Final
Quality Report

relating to the

EU-SILC 2009 Operation

Denmark

Copenhagen 2011

1. COMMON LONGITUDINAL EUROPEAN UNION INDICATORS

The micro data transmitted to Eurostat includes all longitudinal indicators as stipulated in the regulation.

2. ACCURACY

2.1 Sample design

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

Denmark has adopted the 4-year rotational integrated design recommended by Eurostat. The sample is drawn as a sample of persons. 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 selected person). The current household of the selected person is defined as the household of which the selected person is member at the beginning of the survey year (1 January). The sampling frame is all persons aged 13+ living in private households. Only households, where selected person are 16 or more at the beginning of the survey year, are surveyed.

2.1.3 Stratification and substratification criteria

Not applicable, the sample was drawn in a simple random sampling procedure.

2.1.4 Sample size and allocation criteria

Longitudinal Component 2009 is based on 4 subsamples (rotational groups) selected in 2006, 2007, 2008 and 2009 respectively. For the subsample 2006 2500 households have been selected. The 2007, 2008 and 2009 subsamples were enlarged to 3000 households. Not all of them are eligible cf. chapter 2.1.2

2.1.5 Sample selection schemes

Not applicable, since Denmark use simple random sampling.

2.1.6 Sample distribution over time

The sample is not distributed over time.

2.1.7 Renewal of sample: rotational groups

Longitudinal Component 2009 consisted of 3 sequences ending in 2009. One sequence covering 2006-2009, one sequence covering 2007-2009 and one sequence covering 2008-2009.

Table 2.1.7.a shows the composition of the 2009 cross-sectional sample, which is the basis of the longitudinal component. See also chapter 2.3.1.

Table 2.1.7.a Renewal of the 2009 cross-sectional					
	Selected 2006	*Selected 2007*	*Selected 2008*	*Selected 2009*	Total
Number initially selected	2500	3000	3000	3000	11000

2.1.8 Weightings

2.1.8.1 Design Factor

The design effect (or design factor) compares the variance of two different estimators. That is the actual estimator in use and a simple estimator exploiting no auxiliary information in the estimation. Thus the design effect indicates the loss/gain in precision as a consequence of the choice of estimator. A design effect below 1 indicates an improved estimator, whereas a design effect above 1 indicates a decrease in precision. In this case the actual estimator is the regression estimator and the auxiliary information in use is strongly correlated with variables in the survey. The design factor is 1.

2.1.8.2 Non-response Adjustments

Calibration using external data.

2.1.8.3 Adjustments to external data

The following variables have been used in the calibration:
- Sex
- Age
- Equivalised income group of household to which person belongs (3 classes: below 'at risk of poverty threshold', between 'at risk of poverty threshold' and median, above median), where the 'at risk of poverty threshold' is defined as 60% of the median of the equivalised income of all persons in the population.
- Poverty: Indication whether the household is below or above the 'at risk of poverty threshold'.
- Net family income in household to which person belongs
- Type of family
- Highest level of education of person
- Highest education obtained (according to the register) of the person with the highest education in the household
- Economic status of person
- Economic status of person with highest education in the household

2.1.8.4 Final longitudinal weights

Since the longitudinal sample consists only of households participating in the entire longitudinal period (2, 3 or 4 years) the weights are summing to a total less than the population. Hence the weights have been rescaled, that is adjusted to external population data.

2.1.9 Substitutions

No substitution.

2.1.9.1 Method of selection of substitutes

No substitution.

2.1.9.2 Main characteristics of substituted units.

No substitution.

2.1.9.3 Distribution of substituted units by record of contact at address etc.

No substitution.

2.2 Sampling errors

Standard errors for the longitudinal part are not calculated and no imputations are used.

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. The register is based on the Central Population Register (CPR). CPR is updated by the municipalities. The register is a continuously updated register.

Main coverage problems:
- persons living in a private household but registered in the register as living in a collective household at the time of selecting the sub-sample. This group will be under-covered in the sub-sample.
- persons, who after the sub-sample were selected, moved into a private Danish household from a collective household in Denmark or from abroad. This group will likewise be under-covered in the sub-sample:

In theory, these groups 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.

