

EU statistics on income and living conditions (EU-SILC) methodology - monetary poverty

Statistics Explained

This article is part of a [set of articles](#) describing the methodology applied for the computation of the statistical indicators pertinent to the subject area of [Monetary poverty \(ilc_li\)](#) within the overall domain of [Income and living conditions](#). For these indicators, the article provides a methodological and practical framework of reference. The indicators relevant to the subject area of monetary poverty are the following:

- At-risk-of-poverty thresholds
- At-risk-of-poverty rate
- At-risk-of poverty rate before social transfers (pensions included in social transfers)
- At-risk-of poverty rate before social transfers (pensions excluded from social transfers)
- Relative at-risk-of poverty gap
- Persistent at-risk-of poverty rate
- At-risk-of poverty rate after deducing housing costs
- Distribution of population by number of years spent in poverty within a four-year period
- At-risk-of-poverty rate anchored at a fixed moment in time
- At-risk-of-poverty rate for children by citizenship of their parents (population aged 0 to 17 years)
- At-risk-of-poverty rate for children by country of birth of their parents (population aged 0 to 17 years)

Moreover, since the indicators are of multidimensional structure and can be analysed simultaneously along several dimensions, the separate [datasets](#) providing these indicators along with the different combinations of dimensions are also presented.

Description

- Five different **at-risk-of poverty thresholds** are calculated as follows: (a) 40% of the national median equivalised disposable income (ARPT40), (b) 50% of the national median equivalised disposable income (ARPT50), (c) 60% of the national median equivalised disposable income (ARPT60), (d) 70% of the national median equivalised disposable income (ARPT70), (e) 40% of the national mean equivalised disposable income (ARPTM40), (f) 50% of the national mean equivalised disposable income (ARPTM50), (g) 60% of the national mean equivalised disposable income (ARPTM60).
- The **at-risk-of-poverty rate before social transfers (pensions excluded from social transfers)** refers to the percentage of persons in the total population who are at-risk-of-poverty based on the equivalised disposable income before all [social transfers](#) excluding pensions) (EQ_INC22), i.e. with an equivalised disposable income before all social transfers below the 'at-risk-of-poverty thresholds' calculated after social transfers.

- The **at-risk-of-poverty rate after deducting housing costs** refers to the percentage of persons in the total population who are at-risk-of-poverty with the housing costs being deducted, i.e. with an equivalised disposable income without total housing cost below the at-risk-of-poverty threshold calculated in the standard way (ARPT60).
- The **distribution of the population by the number of years spent in poverty within a four-year period** depicts the percentage of persons who are at-risk-of-poverty broken down by the number of years spent in poverty within a four-year period.
- For a given year (T), the **at-risk-of-poverty rate anchored at a fixed moment in time** is defined as the percentage of persons in the total population who are at-risk-of-poverty anchored at a fixed moment in time (at-risk-of-poverty threshold calculated in the standard way for the base year) and adjusted for inflation.
- the **at-risk-of-poverty rate for children by citizenship of their parents (population aged 0 to 17 years)** is defined as the percentage of persons (population aged 0 to 17 years) in the total population and in the relevant citizenship of their parents breakdown who are at-risk-of-poverty.
- the **at-risk-of-poverty rate for children by country of birth of their parents (population aged 0 to 17 years)** is defined as the percentage of persons (population aged 0 to 17 years) in the total population and in the relevant country of birth of their parents breakdown who are at-risk-of-poverty.
- **At-risk-of poverty rate** , **At-risk-of-poverty rate before social transfers (pensions included)** , **Persistent at-risk-of-poverty rate** , **Relative median at-risk-of poverty gap** .

Statistical population

The statistical population consists of all persons living in private [private households](#) . Persons living in [collective households and in institutions](#) are generally excluded from the target population.

However, the at-risk-of-poverty rate covers different subsets of the population when presented along with different [dimensions](#) . More specifically, it covers the population aged 18 and over when broken down in the following dimensions: level of education, the broad group of citizenship and broad group of the country of birth. The population aged 0 to 59 is covered when the indicator is broken down by work intensity of the household. Additionally, when calculated for children (i.e. children at risk of poverty or social exclusion), it refers to the population aged 0 to 17 living in private households. Specifically, when broken down by most frequent activity in the previous year, it refers to the population aged 16 and over living in private households, excluding those with less than 7 months declared in the calendar of activities.

For the computation of the at-risk-of-poverty thresholds, all persons living in the specific types of private households are included. More specifically, all thresholds are calculated for two illustrative household types: (a) Single person household and (b) household with 2 adults, two dependent children under 14 years.

