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**WORKING GROUP**  
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**START: 10H00**

**‘LAEKEN’ INDICATORS**  
**- DETAILED CALCULATION METHODOLOGY -**

*This document can also be found on the Eurostat NewCronos database:*

*Please go to* <http://forum.europa.eu.int/Members/irc/dsis/soipase/home>  
*Then click on* Theme “3 – Population and social conditions”  
*Then click on* Domain “ILC – Income and living conditions”  
*Then click on* Collection “ILC\_LK – Laeken indicators”  
*Then click on* Explanatory notes

## Introductory remarks

At the Nice European Council in December 2000, Heads of State and Government re-confirmed and implemented their March 2000 (Lisbon) decision that the fight against poverty and social exclusion would be best achieved by means of the open method of co-ordination. Key elements of this approach are the definition of commonly-agreed objectives for the European Union (EU) as a whole, the development of appropriate national action plans to meet these objectives, and the periodic reporting and monitoring of progress made.

It is in this context that the Laeken European Council in December 2001 endorsed a first set of 18 common statistical indicators for social inclusion, which will allow monitoring in a comparable way of Member States' progress towards the agreed EU objectives. These indicators need to be considered as a consistent whole reflecting a balanced representation of EU social concerns. They cover four important dimensions of social inclusion (financial poverty, employment, health and education), which highlight the "multidimensionality" of the phenomenon of social exclusion.

Indicator 1a	:	At-risk-of-poverty rate by age and gender
Indicator 1b	:	At-risk-of-poverty rate by most frequent activity and gender
Indicator 1c	:	At-risk-of-poverty rate by household type
Indicator 1d	:	At-risk-of-poverty rate by tenure status
Indicator 1e	:	At-risk-of-poverty threshold (illustrative values)
Indicator 2	:	Inequality of income distribution S80/S20 quintile share ratio
Indicator 3	:	At-persistent-risk-of-poverty rate by gender (60% median)
Indicator 4	:	Relative at-risk-of-poverty gap
Indicator 5	:	Regional cohesion (dispersion of regional employment rates)
Indicator 6	:	Long term unemployment rate
Indicator 7	:	Persons living in jobless households
Indicator 8	:	Early school leavers not in education or training
Indicator 9	:	Life expectancy at birth
Indicator 10	:	Self defined health status by income level
Indicator 11	:	Dispersion around the at-risk-of-poverty threshold
Indicator 12	:	At-risk-of-poverty rate anchored at a moment in time
Indicator 13	:	At-risk-of-poverty rate before social transfers by gender
Indicator 14	:	Inequality of income distribution Gini coefficient
Indicator 15	:	At-persistent-risk-of-poverty rate by gender (50% median)
Indicator 16	:	Long term unemployment share
Indicator 17	:	Very long term unemployment rate
Indicator 18	:	Persons with low educational attainment

## Methodological notes:

### PRIMARY INDICATORS

## 1. At-risk-of-poverty rate

### 1.1 At-risk-of-poverty rate (after social transfers)

#### 1.1.1 Definition

The share of persons with an equivalised total net income below 60% national median income.

Source : European Community Household Panel (ECHP)

#### 1.1.2 Algorithm

##### 1.1.2.1 Calculation of equivalised income

The total net income of each household is calculated by adding together the income received by all the members of the household from all sources.

For each person, the 'equivalised total net income (EQ\_INC)' is calculated as its household total net income divided by equivalised household size according to the modified OECD scale (which gives a weight of 1.0 to the first adult, 0.5 to other persons aged 14 or over who are living in the household and 0.3 to each child aged less than 14).

Consequently, each person in the same household receives the same 'equivalised total net income'.

The population consists of all the persons living in private households of a country. The term person therefore includes all the members of the households, whether they are adults or children.

Persons with missing 'equivalised total net income' are excluded from the calculations (ie. people with missing household income or households with missing composition details).

##### 1.1.2.2 Calculation of the 'at-risk-of-poverty threshold'

Firstly, persons have to be sorted according to their 'equivalised total net income' (sorting order: lowest to highest value).

Secondly, the median is calculated as the equivalised income of the household person for whom the cumulative sum of personal weights is less than or equal to 50% of the total sum of weights.

In other words, persons in the same household are located together, on the same side of the median.

Thirdly, the 'at-risk-of-poverty threshold' is calculated as 60% of the national median.

At risk of poverty threshold = $60\% * EQ\_INC_i$ <small><math>i</math> = person for whom the cumulated sum of weights = <math>0.5 * \text{total sum of weights}</math></small>
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## The 'Laeken' indicators : Detailed calculation methodology

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### 1.1.2.3 Calculation of 'at-risk-of-poverty rate (after social transfers)'

The 'at-risk-of-poverty rate (after social transfers)' is calculated as the percentage of persons with an equivalised net total income below the 'at-risk-of-poverty threshold'.

$$\text{At risk of poverty rate (after social transfers)} = \frac{\sum_{\text{All persons: EQ\_INC} < \text{at risk of poverty threshold}} \text{Weights}}{\sum_{\text{All persons}} \text{Weights}}$$

### 1.1.2.4 Calculation of the EU average

The EU average of the 'at-risk-of-poverty rates (after social transfers)' established for each individual country is calculated as a weighted average of the country rates, where the weighting of countries is done according to the number of persons living in private households (POPTOT) in each country.

$$\text{EU average of 'at risk of poverty rate'} = \frac{\sum_{\text{all countries}} (\text{'at risk of poverty rate'}_i * \text{POPTOT}(\text{year})_i)}{\sum_{\text{all countries}} (\text{POPTOT}(\text{year})_i)}$$

*year* = year of the survey

## **1.2 'At-risk-of-poverty rate' broken down according to certain variables**

The 'at-risk-of-poverty rate (after social transfers)' has been broken down by the following variables:

- Age and gender
- Most frequent activity status in the previous year
- Household type
- Tenure status

The calculation of the 'at-risk-of-poverty rate (after social transfers)', as described in point 1.1, remains the same. In particular, note that the threshold used is the same for each breakdown as the one described in point 1.1 (and not a different threshold for each breakdown).

Each breakdown gives the proportion of the population in each subgroup who is at-risk-of poverty.

### **1.2.1 'At-risk-of-poverty rate (after social transfers)' with breakdown by age and gender**

For this table the 'at-risk-of-poverty rate (after social transfers)' is calculated with a breakdown by 5 age-groups (0-15 years, 16-24 years, 25-49 years, 50-64 years, and 65 years and more), and by gender.

### **1.2.2 'At-risk-of-poverty rate (after social transfers)' with breakdown by most frequent activity status in the previous year**

'Most frequent activity' as used in the ECHP is defined by asking each person aged 16 or over to state for each month of the previous year their main activity. From this 'calendar of activities', the most frequent activity of a person is defined as follows:

- a) First, the person is classified into one of only two categories: economically active (at work or unemployed) versus economically inactive. A person has to be either at work or unemployed for at least 6 months of the year to fall into the category of 'economically active'.
- b) Next, persons classified 'economically active' are classified as 'at work' if within the months of activity the period of 'at work' equals or exceeds the period of 'unemployment'. Persons 'at work' are then classified as 'employed' or 'self-employed' (more than half of the time in self-employment).
- c) Persons classified as 'economically inactive' are classified into the categories 'retired' and 'other economically inactive' on the basis of the majority criterion, with priority given to 'retirement' over 'other economically inactive' in case a person is 'retired' for the same number of months as they are 'other economically inactive'.

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*Thus the following categories of 'most frequent activity' status can be established:*

Economically active

At work

***Employed (1)***

***Self-employed (2)***

***Unemployed (3)***

Economically inactive

***Retired (4)***

***Other economically inactive (5)***

### **1.2.3 'At-risk-of-poverty rate (after social transfers)' with breakdown by household type**

For this table the 'at-risk-of-poverty rate (after social transfers)' has been calculated with a breakdown by household type. In this 'economic' typology, the focus is on 'adults' and 'dependent children', rather than on 'couples' and 'families'. Households are classified according to the number of adults and the number of dependent children that are living in the household.

