

# Labour Force Survey in the EU, candidate and EFTA countries

MAIN CHARACTERISTICS OF NATIONAL SURVEYS, 2017

2018 edition





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Manuscript completed in November 2018

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Collection: Statistical reports  
Theme: Population and social conditions

PDF ISBN 978-92-79-98161-6 ISSN 2529-3222 doi: 10.2785/81167 KS-FT-18-009-EN-N



## Preface

This report describes the main characteristics of the Labour Force Surveys in the 28 Member States of the European Union, three Candidate Countries (Montenegro, the Former Yugoslav Republic of Macedonia<sup>(1)</sup> and Turkey), and three EFTA countries (Iceland, Norway and Switzerland) in 2017.

All of these countries provide Eurostat with Labour Force Survey (LFS) micro-data. The purpose of this report is to inform about the technical features of the surveys carried out in these countries, in order to enable users to interpret the LFS results accurately.

The EU-LFS has been based on European legislation since 1973. The principal legal act is the Council Regulation (EC) No 577/98. The LFS-related regulations are an important element assuring the quality of the EU-LFS.

In all countries the LFS is organized and managed by the National Statistical Institutes.

The LFS is designed as a continuous quarterly survey which measures the labour status and other characteristics of the population in each quarter, by spreading the sample uniformly over all the weeks of the quarter.

The main characteristics of the national practices are presented in this report. The information is mostly organised along the same lines as in "The European Union labour force survey: main characteristics of the national surveys 2016". This will enable users to evaluate the degree of comparability achieved. Country sheets include a section on the main conceptual, methodological or organisational changes introduced in recent years, to allow the reader to have an idea of recent changes at a glance. Tables 1 to 3 (in Annex) provide summary information on some of the characteristics described in the report.

For more detailed information on the legal basis, results, common practices, methods and definitions of the European Labour Force Survey, see the EU LFS Statistics Explained website at:

[http://ec.europa.eu/eurostat/statistics-explained/index.php/EU\\_labour\\_force\\_survey](http://ec.europa.eu/eurostat/statistics-explained/index.php/EU_labour_force_survey)

The information necessary for preparing this publication was mainly collected in 2018. Eurostat wishes to thank the experts responsible for the national labour force surveys in the Member States, Candidate and EFTA countries for their help in compiling the data presented in this report.

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<sup>(1)</sup> In some tables the abbreviation MK is used for the Former Yugoslav Republic of Macedonia. This is a provisional code which does not prejudice in any way the definitive nomenclature for this country, which will be agreed following the conclusion of negotiations currently taking place on this subject at the United Nations.

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# Characteristics of national surveys in 2017

## BELGIUM (BE)

### Background

The survey started in 1983 as an annual survey, but has been continuous since January 1999 providing quarterly and yearly results.

Major changes in recent years:

- 2006: CAPI is introduced (but most of the interviews still in PAPI).
- 2008: The national questions and instructions about education and training take into account the Bachelor/Master structure of higher education. As a consequence, a break is introduced between 2007 and 2008 for the level of education.
- 2009: Imputations of the earnings variable (net wages) based on the structure of earnings survey.
- 2011: Final shift to CAPI as the main collection method.
- 2017: Revision of the sampling design; introduction of 2-(2)-2 rotational scheme; introduction of CAWI surveying technique; revision of the weighting procedure.

### Coverage

**Population interviewed for employment status:** 15 years and more.

**Participation:** Compulsory.

**Description:** The survey covers the entire country but only private households, where at least one person is younger than 77, are included in the survey. The household is the unit comprising either one person living alone or two or more persons living together in the same dwelling, sharing meals and expenditures.

### Sampling strategy

**Sampling design:** Two-stages stratified sampling plan.

**Sampling frame:** Population Register extended with information from tax and unemployment registers.

**Sampling units:** Primary sampling unit is the statistical section and final sampling unit is the household.

**Theoretical sample size (quarterly average):** 6 695 households.



**Sampling rate:** 0.14%.

**Rotation scheme:** 2-(2)-2.

**Description:** The frame of primary sampling units (PSUs) consists of geographic areas, which are either 'statistical sections' or unions of statistical sections within 'statistical letters' or sub-municipalities. In the first stage of sampling, the PSUs are *explicitly* stratified by NUTS 2 regions (i.e. provinces, where the Brussels Capital Region and the German community are separate strata). The PSU sampling frame, within each stratum, is further sorted on (1) the quintile of the number of private households in the PSU, (2) the quintile of the unemployment rate in the PSU and (3) the quintile of the average household income in the PSU. Systematic Probability Proportional to Size (SYS-PPS) sampling is applied in each first stage sampling stratum. The number of PSU draws or selections in each sampling stratum is fixed in advance, such that 6695 households are selected in total per quarter in the second stage. Larger PSUs can be selected more than once, while smaller PSUs are probably not selected. Basically, simple random sampling (SRS) is applied to select households (SSUs or FSUs) in each selected PSU. A sub-sample is used to survey most of the structural variables in Commission Regulation (EC) No 377/2008, for which only yearly results are required. The sub-sample is determined according to a wave approach, i.e. it includes the units of each full quarterly sample which, according to the rotation scheme, are interviewed for the first time (1st wave).

## Data collection

**Techniques adopted:** CAPI – CATI - CAWI.

**Interviews by technique distribution:** CAPI 29%, CATI 37%, CAWI 35%.

**Response rate:** 82.6%.

**Proxy rate (15-74 years):** 25.7%.

**Description:** Detailed information (relating to individuals aged 15 years and over) is collected by means of face-to-face interviews in the three or four weeks following the reference week. For the 2nd to 4th wave, the data are collected using web (CAWI) or telephone (CATI).

In 2017 the response rate was 82.6% and refusals accounted for 14.4% of the total non-response.

## Weighting procedure

**Method:** Calibration, after correcting the sampling weights for non-response.

**Variables used:** Gender, age groups, regions (NUTS2), degree of urbanisation, household type and origin (on the basis of the country of birth of the adult household members).

**Reference population for weighting:** Population living in private households.

**Description:** The 2-step quarterly weighting model can be formulated as:  $\langle IND; STRAT12 \times SEX \times AGECAT + RG_c; d/p; Lin \rangle$ . The third component,  $d/p$ , in this formal representation of the weighting model, means that, in step 1, the sampling weights  $d$  are corrected using estimated response probabilities  $p$  at household level; a random intercept logistic regression model, followed by smoothing, is used to estimate the  $p$ .

In step 2, proper calibration is applied to further adjust the corrected weights  $d/p$ . The first component  $IND$  indicates that calibration is at individual level. The second component is a formal expression for the linear structure of the calibration model in step 2, indicating that:

- calibration is to the joint distribution of variables  $STRAT12$ ,  $SEX$  and  $AGECAT$  in the population;
- the totals of calibrated weights for the rotation groups ( $RGs$ ) involved in each quarterly sample are forced to be proportional to the initial sizes of these  $RGs$  (the notation  $RG_c$  stands for "contrast constraints between  $RGs$ ").

The fourth and last component,  $Lin$ , indicates the use of the linear method for calibration.

# BULGARIA (BG)

## Background

The survey started in 1993, providing quarterly results from 2000 based on a single reference week in the last month of the quarter. In 2003 the survey was redesigned as a continuous Labour Force Survey, providing quarterly results.

Major changes in recent years:

2006: A new LFS questionnaire being used since the Q1 2006, increasing the number of available variables.

WSTATOR – Parental leave, newly introduced in Bulgaria, is taken into account to determine the ILO labour status and is considered as employment from which the person concerned was absent during the reference period.

2007: The new NUTS2 codes introduced.

2008: The wave approach implemented in the national LFS at the beginning of the year. Twenty five variables collected on an annual basis. The third wave is used for data collection of annual variables.

Sample size increased by 1 504 households (to a total sample size of 19 504 households).

Reference period extended to all 13 weeks of the quarter.

Several changes introduced to the questionnaire to match more closely the list of EU-LFS variables and explanatory notes.

2012: Update of the sampling frame based on Census of Population 2011.

Changes in the weighting procedure.

## Coverage

**Population interviewed for employment status:** 15 years and more.

**Participation:** Voluntary.

**Description:** The survey covers the whole country. Only private households are included. Persons living in student hostels or in workers' hostels are treated as private households.

A household is defined as a group of two or more people living together in a dwelling or a part of a dwelling and having a common budget. Any person living in a self-contained dwelling or part of it and has own budget in respect to expenses on food and other needs is considered as a single-person household.

The resident population includes all persons usually residing in Bulgaria, including persons temporarily abroad (less than one year). The survey covers all the members of the selected households including: persons staying in hospitals or other health care institutions for less than one year; students in secondary schools even though studying at different place; students at military schools; persons left for temporal or seasonal work within the country.

## Sampling strategy

**Sampling design:** Two stages stratified cluster sample.

**Sampling frame:** Census 2011.

**Sampling units:** Primary sampling unit is the enumeration district and final sampling unit is the household.

**Theoretical sample size (quarterly average):** 19 547 households.

**Sampling rate:** 0.65%.

**Rotation scheme:** 2-(2)-2.

**Description:** The Labour Force Survey is based on a two-stage stratified cluster sample. Clusters are the enumeration districts at the first stage and households at the second stage. In the first stage 2446 enumeration districts are selected with probability proportional to the size. In the second stage, within each primary sampling unit (PSU), a randomly equal number of eight households are selected.

The LFS sample consists of four independent samples of PSUs, which correspond to the three months (blocks of four consecutive weeks) of a quarter and a sample for the thirteenth week of quarter). The monthly samples include by 752 PSUs, i.e. by 188 for each week and the sample for the last week of quarter includes 190 PSUs.

The sample is stratified by district (28 administrative districts at NUTS3 level), crossed with type of place of residence (three groups: district centre, other town and village).

Since the third quarter of 2017 a new sample of PSUs and households (having the same sampling design) has been gradually implemented in LFS.

A sub-sample is used to survey most of the structural variables in Commission Regulation (EC) No 377/2008, for which only yearly results are required. The sub-sample is determined according to a wave approach, i.e. it includes the units of each full quarterly sample which, according to the rotation scheme, are interviewed for the third time (3rd wave).

## Data collection

**Techniques adopted:** PAPI.

**Interviews by technique distribution:** PAPI 100%.

**Response rate:** 80.3%.

**Proxy rate (15-74 years):** 28.3%.

**Description:** The data are collected in face-to-face interviews, using pencil and paper questionnaires. All persons in the household aged 15 years and over are interviewed.

The average response rate in 2017 was 80.3% and refusals accounted for 20.1% of the total non-response.

## Weighting procedure

**Method:** Calibration.

**Variables used:** Gender, age group, region (NUTS3), type of place of residence (urban/rural).

**Reference population for weighting:** Population living in private households.

**Description:** The weights are calculated in three steps:

1. Initial weights are obtained as inverse of inclusion probability of each household.
2. The initial weights are multiplied by correction factor for households' non-response which is calculated separately for each wave as ratio between the total number of selected households in a stratum and the number of interviewed households from the same stratum.
3. In final step the intermediate weights (corrected for non-response) are calibrated to the population estimates by the following variables: at national level by 5-year age group, sex and type of place of residence (urban/rural); at district level (NUTS3) by 3 age groups (0-14, 15-64, 65+), sex and type of place of residence (urban/rural).

For calculation of weights, the population estimates at the end of the previous quarter are used.

## CZECHIA (CZ)

### Background

The survey has been conducted since December 1992 as a continuous quarterly survey, shifting from seasonal quarters to calendar quarters by the end of 1997.

Major changes in recent years:

2011: Implementation of the wave approach.

### Coverage

**Population interviewed for employment status:** 15 years and more.

**Participation:** Voluntary.

**Description:** The survey covers the whole country. Only private households are surveyed. The target population comprises all persons usually living in the selected dwellings, regardless of the type of stay (permanent, temporary or non-registered). Temporarily absent persons (for less than one year) and domestic servants are included. It does not cover persons (students, workers, migrants) living in collective accommodation. Lodgers are considered as independent budget-keeping households. People living abroad are excluded.

### Sampling strategy

**Sampling design:** Two stages stratified sampling plan.

**Sampling frame:** Register of Census Areas (2013).

**Sampling units:** Primary sampling unit is the Census area and final sampling unit is the dwelling.

**Theoretical sample size (quarterly average):** 33 900 households.

**Sampling rate:** 0.70%.

**Rotation scheme:** 5.

**Description:** The strata consist of 77 districts with Prague considered as one district.

The primary sampling units are census (enumeration) areas that are sampled (by randomised systematic sampling) with probability proportional to size, i.e. a number of dwellings per census area.

In the second stage, dwelling units are selected from the initial sample by simple random sampling.

The initial (1st wave) quarterly sample of PSUs is 1 130 census areas (totally 5 650 census areas), while the approximate final sample size is 33 900 dwelling units per quarter. Regarding response rate it amounts to 24 200 households on a quarterly basis.

A sub-sample is used to survey some structural variables (mostly on atypical work, the situation one year before, and others) for which only yearly results are required. The sub-sample is determined according to a wave approach, i.e. it includes the units of each full quarterly sample which, according to the rotation scheme, are interviewed for the first time (1st wave).

### Data collection

**Techniques adopted:** CAPI – CATI – PAPI - Other.

**Interviews by technique distribution:** CAPI 23%, CATI 24%, PAPI 45%, Other 8%.

**Response rate:** 78.8%.

**Proxy rate (15-74 years):** 43.2%.

**Description:** The LFS data are collected in first visits with face-to-face interviews, with subsequent interviews being partly carried out by telephone (20%). A small part of the interviews (8%) is conducted through a paper questionnaire and the information collected is inserted into a computer afterwards.

The response rate was 78.8% and refusals accounted for 78.6% of the total non-response.

## Weighting procedure

**Method:** Post-stratification.

**Variables used:** Gender, age groups, district.

**Reference population for weighting:** Total resident population.

**Description:** The weights are based on post-stratification to 12 age groups, sex and the 77 districts. Demographic figures for each quarter in 2017 were forecasted from the definitive demographic data for end-of-year 2016, taken into account migration and natural increase of the population.

# DENMARK (DK)

## Background

The survey started in 1984 as an annual survey, but has been organised as a continuous survey providing quarterly results since 1994.

Major changes in recent years:

- 2007: Sample size more than doubled.
  - Rotation scheme changed from 2-(3)-1 to 2-(2)-2.
  - More efficient use of auxiliary variables in weighting procedures.
  - Face-to-face interviewing used as supplementary data collection method.
- 2009: Sample size increased to 40 000 per quarter.
  - Sampling scheme changed from 3 strata to 7 strata.
- 2010: No more CAPI interviews are conducted.
  - Introduction of an extra module for the Danish institute of welfare research on the employment of disabled people in Q1.
- 2011: At the end of 2011 the weights for the entire period back to 2007 were revised.
- 2015: A weighting method based on panels was implemented in Q3 2015, which only led to marginal changes in the data.
- 2016: Sample structure renovation and sample size reduction. Introduction of CAWI techniques also for core variables in the questionnaire.

## Coverage

**Population interviewed for employment status:** 15-74 years.

**Participation:** Voluntary.

**Description:** The entire country is covered, apart from Greenland and the Faroe Islands. The survey covers persons living in either private or collective households with domicile in Denmark according to the Central Population Register.

## Sampling strategy

**Sampling design:** One stage stratified sampling plan.

**Sampling frame:** Population Register and other registers.

**Sampling units:** The sampling unit is the individual.

**Theoretical sample size (quarterly average):** 34 320 individuals.

**Sampling rate:** 0.75%.

**Rotation scheme:** 2-(2)-2.

**Description:** The sample size was reduced in Q1 2016. Before 2016, individuals who had research protection were not interviewed, but this protection has been removed from Q1 2016. This effectively means an expansion of the number of people that actually can be interviewed. This is compensated by reducing the number of people who are drawn out to the sample. The reduction is fully implemented in Q2 2017 with a sample size of 34 320 individuals. A series of tests on this show, however, that it does not appear to have influenced the figures for the labour market participation.



Stratification is overall based on employment and unemployment. The variables used for the delimitation are gross income, net unemployment from the unemployment register, socioeconomic status and age. Persons aged 16-64 years that were registered as unemployed in a specific quarter prior to the survey quarter are selected with a higher probability than their relative proportion of the total population.

## Data collection

**Techniques adopted:** CATI – CAWI.

**Interviews by technique distribution:** CATI 57%, CAWI 43%.

**Response rate:** 55.0%.

**Proxy rate (15-74 years):** 6.4%.

**Description:** From 2016 both the core-LFS and the household subsample is based on a mix of modes where CATI is supplemented with CAWI.

The response rate was 55% in 2017 and refusals accounted for 13.3% of the total non-response.

## Weighting procedure

**Method:** Calibration.

**Variables used:** Gender, age groups, region (NUTS2), socio-economic status, income, nationality, level of education, status in the unemployment register.

**Reference population for weighting:** Individuals aged 15-74 years.

**Description:** The strata are weighted separately. Weighting is performed by using a combination of sex, age group (15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, 60-64, 65-74), socio-economic status, income, nationality, level of education, status in the unemployment register and region.

# GERMANY (DE)

## Background

The Labour Force Sample Survey is carried out as part of the annual micro-census, which is based on the 'micro-census law'. The micro-census has been carried out since 1957 in the old West Germany, and since 1991 in the new Bundesländer and East Berlin. In general the micro-census is compulsory. Additionally, the questionnaire includes optional parts of the LFS and other special national programmes. Starting in 2005 the survey has been organised as a continuous survey covering all weeks of the year, providing quarterly results. The questionnaire was revised at the same time, especially questions relating to employment in the reference week.