The persistent at-risk-of-poverty rate covers all the persons who have been living for four years in private households and who have been on the panel for all the four relevant years. 'Not current household members', i.e. persons for which $RB110 > 4$, are excluded.

The at-risk-of-poverty rate anchored at a fixed point in time refers to all persons who have been living in private households for the current year (T). For the calculation of the at-risk-of-poverty threshold in the base year (2008) the population consists of the persons who lived in private households during the base year (2008), whereas for the calculation of the at-risk-of-poverty threshold in the base year (2005), the population consists of the persons that lived in private households during the base year (2005).

The reference population for the distribution of population by the number of years spent in poverty within a four-year period comprises all persons living in private households for the duration of the 4 last years.

In any case, people with missing values for equivalised income and for any of the different dimensions that the indicators are presented, are excluded from calculations.

Reference period

All indicators are collected and disseminated on an annual basis and refer to the survey year. The indicators distribution of population by the number of years spent in poverty within a four-year period and the persistent at-risk-of-poverty rate cover a longer period: 4 years.

The reference period for all dimensions along with the indicators are disseminated is the survey year, except for age, income, activity status, household type and work intensity of the household. As far as age is concerned, it refers to the age of the respondent at the end of the income reference period, based on which the household type is also derived. For income, the income reference period is a fixed 12-month period (such as the previous calendar or tax year) for all countries except the United Kingdom, for which the income reference period is the current year, and Ireland, for which the survey is continuous and income is collected for the last twelve months. For activity status, the reference year is the year previous to survey year, while work intensity of the household refers to the number of months that all working-age household members have been working during the income reference year. Additionally, the household type refers to the household type of the respondent at the end of income reference period.

Unit of measurement

The at-risk-of-poverty thresholds are expressed in Euro (from 1.1.1999)/ECU (up to 31.12.1998), in national currency (including 'euro fixed' series for euro area countries) or [Purchasing Power Standards](#) (PPS).

The number of persons at risk of poverty (in thousands of persons) is provided. The at-risk-of-poverty rate is also made available as a percentage.

The at-risk-of-poverty rate before social transfers (pensions included in social transfers), the at-risk-of-poverty rate before social transfers (pensions excluded from social transfers), the relative at-risk-of-poverty gap, the persistent at risk of poverty rate, the at-risk-of-poverty rate (after deducting housing costs), the at-risk-of-poverty rate anchored at a fixed point in time and the distribution of population by number of years spent in poverty within a four-year period are given as a percentage.

Dimensions

The separate datasets provide each indicator along with the [Geopolitical entity](#) and [time](#) dimensions and the dimensions presented below.

The at-risk-of-poverty thresholds are presented broken down by household type (only for single person household and households with 2 adults with two dependent children under 14 years).

The at-risk-of-poverty rate is presented along with the following dimensions:

- poverty threshold and age group and sex
- poverty threshold and household type
- poverty threshold, most frequent activity status in the previous year, age group and sex
- poverty threshold and work intensity of the household (population aged 0 to 59 years)
- age group, sex and household type
- poverty threshold, age group, sex and educational level ([ISCED](#))
- poverty threshold, tenure status, age group and sex
- broad group of citizenship, age group and sex (population aged 18 and over)
- country of birth, age group and sex (population aged 18 and over)
- NUTS 2 regions
- degree of urbanisation ([DEGURBA](#))

- age group, highest education level of parents (ISCED)
- citizenship of children's (population aged 0 to 17 years) parents
- country of birth of children's (population aged 0 to 17 years) parents

The at-risk-of-poverty rate before social transfers (pensions excluded from social transfers) is presented along with the dimensions:

- poverty threshold, age group and sex
- household type

The relative at risk of poverty gap is given broken down by age group, sex and poverty threshold.

The persistent at-risk-of-poverty rate is disseminated along with the following dimensions:

- age group and sex
- household type
- sex and education level (ISCED)

The at-risk-of-poverty rate anchored at a fixed moment in time is given broken down by age group and sex.

