EUROPEAN COMMISSION
EUROSTAT

Directorate F: Social Statistics and Information Society
Unit F-3: Living conditions and social protection statistics

Comparative Final EU Quality Report 2005

(Version 2 – September 2008)

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0. BACKGROUND

The EU-SILC Framework Regulation (EC N°1177/2003 – Article 16) states the following:

> *1. Member States shall produce by the end of the year N+1 an intermediate quality report relating to the common cross-sectional EU indicators based on the cross-sectional component of year N.*
>
> *Member States shall produce by the end of year N+2 final quality reports that cover both cross-sectional and longitudinal components in relation to the year of the survey N, focusing on the internal accuracy.* […]
>
> *2. The Commission (Eurostat) shall produce by the end of June N+2 a comparative intermediate quality report relating to the common cross-sectional EU indicators of year N.*
>
> *The Commission (Eurostat) shall produce by 30 June N+3 a comparative final quality report that covers both cross-sectional and longitudinal components in relation to the year of the survey N.* […]

The comparative final quality report for 2005 aims at gathering and summarizing all the information contained in the 2005 national final quality reports that the Member States have sent to Eurostat. The objective here is to evaluate the quality of the instrument from the European point of view, i.e. by establishing between-country comparisons of some of its key quality dimensions.

The quality aspects described in this document are those specified in the Commission Regulation N° 28/2004 (Annex IV) about the detailed content of final quality reports to be produced by Eurostat.

1. RELEVANCE

The relevance of the instrument has to be assessed in the light of the different users of the instruments. The main users of EU-SILC are:

- institutional users like the Social Protection Committee of the Council, in charge of the monitoring of social cohesion and Open Method of Coordination (OMC) on social protection and social inclusion set up by the Lisbon summit;
- other users in Eurostat feeding transversal publications like Structural indicators at the basis of the Spring Report to the Council, Sustainable Development Indicators, the Eurostat yearbook and various pocketbooks, among other reports;
- researchers having access to microdata; and
- end users interested in living conditions and social cohesion in the EU.

With the 2005 operation covering 25 MS plus Norway and Iceland, EU-SILC has rapidly proved to be the main source for comparable indicators for monitoring and reporting on living conditions and social cohesion at EU level. The relevance of the instrument proved to be very high among most users although suggestions for improvement are clearly expressed:

- Institutional users are looking for more timely results that can be synchronised with their annual process of reporting at policy level. They would like the instrument to be flexible to adapt to specific need of policy monitoring.

- Internal users are keen to have stable results without too many revisions so that horizontal publications relying on a long process maintain their relevance.

- Researchers ask for clean and harmonised datasets with full documentation and information on the production process and revision.

- End users would surely like to see the offer of fresh statistics extended and covering all the topics included in EU-SILC.

These elements are taken into account in the process of improvement of the instrument for which 2005 operation can be seen as the first full scale exercise of a complex instrument which will continue to evolve in the next four/five years.

2. ACCURACY

The concept of accuracy refers to the reliability of estimates computed from a sample rather than the entire population. This section dwells on methodological features of the EU-SILC samples surveyed in each country and intents to draw a picture of their relevance for estimation purposes.

2.1. Sample design

In 2005, the EU-SILC instrument covered 27 countries: twelve, mainly the Member States that joined the EU in May 2004, carried out the survey for the first time, while fifteen did it for the second (eight countries) or the third time (seven countries).

The Framework Regulation calls for the selection of nationally representative probabilistic samples[1]. The observation units are both households and individuals. Households are clusters of individuals and all the members of a selected household are eligible for inclusion in the sample.

In most of the countries (the so-called 'survey' countries), both income and non-income information is collected by interview of all household members. In those countries, addresses are selected every year using direct-element or multi-stage sampling schemes and then all the

[1] Except Germany that can use quota samples until 2008.

households living at the selected addresses are included in the sample. Some countries, which do not have any reliable frame, have implemented an 'indirect' selection:

- Some countries (Estonia and Lithuania) select first a sample of individuals and all their households are included in the sample.

- In Luxembourg, the selection corresponds to the 'tax households', which are in fact groups of persons living in the same dwelling and depending on the same Social Security system, complemented by a sample of EU functionaries[2]. The sample corresponds to all households living on the selected dwellings.

On the other hand, some countries (mostly the Nordic Countries) have population registers with income information. In those countries, the 'selected respondent' is only one person in each household and answers to most non-income questions. For all household members, registers provide information for income, education, housing… In general, a direct-element sampling from the registers chooses the 'selected respondents'.

The next table summarizes the survey designs used in the 27 countries[3].

Table 1: The EU-SILC survey designs

'Survey' countries			**'Register' countries**
Direct-element sampling of addresses	***Multi-stage sampling of addresses***	***Indirect sampling of addresses***	
Austria Cyprus Germany Malta Slovakia	Belgium Czech Republic France Greece Hungary Italy Ireland Latvia Poland Portugal Spain United Kingdom	Estonia Lithuania Luxembourg	Denmark Finland Iceland Norway Slovenia Sweden The Netherlands

Source: National Quality Reports 2005 (latest available version in August 2008).

In order to ensure both longitudinal and cross-sectional representativeness, Eurostat has suggested using an integrated structure that is in fact a rotational panel.

The first year of EU-SILC, the sample includes a fixed number of sub-samples, called rotational groups, each of them representative of the whole population[4]. The idea is then to rotate out one group each subsequent year and follow-up the persons in the other groups.

The advantage of this structure is that cross-sectional and longitudinal estimates can be calculated from almost the same sets of observations:

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2 In Luxembourg, the 'sampling frame' is a combination of Social Security registers and a database obtained from the census 2001 covering households without Social Security affiliation.

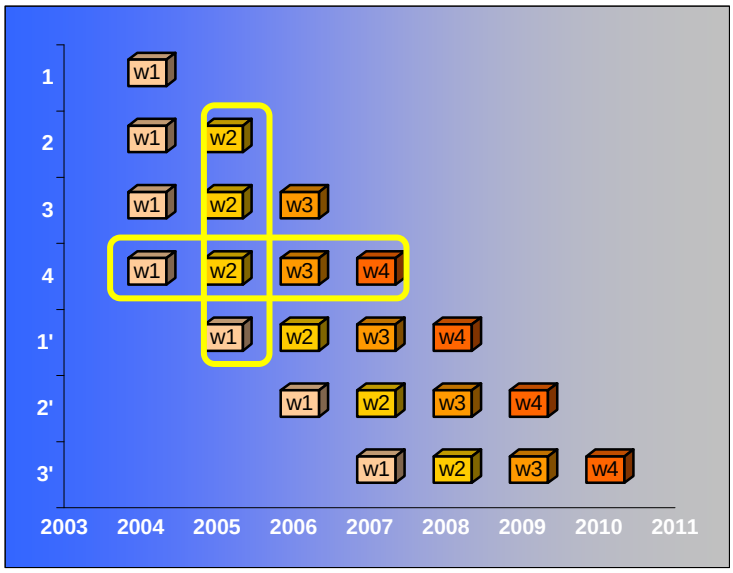
3 Annex 1 provides information that is more descriptive.

4 In order to prevent too high attrition, Eurostat recommends using four rotation groups.

- As a part of it is new each year, the sample represents the new immigrants so is relevant to cross-sectional estimation.

- On the other hand, a rotational panel enables longitudinal follow-up from the part of the sample that has not been refreshed (over 2, 3 or 4 years in case of 4 rotational groups).

Figure 1: The integrated structure as suggested by Eurostat



Most of the 27 countries have adopted this 4-year rotational design recommended by Eurostat (see annex 2). Norway and France use a longer panel duration (8 and 9 years respectively). However, some of the countries have deliberately departed a bit from this standard in order to ensure a minimum sample size, either by keeping all the rotation groups (Austria, Estonia, Czech Republic…) or by making groups of unequal sizes (The Netherlands, Hungary…).

Some countries are using alternative survey structures, essentially for integrating EU-SILC into existing surveys (Finland and Sweden). To carry out the longitudinal survey in Sweden and Luxembourg a pure panel is used, which is supplemented every year with a new sample in order to ensure cross-sectional representativeness.

2.2. Sampling errors

Sampling errors affect any indicator calculated from the EU-SILC data, caused by observing only a fraction of the target population. In general, different sources of errors affect sample surveys, which are usually termed as 'sampling' and 'non-sampling' errors. While sampling errors only refer to sample-to-sample variation of a statistic, non-sampling errors encompass all the remaining errors, i.e. measurement errors, processing errors, frame imperfections...

This section focuses on sampling errors for the main EU-SILC cross-sectional indicators. Measuring sampling errors is an important step in assessing the accuracy, as confidence intervals in which the population value lies with a high probability can be easily derived; assuming the estimator follows a normal distribution, a confidence interval at 95% is centred

at the estimated value and the half-length is given by 1.96σ, where σ denotes the sampling error.

It is implicitly assumed in this development that there are no non-sampling errors. However, their effect can be significant and can distort the confidence intervals. Next section examines non-sampling errors in EU-SILC.

The central indicator of EU-SILC is the at-risk-of-poverty rate after social transfers, which is defined as the share of persons with an income below 60% of the median income (at-risk-of-poverty threshold). This indicator is used as a reference for determining the minimum level of accuracy to be achieved.

The next table contains estimated standard errors for the at-risk-of-poverty rate in 2005, based on the cross-sectional data-files. These values are calculated by the countries. In addition, 95% confidence intervals and the achieved household sample sizes are given.

Besides, Eurostat has been able to yield estimated sampling errors for most of the countries using linearization approximation of the non linear indicators. The software Poulpe, developed in the French Statistical Office (INSEE), is used in order to carry out the variance calculations for most of the countries being in their first wave in 2005. For countries having started in 2003 or 2004, sampling errors were obtained after linearization using simplified calculations based on 2004 results, so are flagged with a 'P' (provisional). Variance calculation appeared to be tedious given the rotational design of the instrument. For the following waves, Eurostat will draw on re-sampling method for the headline indicators and the generalised variance function to estimate the standard error for the full set of breakdown of the indicators.

Table 2: Estimated standard errors and confidence intervals for the at-risk-of-poverty rate (2005)

	At-risk-of-poverty rate	Standard error	95% Confidence interval	Achieved household sample size	Standard error (Eurostat)
Austria	12.3	0.54	11.2 ; 13.4	5148	0.51[P]
Belgium	14.8	0.75	13.3 ; 16.3	5166	0.57[P]
Cyprus	16.2	0.36	15.5 ; 16.9	3746	0.56
Czech Republic	10.4	0.80	8.8 ; 12.0	4351	0.42
Denmark	11.8	-	*11.6 ; 12.0*	5957	0.08
Estonia	18.3	0.64	17.0 ; 19.6	4208	0.66[P]
Finland	11.7	0.34	11.0 ; 12.4	11229	0.39[P]
France	13.0	0.40	12.1 ; 13.9	9775	0.44
Germany	12.3	-	-	13111	-
Greece	19.7	0.37	19.0 ; 20.4	5568	0.55[P]
Hungary	13.4	0.50	12.4 ; 14.4	6927	0.54

	At-risk-of-poverty rate	Standard error	95% Confidence interval	Achieved household sample size	Standard error (Eurostat)
Iceland	9.6	-	*8.5 ; 10.7*	2928	0.55
Ireland	19.7	-	*18.4 ; 21.0*	6085	0.64[P]
Italy	18.8	0.35	18.1 ; 19.5	22032	0.32[P]
Latvia	19.2	0.78	17.7 ; 20.7	3846	0.72
Lithuania	20.5	0.72	19.1 ; 21.9	4441	0.54
Luxembourg	13.0	0.90[(2004)]	11.2 ; 14.8	3622	-
Malta	14.9	0.68	13.6 ; 16.2	3459	0.67
The Netherlands	10.8	-	*10.0 ; 11.6*	9562	0.42
Norway	11.5	-	*10.6 ; 12.4*	5996	0.44[P]
Poland	20.6	0.39	19.8 ; 21.4	16395	0.29
Portugal	19.4	0.79	17.9 ; 20.9	4615	0.70
Spain	19.7	0.63	18.5 ; 20.9	13027	0.43[P]
Slovakia	13.3	0.50	12.3 ; 14.3	5414	0.52
Slovenia	12.2	-	*11.6 ; 12.8*	8287	0.32
Sweden	9.3	-	*8.5 ; 10.1*	6133	0.41[P]
United Kingdom	19.1	-	-	10826	-

Source: Micro-database (May 2008).

Some countries have also provided in their quality reports estimated values for the Design Effect (Deff) in relation to the at-risk-of-poverty rate. The Design Effect is the ratio of the variance under the sampling plan actually used to the variance that would be obtained under a simple random sampling without replacement and of same size. A Deff value greater than one indicates that the actual sampling design has had a deteriorating effect on the variance, while a value less than one indicates a positive effect.

Estimating design effect factors is also important in order to derive the effective sample size, the ratio of the achieved sample size to the design effect. The effective sample size is the sample size that would be required in a simple random sample to provide the same level of precision as with the actual complex sampling design.

The EU-SILC Framework Regulation has set out minimum effective sample sizes that countries have to reach for the cross-sectional 2005 operation. Based on the Deff values they provided, Eurostat checked out whether the minimum sizes were attained.

In addition, Eurostat has been able to estimate the design effect factor for some Member States. The resultant values are given in the last column of the table below. The Deff values that were obtained by Eurostat for the 2004 operation are also reported (flagged with *) and were used in order to derive the effective sample size for the countries for which we have no

value related to 2005. Effective sample sizes using Eurostat's Deff values are reported in italics so as to distinguish them from the sizes calculated using national values.

Table 3: Estimated Deffs and effective household sample sizes in relation to the at-risk-of-poverty rate (2005)

	Achieved sample size (a)	Deff (b)	Effective sample size = (a) / (b)	Minimum effective sample size[5]	Deff (ESTAT)
Austria	5148	1.15	*4477*	4500	
Belgium	5166	-	*4967*	4750	1.04*
Cyprus	3746	1.06	3534	3250	1.00
Czech Republic[6]	4351	1.18	3687	4750	1.09
Denmark	5957	-	*5957*	4250	1.00
Estonia	4208	1.05	8806	3500	-
Finland	11229	-	*8021*	4000	1.40*
France	9775	1.11	8806	7250	-
Germany	13111	-	-	8250	-
Greece	5568	1.30	4283	4750	-
Hungary	6927	1.30	5328	4750	1.86
Iceland	2928	1.00	2928	2250	1.00
Ireland	6085	-	*4681*	3750	1.30*
Italy	22032	-	*15626*	7250	1.41*
Latvia	3846	1.17	3287	3750	1.22
Lithuania	4441	1.02	4354	4000	1.00
Luxembourg	3622	-	-	3250	-
Malta	3459	1.00	3459	3000	1.00
The Netherlands	9562	-	-	5000	-
Norway	5996	-	*5996*	3750	1.00*
Poland	16395	3.72[7]	*16395*	6000	1.00

[5] This minimum effective sample size is specified in the Framework Regulation.

[6] For the Czech Republic, derogation was given to have a smaller sample size the first year of data collection.

[7] This high value appears because Poland computes the variance under simple random sampling (denominator of the Deff) from the sample of individuals rather than the sample of households, as the other countries did, which makes the denominator lower and then the Deff higher. This does not mean Poland has a less efficient design than the other countries, but only they used another definition of Deff.

	Achieved sample size (a)	Deff (b)	Effective sample size = (a) / (b)	Minimum effective sample size[5]	Deff (ESTAT)
Portugal	4615	-	*2814*	4500	1.64
Spain	13027	-	*9110*	6500	1.43*
Slovakia	5414	1.00	5414	4250	1.00
Slovenia	8287	-	*7892*	3750	1.05
Sweden	6133	-	*6133*	4500	1.00*
United Kingdom	10826	-	-	7500	-

Source: Micro-database (May 2008).

Precision as measured by standard error is mainly affected by:

- **The achieved sample size 'n':** this is a basic property (variance of order 1/n) justified by the numerical results. In particular, the achieved sample size may explain national differences, from Latvia (n = 3846, standard error = 0.78) to Italy (n = 22032, standard error = 0.35).

- **Design components:** the Deff values that are reported show that the underlying sampling design can have a significant impact. The four following design components have significant impact on the design effect:

    - ***Clustering.*** Clustering generally decreases the accuracy in estimates because units in a cluster tend to have similar characteristics.

    - ***Unequal weighting.*** Weighting is necessary to correct selection bias but, on the other hand, it may entail substantial increase of variance if the weights are too spread. This is expected to become more and more critical over the next years because of attrition. To this regard, Eurostat has suggested trimming the weight distribution in order to prevent extreme values.

    - ***Stratification.*** Inappropriate allocation of units among strata can severely increase variance. For instance, Hungary over-sampled urban areas in order to allow for high non-response rate. Relatively, rural areas were under-sampled. Assuming that urban areas are less 'poor' than rural areas, that kind of allocation is expected to have a negative impact on the accuracy of the at-risk-of-poverty rate (intuitively, 'rich' people are over-represented in the sample, which brings no useful information on poverty).

    - ***Calibration.*** In most countries, the sample weights were adjusted to external data sources. Calibration information, which is correlated to the target survey variables, can make sampling errors much lower. This is what happened in Denmark where register information on poverty was used to calibrate the sample, which justifies the rather low sampling error.

- **Minimum sample size:** in some countries (Latvia…) the achieved sample size is critical, which was probably caused by high non-response rate. In other countries (Austria, Greece, Portugal…) the design effect factor is high and makes the effective size lower than the minimum required value. Although most of the countries did reach the required minimum, the achieved sample size is going downwards for some of them (Spain, France, Italy…) in comparison with the year 2004, probably due to difficulties to trace out panel persons.

The accuracy achieved for other social inclusion indicators[8] is summarised as:

- The at-risk-of-poverty threshold, which is defined as 60% of the median income, is estimated with a precision of less than 1%.

- The Gini coefficient is estimated with a relative precision of 1-2%, which is better than for the at-risk-of-poverty rate. In general, inequality measures are estimated with better precision than poverty measures. However, they are more sensitive to extreme income values.

- Relative standard errors for the relative median poverty gap, which is the relative difference between the median income of persons below the at-risk-of-poverty threshold and the at-risk-of-poverty threshold, are relatively high (from 4 to 7%) implying limitation in the use of this indicator.

Standard errors, coefficient of variation and confidence interval for each wave of the longitudinal instrument for the mean for all income components and for the breakdown of the equivalised disposable income is not available yet from all national quality report and Eurostat is not able to provide independent calculation at this moment.

