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FSO Quality Report

04 National economy

Neuchâtel, July 2023

SILC21 Quality report

The Federal Statistical Office (FSO) publishes on its website quality reports providing information about the methodology and the definitions used as well as on the quality of the statistical results, thus facilitating interpretation and understanding. The reports are produced first and foremost in order to meet the requirements of Eurostat. For this reason they are only compiled for a limited number of statistics.

The concept of the quality reports is based on the European Statistics System's (ESS) concept of quality contained in the European Statistics Code of Practice.

Statistical presentation

Data description

The European Union Statistics on Income and Living Conditions (EU-SILC) is an instrument aiming at collecting timely and comparable cross-sectional and longitudinal multidimensional microdata on income, poverty, social exclusion and living conditions. This instrument is anchored in the European Statistical System (ESS). In addition, are collected module variables every three year, six year or ad-hoc new policy needs modules.

The EU-SILC instrument provides two types of data:

- Cross-sectional data pertaining to a given time or a certain time period with variables on income, poverty, social exclusion and other living conditions;

- Longitudinal data pertaining to individual-level changes over time, observed periodically over four or more year rotation scheme (Annex III (2) of 2019/1700).

Social exclusion and housing condition information is collected mainly at household level while labour, education and health information is obtained for persons aged 16 and over. The core of the instrument, income at very detailed component level, is mainly collected at personal level.

The EU-SILC survey is a key instrument for providing information required by the European Semester and the European Pillar of Social Rights, in particular for income distribution, poverty and social exclusion, as well as various related living conditions and poverty EU policies, such as on child poverty, access to health care and other services, housing, over indebtedness and quality of life. It is also the main source of data for microsimulation purposes and flash estimates of income distribution and poverty rates.

Classification system

- International Standard Classification of Education (ISCED'2011);
- International Standard Classification of Occupations (ISCO-08);
- Classification of Economic Activities (NACE Rev.2-2008);
- Common classification of territorial units for statistics (NUTS 2);
- SCL - Geographical code list;

- The recommendations made by the United Nations in the Canberra Group Handbook on Household Income Statistics should also be taken into account.

For more details on the classification used please see RAMON, Eurostat's metadata server.

Coverage - sector

Data refers to all private households and individuals living in the private households in the national territory at the time of data collection.

Statistical concepts and definitions

F = Fully comparable L = Largely comparable P=Partly comparable NC = Not collected

Comparability and deviation from definition for each income

Income	Identifier	Comparability	Deviation from definition if any
Total hh gross income	(HY010)	F	
Total disposable hh income	(HY020)	F	In contrast to Eurostat directives, the variable *Non-cash employee income (PY020G)* is part of total gross household income because this component is not distinct from employee income within the CCO register (see PY010G above). Conversely, the variable *Company car* (PY021G) is not included as this is not computed.
Total disposable hh income before social transfers other than old-age and survivors' benefits	(HY022)	F	
Total disposable hh income before all social transfers	(HY023)	F	
Imputed rent	(HY030)	L	See Annex Imputation and estimation. It is calculated (imputed) yearly because included in the national calculation of the household diposable income.
Income from rental of property or land	(HY040)	F	
Family/ Children related allowances	(HY050)	F	
Social exclusion payments not elsewhere classified	(HY060)	F	
Housing allowances	(HY070)	F	
Regular inter-hh cash transfers received	(HY080)	F	
Interest, dividends, profit from capital investments in incorporated businesses	(HY090)	F	
Interest paid on mortgage	(HY100)	F	
Income received by people aged under 16	(HY110)	F	
Regular taxes on wealth	(HY120)	NC	Included in HY140G. Wealth tax is not distinguished from income tax. Both types of taxation feature under *Tax on income and social contributions* (HY140G). It also includes mandatory health-insurance premiums (LAMal).
Regular inter-hh transfers paid	(HY130)	F	
Value of goods produced for own consumption	(HY170)	NC	This variable is not collected as the value of goods produced for own consumption is not a material income component in Switzerland. According to the FSO Household Budget Survey, this variable represented in 2018 an average of less than 0.1% of gross income.
Cash or near-cash employee income	(PY010)	L	Data is taken from registers (CCO) and includes Benefits in kind (PY020G), which cannot be distinguished from Employee cash or near-cash income (PY010G).
Other non-cash employee income	(PY020)	NC	Included in PY010 (see above)
Income from private use of company car	(PY021)	NC	
Employers social insurance contributions	(PY030)	F	
Cash profits or losses from self-employment	(PY050)	F	
Unemployment benefits	(PY090)	F	
Old-age benefits	(PY100)	F	
Survivors benefits	(PY110)	F	
Sickness benefits	(PY120)	F	
Disability benefits	(PY130)	F	
Education-related allowances	(PY140)	F	
Gross monthly earnings for employees	(PY200)	L	It is calculated using PY010 and PY020 and, as indicated above, PY010 includes *Non-cash employee income (PY020G)*.