The at-risk-of-poverty rate after deducting housing costs is disseminated along with the following dimensions:

- age group and sex
- degree of urbanisation (DEGURBA)

Calculation method

1. At-risk-of-poverty thresholds:

At-risk-of-poverty thresholds (ARPTXX and ARPTMXX) broken down by household type are calculated as the percentage of the Median Equivalised disposable Income after social transfers (MEDIAN20) and the Mean Equivalised disposable Income after social transfers (MEAN20) respectively.

$$ARPTXX_{at_HHTYP}=XX\% \text{ times } ;EQ \frac{INC_{median/at_HHTYP}}{}$$

$$ARPTMXX_{at_HHTYP}=XX\% \text{ times } ;EQ \frac{INC_{mean/at_HHTYP}}{}$$

The XX percentage takes the values 40, 50, 60, 70, depending on the threshold we want to calculate. The equivalised disposable income (EQ_INC) can be expressed in National Currency (EQ_INC20nac), Euros (EQ_INC20eur) or Purchasing Power Standards (EQ_INC20ppp).

With regard to the calculation of the at-risk-of-poverty thresholds, the following methodological issues should be taken into consideration:

- When comparing the value of thresholds in different Member States, the thresholds are converted to Purchasing Power Standards (PPS). These convert different national currencies to a single currency, whilst controlling for differences in price levels between countries.
- The choice of the percentage of the median has major consequences with regard to the level of the poverty risk rate. On the one hand, there are normative and political considerations with regard to the level of the poverty threshold. On the other hand, there are methodological issues. For instance, the choice of a lower percentage might result in a poverty threshold that is very close to the bottom of the distribution, hence more subject to problems of reliability.
- For each country, the poverty risk indicator must be assessed by looking at both the number of people whose income is below the threshold and the comparative level (in PPS) of this threshold.
- More in general, by comparing the results obtained with different thresholds within one Member state, one can assess the robustness of conclusions based on the 60% threshold.

2. At-risk-of-poverty rate:

At-risk-of-poverty rate (ARPT) broken down by each combination of dimensions (k) $(ARPT_{at_k})$

is calculated as the percentage of people (or thousands of people) in each k who are at-risk-of-poverty (calculated for different cut-off points) over the total population in that k.

The weight variable used is the Adjusted Cross Sectional Weight (RB050a).

$$ARPT_{at_k} = \frac{\sum_{i=j}^{at_k} RB050a_i}{\sum_{i}^{at_k} RB050a_i} \times 100$$

$$ARPT_{at_k} = \frac{\sum_{i=j}^{at_k} RB050a_i}{\sum_{i}^{at_k} RB050a_i} \times 1000$$

where j denotes the population, or subset of the population, who is at risk of poverty. At-risk-of-poverty thresholds (ARPTXX) can be any of the following: ARPT40, ARPT50, ARPT60, ARPT70, ARPTM40, ARPTM50, ARPTM60.

The Personal Cross-Sectional Weight (PB040) is used for the calculation of the indicator along with the following combinations of dimensions: (a) age group, sex and activity status and (b) age group, sex and education level.

$$ARPT_{at_k} = \frac{\sum_{i=j}^{at_k} PB040_i}{\sum_{i} PB040_i} \times 100$$

With regard to the calculation of the at-risk-of-poverty rate, the following methodological issues should be taken into consideration:

- Unless specified, at-risk-of-poverty rates are assumed to be 'after social transfers' (i.e. they include social benefits such as pensions and unemployment benefits).
- Income poverty risk at a given point in time may not necessarily imply low living standards in the short term, for example, if the persons at risk have access to savings, to credit, to private insurance, tax credits, to financial assistance from friends and relatives etc. In particular, the cumulative impact of extended periods at risk is to be further assessed.
- Measuring incomes at the level of private households may have certain implications. The exclusion of collective households might lead to an underrepresentation of certain groups (e.g. the elderly, persons with disabilities).
- An approach based on relative income poverty gives a proxy for the risk of being affected by poverty within each country but makes it more difficult to compare the situation between countries that would be the case with a common threshold.
- Income-based indicators are presented for individuals by reference to their household distribution: no information is available about the actual distribution of income between household members. The attribution of the household income to each of its members may impede a detailed analysis of the sex dimension.

3. At-risk-of-poverty rate before social transfers (pensions included in social transfers):

At-risk-of-poverty rate (ARPT23) broken down by each combination of dimensions (k) $ARPT_{at_k}$

is calculated as the percentage of people (or thousands of people) in each k who are at-risk-of-poverty (based on the equivalised disposable income before all social transfers – including pensions - (EQ_INC23) over the total population in that (k).