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 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 2 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

Table 2.3.3.1a Achieved sample size				
	Total	Rotational group 1	Rotational group 3	Rotational group 4
2005-2008				
Accepted household interviews = accepted interviews of selected persons	880	na	880	na
Accepted personal interviews (total)	3736	na	3736	na
- sample persons	880	na	880	na
- co-residents	2856	na	2856	na
2006-2008				
Accepted household interviews= accepted interviews of selected persons	2020	na	880	1140
Accepted personal interviews	7456	na	3044	4412
- sample persons	2020	na	880	1140

- co-residents	5436	na	2164	3272
2007-2008				
Accepted household interviews= accepted interviews of selected persons	3326	1306	880	1140
Accepted personal interviews	10260	4147	2622	3491
- sample persons	3326	1306	880	1140
co-residents	6934	2841	1742	2351

2.3.3.2 Unit non-response

Households:

Wave response rate:
2006: 61.2
2007: 66.8
2008: 69.8
2009: 82.7

Longitudinal follow-up rate:
2006: 81.8
2007: 82.5
2008: 82.7
2009: na.

Persons:

Wave response rate, sample persons (same as households):
2006: 61.2
2007: 66.8
2008: 69.8
2009: 82.7

Wave response rate, co-residents
Can not be calculated as we do not have all information on not-participating households.

Longitudinal follow-up rate, sample persons (same as households):
2006: 81.8
2007: 82.5
2008: 82.7
2009: na.

Longitudinal follow-up rate, co-residents:
Can not be calculated as we do not have all information on not-participating households.

2.3.3.3 Distribution of households

2.3.3.3.a. Distribution of households by household status (DB110)

	Wave 2006	Wave 2007	Wave 2008	Wave 2009
1	na	1312	2599	3963
2	na	112	228	0
3	na	1	0	0
4	na	2	6	8
5	na	5	10	18
6	na	0	0	0
7	na	27	42	33
8	na	0	0	0
9	2385	2857	2878	na

2.3.3.3.b Distribution of households by contact at address (DB120) where DB110 = 1,2,9				
	Wave 2006	Wave 2007	Wave 2008	Wave 2009
Total	2385	4281	5705	6828
11	2100	2573	2678	2157
21	14	11	10	15
22	271	385	418	693

2.3.3.3.c Distribution of households by (DB130) household questionnaire result where DB110 = 1,2,9				
DB130	Wave 2006	Wave 2007	Wave 2008	Wave 2009
11	1459	2885	4022	3326
21	247	339	387	222
22	38	63	96	89
23	67	75	99	71
24	289	523	673	255

2.3.3.3.d Distribution of households by (DB135) household questionnaire result by household interview acceptance where DB130=11.				
DB135	Wave 2006	Wave 2007	Wave 2008	Wave 2009
1	1459	2885	4022	3326
2	na	na	na	na

2.3.3.4 Distribution of persons

Table 2.3.3.4 Distribution of persons by membership status (RB110).				
RB110	Wave 2006	Wave 2007	Wave 2008	Wave 2009
Total	3736	7456	10260	8250
1	3736	7371	10066	8250
2	na	0	0	0
3	na	51	124	153
4	na	34	90	97

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.

Table 2.3.3.5.a: Percentage of households, who have received a specific income component				
	Wave 2006	Wave 2007	Wave 2008	Wave 2009
HY010: TOTAL HOUSEHOLD GROSS INCOME	100	100	100	100
HY020: TOTAL DISPOSABLE HOUSEHOLD INCOME	100	100	100	100
HY022: TOTAL DISPOSABLE HOUSEHOLD INCOME BEFORE SOCIAL TRANSFERS OTHER THAN OLDAGE	100	100	100	100