Description of collection income variables

The source or procedure used for the collection of income variables	The form (gross, net) in which income variables at component level have been obtained	The method used for obtaining target variables in the required form
In Switzerland, compensation offices collect social security contributions while calculating and paying out allowances and benefits. The Central compensation Office (CCO), which centralises data, is able to provide information on income arising from paid employment and self-employment, on income received by people under the age of 16, on 1st pillar old-age, survivor or disablity pensions, and on unemployment benefits. Information contained in the register of the Central compensation Office is used to fill in item non-response and validate or amend responses given by telephone. Most income variables are collected solely through the CATI. However, in regard to some income sub-components, this information was reconciled with data from the Central Compensation Office register to improve reliability. This relates to the following income sub-components: Cash profits or losses from self-employment (PY050G) and income received by people aged under 16 (HY110G). From SILC2017 on, survivor and disability pensions (PY110G and PY130G), First-pillar old-age pensions (PY100G), Unemployment benefits (PY090G) and loss of earnings allowances (sub-components of HY050G and HY060G) are not collected anymore through the CATI, but only filled in with registers. Employee cash or near-cash income (PY010G) is only surveyed through CATI in certain particular cases, but for most people the question is not asked. The Swiss Social Assistance Statistics(SHS) register enables the HY060G to be filled.	Respondents are asked to provide gross amounts for all income variables except cash or near-cash employee income (PY010G) and cash profits or losses from self-employment (PY050G). In this instance, the CATI respondent may give gross or net income. Income taken from the CCO register corresponds to gross amounts.	*Employee cash or near-cash income (PY010G)* Net income from employment is gross income minus social insurance contributions. These contributions comprise various insurances: state pension funds (first pillar) and occupational pensions (second pillar). Contribution rates for the first pillar are fixed, whereas those relating to the second pillar vary by age and gender, pension plan and sector of employment. Contributions may even vary between companies. Premium rates for accident insurance depend on employer and wage level. Rates vary greatly from one pension plan to another. Data from the FSO Swiss Earnings Structure Survey can be used to calculate average contribution rates by industry (NOGA). As such, gross-net conversion rates by sector of employment, age bracket and gender were used for calculating gross income for the few people for which CATI is used. *Cash profits or losses from self-employment (PY050G)* Self-employed workers pay first-pillar social-insurance contributions on their income. Membership of an occupational pension plan is optional. Self-employed workers' rates are obtained from a sliding scale. Net income can be determined by using the appropriate rate.

The national concepts used and possible differences in the reference population, household definition and membership

Reference population	Private household definition	Household membership
The reference population is people living in private households (i.e. not in institutions) where at leat one of the residents lives permanently.	A private household is a person or group of people who live in the same unit of accommodation and who pool expenditure for necessities.	Making up a same household are: -All persons who regularly live in the same accommodation -Subtenants, visitors, servants or au pairs, providing that they live in the household for a duration of no less than 6 months or who do not have other accommodation -Persons with or without family ties who live in the accommodation but who are absent for no longer than 6 months -Persons with family ties for whom the accommodation is the main residence and who have been absent for longer than 6 months but who plan to return to live there -Children living in shared custody

Description of reference period used for incomes

Period for taxes on income and social insurance contributions	Income reference periods used	Reference period for taxes on wealth	Lag between the income ref period and current variables
Social insurance contributions are calculated on the basis of income. Correspondingly, the reference period will be the same as for income, 2020.	Reference periods for income variables is 2020.	Amounts relating to (income and wealth) taxation are from the 2020 calendar year.	As interviews took place between January and June 2021, the time lag between 2020 data and those corresponding to the time of the interview is 6 months at the most.

Statistical unit

Statistical units are private households and all persons living in these households who have usual residence in the Member State. Specific statistical units per variable are defined in Annex II of the Commission implementing regulation (EU) 2019/2242 specifying content of the quality reports on the organization of a sample survey in the income and living conditions domain pursuant to Regulation (EU) 2019/1700 of the European Parliament and of the Council.

Statistical population

The target population is private households and all persons composing these households having their usual residence in the Member State. Private household means a person living alone or a group of persons who live together, providing oneself or themselves with the essentials of living.

The population moved out of territory of country, the population that have not a usual residence, living in institutions or who have moved to an institutions from the previous wave are not covered.

Reference area

The entire national territory is covered.