The weight variable used is the Adjusted Cross-Sectional Weight (RB050a).

$$ARPT23_{at_k} = \frac{\sum_{i} RB050a_i}{\sum_{i} RB050a_i} \times 100$$

$$\sum_{i=j} \text{limits_at_k} \{ \text{RB050a_i} \} \times 100$$

where j denotes the population, or subset of the population, who is at risk of poverty (based on the equivalised disposable income before all social transfers, including pensions). At-risk-of-poverty thresholds (ARPTXX) can be any of the following: ARPT40, ARPT50, ARPT60, ARPT70, ARPTM40, ARPTM50, ARPTM60.

With regard to the calculation of the at-risk-of-poverty rate before social transfers (pensions included in social transfers), the following methodological issues should be taken into consideration:

- The 'at-risk-of-poverty threshold' is the same as the one used to calculate the at-risk-of-poverty rate after transfers.
- The indicator 'poverty rate before social transfers' should only be used in connection with the indicator 'poverty rate (after social transfers)'. On its own, it does not have any explanatory value.
- Social transfers are defined as current transfers received during the income reference period, which are intended to relieve them from the financial burden of a number of risks or needs, made through collectively organised schemes or outside such schemes by government units and Non-Profit Institutions Serving Households. In order to be included as a social benefit, the transfer must be (a) compulsory for the group in question and (b) based on a principle of social solidarity.
- Social benefits do not include tax rebates, benefits in kind or benefits paid from schemes into which the recipient has made voluntary payments only, independently of his/her employer or government.

4. At-risk-of-poverty rate before social transfers (pensions excluded from social transfers):

At-risk-of-poverty rate (ARPT22) broken down by each combination of dimensions (k) $(ARPT_{at_k})$

is calculated as the percentage of people (or thousands of people) in each k who are at-risk-of-poverty (based on the equivalised disposable income before all social transfers - excluding pensions - (EQ_INC22)) over the total population in that k.

The weight variable used is the Adjusted Cross-Sectional Weight (RB050a).

$$ARPT22_{at_k} = \frac{\sum_{i=j} \text{limits_at_k} \{ \text{RB050a_i} \}}{\sum_{i=j} \text{limits_at_k} \{ \text{RB050a_i} \}} \times 100$$

where j denotes the population, or subset of the population, who is at risk of poverty (based on the equivalised disposable income before all social transfers, excluding pensions). At-risk-of-poverty thresholds (ARPTXX) can be any of the following: ARPT40, ARPT50, ARPT60, ARPT70, ARPTM40, ARPTM50, ARPTM60.

With regard to the calculation of the at-risk-of-poverty rate before social transfers (pensions excluded from social transfers), the following methodological issues should be taken into consideration:

- The 'at-risk-of-poverty threshold' is the same as the one used to calculate the at-risk-of-poverty rate after transfers.
- The indicator 'poverty rate before social transfers' should only be used in connection with the indicator 'poverty rate (after social transfers)'. On its own, it does not have any explanatory value.
- Social transfers are defined as current transfers received during the income reference period, which are intended to relieve them from the financial burden of a number of risks or needs, made through collectively organised schemes or outside such schemes by government units and Non-Profit Institutions Serving Households. In order to be included as a social benefit, the transfer must be (a) compulsory for the group in question and (b) based on a principle of social solidarity.
- Social benefits do not include tax rebates, benefits in kind or benefits paid from schemes into which the recipient has made voluntary payments only, independently of his/her employer or government.

5. Relative at-risk-of-poverty gap:

Relative at-risk-of-poverty gap rate (RAROPG) broken down by each combination of dimensions

$(k)[\text{RAROPG}_{\text{at_k}}]$

is calculated as the difference between the median equivalised disposable income of people below the at-risk-of-poverty threshold $(EQ_{\text{INC20}_{\text{median/at_poor_k}}})$

and the at-risk-of poverty threshold (ARPTXX), expressed as a percentage of the at-risk-of-poverty threshold, in each k .

$$[\text{RAROPG}_{\text{at_k}}] = \frac{\text{ARPTXX} - EQ_{\text{INC20}_{\text{median/at_poor_k}}}}{\text{ARPTXX}} \times 100$$

At-risk-of-poverty thresholds (ARPTXX) can be any of the following: ARPT40, ARPT50, ARPT60, ARPT70, ARPTM40, ARPTM50, ARPTM60.

With regard to the calculation of the relative at-risk-of-poverty gap rate, the following methodological issues should be taken into consideration:

- The poverty gap represents the poverty gap of the 'median person' who is at risk of poverty. However, it does not convey any information on the distribution of the poverty gap among the population at-risk-of-poverty.
- The median poverty gap is preferred to the total poverty gap or mean poverty gap, in as far as the latter is more sensitive to extremely low and negative incomes (which may be due to income measurement errors).
- The poverty gap is expressed as a percentage of the at-risk of poverty threshold in order to make data comparable across countries.