'Dependent children' includes two groups. All persons below 16 are considered to be dependent children. Persons aged 16 to 24, living in a household of which at least one of their parents is a member, and who are economically inactive are also considered as 'dependent children'.

*The following household types have been chosen for this breakdown:*

- One person household, under 30 years
- One person household, between 30 and 64 years
- One person household, 65 years plus
- One person household, male
- One person household, female
- One person household, total
- 2 adults, no dependent children, both adults under 65 years
- 2 adults, no dependent children, at least one adult 65 years or more
- Other households without dependent children
- Single parent household, one or more dependent children
- 2 adults, one dependent child
- 2 adults, two dependent children
- 2 adults, three or more dependent children
- Other households with dependent children

### **1.2.4 'At-risk-of-poverty rate (after social transfers)' with breakdown by tenure status**

*The following household types have been chosen for this breakdown:*

- Owner or rent free
- Tenant

### **1.3 'At-risk-of-poverty threshold': illustrative values**

#### **1.3.1 Definition**

The value of the 'at-risk-of-poverty threshold' in PPS, Euro and national currency for the total population, for a one person household and for a household consisting of two adults and two children are presented as illustrative examples.

#### **1.3.2 Algorithm**

##### 1.3.2.1 Calculation of the 'at-risk-of-poverty threshold'

Firstly, persons have to be sorted according to their 'equivalised total net income' (sorting order: lowest to highest value).

Secondly, the median is calculated as the equivalised income of the household person for whom the cumulative sum of personal weights is less than or equal to 50% of the total sum of weights.

In other words, persons in the same household are located together, on the same side of the median.

Thirdly, the 'at-risk-of-poverty threshold' is calculated as 60% of the national median.

$$\text{At risk of poverty threshold} = 60\% * EQ\_INC_i \Big|_{i=\text{person for whom the cumulated sum of weights}=0.5*\text{total sum of weights}}$$

##### 1.3.2.2 Calculation of illustrative values for a one person household and for a household consisting of two adults and two children

To illustrate the threshold value for a one person household and for a household consisting of two adults and two children, the 'at-risk-of-poverty threshold' has to be multiplied:

\* by 1 (for a one person household) ;

\* by 2.1 (for a household consisting of two adults and two children). The factor 2.1 is obtained by reference to the 'modified-OECD equivalence scale' as the sum of 1 (first adult) + 0.5(second adult) + 0.3 \* 2 (the two children).

The conversion of national currency values into Euro and into PPS is done using official exchange rates and PPS values published by Eurostat : *New Cronos, Theme 2, Domain "Price", Collection "PPP", Table "PPPSNA95"*

## **2. Inequality of income distribution S80/S20 quintile share ratio**

### **2.1 Definition**

S80/S20 income quintile share ratio: Ratio of total income received by the 20% of the country's population with the highest income (top quintile) to that received by the 20% of the country's population with the lowest income (lowest quintile).

'Income' must be understood as 'equivalised total net income'.

Source : European Community Household Panel (ECHP)

### **2.2 Algorithm**

#### **2.2.1 Equivalised total net income**

For each person, the 'equivalised total net income' is calculated as its household total net income divided by equivalised household size according to the modified OECD scale.

Persons with missing 'equivalised total net income' are excluded from the calculations.

#### **2.2.2 Grouping the population into quintiles**

The sample population of each country has to be grouped into quintiles.

Firstly, persons are sorted according to their 'equivalised total net income' (sorting order: lowest to highest value).

The 20% of persons at the lower end of the distribution that represent 20% of persons are defined as 'poorest' (first quintile). The 20% of persons at the upper end of the distribution are defined as 'richest' (fifth quintile).

The cut-off point is set in such a way that the cumulated sum of weights is less than or equal to  $x*20\%$  (where  $x = 1,2,3,4,5$ ) of the total sum of weights.

Technically, two methodological choices were retained:

1/ persons in the same household belong to the same quintile.

2/ persons with the same income but belonging to different households can eventually belong to different quintiles, according to their position in the ranking (the first ranking variable is the equivalised total net income, the second ranking variable is the household identification number).

#### **2.2.3 Calculation of the S80/S20 quintile share ratio**

In theory the net equivalised income available to a quintile is the sum of the equivalised income of the individuals belonging to the quintile. In practice, the mean equivalised income of the quintile is used instead<sup>1</sup>.

S80/S20 is the quotient of the equivalised income available to the 5<sup>th</sup> quintile (richest) over the 1<sup>st</sup> quintile (poorest).

$$S80/S20 = \frac{\sum (WEIGHT * (EQ\_INC))_{\text{all persons in 5th quintile}}}{\sum (WEIGHT * (EQ\_INC))_{\text{all persons in 1st quintile}}}$$

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<sup>1</sup> This is done to minimise any impact from the fact that the numbers of persons in the quintiles may vary from the anticipated 20% of the total population during the quintile-distribution process.



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### 2.2.4 Calculation of the EU average

The EU average of S80/S20 quintile share ratios is calculated as a weighted average of the country ratios. The weighting of countries is done according to the number of persons living in private households in each country (POPTOT).

$$EU \text{ average of S80/S20 ratios} = \frac{\sum_{\text{all countries}} (S80/S20_i * POPTOT(\text{year})_i)}{\sum_{\text{all countries}} (POPTOT(\text{year})_i)}$$

*year* = year of the survey

### **3. At-persistent-risk-of-poverty rate (60% median)**

#### **3.1 Definition**

The share of persons with an equivalised total net income below the risk-of-poverty threshold in the current year and in at least two of the preceding three years. Gender breakdown + total

Source : European Community Household Panel (ECHP)

#### **3.2 Algorithm**

##### **3.2.1 Calculation of the equivalised total income for each year**

For each person, the 'equivalised total net income' is calculated as its household total net income divided by equivalised household size according to the modified OECD scale.

Persons with missing 'equivalised total net income' are excluded from the calculations.

##### **3.2.2 Calculation of 'at-risk-of-poverty thresholds' for each year**

For each of the four years, the 'at-risk-of-poverty threshold' is calculated for each country in the following way:

Firstly, persons have to be sorted according to their 'equivalised total net income' (sorting order: lowest to highest value).

Secondly, the median is calculated as the equivalised income of the household person for whom the cumulative sum of personal weights is less than or equal to 50% of the total sum of weights.

In other words, persons in the same household are located together, on the same side of the median.

Thirdly, the 'at-risk-of-poverty threshold' is calculated as 60% of the national median.

$\text{At risk of poverty threshold} = 60\% * EQ\_INC_i \Big _{i=\text{person for whom the cumulated sum of weights} = 0.5 * \text{total sum of weights}}$
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##### **3.2.3 Linking information for four years**

A file should contain for each person his/her equivalised total net income for the four years.

**BUT** only persons that have been in the panel for all four waves should be included in the analysis. Therefore, all persons with missing values for at least one of the four EQ\_INC variables are to be excluded.

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### 3.2.4 Calculation of the ‘at-persistent-risk-of-poverty rate’

The ‘at-persistent-risk-of-poverty rate’ is calculated as the percentage of persons with an equivalised total net income below the respective ‘at-risk-of-poverty threshold’ for the current year and at least 2 of the preceding 3 years.