2.3. **Non-sampling errors**

The term 'non-sampling error' is a generic one that encompasses any errors other than sampling errors. The non-sampling errors discussed in this section are:

- Coverage errors

- Measurement and processing errors

- Non-response errors

2.3.1. Coverage errors

Coverage errors are caused by the imperfections of a sampling frame for the target population of the survey. The target population is the set of elements for which estimates are wanted while the frame population is composed of the units which are eligible for inclusion through a

[8] See annex 3 for summary tables with standard errors and design effects for some of the reference indicators.

given sampling procedure. Ideally, there must be a one-to-one relation between target and frame population elements. If not, there are frame imperfections. Two types of frame imperfections are generally encountered:

(i) Over-coverage

It happens whenever the sampling frame contains units which are out of the scope of the survey. For instance, a sample unit has died since the sample was drawn, but this change has not been reported in time. The consequence of over-coverage is a sample that is drawn from the sampling frame will have a lower accuracy because a part of it won't be usable. Nevertheless, this shouldn't make it biased provided the ineligible units can be identified and then not counted as non-responding units.

(ii) Under-coverage

Under-coverage means units of the target population are not listed in the sampling frame. This is a potential source of bias particularly if those units have specific patterns for the target survey variables.

The 27 countries that took part in the 2005 EU-SILC operation have used different sampling sources. Two main groups can be defined:

- Some countries have relied on household information from population registers. In order to make the best coverage of the target population, registers have to be updated frequently. It means any modification in the population (both people moving in and people moving out) must be reported as quickly as possible.

- Other countries have used Census databases in order to select addresses. The databases also have to be updated so as to represent the units which have come into being after the Census and thus ensure the cross-sectional representativeness of the sample. In some countries (Ireland, Portugal) the updates seem to be limited.

A systematic source of coverage problems is the time lag between the reference date for the selection of the sample and the fieldwork period, which should be made the shortest. In practice, actions should be taken so that any modification in the population during this time period will be communicated to the interviewers.

Besides, it appears that some countries (The Netherlands, Hungary) actually carried out EU-SILC as a sub-sample of the units (addresses) which successfully cooperated to another existing survey (Labour Force Survey for The Netherlands, Income Survey for Hungary). Assuming selective non-response in these surveys, this may entail selection bias (under-coverage) for these two countries.

2.3.2. Measurement and processing errors

Generally, measurement errors stem from the questionnaire, the interviewer, the interviewee and the data collection method used.

It is vital in a survey like EU-SILC, which collects a multitude of complex income components, that the questionnaire should be constructed so the interviewee can provide as quickly as possible all the correct information. It appears most of the countries took care of this aspect in designing the questionnaire. In particular, experiences from pilot surveys and/or former EU-SILC waves were used in order to optimize the data collection process. The questionnaires were also tested in order to identify potential sources of problems.

Due to the complexity and the sensitivity of the survey, the interviewees did not manage or did not want to give all of their incomes. For instance, capital of self-employment income may have been under-reported. Besides, EU-SILC collects non-monetary income components (imputed rent, income from private use of company car…) which people appear to be not very familiar with. The risk of confusion as to the information to be reported is then higher than with the more conventional monetary income components.

The question of the data collection method is going to be addressed further in the document. We can just say that computer-assisted interviewing (CAPI or CATI) is definitely desirable in order to prevent measurement problems and facilitate data collection. Another advantage of computer-assisted interviewing is that most of the processing errors can be identified and corrected during the interview.

2.3.3. Non-response errors

All surveys have to deal with non-response in that information is missing for some of the sample units. Unit non-response happens when no interview can be obtained, while item non-response does when only some of the items are missing. EU-SILC suffers from these two types of non-response:

- Unit non-response in that a household may refuse to cooperate or be away during the fieldwork period. Other reasons can explain unit non-response: the questionnaire has been lost; the household is unable to respond because of incapacity or illness…It may also happen that a person in a household refuses to cooperate although the household interview has been accepted (individual non-response).

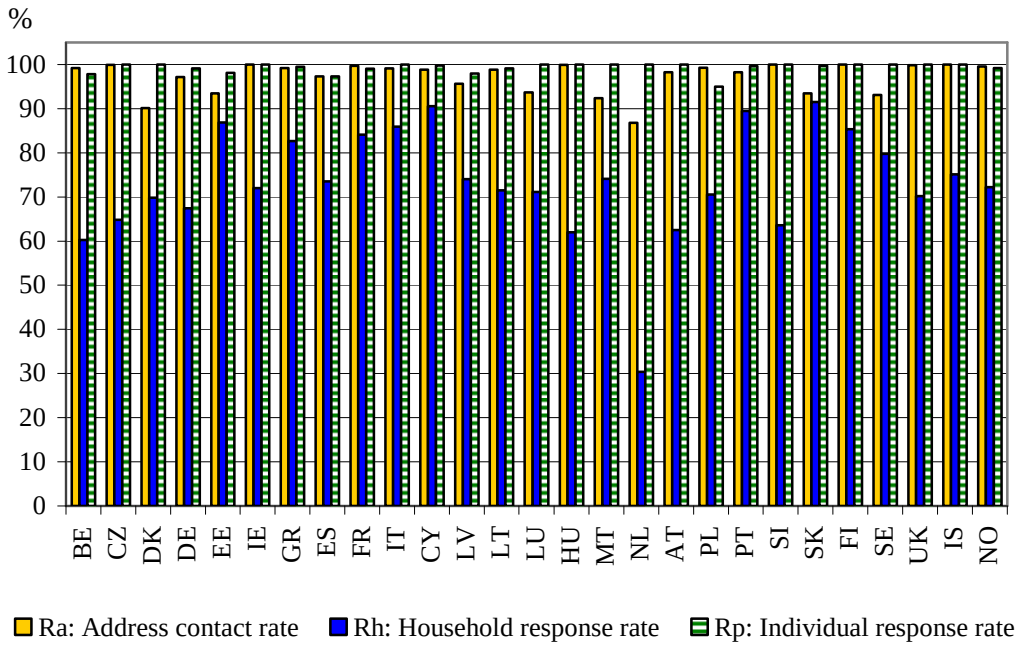
- Item non-response typically happens to questions the interviewee does not answer because she/he considers them as sensitive or not easily understandable.

Non-response is a potential source of bias particularly if the non-responding units have specific survey patterns (non-ignorable non-response). For instance, one might expect persons with high incomes will be more reluctant to give that information to an interviewer, thus making the upper income class under-represented in the sample and estimates downwardly biased.

The Commission Regulation 28/2004 on the detailed content of intermediate and final quality reports has defined indicators aiming at measuring unit non-response in EU-SILC: Address contact rate (Ra), Household response rate (Rh), Individual response rate (Rp).

The chart below displays the address contact rates as well as the household and the individual response rates for each of the 27 SILC countries[9]. These values refer to the whole cross-sectional samples.

Figure 2: Address contact rates, household and individual response rates (whole sample; 2005)



Source: Micro-database (May 2008).

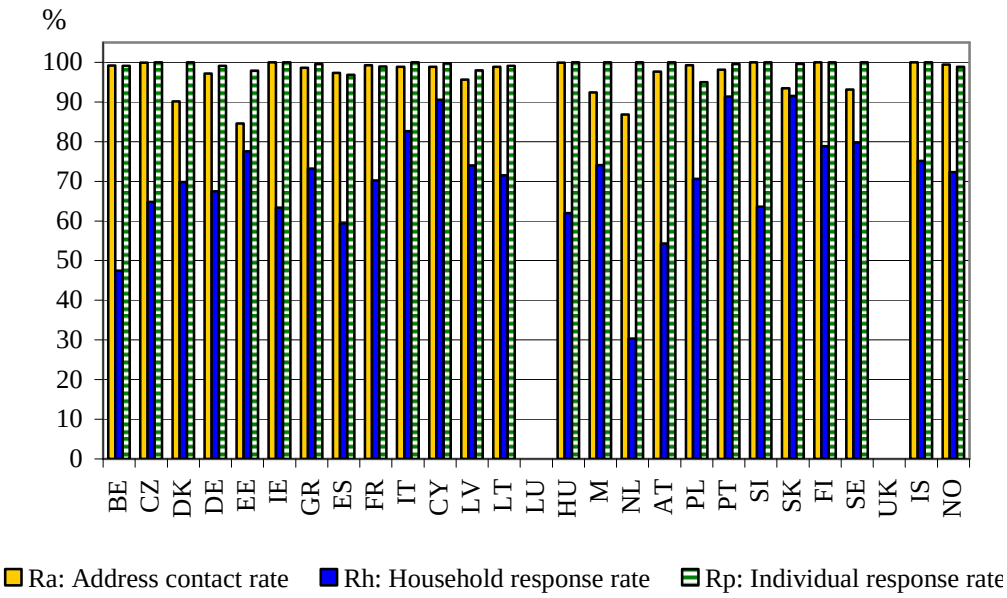
Remarks:

- Austria and Spain allowed substitutions, but the above values for these two countries refer to the original units only.
- The address contact rate is 100% in Ireland because the information provided relates only to the successfully contacted units. Actually, there are addresses that could not be contacted, so the contact rate is lower than 100%, but we have no information about their share.
- The German EU-SILC sample is composed of a random part and of a non-random one (quota samples). Germany's reported values refer only to the random part of the sample and do not take into account the selection process of the access panel from which EU-SILC sample is drawn.

For the countries which carried out EU-SILC in 2005 for the second or the third time, and which have been using a rotational structure, the next chart displays the address contact rates, the household and the individual response rates **for the new entries only** (see annex 4).

[9] See annex 4 for tables with the contact and the response rates in each country.

Figure 3: Address contact rates, household and individual response rates (new entries; 2005)



Source: Micro-database (May 2008).
* There is no information available for Luxembourg and the United Kingdom on the response rates of the new entries.

We can say the address contact rates (Ra) are rather high. Countries selecting persons (Estonia, Denmark, Sweden…) are the ones that mostly present the lowest values; it seems that it is somehow more difficult to contact a person than a household.

We have important variations in the overall household response rates: from Belgium (60%), Hungary (62%) or Austria (63%) to Cyprus (91%) or Slovakia (92%). The seemingly low response rate for The Netherlands (30%) is caused by the fact the EU-SILC sample is actually a sub-sample of the addresses that cooperated to the Labour Force Survey (LFS). The rates reported here take into account of both non-responses in LFS and in EU-SILC.

For the new entries, lower response rates than for the entire cross-sectional samples seem to be achieved: in Belgium 47% for the new entries and 60% for the whole sample, in Austria 54% and 63%, in Estonia 78% and 87%…

Non-response appears to be an important issue particularly at the first year of a panel. At this stage, elaborate models controlling many external control variables are desirable in order to correct it. Most of the countries did apply either a standard post-stratification based on homogeneous response groups or a more sophisticated logistic regression model. As to apparent individual non-response, it appears to be marginal with the noticeable exception of Poland. Most of the countries have actually imputed missing individual income records.

The item non-response is structurally high for some income components which are difficult to collect through interview (capital income, self employment income) or which can be adequately reconstructed using auxiliary information (child allowance …). Eurostat database provides however full income records because countries are asked to impute missing component. Section 2.5 briefly describes method of imputations used by MS. Degree of

imputation of income records is controlled through imputation index attached to each value which records the reported amount divided by the collected amount. The impact of imputation on the EU-SILC data is difficult to assess at the moment because imputation flags do not proved to be reliably implemented in all countries. In addition, the current does not distinguish between the various type of imputation (statistical imputation, valuation model, gross/net conversion…). The revision of income flags for the following waves should enable deeper analysis.

Imputation can have a significant effect on the overall accuracy: it generally skews a sample distribution; estimates are consequently biased. Furthermore, variance estimates drawing on imputed values as if they were exact values are generally also biased.

For the panel component in the second wave, household non-response is the result of initial non-response and follow up non-response.

The following table provides information on the follow up of individuals for countries for which a longitudinal component covering 2004-2005 is available.

Table 4: Follow-up of individuals 2004-2005

a. Out of scope

	Total	Died	Moved abroad	Moved into collective households
Belgium	66 *1%*	42 *0%*	13 *0%*	11 *0%*
Luxembourg	175 *2%*	29 *0%*	124 *1%*	22 *0%*
Spain	354 *1%*	239 *1%*	65 *0%*	50 *0%*
Greece	32 *0%*	10 *0%*	19 *0%*	3 *0%*
Ireland	137 *2%*	42 *1%*	77 *1%*	18 *0%*
Austria	102 *1%*	58 *1%*	31 *0%*	13 *0%*
France	242 *1%*	97 *0%*	94 *0%*	51 *0%*
Estonia	163 *1%*	88 *1%*	52 *0%*	23 *0%*
Italy	688 *1%*	359 *1%*	216 *0%*	113 *0%*
Norway	19 *0%*	1 *0%*	9 *0%*	9 *0%*
Sweden	170 *1%*	84 *1%*	80 *1%*	6 *0%*
Finland	150 *1%*	91 *1%*	33 *0%*	26 *0%*

b. Interview outcome

	Successful interview	Unsuccessful interview					Total (a+b)	
	Total	Total	Not traced	Lost track	Refusal to cooperate	Other reasons		Effective attrition rate
Belgium	7140	2612	43	117	1196	1256	9818	
	73%	*27%*	*0%*	*1%*	*12%*	*13%*		***27%***
Luxembourg	7767	1427	0	116	1012	299	9369	
	83%	*15%*	*0%*	*1%*	*11%*	*3%*		***16%***
Spain	26326	6965	106	1243	3780	1836	33645	
	78%	*21%*	*0%*	*4%*	*11%*	*5%*		***21%***
Greece	12287	1181	0	474	426	281	13500	
	91%	*9%*	*0%*	*4%*	*3%*	*2%*		***9%***
Ireland	6868	1295	169	147	533	446	8300	
	83%	*16%*	*2%*	*2%*	*6%*	*5%*		***16%***
Austria	7974	3465	99	244	2089	1033	11541	
	69%	*30%*	*1%*	*2%*	*18%*	*9%*		***30%***
France	19067	2835	91	608	1099	1037	22144	
	86%	*13%*	*0%*	*3%*	*5%*	*5%*		***13%***
Estonia	9846	1656	92	240	893	431	11665	
	84%	*14%*	*1%*	*2%*	*8%*	*4%*		***14%***
Italy	39267	6574	238	831	3360	2145	46529	
	84%	*14%*	*1%*	*2%*	*7%*	*5%*		***14%***
Norway	8757	1176	349	134	582	111	9952	
	88%	*12%*	*4%*	*1%*	*6%*	*1%*		***12%***
Sweden	11500	2016	193	519	613	691	13686	
	84%	*15%*	*1%*	*4%*	*4%*	*5%*		***13%***
Finland	13658	1666	730	20	472	444	15474	
	88%	*11%*	*5%*	*0%*	*3%*	*3%*		***6%***

Effective attrition rate counts the effective number of individuals for which information could not be successfully collected relative to the total number of individuals presumably in scope. Lack information can be the result of lack of tracing, refusal to cooperate, by far the most important, and other reasons grouped in one category.

Some register countries (Sweden, Finland and Norway) seem to have a component which is systematically not traced because of the specificity of the follow up rules for selected respondent data model (the non-selected respondent has not to be traced out if he/she leaves the household).

The main factors in a logit model explaining propensity of non response at the second wave are:

- Age
- Activity status (principally regular professional activity outside the dwelling)
- The top income and bottom income (financial stress)
- Family type
- Tenure status
- Marital status

Effective attrition rate for the second interrogation is alarming for five countries with more than 15 % drop out and for five others with drop out between 10% and 15%. For some countries, attrition is so high that the durability of the panel component over four years might be in danger, raising concern about the possibility to grasp persistent poverty. It is of primer importance that models controlling for the selectivity of the longitudinal non response are used to correct for attrition.

2.4. Mode of data collection

The EU-SILC Regulation allows some degree of flexibility to the countries regarding the mode of data collection:

- Paper-Assisted Personal Interview (PAPI)
- Computer-Assisted Personal Interview (CAPI)
- Computer-Assisted Telephone Interview (CATI)
- Self-administrated questionnaire

Proxy interviewing has been permitted provided the proxy rate is kept as limited as possible. Some countries that encountered rather high non-response rates resorted to proxy to ensure a certain degree of accuracy in their data.

The tables below give for each country the distribution of the personal interviews according to the mode of data collection for the cross-sectional and the longitudinal components.

Table 5: Distribution of the personal interviews by data collection mode (%)
2005 cross-sectional component

	PAPI	CAPI	CATI	Self-administrated
Belgium	0.0	100.0	0.0	0.0
Czech Republic	99.2	0.0	0.0	0.8
Denmark	0.0	0.0	95.2	4.8
Germany	0.0	0.0	0.0	100.0
Estonia	9.0	90.6	0.3	0.1

	PAPI	CAPI	CATI	Self-administrated
Ireland	0.0	100.0	0.0	0.0
Greece	72.4	25.9	1.7	0.0
Spain	0.0	95.6	4.3	0.0
France	0.0	100.0	0.0	0.0
Italy	100.0	0.0	0.0	0.0
Cyprus	0.4	99.6	0.0	0.0
Latvia	98.9	0.0	0.0	1.1
Lithuania	97.2	0.0	1.1	1.7
Luxembourg	100.0	0.0	0.0	0.0
Hungary	100.0	0.0	0.0	0.0
Malta	11.4	88.6	0.0	0.0
The Netherlands	0.0	0.0	100.0	0.0
Austria	0.0	94.5	5.5	0.0
Poland	100.0	0.0	0.0	0.0
Portugal	7.0	93.0	0.0	0.0
Slovenia	100.0	0.0	0.0	0.0
Slovakia	99.3	0.0	0.0	0.7
Finland	0.0	3.2	96.8	0.0
Sweden	54.9	0.0	45.1	0.0
United Kingdom	0.0	100.0	0.0	0.0
Iceland	0.0	0.0	100.0	0.0
Norway	0.0	0.8	99.2	0.0

Source: Micro-database (May 2008).

Table 6: Distribution of the personal interviews by data collection mode (%)
2005 longitudinal component

	PAPI	CAPI	CATI	Self-administrated
Belgium	0.0	100.0	0.0	0.0
Estonia	56.5	42.5	0.2	0.7
Ireland	0.0	100.0	0.0	0.0
Greece	59.2	38.9	1.7	0.3
Spain	52.0	43.2	3.4	1.4
France	0.0	100.0	0.0	0.0
Italy	100.0	0.0	0.0	0.0
Luxembourg	100.0	0.0	0.0	0.0
Austria	0.0	97.4	2.6	0.0
Finland	0.0	2.7	97.3	0.0
Sweden	0.0	0.0	100.0	0.0
Iceland	0.0	0.0	100.0	0.0
Norway	0.0	0.5	99.5	0.0

Source: Micro-database (May 2008).

CATI is mostly used by the countries which collect income information from registers (the 'register' countries) and thus which just need to collect non-income variables from the selected respondents. On the other hand, most of the 'survey' countries use either PAPI or CAPI interviewing.

