Intermediate
Quality Report

relating to the

EU-SILC 2011 Operation

Denmark

Copenhagen 2012

1. COMMON CROSS-SECTIONAL EUROPEAN UNION INDICATORS

1.1. Common cross-sectional EU indicators based on the cross-sectional component of EU-SILC

The indicators in this section can be calculated using Eurostat´s SAS-programme available at the CIRCABC-website

1.2. Other indicators

1.2.1. Equivalised disposable income

1.2.2. The unadjusted gender pay gap

The gender pay gap is not computed on the basis of EU-SILC.

2. ACCURACY

2.1. Sample design

Denmark has adopted the 4-year rotational integrated design recommended by Eurostat. The sample is drawn as a sample of persons.

2.1.1. Type of sampling design (stratified, multi-stage, clustered)

The sub-samples are sampled by simple random sampling.

2.1.2. Sampling units (one stage, two stages)

The sample is a one stage sample. The sampling unit is the individual person. The household is defined as the household of which the selected person is member at the time of the interview. The sampling frame is all persons aged 13+. Only households, where selected person are 16 or more at the beginning of the survey year, are included in statistics of this year.

2.1.3. Stratification and substratification criteria

No stratification.

2.1.4. Sample size and allocation criteria

Total number of persons aged 16+ living in private households	4.459.966
Number of families in the sampling frame	2.805.855
Size of the sample (selected persons/households)	12.000

0.43 pct. of the total number of households in Denmark is represented in the sample

2.1.5. Sample selection schemes

Not applicable, since Denmark uses simple random sampling.

2.1.6. Sample distribution over time

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2.1.7. Renewal of sample: rotational groups

The sample of the cross-sectional component of EU-SILC 2011 in Denmark consists of 4 sub-samples. one selected in 2008, 2009, 2010 and 2011. 3000 persons/households were selected for the subsamples of 2008-2011.

Table 2: Renewal of the 2011 cross-sectional					
	Selected 2008	*Selected 2009*	*Selected 2010*	Selected 2011	Total
Number initially selected	3000	3000	3000	3000	12000

2.1.8. Weightings

2.1.8.1. Design factor

In the sample persons aged 16 years and over are selected. Hence the probability of selecting a household is proportional to the number of persons aged 16 and over in the household. The design factor for households and for all household members is the inverse of the number of adult household members.

2.1.8.2. Non-response adjustments

Calibration using external data.

2.1.8.3. Adjustments to external data (level, variables used and sources)

Adjustments are based on a calibration using external data on the household level. All external data are based on variables in administrative registers. Exactly the same variables are found in the sampled households.
The following external variables have been used:
- Equivalised disposable income
- The size of the household
- Education level of the person with the highest professional status in the household
- Socio-economic status of main income holder in the household

In addition to correcting for bias due to non-response on the household level, the SILC cross-sectional weights should reproduce certain demographic and poverty distributions on the personal level. Therefore some data on the personal level have been integrated in the calibration, that is:
- Risk of poverty
- Age (5 classes 0-15, 16-24, 25-49, 50-64, 65+) and sex.
- Family type.
- Income mass and income groups (12 intervals: 1, 5, 10, … 90, 95, 99th percentile).

From 2010 the income mass within income groups has been weighted to fit the register better. This has been done in order to obtain better consistency between our register data and the EU-SILC data, when measuring especially the Gini coefficient.

2.1.8.4. Final cross-sectional weight

Computed via calibration using external data, see above.

2.1.9. Substitutions

No substitution.