The persons who are concerned by one of the following four cases have to be taken into account:

	T	T-1	T-2	T-3
1.	At risk of poverty	At risk of poverty	At risk of poverty	At risk of poverty
2.	At risk of poverty	At risk of poverty	NOT at risk of poverty	At risk of poverty
3.	At risk of poverty	At risk of poverty	At risk of poverty	NOT at risk of poverty
4.	At risk of poverty	NOT at risk of poverty	At risk of poverty	At risk of poverty

$$\text{At persistent risk of poverty rate} = \frac{\sum_{\text{All persons: case 1 or case 2 or case 3 or case 4}} \text{weights}}{\sum_{\text{All persons: } EQ\_INC(T) \neq \text{ AND } EQ\_INC(T-1) \neq \text{ AND } EQ\_INC(T-2) \neq \text{ AND } EQ\_INC(T-3) \neq} \text{weights}}$$

For this longitudinal at-risk-of-poverty rate, the base weight of the last wave is to be used.

### 3.2.5 Calculation of the EU average

The EU average of the ‘at-persistent-risk-of-poverty rate’ is calculated as a weighted average of the country rates. The weighting of countries is done according to the number of persons living in private households in the last year (T) in each country.

$$\text{EU average of persistent at risk of poverty rate} = \frac{\sum_{\text{all countries}} (\text{persistent at risk of poverty rate} * POPTOT (T))}{\sum_{\text{all countries}} (POPTOT (T))}$$

## **4. Relative at-risk-of-poverty gap**

### **4.1 Definition**

Difference between the median equivalised total net income of persons below the at-risk-of-poverty threshold and the at-risk-of-poverty threshold, expressed as a percentage of the at-risk-of-poverty threshold. Gender breakdown + total.

Source : European Community Household Panel (ECHP)

### **4.2 Algorithm**

The indicator is calculated in the following way:

#### **4.2.1 Calculation of equivalised income**

For each person, the 'equivalised total net income' is calculated as its household total net income divided by equivalised household size according to the modified OECD scale.

Persons with missing 'equivalised total net income' are excluded from the calculations.

#### **4.2.2 Calculation of the 'at-risk-of-poverty threshold'**

Firstly, persons have to be sorted according to their 'equivalised total net income' (sorting order: lowest to highest value).

Secondly, the median is calculated as the equivalised income of the household person for whom the cumulative sum of personal weights is less than or equal to 50% of the total sum of weights.

In other words, persons in the same household are located together, on the same side of the median.

Thirdly, the 'at-risk-of-poverty threshold' is calculated as 60% of the national median.

$\text{At risk of poverty threshold} = 60\% * EQ\_INC_i \Big _{i=\text{person for whom the cumulated sum of weights} = 0.5 * \text{total sum of weights}}$
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#### **4.2.3 Identification of the 'at-risk-of-poverty' persons**

Each person is classified as 'at-risk-of-poverty rate (after social transfers)' or not, depending on the fact that his/her equivalised income is below the 'at-risk-of-poverty' threshold or not.

#### **4.2.4 Calculation of the median equivalised total net income for the 'at-risk-of-poverty' persons**

Once the 'at-risk-of-poverty' persons are known, the median equivalised total net income of those persons is calculated in the following way:

Firstly the 'at-risk-of-poverty' persons have to be sorted according to their 'equivalised total net income' (sorting order: lowest to highest value).

Secondly, the median is calculated as the equivalised total net income of the 'at-risk-of-poverty' household person for whom the cumulative sum of personal weights is less than or equal to 50% of the total sum of weights of the 'at-risk-of-poverty' persons.

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In other words, 'at-risk-of-poverty' persons in the same household are located together, on the same side of the median.

### 4.2.5 Calculation of 'relative at-risk-of-poverty gap'

Calculation of relative median at-risk-of-poverty gap:

$$100 \times \frac{(\text{At-risk-of-poverty threshold} - \text{median equivalised total net income for the 'at-risk-of-poverty' persons})}{\text{At-risk-of-poverty threshold}}$$

## **5. Regional cohesion (dispersion of regional employment rates)**

### **Coefficient of variation of employment rates across regions within countries, broken down by gender (Total, Male, Female)**

#### **5.1. Definition**

The regional cohesion indicator is the coefficient of variation of employment rates at NUTS (Nomenclature of Territorial Units for Statistics) level 2.

It is calculated separately for each country and gives a measure of the regional spread of employment rates.

#### **5.2 Algorithm**

The indicator is established in the following way:

##### *5.2.1 Source of data to calculate the 'regional cohesion' indicator*

For this indicator, the source of data is the results from the Spring quarterly EU Labour Force Survey at NUTS 2 level.

The EU Labour Force Survey is a personal-interview based survey conducted amongst private households. The target population is restricted to persons of working age (15 years and above). The questions and definitions in the EU Labour Force Survey closely follow those adopted by the 13<sup>th</sup> International Conference of Labour Statisticians, organised by the International Labour Office (ILO) in 1982. See appendix 1 for a summary flowchart of labour classification.

For individual countries, the limitation to regions at NUTS 2 level (c.200 locations) reduces the number of observations considerably by comparison to NUTS 3 level (c.1100 locations), which makes the indicator more sensitive to any changes. Data is not applicable at NUTS 2 level for Denmark, Ireland or Luxembourg because NUTS 2 level is close to national level.

##### *5.2.2 Identification of persons in employment*

Within a particular region (country), persons are considered as having an employment if they did any work for pay or profit during the specified reference week, even for as little as one hour. Pay includes cash payments or payments in-kind, whether payment was received during the reference week or not<sup>2</sup>.

Thus the employed comprise persons who fall into one of the following categories:

#### **(a) Paid employment.**

- At work (perform some work for wage or salary in cash or in kind).
- With a job but not at work (temporarily not at work and having a formal attachment to their job) according to one of the following criteria:
  - Continued receipt of wage or salary.
  - Assurance of return to work or an agreement as to the date of return.
  - Elapsed period of absence in relation to period for which workers are entitled to compensation benefits).

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<sup>2</sup> “The EU Labour Force Survey: Methods and Definitions, 2001” DRAFT v03feb2003 per NewCronos enquiry 26feb2003

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### Notes

1. Seasonal workers during the 'off' season are not considered to be in employment as they do not continue to receive payment although they may have an assurance of return to work.
2. Persons on maternity leave should always be considered to be in employment.
3. Persons who have been temporarily laid-off are considered to be in employment if they continue to receive payment which is at least 50% of their previous wage or salary, or if they have an assurance of a return to work within 3 months.
4. Persons who are absent from work for more than 3 months ('long-term absence') are only considered to be in employment if they continue to receive at least 50% of their previous wage or salary.
5. Persons on parental leave should be treated as a case of long-term absence from work
6. Military conscripts are not considered to be in employment.
7. Persons who receive payment for on-the-job training which involves production of goods or services are considered to be in employment.

### **(b) Self-employment.**

- At work (perform some work for profit or gain in cash or in kind).
- With an enterprise (eg. farm, commerce, professional practice) but temporarily not at work for a specified reason.

### Notes

1. Time spent on the operation of the enterprise, even if not directly linked to the making of sales or the production of goods or services, is also considered to be self-employment.
2. Time spent in setting-up an enterprise including the purchase/installation of equipment, pre-ordering of supplies, etc. is also considered to be self-employment.
3. Unpaid work by family members, which contributes directly to an enterprise owned or operated by a related member of the same household, is also considered to be self-employment.
4. Unpaid family workers are still considered to be in self-employment if they have an assurance of a return to work within 3 months.
5. The classification of agricultural smallholdings where production is for own consumption rather than for resale, depends on the relative importance of such activity in the national accounts (ESA 1995 paragraph 3.08) – if significant, then work on the farm should be considered as self-employment.

### 5.2.3 Identification of regional population (persons of working age: 15-64)

Figures at national level are broken down over individual regions by applying regional structures of most recent population census or results of regional labour force survey.

### 5.2.4 Calculation of regional employment rates

The employment rate represents persons in employment as a percentage of the population of working age.

$$\text{Employment rate} = \frac{\sum x_i}{\sum y_i}$$

where  $x_i$  is the persons aged 15-64 who are in employment and  $y_i$  is the total population of persons aged 15-64.