Major changes in recent years:

- 2006: Implementation of the wave approach.
- 2007: Questionnaire changed to better capture ILO employment.
- 2008: Questionnaire further changed to match more closely the EU-LFS operational guidelines for the definition of labour status.
- 2009: Respondents registered at the public employment office, but not looking for employment, are no longer classified as job seekers.
- 2012: The full sample is used for the EU-LFS data collection.
- 2014: Adaption of the extrapolation frame based on 2011 Census data and in this context revision of LFS data 2013, 2012 and 2011.

## Coverage

**Population interviewed for employment status:** 15 years and more.

**Participation:** Compulsory.

**Description:** The survey covers private and collective households, except for military quarters. A private household comprises either a person living alone or two or more persons who live together or maintain a joint household. The members of a private household are characterised by the same dwelling and common housekeeping. Conscripts on compulsory military service and students are included in the household to which they belong.

The resident population (statistical population) includes all inhabitants with their main place of residence and their secondary residence in the territory of Germany. Foreign armed forces and members of the diplomatic corps and their families are excluded.

The reference week is the week before the interview.

## Sampling strategy

**Sampling design:** One stage cluster sample.

**Sampling frame:** Census 2011 updated with data from building licenses.

**Sampling units:** Clusters (sampling districts) of dwellings, households and persons.

**Theoretical sample size (quarterly average):** 95 000 households.

**Sampling rate:** 0.25%.

**Rotation scheme:** 4 on annual basis.

**Description:** The sampling method applied, i.e. sorting, defining zones, and sampling within the zones, guaranteed an effect similar to stratification. The regional strata (see "stratification") are grouped to 131 "adjustment strata", at least to the extent that an average of 500 000 inhabitants are

obtained. Bound expansion is performed at that regional level. Before sampling, the sample districts are sorted in terms of region, i.e. within each stratum they are sorted by regional stratum subgroup, administrative district, community size class, community, and sample district number.

The sampling districts are stratified by region and size of the buildings. The stratification by size of the buildings is based on the size classes used to work out the sampling units.

All households and all persons in the households in a selected sampling district are interviewed.

## Data collection

**Techniques adopted:** CAPI – CATI – Other.

**Interviews by technique distribution:** CAPI 68%, CATI 3%, Other 29%.

**Response rate:** 96.2%.

**Proxy rate (15-74 years):** 25.1%.

**Description:** The field staff of the 14 statistical offices of the federal states comprises interviewers. For all four waves information is mainly collected by face-to-face interviews. Households that cannot be contacted by the interviewers (3 attempts) or refuse face-to-face-interviews, fill in a self-administered questionnaire. Furthermore people can give written response. Besides these collection methods a hotline for telephone interviews is offered. The share of telephone interviews is very low. It is allowed that one person (18 years or older) gives answers for other household members.

## Weighting procedure

**Method:** Post-stratification.

**Variables used:** Gender, age groups, region (NUTS2-NUTS3), nationality (group), number of households.

**Reference population for weighting:** Total population.

**Description:** A two-stage adjustment procedure is used.

- (a) Where possible, data are collected for households which fail to respond. These data can include: number of members of the household, nationality (German/foreigner), and for households comprising only one person: age (under or over 60 years) and sex. From this data, the weights of respondent households are increased to take account of non-responses in the region.
- (b) The sample, weighted to take account of non-response, is stratified a-posteriori by region, sex, age (<15, 15-44, 45+) and nationality (German/EU foreigners/non-EU foreigners except Turkey/Turkish) and is extrapolated to the population (adjusted in respect of military personnel).

## ESTONIA (EE)

### Background

The Estonian Labour Force Survey, which started in 1997 as an annual survey, has since 2000 been organised as a continuous quarterly survey.

Major changes in recent years:

- 2007: Quarterly sample size increased from 2 500 to 3 000 households.
- 2011: Quarterly sample size increased to 3 200 households.
- 2013: Quarterly sample size increased to 3 400 households and Census revisions (Population Census 2011).
- 2015: Frame errors are excluded from the sample which decreased to 3 250 households.
- 2017: Quarterly sample size increased to 4 000 households.

### Coverage

**Population interviewed for employment status:** 15-74 years.

**Participation:** Voluntary.

**Description:** The survey covers the whole country. Both private and collective households are surveyed. The target population comprises all persons aged 15-74 years with permanent residence in Estonia, i.e. those who have lived or intend to live in Estonia for more than one year.

The household is made up either of persons living alone or of two or more persons who share a household budget and usually occupy the same dwelling. Temporarily absent household members (absence shorter than one year for study, work, etc.) are included.

### Sampling strategy

**Sampling design:** One stage stratified sampling plan.

**Sampling frame:** Population Census 2011 updated in 2017 with Population registers.

**Sampling units:** The sampling unit is the individual.

**Theoretical sample size (quarterly average):** 4 000 households.

**Sampling rate:** 0.60%.

**Rotation scheme:** 2-(2)-2.

**Description:** The sampling design is a stratified systematic sampling of individuals. All persons aged 15-74 years belonging into household of selected individual are interviewed. The 15 counties of Estonia and Tallinn are divided into four strata according to the population size (I – Tallinn, II – four bigger counties, III – ten smaller counties, IV – Hiiu county) and different inclusion probabilities are used in strata, the highest being for Hiiu county.

### Data collection

**Techniques adopted:** CAPI – CATI.

**Interviews by technique distribution:** CAPI 52%, CATI 48%.

**Response rate:** 66.8%.

**Proxy rate (15-74 years):** 36.1%.

**Description:** Since 2016, during later waves (2nd, 3rd and 4th waves) the interviews with respondents from households with 1 or 2 working-aged members are mainly CATI-interviews and with respondents from households with more than 2 working-aged members are CAPI-interviews.

All interviews are conducted by interviewers of the Data Processing and Registers Department of Statistics Estonia. The interviewing is normally done during the week immediately following the reference week but never later than during the two weeks following the reference week.

The response rate in 2017 was 66.8% and refusals accounted for 43.2% of the total non-response.

## Weighting procedure

**Method:** Calibration.

**Variables used:** Gender, age groups, region (NUTS4), type of place of residence (urban/rural), national/non-national.

**Reference population for weighting:** Total resident population.

**Description:** The weights are calculated in a sequence of steps.

As stratified sampling is used, the initial weight that is inversely proportional to the inclusion probability in each stratum is calculated first. The initial weight also depends on the size of the household.

For non-response adjustment, the non-response correction factors are computed. Homogeneous groups of respondents are formed on the basis of the household place of residence according to the non-response rate in the region. Within each group, the correction factor is inversely proportional to the overall response rate in the region.

In the next step, the weights are calibrated so that they produce exact population numbers in certain subgroups known from demographic data (including institutional population). For working-age persons the subgroups by sex, age (5-years age groups), place of residence (urban/rural area, 15 counties (NUTS4 level) and the capital city) and Estonians/non-Estonians are considered. For this purpose, the linear consistent weighting method is applied. For non-working-age persons, the non-response adjusted household's weights are calibrated by sex and 5-years age groups.

## IRELAND (IE)

### Background

The new LFS introduced from Q3 2017 replacing the Quarterly National Household Survey (QNHS) started in September 1997. The full series dating back to Q1 1998 was revised.

Major changes in recent years:

- 2009: Update of survey to collect data on a calendar quarter basis rather than a seasonal basis.
- 2012: The introduction of a new sample based on the 2011 Census of Population began in Q4 2012 using a wave approach (persons interviewed in wave 1 were taken from the 2011 Census). In Q4 2013 the entire sample was based on the new 2011 sample.
- 2016: An additional new sample also based on the 2011 Census of Population was introduced incrementally from Q3 2016.
- 2017: Introduction of the new LFS which involves changes in sampling design, questionnaire, data collection technique and weighting procedure.

### Coverage

**Population interviewed for employment status:** 15 years and more.

**Participation:** Voluntary.

**Description:** Only private households are included. A person is defined to be a 'Usual Resident' of a private household if he/she (i) lives regularly at the dwelling in question and (ii) shares the main living accommodation (i.e. kitchen, living room or bathroom) with the other members of the household.

### Sampling strategy

**Sampling design:** Two stages stratified cluster sample.

**Sampling frame:** Population Census 2011.

**Sampling units:** Primary sampling unit is Census block and final sampling unit is the household.

**Theoretical sample size (quarterly average):** 27 000 households (quarterly average).

**Sampling rate:** 1.51%.

**Rotation scheme:** 5.

**Description:** The Labour Force Survey (LFS) replaced the Quarterly National Survey (QNHS) effective from Q3 2017. A new independent sample based on the 2011 Census of Population was selected for the LFS and this was introduced incrementally from Q1 2016. A parallel run was carried out between the QNHS and the new LFS between Q1 2016 and Q2 2017.

A two-stage sample design is used. The sample frame of households is clustered into blocks (small areas) with each block containing a minimum of 60 occupied households on the night of the 2011 Census of Population. In the first stage 1,300 blocks are selected using Probability Proportional to Size (PPS) sampling. In the second or final sampling stage, each block is split into rotation groups each containing 20 households.

### Data collection

**Techniques adopted:** CAPI – CATI.

**Interviews by technique distribution:** CAPI 83.6%, CATI 16.4%.

**Response rate:** 67.8%.



**Proxy rate (15-74 years):** 48.7%.

**Description:** Computer assisted personal interviewing (CAPI) for all 5 waves up to Q2 2017. From Q3 2017 onwards wave 1 interviews are carried using CAPI while all subsequent waves are carried out using Computer Assisted Telephone Interviewing (CATI).

In 2017, the response rate was 67.8% and refusals accounted for 24.9% of the total non-response.

## Weighting procedure

**Method:** Calibration.

**Variables used:** Gender, age groups, region (NUTS3), nationality.

**Reference population for weighting:** Total resident population.

**Description:** The survey results are weighted to agree with population estimates broken down by age (5-years age groups), sex and region (NUTS3 regions). Results are then calibrated to broad national totals by broad age groups (0-14 and 15+) and gender. The estimates are calculated as follows:

1. The previous quarter's population estimate or census of population at regional level is used as the base population.
2. A quarter of this population is aged on by 1 year.
3. Births for the relevant period are added to each region – source = registered births.
4. Deaths for relevant period are subtracted from each region – source = registered deaths.
5. Net migration (inflows from other regions minus outflows to other regions plus inflows from abroad minus outflows to abroad) is added to each region – main source.

A non-response adjustment into the weighting procedure for the LFS was introduced from Q3 2017 onwards. The adjustment applies extra weight to the groups who tend to be less likely to respond to the survey to make the results from the achieved sample more representative of the target sample and target population.

## GREECE (EL)

### Background

The survey started in 1981 as an annual survey covering all weeks of the second quarter. In 1998 it was redesigned as a continuous survey providing quarterly results.

Major changes in recent years:

2008: Households with all members aged 70 years or more interviewed only in the first wave and no longer in all waves (except in the second quarter, when the age limit was set to 74 because of the ad hoc module).

Introduction of NACE Rev2 for the classification of economic activity.

2009: Questions for variables full time/ part time, permanent/temporary, job search and participation to non-formal education reformulated. Information on the regional level NUTS3 is included in the data set.

New primary sampling units were selected and new sampling frames were compiled for the 4/6 of the sample.

2011: Introduction of ISCO-08 for the classification of occupation.

2013: Introduction of CAPI as an additional mode of data collection.

### Coverage

**Population interviewed for employment status:** 15 years and more.

**Participation:** Compulsory.

**Description:** It covers only private households (group of persons who provide jointly at least the expenses for food). Included in the household are persons who:

- Have multiple residences, but stay in the household for 6 months or more.
- Work during the week in another town but return regularly in the weekends in the household.
- Persons working in merchant shipping are always considered members of the household irrespectively of the duration of absence.
- Persons temporarily away (less than 6 months).

### Sampling strategy

**Sampling design:** Two stages stratified sampling plan.

**Sampling frame:** List of cities blocks compiled at Census 2011 updated in Q3 2016.

**Sampling units:** Primary sampling unit is the block of buildings and final sampling unit is dwelling.

**Theoretical sample size (quarterly average):** 36 700 households.

**Sampling rate:** 0.89%.

**Rotation scheme:** 6.

**Description:** The sampling design is a two-stage stratified sampling of dwellings. At the first stage a random selection of building blocks with probability proportional to "size" (where the size is defined as the number of households residing in the building block at the time of last census) is carried out. Then, within the blocks selected at first stage, a systematic sampling of dwellings is performed.

Athens agglomeration is divided in 31 final strata and Thessaloniki agglomeration is divided in 9 final strata. For these areas, the strata are defined by groups of municipalities. All other NUTS3 areas are divided in 2 or 3 final strata. The first stratum is composed by all settlements with population 10 000

persons or more, the second is composed by all settlements with population 2 000 – 9 999 persons and the third is composed by all settlements with population 1 – 1 999 persons.

## Data collection

**Techniques adopted:** PAPI – CAPI.

**Interviews by technique distribution:** PAPI 96.3%, CAPI 3.7%.

**Response rate:** 74.6%.

**Proxy rate (15-74 years):** 40.4%.

**Description:** Interviews are carried out on a face-to-face basis with paper questionnaires or portable computers, in the first wave.

The response rate in 2017 was 74.6% and refusals accounted for 32.3% of the total non-response.

## Weighting procedure

**Method:** Post-stratification.

**Variables used:** Gender, age groups, region (NUTS2).

**Reference population for weighting:** Population living in private households.

**Description:** Design weights are calculated as the inverse of probability selection of the household (computed from the total number of households during 2011 census, and the expected sample size), adjusted for non-response at primary unit level and finally post stratified by region, sex and age.

## SPAIN (ES)

### Background

The Spanish Labour Force Survey was launched for the first time in 1964, referring to some quarters in each year until 1968. Between 1969 and 1974 it was biannual, but quarterly from 1975. In 1999 the survey was redesigned as a continuous survey providing quarterly results. Since 2005 the survey provides quarterly results for core variables, but annual results for structural variables.

Major changes in recent years:

- 2005: Variable nationality (Spanish or foreigner) included as a new auxiliary variable, for calibration.
- 2006: Implementation of the wave approach.
- 2014: Updated figures from 2002 onwards, according to the 2011 Census and new auxiliary variables for calibration. The new variables used for this calibration are: size of the household (5 groups) and 3 groups of age for each sex at NUTS3 level.

### Coverage

**Population interviewed for employment status:** 16 years and more.

**Participation:** Compulsory.

**Description:** The population residing in private households is covered, including servants; persons temporarily in collective institutions and persons who are temporarily absent are sampled via relatives living in private households. Foreign nationals are included in the resident population if they have lived or intend to live in Spain for more than one year.

The household concept is based on the dwelling concept (all people living in the dwelling are interviewed).

### Sampling strategy

**Sampling design:** Two stages stratified sampling plan.

**Sampling frame:** Population Census 2011 updated to the current period with population registers.

**Sampling units:** Primary sampling unit is the geographical area and final sampling unit is dwelling.

**Theoretical sample size (quarterly average):** 83 750 dwellings.

**Sampling rate:** 0.45%.

**Rotation scheme:** 6.

**Description:** The sampling is a two-stage sampling procedure with stratification of the primary units. First-stage units are geographical areas in which all the country is split. These areas are stratified within each province, using the population size of the municipality. Within each stratum, the areas are sub-stratified according to the socio-economic characteristics of the population.

Second-stage units are private households (dwelling units).

There are 3 822 primary sampling units, and 20 households by primary sampling unit on average, depending on the NUTS3 population. The theoretical sampling size is updated, according to the increase (or decrease) of the population living in the primary sampling units.

Units are selected in such a way as to obtain self-weighted samples within each stratum. The first-stage units are selected with probability proportional to the size and second-stage units are selected with equal probability.

A sub-sample is used to survey the structural variables in Commission Regulation (EC) No 377/2008, for which only yearly results are required. The sub-sample is determined according to a wave approach, i.e. it includes the units of each full quarterly sample which, according to the rotation scheme, are interviewed for the sixth and last time (6th wave).

## Data collection

**Techniques adopted:** CAPI – CATI.

**Interviews by technique distribution:** CAPI 24.3%, CATI 75.7%.

**Response rate:** 86.9%.

**Proxy rate (15-74 years):** 51.5%.

**Description:** All the information is collected by interview. The first interviews are personal ones and performed by CAPI technique. Interviews in the second and subsequent waves are carried out by CATI, except when the family wants a personal interview or there is no telephone.

The average response rate in 2017 was 86.9% and refusals accounted for 35.9% of the total non-response.

## Weighting procedure

**Method:** Calibration.

**Variables used:** Gender, age groups, region (NUTS3), nationals/non-nationals, household size.

**Reference population for weighting:** Population living in private households.

**Description:** The design uses Ratio Estimator and the auxiliary variable is the Population Projection at stratum level.

Every quarter, population projections by age group (0–15 years and 16 years +) and Spanish provinces (in general corresponding to NUTS3 regions) are calculated. Projections by age and region are distributed by stratum in proportion to the population of each stratum. In each stratum, age group and region, the weighting is determined by the ratio of the projection to the sample size.

The sample is then calibrated in order to adjust to the population distribution. Auxiliary information used is in the form of population estimates by sex and 5-years age groups and household size (5 groups of 1, 2, 3, 4 and 5+ inhabitants) at NUTS2 level (Comunidades Autónomas), the nationality of the population aged 16 and more (national/non-national) at NUTS2 level and by sex and 3 aggregated age groups (16-29, 30-49, 50+) and region (NUTS3 or provinces).

A linear weighting method is used, in which each member of the household aged 16 years and over has the same weight.