AND SURVIVOR'S BENEFITS				
HY023: TOTAL DISPOSABLE HOUSEHOLD INCOME BEFORE SOCIAL TRANSFERS INCLUDING OLDAGE AND SURVIVOR'S BENEFITS	100	100	100	100
HY025: WITHIN-HOUSEHOLD NON-RESPONSE INFLATION FACTOR	na	na	na	na
HY030G: IMPUTED RENT	68	73	71	74
HY040G: INCOME FROM RENTAL OF A PROPERTY OR LAND	2	2	3	3
HY050G: FAMILY/CHILDREN RELATED ALLOWANCES	39	39	38	37
HY060G: SOCIAL EXCLUSION NOT ELSEWHERE CLASSIFIED	0	0	0	0
HY070G: HOUSING ALLOWANCES	14	12	11	10
HY080G: REGULAR INTER-HOUSEHOLD CASH TRANSFER RECEIVED	6	6	5	5
HY090G: INTEREST, DIVIDENDS, PROFIT FROM CAPITAL INVESTMENTS IN UNINCORPORATED BUSINESS	98	99	100	100
HY100G: INTEREST REPAYMENTS ON MORTGAGE	57	58	59	60
HY110G: INCOME RECEIVED BY PEOPLE AGED UNDER 16	8	9	10	0
HY120G/HY120N: REGULAR TAXES ON WEALTH	71	73	74	77
HY130G: REGULAR INTER-HOUSEHOLD CASH TRANSFER PAID	5	4	4	4
HY140G: TAX ON INCOME AND SOCIAL CONTRIBUTIONS	99	100	100	100
HY145N: REPAYMENTS/RECEIPTS FOR TAX ADJUSTMENT	na	na	na	na

Table 2.3.3.5.b: Percentage of persons 16+, who have received a specific income component				
	Wave 2006	Wave 2007	Wave 2008	Wave 2009
PY010G: EMPLOYEE CASH OR NEAR CASH INCOME	74	73	74	73
PY020G: NON-CASH EMPLOYEE INCOME	5	6	7	7
PY030G: EMPLOYER'S SOCIAL INSURANCE CONTRIBUTION	na	na	na	na
PY035G: CONTRIBUTIONS TO INDIVIDUAL PRIVATE PENSION PLANS	-	-	-	-
PY050G: CASH BENEFITS OR LOSSES FROM SELF-EMPLOYMENT	25	22	23	28
PY070G: VALUE OF GOODS PRODUCED BY OWN-CONSUMPTION	na	na	na	na
PY080G: PENSION FROM INDIVIDUAL PRIVATE PLANS	na	na	na	na
PY090G/PY090N: UNEMPLOYMENT BENEFITS	18	16	15	14
PY100G/PY100N: OLD-AGE BENEFITS	14	16	16	18
PY110G: SURVIVOR' BENEFITS	1	1	1	1
PY120G: SICKNESS BENEFITS	10	9	8	8

PY130G: DISABILITY BENEFITS	6	6	7	7
PY140G: EDUCATION-RELATED ALLOWANCES	7	6	7	6
PY200G: GROSS MONTHLY EARNINGS FOR EMPLOYEES	na	na	na	na

2.4 Mode of data collection

Denmark uses a sample of persons rather than a sample of addresses or households in the survey.

Table 2.4.a Distribution of household members aged 16 or over by 'data' status (RB250) and type of type of person..

	Data-status = 13 (Data status is always = '13')			
	Wave 2006	Wave 2007	Wave 2008	Wave 2009
Total	2886	5797	7986	6620
Sample persons	1459	2665	3644	3027
Co-resident	1427	3132	4342	3593

Table 2.4.b Distribution of household members aged 16 or over by 'type of interview' (RB260) and type of type of person

		Type of interview (RB260)			
		Total	3	4	5
Wave 2006	Total	2886	1407	81	1398
	Sample person	1459	1319	52	88
	Co-resident	1427	88	29	1310
Wave 2007	Total	5797	2789	145	2863
	Sample person	2665	1922	91	652
	Co-resident	3132	867	54	2211
Wave 2008	Total	7986	3912	163	3911
	Sample person	3644	2423	102	1119
	Co-resident	4342	1489	61	2792
Wave 2009	Total	6620	3207	187	3226
	Sample person	3027	2025	114	888

	Co-resident	3593	1182	73	2338

The establishment of the sample and the delimitation of the household are undertaken in the way described below.

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

All other persons living at the same address are identified using information in the register. In the same way, married couples, couples not married, but expected to be partners, the ID's of fathers and mothers living at the address etc. is identified. In the following, the results will be called the "register-household". The register household can be considered as a hypothesis to be checked in the survey.