Note: To establish the 'regional cohesion' indicator, the source of data is the Spring quarterly survey.

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### 5.2.5 Calculation of the coefficient of variation of regional employment rates

#### 5.2.5.1 Calculation of the arithmetic mean of regional employment rates.

The Arithmetic Mean employment rate is calculated using the total population, as follows:

$$\text{Arithmetic Mean employment rate} = \frac{\sum_{\text{all regions}} x_i}{\sum_{\text{all regions}} y_i}$$

where  $x_i$  is the persons aged 15-64 who are in employment and  $y_i$  is the total population of persons aged 15-64.

Note that this is a departure from the standard calculation of the Arithmetic Mean (sum of the employment rates for each region, divided by the number of regions).

#### 5.2.5.2 Calculation of the standard deviation of regional employment rates.

The Standard Deviation is the square root of the Variance. The Variance is calculated as the sum of the population weighted, squared difference of the employment rate for each region from the Arithmetic Mean, as follows:

$$\text{Variance of employment rates} = \sum_{\text{regions}} \left( \frac{y_i}{\sum_{\text{regions}} y} \cdot (x_i - \bar{x})^2 \right)$$

where  $\bar{x}$  is the arithmetic mean of  $x_i$  and  $x_i$  is the regional employment rate for region  $i$ , and  $y_i$  is the population aged 15-64 for region  $i$ .

Note that this is a departure from the standard calculation of the Variance (sum of the squared difference of the employment rate for each region from the Arithmetic Mean, divided by the number of regions).

#### 5.2.5.3 Calculation of the coefficient of variation of regional employment rates.

The coefficient of variation is the Standard Deviation divided by the Arithmetic Mean, as follows:

$$\text{C.V. of regional employment rates} = \frac{\text{Standard Deviation of regional employment rates}}{\text{Arithmetic Mean of regional employment rates}}$$

### 5.2.6 Calculation of the EU average

The EU average 'regional cohesion' indicator is calculated for the EU as whole using data for all regions in all countries (including Denmark, Ireland and Luxembourg).



## **6. Long-term unemployment rate**

### **Long-term unemployment rate, broken down by gender**

#### **6.1 Definition**

The long term unemployment rate is the total number of long-term unemployed (at least 12 months) as a percentage of the total active population aged 15-64. (Gender breakdown + total)

The total active population or labour force is the total population at work and the unemployed population. It excludes persons who are inactive.

#### **6.2 Algorithm**

The indicator is established in the following way:

##### *6.2.1 Source of data to calculate the 'long-term unemployment rate' indicator*

To establish this indicator, the source of data is the harmonised monthly series of numbers of unemployed persons. This compiles the latest annual results from the EU Labour Force Survey, quarterly results from national Labour Force Surveys and monthly results from national Labour Force Surveys, together with administrative data. The series is seasonally adjusted. The annual total is simply the sum of these monthly values.

The questions and definitions in the EU Labour Force Survey closely follow those adopted by the 13<sup>th</sup> International Conference of Labour Statisticians, organised by the International Labour Office (ILO) in 1982. See appendix 1 for a summary flowchart of labour classification.

##### *6.2.2 Identification of persons in employment*

For the definition of employed persons, please see the description under 5.2.2

##### *6.2.3 Identification of persons who are unemployed*

Within a particular country, persons are considered to be unemployed<sup>3</sup> if :

- (a) They are aged 15-74
- (b) They are without work during the reference week (ie. neither had a job nor were at work for one hour or more in employment or self-employment which is paid either in cash or in kind, not necessarily during the reference week itself).
- (c) They are currently available for work (ie. were available to start paid employment or self-employment before the end of two weeks following the reference week).
- (d) They are actively seeking work (ie. have taken specific steps in the four weeks period ending with the reference week to seek paid employment or self-employment, or who have found a job to start within at least 3 months). The following are considered as specific steps:
  - Having been in contact with a public employment office in order to find work, whoever took the initiative. Note: renewing registration for administrative purposes only is not an active step.

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<sup>3</sup> Commission Regulation (EC) No 1897/2000 of 7 September 2000 implementing Council Regulation (EC) No 577/98 on the organisation of a labour force sample survey concerning the definition of unemployment (OJ L 228 8.9.2000 p.18). This definition remains fully compatible with ILO standards.

## The 'Laeken' indicators : Detailed calculation methodology

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- Having been in contact with a private agency (temporary work agency, firm specialising in recruitment, etc.) in order to find work.
- Applying to employers directly.
- Asking among friends, relatives, unions, etc. in order to find work.
- Placing or answering job advertisements.
- Taking a recruitment test or examination or being interviewed.
- Looking for land, premises or equipment.
- Applying for permits, licences or financial resources.

### Notes

1. Seasonal workers during the 'off' season are not considered to be in employment as they do not continue to receive payment although they may have an assurance of return to work. However, they will only be considered to be unemployed if they are 'currently available for work' and 'actively seeking work'.
2. Persons on maternity leave are not considered to be unemployed.
3. Persons who have been temporarily laid-off are considered to be in employment if they continue to receive payment which is at least 50% of their previous wage or salary, or if they have an assurance of a return to work within 3 months. However even if they are not considered to be in employment, they will only be considered to be unemployed if they are 'currently available for work' and 'actively seeking work'.
4. Persons who are absent from work for more than 3 months ('long-term absence') are only considered to be in employment if they continue to receive at least 50% of their previous wage or salary. However even if they are not considered to be in employment, they will only be considered to be unemployed if they are 'currently available for work' and 'actively seeking work'.
5. Persons on parental leave should be treated as a case of long-term absence from work
6. Military conscripts are not considered to be unemployed.
7. Persons who receive payment for on-the-job training which involves production of goods or services are considered to be in employment. Education and training are considered as ways to improve employability but not as methods of seeking work. Persons without work and in education or training will only be considered to be unemployed if they are 'currently available for work' and 'actively seeking work'.

### 6.2.4 Identification of the duration of unemployment

Duration of unemployment is defined as (a) the duration of the search for work, or, if shorter, (b) the length of time since the last job was held.

For the 'long-term unemployment rate' indicator, the relevant duration is 12 months: persons who have been unemployed for more than 12 months are considered to be long-term unemployed. Clearly, this is a subset of the total number of unemployed persons.

### 6.2.5 Identification of the active population

The total active population (total labour force) is defined as the sum of persons who are in employment and persons who are unemployed.

$$\boxed{\text{Total active population} = \sum_{\text{Persons aged } 15+} x_i + \sum_{\text{Persons aged } 15-74} y_i}$$

where  $x_i$  is the persons who are in employment and  $y_i$  is the persons who are unemployed.

## The 'Laeken' indicators : Detailed calculation methodology

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### 6.2.6 Calculation of the long-term unemployment rate

The long-term unemployment rate (LTU rate) represents persons who have been unemployed for more than 12 months as a percentage of the total active population.

$$\text{Long - term unemployment rate} = \frac{\sum z_i}{\text{Persons aged 15-74}} \div \text{Total active population}$$

where  $z_i$  is the persons who are unemployed for more than 12 months.

### 6.2.7 Calculation of the EU average

The EU average of this indicator is calculated as a weighted average of the available individual country values. The weighting of countries is done according to the number of persons living in private households in each country (POPTOT).

$$\text{EU average of long - term unemployment rates} = \frac{\sum_{\text{all countries}} (\text{LTU rate}_i * \text{POPTOT}(\text{year})_i)}{\sum_{\text{all countries}} (\text{POPTOT}(\text{year})_i)}$$

*year* = year of the survey

## **7. Persons living in jobless households**

### **Persons living in jobless households, for persons aged 0-65 and 0-60**

#### **7.1 Definition**

The 'persons living in jobless households' indicator shows the number of persons aged 0-65 who are living in eligible households where none of the members are working as a percentage (proportion) of the total population aged 0-65 who are living in eligible households.