The advantage of computer-assisted interviewing is that computer programs can identify inconsistencies in the data instantly, as they are collected, and can ask for correction. However, the interviewer keeps playing the central role in the data collection process because he has to get the interviewee to participate in the survey (what computers cannot achieve) and above all to obtain correct information.

Some countries sent self-administrated questionnaires, but Germany is the only one where it was the only mode of data collection used. This collection mode may damage the quality of the data unless the interviewees receive assistance by phone and the persons who provide incomplete or inconsistent information are called back.

Proxy rates are noticeably important in several countries (see table below). Proxy might have a negative impact on the quality of the individual information collected and thus on comparability. In countries using the full household data collection model, the use of proxy can also be seen as an appropriate trade-off between accurate measurement and individual non-response; this choice between accuracy and non-response has been done in at least two countries (United Kingdom and Spain) and it can damage household information. For countries using the selected respondent data model, the use of proxy might introduce selection bias for individual measurement like economic status or health conditions, but it can also improve the quality of data collected as a proxy interview can be chosen when the selected respondent cannot give an accurate answer to the interview questions but another family member can.

Table 7: Proxy interviews (%; 2005 cross-sectional component)

Belgium	14.3
Czech Republic	9.3
Denmark	49.1
Germany	11.9
Estonia	5.0
Ireland	31.0
Greece	5.4
Spain	40.3
France	26.9
Italy	16.1
Cyprus	13.4
Latvia	5.8
Lithuania	14.0
Luxembourg	22.8
Hungary	10.4
Malta	29.5
The Netherlands	39.6
Austria	24.6
Poland	19.3
Portugal	13.9

Slovenia	24.2
Slovakia	5.9
Finland	23.8(1)
Sweden	3.1
United Kingdom	10.8
Iceland	0.0
Norway	28.1

Source: Micro-database (May 2008).
(1) The figure in the micro-database (May 2008) is 51.1% and refers to all household members 16+ while the figure in the table (23.8%) only refers to selected respondents.

Table 8: Proxy interviews (%; 2005 longitudinal component)

Belgium	13.5
Estonia	2.7
Ireland	30.7
Greece	3.8
Spain	36.1
France	25.9
Italy	16.3
Luxembourg	24.1
Austria	18.8
Finland	25.3(1)
Sweden	5.1
Iceland	0.0
Norway	33.6

Source: Micro-database (May 2008).
(1) The figure in the micro-database (May 2008) is 51.1% and refers to all household members 16+ while the figure in the table (25.3%) only refers to selected respondents.

2.5. Imputation procedure

The non reliability of the imputation flags does not allow running comparative analysis of the level of imputation. This section reviews the main strategies used to impute income records in EU-SILC. Specific information from countries is given in the table in Annex 8. More information can be found in the national quality reports.

There are basically three contexts for imputation:

First, some income (sub)components in EU-SILC are derived from auxiliary information collected at the interview (e.g. gross child allowance can be obtained from the age of the children; but you also have to be careful as being entitled to child allowance does not mean you will take it). This method can prove to be more reliable than direct collection of the component through the household if the legal regulations are straightforward to apply. Many of the countries rely on this strategy to reduce the respondent burden and increase data quality.

Second context of EU-SILC imputation is related to the conversion from net income to gross income and vice versa. In some countries, direct collection of gross data (at component level)

proved to be unfeasible and thus income components are collected in a net form (net of tax and/or of social contributions). In this case, taxation models are build up in order to obtain in a coherent way (usually iterative procedure are used) the gross income components and the total net disposable income.

The third context for which imputation is used is related to actual impossibility/refusal for the individual/household to provide the information requested. This usually refers to statistical imputation techniques for which the model is estimated using data collected for the rest of the sample.

One distinguishes between deterministic and stochastic methods for which random residual term is included.

Statistical imputation can be quite important for some income components difficult to collect (such as self employment income and capital income). With the development of the longitudinal dimensions of the instrument, statistical imputation can also include the previous wave data for the individual/household. This aspect is expected to improve the quality of imputation.

2.6. **Imputed rent**

The imputed rent (HY030) refers to the value that shall be imputed for all households that do not report paying full rent, either because they are owner-occupiers or they live in accommodation rented at a lower price than the market price, or because the accommodation is provided rent free. This variable is only mandatory from 2007 operation. Nevertheless, some countries already provide it (see Annex 6).

2.7. **Non-cash employee income**

The variable PY020 has two parts: 1. "Imputed income from private use of company car", which is compulsory; and 2. "Other non-cash employee income", which is mandatory from 2007. In 2005 comparison of this variable among countries is impossible because some countries provided the two parts of the variable while others only the mandatory one (see annex 6).

Only from 2007 operation on, we can compare the value of this variable.

3. TIMELINESS AND PUNCTUALITY

The first microdata for 2005 operation were received in Eurostat on 10 April 2006. Reception of microdata extended up to mid January 2007. By end of October, 11 datasets were finalised and by end of November, 19. On 18 December 2006, which was the closing date for indicators calculation, two data sets (Slovenia and United Kingdom) were not yet final. Key indicators were released on Eurostat website by 15 January. Overarching indicators were

transmitted in time for inclusion in the Joint Report on Social Cohesion and Social Protection to be released for the spring meeting of the European Council.

4. ACCESSIBILITY AND CLARITY

Apart from releasing microdata to researchers and aggregated tables on the Eurostat website, the dissemination of the SILC information is still a weak aspect of the project. For example, there is a need for two kinds of analysis (and corresponding publications) to be prepared: a statistical publication (monograph including statistical analysis) covering all the available dimensions of social inclusion and living conditions in the EU as well as a series of short statistical analysis (of four, eight or twelve pages) in the format of the Eurostat 'Statistics in Focus' publications.

Conditions of data access

Eurostat collects EU-SILC data in the form of microdata files, both cross-sectional and longitudinal. These data aggregated in the form of predefined tables or of multidimensional tables are available free of charge on Eurostat website and can be explored via the data navigation tree. In addition, in accordance with Commission Regulation 831/2002, the Commission has released 2005 SILC anonymized microdata via CD-ROM to researchers. Conditions and prices can be downloaded from Eurostat website. Public information is available on data coding and methodological description of EU-SILC at http://circa.europa.eu/Public/irc/dsis/eusilc/home Moreover, a dedicated section on Eurostat website is containing key information on Living Condition and Social Protection including EU-SILC information.

Conditions of data publication

Commission Regulation (EC) 1982/2003 states the following requirements for data publication:

> […]*The Commission shall not publish an estimate if it is based on fewer than 20 sample observations, or if non-response for the item concerned exceeds 50. The data shall be published by the Commission with a flag if the estimate is based on 20 to 49 sample observations, or if non-response for the item concerned exceeds 20 and is lower than or equal to 50 . The data shall be published by the Commission in the normal way when based on 50 or more sample observations and the item non-response does not exceed 20.*
>
> *All data publications shall include technical information for each Member State on the effective sample size as well as a general indication of standard error of at least the main estimates.*

5. COMPARABILITY

Comparability refers to a common set of concepts and definitions that shall be applied by the countries when designing the survey and collecting the data. It encompasses both basic definitions (reference population, private household, household membership…) and income concepts (employee income, self-employment income…).

For EU-SILC, comparability of data between MS is a priority as stated in the EC Regulation:

EC Regulation No 1177/2003 - Article 1: Aim

> *The aim of this Regulation shall be to establish a common framework for the systematic production of Community statistics on income and living conditions (hereinafter referred to as EU-SILC), encompassing comparable and timely cross-sectional and longitudinal data on income and on the level and composition of poverty and social exclusion at national and European levels.*
>
> *Comparability of data between Member States shall be a fundamental objective and shall be pursued through the development of methodological studies from the outset of EU-SILC data collection, carried out in close cooperation between the Member States and Eurostat.*

Different tools monitor EU-SILC comparability:

- Intermediate and final quality reports
- Methodological studies on key issues for comparability at both EU and national level
- Task Forces

Commission Regulation 1980/2003 establishes the framework for comparability, which has set out standard definitions as accurately as possible to cover most of the cases that might be encountered in practice. Some degree of flexibility is allowed regarding the definitions but countries have to report on deviations and their estimated impact in the national quality report.

Annex 6 summarizes for each country the adherence/deviation to the standard EU-SILC definitions as reported in the national final quality reports.

5.1. Basic concepts and definitions

A. Basic concepts

Sample selection

In survey countries, addresses are selected every year using direct-element or multi-stage sampling schemes and then all households living at the selected addresses are included in the

sample, except for four countries (Estonia, Lithuania and Luxembourg) that have implemented an indirect selection:

In the register countries, only one person in each household is selected in order to answer non-income questions. Concerning income information, it is taken out from the registers for all household members.

The selection process of the individuals/households could have an impact on the quality of data and the subsequent comparability. For instance, the unequal probability of selection between household of different sizes (like in Estonia and Lithuania) has a negative impact on precision.

Reference period, fieldwork duration and time lag

Income reference period

Fixed or moving reference periods can be used.

The major advantage of using a fixed reference period is that it provides information related to the period that is identical for all respondents. Respondents are able to consult records that provide complete data over the 12-month period, improving data quality. The disadvantage is that for some respondents the lag between the income reference period and the day of the interview could be too large, and other variables as household composition, economic activity status or social exclusion, that are measured on the day of the interview may have changed.

The option of using a 12 month moving reference period immediately preceding the interview, has the major advantage of matching most closely with the circumstances of the household at the time of interview. It is expected to minimise recall problems. However, it results in information relating to different times for different respondents in the sample, and to different reference periods for different countries depending on the timing and duration of fieldwork. If fieldwork is spread over a period, such as over all 12 months of the year in a continuous survey, the differences between the actual reference periods will be maximised among different respondents within a single country.

Additionally, even when all income components are collected from the specified reference period, reported tax and other deductions may refer to a different accounting period as analysed in the next section.

The income reference period for most of countries is the calendar year previous to the survey year; with the exception of Ireland where the income reference period is the last twelve months and United Kingdom for which the current income is annualised and aims to refer the current calendar year, i.e. weekly estimates are multiplied by 52, monthly by 12…

Taxes reference period

For the reference period for taxes on income and social insurance contributions in 2005, almost all MS used 2004 but United Kingdom used the same as for income.

To evaluate the income taxes two possibilities are envisaged: A. Income **tax** paid/received during the income reference period and B. Income tax paid/received related to the total **income** received during the income reference period. In 2005:

- Fourteen countries followed definition A: Belgium, Czech Republic, Estonia, Greece, Spain, France, Cyprus, Lithuania, Hungary, Malta, Austria, Poland, Slovenia and Slovakia.

- Nine countries followed definition B: Denmark, Germany, Ireland, The Netherlands, Finland, Sweden, United Kingdom, Iceland and Norway.

- Luxembourg is a special case because taxes and social contributions are those that were paid in 2004 so they do not always pertain to the year 2004.

- Italy, Latvia and Portugal in 2005 did not collect tax on income (net is computed from net components).

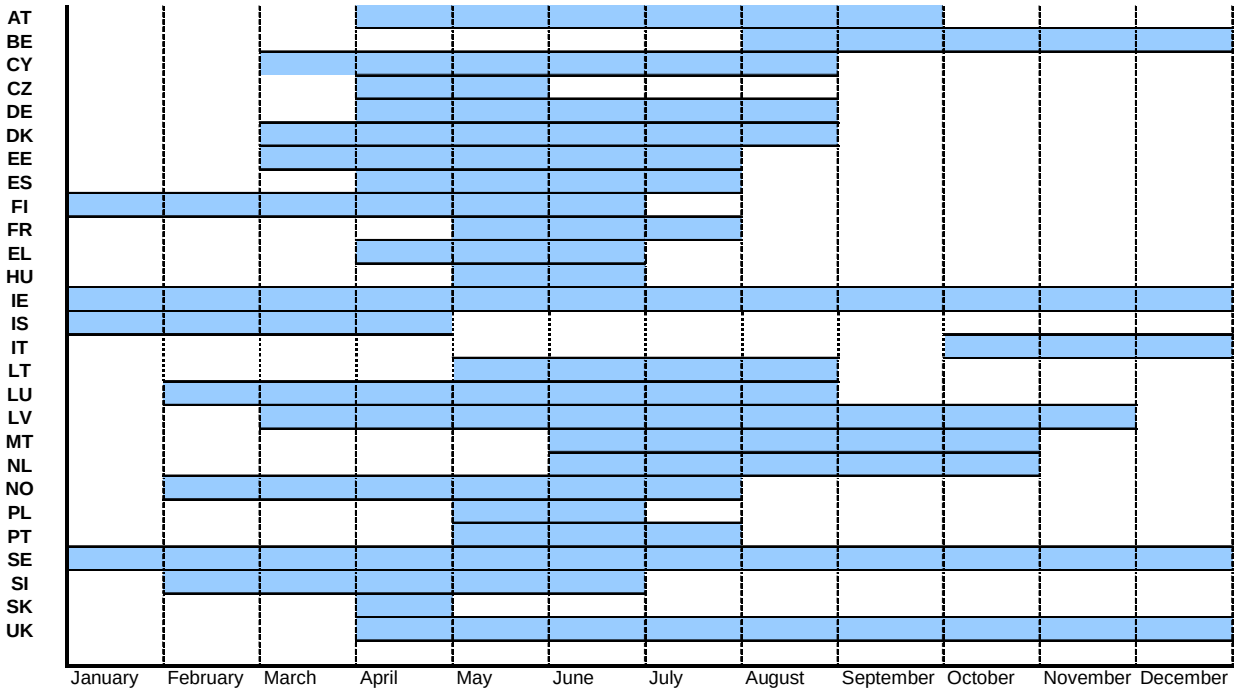
In addition, for the reference period of taxes on wealth, United Kingdom used in 2005 as reference period April 2005-March 2006. The rest of the countries used 2004 as reference period, except for Spain and France, which used 2003. Some countries do not report this item because taxes on wealth do not exist.

The multiple implementations lead to incomparability in the data, but the impact of these differences has been qualified as minor by the methodological Task Force. The main striking point is that income tax paid/received during the income reference period can produce negative income (when tax payment is higher than income received during the same year). The Canberra manual proposes collecting income tax paid/received due to the total income received during the income reference period, but survey countries have not followed this recommendation because sometimes the tax form is filled in after the fieldwork is carried out.

Fieldwork duration

The situation for the 2005 operation is depicted in the graph below. Most countries have opted for one shot fieldwork. United Kingdom, Sweden and Ireland have opted for a continuous survey spread evenly all over the survey year.

Fieldwork period for the 2005 EU-SILC operation



Source: National Quality Reports 2005 (latest available version in August 2008).

The main adverting factors on comparability of 2005 implementation are:

- The mixed between continuous survey (United Kingdom, Ireland, Sweden) and one shot surveys implied systematic shift in income reference period with a possible measurable effect in countries where income level and structure are changing rapidly.

- The persistence of an important lag between the end of income reference period and the interview time. In particular, two countries (Italy and Belgium) have a fieldwork period concentred in the last months of the survey year.

- Worth to be noted at this point is the temporary anomaly of UK fieldwork period delayed by 3 months for the 2005 implementation and concentrated over 9 months instead of 12 months as planned.

Time lag

In 2005, the lag, in months, between the income reference period and current variables was the following:

- Ireland, as it has a moving income reference period, and United Kingdom, as they measure current income, had a lag of zero months.

- Ten countries had a lag below 6 months: Czech Republic, Greece, Hungary, Slovenia, Slovakia, Poland, Finland, Sweden, Iceland and Norway.

- Fifteen countries had an upper limit lag above 6 months: Belgium, Denmark, Estonia, Germany, Spain, France, Italy, Cyprus, Latvia, Lithuania, Luxembourg, Malta, The Netherlands, Austria, and Portugal.

Gross-net conversion

Depending on the source and on the operational difficulties, income components may be collected gross, net of social contributions but gross of taxes or net of taxes and social contributions. Until 2007, the gross components are not mandatory. Thus, the components available might differ from one country to another (see table below). Besides, gross-net conversion is not standardised, which might have an impact on comparability.

Table 9: Form in which income variables at component level have been collected (2005)

Belgium	Gross and net
Czech Republic	Gross or net
Denmark	Gross
Germany	Gross
Estonia	Gross or net
Ireland	Gross and net
Greece	Net
Spain	Net
France	Net
Italy	Net
Cyprus	Gross
Latvia	Net
Lithuania	Gross
Luxembourg	Gross and net
Hungary	Gross
Malta	Gross
The Netherlands	Gross
Austria	Gross
Poland	Gross and net
Portugal	Net
Slovenia	Gross and net
Slovakia	Gross
Finland	Gross
Sweden	Gross
United Kingdom	Gross and net
Iceland	Gross
Norway	Gross

Source: National Quality Reports 2005 (latest available version in August 2008).

Comparability studies

Comparability assessment can be performed as an output from EU-SILC. Most of the studies are based on the EU-SILC 2004 databases principally in the context of the methodological contracts launched by Eurostat[10]. Several countries have launched specific studies on comparability of EU-SILC verging on different issues related to comparability.

[10] Comparative assessment of income reporting in EU-SILC 2004, contract report, ISR – V Verma – April 2007.

Table 10: Ongoing comparability studies

	Topic
Bulgaria	Impact of self employment income measurement and non cash income components. Impact of under coverage in agriculture, of grey economic. Comparability between EU-SILC and NA, administrative data and other surveys
Czech Republic	Impact of panel attrition / Comparability of imputed rent
Denmark	Comparability between survey and register data / Impact of selection method on household delimitation
Estonia	Impact of alternative selection design / Coherence of EU-SILC income data
Greece	Comparison of income structure between EU-SILC and Structure Earnings Survey, Labour Cost Survey, Annual index of turnover in the retail trade, 2002 and Social family benefits. Comparison of income structure between EU-SILC and Household Budget Survey, poverty indicators using EU-SILC and HBS data
Spain	Impact of Sienna Simulation Model on Gross net conversion
France	Comparability of EU-SILC and fiscal data
Latvia	Impact of sampling method on SILC
Austria	Analysis of CATI mode on comparability / Analysis of different method for imputed rent
Poland	Impact of imputation methods / Impact of imputed rent / Coherence between EU-SILC and HBS
Slovakia	Comparability of survey data and administrative data / Coherence between SILC and HBS, NA, ESSPROS and LFS
Finland	Impact of calibration on income distribution and social cohesion indicators

Source: National Quality Reports 2005 (latest available version in August 2008).

B. Definitions

An attribute that can hinder comparability arises when countries use definitions different from the standard one, as for the reference population, private household or household membership.

In 2005, all countries followed the standard definition on reference population but four MS (Germany, Italy, Austria and United Kingdom) used a slightly different private household definition, and seven MS (the four mentioned above plus Spain, Portugal and Slovenia) defined the household membership in a different way.

As most of the countries use the standard definition, there should be little impact on comparability.

The *reference population* is the private households as well as their current members within the national territory at the time of the data collection. Collective households and institutions are excluded from the target population.