Coverage - Time

This report and the related data refer to 2021.EU- SILC has been implemented in Switzerland on the base of a four-year rotational panel since 2007.

Base period

Not applicable.

Statistical processing

Detailed information concerning sampling frame, sampling design, sampling units, sampling size, weightings and mode of data collection can be found in this section (please see below). Such information is mainly used for the computation of the accuracy measures.

Source data

SILC in Switzerland is a 4-year panel. W1 households are drawned from the SRPH survey frame. Households from wave 2 to 4 added to the new sub-sample. Contrary to the Eurostat monitoring rules, households complete in w1 are kept in the sample even if not complete for one of the following years. If not complete for a second year in a row, they are taken out of the sample. All individuals are kept in the sample, even if they have never answered the individual questionnaire, but their household is in the sample. It is for example possible that a household is complete because person 1 answered in w1 and w3, but person 2 (out of 2) only answered in w4.

Sampling design and procedure

The w1 sample is drawn from the survey framework according to a proportional, stratified design in the seven major geographical regions (NUTS2). Details about the sample size can be found in the table below.

Information from the previous years (w2-w4) is also sent to the survey institute, which only has to check that it is still valid (age, adress, nationality, educational level, etc). See Data compilation for more information. Raw sample size per wave as well as achieved sample size is presented in the table below.

Sampling unit

Sampling units (one-stage) are households made up of permanent residents in Switzerland in which, wherever possible, all individuals aged 16 or over are interviewed (two-stage). Non-permanent residents living in a household with at least one permanent resident are also included.

Sampling rate and sampling size

The SRPH survey framework is based on the communal and cantonal population registers in which all persons resident in Switzerland have to be registered. The registers contain information such as the names of people living in a household, their age, sex, nationality AVS/AHV insurance number, etc. but not their telephone number. This valuable information can be used to simplify the questionnaire grid but also to better establish the profile of non-respondents (see Appendix Weightings), or to link AVS/AHV numbers with other register data for the whole of the gross sample. The survey framework is updated every three months.

Frequency of data collection

Fieldwork for the SILC survey was carried out by a private research institute, Demoscope, between January and June. Addresses of the households in the sample were split into four distinct batches, regardless of rotational groups. A few days before the activation date of each batch when interviewers started calling, survey introduction letters were sent out to the households concerned. By using time distribution, management of contacts and appointments could be optimised in line with the research institute's resources. Moreover, one of our targets for all households was to minimise the time between letter receipt and initial contact. As shown in the annexed table, most interviews occurred between January and March.

Because the data collectionis carried out by phone, COVID-19 crisis had no impact and was conducted as in previous years.

Data collection

Mode of data collection

	1-PAPI	2-CAPI	3-CATI	4-CAWI	5-PAPI proxy	6-CAPI proxy	7-CATI proxy	8-CAWI proxy	9-other
% of total	0	0	94.20	0	0	0	5.80	0	0

Data validation

After the CATI, data are exported form the survey institute. Several checks are conducted to verify that:

- variables are present in the dataset, with the codes that are defined at that stage
- in cases of households being split, that presence /absence of individuals are coherent in the households, and with information from the population register
- households that are indicated as complete indeed meet the requirements to be complete
- the person who answers the household questionnaire is indeed living in the household
- grid variables enable some questions to be filtered. In cases when the grid variable was wrong, but only has been corrected further in the (individual) questionnaire, manual corrections are made to delete the information that should not have been asked, or to fill with appropriate flag/values the codes that should have been.

And more generally, other checks are conducted to detect any inconsistency or to verify the plausibility of the data. An iterative process is carried out, with manual corrections until no check appears anymore.

Furthermore, variables from the proxy interviews are transfered to individual variables.

Data compilation

Among the first stages, data are prepared to be used in the sample for next survey (w1-3) in the "masterfile", with consolidated variables like age, sex, citizenship, marital status, highest educational level attained. Some rare missing values are imputed with a multiple imputation procedure. An arbitrary choice of the most plausible value is then made from the imputed values. This step is also essential for the following weightings and imputation procedures. AHV numbers are also searched for the new cohabitants, to enable a pairing with registers.

Some individual information (consolidated) that does not change from year to year is recovered form previous years if the individual questionnaire has been filled in before. This is for example the case for variable height (PH110A, still asked yearly in the first individual interview), age at first job (PL190), year of immigration (RB031). Some household variables (HH010 , HH031) are also imported from the previous years if no change has been announced in the questionnaire. Furthermore, checks are conducted to verify, for example, that:

- occupational status is consistent with age
- family relationships are consistant with age and marital status (parents older than their children e.g.)
- level stay equal or increase in time, and is consistant with age
- codes are consistant with NACE codes

Weighting procedure

See Weightings appendix

Estimation and imputation

see Estimation and imputation appendix

Because of a high Item non-response rate for several Material and social deprivation items, imputations have been made on all missing values for the 13 items, as explained in the Estimation and imputation appendix.