Note: this indicator is also calculated separately for the population aged 0-60 to take account of the variation in retirement ages (legal or effective) across Member States. This indicator shows the impact upon individual members of a household based upon the degree of contact with the world of work of all the members of their household.

#### **7.2 Algorithm**

The indicator is established in the following way:

##### *7.2.1 Source of data to calculate the persons living in jobless households*

To establish this indicator, the source of data is the results from the Spring quarterly EU Labour Force Survey.

The EU Labour Force Survey is a personal-interview based survey conducted amongst private households. The target population is restricted to persons of working age (15 years and above). The questions and definitions in the EU Labour Force Survey closely follow those adopted by the 13<sup>th</sup> International Conference of Labour Statisticians, organised by the International Labour Office (ILO) in 1982. See appendix 1 for a summary flowchart of labour classification.

##### *7.2.2 Identification of eligible households*

The denominator (bottom) of this fraction is the total population aged 0-65 (0-60) which is living in eligible private households.

Eligible households comprise all households except those where all the household members fall into one of the following categories:

- aged less than 18 years old
- aged 18-24 in education and inactive
- aged 65 (60) and over and not working

In other words, eligible households contain at least one member of the household who is either aged between 18 and 24 and not in education and inactive, or who is aged between 24 and 65 (60).

##### *7.2.3 Identification of persons who are unemployed*

The numerator (top) of this fraction is the number of persons living in eligible private households, where none of the members are working (ie. none are 'in employment').

For the definition of employed persons, please see the description under 5.2.2

## The 'Laeken' indicators : Detailed calculation methodology

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### 7.2.4 Calculation of the 'persons living in jobless households' indicator

The indicator is calculated by dividing the number of persons identified under 7.2.3 above by the total number of persons identified under 7.2.2 above.

$$\text{Number of persons living in jobless households} = \frac{\sum x_i}{n}$$

persons living in eligible households

where  $x_i$  is the persons who are living in jobless eligible households and  $n$  is the total number of persons living in eligible households.

### 7.2.5 Calculation of the EU average

The EU average of this indicator is calculated as a weighted average of the available individual country values. The weighting of countries is done according to the number of persons living in private households in each country (POPTOT).

$$\text{EU average of persons living in jobless households} = \frac{\sum_{\text{all countries}} (\text{JoblessHH}_i * \text{POPTOT}(\text{year})_i)}{\sum_{\text{all countries}} (\text{POPTOT}(\text{year})_i)}$$

*year = year of the survey*

## **8. Early school leavers not in education or training**

### **Early school leavers not in education or training, broken down by gender (Total, Male, Female)**

#### **8.1 Definition**

The 'early school leavers not in education or training' indicator is defined as the percentage (proportion) of the total population of 18-24 year olds who have achieved ISCED level 2 or less and are not attending education or training.

This stock measure of persons flowing out of the education system is a proxy measure both of the efficiency of the education system and a predictor of the future ability of the society to fight poverty and social exclusion.

#### **8.2 Algorithm**

The indicator is established in the following way:

##### **8.2.1 Source of data to calculate the 'early school leavers not in education or training' indicator**

To establish this indicator, the source of data is the results from the Spring quarterly EU Labour Force Survey.

The EU Labour Force Survey is a personal-interview based survey conducted amongst private households. The target population is restricted to persons of working age (15 years and above).

##### **8.2.2 Identification of persons who are in education or training**

Respondents are asked whether they are participating in education and training. The reference period is the last four weeks preceding the survey.

The data collected refer to all education or training, whether or not relevant to the declarant's current or future employment. This includes initial education, continuing or further education, training within enterprises, apprenticeships, on-the-job training, seminars and workshops, distance-learning, evening classes, self-learning, etc. It includes courses followed for personal or general interest and may cover all forms of learning and training in subjects such as languages, data processing/computer studies, business studies/management, art/culture, health/medicine.

Persons who do not reply to the question are excluded from the calculation of the denominator (bottom) of the fraction.

##### **8.2.3 Identification of highest level of educational attainment**

Respondents are asked to identify their highest level of educational attainment, coded according to the 1997 International Standard Classification of Education established by UNESCO (ISCED'97) as follows:

## The ‘Laeken’ indicators : Detailed calculation methodology

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Level 0 – Pre-primary education.

Level 1 – Primary education or first-stage of basic education.

Level 2 – Lower secondary education or second stage of basic education.

Level 3 – Upper secondary education.

Level 4 – Post-secondary non-tertiary education.

Level 5 – First stage of tertiary education (not leading directly to an advanced research qualification)

Level 6 – Second stage of tertiary education (leading directly to an advanced research qualification)

The classification refers to the level successfully completed and involves obtaining a certificate or diploma or full attendance. When determining the level, both general and vocational education/training should be taken into consideration.

Persons who do not reply to the question are excluded from the calculation of the denominator (bottom) of the fraction.

### 8.2.4 Identification of the persons with ISCED level 2 or below who are not in education or training

Firstly, the number of persons aged 18-24 with a highest level of educational attainment equal to ISCED level 2 (excluding those who did not answer the question) is identified in accordance with the approach in 8.2.3 above. In other words, the numbers who achieved ISCED level 0, 1 or 2 is identified. This is the denominator (bottom) of the fraction to be calculated.

Secondly, the number of these persons who are not participating in education or training (excluding those who did not answer the question) is identified in accordance with the approach in 8.2.2 above. This is the numerator (top) of the fraction to be calculated.

$$\text{Early school leavers not in education or training} = \frac{\sum x_i}{n}$$

Persons aged 18–24 with low educational attainment

where  $x_i$  is the persons who are not in education or training and  $n$  is the total number of persons aged 18-24 with low educational attainment.

### 8.2.5 Calculation of the EU average

The EU average of this indicator is calculated as a weighted average of the available individual country values. The weighting of countries is done according to the number of persons living in private households in each country (POPTOT).

$$\text{EU avg. of early school leavers not in educ. or training} = \frac{\sum_{\text{all countries}} (\text{Early leavers}_i * \text{POPTOT}(\text{year})_i)}{\sum_{\text{all countries}} (\text{POPTOT}(\text{year})_i)}$$

*year = year of the survey*

## **9. Life expectancy at birth**

### **Life expectancy at birth, broken down by gender (Total, Male, Female)**

#### **9.1 Definition**

The 'life expectancy at birth' indicator is defined as the number of years a person may be expected to live, starting at age 0, if subjected throughout their lives to the current mortality conditions.

This gives an indication both of the efficiency of the healthcare system and a predictor of the future ability of the society to fight poverty and social exclusion.

#### **9.2 Algorithm**

The indicator is established in the following way:

##### *9.2.1 Source of data to calculate the 'life expectancy at birth' indicator*

To establish this indicator, the source of data is demographic information collected by Eurostat on an annual basis, under a gentleman's agreement in collaboration with the Council of Europe and the UN Statistical Division. This data is processed centrally by Eurostat using standard algorithms<sup>4</sup>.

##### *9.2.2 Identification of death rates*

Life expectancy at birth is an estimate of the average length of time (in years) that a person can expect to live, assuming that the prevailing rates of death for each age group will remain the same for the lifetime of that person. This is because no-one knows what death rates will be in the future, although they will almost certainly change over the lifetime of a person born now, because of changes in social and economic conditions, lifestyle, nutritional and environmental factors, and advances in the detection and treatment of disease.

The crude death rate is an estimate of the proportion of a population that dies in a specified period. It is calculated by dividing the number of deaths in a specified period by the number at risk during that period (typically per year). It does not take into account the age structure of the population studied, and can therefore be misleading. This is corrected via age standardisation: the directly age-standardised rate is the weighted sum of age-specific (five-year age group) rates, where the weighting factor is the corresponding age-specific standard population.