6. Persistent at-risk-of-poverty rate:

Let L be the subset of the total population consisting of persons that have been in the panel for the last four years and for whom the Equivalised disposable income (EQ_INC) is not missing for any of the years.

Let $P_{\{T\}}$
 $(P_{\{T\}}$
subset L)

be the subset of individuals who are at-risk-of poverty in the current year (T), i.e.
forall i
in L

for which EQ
 $_INC20\{T\}_i$
lt $ARPTXX\{T\}$

.

Let $P_{\{T-1\}}$
 $(P_{\{T-1\}}$
subset L)

be the subset of individuals who are at-risk-of poverty in $T-1$, i.e.
forall i
in L

for which EQ
 $_INC20\{T-1\}_i$
lt $ARPTXX\{T-1\}$

.

Let $P_{\{T-2\}}$
 $(P_{\{T-2\}}$
subset L)

be the subset of individuals who are at-risk-of poverty in $T-2$, i.e.
forall i
in L

for which EQ
 $_INC20\{T-2\}_i$
lt $ARPTXX\{T-2\}$

.

Let $P_{\{T-3\}}$
 $(P_{\{T-3\}}$
subset L)

be the subset of individuals who are at-risk-of poverty in $T-3$, i.e.
forall i
in L

for which EQ
 $_INC20\{T-3\}_i$
lt $ARPTXX\{T-3\}$

.

Note : i denotes each individual in the dataset. All information for each individual i and all years in the panel has been stored in one line.

Let L^* (L^* [U+FFFC])

$\text{subset } L$

be the subset who are 'persistent at-risk-of-poverty', i.e. those being at-risk-of-poverty in the current year (T) and at least 2 out of the preceding 3 years:

$$L^{\hat{*}} = (P_{T-1} \cap P_{T-2} \cap P_{T-3}) \cup (P_{T-1} \cap P_{T-2}) \cup (P_{T-1} \cap P_{T-3}) \cup (P_{T-2} \cap P_{T-3})$$

Persistent at-risk-of-poverty rate (L_{ARPT}) broken down by each combination of dimensions (k) ($L_{ARPT}_{at_k}$)

is calculated as the percentage of people in each k whose equivalised disposable income was below the 'at-risk-of-poverty threshold' (taken from cross-sectional calculations – external threshold) for the current year and at least 2 out of the preceding 3 years over the total population in (k).

The weight variable used is an estimation of the longitudinal weight estimate – Four-year duration (RB064e).

$$L_{ARPT}_{at_k} = \frac{\sum_{\substack{\text{limits}_{\{i\}} \\ \text{forall}\{i\} \\ \text{in } L^{\hat{*}}}} \sum_{\substack{\text{limits}_{\{i\}} \\ \text{forall}\{i\} \\ \text{in } L}} \text{RB064e}_{i_at_k} \text{RB064e}_{i_at_k}}{\sum_{\substack{\text{limits}_{\{i\}} \\ \text{forall}\{i\} \\ \text{in } L}} \text{RB064e}_{i_at_k}} \times 100$$

At-risk-of-poverty thresholds ARPTXX can be any of the following: ARPT40, ARPT50, ARPT60, ARPT70, ARPTM40, ARPTM50, ARPTM60.

With regard to the calculation of the persistent at-risk-of-poverty rate, the following methodological issues should be taken into consideration:

- In any longitudinal panel survey there can be problems of attrition, with respondents ceasing to participate for a variety of reasons. For the persistent at-risk-of-poverty rate, an important question is whether there are higher drop-out rates for low-income households than for other households.
- The indicator specifies 'at least two out of three previous years' to allow for fluctuations around the poverty line.

7. At-risk-of-poverty rate anchored at a fixed point in time:

At-risk-of-poverty rate (ARPT) anchored at a fixed time (t) broken down by each combination of dimensions (k), $(ARPT_{t_k})$

is calculated as the percentage of people in each k who are at-risk-of-poverty based on the at-risk-of-poverty thresholds of t adjusted for inflation $(ARPT60_{(t)(T)})$

over the total population in k. More specifically people at-risk-of poverty anchored at t are those with an equivalised disposable income (for a given year T) below the at-risk-of-poverty threshold calculated in t adjusted for inflation (i.e.)

$$ARPT60_{(t)(T)} = ARPT60_{(t)} \times \frac{idx_t}{100}$$

where $ARPT60_{(t)(T)}$

is the at-risk-of-poverty threshold adjusted for inflation from t to T). Adjustment is based on the annual Harmonised Indices of Consumer Prices ([HICPs](#)).

$$ARPT60_{(t)(T)} = ARPT60_{(t)} \times \frac{idx_t}{100}$$

where $\frac{idx_t}{100}$

is the official inflation rate between t and T and $ARPT_{(t)}$

denotes the at-risk of poverty threshold in t. The indicator is calculated for the following two base years: 2005 and 2008, i.e. t takes the values 2005 and 2008.

