE (other administrative units).

The mentioned sources are complementary, in the sense that S.13 employees that are registered in the mutual companies (ISFAS, MUGEJU and MUFACE) are not enrolled in Social Security system, and viceversa.

These estimates are broken down by industries, using mainly the information of affiliates to the Social Security by NACE, supplemented by the figures of the Central Personnel Registry (elaborated by the Ministry of Finance and Public Administration) in the cases of education and health industries.

These estimates are validated using the remuneration of employees by COFOG functions in the General Government Accounts, published by the Audit Office, and the resulting average compensation by industry.

Regarding the estimates on employment of the Non-profit Institutions Serving Households (S.15), are based on the remuneration of employees of these units by industry and gross total labour cost by NACE provided by the Labor Cost Survey, published by INE.

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 main original source is the Labour Force Survey (LFS). It's a continuous quarterly survey whose scope is the population living in family dwellings all over the national territory. The purpose of the survey is to find out the characteristics of the population in relation to the labor market. The survey is in terms of persons.

Other sources are also used as SBS surveys (annually published) and Affiliation to Social Security (monthly published), both of them in terms of jobs.

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 differentiate between employees and self-employed a coefficient obtained from DIRCE (Central Business Register) is used to take some self-employed workers of LFS to the group of employees, as they are considered in NA. This is the case of the employers of companies constituted in society.

***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)?**

Annual data provided by LFS are calculated as the annual average of the 4 quarters investigated. Affiliation to social security figures are in terms of monthly average of affiliates and the annual average of the 12 months of the year is obtained.

***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).**

In each industry, jobs are multiplied by the ratio jobs/persons obtained from the LFS. It is necessary to make an adjustment, as it is said in ESA 2010, to add to the persons estimate those people who do not work but they have a guarantee of reinstatement to work even after a period of absence of more than three months since the survey does not consider them working people.

In the case of the non-market units, the transition from jobs to persons is carried out using the same methodology and source (LFS) as in the market ones.

***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.**

In the case of resident workers working for non-resident units the estimate is made from the Labour Force Survey (LFS) data on location of establishment, and activity of the worker.

In the case of non-resident employees working for resident units, the estimate is based on several sources:

- The Survey of Tourist Movements at Borders (FRONTUR) and Survey of Tourist Spending (EGATUR), developed by the Tourist Studies Institute (IET), which provide figures on the seasonal business passengers and the duration of their stay and on entry of day visitors who do not stay the night. This information is annualised using the number of employees and the number of nights of duration (seasonal workers) and the number of working days per year (for cross-border workers) for the estimation of seasonal and cross-border workers from countries in EU, EFTA, Switzerland and Andorra.

- Data on force labour permits of seasonal and cross border employees, including start and end date of the permit provided by the Permanent Observatory for Immigration (IPO) and the Sub-directorate General for

Immigration and Emigration within the Ministry of Employment and Social Security (MEYSS). These figures are annualised using the start and end date of the permission for the estimation of seasonal and cross-border employees coming from countries outside the EU, EFTA, Switzerland and Andorra.

Estimates are developed under the hypothesis that the local employees of Spanish public administrations abroad (must be included in NA) are compensated with the local employees of the foreign public administrations present in Spain (excluded from NA). For other issues mentioned there is no need to make any additional adjustment: neither for the replacement military, a collective that no longer exists in Spain since all the military are professionals and as such are collected in the General Government, nor for the collective homes, since most of them are included within the NPISH or the General Government, for which specific information sources are available outside LFS.

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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.)?

As it has been said in question 1.1, the source with the highest data was chosen in each industry. For industrial and construction activities, if hours worked of LFS are higher than hours worked of the SBS surveys (industry and construction), jobs of LFS are used. In service activities, if jobs of LFS are higher than SBS jobs, jobs of LFS are used. And for the rest of activities without SBS surveys, LFS or Affiliation to Social Security jobs are used.

For illegal activities a joint estimate for all the aggregates is made, among them, jobs are estimated based on different sources according to illegal activity and added to the rest of the estimations in the industries illegal activities have been detected.

It is important to remark that the basic data BT1(1) and BT2(1) of the Bridge Tables, is not a “real” basic data because it is the necessary combination of sources to cover the completeness.

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.)?

In the group of those below the threshold, it must be noted that in Spain the legal age to start work is at 16, the age to which it is compulsory to be enrolled in school; LFS investigates the economically active population from 16 years.

It is necessary to make an adjustment with workers of temporary employment agencies. These people are classified following the criteria of ESA 2010 in NACE Rev. 2 code 78, Employment activities, while in LFS they are classified in the activity of the establishment where they are effectively working.

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?

LFS data have not been used in cases when data is below the SBS survey data. Differences are monitored and LFS data are used for cross-checking.

Despite the fact that LFS and SBS surveys are the basic sources for the estimation of employment in persons and jobs, there are activities in which greater reliability is given to other sources. For example, activities controlled by public or quasi-public bodies (financial and insurance institutions, public administrations) data are used from other sources that are considered more appropriate (company reports, reports from regulators or market coordinators).