Adjustment

Not applicable.

Quality management

> **Definition**
>
> Systems and frameworks in place within an organisation to manage the quality of statistical products and processes.

Quality assurance

As mentionned before, several controls are carried out at each step to ensure quality and comparability of the data. Metadata of each intermediate data are documented in *SAE-SMS Metadata Editor*, which then enable to match codes in the data with those theoretically present. At each important stage of the data preparation, frequencies / means / max /min / P5/ P95 /missing /n values of each variable is compared to those of the previous year, and those of the previous stage of data preparation, in order to identify and correct any mistake.

Quality management - assessment

None of the above mentioned analysis showed a decrease in the data quality due to COVID-19.

Relevance

> **Definition**
>
> The degree to which statistical information meets the real or perceived needs of clients.

Relevance - User Needs

The main users of EU-SILC statistical data are: policy makers, research institutes, media, and students.

Relevance - User Satisfaction

Not available.

Completeness

The variable HD220 "Suitable place to study or do homework" unfortunately cannot be built according to Eurostat regulations, because the second part of the question (whether the child has no place to study for financial reason or other reason) was not integrated in the questionnaire.

Data completeness - rate

Not available.

Accuracy and reliability

> **Definition**
>
> Closeness of computations or estimates to the unknown exact or true values that the statistics were intended to measure. Reliability of the data, defined as the closeness of the initial estimated value to the subsequent estimated value.

The concept of accuracy refers to the precision of estimates computed from a sample rather than from the entire population. Accuracy depends on sample size, sampling design effects and structure of the population under study. In addition to that, sampling errors and non sampling errors need to be taken into account. Sampling error refers to the variability that occurs at random because of the use of a sample rather than a census and non-sampling errors are errors that occur in all phases of the data collection and production process.

Accuracy - overall

In terms of precision requirements, the representativeness of the sample and the effective sample size is to be achieved. The effective sample size combines sample size and sampling design effect which depends on sampling design, population structure and non-response rate.

Sampling error

EU-SILC is a complex survey involving different sampling design in different countries. In order to harmonise and make sampling errors comparable among countries, Eurostat (with the substantial methodological support of Net-SILC2) has chosen to apply the "linearisation" technique coupled with the "ultimate cluster" approach for variance estimation. Linearisation is a technique based on the use of linear approximation to reduce non-linear statistics to a linear form, justified by asymptotic properties of the estimator. This technique can encompass a wide variety of indicators, including EU-SILC indicators. The "ultimate cluster" approach is a simplification consisting in calculating the variance taking into account only variation among Primary Sampling Unit (PSU) totals. This method requires first stage sampling fractions to be small which is nearly always the case. This method allows a great flexibility and simplifies the calculations of variances. It can also be generalised to calculate variance of the differences of one year to another .

The main hypothesis on which the calculations are based is that the "at risk of poverty" threshold is fixed. According to the characteristics and availability of data for different countries we have used different variables to specify strata and cluster information.

In our country we use:

1. sampling design could be assimilated to a two-stage stratified type we used DB050 (primary strata) for strata specification and DB060 (Primary Sampling Unit) for cluster specification;
2. sampling design could be assimilated to a one stage stratified type we used DB050 for strata specification and DB030 (household ID) for cluster specification;
3. sampling design could be assimilated to a simple random sampling, we used DB030 for cluster specification and no strata;

Sampling error - indicators

	AROPE			At risk of poverty			Severe Material Deprivation			Very low work intensity		
	Ind. value	Stand. errors	Half CI (95%)	Ind. value	Stand. errors	Half CI (95%)	Ind. value	Stand. errors	Half CI (95%)	Ind. value	Stand. errors	Half CI (95%)
Total	17.6	0.8	1.5	14.7	0.7	1.5	1.8	0.2	0.4	5.6	0.5	1.0
Male	16.4	0.9	1.8	13.6	0.9	1.7	1.8	0.3	0.6	5.2	0.5	1.0
Female	18.8	0.7	1.5	15.7	0.7	1.4	1.9	0.3	0.5	5.9	0.5	1.0
Age0-17	19.4	2.1	4.2	16.3	2.1	4.1	2.5	0.6	1.2	4.2	0.8	1.6
Age18-64	15.0	0.7	1.4	11.4	0.7	1.4	1.9	0.2	0.4	6	0.5	1
Age 65+	25.1	0.9	1.8	24.6	0.9	1.8	0.9	0.2	0.4			

