

# **FINAL QUALITY REPORT**

**EU-SILC-2008**

**Norway**

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# 1.0 Common longitudinal EU indicators based on the longitudinal component of EU-SILC

Not applicable

## 2.0 Accuracy

### 2.1 Sampling design

#### 2.1.1 Type of sampling

Up until 2008, the sample for EU-SILC in Norway was composed of an old sample for a longitudinal survey established in 1997, and a new sample with a different design in 2003 (see quality report for 2007). From 2008 on, the sample is selected only according to the new design because all respondents from the old sample were rotated out.

The sample in 2008 is now according to the rules for systematic random sampling in one stage. The systematic element stems from the stratification (see 2.1.3) and arrangement of the population register.

#### 2.1.2 Sampling units

The sample units are persons aged 16 years or more registered in the central population register (inhabitants).

#### 2.1.3 Stratification and sub-stratification criteria

The primary stratification criterion for the period 2003-2006 was age. The design chosen implicated that age was the central criterion for representativity. The sample was drawn as a proportion  $p$  of the population within one-year groups. Based on experience from analysing cross sectional EU-SILC data from 2003 to 2006, this way of stratification was problematic because the rotational groups were biased. In 2007, the representativity based on one-year age groups was abandoned, and the new rotational groups are drawn as the proportion  $p$  of the population 16 years and over. In addition, each existing rotational group is then supplemented with new 16 year olds and new immigrants to ensure representativity. The same system as in 2007 has been used in 2008.

The sample is drawn from the population register, and this register is arranged to ensure geographical representativity. This is done by municipality and postal codes. As in the old part of the sample, the register is arranged by family number and personal code within the family before the actual selection of units.

#### 2.1.4 Sample size and allocation criteria

The selected sample size set to meet demands for minimum effective sample size of both the cross-sectional and the longitudinal survey over time is 8 500 persons at the start of the EU-SILC project in 2003, each representing one separate household.

In 2003 8 500 persons constituted a proportion  $p \approx 0,0024$  of the total population (inhabitants aged 16 years or more). This proportion is meant to be identical each year of the survey, and thus the size of the gross sample will change according to changes in the population. The 2008 sample consists of 8 857 persons 16 years and over. During the field period, 59 of these proved to be non-eligible (either dead or emigrated), thus giving a gross sample of 8 798 persons. We succeeded in interviewing 5 559 of these (net sample), a response rate of 63,2 percent. 5 553 interviews were accepted in the data file.

In all households interviewed there were 10 897 persons aged 16 years or more. The minimum sample size set by Eurostat for the cross sectional components was 3 750 households and 6 250 persons. The

effective sample size is: Net sample / design effect for equivalent income. The design effect for equivalent income is estimated to be 1,039. In the Norwegian 2008 survey this gives an achieved effective sample size of 5 345 households and 10 488 persons.

The selected sample size by rotational groups, referring to selected respondent (household), can be seen in table 2.1 below.

### **2.1.5 Sample selection schemes**

As mentioned, the sample for the Norwegian EU-SILC before 2007 consisted of an existing sample for a longitudinal and a new sample selected according to a new design. For information on the old selection schemes, see previous quality reports.

Deleting rotational groups and adding new rotational groups and supplementing the sample resulted in a sample in 2008 of 8 857 persons (before subtracting non-eligibles).

### **2.1.6 Sample distribution over time**

To make the data collection effective, and to ensure a highest possible response rate among the new respondents in the sample, the sample was divided into four periodical groups with different start of the interviewing but similar end of interviewing. Interviewing of all groups ended 7 July.

### **2.1.7 Renewal of sample: Rotational groups**

In the Norwegian design, each selected respondent (sample unit) is part of the sample in eight years. Each year 1/8 of the sample will be replaced. In a period of transition from the old to the new design in the 2003-2007 period, some respondents in the old sample belonged to the sample for eleven years, while some belonged for only six years. Following the new routine for new rotational groups from 2007 on, with supplementation of 16 year olds and immigrants in the existing rotational groups, some selected respondents will belong to the sample in from 7 years to 1 year.