## FRANCE (FR)

### Background

The French Labour Force Survey started in 1950 and was organised in 1954 as an annual survey. Since then, the survey has experienced several changes. Redesigned in 2003, the survey is now a continuous survey providing quarterly results.

Major changes in recent years:

2007: Change in the weighting scheme:

- a) The sample is from then expanded to the number of persons in private households and no longer to the total population (i.e. including persons in collective households);
- b) NUTS2 was added as a post-stratification variable. These changes have been implemented to previous data since 2003.

Results of the supplementary non-response survey incorporated in the final results from the LFS (via the weighting process).

2011: Completion of the replacement of the sample from the Population Census by the new sample from the tax registers from Q4 2011 onwards.

2013: Substantial revision of the French LFS, including modifications of the questionnaire and a redesign of the IT tool. The renovated French LFS is in place from Q1 2013 onwards.

2014: Overseas departments (Guadeloupe, Martinique, Guyane, La Réunion), except Mayotte, have joined the French quarterly LFS, which covered only Metropolitan France until 2013.

### Coverage

**Population interviewed for employment status:** 15 years and more.

**Participation:** Compulsory.

**Description:** The survey covers private households living in their main residence in France. The resident population comprises persons living on French metropolitan territory and in the overseas departments. All individuals 15 years old or over in the household are surveyed.

The household concept used is that of the 'dwelling household': a household means all persons living in the same dwelling. For instance, it may consist of a single person, or of two families living in the same dwelling.

### Sampling strategy

**Sampling design:** Two stages stratified sampling plan.

**Sampling frame:** Housing-tax-register for Metropolitan France and annual census survey for overseas department (also called DOM).

**Sampling units:** Primary sampling unit is the geographical area (no PSUs in DOM) and final sampling unit is dwelling.

**Theoretical sample size (quarterly average):** 73 000 dwellings (main residences)

**Sampling rate:** 0.25%.

**Rotation scheme:** 6.

**Description:** For Metropolitan France, the sampling design consists in a selection of around 3 200 sectors divided in 6 adjacent clusters; a cluster being a set of nearby dwellings of about 20 main residences. The sample is rotational: each cluster is surveyed 6 consecutive quarters, then replaced by a new cluster of the same sector. The same sample design (cluster / rotational) is used for



overseas departments.

For Metropolitan France, the sample is stratified by region (NUTS 2). For each region, the sample is balanced, proportionally of the number of main residences, on some variables from the sample frame (age, income, type of dwelling, type of urban/rural areas, resident status (owner/tenant)). For overseas departments, the sampling is stratified (geographic strata) and systematic (with equal inclusion probabilities, within geographic strata).

For Metropolitan France and Dom, the sample is uniformly distributed among the 13 weeks of the quarter. Each cluster is affected to a reference week.

A sub-sample is used for the yearly variables. The sub-sample is determined according to a wave approach, i.e. it includes the units of each full quarterly sample which, according to the rotation scheme, are interviewed for the first time (1st wave). Thus the full sub-sample is spread over all the weeks of a year and has a size of about 49 000 dwellings (main residences) over the year.

## Data collection

**Techniques adopted:** CAPI – CATI.

**Interviews by technique distribution:** CAPI 40%, CATI 60%.

**Response rate:** 79.6%.

**Proxy rate (15-74 years):** 27.3%.

**Description:** The collection method is a face-to-face interview (CAPI) on the first and the last waves and a telephone interview (CATI) for the intermediate waves (2nd to 5th waves).

The average response rate in 2017 was 79.6%. Among the non-response, refusals amounted to 18.1%.

## Weighting procedure

**Method:** Calibration for Metropolitan France; two stage non-response correction for overseas departments.

**Variables used:**

For Metropolitan France: individual characteristics (sex, age, region) and dwelling characteristics (number of dwellings, type of housing, size of the urban unit, new dwelling or not, number of rooms in the housing, individual house or building, social housing or not, income of the household in deciles).

For overseas departments: individual characteristics (sex, age, region, diploma and birthplace), dwelling characteristics (individual house or building) and response at the previous wave of interrogation.

**Reference population for weighting:** Population living in private households.

**Description:** Weighting procedures are different for Metropolitan France and overseas departments.

For Metropolitan France, a unique calibration is performed both to correct biases induced by non-response and to get consistency with external margins. The procedure is performed on each wave. The variables used are those indicated above: some are derived from the sample base (region, dwelling characteristics and income of the household in deciles) and the others are external margins (population by sex, age and region). Another correction for non-response is made using the answers to the “non-response survey” (NRS): the employment and unemployment ratios are adjusted to the ones obtained when including the respondents to the NRS survey within the LFS.

For overseas departments, weights are first adjusted by using an estimation of response probabilities, and are next calibrated on external margins. The procedure is performed on three groups of waves (1, 2 to 5, 6). Variables used for correction of non-response are derived from the sample base (region, individual house or building, response at the previous wave of interrogation). Variables used for calibration are external margins (population by sex, age and region; population by diploma; population by birthplace; individual house or building).

# CROATIA (HR)

## Background

The Labour Force Survey in Croatia was carried out for the first time in November 1996 and in June 1997. From 1998 to 2006 the survey was semi-annual, i.e. data were processed and published each half-year. Interviews were carried out every month on a part of the total sampled households. Since 2007 the survey is a continuous one, i.e. interviews cover all the weeks of the year, producing quarterly results.

Major changes in recent years:

2007: Data available at NUTS2 level.

Quarterly results available.

Yearly sample size doubled.

Rotation scheme changed to 2-(2)-2.

2014: Harmonization of educational variables (HATLEVEL, EDUCLEVL) according to ISCED 2011.

Implementation of a new sample frame based on the Census 2011, new sample design and a new process of weighting the collected data. In order to achieve the consistency and comparability between the 2014 data and the already issued data for previous years, the data for the period from 2007 to 2013 have been revised in terms of weighting, that is, the data have been weighted according to the 2011 Census data applying the calibration method.

2016. Implementation of the classification ISCED-F 2013.

Replacement of PAPI method of data collection with CAPI and CATI method.

## Coverage

**Population interviewed for employment status:** 15 years and more.

**Participation:** Voluntary.

**Description:** The Labour Force Survey covers the whole country. The target population comprises all persons who usually reside in Croatia or intend to stay in Croatia for at least 12 months. Only private households are surveyed. Household members are persons who are permanently present in the household or absent less than 1 year.

The household is a small economic group of persons that is usually, although not always, a group of relatives living together and sharing costs of living (housing, food, etc.).

## Sampling strategy

**Sampling design:** Two stages stratified sampling plan.

**Sampling frame:** Population Census 2011.

**Sampling units:** Primary sampling unit is the segment census area and final sampling unit is dwelling.

**Theoretical sample size (quarterly average):** 6 448 dwellings.

**Sampling rate:** 0.40%.

**Rotation scheme:** 2-(2)-2.

**Description:** The sampling design is a two-stage stratified sample. First-stage sampling is a list of area units called segments (PSU) and are defined according to the results of the Census 2011 which consist of a number of private households according to each enumeration area. Segments are selected by PPS systematic sampling, where measure of size of segment is number of private households in segment according to Population Census 2011.

The stratification is done by two NUTS2 regions and both of them further divided in urban and rural part, so, 4 strata at the end.

Within selected segments, 12 dwellings are selected by simple random sampling. All members of all private households in dwellings are interviewed.

## Data collection

**Techniques adopted:** CAPI – CATI.

**Interviews by technique distribution:** CAPI 58.55%, CATI 41.45%.

**Response rate:** 55.5%.

**Proxy rate (15-74 years):** 51.7%.

**Description:** Since the beginning of 2016, the earlier method of data collection "on paper" has been replaced by new interviewing methods, CAPI and CATI. All households selected to sample for the first time and households that either do not have a telephone/cell phone or do not want, for whatever reason, be interviewed by telephone are interviewed by CAPI. All households that accepted in the first interviewing to be interviewed by phone are interviewed by CATI.

In 2017 the average response rate was 55.5% and refusals accounted for 60.4% of the total non-response.

## Weighting procedure

**Method:** Calibration.

**Variables used:** Gender, age groups, regions (NUTS2-NUTS3), type of place of residence (urban/rural), household size.

**Reference population for weighting:** Population living in private households.

**Description:** The weights are calculated in several steps.

First, design weights as inverse value of the selection probabilities of choosing dwellings in a sample are calculated. They are equal for dwellings, households and persons in one segment. That's because all households and persons in each selected dwelling are interviewed.

Then, there are defined weighting groups regarding non-response, and response rates are calculated for each of these groups. The urban part of each 21 county form one group while the rural parts in each county form the second group. As there are 21 counties, multiplying 2 groups (urban and rural) gives 42 groups within counties for defining non-response rates (and calculating response rates in each one). Non-response weights are inverse value of these response rates. They are also equal for each segment.

At the end, calibration is used for adjustment weighting. Distributions of the 5-year age groups, gender, regions and household size for the subsample of respondents is calibrated to known auxiliary information from Census 2011. It reduces sampling error, effecting the 'old' weights, but in limits of previously defined constraints in CALMAR software. Bounded linear method is used for calibration, and lower limit is set on 0.5, and upper on 3.

## ITALY (IT)

### Background

The Italian Labour Force Survey was launched as a quarterly survey in 1959. Since Q1 2004 the survey is a continuous one, covering all the weeks of the year. The labour status for each interviewed person is referred to a specific week (reference week), usually the one preceding the interview.

Major changes in recent years:

- 2006: Changes to the questionnaire to take into account the legal suppression of compulsory military or community service and to fully tie in with the EU-LFS definition of unemployment.
- 2008: From Q1 2008, people aged 15 are considered as out of the labour force, to take into account a change in the national legislation which increased the number of years of compulsory education. Employment and activity rates are still computed with reference to the working age population 15-64 to keep the comparability. As very few 15 year olds are employed or unemployed, the impact on time-series is negligible.
- 2011: Considering that the transitions from inactivity to employment of people aged 75 years or more are almost null, in order to avoid statistical burden on this target population and in particular to reduce the costs of data collection, from Q1 2011, the households composed by all members inactive and aged 75 years or more are no longer re-interviewed. In these cases the information collected during the last available interview are copied for the next waves in which the household would be involved.
- 2012: A new stratification of the municipalities was made, to take into account updated information on their population and a reduction of the sample size by about 9% due to budget cuts. Consequently a new selection of the municipalities has been done, the new selected municipalities entered in the sample in Q3 2012. Due to rotation scheme, for 5 quarters until Q3 2013, old and new sampling designs have been overlapped.
- 2015: On January 2015 new population figures were available for the period 2002-2014, according to the results of the 2011 Population Census, Post Enumeration Survey of the 15th Italian population census and administrative register updates for the post census period. Consequently LFS weights have been recalculated for the period Q1 2004-Q3 2014.

### Coverage

**Population interviewed for employment status:** 16 years and more.

**Participation:** Compulsory.

**Description:** The target population is the resident population, which is the population recorded in the registry offices in the Italian municipalities. All the Italian regions are covered. Only private households are included in the sample. Private households are made up either of persons living alone or of two or more persons, whether or not of the same family, usually living in the same dwelling and with family (marriage, relationships, adoption, guardianship) or affection ties. Non-resident households, people not living in private households and household members emigrated abroad or absent from the selected household for more than one year are not covered. Students in tertiary education, studying away from their parents' home, are included in the household.

### Sampling strategy

**Sampling design:** Two stages stratified sampling plan.

**Sampling frame:** Municipal registers.

**Sampling units:** Primary sampling unit is the municipality and final sampling unit is the household.

**Theoretical sample size (quarterly average):** 71 500 households.

**Sampling rate:** 0.28%.

**Rotation scheme:** 2-(2)-2.

**Description:** Stratification of primary units is carried out in each NUTS3 domain and is based on the population of the municipalities. Large municipalities, with population over a given threshold (also called self-representative municipalities), are always included in the sample; smaller municipalities (non-self-representative) are grouped in strata, then one municipality in each stratum is selected with probability proportional to the population.

The final sampling units are the households and they are randomly selected from the registry offices in all the municipalities drawn at the first stage.

## Data collection

**Techniques adopted:** CAPI – CATI.

**Interviews by technique distribution:** CAPI 46.3%, CATI 53.7%.

**Response rate:** 85.1%.

**Proxy rate (15-74 years):** 26.7%.

**Description:** CAPI mode is usually used for the 1st wave, whereas CATI mode is usually used for later waves. Interviews are carried out by professional interviewers. Households without a telephone and non-Italian households are interviewed always by CAPI mode.

The response rate in 2017 was 85.1% and refusals accounted for approximately 34.8% of the total non-response.

## Weighting procedure

**Method:** Calibration.

**Variables used:** Gender, age groups, region (NUTS3), nationals/non-nationals, number of households.

**Reference population for weighting:** Population living in private households.

**Description:** The calibration estimator is used to obtain LFS estimates. Grossing-up weights are determined as follows:

1. Firstly, initial weights are obtained as the inverse of the inclusion probabilities of any household in the sample.
2. Then, correction factors for households' non-response are worked out as the reciprocal of the response ratios (computed for specific kinds of households and territorial domains). Intermediate weights corrected for non-response are then computed multiplying initial weights by these correction factors.
3. Then, starting from intermediate weights, final grossing weights are obtained solving a minimisation problem under constraints. The function to be minimised is the distance between final and intermediate weights; the constraints regard the estimates of some auxiliary variables that have to be equal to the totals in the reference population derived from external sources. Main constraints are: (1) population by gender and 5-year age groups at NUTS2 level; (2) population by gender and 5 age groups at NUTS3 level. Final weights ensure that all members of a given household have the same weight.

Through the calibration estimator, applying final grossing-up weights, the sample reproduces the same distribution of the population according to the chosen auxiliary variables.

Grossing-up weights are computed on a monthly and on a quarterly basis, whereas annual estimates are calculated as averages of quarterly estimates.

# CYPRUS (CY)

## Background

The Cypriot Labour Force Survey was launched in 1999 as an annual survey in the second quarter of the year. Starting with Q2 2004, the survey was redesigned as a continuous survey providing quarterly results.

Major changes in recent years

2013: Introduction of a new sample frame (Population Census 2011) and change of the sample design.

2016: Calibration is used for weighting from this year onwards.

## Coverage

**Population interviewed for employment status:** 15 years and more.

**Participation:** Compulsory.

**Description:** The survey covers the areas of Cyprus controlled by the Government of the Republic of Cyprus. Only private households are covered. The housekeeping concept is used with criteria of provide themselves with essentials for living and share expenses.

The resident population comprises persons who usually reside in Cyprus or intend to stay in Cyprus for at least 12 months. It excludes Cypriot students studying abroad as well as foreign armed forces and foreigners who work in embassies or diplomatic missions.

## Sampling strategy

**Sampling design:** One stage stratified sampling plan.

**Sampling frame:** Census 2011 updated with register of domestic consumers of electricity.

**Sampling units:** The sampling unit is the household.

**Theoretical sample size (quarterly average):** 4 600 households.

**Sampling rate:** 1.50%.

**Rotation scheme:** 6.

**Description:** The sample frame refers to the number of households enumerated in the Population Census of 2011. In September 2014, the Population Census of 2011 households frame was updated with the domestic consumers of electricity which were connected after the Census date. These were obtained from the Electricity Authority of Cyprus.

The sampling plan is stratified and within each stratum simple random sampling is applied. The variables used for stratification are the districts and the urban/rural areas within each district.

## Data collection

**Techniques adopted:** CAPI – CATI.

**Interviews by technique distribution:** CAPI 16.7%, CATI 83.3%.

**Response rate:** 96.2%.

**Proxy rate (15-74 years):** 35.9%.



**Description:** Data are collected with face-to-face interviews using CAPI in the first wave. Data in subsequent waves (2-6) are collected through telephone interviews using CATI.

The response rate in 2017 was 96.2% and refusals accounted for 32.3% of the total non-response.

## Weighting procedure

**Method:** Calibration.

**Variables used:** Calibration variables are gender and age groups while stratification variables are districts and type of place of residence (urban/rural).

**Reference population for weighting:** Population living in private households.

**Description:** The design weights, i.e. the inverse of the probabilities of inclusion of the households in the sample are calculated and adjusted for non-response in each stratum. The adjusted weights for non-response are then calibrated.

# LATVIA (LV)

## Background

The Latvian Labour Force Survey started in November 1995, producing results in May and November each year. In 2002 the survey was redesigned as a continuous survey and results are produced each quarter.

Major changes in recent years:

- 2006: Data collection mode changed from PAPI (paper and pencil interviewing) to CAPI.  
Changes to the questionnaire to match more closely the EU-LFS definition of unemployment.
- 2007: Sample size more than doubled, from 2 574 to 6 032 households.  
Rotation scheme changed from 1-(1)-1-(1)-1 to 2-(2)-2.  
Since the 2nd quarter, CATI interviewing introduced in combination with CAPI.
- 2010: The weighting at household level was introduced.
- 2013: The sampling design was revised. Enlargement of sample size has started. Enlargement will be done in 6 quarters. Sample size has enlarged gradually – it grew each quarter in comparison with previous quarter.
- 2014: Enlargement of sample size has finished. Since 2nd quarter sample size is 7 488 households per quarter.  
The quarterly average statistical data on population living in private households is used in weighting procedure.  
The new information used in weighting procedure: information from The State Revenue Service.
- 2017: Introduction of sub-sampling for the yearly structural variables.

## Coverage

**Population interviewed for employment status:** 15-74 years.

**Participation:** Voluntary.

**Description:** The survey covers the whole country. Only private households are surveyed. A private household is defined as several persons living in one dwelling and sharing expenditures or one person having separate housekeeping.