A *private household* is composed of a group of persons who live in the same dwelling and share expenses, including the joint provision of the essentials of living.

Eurostat has reviewed the implementation of household and household membership in different Member States. It can have consequences on comparability because household is the main substantive unit in EU-SILC, which determines equivalised disposable income at

individual level. Differences can be due to conceptual differences and/or to operational differences. The latter requires detailed inquiry. First inquiry for 2004 countries[11] showed that conceptual differences are not frequent. Instead, the specific treatment of special categories like lodgers or people temporary away (students…) sees more widespread differences. The extent of these differences is limited because the concerned groups seem to remain limited in size. However, for the specific group of students, the differences are more evident when looking at their socio-economic status in different countries.

5.2. **Components of income**

Regarding the components of income, in addition to the source of data (register, survey), some flexibility has been allowed to the definitions particularly for taking into account national constraints.

For instance, there are three main approaches for collecting self-employment income:

- The 'entrepreneurial income' that corresponds to the concept of profit/loss normally used in business accounting.
- The 'net operating benefits/losses' shown on the annual tax accounts.
- The money (goods) drawn out of the business for personal use.

The study of Marco Di Marco, ISTAT (Statistics Italy): "Self-Employment Incomes in the Italian EU-SILC" clearly shows the impact of different concepts on income distribution in Italy.

Similarly, the study on the comparability of property income by Veli-Matti Törmälehto, Statistics Finland: "Measurement of property income in EU-SILC" shows the relative performance of register and survey countries with respect to this difficult income component. Nevertheless, the interview versus register issue does not explain all the differences; the differences in concentration and income shares among the register countries suggest that all aspects, beginning from conceptual validity and ending at different calibration models, may come into play.

Eventually, depending on the collection difficulties, the coverage of income components might not be standard or a component or a part of it may be included in another component.

5.3. **Tracing rules**

Tracing rules are defined in Commission Regulation EC 1982/2003. No deviation to common rules is reported in National quality reports.

[11] "Assessment of the impact on comparability of national differences in the household definitions used".

It is worth to underline the structural difference between selected respondent data model used by register countries and the standard model used by survey countries for which all individuals 16+ are panel individuals. In the former implementation, only the selected respondent is a panel individual and has to be traced out for the following waves. If the household splits, only information on the household of the selected individuals will be extracted from register. This model leads thus to the systematic drop out of non selected respondent in case of household split. This situation holds also for children less than 16 when the household splits. No information is obtained for children who move with the non selected respondent and these are thus virtually out of the panel. Although the weighting system ensures that the panel remains representative of the target population, structural drop out from the initial sample could decrease the size of the sample for the individual at stake (children and split household). This is one of the reasons why the sample size for the selected respondent data model has been increased in the Framework Regulation.

6. COHERENCE

Coherence of different data collections can be assessed at two different levels: at the level of the definitions and at the level of the data. Definitions can be analysed to evaluate their comparability. Taking into account the disparities, we can estimate afterwards the discrepancy on the data related to similar definitions. Finally, we can assess if the differences on the data can be explained by the differences in the definitions.

There is a variety of sources to analyse coherence of EU-SILC. The main sources used by the countries are: Household Budget Survey (HBS), Labour Force Survey (LFS), National Accounts (NA), administrative sources and preceding EU-SILC data. In each survey or administrative data variables similar to those in EU-SILC can be found and then the definitions and data can be compared taking as starting point EU-SILC variables.

In 2005, some countries performed coherence studies and presented the results in the quality report (see annex 7).

Household Budget Survey

The Household Budget Survey (HBS) is the less harmonised EU survey. The focus is on household expenditure rather than income. Moreover, the design of the instrument is significantly different from EU-SILC because expenditures are seasonal. HBS was often considered as the reference national source for income poverty indicators before EU-SILC; hence, it is worth comparing poverty rate and income inequality index.

HBS is not as regular as EU-SILC. However, the 2005 operation coincides with a new HBS wave. Ex-post coherence analysis between HBS and EU-SILC are thus possible on an EU scale basis for a large set of similar variable shared by both instruments. This comparison has been carried out by Eurostat and is available for all countries.

Labour Force Survey

EU-SILC and the Labour Force Survey (LFS) can be benchmarked at EU level with respect to Education (ISCED level), Self-declared labour status, Status in employment, Occupation in employment, Economic sector in employment.

EU-SILC data can be compared with LFS yearly average data for stable variables or with the closest quarterly data when the variable is seasonal. Currently, Eurostat is developing a project to compare ISCED (International Standard Classification of Education) between LFS and EU-SILC.

National Accounts

National Accounts (NA) provides data on the income approach of the GDP. The sector accounts can be restricted to households and non-profit organisation serving households (NPISH). Comparison can be done if:

- Income from NPISH can be estimated
- Income from people residing collective household can be estimated
- Income generated from transfer from reserve can be estimated
- Income generated from imputed rent can be separated out.

The Austrian Quality Report identified capital income as the main source of differences between NA and EU-SILC total income. For gross incomes of private households, the difference between data from NA and data from EU-SILC is decreasing from 2004 to 2005.

The paper written by Matthias Thill, Statistics Austria: "Aggregate wealth and regional poverty – a new perspective on income poverty lines in Europe", compares aggregate household disposable income derived from EU-SILC and obtained from National Accounts. Results provided show that the EU-SILC type of source has an impact on the coverage of the income amounts: survey countries have a larger discrepancy of disposable income aggregates from National Accounts than register countries.

ESSPROS

EU-SILC survey data and administrative data like ESSPROS (European System of Integrated Social Protection Statistics) can be compared on the basis of total gross amount (of the social benefits) and the number of recipients when available. However, such comparisons first require reconciliation of definitions.

The reference populations are different: ESSPROS covers all individuals benefiting from a national social benefit scheme, including people residing abroad, while EU-SILC covers individuals residing in private households within the national territory. Corrections have to be done to take into account the population living in collective households, beneficiaries living

abroad and finally the population residing in the national territory benefiting from social benefits from abroad. Further care should be taken regarding the exact components included in ESSPROS function for a particular country.

Eurostat has done a first tentative analysis on the coherence of these two sources in November 2006: "Attempt of reconciliation between ESSPROS social protection statistics and EU-SILC", Gérard Abramovici. This paper highlights some differences on the definitions in both sources that could explain data discrepancy, such as different reference population or differences on the accounting rules on the components of income. It concludes that carrying out a detailed comparison of both sources, county by country, can show up the weakness of both sources.

Other administrative sources

Countries can also compare EU-SILC data with other sources available in their territory, which many countries did for 2005 operation.

Moreover, countries can carry out studies on different variables such as core socio-economic variables or demographic/census counts.

Core socio-economic variables

EU-SILC gathers all the core socio-economic variables (Sex, Age, Country of birth, Citizenship, Marital status, Household composition, Net monthly income) which will have to be included in EU social surveys from 2010 onwards.

Demographic/Census counts

The EU-SILC housing data (dwelling type and number of rooms, tenure status, commodities – indoor flushing toilet and bath or shower) are compared with census data as most of the definition coincide except for the variable number of rooms because EU-SILC counts does not include the kitchen as long it is for the sole use of cooking.

Other key demographic variables like sex, age, household size by region are generally used as control variables in calibration procedures. However, calibration totals might differ from official demographic counts because of conceptual differences on the target population (persons living in private households).

7. CONCLUSION

This document reviews the main features described in the national quality reports 2005, namely accuracy, comparability and coherence, and introduces the study on other common aspects such as the relevance, the timeliness and punctuality and the accessibility and clarity.

Some aspects that need to be highlighted from 2005 operation are the following:

- The different data sources for income data are known to have an impact on the estimated income distribution and consequently on national comparability.

- The mode of data collection varies among countries and in particular the self-administrated questionnaires may impact the comparability of the data.

- Proxy rates in 2005 are noticeably important in several countries and it might have a negative impact on the quality of the individual information collected.

- The selection process of the individuals/households could also have a differential impact on data accuracy.

- The measure of self-employment is another source of differences between countries that have not yet found a common harmonised solution.

- Comparable analysis of income distribution components cannot be carried out given that, until 2007, gross components are not collected in all countries.

- The mixed between continuous and one shot surveys implied a systematic shift in income reference period with a possible measurable effect in countries where income level and structure are changing rapidly.

- The persistence of a significant lag between the end of income reference period and the interview time could also hamper quality and comparability.

In conclusion, the flexibility in EU-SILC is a key aspect allowing for adaptation to national specificities in terms of infrastructure and measurement. This flexibility implies that many characteristics of SILC have to be watched carefully every year and assessed their implications mainly on the accuracy of the data and on the comparability over time and between countries.

8. LIST OF ANNEXES

Annex 1: The EU-SILC sampling designs

Table 11: Sampling designs by country (2005)

	Type of sampling design	*Number of sampling stages*	*First-stage*			*Final stage*		
			Type of unit	*Selected by*	*Stratification*	*Type of unit*	*Selected by*	*Stratification*
Austria	Simple random sampling	1				Dwellings	Simple random sampling	N
Belgium	Stratified two-stage sampling	2	Municipalities	Pps sampling	NUTS2 Region	Households	Systematic sampling	N
Cyprus	Stratified simple random sampling	1				Households	Simple random sampling	Geographical criteria
Czech Republic	Stratified two-stage sampling	2	Census sections	Pps sampling	NUTS4 and number of residents	Dwellings	Simple random sampling	N
Denmark	Simple random sampling	1				Persons 14+	Simple random sampling	N
Estonia	Stratified systematic sampling	1				Persons 14+	Systematic sampling	County level ("big" counties, "small" counties and Hiiu)
Finland	Post-stratified unequal probability sampling	1				Dwellings	Pps sampling	Socio-economic criteria (1)
France	Stratified three-stage sampling	3	Groups of municipalities	Pps sampling	NUTS2, degree of urbanisation and rural/urban	Dwellings	Systematic sampling	N
Germany	Quota sampling + random part(1/4)							
Greece	Stratified two-stage sampling	2	Dwelling blocks	Pps sampling	NUTS2 and degree of urbanisation	Dwellings	Systematic sampling	N
Hungary	Stratified two-stage sampling	2	Localities	Pps sampling	Election district and number of dwellings	Dwellings	Systematic sampling	N

	Type of sampling design	*Number of sampling stages*	*First-stage*			*Final stage*		
			Type of unit	*Selected by*	*Stratification*	*Type of unit*	*Selected by*	*Stratification*
Iceland	Simple random sampling	1				Persons 16+	Simple random sampling	N
Ireland	Stratified two-stage sampling	2	Dwelling blocks	Simple random sampling	NUTS2 and degree of urbanisation	Dwellings	Simple random sampling	N
Italy	Stratified two-stage sampling	2	Municipality	Pps sampling	Administrative region and number of residents	Dwellings	Systematic sampling	N
Latvia	Stratified two-stage sampling	2	Census sections	Pps sampling	Degree of urbanisation	Dwellings	Simple random sampling	N
Lithuania	Stratified simple random sampling	1				Persons 16+	Simple random sampling	Degree of urbanisation
Luxembourg	Stratified simple random sampling	1				"Tax" households	Simple random sampling	Social Security data
Malta	Simple random sampling	1				Dwellings	Simple random sampling	N
The Netherlands	Stratified three-stage sampling	3	Municipalities	Pps sampling	COROP and interviewer region	Persons 16+	Simple random sampling	N
Norway	Systematic sampling	1				Persons 16+	Systematic sampling	One-year age group
Poland	Stratified two-stage sampling	2	Census sections	Pps sampling	NUTS2 and degree of urbanisation	Dwellings	Simple random sampling	N
Portugal	Stratified two-stage sampling	2	Census sections	Pps sampling	NUTS3	Dwellings	Simple random sampling	N
Slovakia	Stratified simple random sampling	1				Dwellings	Simple random sampling	NUTS3 and degree of urbanisation
Slovenia	Stratified two-stage sampling	2	Census sections	Pps sampling	Size of the settlement and proportion of agricultural households	Persons 16+	Systematic sampling	N

	Type of sampling design	*Number of sampling stages*	*First-stage*			*Final stage*		
			Type of unit	*Selected by*	*Stratification*	*Type of unit*	*Selected by*	*Stratification*
Spain	Stratified two-stage sampling	2	Census sections	Pps sampling	Administrative region and size of the municipality	Dwellings	Systematic sampling	N
Sweden	Systematic sampling	1				Persons 16+	Systematic sampling	N
United Kingdom	Stratified two-stage sampling	2	Postcode sectors	Pps sampling	2001 Census data	Dwellings	Systematic sampling	N

Source: National Quality Reports 2005 (latest available version in August 2008).
Pps sampling = proportional-to-size sampling
(1) Stratification *a posteriori*, according to socio-economic criteria

Annex 2: Sampling structures used in each country

Table 12: Sampling structures by country (2005)

Belgium	Integrated design with 4 groups
Czech Republic	Integrated design with 4 groups
Denmark	Integrated design with 4 groups
Germany	Integrated design with 4 groups
Estonia	Integrated design with 4 groups
Ireland	Integrated design with 4 groups
Greece	Integrated design with 4 groups
Spain	Integrated design with 4 groups
Italy	Integrated design with 4 groups
Cyprus	Integrated design with 4 groups
Latvia	Integrated design with 4 groups
Lithuania	Integrated design with 4 groups
Hungary	Integrated design with 4 groups
Malta	Integrated design with 4 groups
The Netherlands	Integrated design with 4 groups
Austria	Integrated design with 4 groups
Poland	Integrated design with 4 groups
Portugal	Integrated design with 4 groups
Slovenia	Integrated design with 4 groups
Slovakia	Integrated design with 4 groups
Finland	Integrated design with 4 groups
United Kingdom	Integrated design with 4 groups
Iceland	Integrated design with 4 groups
Norway	Integrated design with 8 groups
France	Integrated design with 9 groups
Luxembourg	Pure panel supplemented with a new sample each year
Sweden	Pure panel supplemented with a new sample each year

Source: National Quality Reports 2005 (latest available version in August 2008).

Annex 3: Estimated standard errors and design effects

The tables presented in this annex show the estimated standard errors and design effects (Deff) obtained by Eurostat for some of the key EU-SILC indicators. The underlying methodology is the linearization technique coupled with the use of the variance estimation software Poulpe.

The tables below also report estimated confidence intervals at 95 for the indicators. They have been calculated assuming the estimators are normally distributed.

The values of the indicators presented in the tables below correspond to the ones computed from the cross-sectional micro-database in May 2008. These values could differ from data published previously, or in other reports, or national data due to methodological adjustments by Eurostat and/or revisions by the countries.

Table 13: Estimated standard errors and design effects by country (2005)

Czech Republic

Indicator	Value	Achieved sample size	Standard error	Standard error (after calibrating)	Confidence interval at 95 % Lower	Upper	CV (%)	DEFF
At-risk-of-poverty rate after social transfers - total	10.4	10333	0.45	0.42	9.5	11.2	4.0	1.09
At-risk-of-poverty rate after social transfers - men total	9.7	4916	0.46	0.42	8.9	10.5	4.3	1.04
At-risk-of-poverty rate after social transfers - women total	11.0	5417	0.54	0.51	10.0	12.0	4.6	1.10
At-risk-of-poverty rate after social transfers - 0-15 years	17.7	1705	1.10	1.02	15.7	19.7	5.8	1.01
At-risk-of-poverty rate after social transfers - 16-24 years	12.0	1176	0.88	0.85	10.4	13.7	7.1	1.05
At-risk-of-poverty rate after social transfers - 25-49 years	10.9	3435	0.49	0.45	10.0	11.8	4.1	1.02
At-risk-of-poverty rate after social transfers - 50-64 years	6.1	2303	0.50	0.49	5.1	7.1	8.0	1.00
At-risk-of-poverty rate after social transfers - 65+ years	5.3	1714	0.71	0.68	4.0	6.6	12.8	1.09
At-risk-of-poverty rate after social transfers - 16+ years	8.9	8628	0.39	0.37	8.2	9.7	4.1	1.14
At-risk-of-poverty rate after social transfers - 16-64 years	9.7	6914	0.41	0.39	8.9	10.4	4.0	1.11
At-risk-of-poverty rate after social transfers - 0-64 years	11.2	8619	0.49	0.45	10.3	12.1	4.0	1.07
At-risk-of-poverty threshold - single	2539	10333	22.74	18.97	2502	2577	0.7	1.36
At-risk-of-poverty threshold - 2 adults, 2 children	5333	10333	47.76	39.84	5255	5411	0.7	1.36
Relative median at-risk-of-poverty gap - total	18.2	906	1.04	1.02	16.2	20.2	5.6	1.12
Relative median at-risk-of-poverty gap - men total	18.9	385	1.14	1.12	16.7	21.1	5.9	1.13
Relative median at-risk-of-poverty gap - women total	17.5	521	1.13	1.12	15.3	19.7	6.4	1.00
Relative median at-risk-of-poverty gap - 0-15 years	18.3	269	1.57	1.55	15.3	21.3	8.5	1.07
Relative median at-risk-of-poverty gap - 16-64 years	19.0	542	1.07	1.04	17.0	21.0	5.5	1.20
Relative median at-risk-of-poverty gap - 65+ years	7.8	95	1.21	1.19	5.5	10.1	15.3	1.01
Relative median at-risk-of-poverty gap - 16+ years	17.8	637	0.94	0.93	15.9	19.6	5.2	1.11
Inequality of income distribution S80/S20 income quintile share ratio	3.7	10333	0.08	0.07	3.5	3.8	1.9	1.13
Gini coefficient	26.0	10333	0.48	0.44	25.1	26.8	1.7	1.18
Mean equivalised disposable household income	4834	10333	47.19	39.93	4755.7	4912.2	0.8	1.34
Median equivalised disposable household income	4232	10333	37.90	31.62	4170.4	4294.4	0.7	1.36