##### *9.2.3 Estimation of life expectancy for total population*

Life expectancy values are currently established by Eurostat unit E4 (demographic statistics) for males and females only.

A value for the total population has been estimated by Eurostat unit E2 as a population weighted average of the male and female values. The weighting is done according to the number of persons by gender.

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<sup>4</sup> SYSCODEM software. Eurostat demographic statistics unit is in the progress of switching to a new calculation system.



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### 9.2.4 Calculation of the EU average

Finally, the EU average of this indicator is calculated as a weighted average of the available individual country values. The weighting of countries is done according to the number of persons living in private households in each country (POPTOT).

$$EU \text{ average life expectancy at birth} = \frac{\sum_{\text{all countries}} (Life \text{ Expectancy}_i * POPTOT(\text{year})_i)}{\sum_{\text{all countries}} (POPTOT(\text{year})_i)}$$

*year* = year of the survey

**10. Self defined health status by income level**

An indicator of health inequality by income was tentatively adopted in Laeken, calculated as the ratio of the proportions in the bottom and top income quintile groups of the population aged 16 and over who classify themselves as in a bad or very bad state of health (source: ECHP). However, Eurostat is still undertaking research into the feasibility and suitability of this indicator, in collaboration with the Indicators Sub-Group of the Social Protection Committee.

In the absence of an agreed methodology, this indicator is not currently being produced.

## **SECONDARY INDICATORS**

### **11. Dispersion around the 'at-risk-of-poverty threshold'**

#### **11.1 Definition**

The share of persons with an income below 40%, 50% and 70% national median income.

Source : European Community Household Panel (ECHP)

#### **11.2 Algorithm**

##### *11.2.1 Calculation of equivalised income*

See the description under 1.1.2.1

##### *11.2.2 Calculation of the 'at-risk-of-poverty threshold'*

See the description under 1.1.2.2

The at-risk-of-poverty threshold is set firstly at 40% of the national median

At risk of poverty threshold = $40\% * EQ\_INC_i$ <small><math> _{i=\text{person for whom the cumulated sum of weights}=0.5*\text{total sum of weights}}</math></small>
---

Secondly it is set at 50% of the national median

At risk of poverty threshold = $50\% * EQ\_INC_i$ <small><math> _{i=\text{person for whom the cumulated sum of weights}=0.5*\text{total sum of weights}}</math></small>
---

Thirdly it is set at 70% of the national median

At risk of poverty threshold = $70\% * EQ\_INC_i$ <small><math> _{i=\text{person for whom the cumulated sum of weights}=0.5*\text{total sum of weights}}</math></small>
---

##### *11.2.3 Calculation of 'at-risk-of-poverty rate (after social transfers)'*

See the description under 1.1.2.3

The at-risk-of-poverty rate is calculated firstly using the 40% threshold, secondly using the 50% threshold and thirdly using the 70% threshold.

##### *11.2.4 Calculation of the EU average*

See the description under 1.1.2.4

## **12. 'At-risk-of-poverty rate' anchored at a moment in time**

### **12.1 Definition**

For a given year « t » (eg. 1999), the “at-risk-of-poverty rate anchored at a moment in time is the share of the population whose equivalised total net income in that given year is below a risk-of-poverty threshold calculated in the standard way for the earlier year « t-3 » (eg. 1996) and then up-rated for inflation (eg., the period concerned is 1996-1999, but the inflation rate to be applied is that for the period 1995-1998 because the income reference year in the ECHP is the year prior to the survey)

Source : European Community Household Panel (ECHP)

### **12.2 Algorithm**

1) 'At-risk-of-poverty thresholds' are calculated as follows:

a) for the base year :

The 'at-risk-of-poverty threshold' is calculated for the base year as described in section 1 (i.e. 60% of the median equivalised income).

b) for subsequent years :

The inflation factor is applied to base year threshold.

2) The 'at-risk-of-poverty rate' is calculated as described for the standard 'at-risk-of-poverty rate'.

However, the special inflated threshold is used.

This is illustrated by an example. The base year is 1996 (income 1995).

The median of equivalised income of base year (1996, income 1995) is computed (Median3).

Then, we calculate the 'at-risk-of-poverty threshold', which corresponds to 60% of Median3. It is called Med3\_60.

*Example : 'at-risk-of-poverty rate' for 1999*

- Calculation of the 'at-risk-of-poverty threshold' for 1999 (income data from 1998) using the inflation factor 95-98

## The 'Laeken' indicators : Detailed calculation methodology

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- $\text{Med6X}_{60} = (\text{Med3}_{60} \cdot \text{idx9598}) / 100$  → 'at-risk-of-poverty threshold' of 1996 (income 1995) multiplied with the inflation factor  $\text{idx}_{95\_98}$

Calculation of 'at-risk-of-poverty rate' using  $\text{Med6X}_{60}$  as the 'at-risk-of-poverty threshold'.

*Source for the Inflation factors used from the Eurostat Price statistics: Eurostat, New Cronos, Theme 2, Domain "Price", Collection "ipc", Table "ipca"*

### 13. 'At-risk-of-poverty rate before social transfers'

#### 13.1 Definition

The 'at-risk-of-poverty rate before social transfers' shows the percentage of the population having an equivalised net income before social transfers below the national 'at-risk-of-poverty threshold'.

Two definitions of the income before social transfers have to be applied, depending on whether pensions are considered as transfers or not.

The 'at-risk-of-poverty rate before social transfers' should only be used in connection with the 'at-risk-of-poverty rate (after social transfers)' in order to evaluate the impact of social transfers. On its own it does not have any explanatory value.

Source : European Community Household Panel (ECHP)

#### 13.2 Algorithm

##### 13.2.1 Calculation of the 'Equivalised income before social transfers'

For each household the 'equivalised income before social transfers' is to be calculated as:

1. EQ\_INC\_BST = total net household income minus social transfers (except old-age or survivors pensions), divided by the equivalised household size according to the modified OECD scale).
2. EQ\_INC\_Btp = total net household income minus social transfers (including old-age or survivors pensions), divided by the equivalised household size according to the modified OECD scale).

Households with missing 'equivalised income before social transfers' are excluded from the calculations.

##### 13.2.2 Calculation of the 'at-risk-of-poverty rate before social transfers'

The 'at-risk-of-poverty rate before social transfers' is calculated as the percentage of persons with an equivalised income before social transfers (including or excluding pensions) below the 'at-risk-of-poverty threshold' (60% of the national median).

The 'at-risk-of-poverty threshold' (60% of the national median) is the same as the one described in point 1. In other words, the threshold is computed on the basis of the distribution **after** transfers.

$$\text{At risk of poverty rate before social transfers (excl. pensions)} = \frac{\sum_{\text{All persons: EQ\_INC\_BST} < \text{At risk of poverty threshold}} \text{Weight}}{\sum_{\text{All persons}} \text{Weight}}$$

$$\text{At risk of poverty rate before social transfers (incl. pensions)} = \frac{\sum_{\text{All persons: EQ\_INC\_Btp} < \text{At risk of poverty threshold}} \text{Weight}}{\sum_{\text{All persons}} \text{Weight}}$$

## The 'Laeken' indicators : Detailed calculation methodology

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### 13.2.3 Calculation of the EU average

The EU average of the 'at-risk-of-poverty rates' is calculated as a weighted average of the country rates. The weighting of countries is done according to the number of persons living in private households.

$$EU \text{ average of 'at risk of poverty rate'} = \frac{\sum_{\text{all countries}} ('at risk of poverty rate'_i * POPTOT(year)_i)}{\sum_{\text{all countries}} (POPTOT(year)_i)}$$

*year* = year of the survey

## **14. Inequality of income distribution Gini coefficient**

### **14.1 Definition**

The relationship of cumulative shares of the population arranged according to the level of income, to the cumulative share of the equivalised total net income received by them.