Non-sampling error

Non-sampling errors are basically of 4 types:

- Coverage errors: errors due to divergences existing between the target population and the sampling frame.
- Measurement errors: errors that occur at the time of data collection. There are a number of sources for these errors such as the survey instrument, the information system, the interviewer and the mode of collection
- Processing errors: errors in post-data-collection processes such as data entry, keying, editing and weighting
- Non-response errors: errors due to an unsuccessful attempt to obtain the desired information from an eligible unit.
  Two main types of non-response errors are considered:

  Unit non-response: refers to absence of information of the whole units (households and/or persons) selected into the sample.
  Item non-response: refers to the situation where a sample unit has been successfully enumerated, but not all required information has been obtained.

Coverage error

Coverage errors include over-coverage, under-coverage and misclassification:

- Over-coverage: relates either to wrongly classified units that are in fact out of scope, or to units that do not exist in practice.
- Under-coverage: refers to units not included in the sampling frame.
- Misclassification: refers to incorrect classification of units that belong to the target population.

Over-coverage - rate

	Main problems	Size of error
Cross sectional data	- Over-coverage - Under-coverage - Misclassification	- 0.02% - 0.45% - NA

Common units - proportion

Not available

Measurement error

Source of measurement errors

Measurement errors in the SILC survey may arise from the following sources:

- **The questionnaire**, owing to its structure, form, content, and the way in which questions are formulated. Moreover, as the questionnaire is available in three national languages, errors relating to translation or text interpretation may arise.
- **Data-collection method** (CATI).
- **Interviewers** may influence the answers given by the respondent.
- The **respondent** may unwittingly or otherwise supply erroneous information.

While such errors are inevitable, the following processes have been implemented to keep such errors to a minimum.

Building process of questionnaire

The SILC survey is comprised of five questionnaires:

- A **grid questionnaire** which is answered by an individual – wherever possible an adult – who is well aware of the household's composition. The person answering the questionnaire basically has to check that the register information is correct.
- A **household questionnaire** which preferably is answered by the individual responding to the grid questionnaire or who at the very least is well aware of the household's economic situation. It gathers information on housing conditions and sources of income that are difficult to attribute to household members.
- An **individual questionnaire** for all household members aged 16 or over.
- An **adult proxy form**, which replaces the individual questionnaire if the person concerned is unable to respond (e.g. due to disability or an extended leave of absence). This may be answered by another individual aged 16 or over.
- A **child proxy** for each child aged 12 years or under, which is submitted to the person answering the household questionnaire once the latter has been completed.

In 2021 the questionnaires were brought in line with the EU-SILC 2021 revision. However, some of the questions for constructing EU 3-years rolling module variables are still being asked yearly. This is the case for some variables important for national dissemination.

We implemented the EU 3-years rolling module on health and the ad-hoc module on living arrangements and conditions of children in separated and blended families. The optional module on the impact of Covid-19 was also set up.

These various questionnaires were drawn up under Eurostat regulations. Income components were collected in detail, wherever possible from the individual who was directly concerned, or otherwise through the proxy (in which case total income and source of income are noted).

Questions concerning income focus on income sub-components so that the respondent does not have to add up amounts, and to minimise the risk of item non-response. Likewise, to keep errors of estimation, memorisation or comprehension to a minimum, respondents have the option of stating either annual or monthly amounts for all types of income. For income stemming from employment or self-employment, respondents can provide gross or net figures. Where these alternatives are not helpful enough to respondents, it is then possible to provide an annual estimate or choose ranges of answers (ordinal categorical). These ranges are used as imputation boundaries. However, this rarely occurs as most income amounts regarding employment are filled with register data.

Interview training

The FSO staff were able to listen in on interviews and interviewers whose performance was insufficient were retrained and removed from the SILC survey if problems persisted. FSO members of staff were included in the sample as test households.

On the request of the FSO, the DemoSCOPE institute organised intermediate training sessions for interviewers on specific SILC topics.

The institute trained special groups of interviews to contact certain households, for example those who had already refused to take part in the survey.

Quality control

To limit data-collection errors, filters and input controls (plausi-online) were inserted into CATI. These plausibility checks can be used to detect incoherent responses in relation to other variables or unusual answers (e.g. amounts which are too low or too high) as well as input errors by the interviewer (e.g. an extra zero added to an amount).

A wide selection of baseline questionnaire variables were evaluated using cognitive interviews aimed at pinpointing comprehension problems. As the Swiss SILC questionnaire is drawn up in the three official languages (German, French and Italian), consistency analysis is conducted between the three versions.