The weight variable used is the Adjusted Cross-Sectional Weight (RB050a).

$$ARPT_{(t)(T)} = \frac{\sum_{limits_{i=j}}^{at_k} ;RB050a_{i}}{\sum_{limits_{i}}^{at_k} ;RB050a_{i}} \times 100$$

where j denotes the population, or subset of the population, who is at risk of poverty based on the at-risk-of-poverty thresholds of t adjusted for inflation.

With regard to the calculation of the at-risk-of-poverty rate anchored at a fixed moment in time (t), the following methodological issues should be taken into consideration:

- The poverty threshold of the base year (t=2005 or 2008) is adjusted for inflation. This operation results in the 'real' value of the threshold base year, i.e. adjusted for price increases in subsequent years. The remaining difference between the 'inflation adjusted' threshold of the base year and the threshold of the current year reflects evolutions in living standards.
- The base or reference year (t) is meant to change in regular intervals.
- The inflation rate to be applied should correspond to the survey years both for the base year (t) and T.

8. At-risk-of-poverty rate after deducting housing costs:

At-risk-of-poverty rate, with the housing costs (HH070) being deducted, (ARPT_{hc}), broken down by each combination of dimensions (k), $ARPT_{hc}(k)$

is calculated as the percentage of people in each (k) who are at-risk-of-poverty (EQ_INC20hc < ARPT60) after deducting housing costs over the total population in (k).

The weight variable used is the Adjusted Cross-Sectional Weight (RB050a).

$$ARPT_{hc}(k) = \frac{\sum_{i=j}^{at} RB050a_i(k)}{\sum_{i} RB050a_i(k)} \times 100$$

where j

denotes the population, or subset of the population, who is at risk of poverty after deducing housing costs.

With regard to the calculation of the at-risk-of-poverty rate after deducting housing costs, the following methodological issues should be taken into consideration:

- As the housing costs faced by households do not always reflect the true value of the housing they enjoy, housing costs should be deducted in calculated disposable income. However, a disadvantage of using an after housing costs measure of disposable income is that it has the effect of understating the relative standard of living of those individuals who benefit from a better quality of housing by paying more for better accommodation. In the case of making comparisons across age groups, it can be argued that as a large proportion of pensioners own their homes and therefore typically have lower housing costs than those of a working age.
- The strength of the case for measuring the risk of poverty after housing costs, depends on how far housing costs can be regarded as a fixed and inescapable charge on income and how far, on the contrary, they represent payment for a consumer good which like any other produces a stream of satisfaction which varies between households according to how much the individuals concerned value having an attractive or spacious place in which to live.

9. Distribution of population by number of years spent in poverty within a four-year period:

Let L be the subset of the total population consisting of persons that have been in the panel for the last four years and for whom (EQ_INC) is not missing for any of the years. The distribution of population at-risk-of poverty within a four-year period broken down by each combination of dimensions (k), $DISP_{T,D}(k)$

is calculated as the percentage of people who are at-risk-of poverty (calculated for different cut-off points) within a four-year period in each k over the total population in that k.

The weight variable used is an estimation of the Longitudinal weight estimate - four year duration (RB064a). The variable is estimated for the years for which the real longitudinal weight (RB064) is not provided.

$$\begin{aligned}
 \text{[math]DISP}_{\{T,D_{\{at}} \\
 \text{_k}\}} = \\
 \text{frac}\{ \\
 \text{sum} \\
 \text{limits}_{\{ \\
 \text{forall}\{i\} \\
 \text{in } L, \text{SumT}_{i=D} \\
 \text{_at} \\
 \text{_k}\} \text{RB064e}_{i} \} \\
 \text{sum} \\
 \text{limits}_{\{ \\
 \text{forall}\{i\} \\
 \text{in } L \\
 \text{_at} \\
 \text{_k}\} \text{RB064e}_{i} \} \\
 \text{times } 100 \text{[}/\text{math]}
 \end{aligned}$$

where D in (0,1,2,3,4) denoting the number of years spent in poverty and counts how many times within the four-year period each individual is at-risk-of poverty (calculated for the different cut-off points).