Denmark

Indicator	Value	Achieved sample size	Standard error	Standard error (after calibrating)	Confidence interval at 95 % Lower	Confidence interval at 95 % Upper	CV (%)	DEFF
At-risk-of-poverty rate after social transfers - total	11.8	15321	0.39	0.08	11.7	12.0	0.7	1.00
At-risk-of-poverty rate after social transfers - men total	11.6	7707	0.43	0.07	11.4	11.7	0.6	1.00
At-risk-of-poverty rate after social transfers - women total	12.1	7614	0.48	0.10	11.9	12.3	0.8	1.00
At-risk-of-poverty rate after social transfers - 0-15 years	10.1	3420	0.74	0.21	9.7	10.5	2.1	1.00
At-risk-of-poverty rate after social transfers - 16-24 years	28.9	1631	1.25	0.21	28.5	29.3	0.7	1.00
At-risk-of-poverty rate after social transfers - 25-49 years	9.7	5423	0.43	0.07	9.6	9.8	0.7	1.00
At-risk-of-poverty rate after social transfers - 50-64 years	4.6	3172	0.45	0.01	4.6	4.7	0.2	1.00
At-risk-of-poverty rate after social transfers - 65+ years	17.6	1675	1.26	0.23	17.1	18.0	1.3	1.00
At-risk-of-poverty rate after social transfers - 16+ years	12.3	11901	0.40	0.06	12.1	12.4	0.5	1.00
At-risk-of-poverty rate after social transfers - 16-64 years	11.0	10226	0.35	0.05	10.9	11.1	0.5	1.00
At-risk-of-poverty rate after social transfers - 0-64 years	10.8	13646	0.38	0.08	10.7	11.0	0.7	1.00
At-risk-of-poverty threshold - single	13274	15321	89.19	10.00	13255	13294	0.1	1.00
At-risk-of-poverty threshold - 2 adults, 2 children	27876	15321	187.29	21.00	27835	27917	0.1	1.00
Relative median at-risk-of-poverty gap - total	15.6	910	0.76	0.65	14.3	16.9	4.2	1.00
Relative median at-risk-of-poverty gap - men total	15.5	410	0.96	0.82	13.9	17.1	5.3	1.00
Relative median at-risk-of-poverty gap - women total	15.9	500	0.86	0.76	14.4	17.4	4.8	1.00
Relative median at-risk-of-poverty gap - 0-15 years	18.2	176	1.70	1.58	15.1	21.3	8.7	1.00
Relative median at-risk-of-poverty gap - 16-64 years	21.6	504	1.13	0.99	19.6	23.5	4.6	1.00
Relative median at-risk-of-poverty gap - 65+ years	8.1	230	0.63	0.57	6.9	9.2	7.1	1.00
Relative median at-risk-of-poverty gap - 16+ years	15.6	734	0.73	0.60	14.4	16.7	3.9	1.00
Inequality of income distribution S80/S20 income quintile share ratio	3.5	15321	0.10	0.09	3.3	3.7	2.6	1.00
Gini coefficient	23.9	15321	0.46	0.40	23.1	24.7	1.7	1.00
Mean equivalised disposable household income	23294	15321	168.45	118.88	23060.6	23526.6	0.5	1.00
Median equivalised disposable household income	22124	15321	148.65	16.67	22091.2	22156.6	0.1	1.00

France

Indicator	Value	Achieved sample size	Standard error	Standard error (after calibrating)	Confidence interval at 95 % Lower	Upper	CV (%)	DEFF
At-risk-of-poverty rate after social transfers - total	13.0	24245	0.45	0.44	12.1	13.9	3.4	1.13
At-risk-of-poverty rate after social transfers - men total	12.3	11745	0.48	0.47	11.3	13.2	3.8	1.14
At-risk-of-poverty rate after social transfers - women total	13.7	12500	0.49	0.48	12.7	14.6	3.5	1.11
At-risk-of-poverty rate after social transfers - 0-15 years	14.1	5297	0.91	0.89	12.3	15.8	6.3	1.03
At-risk-of-poverty rate after social transfers - 16-24 years	17.8	2917	0.97	0.94	16.0	19.7	5.3	0.98
At-risk-of-poverty rate after social transfers - 25-49 years	10.6	8129	0.48	0.47	9.7	11.5	4.4	1.15
At-risk-of-poverty rate after social transfers - 50-64 years	10.1	4434	0.59	0.58	9.0	11.3	5.7	1.07
At-risk-of-poverty rate after social transfers - 65+ years	16.5	3468	0.86	0.82	14.9	18.1	5.0	1.30
At-risk-of-poverty rate after social transfers - 16+ years	12.7	18948	0.42	0.40	11.9	13.5	3.1	1.16
At-risk-of-poverty rate after social transfers - 16-64 years	11.8	15480	0.43	0.42	11.0	12.6	3.6	1.10
At-risk-of-poverty rate after social transfers - 0-64 years	12.3	20777	0.49	0.48	11.4	13.3	3.9	1.09
At-risk-of-poverty threshold - single	9562	24245	75.89	62.54	9440	9685	0.7	1.27
At-risk-of-poverty threshold - 2 adults, 2 children	20081	24245	159.36	131.33	19824	20339	0.7	1.27
Relative median at-risk-of-poverty gap - total	16.6	3271	0.85	0.83	14.9	18.2	5.0	1.09
Relative median at-risk-of-poverty gap - men total	16.7	1499	0.96	0.95	14.8	18.5	5.7	1.10
Relative median at-risk-of-poverty gap - women total	16.5	1772	0.87	0.86	14.8	18.1	5.2	1.06
Relative median at-risk-of-poverty gap - 0-15 years	14.8	830	1.50	1.49	11.9	17.7	10.1	1.07
Relative median at-risk-of-poverty gap - 16-64 years	17.4	1892	0.96	0.95	15.5	19.3	5.5	1.06
Relative median at-risk-of-poverty gap - 65+ years	14.8	549	0.97	0.95	13.0	16.7	6.4	1.11
Relative median at-risk-of-poverty gap - 16+ years	16.9	2441	0.78	0.77	15.3	18.4	4.6	1.07
Inequality of income distribution S80/S20 income quintile share ratio	4.0	24245	0.07	0.07	3.9	4.2	1.7	1.23
Gini coefficient	27.8	24245	0.36	0.34	27.1	28.4	1.2	1.15
Mean equivalised disposable household income	18199	24245	141.89	117.49	17968.4	18429.0	0.6	1.25
Median of the equivalised disposable household income	15937	24245	126.48	104.23	15733.1	16141.7	0.7	1.27

Cyprus

Indicator	Value	Achieved sample size	Standard error	Standard error (after calibrating)	Confidence interval at 95 % Lower	Confidence interval at 95 % Upper	CV (%)	DEFF
At-risk-of-poverty rate after social transfers - total	16.2	11541	0.58	0.56	15.1	17.3	3.5	0.99
At-risk-of-poverty rate after social transfers - men total	14.6	5675	0.62	0.61	13.4	15.8	4.2	0.99
At-risk-of-poverty rate after social transfers - women total	17.7	5866	0.63	0.60	16.5	18.9	3.4	0.99
At-risk-of-poverty rate after social transfers - 0-15 years	12.5	2523	1.03	1.02	10.5	14.5	8.2	0.99
At-risk-of-poverty rate after social transfers - 16-24 years	11.5	1664	0.93	0.92	9.7	13.3	8.0	1.00
At-risk-of-poverty rate after social transfers - 25-49 years	10.1	3974	0.54	0.54	9.0	11.1	5.4	0.99
At-risk-of-poverty rate after social transfers - 50-64 years	14.2	1968	0.95	0.92	12.4	16.0	6.4	1.00
At-risk-of-poverty rate after social transfers - 65+ years	50.7	1412	1.77	1.71	47.3	54.0	3.4	1.00
At-risk-of-poverty rate after social transfers - 16+ years	17.1	9018	0.57	0.54	16.1	18.2	3.2	0.99
At-risk-of-poverty rate after social transfers - 16-64 years	11.4	7606	0.52	0.51	10.4	12.4	4.5	1.00
At-risk-of-poverty rate after social transfers - 0-64 years	11.7	10129	0.57	0.56	10.6	12.8	4.8	0.99
At-risk-of-poverty threshold - single	7894	11541	78.59	73.68	7750	8039	0.9	0.98
At-risk-of-poverty threshold - 2 adults, 2 children	16578	11541	165.04	154.73	16274	16881	0.9	0.98
Relative median at-risk-of-poverty gap - total	19.4	1949	0.91	0.90	17.7	21.2	4.6	1.00
Relative median at-risk-of-poverty gap - men total	17.4	861	0.98	0.97	15.5	19.3	5.6	1.00
Relative median at-risk-of-poverty gap - women total	21.1	1088	0.97	0.95	19.3	23.0	4.5	1.00
Relative median at-risk-of-poverty gap - 0-15 years	17.1	336	1.86	1.84	13.5	20.7	10.8	1.00
Relative median at-risk-of-poverty gap - 16-64 years	19.1	895	1.18	1.17	16.8	21.3	6.1	1.00
Relative median at-risk-of-poverty gap - 65+ years	21.3	718	1.11	1.07	19.2	23.4	5.0	1.00
Relative median at-risk-of-poverty gap - 16+ years	20.4	1613	0.88	0.86	18.7	22.1	4.2	1.00
Inequality of income distribution S80/S20 income quintile share ratio	4.3	11541	0.10	0.10	4.2	4.5	2.3	1.01
Gini coefficient	28.7	11541	0.51	0.50	27.8	29.7	1.7	1.01
Mean equivalised disposable household income	15055	11541	155.80	148.10	14764.4	15344.9	1.0	0.99
Median of the equivalised disposable household income	13157	11541	130.98	122.80	12916.2	13397.6	0.9	0.98

Latvia

Indicator	Value	Achieved sample size	Standard error	Standard error (after calibrating)	Confidence interval at 95 % Lower	Confidence interval at 95 % Upper	CV (%)	DEFF
At-risk-of-poverty rate after social transfers - total	19.2	9699	0.76	0.72	17.8	20.6	3.7	1.22
At-risk-of-poverty rate after social transfers - men total	18.3	4301	0.85	0.79	16.8	19.9	4.3	1.29
At-risk-of-poverty rate after social transfers - women total	20.0	5398	0.89	0.85	18.3	21.7	4.3	1.21
At-risk-of-poverty rate after social transfers - 0-15 years	20.3	1620	1.61	1.50	17.3	23.2	7.4	1.19
At-risk-of-poverty rate after social transfers - 16-24 years	19.5	1317	1.44	1.35	16.9	22.1	6.9	1.17
At-risk-of-poverty rate after social transfers - 25-49 years	17.1	3158	0.77	0.72	15.7	18.6	4.2	1.15
At-risk-of-poverty rate after social transfers - 50-64 years	20.3	1782	1.33	1.24	17.9	22.8	6.1	1.20
At-risk-of-poverty rate after social transfers - 65+ years	21.2	1822	1.71	1.56	18.2	24.3	7.4	1.16
At-risk-of-poverty rate after social transfers - 16+ years	19.0	8079	0.74	0.70	17.6	20.4	3.7	1.19
At-risk-of-poverty rate after social transfers - 16-64 years	18.5	6257	0.74	0.70	17.1	19.8	3.8	1.23
At-risk-of-poverty rate after social transfers - 0-64 years	18.8	7877	0.80	0.75	17.4	20.3	4.0	1.24
At-risk-of-poverty threshold - single	1322	9699	22.10	19.90	1283	1361	1.5	1.39
At-risk-of-poverty threshold - 2 adults, 2 children	2777	9699	46.41	41.79	2695	2859	1.5	1.39
Relative median at-risk-of-poverty gap - total	27.2	2035	1.64	1.57	24.1	30.2	5.8	0.98
Relative median at-risk-of-poverty gap - men total	33.3	851	2.20	2.12	29.2	37.5	6.4	1.02
Relative median at-risk-of-poverty gap - women total	23.4	1184	1.56	1.50	20.4	26.3	6.4	1.02
Relative median at-risk-of-poverty gap - 0-15 years	31.3	371	3.46	3.37	24.7	37.9	10.8	0.95
Relative median at-risk-of-poverty gap - 16-64 years	32.7	1272	1.84	1.80	29.2	36.2	5.5	1.00
Relative median at-risk-of-poverty gap - 65+ years	10.8	392	1.09	1.07	8.7	12.9	9.9	1.10
Relative median at-risk-of-poverty gap - 16+ years	25.9	1664	1.51	1.46	23.1	28.8	5.6	1.00
Inequality of income distribution S80/S20 income quintile share ratio	6.7	9699	0.26	0.24	6.2	7.1	3.6	1.15
Gini coefficient	36.1	9699	0.70	0.67	34.8	37.5	1.9	1.12
Mean equivalised disposable household income	2733	9699	45.40	41.20	2652.0	2813.5	1.5	1.32
Median of the equivalised disposable household income	2204	9699	36.83	33.17	2138.8	2268.9	1.5	1.39

Lithuania

Indicator	Value	Achieved sample size	Standard error	Standard error (after calibrating)	Confidence interval at 95 % Lower	Confidence interval at 95 % Upper	CV (%)	DEFF
At-risk-of-poverty rate after social transfers - total	20.5	12102	0.55	0.54	19.5	21.6	2.6	1.00
At-risk-of-poverty rate after social transfers - men total	19.7	5608	0.59	0.58	18.6	20.9	2.9	0.99
At-risk-of-poverty rate after social transfers - women total	21.3	6494	0.66	0.65	20.0	22.5	3.1	1.00
At-risk-of-poverty rate after social transfers - 0-15 years	27.1	2100	1.31	1.30	24.6	29.7	4.8	0.99
At-risk-of-poverty rate after social transfers - 16-24 years	22.5	1754	1.00	0.99	20.6	24.5	4.4	0.99
At-risk-of-poverty rate after social transfers - 25-49 years	19.0	4018	0.61	0.61	17.8	20.2	3.2	0.99
At-risk-of-poverty rate after social transfers - 50-64 years	17.9	2337	1.10	1.09	15.8	20.1	6.1	0.99
At-risk-of-poverty rate after social transfers - 65+ years	17.0	1893	1.38	1.37	14.3	19.7	8.1	1.00
At-risk-of-poverty rate after social transfers - 16+ years	19.0	10002	0.51	0.51	18.0	20.0	2.7	1.00
At-risk-of-poverty rate after social transfers - 16-64 years	19.5	8109	0.53	0.52	18.4	20.5	2.7	0.99
At-risk-of-poverty rate after social transfers - 0-64 years	21.2	10209	0.59	0.58	20.0	22.3	2.7	0.99
At-risk-of-poverty threshold - single	1235	12102	12.30	12.30	1211	1259	1.0	0.95
At-risk-of-poverty threshold - 2 adults, 2 children	2593	12102	25.83	25.83	2542	2644	1.0	0.95
Relative median at-risk-of-poverty gap - total	28.4	906	0.74	0.74	27.0	29.9	2.6	0.99
Relative median at-risk-of-poverty gap - men total	31.1	385	0.79	0.79	29.5	32.6	2.5	0.98
Relative median at-risk-of-poverty gap - women total	26.3	521	0.84	0.83	24.7	27.9	3.2	0.99
Relative median at-risk-of-poverty gap - 0-15 years	29.6	269	1.42	1.42	26.9	32.4	4.8	0.98
Relative median at-risk-of-poverty gap - 16-64 years	31.7	542	0.73	0.73	30.3	33.2	2.3	0.98
Relative median at-risk-of-poverty gap - 65+ years	12.8	95	0.81	0.81	11.2	14.3	6.3	1.00
Relative median at-risk-of-poverty gap - 16+ years	27.7	637	0.67	0.67	26.4	29.0	2.4	0.99
Inequality of income distribution S80/S20 income quintile share ratio	6.9	12102	0.17	0.17	6.6	7.3	2.4	1.01
Gini coefficient	36.3	12102	0.42	0.42	35.4	37.1	1.2	1.05
Mean equivalised disposable household income	2554	12102	27.50	27.20	2500.9	2607.6	1.1	0.99
Median of the equivalised disposable household income	2058	12102	20.50	20.50	2017.8	2098.2	1.0	0.95

Hungary

Indicator	Value	Achieved sample size	Standard error	Standard error (after calibrating)	Confidence interval at 95 % Lower	Upper	CV (%)	DEFF
At-risk-of-poverty rate after social transfers - total	13.4	17969	0.59	0.54	12.4	14.5	4.0	1.86
At-risk-of-poverty rate after social transfers - men total	13.8	8344	0.67	0.62	12.6	15.0	4.5	1.93
At-risk-of-poverty rate after social transfers - women total	13.1	9625	0.58	0.54	12.0	14.1	4.1	1.62
At-risk-of-poverty rate after social transfers - 0-15 years	19.6	3178	1.25	1.18	17.3	21.9	6.0	1.45
At-risk-of-poverty rate after social transfers - 16-24 years	16.7	2007	1.28	1.19	14.4	19.0	7.1	1.70
At-risk-of-poverty rate after social transfers - 25-49 years	14.1	6076	0.61	0.57	13.0	15.2	4.0	1.54
At-risk-of-poverty rate after social transfers - 50-64 years	10.1	3624	0.64	0.63	8.9	11.4	6.2	1.37
At-risk-of-poverty rate after social transfers - 65+ years	6.5	3084	0.51	0.50	5.5	7.5	7.7	0.99
At-risk-of-poverty rate after social transfers - 16+ years	12.1	14791	0.50	0.47	11.2	13.0	3.9	1.83
At-risk-of-poverty rate after social transfers - 16-64 years	13.4	11707	0.58	0.54	12.3	14.5	4.0	1.89
At-risk-of-poverty rate after social transfers - 0-64 years	14.7	14885	0.67	0.61	13.5	15.9	4.2	1.88
At-risk-of-poverty threshold - single	2066	17969	16.96	12.80	2041	2091	0.6	1.75
At-risk-of-poverty threshold - 2 adults, 2 children	4339	17969	35.62	26.88	4286	4391	0.6	1.75
Relative median at-risk-of-poverty gap - total	18.8	2304	0.99	0.98	16.8	20.7	5.2	1.44
Relative median at-risk-of-poverty gap - men total	19.3	1095	1.22	1.20	17.0	21.7	6.2	1.63
Relative median at-risk-of-poverty gap - women total	17.9	1209	0.93	0.92	16.1	19.7	5.1	1.23
Relative median at-risk-of-poverty gap - 0-15 years	18.8	623	1.47	1.44	15.9	21.6	7.7	1.35
Relative median at-risk-of-poverty gap - 16-64 years	19.9	1487	0.98	0.97	18.0	21.8	4.9	1.30
Relative median at-risk-of-poverty gap - 65+ years	9.3	194	1.11	1.10	7.1	11.4	11.9	1.21
Relative median at-risk-of-poverty gap - 16+ years	18.7	1681	0.93	0.92	16.9	20.5	4.9	1.36
Inequality of income distribution S80/S20 income quintile share ratio	4.0	17969	0.09	0.08	3.9	4.2	2.0	1.17
Gini coefficient	27.5	17969	0.46	0.43	26.7	28.4	1.6	1.02
Mean equivalised disposable household income	3910	17969	36.20	28.75	3853.7	3966.4	0.7	1.25
Median of the equivalised disposable household income	3443	17969	28.27	21.33	3401.6	3485.2	0.6	1.75