The target population comprises all persons aged 15 to 74 years who are permanently resident in Latvia. Persons temporarily absent for one year or more are excluded.

## Sampling strategy

**Sampling design:** Two stages stratified sampling plan.

**Sampling frame:** Population register and the National Real Estate Cadastre Information System.

**Sampling units:** Primary sampling unit is the sampling area and final sampling unit is the dwelling.

**Theoretical sample size (quarterly average):** 7 488 dwellings.

**Sampling rate:** 0.90%.

**Rotation scheme:** 2-(2)-2.

**Description:** Two sampling frames are built for each sampling stage due to two-stage sampling is

used. At the first stage the list of sampling areas is used as sampling frame. The sampling areas are territories which contain information about the number of dwellings in each sampling area. At the second stage sampling frame is built from the Demographic Statistics Data Processing System. The Demographic Statistics Data Processing System includes data from Population register and the National Real Estate. The strata are defined by degree of urbanization (Riga, cities, towns and rural areas).

The sampling areas are selected from each stratum using systematic sampling with probability proportional to size. The final sampling units are selected from the PSUs by a simple random sampling method in each sampled PSU.

A sub-sample is used to survey most of the structural variables in Commission Regulation (EC) No 377/2008, for which only yearly results are required. The sub-sample is determined according to a wave approach, i.e. it includes the units of each full quarterly sample which, according to the rotation scheme, are interviewed for the first time (1st wave).

## Data collection

**Techniques adopted:** CAPI – CATI.

**Interviews by technique distribution:** CAPI 79.7%, CATI 20.3%.

**Response rate:** 64.6%.

**Proxy rate (15-74 years):** 38.4%.

**Description:** Face-to-face interviews using portable computers (CAPI) and telephone-assisted interviews (CATI) are conducted by interviewers of the Interviewers' Coordination Section and Household Survey Preparation and Supervision Section.

The average response rate in 2017 was 64.6% and refusals accounted for 28.1% of the total non-response.

## Weighting procedure

**Method:** Calibration.

**Variables used:** Gender, age groups, region (NUTS3), type of place of residence (urban/rural), employment agency registers, revenue service registers.

**Reference population for weighting:** Population living in private households.

**Description:** The initial weights are calculated according to the sample design, with all persons within the same PSU having equal design weights. The design weights are adjusted using the data of response level in each stratum for each wave and each survey technique (CAPI/CATI). These quarterly weights are then adjusted on the basis of demographic data and data of the State employment agency and of the State Revenue Service. Yearly weights are calculated as quarterly weights divided by four.

For adjustment of the quarterly weights demographic data are broken down by the type of municipality (Riga, cities, towns, rural areas), as in stratification, 14 age groups and sex as well as in NUTS3 (6 regions), 3 age groups, eight cities of Republic, the information from the State employment agency by sex and 5 age groups and the information from the State Revenue Service by sex and 7 age groups.

All persons within the same household have equal initial and final weights.

# LITHUANIA (LT)

## Background

The Lithuanian LFS started in April 1998 as a semi-annual survey with one reference week in both the second and fourth quarter. Since Q3 2002 the redesigned survey has been a continuous one.

Major changes in recent years:

- 2006: Labour Exchange data (i.e. the registered employment/unemployment status) no longer used as auxiliary information for calculation of weights.
- 2007: Gradual increase of the theoretical sample size from 4 000 households in 2006 to 7 000 in 2007 and to 8 000 in 2008.
- 2015: Web survey mode of interviewing has been introduced.

## Coverage

**Population interviewed for employment status:** 15 years and more.

**Participation:** Voluntary.

**Description:** The survey covers the whole country. Only private households are surveyed.

The target population comprises all persons usually living in the households of the selected dwellings, including those who are temporarily abroad for a period of less than a year. The population also includes foreign nationals who have been living in Lithuania for at least one year.

Household is a person living alone or a group of persons sharing the same living accommodation and expenditure, including collective provision of vital needs. Only the members of the selected private households (family) are interviewed.

## Sampling strategy

**Sampling design:** Simple random sampling.

**Sampling frame:** Population register.

**Sampling units:** The sampling unit is the household.

**Theoretical sample size (quarterly average):** 8 000 households.

**Sampling rate:** 0.80%.

**Rotation scheme:** 2-(2)-2.

**Description:** The sampling unit are persons living in the private household. All the members of the selected person's household are surveyed according to a one-stage simple random sampling design.

The sample is constructed as follows: having selected a simple random sample of the fixed number of persons of the sampling frame, the members of their households are also added. Even if it turned out that, according to the address sampled, some or all of the people were not included in the list of the sample, all household members actually living at the address are interviewed. A cluster sample of persons is thus obtained. All the persons living at the address selected belong to the same cluster. The actual composition of the cluster is indicated by the interviewer when visiting the household.

## Data collection

**Techniques adopted:** CAWI - CAPI – CATI.

**Interviews by technique distribution:** Not available.

**Response rate:** 77.7%.

**Proxy rate (15-74 years):** 33.0%.

**Description:** At first respondents can answer the LFS questionnaire by themselves on the internet (CAWI). If they choose not to do so, interviews are conducted by face-to-face (CAPI) or telephone (CATI) according to the circumstances. The interview normally takes place during the week immediately following the reference week but never later than five weeks after the reference week.

The average response rate in 2017 was 77.7% and refusals accounted for 31.8% of the total non-response.

## Weighting procedure

**Method:** Calibration.

**Variables used:** Gender, age groups, region (NUTS4), type of place of residence (urban/rural).

**Reference population for weighting:** Population living in private households.

**Description:** The weighting method for the Lithuanian LFS is based on the generalised calibration method introduced by Deville and Särndal in 1992. The initial household design weights are calculated, taking into account the unequal selection probabilities of the households. These are then adjusted by the use of auxiliary information relating to population data on 60 municipalities and the intersection of 13 age-groups, sex and urban/rural. All household members have the same sampling weight.

# LUXEMBOURG (LU)

## Background

In 2003, a new survey design was launched for the Luxembourg LFS, which is characterised by continuous data collection by telephone interviews, replacing the annual spring survey dating from 1983. The survey yields annual results as an average of the whole year. Since 2007 the survey has been providing quarterly and annual results.

Major changes in recent years:

2007: Dissemination of quarterly results in addition to annual ones.

2015: Rotational scheme of household has been introduced. Data are collected also by internet interviewing technique. Instead of random dialling, a representative random sample is used.

## Coverage

**Population interviewed for employment status:** 15 years and more.

**Participation:** Compulsory.

**Description:** The resident population comprises persons registered as residing in one of the municipalities. The sampling frame covers only private households in Luxembourg. The cross-border workers are not taken into account.

The household is defined as persons living together in the same household, other than subtenants and military personnel returning home at the weekend.

## Sampling strategy

**Sampling design:** Simple random sampling.

**Sampling frame:** Population register.

**Sampling units:** The sampling unit is the individual.

**Theoretical sample size (quarterly average):** 9 000 individuals.

**Sampling rate:** 1.60%.

**Rotation scheme:** 5.

**Description:** A single stage random sample is applied. A representative random sample from the national people register (Registre national des personnes physiques) is selected. The sampling unit is the reference person of the household and all the individuals included in the aforementioned households are considered as targets of the survey.

## Data collection

**Techniques adopted:** CAWI – CATI.

**Interviews by technique distribution:** CAWI 51.3%, CATI 48.6%.

**Response rate:** 58.3%.

**Proxy rate (15-74 years):** 34.0%.

**Description:** The interviews are performed by phone and internet. The response rate in 2017 was 58.3% and refusals accounted for 7.8% of the total non-response.

## Weighting procedure

**Method:** Post-stratification.

**Variables used:** Gender, age groups, nationals/non-nationals, household size.

**Reference population for weighting:** Population living in private households.

**Description:** Data from the survey are post-stratified by sex, age classes: (0-14, 15-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, 60-64, 65+), household size and nationality (national/foreigner). All persons of these strata have the same weight, calculated by dividing the population in each stratum by the number of interviewed persons in the same stratum.

# HUNGARY (HU)

## Background

The Hungarian Labour Force Survey started in 1992 as a quarterly survey (until 2002 the reference week in each month was the week which included the 12th day of the month, from 2003 to 2005 three weeks of each month were surveyed). Since the beginning of 2006 the survey is a continuous one, covering all weeks of the year. Interviews are done during the week immediately following the reference week.

Major changes in recent years:

- 2006: Changes in the questionnaire to fully harmonize with the list of EU-LFS variables and explanatory notes.
- 2011: Establishing a team for central coding of occupations (according to the HSCO-08 and ISCO-08) to ensure high quality of these data continuously.
- 2012: Replacement of PAPI (paper and pencil interviewing) with CAPI for all waves.
- 2014: (December) Grossing up of LFS data is based on the adjusted population number of 2011 census. Revision back to 2006 has also been carried out.
- 2015: Changes in the questionnaire concerning information of non-formal education (break in time series of LLL indicator).

## Coverage

**Population interviewed for employment status:** 15-74 years.

**Participation:** Voluntary.

**Description:** The survey covers the whole country. Only private households are surveyed. The household is a community of persons who share partly or entirely their continuous lifestyle costs, i.e. members of the same income and consumer community.

The inclusion or exclusion of the temporary absent persons – like persons living in student homes or worker homes – depends on their economic contribution to the household. For the person living abroad the same rule applies, they are surveyed only if they are contributing to the common income-consumption. Lodgers and domestic servants are surveyed and registered as separate households, since they live in the sampled dwelling.

## Sampling strategy

**Sampling design:** Two stages stratified sampling plan.

**Sampling frame:** Dwellings register.

**Sampling units:** Primary sampling unit is the settlement and final sampling unit is the dwelling.

**Theoretical sample size (quarterly average):** 37 710 dwellings.

**Sampling rate:** 0.92%.

**Rotation scheme:** 6.

**Description:** The LFS sample is a multi-stage stratified sample of dwellings based on the 2011 Population and Housing Census and the last update of the sample frame was in 2013.

The LFS sample is stratified by administrative units (i.e. the capital city and 19 counties) and by size categories of the localities. Total number of strata is 278, of which 175 are self-representing localities. The remaining 103 strata contain 513 non-self-representing sampled localities.



At national level, self-representing localities are those which have at least 3 975 dwellings (i.e. approximately 5 000 inhabitants), while all other localities are non-self-representing. The former are all included in the sample with certainty, while a stratified (sub-)sample is selected from the latter with probability proportional to size (PPS). In the case of non-self-representing localities, design strata are defined as cross-classes of four size categories and 19 administrative units (counties). In such cases, the primary sampling units (PSUs) are localities, and the secondary (and ultimate) sampling units are dwellings. By contrast, the PSUs are dwellings in the case of self-representing localities, thus sampling has actually only one stage in this case.

The final sampling units are dwellings in each case. They are selected with systematic random sampling from lists of addresses belonging to the sampled localities. All households residing in the selected dwelling units are surveyed.

## Data collection

**Techniques adopted:** CAPI – CATI.

**Interviews by technique distribution:** CAPI 71.7%, CATI 28.3%.

**Response rate:** 78.5%.

**Proxy rate (15-74 years):** 42.2%.

**Description:** Data are collected by laptops (CAPI) interviews. First time the respondents are interviewed face-to-face; while during the subsequent time interviews could be conducted according to the situation – by telephone or face-to-face. Interviews are done during the week immediately following the reference week.

The average response rate in 2017 was 78.5% and refusals accounted for 35.3% of the total non-response.

## Weighting procedure

**Method:** Calibration.

**Variables used:** Gender, age groups, region (NUTS3), type of place of residence (urban/rural), number of households.

**Reference population for weighting:** Population living in private households.

**Description:** At the first stage, design (or design-based) weights are determined. For any stratum of the sample, the unique design weight is defined as the ratio of the total number of dwellings in the stratum to that in the sub-sample for that stratum. Some adjustments are also included at this stage.

At the second stage, calibrated weights are determined with the method of generalised raking. The calibration is organised so that all members in a sample household have the same calibrated weight as that household.

Method of deriving controls: demographic components method combined with census-based proportions.

## MALTA (MT)

### Background

The Maltese Labour Force Survey started in 2000, providing quarterly results from 2001. The survey was redesigned as a quarterly continuous survey in 2004. At the same time a new sampling frame was introduced.

Major changes in recent years:

- 2006: Weighting scheme changed to correct for non-response in successive waves.
- 2007: Quarterly sample size increased from 2 500 to 3 200 households.
- 2008: Rotation scheme changed from 2- to 2-(2)-2.
- 2012: New sampling frame based on the census 2011. For the data collection 2006-2011 the census 2005 was used.

### Coverage

**Population interviewed for employment status:** 15 years and more.

**Participation:** Compulsory.

**Description:** The survey covers the whole country. Only private households are surveyed. A household is defined as one or more persons who live together and share expenses.

The survey covers private households, including people who are temporarily absent from the usual place of residence. Children or any other members who are living in another dwelling or institution are excluded.

### Sampling strategy

**Sampling design:** Systematic random sampling.

**Sampling frame:** Census 2011 updated with demographic register.

**Sampling units:** The sampling unit is the household.

**Theoretical sample size (quarterly average):** 3 200 households.

**Sampling rate:** 1.70%.

**Rotation scheme:** 2-(2)-2.

**Description:** The sampling plan is a one-stage systematic random sample of households from the 2011 Census taking into account the locality of residence and composition of households. All persons in the household selected are interviewed.

### Data collection

**Techniques adopted:** PAPI – CATI.

**Interviews by technique distribution:** PAPI 25%, CATI 75%.

**Response rate:** 75.2%.

**Proxy rate (15-74 years):** 47.4%.

**Description:** Each household is contacted via ordinary mail so that it is informed that the family has been chosen to participate in the LFS. An interviewer who is assigned to a group of households carries out the interview in one of two ways i.e. in person or by telephone.

In the first wave the interview is conducted via PAPI whereas in the later waves they are usually carried out using CATI or PAPI only when the households do not provide a telephone number or do not have a telephone landline or do not want to be interviewed over the phone.

The average response rate was 75.2% and refusals accounted for 4.4% of the total non-response.

## Weighting procedure<sup>2</sup>

**Method:** Calibration.

**Variables used:** Gender, age groups, region (NUTS4).

**Reference population for weighting:** Population living in private households.

**Description:** Prior to the compilation of weights, adjustment for non-response is done based on panel information to correct for sample bias arising out of differential non-response and non-representative probabilities of selection.

A posteriori stratification at one level is performed by sex, age-group and district. This allows the tabulation of estimates at national and district levels. The totals are benchmarked to Census Population Totals of persons living in private households only.

For weighting procedures, NUTS4 is used, gender and age groups (0-4, 5-9, 10-14, 15-17, 18-19, 20-24, 25-29, continue 5-years age groups until 75-79, 80+).

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<sup>2</sup> In 2018 the weighting methodology was changed and time series of the main indicators were revised backward till 2012.

# NETHERLANDS (NL)

## Background

The Dutch Labour Force Survey started in 1987 as an annual survey. In 2000 it was redesigned as a continuous quarterly survey.

Major changes in recent years:

2010: Revision of sampling design and weighting scheme.

2012: Introduction of computer-assisted web interviewing (CAWI).

2015: The LFS weights were recalculated from 2011 onwards. Breaks in the series of unemployment due to LFS redesigns in 2010 and 2012 were corrected for in the new weights. Until this revision of weights the series were continued on the levels for unemployment from before the redesigns.

## Coverage

**Population interviewed for employment status:** 15 years and more.

**Participation:** Voluntary.

**Description:** The resident population comprises persons residing in the Netherlands. The survey covers only private households. The private household comprises either persons living alone or two or more persons, whether or not they are of the same family, who usually occupy the same dwelling and share a joint budget.

The survey is based on sliding reference weeks, meaning that respondents answer the questions on the current week.

## Sampling strategy

**Sampling design:** Two stages stratified sampling plan.

**Sampling frame:** List of postal addresses and population register.

**Sampling units:** Primary sampling unit is the municipality and final sampling unit is the household address.

**Theoretical sample size (quarterly average):** 36 300 households.

**Sampling rate:** 0.50%.

**Rotation scheme:** 5.

**Description:** In the first stage, municipalities are selected systematically with a probability proportional to the number of addresses in the municipalities and also the number of addresses, which have to be selected in the second stage, are determined for selected municipalities. For municipalities which are selected with probability 1, the number of addresses which have to be selected in the second stage equals the product of the sampling rate and the number of addresses in the municipality. With the current sample size, every municipality is selected with probability 1. In the second stage, addresses are selected randomly in the selected municipalities, with the number of addresses per municipality as determined in the first stage.

Mailing addresses (which represent the secondary sampling unit) are selected systematically out of a mailing list sorted by postal code. At addresses with more than one letterbox, all letterboxes appear in the list. If a selected mailing address includes only one household, this household is selected. If the address includes more than one household, a maximum of three households are selected.

A sub-sample is used to survey the structural variables (for which only yearly results are required) concerning, for example, atypical work, previous work experience of persons not in employment and

ad-hoc modules. The sub-sample is determined according to a wave approach, i.e. it includes the units of each full quarterly sample which, according to the rotation scheme are interviewed for the second time (2nd wave). This corresponds to one fifth of each quarterly sample.