2.1.9.1 Methods of selection of substitutes

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2.1.9.2 Main characteristics of substituted units

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2.1.9.3 Distribution of substituted units

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2.2. Sampling errors

2.2.1. Standard error and effective sample size

2.2.1.A
Total:

Age	standarderr	Sample size (persons)
Total	0.53	13368
0-15 years	1.07	2622
16-24 years	2.34	1588
25-49 years	0.94	4041
50-64 years	0.66	3162
65+ years	1.06	1955
16-64 years	0.72	8791
16+ years	0.61	10746
0-64 years	0.60	11413

Female:

Age	standarderr	Sample size (persons)
Total	0.72	6713
0-15 years	1.48	1286
16-24 years	3.35	747
25-49 years	1.28	2163
50-64 years	0.78	1570
65+ years	1.49	947
16-64 years	0.97	4480
16+ years	0.82	5427
0-64 years	0.82	5766

Male:

Age	standarderr	Sample size (persons)
Total	0.78	6655
0-15 years	1.54	1336
16-24 years	3.26	841
25-49 years	1.37	1878
50-64 years	1.06	1592
65+ years	1.51	1008
16-64 years	1.05	4311
16+ years	0.90	5319
0-64 years	0.89	5647

2.2.1.B
Total:

ACTSTA	standarderr	Sample size (persons)
At work	0.61	6293
Unemployed	4.54	243
Retired	0.97	2141
Other inactive	1.98	1827
Not at work: Total	1.07	4211

Female:

ACTSTA	standarderr	Sample size (persons)
At work	0.80	3050
Unemployed	6.76	109

ACTSTA	standarderr	Sample size (persons)
Retired	1.36	1087
Other inactive	2.49	1055
Not at work: Total	1.37	2251

Male:

ACTSTA	standarderr	Sample size (persons)
At work	0.90	3243
Unemployed	6.14	134
Retired	1.35	1054
Other inactive	3.18	772
Not at work: Total	1.67	1960

2.2.1.C
Total:

HT	standarderr	Sample size (persons)
Single, total	1.65	1097
2 adults, no dependent children, both < 65	0.74	2286
2 adults, no dependent children, at least one 65+	0.91	1780
Other households without dependent children	0.04	138
Single parent with children	3.44	287
2 adults, one child	1.16	882
2 adults, 2 children	0.78	2072
2 adults, more than 2 children	1.44	879
Other households with children	0.00	158
Other	0.69	3789
Single, 0-64 years	2.16	677
Single, 65+ years	2.04	420

Female:

HT	standarderr	Sample size (persons)
Single, total	2.13	603
2 adults, no dependent children, both < 65	1.11	1141
2 adults, no dependent children, at least one 65+	1.29	888
Other households without dependent children	0.05	59
Single parent with children	4.30	179
2 adults, one child	1.64	443
2 adults, 2 children	1.14	1032
2 adults, more than 2 children	1.87	431
Other households with children	0.00	80
Other	1.05	1857
Single, 0-64 years	3.17	314
Single, 65+ years	2.39	289

Male:

HT	standarderr	Sample size (persons)
Single, total	2.52	494
2 adults, no dependent children, both < 65	0.98	1145
2 adults, no dependent children, at least one 65+	1.28	892
Other households without dependent children	0.05	79
Single parent with children	5.76	108
2 adults, one child	1.64	439
2 adults, 2 children	1.07	1040
2 adults, more than 2 children	2.15	448
Other households with children	0.00	78
Other	0.91	1932
Single, 0-64 years	2.94	363
Single, 65+ years	3.91	131

2.2.1.D
Total:

TENSTA	standarderr	Sample size (persons)
Owner or rent-free	0.45	10552
Tenant	1.26	2745

Female:

TENSTA	standarderr	Sample size (persons)
Owner or rent-free	0.66	5224
Tenant	1.61	1450

Male:

TENSTA	standarderr	Sample size (persons)
Owner or rent-free	0.62	5328
Tenant	1.95	1295

2.3. Non-sampling errors

2.3.1. Sampling frame and coverage errors

The sample frame is persons aged 13+ living in private household according to the Register of Population Statistics of Statistics Denmark (From 31st of December 2010). The register is based on Central Population Register (CPR) run by the *Ministry of Economic affairs and the Interior*. CPR is updated by the municipalities. The register is continuously updated.