Malta

Indicator	Value	Achieved sample size	Standard error	Standard error (after calibrating)	Confidence interval at 95 % Lower	Confidence interval at 95 % Upper	CV (%)	DEFF
At-risk-of-poverty rate after social transfers - total	14.9	10282	0.67	0.67	13.6	16.2	4.5	1.00
At-risk-of-poverty rate after social transfers - men total	14.2	5102	0.71	0.71	12.8	15.6	5.0	1.00
At-risk-of-poverty rate after social transfers - women total	15.5	5180	0.73	0.72	14.1	17.0	4.7	1.00
At-risk-of-poverty rate after social transfers - 0-15 years	21.9	2036	1.36	1.34	19.3	24.6	6.1	1.00
At-risk-of-poverty rate after social transfers - 16-24 years	11.1	1346	1.02	1.02	9.1	13.1	9.1	1.00
At-risk-of-poverty rate after social transfers - 25-49 years	12.7	3302	0.76	0.75	11.2	14.1	5.9	1.00
At-risk-of-poverty rate after social transfers - 50-64 years	13.1	2141	0.92	0.91	11.3	14.8	6.9	1.00
At-risk-of-poverty rate after social transfers - 65+ years	16.3	1457	1.40	1.39	13.6	19.0	8.5	1.00
At-risk-of-poverty rate after social transfers - 16+ years	13.2	8246	0.60	0.60	12.0	14.4	4.6	1.00
At-risk-of-poverty rate after social transfers - 16-64 years	12.5	6789	0.61	0.61	11.3	13.7	4.9	1.00
At-risk-of-poverty rate after social transfers - 0-64 years	14.6	8825	0.71	0.71	13.3	16.0	4.8	1.00
At-risk-of-poverty threshold - single	4747	10282	55.93	54.55	4640	4854	1.1	1.00
At-risk-of-poverty threshold - 2 adults, 2 children	9969	10282	117.46	114.55	9744	10193	1.1	1.00
Relative median at-risk-of-poverty gap - total	17.7	1546	1.04	1.04	15.6	19.7	5.9	1.00
Relative median at-risk-of-poverty gap - men total	19.2	743	1.20	1.20	16.8	21.5	6.3	1.00
Relative median at-risk-of-poverty gap - women total	17.0	803	1.06	1.05	14.9	19.0	6.2	1.00
Relative median at-risk-of-poverty gap - 0-15 years	20.3	455	1.63	1.62	17.1	23.4	8.0	1.00
Relative median at-risk-of-poverty gap - 16-64 years	17.7	856	1.14	1.13	15.5	19.9	6.4	1.00
Relative median at-risk-of-poverty gap - 65+ years	13.5	235	1.55	1.54	10.5	16.5	11.4	1.00
Relative median at-risk-of-poverty gap - 16+ years	17.2	1091	0.99	0.98	15.2	19.1	5.7	1.00
Inequality of income distribution S80/S20 income quintile share ratio	4.1	10282	0.09	0.09	3.9	4.3	2.2	1.00
Gini coefficient	27.9	10282	0.42	0.41	27.1	28.7	1.5	1.00
Mean equivalised disposable household income	8926	10282	89.32	87.14	8755.2	9096.8	1.0	1.00
Median of the equivalised disposable household income	7912	10282	93.22	90.91	7733.5	8089.9	1.1	1.00

The Netherlands

Indicator	Value	Achieved sample size	Standard error	Standard error (after calibrating)	Confidence interval at 95 % Lower	Upper	CV (%)	DEFF
At-risk-of-poverty rate after social transfers - total	10.8	23756	0.54	0.42	10.0	11.6	3.9	2.38
At-risk-of-poverty rate after social transfers - men total	10.7	11713	0.58	0.50	9.7	11.7	4.7	2.51
At-risk-of-poverty rate after social transfers - women total	10.9	12043	0.59	0.45	10.0	11.8	4.1	2.44
At-risk-of-poverty rate after social transfers - 0-15 years	15.7	5904	1.38	1.08	13.6	17.8	6.9	2.72
At-risk-of-poverty rate after social transfers - 16-24 years	15.7	2044	0.94	0.92	13.9	17.5	5.8	2.25
At-risk-of-poverty rate after social transfers - 25-49 years	10.0	8781	0.58	0.41	9.2	10.8	4.1	2.53
At-risk-of-poverty rate after social transfers - 50-64 years	8.0	4419	0.69	0.66	6.7	9.3	8.2	1.97
At-risk-of-poverty rate after social transfers - 65+ years	5.4	2608	0.57	0.44	4.5	6.3	8.1	2.03
At-risk-of-poverty rate after social transfers - 16+ years	9.5	17852	0.41	0.33	8.9	10.2	3.5	2.10
At-risk-of-poverty rate after social transfers - 16-64 years	10.3	15244	0.46	0.36	9.6	11.1	3.5	2.17
At-risk-of-poverty rate after social transfers - 0-64 years	11.6	21148	0.62	0.46	10.7	12.5	3.9	2.48
At-risk-of-poverty threshold - single	10189	23756	101.06	60.52	10071	10308	0.6	2.62
At-risk-of-poverty threshold - 2 adults, 2 children	21397	23756	212.22	127.10	21148	21646	0.6	2.62
Relative median at-risk-of-poverty gap - total	21.1	1853	1.51	1.41	18.3	23.8	6.7	2.24
Relative median at-risk-of-poverty gap - men total	22.4	880	1.79	1.64	19.2	25.6	7.3	2.48
Relative median at-risk-of-poverty gap - women total	20.0	973	1.48	1.46	17.1	22.8	7.3	2.16
Relative median at-risk-of-poverty gap - 0-15 years	20.8	670	2.57	2.60	15.7	25.9	12.5	2.30
Relative median at-risk-of-poverty gap - 16-64 years	22.2	1088	1.55	1.35	19.6	24.9	6.1	2.45
Relative median at-risk-of-poverty gap - 65+ years	12.3	95	1.38	1.26	9.9	14.8	10.2	1.62
Relative median at-risk-of-poverty gap - 16+ years	21.3	1183	1.36	1.17	19.0	23.6	5.5	2.37
Inequality of income distribution S80/S20 income quintile share ratio	4.0	23756	0.13	0.07	3.8	4.1	1.8	2.69
Gini coefficient	26.7	23756	0.51	0.34	26.0	27.4	1.3	2.82
Mean equivalised disposable household income	18797	23756	187.22	46.80	18705.5	18889.0	0.2	3.12
Median of the equivalised disposable household income	16982	23756	168.43	100.87	16784.3	17179.7	0.6	2.62

Poland

Indicator	Value	Achieved sample size	Standard error	Standard error (after calibrating)	Confidence interval at 95 % Lower	Confidence interval at 95 % Upper	CV (%)	DEFF
At-risk-of-poverty rate after social transfers - total	20.6	49044	0.30	0.29	20.0	21.1	1.4	1.00
At-risk-of-poverty rate after social transfers - men total	21.3	23706	0.33	0.33	20.6	21.9	1.6	1.00
At-risk-of-poverty rate after social transfers - women total	19.9	25338	0.32	0.31	19.3	20.5	1.6	1.00
At-risk-of-poverty rate after social transfers - 0-15 years	29.0	9378	0.63	0.62	27.8	30.2	2.2	1.01
At-risk-of-poverty rate after social transfers - 16-24 years	26.2	7584	0.63	0.63	25.0	27.5	2.4	1.02
At-risk-of-poverty rate after social transfers - 25-49 years	21.1	16733	0.33	0.32	20.4	21.7	1.5	0.98
At-risk-of-poverty rate after social transfers - 50-64 years	16.2	8975	0.43	0.43	15.4	17.1	2.7	1.00
At-risk-of-poverty rate after social transfers - 65+ years	7.3	6374	0.35	0.34	6.6	8.0	4.7	1.01
At-risk-of-poverty rate after social transfers - 16+ years	18.7	39666	0.28	0.27	18.2	19.2	1.4	0.99
At-risk-of-poverty rate after social transfers - 16-64 years	20.9	33292	0.31	0.31	20.3	21.5	1.5	1.00
At-risk-of-poverty rate after social transfers - 0-64 years	22.6	42670	0.33	0.33	21.9	23.2	1.5	1.00
At-risk-of-poverty threshold - single	1520	49044	8.99	8.40	1503	1536	0.6	1.07
At-risk-of-poverty threshold - 2 adults, 2 children	3192	49044	18.87	17.64	3157	3226	0.6	1.00
Relative median at-risk-of-poverty gap - total	30.1	10805	0.66	0.66	28.8	31.4	2.2	0.95
Relative median at-risk-of-poverty gap - men total	30.8	5355	0.72	0.72	29.4	32.2	2.3	0.95
Relative median at-risk-of-poverty gap - women total	29.8	5450	0.69	0.68	28.5	31.2	2.3	0.94
Relative median at-risk-of-poverty gap - 0-15 years	32.5	2912	1.02	1.02	30.5	34.5	3.1	0.94
Relative median at-risk-of-poverty gap - 16-64 years	30.2	7390	0.65	0.65	29.0	31.5	2.1	0.95
Relative median at-risk-of-poverty gap - 65+ years	16.6	503	0.99	0.99	14.6	18.5	6.0	0.93
Relative median at-risk-of-poverty gap - 16+ years	29.5	7893	0.64	0.64	28.2	30.7	2.2	0.96
Inequality of income distribution S80/S20 income quintile share ratio	6.6	49044	0.10	0.10	6.4	6.8	1.5	1.10
Gini coefficient	35.6	49044	0.26	0.25	35.1	36.1	0.7	1.14
Mean equivalised disposable household income	3040	49044	18.93	17.82	3005.0	3074.8	0.6	1.18
Median of the equivalised disposable household income	2533	49044	14.98	14.00	2505.6	2560.5	0.6	1.00

Portugal

Indicator	Value	Achieved sample size	Standard error	Standard error (after calibrating)	Confidence interval at 95 % Lower	Confidence interval at 95 % Upper	CV (%)	DEFF
At-risk-of-poverty rate after social transfers - total	19.4	12878	0.71	0.70	18.0	20.8	3.6	1.64
At-risk-of-poverty rate after social transfers - men total	18.7	6159	0.73	0.73	17.3	20.1	3.9	1.53
At-risk-of-poverty rate after social transfers - women total	20.1	6719	0.77	0.75	18.6	21.5	3.7	1.62
At-risk-of-poverty rate after social transfers - 0-15 years	22.8	2131	1.30	1.29	20.3	25.4	5.7	1.38
At-risk-of-poverty rate after social transfers - 16-24 years	18.8	1538	1.29	1.26	16.4	21.3	6.7	1.31
At-risk-of-poverty rate after social transfers - 25-49 years	15.3	4273	0.68	0.67	14.0	16.6	4.4	1.41
At-risk-of-poverty rate after social transfers - 50-64 years	17.2	2459	1.10	1.09	15.0	19.3	6.4	1.29
At-risk-of-poverty rate after social transfers - 65+ years	27.7	2477	1.62	1.58	24.6	30.8	5.7	1.47
At-risk-of-poverty rate after social transfers - 16+ years	18.7	10747	0.68	0.67	17.4	20.0	3.6	1.58
At-risk-of-poverty rate after social transfers - 16-64 years	16.4	8270	0.66	0.65	15.1	17.7	4.0	1.52
At-risk-of-poverty rate after social transfers - 0-64 years	17.7	10401	0.72	0.70	16.3	19.1	4.0	1.56
At-risk-of-poverty threshold - single	4312	12878	68.40	64.29	4186	4438	1.5	2.06
At-risk-of-poverty threshold - 2 adults, 2 children	9055	12878	143.64	135.02	8790	9319	1.5	2.06
Relative median at-risk-of-poverty gap - total	25.9	2804	1.11	1.10	23.7	28.0	4.2	1.06
Relative median at-risk-of-poverty gap - men total	25.5	1302	1.20	1.20	23.2	27.9	4.7	1.01
Relative median at-risk-of-poverty gap - women total	26.2	1502	1.17	1.16	24.0	28.5	4.4	1.13
Relative median at-risk-of-poverty gap – 0-15 years	27.1	542	1.99	1.98	23.2	31.0	7.3	1.15
Relative median at-risk-of-poverty gap - 16-64 years	27.9	1547	1.37	1.37	25.2	30.6	4.9	1.12
Relative median at-risk-of-poverty gap - 65+ years	17.3	715	1.24	1.22	14.9	19.7	7.0	1.09
Relative median at-risk-of-poverty gap - 16+ years	25.1	2262	1.06	1.06	23.0	27.2	4.2	1.06
Inequality of income distribution S80/S20 income quintile share ratio	6.9	12878	0.37	0.37	6.2	7.7	5.3	1.91
Gini coefficient	38.1	12878	1.01	0.99	36.1	40.0	2.6	1.86
Mean equivalised disposable household income	9377	12878	259.92	255.34	8876.4	9877.3	2.7	2.41
Median of the equivalised disposable household income	7186	12878	114.00	107.15	6976.3	7396.3	1.5	2.06

Slovenia

Indicator	Value	Achieved sample size	Standard error	Standard error (after calibrating)	Confidence interval at 95 % Lower	Upper	CV (%)	DEFF
At-risk-of-poverty rate after social transfers - total	12.2	27679	0.33	0.32	11.5	12.8	2.6	1.05
At-risk-of-poverty rate after social transfers - men total	10.6	13697	0.34	0.33	9.9	11.2	3.1	1.05
At-risk-of-poverty rate after social transfers - women total	13.7	13982	0.42	0.39	12.9	14.5	2.8	1.03
At-risk-of-poverty rate after social transfers - 0-15 years	12.1	3817	0.72	0.71	10.7	13.5	5.9	1.06
At-risk-of-poverty rate after social transfers - 16-24 years	10.4	4604	0.56	0.55	9.3	11.5	5.3	1.07
At-risk-of-poverty rate after social transfers - 25-49 years	9.3	10347	0.35	0.34	8.7	10.0	3.6	1.05
At-risk-of-poverty rate after social transfers - 50-64 years	12.6	5367	0.64	0.61	11.4	13.8	4.8	1.03
At-risk-of-poverty rate after social transfers - 65+ years	20.4	3544	0.96	0.87	18.7	22.1	4.3	0.98
At-risk-of-poverty rate after social transfers - 16+ years	12.2	23862	0.32	0.30	11.6	12.8	2.5	1.04
At-risk-of-poverty rate after social transfers - 16-64 years	10.4	20318	0.32	0.31	9.8	11.0	3.0	1.07
At-risk-of-poverty rate after social transfers - 0-64 years	10.7	24135	0.34	0.34	10.1	11.4	3.2	1.07
At-risk-of-poverty threshold - single	5278	27679	27.11	20.15	5238	5317	0.4	1.12
At-risk-of-poverty threshold - 2 adults, 2 children	11083	27679	56.94	42.31	11000	11166	0.4	1.12
Relative median at-risk-of-poverty gap - total	19.1	2538	0.63	0.62	17.9	20.3	3.2	1.00
Relative median at-risk-of-poverty gap - men total	20.4	1141	0.89	0.89	18.7	22.1	4.4	1.00
Relative median at-risk-of-poverty gap - women total	18.5	1397	0.64	0.63	17.3	19.7	3.4	1.01
Relative median at-risk-of-poverty gap - 0-15 years	17.3	384	1.41	1.41	14.5	20.0	8.1	1.00
Relative median at-risk-of-poverty gap - 16-64 years	19.3	1623	0.74	0.73	17.8	20.7	3.8	1.01
Relative median at-risk-of-poverty gap - 65+ years	19.6	531	0.93	0.92	17.8	21.4	4.7	0.99
Relative median at-risk-of-poverty gap - 16+ years	19.4	2154	0.60	0.59	18.2	20.5	3.0	1.00
Inequality of income distribution S80/S20 income quintile share ratio	3.4	27679	0.04	0.04	3.3	3.5	1.2	1.02
Gini coefficient	23.8	27679	0.24	0.20	23.4	24.2	0.8	1.01
Mean equivalised disposable household income	9535	27679	52.88	15.71	9504.2	9565.8	0.2	1.17
Median of the equivalised disposable household income	8796	27679	45.19	33.58	8730.3	8861.9	0.4	1.12

Slovakia

Indicator	Value	Achieved sample size	Standard error	Standard error (after calibrating)	Confidence interval at 95 % Lower	Confidence interval at 95 % Upper	CV (%)	DEFF
At-risk-of-poverty rate after social transfers – total	13.3	15418	0.53	0.52	12.3	14.3	3.9	1.00
At-risk-of-poverty rate after social transfers - men total	13.2	7386	0.59	0.57	12.0	14.3	4.3	1.00
At-risk-of-poverty rate after social transfers - women total	13.5	8032	0.55	0.54	12.4	14.5	4.0	1.00
At-risk-of-poverty rate after social transfers - 0-15 years	18.5	2500	1.09	1.05	16.4	20.5	5.7	1.00
At-risk-of-poverty rate after social transfers - 16-24 years	16.8	2719	1.06	1.05	14.8	18.9	6.2	1.00
At-risk-of-poverty rate after social transfers - 25-49 years	14.1	5535	0.64	0.63	12.8	15.3	4.5	1.00
At-risk-of-poverty rate after social transfers - 50-64 years	8.3	2966	0.67	0.66	7.0	9.6	8.0	1.01
At-risk-of-poverty rate after social transfers - 65+ years	7.1	1698	0.69	0.67	5.8	8.4	9.4	0.99
At-risk-of-poverty rate after social transfers - 16+ years	12.3	12918	0.50	0.49	11.3	13.3	4.0	1.00
At-risk-of-poverty rate after social transfers - 16-64 years	13.2	11220	0.56	0.55	12.1	14.3	4.2	1.00
At-risk-of-poverty rate after social transfers - 0-64 years	14.2	13720	0.59	0.57	13.1	15.3	4.0	1.00
At-risk-of-poverty threshold – single	1698	15418	14.17	13.07	1672	1724	0.8	0.98
At-risk-of-poverty threshold - 2 adults, 2 children	3566	15418	29.76	27.45	3512	3620	0.8	0.98
Relative median at-risk-of-poverty gap – total	23.5	2042	1.46	1.44	20.6	26.3	6.1	1.00
Relative median at-risk-of-poverty gap - men total	25.5	964	1.84	1.81	21.9	29.0	7.1	1.01
Relative median at-risk-of-poverty gap - women total	22.8	1078	1.37	1.35	20.1	25.4	5.9	1.00
Relative median at-risk-of-poverty gap - 0-15 years	24.0	464	2.28	2.24	19.6	28.4	9.3	1.00
Relative median at-risk-of-poverty gap - 16-64 years	24.6	1468	1.63	1.60	21.5	27.8	6.5	1.01
Relative median at-risk-of-poverty gap - 65+ years	16.2	110	1.55	1.53	13.2	19.2	9.4	0.98
Relative median at-risk-of-poverty gap - 16+ years	23.5	1578	1.44	1.42	20.7	26.3	6.1	1.00
Inequality of income distribution S80/S20 income quintile share ratio	3.9	15418	0.11	0.10	3.7	4.1	2.6	0.98
Gini coefficient	26.2	15418	0.51	0.50	25.2	27.2	1.9	0.98
Mean equivalised disposable household income	3113	15418	29.20	27.28	3059.9	3166.8	0.9	0.96
Median of the equivalised disposable household income	2830	15418	23.62	21.78	2787.5	2872.9	0.8	0.98