As SILC questionnaires are relatively long and complex, it is particularly important to check that the CATI program corresponds precisely to the questionnaire's specifications.

Two types of control are carried out:

- Qualitative controls of the CATI system, in comparison with the questionnaire's specifications (existence and order of questions, repeat of questions and arrangements in the three languages, question readability and presentation, and workings of filters and plausi-online).
- Quantitative controls, with approximately 15 predefined response scenarios input into the CATI system. These data are then exported and compared with the expected response codes.

Non response error

Unit non-response rate for cross-sectional and longitudinal data

Cross sectional data																	
Address (including phone, mail if applicable) contact rate (Ra)*			Complete household interviews (Rh)*			Complete personal interviews (Rp)*			Household Non-response rate (NRh)*			Individual non-response rate (NRp)*			Overall individual non-response rate (NRp)*		
A*	B*	C*	A*	B*	C*	A*	B*	C*	A*	B*	C*	A*	B*	C*	A*	B*	C*
82.6	67.2	98.4	78.6	71.8	91.7	98.3	98.2	98.5	35.1	51.7	9.8	1.7	1.9	1.5	36.2	56.6	11.2
Longitudinal data																	
Address (including phone, mail if applicable) contact rate (Ra)*			Complete household interviews (Rh)*			Complete personal interviews (Rp)*			Household Non-response rate (NRh)*			Individual non-response rate (NRp)*			Overall individual non-response rate (NRp)*		
A*	B*	C*	A*	B*	C*	A*	B*	C*	A*	B*	C*	A*	B*	C*	A*	B*	C*
79.7	67.2	84.6	69.4	71.8	65.2	98.2	98.2	98.4	44.7	51.7	44.8	1.8	1.9	1.7	45.7	56.6	45.7

A* = Total sample; B* = New sub-sample, C* = Longitudinal 1 wave

Response rate for households by wave

Response rate for household	Wave 2	Wave 3	Wave 4
Wave response rate	49.43	59.38	64.71
L follow-up rate	77.57	80.55	83.71
Follow-up ratio	66.74	82.06	80.29
Achieved sample size ratio	72.97	83.95	82.07

Sample and response rate by wave

	Sample of households	Sample of individuals 16+	Response rate of the households	Response rate of individuals 16+
Year of the survey	2021	2021	2021	2021
Wave 1	6651	14481	47.05	32.87
Wave 2	3347	7204	71.6	44.99
Wave 3	2802	6172	65.04	44.14
Wave 4	1707	3709	81.04	56.84

Unit non-response - rate

Unit non-response which refers to the absence of information of the whole units (households and/or persons) selected into the sample. According to the Commission implementing regulation (EU) 2019/2180 specifying content of the quality reports on the organisation of a sample survey in the income and living conditions domain pursuant to Regulation (EU) 2019/1700 of the European Parliament and of the Council.

Item non-response - rate

The computation of item non-response is essential to fulfil the precision requirements. Item non-response rate is provided for the main income variables both at household and personal level.

Item non-response which refers to the situation where a sample unit has been successfully enumerated, but not all the required information has been obtained.

Item non-response rate by indicator

See Annex 2 Item non-response

Processing error

Data entry and coding	Editing controls
The data-preparation process is long and complex. The various stages of the process are used to improve the quality of the collected data. Basic data processing is conducted as follows: - Data input by interviewers - Online plausibility checks - Integrity checks on data exported by the research institute (format of variables, method, filters, basic ties between individuals and households) - Data consolidation (construction of uniform income components on an annual basis and construction of other variables) - Integration of register data and quality control (consistency and excessive values). - Imputation - Weighting - Calculation of national target variables and EU-SILC European variables Controls are implemented in each of these stages to limit the occurrence of processing errors. To maximise the scope for detecting programming errors, a dual control is put in place for important program along with the systematic alternation of the step leader every year. During consolidation stages, Excel tables are used to document rules of consolidation.	Stages of consolidation process sub-components separately but with no tests for quality. As such, they do not identify errors arising from confusion between various income sources, which may lead to the inputting of duplicate entries. The occupational pension plan system in Switzerland is relatively complex as it is comprised of three "pillars": the compulsory state pension, occupational pension and voluntary private contributions. Some people, especially the elderly, sometimes have trouble correctly identifying their sources of income (1st pillar - 2nd or 3rd pillar; income from employment - self-employment, etc.). All interviews are conducted by telephone and respondents have to rely solely on their own recollections in answering the questionnaires. The quality-control stage, designed to keep this kind of error to a minimum, is comprised of various tests on income variables, such as detection of duplicate entries (identical sum but located under another income variable, same amount but assigned to a different member of the household, etc.), identification of excessive values and possible inconsistency between various sources of income. Quality control combines automatic and manual processing. Regarding manual processes, documentation setting out the main processing rules has been introduced, with a dual check used for doubtful cases. Nevertheless, manual processes hinge heavily on the subjectivity of the person carrying them out and are problematic in terms of reproducibility and process duration. When working with SAS data, the logging of changes is also problematic. A fluent organisation is required to avoid losing traceability of changes and to retain the possibility of backtracking should an error be identified at a later stage. As such, for each sub-stage, an input file and an output file (corresponding to the file after revisions) are both created, making it possible to detect what has been modified and to retrieve variables' initial values.