Main coverage problems:
- Persons, who after the sub-sample were selected but before the time of the interview, moved into a private Danish household from a collective household in Denmark or from abroad. This group will be under-covered in the sub-sample:

In theory, this group should be taken into consideration like persons between 13 and 15 at the time of sampling, cf. above, but technically it is difficult, and the number of persons involved is small. The number of new immigrants is on a yearly basis less than 1 pct. of the population and the number of persons living in collective households is about 1 pct., primarily persons living in old-age homes and homes for other people, who cannot take care of themselves.

If two persons from the same household are selected to a panel, one of them is dropped as a selected person. If a person, who belongs to a household from an earlier still active panel, is selected, the person is likewise dropped as a selected person. The situation, where a household is selected more than once, is only of theoretical interest. The practical importance is negligible.

Danish law prohibits that Statistics Denmark from contacting roughly 12 pct. of the population, as members of the household have indicated that they do not wish to be contacted for statistical or research purposes. These households are included in the sample, and are counted as non-response in this report.

2.3.2. Measurement and processing errors

2.3.2.1. Measurement errors

The data comes from interviews or from registers. Income and demographic data primarily comes from registers, while social and subjective data primarily comes from interviews. The questionnaire does not include other questions than the SILC-questions. The questionnaire includes between 40 and 50 questions dependent on the type of household.

Interview-method was telephone interviewing when feasible and postal questionnaire for other households. The questionnaire was programmed in BLAISE. To obtain contact by telephone at least 5 calls was conducted. Households contacted by mail received one reminder, if they did not respond to the first letter.

The interviews were conducted by the interviewers of Statistics Denmark. In addition to their usual training and education, they got a special introduction to the SILC-questionnaire of 3 hours.

2.3.2.2. Processing errors

The questionnaire is programmed in BLAISE. Several entry controls are built into the questionnaire. The system for processing, checking and editing data is programmed in SAS. Finally, the files are transformed into Eurostat´s standard format and tested using the checking program developed by Eurostat.
During the checking procedure errors are corrected.

2.3.3. Non-response errors

2.3.3.1. Achieved sample size was

Number of households in the sample: 12,000

Number of households contacted is 9.245

Number of households for which an interview is accepted for the database: 5,331

Number of persons of 16 years or older who are members of the households for which the interview is accepted for the database, and who completed a personal interview: na

If the household part of the interview and the personal interview of household representative is acceptable, all members of the household are accepted for the database also in case unit non-response for the person. The necessary information about his/hers income, activity status etc. is extracted from registers.

2.3.3.2 Unit non-response

RA address contact rate = addresses contacted/total sample = 9245/12000 = 77.0 %
RH Rate of accepted households = completed interviews/contacted households= 5331/9245= 57.6 %
NRH Household non-response rate =(1-(RA*RH))*100 = 44.4 %
RP proportion of completed personal interviews = 1
NRP= Individual non-response rate = (1-(RP))*100 = 0

The group of contacted households includes 1 514 households, which Statistics Denmark is not allowed to contact by law. (see 2.3.1)

2.3.3.3 Distribution of households by contact results, etc., and rotational group

Table 2.3.3.3.a Contact at address

Respondent	2008	2009	2010	2011	Total
Contacted	2112	2170	2268	2695	9245

The group of contacted households includes 1 514 households, which Statistics Denmark is not allowed to contact by law. (see 2.3.1)

Table 2.3.3.3.b Household questionnaire result

Respondent	2008	2009	2010	2011	Total
Completed	1269	1289	1313	1460	5331
Not completed	843	881	955	1235	3914
Total	2112	2170	2268	2695	9245

Table 2.3.3.3.c Household interview acceptance

Respondent	2008	2009	2010	2011	Total
Completed	1269	1289	1313	1460	5331
Accepted	1269	1289	1313	1460	5331

2.3.3.4. Distribution of substituted units (if applicable) by 'record of contact at address'

No substitution.

2.3.3.5. Item non-response

There is no item non-response for all the income variables as these variables are extracted from registers with full coverage.

2.3.3.6 Total item non-response

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2.4. Mode of data collection

Denmark is one of the countries, which uses a sample of persons rather than a sample of addresses or households in the survey.