Iceland

Indicator	Value	Achieved sample size	Standard error	Standard error (after calibrating)	Confidence interval at 95 % Lower	Upper	CV (%)	DEFF
At-risk-of-poverty rate after social transfers – total	9.6	8832	0.55	0.55	8.5	10.7	5.7	1.00
At-risk-of-poverty rate after social transfers - men total	9.8	4443	0.61	0.60	8.7	11.0	6.1	1.00
At-risk-of-poverty rate after social transfers - women total	9.4	4389	0.67	0.66	8.1	10.7	7.0	1.00
At-risk-of-poverty rate after social transfers - 0-15 years	10.3	2170	1.00	1.00	8.3	12.3	9.7	1.00
At-risk-of-poverty rate after social transfers - 16-24 years	15.4	1467	1.39	1.34	12.8	18.0	8.7	1.00
At-risk-of-poverty rate after social transfers - 25-49 years	8.9	3031	0.66	0.66	7.6	10.2	7.4	1.00
At-risk-of-poverty rate after social transfers - 50-64 years	5.8	1340	0.80	0.80	4.2	7.4	13.7	1.00
At-risk-of-poverty rate after social transfers - 65+ years	8.5	824	1.42	1.41	5.8	11.3	16.5	1.00
At-risk-of-poverty rate after social transfers - 16+ years	9.4	6662	0.51	0.50	8.4	10.3	5.3	1.00
At-risk-of-poverty rate after social transfers - 16-64 years	9.5	5838	0.53	0.52	8.5	10.5	5.5	1.00
At-risk-of-poverty rate after social transfers - 0-64 years	9.7	8008	0.59	0.58	8.6	10.9	6.0	1.00
At-risk-of-poverty threshold - single	14051	8832	115.74	109.36	13837	14265	0.8	1.00
At-risk-of-poverty threshold - 2 adults, 2 children	29507	8832	243.03	229.68	29057	29957	0.8	1.00
Relative median at-risk-of-poverty gap - total	20.8	700	1.66	1.65	17.5	24.0	7.9	1.00
Relative median at-risk-of-poverty gap - men total	23.1	362	1.95	1.94	19.3	26.9	8.4	1.00
Relative median at-risk-of-poverty gap - women total	17.9	338	1.85	1.84	14.3	21.5	10.3	1.00
Relative median at-risk-of-poverty gap - 0-15 years	25.3	206	3.01	3.00	19.4	31.1	11.9	1.00
Relative median at-risk-of-poverty gap - 16-64 years	20.7	443	1.63	1.61	17.5	23.8	7.8	1.00
Relative median at-risk-of-poverty gap - 65+ years	9.7	51	1.76	1.74	6.3	13.1	17.9	1.00
Relative median at-risk-of-poverty gap - 16+ years	18.8	494	1.46	1.45	16.0	21.6	7.7	1.00
Inequality of income distribution S80/S20 income quintile share ratio	3.5	8832	0.11	0.11	3.3	3.7	3.1	1.00
Gini coefficient	25.1	8832	0.73	0.72	23.7	26.5	2.9	1.00
Mean equivalised disposable household income	26048	8832	312.19	304.38	25451.1	26644.3	1.2	1.00
Median of the equivalised disposable household income	23418	8832	192.93	182.27	23061.1	23775.6	0.8	1.00

Annex 4: Contact and response rates

Address contact rate (R_a):

$$R_a = \frac{\text{Number of addresses successfully contacted}}{\text{Number of valid addresses selected}} = \frac{\sum\{DB120 = 11\}}{\sum\{DB120 = \text{all}\} - \sum\{DB120 = 23\}}$$

Household response rate (R_h):

$$R_h = \frac{\text{Number of household interviews completed and accepted}}{\text{Number of eligible households at contacted addresses}} = \frac{\sum\{DB135 = 1\}}{\sum\{DB130 = \text{all}\}}$$

Individual response rate (R_p):

$$R_p = \frac{\text{Number of personal interviews completed}}{\text{Number of eligible individuals in the households whose interviews were completed and accepted}}$$

$$= \frac{\sum\{RB250 = 11 + 12 + 13\}}{\sum\{RB245 = 1 + 2 + 3\}}$$

Table 14: Contact and response rates for the whole sample and new entries (2005)

Whole sample

	Ra	Rh	Rp
Belgium	99	60	98
Czech Republic	100	65	100
Denmark	90	70	100
Germany (1)	97	67	99
Estonia	93	87	98
Ireland	100	72	100
Greece	99	83	99
Spain	97	74	97
France	100	84	99
Italy	99	86	100
Cyprus	99	91	100

Whole sample

	Ra	Rh	Rp
Latvia	96	74	98
Lithuania	99	72	99
Luxembourg	94	71	100
Hungary	100	62	100
Malta	92	74	100
The Netherlands	87	30	100
Austria	98	63	100
Poland	99	71	95
Portugal	98	90	100
Slovenia	100	64	100
Slovakia	93	92	100
Finland	100	85	100
Sweden	93	80	100
United Kingdom	100	70	100
Iceland	100	75	100
Norway	100	72	99
25 EU countries	97	71	99
27 countries	97	71	99

Source: Micro-database (May 2008).
(1) The 2005 German SILC survey is divided in a quota sampling (3/4 of the sample) and a random sampling part, which is the one taken into account to assess the response rate.

New entries

	Ra	Rh	Rp
Belgium	99	47	99
Czech Republic	100	65	100
Denmark	90	70	100
Germany	97	67	99
Estonia	85	78	98

New entries

	Ra	Rh	Rp
Ireland	100	63	100
Greece	99	73	100
Spain	97	59	97
France	99	70	99
Italy	99	83	100
Cyprus	99	91	100
Latvia	96	74	98
Lithuania	99	72	99
Luxembourg	No information	No information	No information
Hungary	100	62	100
Malta	92	74	100
The Netherlands	87	30	100
Austria	98	54	100
Poland	99	71	95
Portugal	98	91	100
Slovenia	100	64	100
Slovakia	93	92	100
Finland	100	79	100
Sweden	93	80	100
United Kingdom	No information	No information	No information
Iceland	100	75	100
Norway	99	72	99
25 EU countries	97	71	99
27 countries	97	71	99

Source: Micro-database (May 2008).

Annex 5: Mean interview durations

Table 15: Mean interview duration (minutes; 2005)

	Mean Interview duration
Belgium	51
Czech Republic	90
Denmark	9
Germany(1)	103
Estonia	58
Ireland	38
Greece	62
Spain	61
France	54
Italy	68
Cyprus	41
Latvia	58
Lithuania	55
Luxembourg	53
Hungary	51
Malta	40
The Netherlands	12
Austria	36
Poland	94
Portugal	66
Slovenia	34
Slovakia	80
Finland	29
Sweden	20
United Kingdom	50
Iceland	20
Norway	20

Source: National Quality Reports 2005 (latest available version in August 2008).
(1) This figure is a rough estimation by the respondents as the interview is carried out by mail.

Annex 6: Basic concepts and definitions

Table 16: Basic concepts and definitions: are the standard EU-SILC definitions used? (2005)

	Reference population	Private household definition	Household membership	Income reference period	Reference period for taxes on income and social insurance contributions	Reference period for taxes on wealth	Lag (months) between income reference period and current variables	Duration (months) of the data collection
Austria	F	L	L	2004	2004	NA	5-12	7
Belgium	F	F	F	2004	2004	NA	9-11	3
Cyprus	F	F	F	2004	2004	2004	5-8	4
Czech Republic	F	F	F	2004	2004	2004	-	-
Denmark	F	F	F	2004	2004	2004	4-6	3
Estonia	F	F	F	2004	2004	2004	3-9	4
Finland	F	F	F	2004	2004	2004	0-5	5
France	F	F	F	2004	2003	2004	5-6	1.5
Germany	F	L	L	2004	2004	2004	4-7	3
Greece	F	F	F	2004	2004	2004	3-6	3
Hungary	F	F	F	2004	2004	2004	4-5	1.5
Iceland	F	F	F	2004	2004	2004	0-3	3
Ireland	F	F	F	12 months prior interview date	12 months prior interview date	NA	0	12
Italy	F	L	L	2004	NA	2004	10	2
Latvia	F	F	F	2004	NA	2004	4-9	5
Lithuania	F	F	F	2004	2004	2004	4-7	2.5

	Reference population	Private household definition	Household membership	Income reference period	Reference period for taxes on income and social insurance contributions	Reference period for taxes on wealth	Lag (months) between income reference period and current variables	Duration (months) of the data collection
Luxembourg	F	F	F	2004	2004	2004	2-11	9
Malta	F	F	F	2004	2004	NA	6-10	4
The Netherlands	F	F	F	2004	2004	NA	5-10	5
Norway	F	F	F	2004	2004	2004	1-6	5
Poland	F	F	F	2004	2004	2004	4-5	1.75
Portugal	F	F	L	2004	NA	2004	4-7	3
Slovakia	F	F	F	2004	2004	2004	4-5	1
Slovenia	F	F	L	2004	2004	2004	2-6	4
Spain	F	F	L	2004	2003	2004	3-6	3
Sweden	F	F	F	2004	2004	2004	0-12	12
United Kingdom	F	L	L	Centred around interview date	Centred around interview date	Financial year Apr 05-March 06	0	9

Source: National Quality Reports 2005 (latest available version in August 2008).
F (fully comparable), L (largely comparable), P (partly comparable), N (not comparable), NA (Not applicable, the country does not have to send this data)

Table 17: Household income components: Basic concepts and definitions: are the standard EU-SILC definitions used? (2005)

	Total household gross income	Total disposable household income	Total disposable household income before social transfers other than old-age and survivors' benefits	Total disposable household income before all social transfers	Imputed rent [1]	Income from rental of property or land	Family/Children related allowances	Social exclusion payments not elsewhere classified	Housing allowances	Regular inter-household cash transfers received	Interest, dividends, profit from capital investments in incorporated businesses	Interest paid on mortgage [1]	Income received by people aged under 16	Regular taxes on wealth	Regular inter-household transfers paid
AT	L	L	L	L	Not collected – NA	F	L	F	F	F	F	Not collected – NA	F	NA	F
BE	F	F	F	F	Not collected – NA	F	L	L	L	F	F	F	F	NA	F
CY	F	F	F	F	Not collected – NA	F	F	F	F	F	F	Not collected – NA	F	F	F
CZ	F	F	F	F	Not collected – NA	F	F	F	F	F	F	F	F	F	F
DK	F	F	F	F	P	F	F	F	F	F	L	F	F	F	F
EE	L	L	L	L	Not collected – NA	F	F	F	F	F	L	Not collected – NA	L	F	F
FI	F	F	F	F	L [2]	F	F	F	F	F	F	F	F	F	F
FR	Not collected	F	F	F	F	F	F	F	F	L	F	F	F	F	L

	Total household gross income	Total disposable household income	Total disposable household income before social transfers other than old-age and survivors' benefits	Total disposable household income before all social transfers	Imputed rent [1]	Income from rental of property or land	Family/Children related allowances	Social exclusion payments not elsewhere classified	Housing allowances	Regular inter-household cash transfers received	Interest, dividends, profit from capital investments in incorporated businesses	Interest paid on mortgage [1]	Income received by people aged under 16	Regular taxes on wealth	Regular inter-household transfers paid
DE	F	F	F	F	Not collected – NA	L	F	F	F	F	L	F	F	F	F
EL	Not collected	F	F	F	F	F	F	F	F	F	F	F	F	F	F
HU	F	F	F	F	Not collected – NA	F	F	F	F	F	F	F	F	F	F
IS	L	F	F	F	Not collected – NA	L	F	F	F	F	F	F	F	F	F
IE	F	F	F	F	Not collected – NA	F	F	F	F	F	F	F	F	NA	F
IT	Not collected	F	F	F	Not collected – NA	F	F	F	F	F	F	Not collected – NA	F	F	F
LV	Not collected	F	F	F	Not collected – NA	F	F	F	F	F	F	Not collected – NA	F	F	F
LT	F	F	F	F	Not collected – NA	F	F	F	F	F	F	F	F	F	F

	Total household gross income	Total disposable household income	Total disposable household income before social transfers other than old-age and survivors' benefits	Total disposable household income before all social transfers	Imputed rent [1]	Income from rental of property or land	Family/Children related allowances	Social exclusion payments not elsewhere classified	Housing allowances	Regular inter-household cash transfers received	Interest, dividends, profit from capital investments in incorporated businesses	Interest paid on mortgage [1]	Income received by people aged under 16	Regular taxes on wealth	Regular inter-household transfers paid
LU	F	F	F	F	Not collected – NA	F	F	F	F	F	F	Not collected – NA	F	F	F
MT	F	F	F	F	Not collected – NA	F	F	F	F	F	F	F	F	Not collected	F
NL	L	L	L	L	F	F	L	F	F	L	F	F	F	Not collected	L
NO	F	F	F	F	Not collected – NA	F	L	F	L	F	F	F	F	F	F
PL	F	F	F	F	Not collected – NA	F	F	F	F	F	F	Not collected – NA	F	F	F
PT	Not collected	L	L	L	Not collected – NA	F	F	F	F	L	F	F	N	F	L
SK	F	F	F	F	Not collected – NA	F	F	L	L	F	F	F	F	F	F
SI	F	F	F	F	Not collected – NA	F	F	F	F	F	F	F	F	F	F

	Total household gross income	Total disposable household income	Total disposable household income before social transfers other than old-age and survivors' benefits	Total disposable household income before all social transfers	Imputed rent (1)	Income from rental of property or land	Family/Children related allowances	Social exclusion payments not elsewhere classified	Housing allowances	Regular inter-household cash transfers received	Interest, dividends, profit from capital investments in incorporated businesses	Interest paid on mortgage (1)	Income received by people aged under 16	Regular taxes on wealth	Regular inter-household transfers paid
ES	Not collected	F	F	F	Not collected – NA	F	F	F	F	F	F	Not collected	F	F	F
SE	F	F	F	F	Not collected – NA	F	F	F	F	N	F	F	F	F	N
UK	F	L	F	F	Not collected – NA	F	F	F	F	F	F	F	F	F	F

Source: National Quality Reports 2005 (latest available version in August 2008).

F (fully comparable), L (largely comparable), P (partly comparable), N (not comparable), Not collected – NA (country does not send this data but it is not compulsory)

(1) Mandatory from 2007 onwards.

(2) Finland's figure covers owner-occupied dwellings only. Dwellings rented at a lower price than a market price from a public, municipal, voluntary or non-profit agency have not been included in the calculations.

Table 18: Individual income components: are the standard EU-SILC definitions used? (2005)

	Cash or near-cash employee income	Income from private use of company car	Other non-cash employee income	Employers' social insurance contributions	Cash profits or losses from self-employment	Value of goods produced for own consumption	Unemployment benefits	Old-age benefits	Survivors' benefits	Sickness benefits	Disability benefits	Education-related allowances	Gross monthly earnings for employees [(2)]
AT	L	L	Not collected	Not collected	L	Not recorded	L	L	F	F	F	F	F
BE	F	F	Not collected	Not collected	F	Not collected	L	L	L	L	L	L	L
CY	F	F	F	F	F	Not collected	F	F	F	F	F	F	Not collected
CZ	F	F	F	Not collected	F	P	F	F	F	F	F	F	F
DK	F	F	F	Not collected	F	Not collected	F	F	F	F	F	F	Not collected
EE	L	F	F	F	L	Not collected	L	F	L	F	F	F	Not collected
FI	F	F	F	Not collected	F	Not collected	F	F	F	F	F	F	Not collected
FR	L	L	Not collected	F	F	F	F	F	F	F	F	F	Not collected
DE	F	F	F	Not collected	L	L	L	F	F	F	F	F	Not collected
EL	F	F	Not collected	Not collected	F	Not collected	F	F	F	F	F	F	F
HU	F	F	F	Not collected	F	F	F	F	F	F	F	F	Not collected
IS	P	F	F	Not collected	F	Not collected	P	P	Y	P	F	F	Not collected

	Cash or near-cash employee income	Income from private use of company car	Other non-cash employee income	Employers' social insurance contributions	Cash profits or losses from self-employment	Value of goods produced for own consumption	Unemployment benefits	Old-age benefits	Survivors' benefits	Sickness benefits	Disability benefits	Education-related allowances	Gross monthly earnings for employees [2]
IE	F	F	F	F	F	F	F	L	F	F	F	F	F
IT	F	F	Not collected	Not collected	F	Not collected	F	F	F	N	F	F	F
LV	F	L	F	Not collected	F	Not collected	F	F	F	F	F	F	Not collected
LT	L	F	F	Not collected	F	F	F	F	F	Not collected[1]	F	F	Not collected
LU	F	F	F	Not collected	F	Not collected	F	F	F	F	F	F	Not collected
MT	F	F	F	Not collected	F	Not collected	F	F	F	F	F	F	Not collected
NL	L	F	F	Not collected	F	Not collected	L	F	F	F	F	F	Not collected
NO	L	F	F	Not collected	F	Not collected	F	L	L	L	L	F	Not collected
PL	F	F	Not collected	Not collected	F	Not collected	F	F	F	L	F	F	F
PT	F	F	Not collected	Not collected	F	Not collected	F	F	F	F	F	F	F
SK	F	L	Not collected	Not collected	L	L	F	F	F	F	F	F	Not collected
SI	F	L	Not collected	Not collected	L	L	F	F	F	F	F	F	Not collected
ES	F	F	F	Not collected	F	Not collected	F	F	F	F	F	F	F

	Cash or near-cash employee income	Income from private use of company car	Other non-cash employee income	Employers' social insurance contributions	Cash profits or losses from self-employment	Value of goods produced for own consumption	Unemployment benefits	Old-age benefits	Survivors' benefits	Sickness benefits	Disability benefits	Education-related allowances	Gross monthly earnings for employees [2]
SE	F	F	F	Not collected	F	Not collected	F	F	F	F	F	F	Not collected
UK	F	F	F	Not collected	F	F	F	F	F	F	F	F	F

Source: National Quality Reports 2005 (latest available version in August 2008).

F (fully comparable), L (largely comparable), P (partly comparable), N (not comparable)

(1) Sickness benefits could not be separated from cash or near cash employee income and are recorded under the variable PY010.

(2) Variable mandatory only for countries that send the gender pay gap.