With regard to the calculation of the distribution of population by number of years spent in poverty within a four-year period, the following methodological issues should be taken into consideration:

- Income poverty risk at a given point in time may not necessarily imply low living standards in the short term, for example if the persons at-risk have access to savings, to credit, to private insurance, tax credits, to financial assistance from friends and relatives etc. In particular, the cumulative impact of extended periods at risk is to be further assessed.

10. At-risk-of-poverty rate for children by citizenship of their parents (population aged 0 to 17 years):

At-risk-of-poverty rate (ARPT) of population aged 0 to 17 years broken down by citizenship of their parents $(\text{ARPT}_{\{agex_{\{at}} \\ \text{_citizen}\}})$

is calculated as the percentage of people (aged 0 to 17 years) in each citizenship group of their parents (C_SHIP) who are at-risk-of-poverty ($\text{EQ_INC20} < \text{ARPT60}$) over the total population in that breakdown (i.e., citizenship group of their parents).

The weight variable used is the Adjusted Cross Sectional Weight (RB050a).

$$\begin{aligned}
 \text{[math]ARPT}_{\{agex_{\{at} \\
 \text{_citizen}\}} = \\
 \text{frac}\{ \\
 \text{sum} \\
 \text{limits}_{\{ \\
 \text{forall}\{i\} \text{EQ} \\
 \text{_INC20} \\
 \text{lt } \text{ARPT60} \\
 \text{_at} \\
 \text{_citizen}\} \text{RB050a}_{i} \} \\
 \text{sum} \\
 \text{limits}_{\{ \\
 \text{forall}\{i\} \\
 \{at}
 \end{aligned}$$

$$\frac{\text{RB050a}_{i,c}}{100}$$

Where *agex* takes the values from 0 to 17 years.

11. At-risk-of-poverty rate for children by country of birth of their parents (population aged 0 to 17 years):

At-risk-of-poverty rate (ARPT) of population aged 0 to 17 years broken down by country of birth of their parents

$$\text{ARPT}_{agex,at_c_birth}$$

is calculated as the percentage of people (aged 0 to 17 years) in each country of birth of their parents (C_SHIP) who are at-risk-of-poverty (EQ_INC20 < ARPT60) over the total population in that breakdown (i.e., country of birth of their parents).

The weight variable used is the Adjusted Cross Sectional Weight (RB050a).

$$\text{ARPT}_{agex,at_c_birth} = \frac{\sum_{\substack{\text{limits}_{EQ_INC20} \\ \text{lt ARPT60}}} \text{RB050a}_{i,c}}{\sum_{\substack{\text{limits}_{at_c_birth} \\ \text{RB050a}_{i,c}}} \text{RB050a}_{i,c}} \times 100$$

Where *agex* takes the values from 0 to 17 years.

Moreover, there are some methodological limitations that pertain to the following dimensions accompanying the indicators: age, [activity status, citizenship, country of birth, degree of urbanisation, educational level, highest educational level of parents, household type, NUTS region, tenure status, work intensity of the household.

Main concepts used

For the production of the indicators relevant to the subject area of monetary poverty, the variables listed below are also involved in computations:

Poverty status (ARPTXX_i), **At-risk-of-poverty threshold** (ARPTXX), **Equivalised disposable Income** (EQ_INC)

SAS program files

SAS programming routines developed for the computation of the EU-SILC monetary poverty datasets along with the different dimensions, are listed below.