Source : European Community Household Panel (ECHP)

### **14.2 Algorithm**

#### *14.2.1 Calculation of the equivalised total net income*

For each person, the 'equivalised total net income' is calculated as its household total net income divided by equivalised household size according to the modified OECD scale.

Consequently, people in the same household receive the same 'equivalised total net income'.

Persons with missing 'equivalised total net income' are excluded from the calculations.

#### *14.2.2 Sorting*

Persons have to be sorted according to EQ\_INC (sorting order: lowest to highest value). Persons with unknown EQ\_INC are excluded from calculations.

#### *14.2.3 Calculation of the Gini coefficient*

$$GINI = 100 * \left( \frac{2 * \sum_{i=\text{first person}}^{\text{last person}} \left( weight_i * EQ\_INC_i * \sum_{j=\text{first person}}^{\text{person } i} weight_j \right) - \sum_{i=\text{first person}}^{\text{last person}} (weight_i)^2 * EQ\_INC_i}{\left( \sum_{i=\text{first person}}^{\text{last person}} weight_i \right) * \sum_{i=\text{first person}}^{\text{last person}} (weight_i * EQ\_INC_i)} - 1 \right)$$

### **14.3 Calculation of the EU average**

The EU average of the Gini coefficient is calculated as a weighted average of the country coefficients. The weighting of countries is done according to the number of persons living in private households in each country.

$$EU \text{ average of gini coef.} = \frac{\sum_{\text{all countries}} (Gini_i * POPTOT(year)_i)}{\sum_{\text{all countries}} (POPTOT(year)_i)}$$

*year = year of the survey*



## **15. At-persistent-risk-of-poverty rate (50% median)**

### **15.1 Definition**

The share of persons with an equivalised total net income below the 50% risk-of-poverty threshold in the current year and in at least two of the preceding three years.  
Gender breakdown + total

Source : European Community Household Panel (ECHP)

### **15.2 Algorithm**

#### *15.2.1 Calculation of the equivalised total income for each year*

For each person, the 'equivalised total net income' is calculated as its household total net income divided by equivalised household size according to the modified OECD scale.

Persons with missing 'equivalised total net income' are excluded from the calculations.

#### *15.2.2 Calculation of 'at-risk-of-poverty thresholds' for each year*

For each of the four years, the 'at-risk-of-poverty threshold' is calculated for each country in the following way:

Firstly, persons have to be sorted according to their 'equivalised total net income' (sorting order: lowest to highest value).

Secondly, the median is calculated as the equivalised income of the household person for whom the cumulative sum of personal weights is less than or equal to 50% of the total sum of weights.

In other words, persons in the same household are located together, on the same side of the median.

Thirdly, the 'at-risk-of-poverty threshold' is calculated as 50% of the national median.

At risk of poverty threshold = $50\% * EQ\_INC_i \Big _{i=\text{person for whom the cumulated sum of weights} = 0.5 * \text{total sum of weights}}$
---

#### *15.2.3 Linking information for four years*

A file should contain for each person his/her equivalised total net income for the four years.

**BUT** only persons that have been in the panel for all four waves should be included in the analysis. Therefore, all persons with missing values for at least one of the four EQ\_INC variables are to be excluded.

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### 15.2.4 Calculation of the ‘at-persistent-risk-of-poverty rate’

The ‘at-persistent-risk-of-poverty rate’ is calculated as the percentage of persons with an equivalised total net income below the respective ‘at-risk-of-poverty threshold’ for the current year and at least 2 of the preceding 3 years.

The persons who are concerned by one of the following four cases have to be taken into account:

	T	T-1	T-2	T-3
1.	At risk of poverty	At risk of poverty	At risk of poverty	At risk of poverty
2.	At risk of poverty	At risk of poverty	NOT at risk of poverty	At risk of poverty
3.	At risk of poverty	At risk of poverty	At risk of poverty	NOT at risk of poverty
4.	At risk of poverty	NOT at risk of poverty	At risk of poverty	At risk of poverty

$$\text{At persistent risk of poverty rate} = \frac{\sum_{\text{All persons: case 1 or case 2 or case 3 or case 4}} \text{weights}}{\sum_{\text{All persons: } EQ\_INC(T) \neq \text{ AND } EQ\_INC(T-1) \neq \text{ AND } EQ\_INC(T-2) \neq \text{ AND } EQ\_INC(T-3) \neq} \text{weights}}$$

For this longitudinal at-risk-of-poverty rate, the base weight of the last wave is to be used.

### 15.2.5 Calculation of the EU average

The EU average of the ‘at-persistent-risk-of-poverty rate’ is calculated as a weighted average of the country rates. The weighting of countries is done according to the number of persons living in private households in the last year (T) in each country.

$$\text{EU average of persistent at risk of poverty rate} = \frac{\sum_{\text{all countries}} (\text{persistent at risk of poverty rate} * POPTOT (T))}{\sum_{\text{all countries}} (POPTOT (T))}$$

## **16. Long-term unemployment share**

### **Long-term unemployment share, broken down by gender (Total, Male, Female)**

#### **16.1 Definition**

The long term unemployment share is the total number of long-term unemployed (at least 12 months) as a percentage of the total number of unemployed. (Gender breakdown + total)

#### **16.2 Algorithm**

This indicator is established in the following way:

##### *16.2.1 Source of data to calculate the 'long-term unemployment share' indicator*

To establish this indicator, the source of data is the harmonised monthly series of numbers of unemployed persons. This compiles the latest annual results from the EU Labour Force Survey, quarterly results from national Labour Force Surveys and monthly results from national Labour Force Surveys, together with administrative data. The series is seasonally adjusted. The annual total is simply the sum of these monthly values.

##### *16.2.2 Identification of persons who are unemployed*

For the definition of persons who are unemployed, please see the description under 6.2.3

##### *16.2.3 Identification of the duration of unemployment*

Duration of unemployment is defined as (a) the duration of the search for work, or, if shorter, (b) the length of time since the last job was held.

For this indicator, the relevant duration is 12 months: persons who have been unemployed for more than 12 months are considered to be long-term unemployed. Clearly, this is a subset of the total number of unemployed persons.

##### *16.2.4 Calculation of the long-term unemployment share*

The long-term unemployment share represents persons who have been unemployed for more than 12 months (the numerator) as a percentage of the total number of unemployed persons (the denominator).

Long - term unemployment share	=	$\frac{\sum z_i}{n}$
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where  $z_i$  is the persons who are unemployed for more than 12 months and  $n$  is the total number of unemployed persons.

##### *16.2.5 Calculation of the EU average*

The EU average of this indicator is calculated as a weighted average of the available individual country values. The weighting of countries is done according to the number of persons living in private households in each country (POPTOT).

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$$EU \text{ average of long - term unemployment shares} = \frac{\sum_{\text{all countries}} (LTU \text{ share}_i * POPTOT(\text{year})_i)}{\sum_{\text{all countries}} (POPTOT(\text{year})_i)}$$

*year* = year of the survey

## **17. Very long-term unemployment rate**

### **Very long-term unemployment rate, broken down by gender (Total, Male, Female)**

#### **17.1 Definition**

The very long term unemployment rate is the total number of very long-term unemployed (at least 24 months) as a percentage of the total active population. (Gender breakdown + total)

#### **17.2 Algorithm**

This indicator is established in the following way:

##### *17.2.1 Source of data to calculate the very long-term unemployment rate*

To establish this indicator, the source of data is the harmonised monthly series of numbers of unemployed persons. This compiles the latest annual results from the EU Labour Force Survey, quarterly results from national Labour Force Surveys and monthly results from national Labour Force Surveys, together with administrative data. The series is seasonally adjusted. The annual total is simply the sum of these monthly values.

##### *17.2.2 Identification of persons in employment*

For the definition of employed persons, please see the description under 5.2.2

##### *17.2.3 Identification of persons who are unemployed*

For the definition of persons who are unemployed, please see the description under 6.2.3

##### *17.2.4 Identification of the duration of unemployment*

Duration of unemployment is defined as (a) the duration of the search for work, or, if shorter, (b) the length of time since the last job was held.