### **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 equal 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***

PB060: Personal cross-sectional weight for selected respondent

The probability of selection is the same for all selected respondents. Weights are only calculated to take into account non-response. Results are not calibrated to external sources.

Weights are calculated by stratifying the gross sample into strata. The gross sample and net sample are stratified according to information in registers on sex, age, education and family size. There are five categories of age: 16-24 years, 25-44 years, 45-66 years 67-79 years and 80 years and over. There are five categories of education: lower secondary and lower; upper secondary; post-secondary but non-tertiary; tertiary; missing information. There are also five categories for family size: 1, 2, 3, 4 and 5 and more persons.

DB090: Household cross-sectional weight

This is constructed as the household design weight (DB080) times the personal cross-sectional weight for the selected person (PB060).

The household design weight is the inverse of the number of persons 16 years and older in the household (age is age per 31.12.2007).

RB050: Personal cross-sectional weight

RB050 is equal to DB090.

PB040: Personal cross-sectional weight for all household members aged 16 and over  
PB040 is equal to DB090.

RL070: Children cross-sectional weight

The weights are calculated as the number of children in each one-year group (0-12 years) in the population divided by the number of children in one-year groups in the households interviewed.

**2.1.8.3. Adjustments to external data**

No adjustments are made, except for children's weights where weights are adjusted according to population size as given in the population register.

**2.1.8.4. Final longitudinal weight**

Longitudinal weights are made by using the same method as for cross sectional weights, see 2.1.8.1.

RB060: Personal base weight. Same method as for PB060 using the gross sample in scope, except that the base of the weight is rotational groups.

RB062, RB063 and RB064: Longitudinal weights

Calculated by dividing RB060 (for 2008) by the number of rotational groups included in the last two, three and four waves, considering individuals in scope the last two, three and four years (RB110 = 1 or 2)

**2.1.8.5. Non-response adjustments**

See 2.1.8.4

**2.1.8.6. Adjustments to external data**

No adjustments are made

**2.1.8.7. Final longitudinal weight**

See 2.1.8.4

**2.1.8.8. Final household cross sectional weight**

Not applicable as no substitutions are allowed

**2.1.9. Substitutions**

There are no substitutions in EU-SILC Norway.

## 2.2 Sampling errors

### 2.2.1. Standard errors and effective sample size

Effective sample size is also treated in 2.1.4.

**Table 2.2.1. Standard errors and effective sample size for cross sectional EU-indicators based on the cross sectional component of EU-SILC. 2008**

	Estimate	Standard error	Kish	N	Effective sample size
HCR, after social transfers: Age 0-15	0,093	0,0085	1,18	3089	2 973
HCR, after social transfers: Age 16-24	0,318	0,0146	1,31	1912	1 840
HCR, after social transfers: Age 25-49	0,088	0,0058	1,24	4855	4 673
HCR, after social transfers: Age 50-64	0,037	0,0045	1,26	2682	2 581
HCR, after social transfers: Age more then 64	0,144	0,0116	1,37	1665	1 603
HCR, after social transfers: Male	0,100	0,0051	1,25	7161	6 892
HCR, after social transfers: Female	0,130	0,0059	1,35	7051	6 786
HCR, after social transfers: Male Age 0-15	0,091	0,0098	1,12	1540	1 482
HCR, after social transfers: Male Age 16-24	0,275	0,0190	1,32	1001	963
HCR, after social transfers: Male Age 25-49	0,090	0,0070	1,23	2418	2 327
HCR, after social transfers: Male Age 50-64	0,039	0,0055	1,28	1369	1 318
HCR, after social transfers: Male Age more then 64	0,069	0,0094	1,35	827	796
HCR, after social transfers: Female Age 0-15	0,094	0,0101	1,23	1549	1 491
HCR, after social transfers: Female Age 16-24	0,363	0,0196	1,29	911	877
HCR, after social transfers: Female Age 25-49	0,085	0,0069	1,25	2437	2 346
HCR, after social transfers: Female Age 50-64	0,035	0,0053	1,23	1313	1 264
HCR, after social transfers: Female Age more then 64	0,202	0,0173	1,31	838	807
HCR, after social transfers: Male Age more then 16	0,102	0,0054	1,27	5621	5 410
HCR, after social transfers: Female Age more then 16	0,139	0,0065	1,37	5502	5 295
HCR, after social transfers: Male Age 16-64	0,107	0,0058	1,26	4788	4 608
HCR, after social transfers: Female Age 16-64	0,119	0,0061	1,29	4661	4 486
HCR, after social transfers: Male Age 0-64	0,105	0,0056	1,24	6334	6 096
HCR, after social transfers: Female Age 0-64	0,114	0,0060	1,28	6213	5 980
HCR, after social transfers: One person hh under 65 years	0,289	0,0142	1,01	925	890
HCR, after social transfers: One person hh 65 years and over	0,313	0,0248	1,06	356	343
HCR, after social transfers: One person hh male	0,237	0,0169	1,02	668	643
HCR, after social transfers: One person hh female	0,356	0,0194	1,04	613	590
HCR, after social transfers: One person hh total	0,297	0,0127	1,04	1281	1 233
HCR, after social transfers: 2 adults, nodependant children, both adults under 65 years	0,068	0,0086	1,03	2311	2 224
HCR, after social transfers: 2 adults, nodependant children, at least one adult 65 years or	0,026	0,0047	1,02	1454	1 399