Re-interview rates by wave

	Wave 2	Wave 3	Wave 4
Re-interview rates:			
(a) individuals in interviewed households %	96.43	96.84	97.89
(b) individuals out of scope %	0.29	0.61	0.40
(c) individuals not interviewed for reasons other than their being out of scope %	3.28	2.55	1.72
Re-interview rates for people leaving their original household total	0.97	1.10	1.28
Re-interview rates for people leaving their original household males	0.76	0.90	1.20
Re-interview rates for people leaving their original household females	1.16	1.29	1.35
Re-interview rates for young people (16-35) total	2.88	3.69	5.15
Re-interview rates for young people (16-35) male	2.08	2.66	5.28
Re-interview rates for young people (16-35) female	3.61	4.67	5.04

Imputation - rate

Not available.

Model assumption error

Not available.

Seasonal adjustment

Not applicable.

Data revision - policy

Important revisions occured in SILC14 (cross-sectionnal) and SILC17 (longitudinal) as explained in section Comparability. For the revision of the longitudinal weighting method, it was first developped on SILC18, and when finished applied back on SILC17 and SILC19 (already published). This led to revised versions of SILC17 to SILC19.

A methodological report on this latest revision is available on https://www.bfs.admin.ch/asset/en/be-e-20.03.02.05.03

Data revision - practice

No other revision is planned yet.

Data revision - average size
Not available

Timeliness and punctuality

Timeliness

Due to late availability of register data, Switzerland is not subject to the same deadlines as the EU countries. First delivery is to be made by the end of September N+1, and final delivery by the end of November N+1.

National publication of the results : 2.5.2023.

End of field-work: 15.6.2021

First delivery of the data: 25.11.2022

Final delivery of the data: 25.11.2022

Months between the end of reference year N (2021) and the first delivery: 11

Months between the end of reference year N (2021) and the final delivery: 11

Time lag - first result
First results were published on 6.10.2021, without register data and with an experimental weighting.

National publication date: 0 months after the end of the reference period
https://www.experimental.bfs.admin.ch/expstat/en/home/projects/silc.html

Time lag - final result
National publication date: 2.5.2023- 15 months after the end of the reference period

https://www.bfs.admin.ch/bfs/fr/home/services/pour-medias/toutes-publications.gnpdetail.2023-0485.html

Punctuality

First delivery (due date 30.9.2022, delivery on 25.11.2022) - 56 days . This delay is due to a combination of reasons, including late delivery of registers, and the development of an imputation method for the MSD indicator variables.

Final delivery (due date 30.11.2022, delivery on 25.11.2022)- 0 days

Punctuality - delivery and publication
The publication of the national results was originally planned for December 2022. For quality reasons, the publication has been postponed to 2 May 2023.

Coherence and comparability

> **Definition**
>
> Adequacy of statistics to be reliably combined in different ways and for various uses and the extent to which differences between statistics can be attributed to differences between the true values of the statistical characteristics.

According to the Regulation (EC) No 1177/2003 of the European Parliament and of the Council concerning EU-SILC: "Comparability of data between Member States shall be a fundamental objective and shall be pursued through the development of methodological studies from the outset of EU-SILC data collection, carried out in close collaboration between the Member States and Eurostat".

The coherence of two or more statistical outputs refers to the degree to which the statistical processes, by which they were generated, used the same concepts and harmonised methods. A comparison with external sources for all income target variables and the number of persons who receive income from each 'income component' will be provided, where the Member States concerned consider such external data to be sufficiently reliable.

Comparability - over time

A revision of the weightings occured in SILC14. Since then, the latest survey framework SRPH enabled more register data to be used. Longitudinal weightings could be revised from SILC17 on, when all waves had been drawn in the SRPH. These revision led to breaks in serie in SILC14 for the cross-sectional indicators, and a break in SILC17 for longitudinal indicatiors.

Length of comparable time series

The length of comparable time series is then of 8 years (14-21) for the cross-sectional and 5 years for the longitudinal (SILC17-SILC21).