The establishment of the sample and the delimitation of the household are as follows.

A sample of persons is selected from the Central Population Register (CPR).

As a general rule, the selected person becomes the respondent of the household questionnaire, and therefore the person to be interviewed about the composition of the household, etc. The only exception is the case, where the selected person is under 25 years and has parents living at the address. In this case, we randomly select one of the parents to represent the household and the selected person (the household respondent).

At the interview, a "statistical household" following Eurostat's definition is defined.

As mentioned income and demographic data, including citizenship ,etc., primarily comes from registers, while social data primarily comes from interviews.

The questionnaire was split up into 5 different parts.
   a) Questions relating to defining households
   b) Questions about the household
   c) General questions about the household members
   d) the ad-hoc module
   e) Detailed questions about the selected person; including detailed labour information and health information

According to the instructions given to the interviewers, questions under a), b), c) and d) and if the selected person is the same as the selected household respondent also e), shall be asked the person in the household selected as household respondent if possible. If this person is unable to respond, e.g. is not at home or is busy, it should be attempted to arrange an appointment to conduct an interview at another time. If such an appointment appears to be difficult to obtain, it shall be attempted to achieve an interview with the spouse, if any. The interviewers are told to accept partners not married as proxies for the interview, if necessary, but that they should be very careful in doing so. Other members of the household should only be accepted as proxies in the worst case, e.g. if no other possibility is feasible.

It must be taken into account, that information on income and many other subjects is extracted from registers, and therefore was not included in the questionnaire.

Table 2.4a Data status by rotation group

	2008	2009	2010	2011	All
Information completed from both: interview and registers	2571	2600	2657	2918	10746

Table 2.4b Type of interview by rotation group

	2008	2009	2010	2011	All
Total	2571	2600	2657	2918	10746
CATI with selected person	1212	1234	1264	1402	5112
CATI with proxy - that is all household members 16+ years except the selected respondent	1262	1278	1311	1417	5268
Self-administered (mail)	97	88	82	99	366

2.5. Interview duration

The average household interview duration for the CATI part was 11.2 minutes.

3. COMPARABILITY

3.1. Basic concepts and definitions

Reference population:
Private households residing in Denmark at the time of the interview (spring 2011).
No difference from EU-SILC concept

Private household definition:
No difference from EU-SILC concept.

Household membership:
No difference from EU-SILC concept.

Income reference period(s) used:
Calendar year 2010

Period for taxes on income and social insurance contributions:

Calendar year 2010

Reference period for taxes on wealth:
Calendar year 2010

Lag between the income reference period and current variables:
4-6 months

Total duration of the data collection of the sample:
2-3 months

Information on activity status during the income reference period:
Calendar year 2010

3.2. Components of income

3.2.1. Differences between the national definitions and standard EU-SILC definitions.

Several income components can be negative**.**

Apart from this, there is only insignificant deviations from EU-SILC 065 occur.

3.2.2. The source or procedure used for the collection of income variables

The variables concerning income, wealth and taxes are based on the income statistics register.

The most important source is the registers of the tax authorities. These registers contain information on all kinds of taxable income and on all kinds of taxes.

Almost all income in Denmark is taxable. The only exceptions of any importance are child allowances, housing allowances and supplementary payments to the disabled and the like. Statistics Denmark gets information on these kinds of income from the municipalities.

Of course moonlighting, incomes from crime, etc., are not recorded in the registers, but otherwise the data in the income statistics register is assumed to be very accurate.

Read more about the income registers here:
http://www.dst.dk/en/Statistik/dokumentation/Declarations/personal-income-statistics.aspx

3.2.3. The form in which income variables at component level has been obtained.

Income components were collected gross.

3.2.4. The method used for obtaining income target variables in the required form (i.e. as gross **values**)

They were collected gross.

4. COHERENCE

4.1. Comparison of income target variables and number of persons who receive income from each 'income component', with external sources

All income target variables are based on and monitored using external sources.