HCR, after social transfers: Other hh without dependant children	0,052	0,0096	1,06	1358	1 307
HCR, after social transfers: Single parent hh, one or more dependant children	0,225	0,0295	1,08	587	565
HCR, after social transfers: 2 adults, one dependant child	0,057	0,0101	1,05	1261	1 214
HCR, after social transfers: 2 adults, two dependant children	0,039	0,0063	1,04	3117	3 000
HCR, after social transfers: 2 adults, three or more dependant children	0,095	0,0170	1,07	2194	2 112
HCR, after social transfers: Other hh with dependant children	0,868	0,0486	0,83	22	21
HCR, after social transfers: Hh without dependant children	0,142	0,0062	1,30	6404	6 164
HCR, after social transfers: Hh with dependant children	0,087	0,0074	1,19	7181	6 911
HCR, after social transfers: Accommodation tenure status: Owner or rent free	0,063	0,0040	1,34	12528	12 058
HCR, after social transfers: Accommodation tenure status: Tenant	0,379	0,0190	1,12	1413	1 360
HCR, after social transfers: Main activitiystatus: Employed	0,059	0,0039	1,28	6815	6 559
HCR, after social transfers: Main activitiystatus: Unemployed	0,316	0,0422	1,20	163	157
HCR, after social transfers: Main activitiystatus: Retired	0,152	0,0126	1,37	1473	1 418
HCR, after social transfers: Main activitiystatus: Other inactive	0,161	0,0085	1,26	5451	5 246
HCR, after social transfers: Main activitiystatus: Employed, Male	0,062	0,0048	1,26	3639	3 502
HCR, after social transfers: Main activitiystatus: Unemployed, Male	0,296	0,0477	1,19	80	77
HCR, after social transfers: Main activitiystatus: Retired, Male	0,073	0,0102	1,35	741	713
HCR, after social transfers: Main activitiystatus: Other inactive, Male	0,155	0,0109	1,23	2527	2 432
HCR, after social transfers: Main activitiystatus: Employed, Female	0,056	0,0050	1,31	3176	3 057
HCR, after social transfers: Main activitiystatus: Unemployed, Female	0,335	0,0512	1,20	83	80
HCR, after social transfers: Main activitiystatus: Retired, Female	0,214	0,0188	1,31	732	705
HCR, after social transfers: Main activitiystatus: Other inactive, Female	0,165	0,0098	1,27	2924	2 814
HCR, after social transfers: Work intensity: hh without dependent children, w=0	0,418	0,0592	1,13	245	236
HCR, after social transfers: Work intensity: hh without dependent children, 0<w<1	0,149	0,0200	1,14	2037	1 961
HCR, after social transfers: Work intensity: hh without dependent children, w=1	0,041	0,0055	1,23	4899	4 715
HCR, after social transfers: Work intensity: hh with dependent children, w=0	0,251	0,0130	1,21	1920	1 848