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 (the household respondent).

After the interview, a "statistical household" following Eurostat's definition is defined. Persons in the register-household, who do not belong to the statistical household, will be excluded from the sample and persons belonging to the statistical household, who are not found in the register-household are included.

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 4 different parts.
a) Questions relating to defining households
b) Questions about the household
c) General questions about the household members
d) 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) and c) and if the selected person is the same as the selected household respondent also d), 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 with other things, it should be attempted to arrange an appointment to conduct an interview at another time. If such an appointment appears 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.

Questions under d shall preferable be asked the selected person. If it is not feasible, because the person is not home or is busy with other things, the instruction is that a proxy interview with one of the parents is OK.

It is our experience that this procedure is the most feasible. It makes the interview more fluent and comfortable. Interviewing each household member individually instead of one household member on behalf of the others would be a troublesome process to the interviewers as well as to the interviewees.

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

2.5 Imputation procedures

No imputations. Income information is extracted from registers.

2.6 Imputed rent

Until 2006 imputed rent for dwellings owned by the occupant was, in principle, calculated as 4% of the taxable value of the property in our national income statistics and in the micro-files that we transmit to Eurostat. The taxable value is a relatively good estimate of the market value. The properties are valued by the municipalities. From 2007 and onwards imputed rent is calculated using a rental equivalence method. Figures until 2006 is not comparable with figures from 2007 and onwards, where the variable became obligatory.

2.7 Company cars

Information about company cars is extracted from the tax authorities registers as the taxable value.

3. COMPARABILITY

3.1 Basic concepts and definitions

Reference population:
Private households residing in Denmark 1 January 2009 and members of these households.
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 2008

Period for taxes on income and social insurance contributions:
Calendar year 2008

Reference period for taxes on wealth:
Calendar year 2008

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

Total duration of the data collection of the sample:
6 months

Information on activity status during the income reference period:
Calendar year 2008

3.2 Components of income

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

HY090G can be negative .
The concept is calculated as a net-concept. E.g. interest received from bank accounts etc. are deducted interest paid on consumer loans etc. If interest paid exceeds capital income HY090 will be negative

HY080G/HY080N: REGULAR INTER-HOUSEHOLD CASH TRANSFER RECEIVED/
HY130G/HY130N: REGULAR INTER-HOUSEHOLD CASH TRANSFER PAID
Only information about transfers known by authorities are included. Typically obligatory transfers and transfers for which tax-deductions can be obtained. Other forms of regularly transfers are not common in Denmark. In the 2003 and 2004 survey we had some questions about voluntary transfers, but the incidences was low and data quality was bad, so we decided not to use the data.

Apart from these facts only insignificant deviations from EUSILC 065.

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

First wave:
The variables concerning income, wealth and taxes are monitored by registers.

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. In addition to information used for taxation purposes, the register contains specified information reported by municipalities on social assistance, housing allowances, disability benefits, sickness benefits etc. and on the originator's number in the Central Business Register.

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. The municipalities report information about these forms of income to the Tax Authorities or directely to Statistics Denmark that then will integrate the information in the statistical income register..

Information about the number of days for which the taxpayer received benefits according to different social, unemployment and training schemes are submitted to Statistics Denmark by municipalities and other authorities. The information is located in the so-called Labour Market Policy Measures Register and is used, when the different kinds of benefits from unemployment funds, trade unions etc. are split up into the different income components.

Income in the form of regular pension from private schemes and allowances from the State Education Fund's can be distinguished and broken down by components, using information about the kind of income in the tax authorities' registers and about the originator of the income from the Central Business Register and the age of the person.

Information about the amount of unemployment benefit payments can be extracted from a special register.

Information from these different sources makes it possible to estimate the breakdown of gross income by the components with a high degree of accuracy.

Following waves: Unchanged

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

They were collected gross.

3.3 Tracing rules

Tracing was conducted using the personal number in the population register. In principle there is no difference from national rules and the standard EU-rules.

4 COHERENCE

4.1 Comparison of income variables with external sources

All income target variables are monitored using external sources.