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.

Hours worked are calculated by multiplying the hours per worker and per year by full-time equivalents, which are obtained from the estimation of jobs multiplied by a ratio extracted from LFS which is calculated using the total number of hours and the average number of hours per full-time worker to the highest possible level of disaggregation. This is possible because the information provided by the sources described in previous questions used for calculating jobs, differentiates the employment according to the working day (full and partial) and also provides information on hours worked. Also, for the average number of hours per full-time worker two other sources are used:

- Quaterly Labour Cost Survey
- Collective Labour Agreement Statistics

From 2010, variation indexes of several sources (LFS, Quaterly Labour Cost Survey, Collective Labour Agreement Statistics) are used to obtain a weighted rate. This final index is applied to the previous year's data of hours per worker and then multiplied by the estimation of full-time equivalents.

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 sources for hours worked are the LFS (See Question 1.2), the Quarterly Labour Cost Survey and the Collective Labour Agreement Statistics.

Quarterly Labour Cost Survey is a continuous quarterly survey whose population scope is Social Security Accounts: General Regime: CNAE-09 sections B to S and Special Scheme for Sea Workers (Maritime transport (division 50, CNAE-09)). The main objective of this survey is knowing the evolution of the average labor cost per worker and month, the average labor cost per effective hour of work and the time worked and not worked.

Collective Labour Agreement Statistics is an administrative source whose aim is to provide statistical information on the most relevant aspects of the collective labour agreements and the result of the collective bargaining processes in the current year and earlier.

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 same specifications already explained for the estimation of jobs and persons also applied here.

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

No adjustments are needed since the sources take into account the concept of working hours as defined in national accounts. Indeed:

In the methodology of the Quaterly Labour Cost Survey:

“ Effective hours are the hours actually worked in both normal periods of work as in an extraordinary day, including the hours lost instead of working under, which are considered effective time under current regulations.

They are obtained as the sum of the agreed hours plus overtime and / or supplementary less the hours not worked, from which the hours lost in the workplace are excluded since they are considered effective time.

Within hours not worked are included:

- holidays and annual leave

- sickness leave

- adoption and paternity leave

- rest as compensation for extra hours

- hours of union representation, fulfillment of an inexcusable duty, attendance to exams and medical visits, among other concepts.

- Days or hours not worked for technical, organizational or production reasons

- Hours lost in the workplace: hours not worked for reasons not attributable to the workers or the employer as an occasional lack of work, breakage of machines, lack of raw materials, atmospheric accidents, interruption of the driving force or other causes of force majeure. “

In SBS surveys, effective hours are collected, so implicitly these adjustments were already incorporated.

Finally, the definition of hours worked in LFS are based on the recommendations approved by the International Labour Organization (ILO) in this matter, as defined in national accounts.

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.

The same adjustments already explained in question 1.6 applied here.

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 hours worked by these persons are estimated assuming the same average annual number of hours worked than persons of the same industry.

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

In the data collected by the LFS, it is necessary to estimate the hours worked by a small number of cases who declare that they do not know the number of hours worked. An average of the hours worked by other cases with the same activity, region, type of working day and professional situation are used in those cases.

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).

Not other adjustments are necessary.

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.

At two-digit level of NACE (the level used), the shortcomings detected for LFS as an input of employment estimates are:

- the NACE refers to the establishment, not to the whole enterprise, which is the information unit used in the estimation for the rest of aggregates, according to the perception of the informant.
- to avoid S13 employees duplicity, persons classified in NACE O are eliminated and for NACEs P and Q public employees, as they have self-classificated themselves, are eliminated for market producers estimates.

- regarding the hours, LFS is considered as a maximum since people tend to declare more hours than real ones.

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?

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?

NA Department at INE is currently involved in the Task Force of Employment Flash Estimates of Eurostat, which tries to assess the feasibility of producing a flash estimate in t+30/t+45. Although the flash estimate on employment in Spain is not published yet, a flash estimate of persons employed at T+30 is being elaborated as a work for the task force since the first quarter of 2017. The plans for the near future are to begin to publish data on employment (person employed, jobs, full-time equivalents and hours worked) in T+30 in the second half of 2018 (from July 2018 onwards).

Regarding the sources, the main one is the LFS. Other auxiliary sources are: Statistics of Social Security Affiliation, Short Term Statistics on Retail Trade and Tax sources of bigger enterprises.

Regarding the methodology, a quarterly indicator for each of the four variables for each industry is used. For each estimated variable, the annual data is taken as the starting point. Temporal disaggregation method (mainly Chow-Lin) and the quarterly indicators are used in the preliminary estimates of the quarterly aggregates.

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

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 in project to analyze the social security information where the S13 employees could be better distinguished. In addition, the quality of these data at two-digit level of NACE could be better.

The information used for desaggregating between employees and employers could be also modified.

The ratios used for estimating persons and full-time equivalents from jobs estimates are going to be analysed and possibly changed.

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.

No.

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.

No.

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.

No.