## Data collection

**Techniques adopted:** CAWI - CAPI – CATI.

**Interviews by technique distribution:** CAWI 21%, CAPI 7%, CATI 72%.

**Response rate:** 51.6%.

**Proxy rate (15-74 years):** 45.4%.

**Description:** Since 2010 interviews in the first wave are carried out mixed-mode (CATI, CAPI); as from Q4 2012 CAWI is introduced. First everyone is approached by CAWI. Non-respondents are re-approached by CATI or CAPI. When a telephone number is available, people are re-approached by telephone (CATI). When there is no telephone number available, the approach is face-to-face with the help of portable computers (CAPI). Interviews in the next four waves are carried out by telephone (CATI). In the CATI questionnaire, data previously gathered in the preceding wave (CAWI, CATI or CAPI) are included.

The response rate in 2017 was 51.6% and refusals accounted for 73.6% of the total non-response.

## Weighting procedure

**Method:** Post-stratification.

**Variables used:** Gender, age groups, region (municipalities with over 30 thousand residents), ethnic background, household type, income and registration at the unemployment office.

**Reference population for weighting:** Population living in private households.

**Description:** Weighting of the respondents is done in two stages. In the first stage all respondents are assigned an inclusion weight. These inclusion weights are calculated in such a way that unequal inclusion probabilities that occur because of the sampling method are corrected. In the second stage final weights are determined. In this stage biases because of non-response are reduced. For this, information on gender, age, ethnic background, place of residence and some other regional classifications are used. In addition, administrative sources on the income and registration at unemployment office are used. Also information on the correlation in the panel-overlap between subsequent quarters is used and all waves together are weighted in one step.

# AUSTRIA (AT)

## Background

The Austrian Labour Force Survey covering the whole questionnaire of the European Labour Force Survey started in 1995 as an annual survey in March. In 2004 the LFS was redesigned as a continuous survey, covering all weeks of the year. Key data on employment and unemployment have been collected within the Austrian Microcensus quarterly since 1968, but ILO definitions have been used only from 1994 onwards.

Major changes in recent years:

- 2004: Replacement of PAPI (paper and pencil interviewing) with CATI for second to fifth wave interviews.
- 2006: Replacement of PAPI with CAPI for first-wave interviews.
- 2012: Last revision of the questionnaire.
- 2014: Change of the weighting scheme (Census 2011 and inclusion of register based information) and revision of weights for the period 2004 to 2013.

## Coverage

**Population interviewed for employment status:** 15 years and more.

**Participation:** Compulsory.

**Description:** Only the population in private households is included. The resident population comprises persons who have their main residence on Austrian territory during the reference week.

A private household is made up of all people actually living in a dwelling.

## Sampling strategy

**Sampling design:** One stage stratified sampling plan.

**Sampling frame:** Register of residents.

**Sampling units:** The sampling unit is the dwelling.

**Theoretical sample size (quarterly average):** 22 500 dwellings.

**Sampling rate:** 0.60%.

**Rotation scheme:** 5.

**Description:** The sampling design is a stratified single random sample from the sampling frame, with each 'Bundesland' (NUTS2) forming a stratum.

The sampling unit is the dwelling with at least one person with main residence. All the people in the selected dwellings are surveyed.

## Data collection

**Techniques adopted:** CAPI – CATI.

**Interviews by technique distribution:** CAPI 35.8%, CATI 64.2%.

**Response rate:** 96.7%.

**Proxy rate (15-74 years):** 24.4%.

**Description:** CAPI (computer-assisted personal interviewing) is used in the first wave and mostly CATI (computer-assisted telephone interviewing) in the second to fifth waves.

The average response rate in 2017 was 96.7% and refusals accounted for 33.4% of the total non-response.

## Weighting procedure

**Method:** Calibration.

**Variables used:** Gender, age groups, region (NUTS2), nationality, household size, register based labour status

**Reference population for weighting:** Population living in private households.

**Description:** The weights are calculated in two steps.

In the first step for each record a basic weight which depends on the stratum and the domain is calculated.

In the second step the weights are adjusted so that the resulting distribution is in accordance to the population within the federal provinces (Bundesländer, NUTS2).

Calibration is performed by iterative proportional fitting and the following specifications are used for calibration:

- total number of persons in private households in NUTS2 region b (= 1, ..., 9), age class a (1 = 0-2 years, 2 = 3-5 years, 3 = 6-9, 4 = 10-14, ... (5-year classes) ..., 18 = 80-84, 19 = 85+) and sex s (= 1, 2);
- total number of persons in private households in NUTS2 region b (= 1, ..., 9) with nationality n (1 = Austria, 2 = EU-15 without Austria, 3 = EU from 2004 onwards, 4 = European non-EU states, 5 = Turkey, 6 = others);
- total number of persons in private households in NUTS2 region b (= 1, ..., 9) with register based labour status l (1 = standard employment, 2 = non-standard employment, 3 = self-employment, 4 = unemployment, 5 = out of labour force) and sex s (=1, 2);
- total number of households in NUTS2 region b (= 1, ..., 9) with g (= 1, 2, ..., 5+) residents.

In a first step, a basic weight is calculated for each person. This is followed by a calibration procedure with iterative proportional fitting. Finally each member of the household gets the same weight.

## POLAND (PL)

### Background

The Polish Labour Force Survey started in May 1992 as a quarterly survey, using data collection in one reference week per quarter. Since Q4 1999 the survey has covered all weeks of the year.

Major changes in recent years:

- 2006: Introduction of CAPI supplementing PAPI.  
Change to the questionnaire, to better identify people absent from work (identification of lay-offs) and to tie in with the EU-LFS operational guidelines for the definition of labour status.
- 2009: Questionnaire changed to better align to the EU-LFS operational guidelines for the definition of labour status.
- 2010: Sample size doubled in order to adjust precision to the requirement set out in Article 3.2.
- 2011: From Q1 2011 onwards the occupational data is compiled in accordance with the Classification of Occupations and Specializations 2010 (KZiS 2010), being a national adaptation of ISCO-08. The KZiS 2010 replaced the KZiS 2007.
- 2012: From Q3 2012 generalization of the survey results on the population was carried out with the use of the data on the population of Poland aged 15 years and more coming from the balances compiled on the new basis of the results - National Census of Population and Housing 2011.
- 2014: Introduction of CATI as a supplementary mode of data collection.
- 2015: From Q1 2015 onwards data on occupation is compiled in accordance with the Classification of Occupations and Specializations 2014 (KZiS 2014) which replaced KZiS 2010.
- 2016: Since Q1 2016 all new samples (people surveyed for the first time) are selected according to a new stratification scheme. As previously the main division of strata is based on voivodships and strata within voivodships are created depending on the size of a place, however also one or two of the biggest voivodship towns form the separate strata among these inter-voivodship strata. Moreover, the correction of weights respective to lack of responses has started to be calculated at the voivodship level and calibration of results separately for all 16 voivodships – NUTS2 level (instead of country level).

### Coverage

**Population interviewed for employment status:** 15 years and more.

**Participation:** Voluntary.

**Description:** The survey is spread over the whole country. The target population covers all persons aged 15 years and over with usual residence in Poland. Only private households are surveyed. Persons living in institutional households (army, hospital, prison, hostels, etc.) are excluded from the survey if their length of stay in these institutions is planned to be one year or longer. The same applies to persons living permanently or temporarily (for one year or longer) in other countries.

The household is a group of relatives or other people living together and maintaining a joint unit. Persons not belonging to any household and living and managing the household alone are considered as single-person households.

### Sampling strategy

**Sampling design:** Two stages stratified sampling plan.

**Sampling frame:** OBS - statistical sampling frame for social surveys.



**Sampling units:** Primary sampling unit is the Census cluster in towns and enumeration district in rural areas and final sampling unit is the dwelling.

**Theoretical sample size (quarterly average):** 55 380 dwellings.

**Sampling rate:** 0.40%.

**Rotation scheme:** 2-(2)-2.

**Description:** The primary sampling units (PSUs) refer with few exceptions to census clusters in towns and enumeration districts in rural areas. PSUs are stratified by urban/rural division of voivodships (provinces), as well as division within voivodships depending on the size of the place, with rural areas included among the smallest ones (since Q1 2016 in case of new subsamples in the survey one to two of the biggest voivodship towns have formed separate strata in voivodships). PSUs are sampled within strata with sampling probability proportional to the number of dwellings in a PSU.

In the second stage a total of 55 380 dwelling units per quarter are sampled from selected PSUs stratified by size of the municipality.

## Data collection

**Techniques adopted:** CAPI – PAPI – CATI.

**Interviews by technique distribution:** CAPI 81.9%, PAPI 16.9%, CATI 1.2%.

**Response rate:** 61.3%.

**Proxy rate (15-74 years):** 37.6%.

**Description:** The data are collected mainly with use of face-to-face interviews - CAPI method (in case of problems with IT applications equipment or on respondent request paper questionnaires are used). CATI is a supplementary survey method for LFS which is only applied to households with one member of age 15+ and on condition that he/she previously expressed the approval of being surveyed in this way in the next observations/surveys. The CATI is applied only in case of second, third and fourth (the last) wave for whole country.

The average response rate in 2017 was 61.3% and refusals accounted for 52.7% of the total non-response.

## Weighting procedure

**Method:** Post-stratification.

**Variables used:** Gender, age groups, region (NUTS2), type of place of residence (urban/rural).

**Reference population for weighting:** Population living in private households.

**Description:** The weights are computed using a four-step procedure. First the initial design weights are calculated for dwelling units, i.e., the inverse of the selection probabilities for the final sampling units in each stratum. Secondly, the weighted response rates are calculated for sampling units stratified a posteriori by six place-of-residence categories in each voivodship. Thirdly, the initial weights are adjusted by the response rates.

The final step consists in modifying the adjusted weights using the population estimates stratified a posteriori by the urban-rural division, sex and 12 age groups (15-17, 18-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, 60-64, 65+) plus three age groups (0-4, 5-9, 10-14) for children living in the surveyed households separately in each voivodship.

# PORTUGAL (PT)

## General

The Portuguese LFS started in 1983 as a quarterly survey. Since 1998, the survey is a continuous one yielding quarterly results.

Major changes in recent years:

2011: Implementation of telephone interviewing (CATI) as one of the data collection mode and revision of the questionnaire.

2013: Implementation of a new sampling frame from the National Dwellings Register.

## Coverage

**Population interviewed for employment status:** 15 years and more.

**Participation:** Compulsory.

**Description:** All the geographical territory of Portugal is covered, i.e. mainland, Madeira and Azores.

Only private dwellings are surveyed, although the survey also covers the individuals living in collective dwellings who represent a potential for the labour market, insofar as they have family links with the private dwellings (national servicemen or students).

The resident population consists of individuals living in private dwellings during the reference week. Individuals who are absent for short periods of time (less than one year) and who are not occupying other dwellings permanently are also included.

## Sampling strategy

**Sampling design:** Two stages cluster sampling plan.

**Sampling frame:** National Dwelling Register (NDR).

**Sampling units:** Primary sampling unit is the geographical area and final sampling unit is the dwelling.

**Theoretical sample size (quarterly average):** 22 572 dwellings.

**Sampling rate:** 0.60%.

**Rotation scheme:** 6.

**Description:** The sampling frame is stratified one-stage cluster sample. In each stratum (NUTS3), the clusters are selected systematically with probability proportional to size (number of private dwellings of usual residence). The clusters are composed by one or more contiguous grid INSPIRE cells with 1 Km<sup>2</sup> of area, also aiming at having at least close to 300 private dwellings of usual residence in each of them – 1 254 Primary Sampling Units (PSU) are selected.

The selection of PSU is made with probability proportional to size (in number of private dwellings of usual residence).

All persons living in the same dwelling are interviewed. In spite of the survey being directed to the households, the dwellings are the sampling units.

## Data collection

**Techniques adopted:** CAPI – CATI.

**Interviews by technique distribution:** CAPI 29.8%, CATI 70.2%.

**Response rate:** 83.9%.

**Proxy rate (15-74 years):** 48.1%.

**Description:** All information is obtained by interviews which are carried out in a mixed mode; the first interview is done face-to-face by a laptop while the other five interviews are generally done by telephone (CATI).

The average response rate in 2017 was 83.9% and refusals accounted for 14.9% of the total non-response.

## Weighting procedure

**Method:** Calibration.

**Variables used:** Gender, age groups, region (NUTS3).

**Reference population for weighting:** Total resident population.

**Description:** The weight is derived as the product of a design weight (which incorporates design information and non-response) and a factor that calibrates the sample to the independent demographic estimates using a posteriori stratification method by:

- NUTS2, sex and 5-years age groups;
- NUTS3 (or groups of NUTS3) by six age groups;
- NUTS3 (or groups of NUTS3) by sex.

## ROMANIA (RO)

### Background

The Romanian Labour Force Survey started in 1993 with a pilot survey, followed by two annual surveys in 1994 and 1995. In 1996, a continuous LFS started, providing quarterly results.

Major changes in recent years:

2006: Full and uniform coverage of the weeks of each quarter.

2014: National LFS is fully aligned to the definition of resident population.

### Coverage

**Population interviewed for employment status:** 15 years and more.

**Participation:** Voluntary.

**Description:** The whole country is covered and only private households are surveyed. The target population comprises persons resident in Romania.

The survey covers all members of the selected households including the persons absent from home for a longer period, living inside the country or abroad (for the latter, only if the total duration of staying abroad is less than 12 months), if they are preserving family relations with the household to which they belong, such as: pupils and students away for study, persons left for work, prisoners, persons temporary in hospitals or sanatoria for medical cure.

A household is defined as a group of two or more persons, usually living together, being generally relatives, managing the household in common, entirely or partly participating in income formation and spending. A person stating that he or she does not belong to any joint household, and lives and manages the household all by him or herself, is considered as a single-person household.

### Sampling strategy

**Sampling design:** Two stages stratified sampling plan.

**Sampling frame:** Census 2011.

**Sampling units:** Primary sampling unit is a group of census section and final sampling unit is the dwelling.

**Theoretical sample size (quarterly average):** 28 512 dwellings.

**Sampling rate:** 0.38%.

**Rotation scheme:** 2-(2)-2.

**Description:** The sampling plan is a two-stage probability sampling of housing units.

In the first stage, a stratified random sample of 792 areas, Primary Sampling Units (PSUs), was designed after the 2011 census, using as stratification criteria the residence area (urban/rural) and county (corresponding to NUTS3 level) – 88 strata in all. This is the Multifunctional Sample of Territorial Areas, known as the master sample EMZOT. The EMZOT sample has 450 PSUs selected from urban area and 342 PSUs selected from rural area.

In the second stage, the dwellings are systematically selected from the initial sample of PSUs. The final quarterly sample consists of 28 512 dwelling units each quarter. All households within each sampling unit are included.

## Data collection

**Techniques adopted:** PAPI.

**Interviews by technique distribution:** PAPI 100%.

**Response rate:** 87.3%.

**Proxy rate (15-74 years):** 20.8%.

**Description:** The data are collected only by face-to-face interviews using paper questionnaires. Data are collected with identical questionnaires through the whole year. The questionnaire is divided into three parts: dwelling questionnaire, individual questionnaire and continuous education questionnaire.

The average response rate in 2017 was 87.3% and refusals accounted for 20.8% of the total non-response.

## Weighting procedure

**Method:** Calibration.

**Variables used:** Gender, age groups, region (NUTS2), type of place of residence (urban/rural), number of households.

**Reference population for weighting:** Total resident population.

**Description:** The weights are calculated in three steps:

- The first step assigns the inverse of the selection probabilities to each sampled dwelling unit.
- The second step adjusts for non-response, categorising the responding dwelling units by the following characteristics: county (NUTS3) and urban/rural residency.
- The third and final step consists in calibrating the secondary weights to the best latest available population totals by region, urban-rural residency, gender, 14 age groups (0-14, 15-19, ..., 70-74, 75 and older) and to the household totals by region, using the SAS macro Calmar.

The current demographic statistics used to calibrate the LFS estimates also include the institutional population.

# SLOVENIA (SI)

## Background

The Slovenian Labour Force Survey started in 1993 as an annual survey, using four weeks in May as the reference period. Since Q2 1997 the LFS has been conducted as a continuous survey, providing quarterly results.

Major changes in recent years:

- 2006: Move to a more uniform distribution of sample and coverage of all weeks of each quarter.
- 2007: Question on self-declared main labour status moved to the end of the questionnaire, to tie in with the EU-LFS operational guidelines for the definition of labour status.
- 2008: New definition of resident population introduced.

## Coverage

**Population interviewed for employment status:** 15 years and more.

**Participation:** Voluntary.

**Description:** The survey covers the whole country. Only individuals in private households are surveyed. A household is a single person or a group of persons who live together and share expenses related to common living and eating.

Members of the household temporarily absent for a period exceeding 12 months (in nursing home, prison, student accommodation) and persons living in other countries are excluded from the survey. Foreign nationals are included, if they correspond to the criteria of household. For the household members up to 15 years old only few questions are asked.

## Sampling strategy

**Sampling design:** One stage stratified sampling plan.

**Sampling frame:** Central Population register.

**Sampling units:** The sampling unit is the household.

**Theoretical sample size (quarterly average):** 7 720 households.

**Sampling rate:** 0.40%.

**Rotation scheme:** 3-(1)-2.

**Description:** The sampling method is a stratified systematic random sampling of addresses. All members of the household at the selected address are included.

Strata are defined by NUTS3 (12) and type of settlement, defined according to the settlement size and proportion of farmers (6). Stratum allocation is proportional to the population distribution, adjusted by previous non-response rates by stratum.

## Data collection

**Techniques adopted:** CAPI – CATI.

**Interviews by technique distribution:** CAPI 39%, CATI 61%.

**Response rate:** 79.9%.

**Proxy rate (15-74 years):** 53.3%.

**Description:** Face-to-face interviews using electronic questionnaires and telephone interviewing are

used for the data collection. The first interview is a face-to-face interview at home (CAPI). All repeated interviews are carried out by telephone if the household has a telephone (CATI) otherwise CAPI.