Annex 7: Coherence

Table 19: Comparison EU-SILC versus 'other sources' (2005)

	Comparison with EU-SILC 2004	Comparison with HBS	Comparison with LFS	Comparison with National Accounts	Comparison with administrative sources	Comparison with other sources
Belgium	N	N	N	N	N	N
Czech Republic	NA	N	N	N	N	N
Denmark	N	N	N	N	N	N
Germany	NA	N	N	N	N	Y (Socio-economic panel)
Estonia	N	Y	Y	Y	Y	Y (Wage Statistics)
Ireland	N	N	N	N	Y	N
Greece	Y	Y	Y	N	Y	N
Spain	N	N	N	Y	Y	N
France	N	N	N	N	Y	Y (Tax Statistics)
Italy	N	N	Y	Y	Y	N
Cyprus	NA	Y	N	N	N	N
Latvia	NA	Y	Y	N	N	Y (Wage Statistics)
Lithuania	NA	Y	N	N	Y	Y (Wage Statistics)
Luxembourg	N	N	N	N	N	N
Hungary	N	Y	N	N	N	Y (Income Survey – IS)
Malta	NA	N	N	N	N	N

	Comparison with EU-SILC 2004	Comparison with HBS	Comparison with LFS	Comparison with National Accounts	Comparison with administrative sources	Comparison with other sources
The Netherlands	NA	N	N	N	N	Y (Income Panel Survey and Continuous Survey on Living Conditions)
Austria	Y	N	N	Y	N	Y (Wage Statistics)
Poland	NA	Y	N	N	N	N
Portugal	N	Y	N	N	N	N
Slovenia	NA	Y	N	N	N	N
Slovakia	NA	N	Y	N	Y	N
Finland	N	N	N	Y	Y	Y (Income Distribution Survey)
Sweden	N	N	N	N	N	N
United Kingdom	NA	N	N	N	N	N
Iceland	N	N	N	N	N	N
Norway	N	N	N	N	Y	N

Source: National Quality Reports 2005 (latest available version in August 2008).
Y (Yes), N (no), NA (Not applicable)

Annex 8: Imputation procedures explained in the 2005 Quality Reports

Belgium	The use of IVE method for imputation based on multivariate estimation techniques in presence of missing values (Durbin) has the abandoned because the significant reduction of the number of case where deductive imputation cannot be carried out. For this case, standard regression imputation technique is used. Standard bounded regression imputation technique is used for gross imputation given for a sufficient number of cases, gross and net information are collected jointly. For a limited number of cases where regression technique is not possible, median imputation is carried out Individual non response: The method chosen for Belgium was imputation of an income for each member of the household who did not answer the questionnaire. Imputation is based on the variable RB210 (basic activity status) of the individual given in the R-file. When the answer is missing or 4 (other inactive person), it is chosen not to impute any income. The method for imputation differs with the categories: imputation based on a regression for the wages (no difference between employee and employer, independent variables are age and gender), imputation of a sub-category median for the unemployment and retirement incomes. Net incomes were computed with a gross to net model, based on the imputed gross incomes. HY025 is calculated as total net disposable income including these individual imputed incomes divided by HY020.
Czech Republic	Income component non response concern only 18 cases. For these persons, the income was imputed by the simple hot-deck method (using randomly chosen person with similar characteristics from another household).
Denmark	No imputation required (register information).
Germany	Gross net conversion is applied for cash employee and self-employed income or pensions with existing data about income related amounts. There are three types of converting derived income related amounts back to (gross) income. At first net to gross conversion in case that the net amount was available. Social contributions to gross conversion for small incomes since small incomes are tax free. And at third tax to gross conversion as the second best solution for high incomes since social contributions are limited by a maximum amount. If both, social contributions and tax were available; the maximum amount of both conversions was taken. Besides conversion methods deductive imputation was applied by using regulations for social transfers. This was possible for most types of social transfers like family or housing allowances and often joined by data editing using the same rules. Statistical imputation is used within groups of similar households reflecting by statistical coherences between auxiliary variables. Complexity of modelling for this method of imputation is depending on the importance of the imputed values. Mean ratio is applied to subcomponents proportional to other significant income components, e. g. for additional employee income like thirteenth month. For major income components where extensive modelling was justified and possible (e.g. for cash employee income without any income data) deterministic regressions were applied using a lot of different models, each based on a different set of similarity variables and, as its whole, guaranteeing preservation of variation based on the differences between the models. For every respondent to be imputed the most homogenous model was chosen by using that one with the highest coefficient of determination. In case of difficulties in finding well fitting

	models, stochastic regressions with error components were applied (e.g. for inter-household transfers). If necessary, e. g. to avoid unreasonable values due to outliers, also some bounds was added to the regression models in order to introduce minimum or maximum values. For household and person specific persistency of items model are based on some household and person specific information from data collected previously and was very similar to previous method imputation methods described above. For 2005 wave this was only applicable for the "household inflation factor" using self-assessed total disposable household income from a previous questionnaire.
Estonia	Use of last year information in imputation model for sufficiently persistent variables. Random regression method and software IVEware were used for imputation for remaining cases. As most of income variables have a skewed distribution, imputation was conducted on the log-scale. In general, empirical bounds of values present in the dataset were used in IVEware to bound imputed values. If an income component was collected only net (PY020, PY035, PY080, PY090, PY100, PY110, PY120, HY050, HY140, HY145), then missing net values were imputed and then converted to gross using net/gross conversion algorithm, where necessary. Respectively, if an income component was collected only gross (HY060, HY070, HY080, HY090, PY130, PY140), then a gross value was imputed and then converted to net. For income components, which were collected both net and gross (PY010, PY050, HY040, HY110, HY120), the procedure was as follows. If only gross value was obtained, it was first converted to net using gross/net conversion algorithm. If both net and gross value were obtained, the net value was used, since it is believed that people know this value better. Missing net values were imputed using IVEware. Gross components of EU-SILC variables were obtained with net/gross conversion algorithm. In this way, when only gross value was obtained, a value recorded in gross component was equal to the collected gross value, since net/gross and gross/net algorithm are in accordance with each other. Also, it allows basing both net and gross recorded values on the same collected value. Net/gross and gross/net conversion algorithms were based on local tax system.
Ireland	In the case of missing values for PY010 and non-farm PY050, imputation was based on the occupation and industry of the respondent, the number of weeks worked in the income reference period, the number of years worked in the job and the number of hours worked per week. For example if the PY010G and PY010N values were missing for a teacher. We took the point (from an Irish income look-up file) on the pay scale for a teacher that corresponded to the number of years the respondent worked as a teacher and imputed this amount in respect of the missing PY010G. If the respondent had an out of work period in the income reference period and the respondent did not receive employment income during the absence from his/her job (i.e. no sick pay) then the PY010G value was adjusted. Gross net conversion is based on a calculator developed by the Irish Department of Finance to estimate tax and social insurance contributions of individuals. We used the calculator to estimate PY010N where PY010G values were collected but the tax and social insurance values were missing and also in cases where both PY010G and PY010N were missing (i.e. Firstly we imputed PY010G). This calculator takes into effect tax credits based on the circumstances of the individual. For example, single working parents, married individuals where the spouse doesn't work and widows and widowers receive additional tax credits and therefore pay less tax than an income-equivalent single person. We took these circumstances into account when imputing the tax and social insurance liability of SILC respondents. In the case of farmers we categorised farms by farm size, farm system and soil type we then used income coefficients (supplied by the Irish farm authority) to estimate PY050G.

	Payments received from the Department of Social and Family Affairs e.g. old age payments or unemployment supports were mostly taken from registers. In the cases where they were not the respondents gave us the weekly payment received, details of the scheme under which the payment was received and the number of weeks in the income reference period in which a payment was received.
Greece	No imputation was made in the data as systematic recall of household is implemented.
Spain	If missing item cannot be imputed directly from related and collected information (e.g. from last year), the method used is the IVE-ware approach consists of a multivariate model involving a multiple regression sequence. For each variable the best regression method is chosen according to the nature of the variable being imputed. The continuous variable, that is the case in income variables, is imputed with a normal linear regression model. Interval restriction is used on the basis of information collected in the questionnaire or calculated using information of the distribution of the collected values. The construction of within-household non-response inflation factor (HY025) is based in the imputation of a personal income to the persons without individual questionnaire. The imputed personal income is the mean of personal incomes of the group to which the person belongs. Groups are formed with available information (using R-file) for all persons (sex, age, activity, etc.). When the calculated within-household non-response inflation factor is very high, i.e., there is an important lack of information due to individual non-response, the variable HY025 is set to missing.
France	Standard regression technique are used to impute main income components When available, information from last year are used in the regression equation Separate model are used for different strata based on sec, level of qualification, sector of activity, public/private sector For some income components like non salaried income, early retirement is based homogeneous class mean imputation. Self employment income is imputed using hot deck method. Children and housing allowance, income supports are build on legal regulations.
Italy	The imputation procedure for each quantitative variable is implemented by using the IMPUTE module of the software Iveware, as recommended by EUROSTAT. The imputation procedure for the qualitative variables is based on a 'hot deck' stochastic technique that imputes each missing or inconsistent answer by replacing it with a correct value, taken from a 'nearest donor' (i.e. from a record randomly selected within a group of statistical units similar to the one that presents missing or erroneous answers). In a preliminary step, a set of explicit consistency rules is used to check for logical inconsistencies between the reported answers. The set is then expanded by using the Fellegy-Holt algorithm, in order to account for all the implicit rules (i.e. those logically implied by the explicit ones).
Cyprus	No specific imputation procedure was applied, since there were no non-response items. Only in the very few cases where gross income or taxes on income at source or social insurance contributions were impossible to collect, the interviewers were instructed to collect at least net value for the specific income component. It was then converted to gross by applying the existing tax system and social insurance contributions rules.
Latvia	Missing values of income components were filled using imputation methods. Multiple imputation method in combination with Hot Deck method was chosen for imputation of missing values in EU-SILC survey. The main principle of the Hot Deck method is to use the current data (donors) to provide imputed values for records with missing values. Before imputation data of households was divided in similar groups by type of dwelling, year the dwelling was built and number of rooms in dwelling. Data of individuals were divided in similar groups by sex, person's family status and person's social status. After this distribution we obtained all groups of households and persons with similar income level.

Lithuania	Item non-response is mostly related employee cash or near cash income (PY010), cash benefits or losses from self-employment (PY050) and tax on Income and Social Contributions (HY140). Also few cases are related disability benefits (PY130), family/child related allowances (HY050) and interest, dividends, etc (HY090). *Deterministic statistical methods* were used for PY010G, PY050G (mean/median imputation); PY0130G, HY090G (distance matching). *Deductive methods* were used for HY050G, HY140G (deductive imputation).
Luxembourg	Imputation target subcomponent income components. IVE method is for most income components (Earnings, other work income and household income), Deductive methods based on taxation rules and legal regulations are used for social contribution, income tax, housing allowance and income in kind. Predictive regression is used for regular tax on wealth
Hungary	Deterministic method was covering the cases when the missing value can be determined by the available background information at the given record. Practically it was used for social incomes and benefits. Most of the benefit income items had got fixed amount according to the corresponding governmental measures and regulations. When the respondents were not able to give us the exact value of childcare benefit (*Családi pótlék)*, we imputed the value of childcare benefit according to the information about the number, age and activity status of the children at the household. Similar imputation was done, when the respondent did not report the value of his unemployment benefit. In this case we imputed the value the official unemployment benefit minimum to this variable. Stochastic method was covering the cases of item non-response for work related income items. The estimations were based on linear or logarithmic regression models built up for the income items. We tested several models and chose the ones with the highest R^2. If we could not assign a regression model to describe the missing information, the mean value of the group was used.
Malta	Item-non response in essential variables was tackled through estimations by means of auxiliary variables taking benefit of income bracket collected in the questionnaire for tax adjustments, income from self-employment, income from interests and dividends and profit from property rental and the use of register information where available. Missing values on children's allowance were estimated using legal regulation and a calculator made available by the Ministry for the Family and Social Solidarity. Missing income for employees who only gave information on the amount of tax paid was estimated using the tax band register. Insurance registers were used to estimate the non-cash employee income component related to the provision of a company car, van or other vehicle that was available for private use. The value can be estimated if the vehicle's make, model and year of registration are known. In fact these variables were collected through the SILC questionnaire.
The Netherlands	The EU-SILC database includes full information on the income variables. As a result, further imputations have not been implemented.
Austria	The imputation procedures in EU-SILC 2004 and EU-SILC 2005 are very similar except for the application of longitudinal imputation procedures in EU-SILC 2005. Imputation refers to all procedures to estimate and insert variable values that are missing due to item non response. Statistics Austria replaces missing personal interviews of persons which could not be interviewed because of temporary absence, because of refusal of cooperation or because of other reasons. The general idea was to apply a distance function to determine an appropriate donor case

	to complete the information for the missing interview. The distance function uses a given set of variables to compute the similarity of interviews and ranks the interviews accordingly. Then the nearest neighbour was determined as a donor, given that a set of minimum requirements is fulfilled: When the person was interviewed in the preceding survey, the information of the last years' interview was used to calculate the distance function. The interviews of the previous year were ranked and the nearest neighbour was identified as the donor for the missing interview. The information of the donor in 2005 was then used to impute the required information. The variables that were used to compute the distance function are listed below. However, for EU-SILC 2004 only 60 and for EU-SILC 2005 only 55 interviews were imputed. As far as item non-response is concerned, Statistics Austria in general only imputed net income variables, missing gross variables were calculated by the net-gross conversion. The question of missing income values received special attention. Basically, the respondents had more than one possibility to provide information about their income: they could provide either the gross or the net income amount, or they could provide information about their income by declaring an income category. The latter possibility was foreseen to reduce the number of missing income values. The interviewer presented income category tables to support the respondent to remember the income amount, and in case of unwillingness to respond, to reduce the burden to give an answer. If an income variable was missing but either the gross or the net amount was declared, the corresponding missing value was computed according to a model based on Austrian tax data. If the respondent declared an income category to give the information about the income received, Statistics Austria then assigned an income value by selecting a random value from within this income category. If the respondent refused to give any information about the income, Statistics Austria applied deductive, stochastic and deterministic methods of imputation. For other missing income information Statistics Austria applied cross-sectional imputations. For EU-SILC 2005 – based on the income information of follow-up households and persons from the previous year – also longitudinal imputation were applied. The longitudinal imputation procedure is based on the row-and-column-method of Little and Suβ. As suggested by the name, the method uses the row effects and the column effects of the data to identify an appropriate donor case. The row effect, then, is the development of the variable between waves, and the column effect quantifies the relation of one case to all other observations in the sample. This results in a total effect that is used to sort the data file. The nearest neighbour is then used as a donor value. As cross-sectional imputation Statistics Austria used regression models as estimation procedures. The estimated values were then added with a residual term to prevent the attenuation of the variance. This estimation procedure required the specification of several regression models per income component to ensure that a value was estimated regardless of the case of missing values of predictor variables in the most sophisticated models.
Poland	In the situation where: - a target variable includes components of different character (e.g. taking different but highly predictable values, like benefits, or dependent on explanatory variables and thus easier to be modelled separately), - there are many components of a target variable and it is often the case that in some of them there are missing data, while in others there are correct ones which could be lost during the imputation of the aggregated variable, imputation is carried out at the level of

	particular components of target variables, frequently at the level of questionnaire variables. In some cases the target variables are identical with the questionnaire variables. In the case of imputation at the target variable level or imputation of their most significant components, stochastic imputation is applied in order to retain the variable properties distribution as required by Decision 1981/2003. In the majority of cases, the hot-deck method is applied. Regression imputation with randomly generated residuals is applied to incomes from hired employment, as: - it is an important category of income, declared by a significant percentage of respondents and, if present, having a significant share in the total household's income, - this category can be successfully modelled with the use of the variables included in the questionnaire, - there is a large (absolute) number of missing data, the percentage, however, being rather small; a large number of correct records makes it possible to design a well-fitted model. Deterministic imputation is applied where missing data concern less significant components of target variables (taxes, burdens to the main component, additions, etc.) and the main component is known. In such cases deterministic regression imputation is usually applied. Gross/net conversion is carried out with the use of the deterministic regression method. Deduction imputation is employed in rare cases of obvious relationships and can be treated as a supplementary stage of data editing. The explanatory variables in the models and the grouping ones in the case of hot-deck method have been selected so as to represent the relationships which, according to logics and knowledge about the phenomena studied, should occur in the data set, taking into account availability of the potential variables in the questionnaire. The relationships have been tested on the file of correct data and in the majority of cases they proved to be significant. Some of the explanatory variables, when expressing an economically important relationship or providing a grouping condition (interpretation criterion) in the calculation algorithm, have been retained, even if their effect on the imputed variable has not been statistically significant. *Individual non response* The imputation of the missing individual questionnaires is made with the use of hot-deck method. The data on the donor's total income: gross, net and taxes as well as those on the sums of individual income components used for the calculation of the obligatory target variables at the household level are transferred to the taker's record.
Portugal	
Slovenia	Use of different types of the imputations for different kinds of variables. In incomes variable we use several stages of imputations. In the first stage we imputed the allowances for transport to/from work and lunch allowance. In the second stage we imputed the incomes for employed and self-employed persons who received no income. When we imputed wages we calculate the average wages according to different categories (gender, age, education) and we imputed the average instead of missing values. For self-employed persons without any income we imputed the income in the level of minimal social benefit.
Slovakia	Slovakia use deterministic mean imputation on the base of groups: – for imputation of income variables in household data file based on region (NUTS3) HH030, POCL (number of household members). – for imputation of income variables in personal data file based on region (NUTS3) Age, Sex.
Finland	Imputing was used for an interviewed income item of HY090G, and for the variables HY30G, HY022 and HY023.

	Interest income taxed at source which is counted to HY090 was imputed by the hot-deck method to the households that answered that they had received income, but did not answer the monetary value in the interview. The data was grouped to classes by domicile code (dwelling location), socio-economic status and the number of household members, from within donor values (interviewed amount) were selected to recipient households (missing amount) randomly. For HY030G, the stratification method was used to impute market rent values to households' equivalent dwellings from external data source. For HY022 and HY023, deductive imputation was used to convert taxable social transfers in gross amount for net amount.
Sweden	Calculations of income variables are based on administrative register data. Imputation procedures are consequently not necessary
United Kingdom	The strategy used to impute UK EU-SILC is a donor-based imputation methodology: All donor-based imputation processing was conducted in Canceis. Canceis was developed to perform minimum change nearest neighbour imputation (NIM). NIM was developed by Mike Bankier of Statistics Canada in 1992. Where whole income records were missing (see section 2.3.3), donor imputation was used at a unit level. In other words, the missing income record was filled with a copy of the income record belonging to another individual with similar characteristics.
Iceland	Tax register is use for all income variables except for HY080 and HY130 (Regular inter-household cash transfer received and paid). For those two variables information are collected through the interview. Those are also the only income variables where imputation was used.
Norway	In 2005 there were 23 household members who could not be linked to the income register. The personal incomes for these were imputed. The sample was stratified by age (16-24, 25-29, 30-66 and 67 +) and employed/self-employed and not active. Averages of the variables for personal income were calculated, and the imputed value of the personal income variables was set equal to the average for the stratum the person belonged to.

Source: National Quality Reports 2005 (latest available version in August 2008).