Coherence - cross domain

See Coherence appendix.

Coherence - sub annual and annual statistics

Not applicable

Coherence - National Accounts

Coherence with National Accounts for income variables

EU-SILC variables	National Accounts item (S14)	Coverage rate (calculated as EU-SILC and NA ratio)	EU-SILC growth rate (nominal, year to year)	National accounts growth rate (nominal, year to year)
Employee income: PY010G Employee cash or near cash income+ PY021G Company car	D11/rec Wages and salaries	99.49 %	1.55%	5.20%
Income from self-employment: PY050G Cash benefits or losses from self-employment	B3g Mixed income, gross	27.12 %	-7.95%	4.61%
Social benefits other than social transfers in kind: HY050G Family/children related allowances +HY060G Social exclusion not elsewhere classified +PY090G Unemployment benefits + PY100G Old-age benefits + PY110G Survivor' benefits + PY120G Sickness benefits + PY130G Disability benefits + PY140G Education-related allowances + HY070G Housing allowances	D62/rec: Social benefits, other than social transfers in kind	62.03%	5.29%	-1.87%
Social contributions and taxes on income paid: HY140G Tax on income and social contributions	D61/use: net social contributions + D51/use: taxes on income	*D51 is included in D5 (with D59), which cannot be disaggregated.*	0.64%	1.66%
Total disposable household income HY020	B6 Gross disposable income	77.47%	1.13%	1.47%

Methodological background for comparisons is provided in the *Methodological note Comparison of household income: European Union Statistics on Income and Living Conditions and National Accounts*:

https://ec.europa.eu/eurostat/documents/7894008/9077550/Methodological_note.pdf

Coherence – internal

See appendix Coherence.

Accessibility and clarity

> **Definition**
>
> The conditions and modalities by which users can obtain, use and interpret data.

Dissemination format - News release

SILC21 results were published on FSO website on 2.05.2023.

Results on the Intergenerational transmission of advantages and disadvantages SILC19 were published on 1st of December 2022, in German, French and Italian, on this page: [Mobilité sociale | Office fédéral de la statistique (admin.ch)](admin.ch) .

Dissemination format - Publications

SILC results are published yearly on the fso website. All published information is linked on this page, available in English, French, German and Italian:: [Statistics on Income and Living Conditions (SILC) | Federal Statistical Office (admin.ch)](admin.ch) .

Dissemination format - online database

No database is available online.

Data tables - consultations

About 20 tables (each in 3 languages) based on SILC results are published on the FSO website. Some tables about are downloaded over 4000 times a year, e.g. table about Disposable income distribution. The corresponding pages (4 langages) have been consulted over 37000 times.

Dissemination format - microdata access

SILC microdata are available to those who want them, under certain conditions. They have to sign a data protection agreement before receiving the data. More information is available on [Statistics on Income and Living Conditions (SILC) | Federal Statistical Office (admin.ch)](admin.ch) -> FAQ.

Swiss SILC microdata contain all EU-SILC variables, plus national variables, including important income sub-components.

Dissemination format - other

No other format is used.

Documentation on methodology

All the available methodological documents can be found on the FSO silc web page [Statistics on Income and Living Conditions (SILC) | Federal Statistical Office (admin.ch)](admin.ch) , at the bottom, on the "Methodologies" sheet. More documents are available on the French and German web pages.

Quality management - documentation

Not applicable.

Metadata completeness - rate

100%. All metadata, from the questionnaire to the final dataset, are documented on SAE-SMS Metadata Editor (V. 1.44) and Data Structure Definitions are created on each step of the data editing.

Metadata - consultations

Not available.

Cost and Burden

> **Definition**
>
> Cost associated with the collection and production of a statistical product and burden on respondents.

Mean (average) interview duration per household = 52.16 minutes.

Mean (average) interview duration per person (16 plus)= 22.86 minutes.

Confidentiality

> **Definition**
>
> A property of data indicating the extent to which their unauthorised disclosure could be prejudicial or harmful to the interest of the source or other relevant parties.

Not available.

Confidentiality - policy

No SILC result is published on the FSO web pages if calculations are based on fewer than 200 observations, or with parenthesis if based on 100 to 200 observations. All results are published with a confidence interval, if this latest is smaller than 10. Otherwise, the result is not published.

Confidentiality - data treatment

Anonymisation rules are the same for national microdata as for the EU-SILC microdata.

DataSet Comment

> **Definition**
>
> Supplementary descriptive text.

A detailed report was written for SILC 2014, describing the changes in method and sampling frame. SILC 2021 is very comparable. This report is available under:

https://www.bfs.admin.ch/asset/en/be-e-20.03.04.05

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