For this indicator, the relevant duration is 24 months: persons who have been unemployed for more than 24 months are considered to be very long-term unemployed. Clearly, this is a subset of the total number of unemployed persons.

##### *17.2.5 Identification of the active population*

The total active population (total labour force) is defined as the sum of persons who are in employment and persons who are unemployed.

$$\text{Total active population} = \sum_{\text{Persons aged 15+}} x_i + \sum_{\text{Persons aged 15-74}} y_i$$

where  $x_i$  is the persons who are in employment and  $y_i$  is the persons who are unemployed.

##### *17.2.6 Calculation of the very long-term unemployment rate*

The very long-term unemployment rate (VLTUrate) represents persons who have been unemployed for more than 24 months as a percentage of the total active population.

## The 'Laeken' indicators : Detailed calculation methodology

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$$\text{Very long - term unemployment rate} = \frac{\sum z_i}{\text{Persons aged 15-74}} \div \text{Total active population}$$

where  $z_i$  is the persons who are unemployed for more than 24 months.

### 17.2.7 Calculation of the EU average

The EU average of this indicator is calculated as a weighted average of the available individual country values. The weighting of countries is done according to the number of persons living in private households in each country (POPTOT).

$$\text{EU average of very long - term unemployment rates} = \frac{\sum (VLTU \text{ rate}_i * POPTOT(\text{year})_i)}{\sum (POPTOT(\text{year})_i)}$$

*year* = year of the survey

## **18. Persons with low educational attainment**

### **Persons with low educational attainment, broken down by age and gender (Total, Male, Female)**

#### **18.1 Definition**

The 'persons with low educational attainment' indicator is defined as the percentage (proportion) of the total population of 25-64 year olds who have achieved ISCED level 2 or less .

When broken down into 10-year age bands (25-34, 35-44, 45-54 and 55-64), this stock measure shows the extent to which general educational attainment levels are changing over time. This gives an insight into both of the efficiency of the education system and the future ability of the society to fight poverty and social exclusion.

#### **18.2 Algorithm**

The indicator is established in the following way:

##### *18.2.1 Source of data to calculate the 'persons with low educational attainment' indicator*

To establish this indicator, the source of data is the results from the Spring quarterly EU Labour Force Survey.

The EU Labour Force Survey is a personal-interview based survey conducted amongst private households. The target population is restricted to persons of working age (15 years and above).

##### *18.2.1 Identification of the highest level of educational attainment*

For the definition of level of educational attainment please see the description under 8.2.3

Note : the 1997 International Standard Classification of Education is used.

##### *18.2.2 Identification of the persons with ISCED level 2 or below*

Firstly, the number of persons aged 25-64 (and 10-year age bands 25-34, 35-44, 45-54 and 55-64) who have a highest level of educational attainment equal to ISCED level 2 or less are identified in accordance with the approach in 18.2.1 above. This is the numerator (top) of the fraction to be calculated.

Secondly, this number is expressed as a percentage of the total number of persons aged 25-64 (and 10-year age bands).

$$\text{Persons with low educational attainment} = \frac{\sum x_i}{n}$$

where  $\sum x_i$  is the persons aged 25-64 who have low educational attainment and  $n$  is the total number of persons aged 25-64.

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### 18.2.3 Calculation of the EU average

The EU average of this indicator is calculated as a weighted average of the available individual country values. The weighting of countries is done according to the number of persons living in private households in each country (POPTOT).

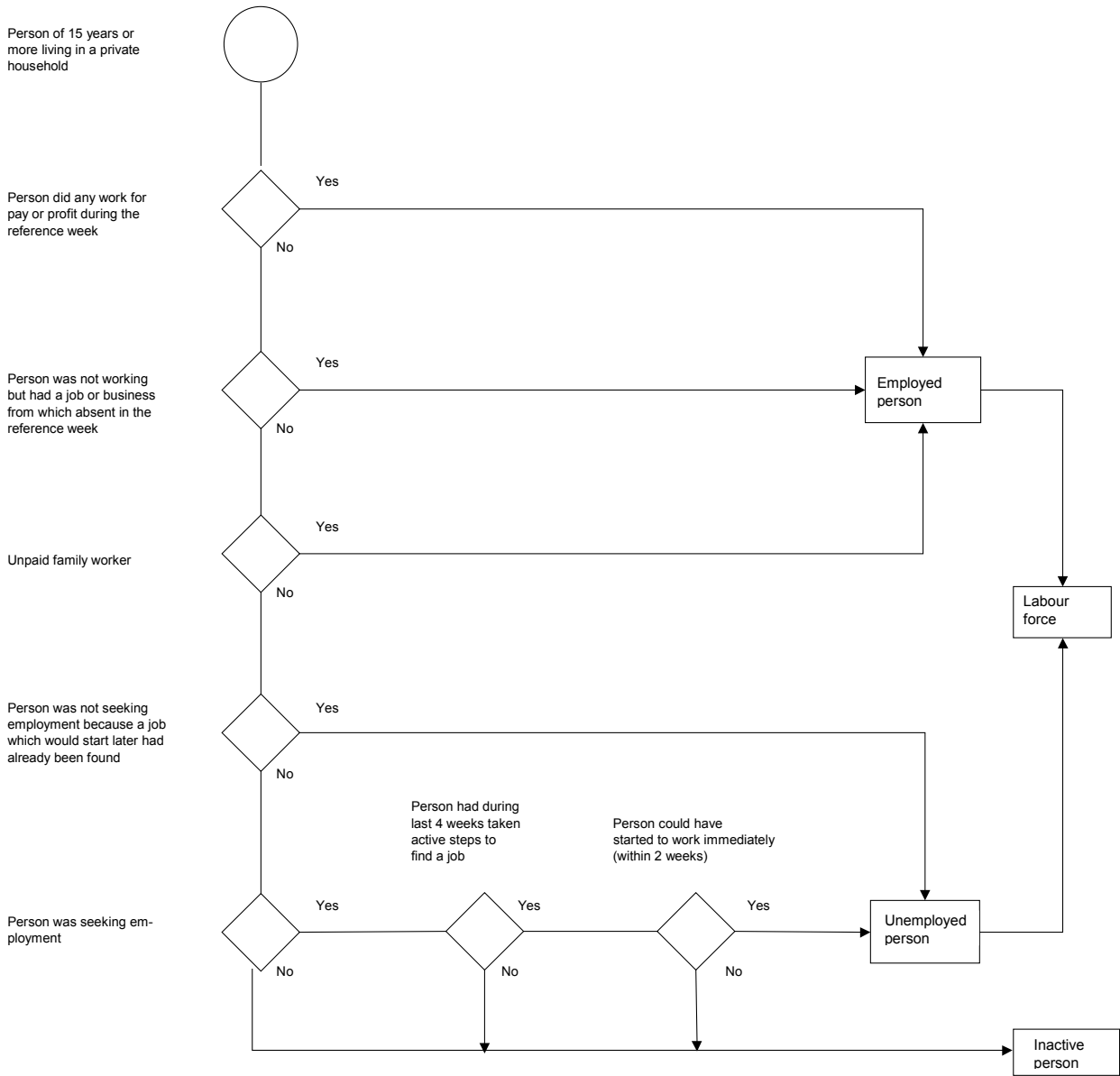
$$EU \text{ average of persons with low educational attainment} = \frac{\sum_{\text{all countries}} (Low \text{ attainment}_i * POPTOT(\text{year})_i)}{\sum_{\text{all countries}} (POPTOT(\text{year})_i)}$$

*year* = year of the survey



# The 'Laeken' indicators : Detailed calculation methodology

## APPENDIX 1



Labour force classification in the Labour Force Survey