The average response rate in 2017 was 79.9%. Refusals accounted for 55.2% of the total non-response.

## Weighting procedure

**Method:** Calibration.

**Variables used:** Gender, age groups, region (NUTS3).

**Reference population for weighting:** Total resident population.

**Description:** The data are weighted for unequal probability of selection and for non-response and calibrated according to the known population distribution: age groups (0-14, 15-19, 20-29, 30-39, 40-49, 50-59, 60-69, 70+), sex and region (NUTS3 level). The calibration is done on a household level, with members of the same household thus receiving identical weights, and benchmarked to population totals. Institutional population is included in population totals.

# SLOVAKIA (SK)

## Background

The Slovakian Labour Force Survey started in 1993 as a continuous, quarterly survey using seasonal quarters. In 2000 the Slovakian LFS moved to calendar quarters.

Major changes in recent years:

- 2006: New structure of the national questionnaire.
- 2011: Implementation of a new CAPI mode.
- 2012: Sampling frame based on Census of Population 2011.

## Coverage

**Population interviewed for employment status:** 15 years and more.

**Participation:** Compulsory.

**Description:** The whole country is covered. Only private households are surveyed. A household is a group of persons sharing common accommodation and housekeeping budget. Persons living on their own constitute one-person households.

The target population of the survey is every person aged 15 and over, living in the household of the selected dwelling without regard to permanent, temporary or unregistered stays. Data for students living in hostels, schoolchildren at boarding schools and persons living temporarily in worker homes are collected within the households to which they belong. Inmates of prison or mental institutions, and foreign citizens staying temporarily are not surveyed.

## Sampling strategy

**Sampling design:** Two stages stratified sampling plan.

**Sampling frame:** Census 2011.

**Sampling units:** Primary sampling unit is the census administrative units and final sampling unit is the dwelling.

**Theoretical sample size (quarterly average):** 10 250 dwellings.

**Sampling rate:** 0.60%.

**Rotation scheme:** 5.

**Description:** The sampling design is a stratified two-stage probability sampling of dwelling units and the variables used for the stratification are regions.

The primary sampling units (PSU) correspond to the Census Administrative Units. These are selected at the first sampling stage in each district with probability proportional to the district's population size. Each PSU can be selected more than once.

At the second stage, the dwelling units are selected from each instance of the PSU using a simple random sampling method.

## Data collection

**Techniques adopted:** CAPI – PAPI – CATI.

**Interviews by technique distribution:** CAPI 30.3%, PAPI 40.1%, CATI 29.6%.

**Response rate:** 82.0%.



**Proxy rate (15-74 years):** 51.6%.

**Description:** The data are collected by face-to-face interviews (first visit); all other interviews are mainly carried out via telephone or using CAPI and PAPI as the mode of data collection.

The average response rate in 2017 was 82.0% and refusals accounted for 81.7% of the total non-response.

## Weighting procedure

**Method:** Post-stratification.

**Variables used:** Gender, age groups, region (NUTS3).

**Reference population for weighting:** Total population.

**Description:** Data from the survey for all persons participating in the survey are weighted by administrative data on total population (including institutional population) as of 1 January 2017 by region, sex and age groups. Extrapolation to the population is done at the level of individuals.

The population and the sample are subjected of a post-stratification by NUTS3 administrative region (8 regions altogether), sex and 5-years age groups.

## FINLAND (FI)

### Background

The Finnish Labour Force Survey (LFS) started in 1959. Finnish LFS data have been delivered to Eurostat since 1995. In the late 1990s various kinds of methodological development took place, and changes were introduced to the Finnish LFS to reflect EU harmonisation. Since 2000 the Finnish LFS is a strictly continuous survey.

Major changes in recent years:

2007: Implementation of the wave approach.

2008: Extension of the wave approach. Redesign of the questionnaire to tie in with Regulation 430/2005.

### Coverage

**Population interviewed for employment status:** 15-74 years.

**Participation:** Voluntary.

**Description:** The survey is a monthly survey of individuals with the reference weeks distributed uniformly throughout the month (4 or 5 reference weeks). The quarterly sample (usually 13 reference weeks) consists of three separate and independent monthly samples. The survey provides monthly, quarterly and annual results.

The whole country and the Autonomous Territory of the Åland Islands are covered, as well as both private and collective households.

The target population comprises people aged 15 to 74 who are registered as permanently resident in Finland, including those who are temporarily abroad for a period of less than a year, members of the armed forces, and the institutional population. It also includes foreign nationals who have been living in Finland for at least a year or intend to do so. Persons living in institutions cannot be separated from the total population.

The information concerning the household composition and other members of the household are collected in the last wave. A household consists of persons who live together, share meals or otherwise jointly use their income.

### Sampling strategy

**Sampling design:** One stage stratified sampling plan.

**Sampling frame:** Population register.

**Sampling units:** The sampling unit is the individual.

**Theoretical sample size (quarterly average):** 37 500 persons.

**Sampling rate:** 0.91%.

**Rotation scheme:** 3-(1)-2.

**Description:** The sampling design used in Finland is stratified systematic sampling of persons where the strata are formed according to NUTS1 regions with over-sampling from the Autonomous Territory of the Åland Islands.

In each stratum systematic random selection is applied to the frame sorted according to the domicile code and personal identity number which yields implicit geographic stratification. So far no indication of selection bias due to systematic sampling has been encountered, so the selection procedure can be approximated by simple random sampling without replacement (SRSWOR).

A sub-sample is used to survey some structural variables (mostly on relations between household members, atypical work, reasons for leaving last job/ not seeking employment/ not being available to start work within 2 weeks, situation one year before and others) in Commission Regulation (EC) 377/2008, for which only yearly results are required. The sub-sample is determined according to a wave approach, i.e. it includes the units of each full quarterly sample which, according to the rotation scheme, are interviewed for the fifth and last time (5th wave).

## Data collection

**Techniques adopted:** CATI.

**Interviews by technique distribution:** CATI 100%.

**Response rate:** 67.3%.

**Proxy rate (15-74 years):** 4.0%.

**Description:** The Labour Force Survey is based on a computer-aided telephone interview using decentralised computer-assisted telephone interviewing (CATI). Interviews are carried out in Finnish, Swedish and English. Demographic information (sex, year of birth, marital status, nationality) and information about highest level of completed education or training, and field of education are obtained from administrative sources (Population Register, Register of Completed Education and Degrees).

The average response rate in 2017 was 67.3% and refusals accounted for 57.6% of the total non-response.

## Weighting procedure

**Method:** Calibration.

**Variables used:** Gender, age groups, region (NUTS3), registered unemployment.

**Reference population for weighting:** Total population.

**Description:** The weighting procedure is carried out in two steps:

- **Post-stratified weights:** The 240 post-strata are constructed by sex (2), age group (6) and region (20).
- **Calibrated weights:** The post-stratified weights are calibrated according to gender, age group, region, reference week and status in Ministry of Labour's job-seeker register.

Specific weighting procedures are adopted for the household sub-sample and for the sub-sample of structural variables collected by the wave approach.

## SWEDEN (SE)

### Background

The Swedish Labour Force Survey started in 1959, with a quarterly survey introduced in 1963 and a monthly survey in 1970. From 1993, the reference weeks are distributed uniformly throughout the year and the survey provides monthly, quarterly and annual results. In April 2005 a new questionnaire was introduced, together with a full renewal of the weighting scheme.

Major changes in recent years:

- 2009: Ahead of 2010, a number of questions in the LFS were revised in order to minimise the risk of misclassification of the labour force status of sample persons due to the introduction of new programs at the public employment office, specifically Phase 3 of the activity and development guarantee. The scope of this program was very limited during 2009, but it was expected to increase during 2010 because more persons had finished the first two phases.
- 2010: The monthly sample was increased by 8 000 persons, from approximately 21 000 to 29 000. This change was requested by the Swedish government with the purpose of enabling a more detailed presentation of statistics concerning persons not at work and statistics on labour market flows.

### Coverage

**Population interviewed for employment status:** 15-74 years.

**Participation:** Voluntary.

**Description:** Through sampling of individuals, persons living in both private and collective households are covered. Persons living in a collective household are also recorded in the central population register and are therefore sampled as well as persons living in private households.

The resident population for the purposes of the survey comprises persons between the ages of 15 and 74 who are domiciled in Sweden according to the population register.

A household is either a person that lives alone or persons that live together and share household expenses. Members of the household are included in wave 8 (the last wave) according to EU definitions of economic households.

### Sampling strategy

**Sampling design:** One stage stratified sampling plan.

**Sampling frame:** Population register.

**Sampling units:** The sampling unit is the individual.

**Theoretical sample size (quarterly average):** 89 121 persons.

**Sampling rate:** 1.20%.

**Rotation scheme:** 8.

**Description:** The total sample consists of two separate samples.

The first sample is stratified according to county and sex. In this way 48 strata are constructed. The inclusion probabilities are in general proportional to the size of the strata, although some small counties have to be overrepresented in the sample. The age group 16-64 is also overrepresented.

The second sample is stratified according to region, sex, country of birth, age group (13-24, 25-54, 55-66) and information from Statistics Sweden's Income and Taxation register (IoT) combined with information from Statistics Sweden's Longitudinal integration database for health insurance and labour market studies (LISA). In this way 105 strata are constructed. Individuals that have specific

characteristics according to IoT and LISA are overrepresented.

## Data collection

**Techniques adopted:** CATI.

**Interviews by technique distribution:** CATI 100%.

**Response rate (15-74 years):** 56.6%.

**Proxy rate (15-74 years):** 2.6%.

**Description:** Information is collected by computer-assisted telephone interviews; the number of interviewers who conduct the interviews varies between 210–250 persons per month.

Data on sex, age, region, country of birth, industrial code, level and field of education and years of residence in Sweden are collected from administrative registers.

The average response rate in 2017 was 56.6% and refusals accounted for 34.8% of the total non-response.

## Weighting procedure

**Method:** Generalised regression estimation - Calibration.

**Variables used:** Gender, age groups, region (NUTS3), country of birth, registered employment and unemployment.

**Reference population for weighting:** Total resident population.

**Description:** The estimates are built on regression estimators (GREG) with a set of auxiliary information. The auxiliary variables are: sex, age (13 age groups), region (NUTS3), nationality at birth, information on employed persons by industry and persons who have enrolled at a job-centre as unemployed and are looking for work. The registers which are used to obtain the auxiliary variables are the Register of Total Population (RTB), the Employment Register (RAMS) and the Swedish Public Employment Service's register of job-seekers (SOK).

Each month the last wave of the individual LFS-sample is used as the starting point for identifying sampled households, i.e. the household sample is a network sample. The weights are based on the calibration approach for two-phase sampling in Estevao and Särndal (2002). Design weights according to the network sampling design, adjusted for nonresponse at the household level, are used as starting weights in the calibration. Only information at the individual level is used in the calibration.

# UNITED KINGDOM (UK)

## Background

The survey started in 1973 as a biennial survey (not using the ILO definition of unemployment). It was redesigned in 1984 as an annual survey and from 1992 as a continuous, quarterly survey.

Major changes in recent years:

- 2006: Move from seasonal to calendar quarters.
- 2007: Redefinition of some NUTS2 regions.
- 2008: Change of residency rules (i.e. the six-month residency rule removed from household surveys), in order to improve coverage of short-term migrants and temporary foreign workers.  
Implementation of the wave approach.
- 2010: Adaptations to the sample design relating to multiple-occupancy addresses and to households that have only adults aged 75 plus.

## Coverage

**Population interviewed for employment status:** 16 years and more.

**Participation:** Voluntary.

**Description:** The survey covers private households and includes persons who are temporarily absent. Students living in university accommodation (e.g. halls of residence) are sampled via their parents living in private households. In Great Britain, an additional sample is drawn to cover persons living in National Health Service/Hospital Trust accommodation.

A household response unit is one person living alone or a group of people (not necessarily related) living at the same address who share cooking facilities and share a living room or sitting room or dining area, this also includes students who live in halls of residence in term-time and residents in National Health Service.

## Sampling strategy

**Sampling design:** One stage stratified sampling plan.

**Sampling frame:** Postal addresses / telephone numbers / housing units.

**Sampling units:** The sampling unit is the household.

**Theoretical sample size (quarterly average):** 87 100 households.

**Sampling rate:** 0.33%.

**Rotation scheme:** 5.

**Description:** The sampling design is a stratified single stage systematic (single random in Northern Ireland) probability sampling.

The survey unit is the postal address (the telephone number in the far north of Scotland). For most of Great Britain, the survey base is the Royal Mail's PAF (Postcode Address File), a database of all addresses receiving mail. The list is limited to addresses receiving fewer than 50 items of post per day, in order to exclude businesses. Because of the very low population density in the far north of Scotland (north of the Caledonian Canal), interviews are carried out exclusively by telephone with telephone directories being used as sampling frames. In Northern Ireland, the Rating and Valuation List (which serves for the administration of land taxes) is used.

Most of Great Britain constitutes one stratum, while the far north of Scotland forms a separate

stratum and Northern Ireland three strata: Belfast and eastern and western Northern Ireland.

In Great Britain, a systematic sample is drawn each quarter from the three sampling bases, which yields 16,640 PAF addresses, 80 telephone numbers for the north of Scotland and nine units of National Health Service housing. As the PAF is broken down geographically, the systematic sampling ensures that the sample is representative at regional level. In Northern Ireland, a simple random sample is drawn, each quarter, from each of the three strata, giving 650 addresses in all. Additionally, 260 additional ('booster') new addresses are added to the sample in Q2 of each year; these are spread equally across the five waves. Thus, in any one quarter, a total of about 17 380 addresses are newly-selected in the UK for the main LFS (excluding the Northern Ireland boosters).

Since all adults within a household are sampled, the person-level survey may be regarded (mainly) as a one-stage cluster sample of people, with the clusters (or primary sampling units) being the households.

A sub-sample is used to survey some structural variables (mostly on atypical work, the situation one year before, and others) under Commission Regulation (EC) No 377/2008, for which only yearly results are required. The sub-sample is determined according to a wave approach, i.e. it includes the units of each full quarterly sample which, according to the rotation scheme, are interviewed for the first time (1st wave).

## Data collection

**Techniques adopted:** CAPI – CATI.

**Interviews by technique distribution:** CAPI 41.2%, CATI 58.8%.

**Response rate:** 49.3%.

**Proxy rate (15-74 years):** 35.2%.

**Description:** Interviews are carried out on a face-to-face basis with the help of portable computers (CAPI) for the interviews in the first wave. In the far north of Scotland (north of the Caledonian Canal) and for interviews in the second to fifth waves wherever possible, interviews are carried out by telephone (CATI). All information is obtained by interview.

The average response rate in 2017 was 49.3% and refusals accounted for 83.2% of the total non-response.

## Weighting procedure

**Method:** Calibration.

**Variables used:** Gender, age groups, region (LAU).

**Reference population for weighting:** Population living in private households.

**Description:** The adjustment procedure is based on a three-stage a posteriori stratification. In each case, figures are based on independent demographic estimates.

- (a) The stratification variable for the first stage is the Local Authority District or Unitary Authority. This stage makes it possible to make adjustments for different rates of non-response in the various local authority areas and ensures that the results are geographically representative.
- (b) The second-stage variables are sex and age group (0-15, each year of age in the 16-24 group and 25+). This stratification is intended to ensure that the age profile of the 16-24 year olds is correct at national level.
- (c) The variables in the third stage are region, sex and 5-years age group.

The three stages are applied by means of an iterative procedure designed to ensure that the estimates are consistent with the stratification variable sets.

## ICELAND (IS)

### Background

The survey started in 1991 as a semi-annual survey. Since 2003 the survey has covered all weeks of the year uniformly, providing quarterly results.

### Coverage

**Population interviewed for employment status:** 16-74 years.

**Participation:** Voluntary.

**Description:** Since beginning of the year 2011 the survey covers persons aged 16-74 years in both private and collective households.

The resident population comprises persons registered with domicile in Iceland, excluding persons attached to foreign missions and registered persons living abroad for more than six months, but including Icelandic personnel in missions abroad.

The definition of private household used is that of housekeeping unit.

### Sampling strategy

**Sampling design:** One stage sampling plan.

**Sampling frame:** Population register.

**Sampling units:** The sampling unit is the individual.

**Theoretical sample size (quarterly average):** 4 030 households.

**Sampling rate:** 1.70%.

**Rotation scheme:** 3-(2)-2.

**Description:** The sampling plan is a one-stage simple random sample without stratification and the sampling unit is the individual. Each quarter one fifth of the sample is renewed by a single random sample without replacement of persons younger than 75 in the first week of the quarter and older than 16 in the last week at the end of the rotation cycle. A person younger than 16 on the last day of the reference week is not included in the weekly sample until this age is reached

The quarterly sample is sorted according to sex, age and residence and then allocated systematically (with random start) to the 13 weeks of the quarters so that each week is representative of the total sample by age, sex and residence.

The household sub-sample is selected from the fifth and last wave so that the sampling probability is inversely proportional to the number of persons aged 16-74 years in the household of the drawn individual.

### Data collection

**Techniques adopted:** CATI.

**Interviews by technique distribution:** CATI 100%.

**Response rate:** 68.5%.

**Proxy rate (15-74 years):** 0.8%.

**Description:** Interviews are carried out by telephone with the aid of computers (CATI). Information on sex, age, years of residence, citizenship and marital status is obtained from administrative sources (National Population Register).



The average response rate in 2017 was 68.5% and refusals accounted for 28.1% of the total non-response.