Dataset	SAS program file
At-risk-of-poverty thresholds (ilc_li01)	LI01.sas
At-risk-of-poverty rate by poverty threshold, age and sex (ilc_li02)	LI02.sas
At-risk-of-poverty rate by poverty threshold and household type (ilc_li03)	LI03.sas
At-risk-of-poverty rate by poverty threshold and most frequent activity in the previous year (ilc_li04)	LI04.sas
At-risk-of-poverty rate by poverty threshold and work intensity of the household (population aged 0 to 59 years) (ilc_li06)	LI06.sas
At-risk-of-poverty rate by poverty threshold and education level (ilc_li07)	LI07.sas
At-risk-of-poverty rate by poverty threshold and tenure status (ilc_li08)	LI08.sas
At-risk-of-poverty rate before social transfers (pensions included in social transfers) by poverty threshold, age and sex (ilc_li09)	LI09.sas
At-risk-of-poverty rate before social transfers (pensions included in social transfers) by household type (ilc_li09b)	LI09b.sas
At-risk-of-poverty rate before social transfers (pensions excluded from social transfers) by poverty threshold, age and sex (ilc_li10)	LI10.sas
At-risk-of-poverty rate before social transfers (pensions excluded from social transfers) by household type (ilc_li10b)	LI10b.sas
Relative at-risk-of-poverty gap by poverty threshold (ilc_li11)	LI11.sas
Persistent at-risk-of-poverty rate by sex and age (ilc_li21)	LI21.sas
At-risk-of-poverty rate anchored at a fixed moment in time (2005) by age and sex (ilc_li22)	LI22.sas
At-risk-of-poverty rate anchored at a fixed moment in time (2008) by age and sex (ilc_li22b)	LI22b.sas
Persistent at-risk-of-poverty rate by household type (ilc_li23)	L_li23.sas
Persistent at-risk-of poverty rate by educational level (ilc_li24)	L_li24.sas
At-risk-of poverty rate by broad group of citizenship (population aged 18 and over) (ilc_li31)	LI31.sas
At-risk-of poverty rate by broad group of country of birth (population aged 18 and over) (ilc_li32)	LI32.sas
At-risk-of poverty rate for children by citizenship of their parents (population aged 0 to 17 years) (ilc_li33)	LI33.sas
At-risk-of poverty rate for children by country of birth of their parents (population aged 0 to 17 years) (ilc_li34)	LI34.sas
At-risk-of poverty rate by NUTS region (ilc_li41)	LI41.sas
At-risk-of poverty rate by degree of urbanisation (ilc_li43)	LI43.sas
At-risk-of poverty rate after deducting housing costs by age and sex (ilc_li45)	LI45.sas
At-risk-of poverty rate after deducting housing costs by degree of urbanisation (ilc_li48)	LI48.sas
Distribution of population by number of years spent in poverty within a four-year period (ilc_li51)	LI51.sas
At-risk-of-poverty rate for children by highest education level of their parents (population aged 0 to 17 years) (ilc_li60)	LI60.sas

See also

- [EU statistics on income and living conditions \(EU-SILC\) methodology](#) (overview of all articles)
- [Living conditions in Europe - poverty and social exclusion](#)
- [Living conditions in Europe - income distribution and income inequality](#)

Main tables

- [Income and living conditions \(t_ilc\)](#)

Database

- Living conditions and welfare (livcon), see:

[Income and living conditions \(ilc\)](#)

[Income distribution and monetary poverty \(ilc_ip\)](#)

[Monetary poverty \(ilc_li\)](#)

Dedicated section

[Income and living conditions \(ilc\)](#)

Publications

- [23 % of EU citizens were at risk of poverty or social exclusion in 2010](#) - Statistics in focus 9/2012
- [European social statistics \(2013\)](#) - Statistical books
- [Children were the age group at the highest risk of poverty or social exclusion in 2011](#) - Statistics in focus 4/2013
- [Combating In 2011, 27 % of children aged less than 18 were at risk of poverty or social exclusion – News release](#)
- [Combating poverty and social exclusion. A statistical portrait of the European Union 2010](#) — Statistical books
- [Income and living conditions in Europe \(2010\)](#) — Statistical books
- [Living standards falling in most Member States](#) — Statistics in focus 8/2013
- [Household composition, poverty and hardship across Europe](#) — Working paper (2013 edition)
- [The continuity of indicators during the transition between ECHP and EU-SILC](#)
- [Comparative EU quality reports](#)
- [Modules: assessment of implementation](#)

Methodology

- [Income and living conditions \(ilc\) \] \(ESMS metadata file — ilc_esms\)](#)
- [Operation guidelines](#)
- [Methodological guidelines and description of EU-SILC target variables](#)

Legislation

- [Regulation 1177/2003](#) of 16 June 2003 concerning Community statistics on income and living conditions (EU-SILC)
- [Summaries of EU Legislation: EU statistics on income and living conditions](#)
- [Regulation 1553/2005](#) of 7 September 2005 amending Regulation 1177/2003 concerning Community statistics on income and living conditions (EU-SILC)
- [Regulation 1791/2006](#) of 20 November 2006 adapting certain Regulations and Decisions in the fields of ... statistics, ..., by reason of the accession of Bulgaria and Romania

External links

- [OECD - Better Life Initiative: Measuring Well-being and Progress](#)
- [The social dimension of the EUROPE 2020 strategy - A report of the social protection committee \(2011\)](#)
- [Employment and Social Developments in Europe \(2013\)](#)

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