## Weighting procedure

**Method:** Post-stratification.

**Variables used:** Gender, age groups.

**Reference population for weighting:** Total population.

**Description:** The a posteriori stratification variables are 5-years age groups and sex.

The weighting factors are calculated as follows:

$$w = N(sa) / [n(sa) + n'(sa)]$$

where N = population, s = sex, a = age, n = sample size and n' = estimated over-coverage (i.e. registered persons living abroad for more than six months as detected in the field work).

# NORWAY (NO)

## Background

The Norwegian labour force survey started in 1972 as a quarterly survey. From 1996, the survey has been designed as a continuous survey providing quarterly results, using the wave approach.

Major changes in recent years:

- 2006: Redesign of questionnaire for improved EU comparability of ILO labour status.  
Lower age limit moved to 15.

## Coverage

**Population interviewed for employment status:** 15-74 years.

**Participation:** Compulsory.

**Description:** The target population is total population aged 15-74, residing in Norway (according to the Central Population Register).

The survey covers private and collective households. The definition of household used is concept of housekeeping unit (i.e. persons living in the same dwelling with joint board).

## Sampling strategy

**Sampling design:** One stage stratified sampling plan.

**Sampling frame:** Population register.

**Sampling units:** The sampling unit is the household.

**Theoretical sample size (quarterly average):** 24 000 persons.

**Sampling rate:** 0.61%.

**Rotation scheme:** 8.

**Description:** Inhabitants in all municipalities are randomly selected, on the basis of a register of family units. Each family member aged 15-74 participates in the survey answering questions about their situation during a specified reference week.

The sampling frame is based on the Central Population Register, which is continuously updated by the local population registration offices. The sampling frame is stratified according to county (NUTS3 regions).

Each quarter the sample approximately consists of 24 000 persons (around 12 000 households), corresponding to a sampling rate of about 0.61%.

A sub-sample is used to survey some of the structural variables (mostly for atypical work, reasons for leaving last job/ not seeking employment/ not being available to start work within two weeks and others) under Commission Regulation (EC) No 377/2008, for which only yearly results are required. The sub-sample is determined according to a wave approach, i.e. it includes the units of each full quarterly sample which, according to the rotation scheme, are interviewed for the first and for the eighth and last time (1st and 8th wave).

## Data collection

**Techniques adopted:** CATI.

**Interviews by technique distribution:** CATI 100%.

**Response rate:** 84.2%.

**Proxy rate (15-74 years):** 17.0%.

**Description:** All interviews are carried out by telephone (CATI). For the coding of industry information from some registers is used. Moreover some demographic data are collected from the Central Population Register, and data on education are based on the Central Register of Education.

The response rate in 2017 was 84.2% and refusals accounted for 6.3% of the total non-response.

## Weighting procedure

**Method:** Post-stratification / Calibration.

**Variables used:** Gender, age groups, region (NUTS3), registered employment status, income.

**Reference population for weighting:** Total population.

**Description:** The initial weights are adjusted by post-stratification according to age, sex and employment status, altogether 96 ( $=2 \times 12 \times 4$ ) post-strata. The variables used for post-stratification are based on information from the Central Population Register, the Register of Employees and the Tax Register. Finally, the post-stratification adjusted weights are calibrated within each of the 19 counties, which is equivalent to the NUTS3 level, with respect to the marginal totals of the same auxiliary variables.

# SWITZERLAND (CH)

## Background

The Labour Force Survey in Switzerland was carried out for the first time in 1991 as an annual survey. It was conducted in the second quarter of each year (April-June), having as the reference week the week before the interview. In 2010 the LFS was redesigned as a quarterly survey, providing results as quarterly average.

Major changes in recent years:

- 2010: Shifting from an annual to a quarterly survey, making the participation compulsory, and revising the questionnaire.
- 2012: Shifting from a compulsory to voluntary participation in Q3 2012.
- 2014: Introduction of a new sampling frame for both subsamples (Sampling Frame for Person and Household Surveys) in Q2 2014.

## Coverage

**Population interviewed for employment status:** 15 years and more.

**Participation:** Voluntary.

**Description:** The survey population consists of all persons living in private households aged 15 years and older. Only one person per household is selected for the interview. A household is defined as all persons who generally spend the majority of nights (four nights per week or more) at a given residence.

The Swiss LFS covers only the permanent resident population in Switzerland and excludes some categories of foreign persons. The permanent resident population includes all persons officially residing in Switzerland for the entire year. Swiss citizens, foreign citizens holding a permanent residence permit or a residence permit valid for at least one year, international civil servants, diplomats and their family members all fall into this category.

## Sampling strategy

**Sampling design:** Two stages stratified sampling plan.

**Sampling frame:** Sampling Frame for Person and Household Surveys.

**Sampling units:** The sampling unit is the household, but only one person (aged 15 years and more) per household is interviewed.

**Theoretical sample size (quarterly average):** 38 150 persons.

**Sampling rate:** 0.53%.

**Rotation scheme:** 2-(2)-2.

**Description:** The sample for the Swiss LFS is divided into two parts:

- a) Standard sample (72 526 household/persons).
- b) Extra sample of foreign persons, additionally stratified by nationality (16 847 persons).

The base used for both subsamples is the SFSO's Sampling Frame for Person and Household Surveys, which contains administrative data provided by cantonal and communal resident's register offices and covers 100% of Switzerland's permanent resident population. This gross sample is first matched with a catalogue of all registered phone numbers (covering 70% to 75% of the target population), and subsequently, the remaining sample units are contacted by mail and asked to communicate a phone number under which they can be reached for the interview (=ALTEL-

subsample).

Once a household has been selected for a survey conducted by the SFSO, it remains ineligible for any other SFSO-survey during four years (coordination methods are used to reach this goal).

First, a random Poisson sample of households is drawn from the sampling frame. Subsequently, one person of each household in this first stage sample is selected by simple random sampling. The samples are stratified by canton (the sample size of each stratum is proportionate to the population size of the respective canton).

A sub-sample is used to survey some structural variables (mostly on atypical work, the situation one year before, and others) under Commission Regulation (EC) No 377/2008, for which only yearly results are required. The sub-sample is determined according to a wave approach, i.e. it includes the units of each full quarterly sample which, according to the rotation scheme, are interviewed for the first and the third time (1st and 3rd wave).

## Data collection

**Techniques adopted:** CATI.

**Interviews by technique distribution:** CATI 100%.

**Response rate:** 80.3%.

**Proxy rate (15-74 years):** 2.8%.

**Description:** In the CATI questionnaire, data previously gathered in the preceding wave are included. The questionnaire exists in four languages (German, French, Italian and English). All information is obtained by interview.

The response rate in 2017 was 80.3% and refusals accounted for 13.2% of the total non-response.

## Weighting procedure

**Method:** Calibration.

**Variables used:** Gender, age groups, region (NUTS3), marital status, nationality, registered employment and unemployment characteristics, others.

**Reference population for weighting:** Population living in private households.

**Description:** The weighting procedure is based on a two-phase process. In a first step, the design weights are obtained as the reciprocal of the inclusion probability of the sample units. In a second step, these weights are adjusted for non-response, and finally the sample is calibrated on age, sex, canton of residence (NUTS3), and other variables (nationality, residence permit, duration of residence, marital status, labour market status, number of jobs, income decile, grade of invalidity to work, reception of invalidity or old age pension, registration at public employment office, duration of registration at public employment office, economic activity of the local unit, legal form of the local unit) using the calibration software CALMAR.

# MONTENEGRO (ME)

## Background

The Labour Force Survey in Montenegro started in 2004 as annual survey but since 2008 LFS is carried out continuously during a whole year, and survey results are published quarterly.

Major changes in recent years:

2012: Introduction of Census of Population, Households and Dwellings 2011 as sampling frame.

2014: Adoption of ISCED 2011 classification.

2017: Sample size increased to 2 964 households quarterly.

Adoption of 2-(2)-2 rotational scheme.

## Coverage

**Population interviewed for employment status:** 15 years and more.

**Participation:** Voluntary.

**Description:** The Labour Force Survey covers the whole country. Target population comprises all persons with residence in Montenegro that live in private households. Members of the household temporary absent for a period exceeding 12 months are excluded from the survey.

Survey units are all household members, regardless of their age and current presence at home.

## Sampling strategy

**Sampling design:** Two stages stratified sampling plan.

**Sampling frame:** Census of Population, Households and Dwellings 2011.

**Sampling units:** Primary sampling unit is the enumeration area and final sampling unit is the household.

**Theoretical sample size (quarterly average):** 2 964 households.

**Sampling rate:** 1.54%.

**Rotation scheme:** 2-(2)-2.

**Description:** The sample design is a two stage sampling with stratification of the primary units carried out by region and degree of urbanization (8 strata).

Enumeration areas of the Census of Population, Households and Dwellings 2011 are used as the primary sampling units (PSU). Within each stratum an indirect additional stratification is made by partial ordering of PSU (PSUs are sorted by municipality) and PSUs are selected by systematic probabilities sampling with regard to the size (the number of households).

At the second stage households are selected by simple random procedure within PSUs.

## Data collection

**Techniques adopted:** PAPI.

**Interviews by technique distribution:** PAPI 100%.

**Response rate:** 83.3%.

**Proxy rate (15-74 years):** 39.0%.

**Description:** Data are collected by face-to-face interview, using paper questionnaires. Interviews are done during the week immediately following the reference week.

The response rate in 2017 was 83.3% and refusals accounted for 27.5% of the total non-response.

## Weighting procedure

**Method:** Calibration.

**Variables used:** Gender, age groups, region (strata).

**Reference population for weighting:** Population living in private households.

**Description:** Calculation of weights is made in several successive steps. At first, so-called design weights are calculated. The design weight of a household is calculated as the inverse of inclusion probabilities of PSU and final sampling unit. All persons of the same household have the design weight equal to the design weight of that household. The design weights are further adjusted according to the actual response level and calibrated according to:

- Census 2011 data by strata, sex and age groups;
- data from administrative sources (number of employed persons from Tax Authority and number of "health insured persons" i.e. persons who have health insurance based on unemployment).

Calibration of weights is made only for person level weights.

# FORMER YUGOSLAV REPUBLIC OF MACEDONIA (MK)

## Background

Starting with 2004, the labour force survey is conducted as a continuous quarterly survey throughout the year. The survey provides quarterly and annual (averages) results.

Major changes in recent years:

2006: Delivery of microdata to Eurostat.

2011: Introduction of telephone interviewing (CATI).

## Coverage

**Population interviewed for employment status:** 15-79 years.

**Participation:** Voluntary.

**Description:** The Macedonian LFS covers the whole country and it is a private household survey, which provides some socio-demographic information on population without age limit and labour market information on the population aged 15-79.

The survey applies to all the members of the selected households including persons absent from home for a longer period (over 6 months), if they are preserving family ties with the household to which they belong (military duty; pupils and students away for study; workers; prisoners; persons temporarily in hospitals or sanatoria for medical treatment), and they are surveyed via the relatives living in the selected households. In the case of persons living abroad, they are surveyed only if they are absent up to 12 months. Persons living permanently in collective units (elderly, handicapped, etc.) are not included in the survey.

## Sampling strategy

**Sampling design:** Two stages stratified sampling plan.

**Sampling frame:** Census 2002 updated with survey results on randomly selected statistical areas..

**Sampling units:** Primary sampling unit is the enumeration district and final sampling unit is the household.

**Theoretical sample size (quarterly average):** 5 000 households.

**Sampling rate:** 0.90%.

**Rotation scheme:** 2-(2)-2.

**Description:** The sample design strata are defined in terms of geographic regions and area types (i.e. urban and rural). Total number of strata is 16.

In each sampled enumeration district (ED), a fixed number of households (8) is selected with random sampling. The final quarterly sample consists on the whole of 5 000 households and is made up of three monthly sub-samples. There is no overlap between monthly sub-samples.

## Data collection

**Techniques adopted:** PAPI – CATI.

**Interviews by technique distribution:** PAPI 52.3%, CATI 47.7%.

**Response rate:** 88.1%.



**Proxy rate (15-74 years):** 52.8%.

**Description:** Data are collected by face-to-face interviews-registration on paper-and-pencil and computer assisted telephone interview introduced for the first time in 2011. Interviews are done during the week immediately following the reference week. Data are collected with identical questionnaires through the whole year. The questionnaire is divided into two parts, a household questionnaire and an individual one.

In 2017 the average response rate was 88.1% and refusals accounted for 51.2% of the total non-response.

## Weighting procedure

**Method:** Calibration.

**Variables used:** Gender, age groups, region (NUTS3), households number and households size.

**Reference population for weighting:** Population living in private households.

**Description:** Data are weighted for unequal probability of selection. The first step assigns the inverse of the selection probabilities to each sampled household unit. In the second step design weights are then adjusted for non-response by multiplying the basic weights by inverse of response rate at strata level. The third and final step consists in calibrating the secondary weights to the best latest available regional population totals for gender and 15 age groups and to the estimated number of households at regional level and to the estimated number of households on regional level and estimated number of households by size. All household members have the same final weight.

# TURKEY (TR)

## Background

The Labour Force Surveys in Turkey started in 1966, while regular annual Labour Force Surveys applying ILO recommendations started in October 1988. The Turkish LFS was carried out in April and October each year from 1989 to 1999 with major changes in design introduced in October 1994. In 2004 the questionnaire was revised to conform to the Eurostat regulation. From 2000 onwards the survey has produced quarterly results, and from 2005 monthly results using moving 3-month averages. Since 2014 all weeks of the year (52 weeks) are used as the reference period.

Major changes in recent years:

2006: Delivery of micro-data to Eurostat.

2009: Changes to the questionnaire, including: an improved verification of ILO labour status of seasonal workers; the deletion of some variables deemed unsuitable for the country situation (ex; variables on atypical works); fine tunings on the wording of some questions, to better align to Commission Regulation No 1897/2000 and in particular to the twelve principles for the formulation of questions on labour status.

Definition for resident population aligned to the Census 2011 recommendations, mainly regarding the treatment of students.

2014: Fully introduction of a yearly continuous survey, changes in the sampling design and in the weighting scheme.

## Coverage

**Population interviewed for employment status:** 15 years and more.

**Participation:** Compulsory.

**Description:** The survey covers the whole country. Only private households are surveyed.

The population surveyed comprises all persons in the country excluding residents of collective households. The small settlements (villages, districts etc.) having less than 20 households are not covered in the sampling frame (at most 1% of the population is excluded).

A household comprises one person or a group of persons with or without a family relationship who live in the same house or in the same part of the house, who meet their common requirements together and take part in the tasks and management of the household.

## Sampling strategy

**Sampling design:** Two stages stratified sampling plan.

**Sampling frame:** National addresses database.

**Sampling units:** Primary sampling unit is the housing block and final sampling unit is the household address.

**Theoretical sample size (quarterly average):** 44 000 households.

**Sampling rate:** 0.22%.

**Rotation scheme:** 2-(2)-2.

**Description:** The sampling frame is National Address Database which is based on Address Based Population Register System and it is continuously updated.

The sampling design is a two stage stratified cluster sampling with eight subsamples:

- In the first stage Primary sampling units (blocks) are selected with probability proportional to their household sizes from Province x Urban/Rural classes. The implicit strata are defined as 81 provinces and urban-rural areas (162 strata). An urban area is defined as a settlement with more than 20 000 inhabitants, rural area is defined as a settlement with less than 20 000 inhabitants based on current Address Based Population Register System.
- Selection of the second stage units (household addresses) are based on the rotation pattern. When the PSU's are firstly entered to the sample, 20 households are selected systematically and divided into two parts namely the sets A and B. Every quarter 10 of those (one set A or B) are involved in the survey.

## Data collection

**Techniques adopted:** CAPI.

**Interviews by technique distribution:** CAPI 100%.

**Response rate:** 95.7%.

**Proxy rate (15-74 years):** 9.6%.

**Description:** The data are collected by using Computer Assisted Personal Interviewing (CAPI).

Overall response rate in 2017 was 95.7% and refusals accounted for around 2.0% of the total non-response.

## Weighting procedure

**Method:** Calibration.

**Variables used:** Gender, age groups, region (NUTS2), type of place of residence (urban/rural).

**Reference population for weighting:** Population living in private households.

**Description:** The procedure takes into account the data of the related 3 months. Moving average procedure is applied, so each month, the weights of aggregate 3 month data are calculated.

The weighting procedure is based on a three-phase process:

- At the first step (design weights) initial weights are calculated inversely proportional to their selection probabilities (proportional probability selection at the first stage, systematic at the second stage) and assigned to each sampling unit.
- At the second step, nonresponse adjustment (excluding the out of scope units with their weights) of households is applied on the basis of blocks, thus initial weights are adjusted for non-response.
- At the final step, in order to estimate quarterly LFS results, the weights are calibrated by the "15th of middle month projections" based on Address Based Population Register. In the procedure, integrated calibration method is applied. Also trimming procedure is applied to avoid the use of extreme weights. In the calibration, "NUTS2 by urban-rural" and "age group by sex" distributions are adjusted iteratively. Finally an adjustment by register distribution of household size is applied.

## Glossary

### Target population

The target population is the population about which information is sought and estimates are required. For the LFS the target population consists of all persons residing in private households in the territory of the reporting country at the time of data collection.

### Sampling design

The sampling design specifies the way (rules and operations) the sample is drawn.

#### STRATIFICATION

The stratified random sampling is a method of sampling that involves the division of a reference population into smaller groups known as strata. In stratified random sampling, or stratification, the strata are formed based on members' shared attributes or characteristics. In general, not all the elements of the strata are sampled, but a further selection procedure applied at strata level.

#### CLUSTERING

The cluster sampling or clustering is a sampling method in which the reference population is divided into groups (known as clusters) and a simple random sample of the groups is selected. All the elements in each selected cluster are then included in the sample.

### Sampling frame

The sampling frame is the reference list(s) from which the sample (e.g. individuals, households, addresses or dwellings) is drawn.

### Sampling unit

A sampling unit is one of the units into which the sampling frame is divided for the purpose of sampling, each unit being regarded as individual and indivisible when the selection is made. In the context of the LFS, sampling units are generally dwellings, households, addresses or individuals.

### Sampling rate

The sampling rate is the ratio between the size of the sample and the size of the reference population from which the sample was selected.

### Rotation scheme

The sample rotation scheme specifies how often and for which reference quarters a sampling unit should provide information in the survey.

The schemes adopted by countries are:

**2-(2)-2:** each unit is interviewed four times in the course of 6 quarters; respondents are interviewed in two consecutive quarters, then they are temporarily removed for the next two quarters and entered again for the following two quarters, thereafter being definitively removed from the survey. It involves an overlap of 50% between consecutive quarters and 50% between the same quarters in consecutive years.

**5-:** each unit is interviewed five times in the course of 5 quarters; sampling units are asked to take part in the survey for five consecutive quarters and they are then replaced by other units. Thus, one fifth of the units in the survey are replaced each quarter and it involves an overlap of 80% between consecutive quarters and 20% between the same quarters in consecutive years.

**6-:** each unit is interviewed six times in the course of 6 quarters; sampling units are asked to take part in the survey for six consecutive quarters and they are then replaced by other units. Thus, one sixth of the units in the survey are replaced each quarter and it involves an overlap of 83.3% between consecutive quarters and 33.3% between the same quarters in consecutive years

**4- on annual basis:** each unit is interviewed once per year; each sampling unit remains in the sample for four years and 25% of the sample is replaced each year.

**3-(1)-2:** each unit is interviewed five times in the course of 6 quarters; respondents are interviewed in three consecutive quarters, then they are temporarily removed for the next quarter and entered again for the following two quarters, thereafter being definitively removed from the survey. It involves an overlap of 60% between consecutive quarters and 40% between the same quarters in consecutive years

**8-:** each unit is interviewed eight times in the course of 8 quarters; sampling units are asked to take part in the survey for eight consecutive quarters and they are then replaced by other units. Thus, one eighth of the units in the survey are replaced each quarter and it involves an overlap of 87.5% between consecutive quarters and 50% between the same quarters in consecutive years.

**3-(2)-2:** each unit is interviewed five times in the course of 7 quarters; respondents are interviewed in three consecutive quarters, then they are temporarily removed for the next two quarters and entered again for the following two quarters, thereafter being definitively removed from the survey. It involves an overlap of 60% between consecutive quarters and 40% between the same quarters in consecutive years.

## Data collection techniques

The different kinds of data collection techniques used in the LFS are the following:

**PAPI (Paper and Pencil Interviewing):** PAPI is a face-to-face interviewing technique in which the interviewer enters the responses into a paper questionnaire. If no interviewer is present and respondents enter the answers themselves it is considered a self-administered questionnaire.

**CAPI (Computer Assisted Personal Interviewing):** CAPI is a face-to-face interviewing technique in which the interviewer uses a computer to administer the questionnaire. Responses are directly entered into the application, and control and editing can be directly performed.

**CATI (Computer Assisted Telephone Interviewing):** CATI is a telephone surveying technique in which the interviewer follows a questionnaire displayed on a screen. Responses are directly entered into the application. It is a structured system of interviewing that speeds up the collection, control and editing of information collected.

**CAWI (Computer Assisted Web Interviewing):** CAWI is an Internet surveying technique in which respondents follow a questionnaire provided on a website and enter the responses into the application themselves.

## Proxy rate

The proxy rate is the percentage of proxy interviews among all interviews. A proxy interview is an interview with someone (e.g. one member of the household) other than the person from whom information is being sought.

## Response rate

The response rate is the ratio of the number of units for which data for at least some variables have been collected to the total number of units designated for data collection. Most of the countries calculate non-response on the basis of the household unit, with the exception of Denmark, Estonia, Luxembourg, Malta, Slovakia, Finland, Sweden, Iceland, Norway and Switzerland which calculate non-response at the level of the individuals.

## Weighting methods

The main methods adopted from the countries to compute weights are:

**Post-stratification:** Post-stratification is applied to survey data by stratifying sample units after data collection using information collected in the survey and auxiliary information to adjust weights to population control totals or for nonresponse adjustment.

**Calibration:** The calibration approach to estimation for finite populations consists of:

- (a) a computation of weights that incorporate specified auxiliary information and are restrained by calibration equation(s);
- (b) the use of these weights to compute linearly weighted estimates of totals and other finite population parameters: weight times variable value, summed over a set of observed units;
- (c) an objective to obtain nearly design unbiased estimates as long as nonresponse and other nonsampling errors are absent.

**Generalised regression estimation:** Generalised regression estimator (GREG) is a model assisted estimation method designed to improve the accuracy of the estimates by means of auxiliary information. GREG estimator guarantees the coherence between sampling estimates and known totals of the auxiliary variables as well.

## Annex (Tables)

**Table 1: Coverage of the EU-LFS by country, 2017**

	Participation	Population interviewed for employment status	Population in institutional households	Basis of sampling frame
<b>Belgium</b>	Compulsory	15+	No	Population Register
<b>Bulgaria</b>	Voluntary	15+	Via the household (students-workers)	Census 2011
<b>Czechia</b>	Voluntary	15+	No	Register of Census Areas (2013)
<b>Denmark</b>	Voluntary	15-74	Sampled	Population Register and other registers
<b>Germany</b>	Compulsory	15+	Yes	Census 2011 updated with data from building licenses
<b>Estonia</b>	Voluntary	15-74	Sampled	Census 2011 + Population register
<b>Ireland</b>	Voluntary	15+	No	Census 2011
<b>Greece</b>	Compulsory	15+	No	Census 2011
<b>Spain</b>	Compulsory	16+	Via the household	Census 2011 + Population registers
<b>France</b>	Compulsory	15+	No	Tax register (Metrop.) + annual population census (DOM)
<b>Croatia</b>	Voluntary	15+	No	Census 2011
<b>Italy</b>	Compulsory	16+	No	Municipal registers
<b>Cyprus</b>	Compulsory	15+	Via the household	Census 2011 updated with electricity consumers register)
<b>Latvia</b>	Voluntary	15-74	No	Population register and the National Real Estate
<b>Lithuania</b>	Voluntary	15+	No	Register of residents
<b>Luxembourg</b>	Compulsory	15+	No	Population Register
<b>Hungary</b>	Voluntary	15-74	No	Register of dwellings
<b>Malta</b>	Compulsory	15+	No	Census 2011 updated with demographic registers
<b>Netherlands</b>	Voluntary	15+	No	List of postal addresses and population register
<b>Austria</b>	Compulsory	15+	No	Register of residents
<b>Poland</b>	Voluntary	15+	Via the household	OBS - statistical sampling frame for social surveys
<b>Portugal</b>	Compulsory	15+	Via the household (students and servicemen)	Register of national dwellings
<b>Romania</b>	Voluntary	15+	Via the household	Census 2011
<b>Slovenia</b>	Voluntary	15+	No	Central Population register
<b>Slovakia</b>	Compulsory	15+	Via the household	Census 2011
<b>Finland</b>	Voluntary	15-74	Sampled	Population register
<b>Sweden</b>	Voluntary	15-74	Sampled	Population register
<b>United Kingdom</b>	Voluntary	16+	Via the household including population in NHS accommodation	Postal addresses / telephone numbers (N Scotl) / housing units (N Irel)
<b>Iceland</b>	Voluntary	16-74	Sampled	Population register

<b>Norway</b>	Compulsory	15-74	Sampled	Population register
<b>Switzerland</b>	Voluntary	15+	No	Sampling Frame for Person and Household Surveys (register of residents)
<b>Montenegro</b>	Voluntary	15+	No	Census 2011
<b>Former Yugoslav Republic of Macedonia</b>	Voluntary	15-79	No	Census 2002
<b>Turkey</b>	Compulsory	15+	No	National Address Database



**Table 2: Sampling designs of the EU-LFS by country, 2017**

	Sampling design	Primary sampling unit	Final sampling unit	Variables used for the stratification	Overall sampling rate per quarter
<b>Belgium</b>	Two stage stratified	Statistical sections	Households	Region	0.14%
<b>Bulgaria</b>	Two stage stratified	Census enumeration districts	Households	Administrative districts, type of place of residence	0.65%
<b>Czechia</b>	Two stage stratified	Census areas	Dwellings	Region (districts, Prague 1 district)	0.70%
<b>Denmark</b>	One stage stratified	-	Persons	Gross income, net unemployment from registers, socioeconomic status and age.	0.75%
<b>Germany</b>	One stage cluster	-	Clusters (sampling districts) of dwellings, households and persons	Region and size of building	0.25%
<b>Estonia</b>	One stage stratified	-	Persons	Group of regions by population size	0.60%
<b>Ireland</b>	Two stage stratified	Census blocks	Households	Region, Pobal HP Deprivation Index	1.51%
<b>Greece</b>	Two stage stratified	Blocks	Dwellings	Region (NUTS3) (2-3 strata for each) - Athens -Thessaloniki apart	0.89%
<b>Spain</b>	Two stage stratified	Geographical areas	Dwellings	Population size of municipality	0.45%
<b>France</b>	Two stage stratified (one stage stratified in overseas)	Geographical sectors (No PSU in DOM)	Dwellings	French region (NUTS2 - Metropol.) + infra NUTS3 (DOM)	0.25%
<b>Croatia</b>	Two stage stratified	Census areas	Dwellings	Region (NUTS2), urban/rural areas	0.40%
<b>Italy</b>	Two stage stratified	Municipalities	Households	Size categories of municipalities within NUTS3 region	0.28%
<b>Cyprus</b>	One stage stratified	-	Households	Districts, urban/rural	1.50%
<b>Latvia</b>	Two stage stratified	Sampling areas	Dwellings	Region, urban/rural	0.90%
<b>Lithuania</b>	Simple Random Sampling	-	Households	-	0.80%
<b>Luxembourg</b>	Simple Random Sampling	-	Persons	-	1.60%
<b>Hungary</b>	Two stage stratified	Settlements	Dwellings	Administrative units, size categories of localities	0.92%
<b>Malta</b>	Systematic Random sampling	-	Households	-	1.70%
<b>Netherlands</b>	Two stage stratified	Municipalities	Household address	Region - Corop (NUTS3)	0.50%
<b>Austria</b>	One stage stratified	-	Dwellings	Bundesland (NUTS2)	0.60%

<b>Poland</b>	Two stage stratified	Census clusters (towns) / enumeration districts (rural)	Dwellings	Region, urban/rural, urbanisation	0.40%
<b>Portugal</b>	Two stage cluster	Geographical areas	Dwellings	Region (NUTS3)	0.60%
<b>Romania</b>	Two stage stratified	Census sections	Dwellings	Region (NUTS3), urban/rural	0.38%
<b>Slovenia</b>	One stage stratified	-	Households	Region (NUTS3), size and type of settlement (urban/rural)	0.40%
<b>Slovakia</b>	Two stage stratified	Census administrative units	Dwellings	Region (NUTS4)	0.60%
<b>Finland</b>	One stage stratified	-	Persons	Region (NUTS1)	0.91%
<b>Sweden</b>	One stage stratified	-	Persons	Sex, age group, region, country of birth	1.20%
<b>United Kingdom</b>	One stage stratified	-	Households	Local areas	0.33%
<b>Iceland</b>	Simple Random Sampling	-	Persons	-	1.70%
<b>Norway</b>	One stage stratified	-	Households	County (NUTS3)	0.61%
<b>Switzerland</b>	Two stage stratified	Households	Persons	Canton	0.53%
<b>Montenegro</b>	Two stage stratified	Enumeration area	Households	Region, type of settlement (urban/rural)	1.54%
<b>Former Yugoslav Republic of Macedonia</b>	Two stage stratified	Enumeration districts	Households	Region, type of settlement (urban/rural)	0.90%
<b>Turkey</b>	Two stage stratified	Housing blocks	Household Address	Region (NUTS3), urban/rural areas	0.22%

**Table 3: Rotation scheme, response and proxy rates, weighting and achieved sample in the EU-LFS by country 2017**

	Rotation scheme	Response rate	Proxy rate	Achieved sample (average quarter 2017)		Variables of weighting
				Households	Persons 15-74	
<b>Belgium</b>	2-(2)-2	82.6	25.7	16,100	29,200	Gender, age group, region (NUTS2), household type, origin, level of urbanisation
<b>Bulgaria</b>	2-(2)-2	80.3	28.3	14,600	24,800	Gender, age group, region (NUTS3), urban/rural
<b>Czechia</b>	5-	78.8	43.2	24,300	40,500	Gender, age group, district
<b>Denmark</b>	2-(2)-2	55.0	6.4	-	21,300	Gender, age group, region, socio-economic status, income, nationality, level of education, status in the unemployment register
<b>Germany</b>	4- (annual)	96.2	25.1	93,400	141,700	Gender, age group, region (NUTS2-NUTS3), nationality (group), number of households
<b>Estonia</b>	2-(2)-2	66.8	36.1	2,700	5,400	Gender, age group, region (NUTS4), urban/rural, national/non-national
<b>Ireland</b>	5-	67.8	48.7	14,400	27,300	Gender, age group, region (NUTS3), nationality
<b>Greece</b>	6-	74.6	40.4	27,400	45,200	Gender, age group, region (NUTS2)
<b>Spain</b>	6-	86.9	51.5	63,200	119,200	Gender, age group, region (NUTS3), nationals/non-nationals, household size
<b>France</b>	6-	79.6	27.3	58,500	94,100	Gender, age group, region (NUTS2), house characteristics and typology, other variables
<b>Croatia</b>	2-(2)-2	55.5	51.7	3,100	6,200	Gender, age group, region (NUTS2-NUTS3), urban/rural, household size
<b>Italy</b>	2-(2)-2	85.1	26.7	64,400	105,000	Gender, age group, region (NUTS3), nationality (group), number of households

<b>Cyprus</b>	6-	96.2	35.9	3,900	7,800	Gender, age group, (Districts, urban/rural)
<b>Latvia</b>	2-(2)-2	64.6	38.4	4,800	7,600	Gender, age group, region (NUTS3), urban/rural, employment agency reg, revenue service reg.
<b>Lithuania</b>	2-(2)-2	77.7	33.0	6,600	12,100	Gender, age group, region (NUTS4), urban/rural
<b>Luxembourg</b>	5-	58.3	34.0	4,900	6,600	Gender, age group, household size, national / non-national
<b>Hungary</b>	6-	78.5	42.2	24,400	43,300	Gender, age group, region (NUTS3), number of households, urban/rural
<b>Malta</b>	2-(2)-2	75.2	47.4	2,300	4,900	Gender, age group, region (NUTS4)
<b>Netherlands</b>	5-	51.6	45.4	38,800	75,300	Gender, age group, region (NUTS4), ethnic background, household type, income and registration at unemployment office
<b>Austria</b>	5-	96.7	24.4	20,500	34,200	Gender, age group, region (NUTS2), nationality (group), household size, register based labour status
<b>Poland</b>	2-(2)-2	61.3	37.6	30,300	57,800	Gender, age group, region (NUTS2), urban/rural
<b>Portugal</b>	6-	83.9	48.1	16,200	30,000	Gender, age group, region (NUTS3)
<b>Romania</b>	2-(2)-2	87.3	20.8	23,600	46,700	Gender, age group, region (NUTS2), urban/rural, households total
<b>Slovenia</b>	3-(1)-2	79.9	53.3	6,100	12,500	Gender, age group, region (NUTS3)
<b>Slovakia</b>	5-	82.0	51.6	8,600	17,500	Gender, age group, region (NUTS3)
<b>Finland</b>	3-(1)-2	67.3	4.0	-	28,900	Gender, age group, region (NUTS3), registered unemployment
<b>Sweden</b>	8-	56.6	2.6	-	50,500	Gender, age group, region (NUTS3), country of birth, employment / unemployment
<b>United Kingdom</b>	5-	49.3	35.2	37,100	66,800	Gender, age group, region (LA/UA)
<b>Iceland</b>	3-(2)-2	68.5	0.8	-	2,600	Gender, age group

<b>Norway</b>	8-	84.2	17.0	13,300	20,300	Gender, age group, region (NUTS3), employment status, income
<b>Switzerland</b>	2-(2)-2	80.3	2.8	-	27,800	Gender, age group, region (NUTS3), marital status, nationality, employment / unemployment
<b>Montenegro</b>	2-(2)-2	83.3	39.0	2,200	5,100	Gender, age group, region (strata)
<b>Former Yugoslav Republic of Macedonia</b>	2-(2)-2	88.1	52.8	4,100	10,500	Gender, age group, region (NUTS3), number of households and household size
<b>Turkey</b>	2-(2)-2	95.7	9.6	37,400	89,400	Gender, age group, region (NUTS2), urban/rural

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# Labour Force Survey in the EU, candidate and EFTA countries

MAIN CHARACTERISTICS OF NATIONAL SURVEYS, 2017

The present report describes the main characteristics of the Labour Force Surveys (LFS) in the 28 Member States of the European Union, as well as three Candidate Countries and three EFTA countries in 2017. All these countries provide Eurostat with LFS micro-data for publication. The aim of this report is to provide users with the means to accurately interpret the LFS results by providing information regarding the technical features of the Labour Force Surveys carried out in these countries.

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