HCR, after social transfers: Work intensity: hh with dependent children, $0 < w < 0.5$	0,304	0,0392	1,28	269	259
HCR, after social transfers: Work intensity: hh with dependent children, $0.5 \leq w < 1$	0,106	0,0117	1,36	1453	1 398
HCR, after social transfers: Work intensity: hh with dependent children, $w = 1$	0,049	0,0063	1,22	2762	2 658
HCR, before social transfers including pensions: Male Age 0-15	0,288	0,0172	1,12	1540	1 482
HCR, before social transfers including pensions: Male Age 16-24	0,375	0,0203	1,23	1001	963
HCR, before social transfers including pensions: Male Age 25-49	0,210	0,0087	1,15	2418	2 327
HCR, before social transfers including pensions: Male Age 50-64	0,179	0,0117	1,20	1369	1 318
HCR, before social transfers including pensions: Male Age more then 64	0,191	0,0150	1,14	827	796
HCR, before social transfers including pensions: Female Age 0-15	0,275	0,0160	1,13	1549	1 491
HCR, before social transfers including pensions: Female Age 16-24	0,464	0,0178	1,20	911	877
HCR, before social transfers including pensions: Female Age 25-49	0,236	0,0093	1,17	2437	2 346
HCR, before social transfers including pensions: Female Age 50-64	0,204	0,0133	1,18	1313	1 264
HCR, before social transfers including pensions: Female Age more then 64	0,304	0,0189	1,21	838	807
HCR, before social transfers excluding pensions: Male Age 0-15	0,288	0,0172	1,12	1540	1 482
HCR, before social transfers excluding pensions: Male Age 16-24	0,375	0,0203	1,23	1001	963
HCR, before social transfers excluding pensions: Male Age 25-49	0,210	0,0087	1,15	2418	2 327
HCR, before social transfers excluding pensions: Male Age 50-64	0,179	0,0117	1,20	1369	1 318
HCR, before social transfers excluding pensions: Male Age more then 64	0,191	0,0150	1,14	827	796
HCR, before social transfers excluding pensions: Female Age 0-15	0,275	0,0160	1,13	1549	1 491
HCR, before social transfers excluding pensions: Female Age 16-24	0,464	0,0178	1,20	911	877
HCR, before social transfers excluding pensions: Female Age 25-49	0,236	0,0093	1,17	2437	2 346
HCR, before social transfers excluding pensions: Female Age 50-64	0,204	0,0133	1,18	1313	1 264
HCR, before social transfers excluding pensions: Female Age more then 64	0,304	0,0189	1,21	838	807
Median equivalised disposable income	253650,000	1218,1417	1,11	14216	13 682
At-risk-of-poverty threshold, one person hh	119625,503	2155,8318	1,02	1281	1 233
At-risk-of-poverty threshold, hh 2 adults 2 dependent children	159030,000	1634,8392	1,03	3117	3 000
S80/S20	3,741	0,1180	1,11	14216	13 682
Relative median at-risk-of-poverty gap: Male Age 0-15	0,176	0,0655	1,06	1540	1 482



Relative median at-risk-of-poverty gap: Male Age16-24	0,454	0,0521	1,16	1001	963
Relative median at-risk-of-poverty gap: Male Age25-49	0,228	0,0050	1,10	2418	2 327
Relative median at-risk-of-poverty gap: Male Age50-64	0,268	0,2340	1,09	1369	1 318
Relative median at-risk-of-poverty gap: Male Age more then 64	0,095	0,0105	1,09	827	796
Relative median at-risk-of-poverty gap: Female Age 0-15	0,193	0,0133	1,07	1549	1 491
Relative median at-risk-of-poverty gap: Female Age 16-24	0,419	0,0310	1,17	911	877
Relative median at-risk-of-poverty gap: Female Age 25-49	0,193	0,0347	1,09	2437	2 346
Relative median at-risk-of-poverty gap: Female Age 50-64	0,213	0,0380	1,08	1313	1 264
Relative median at-risk-of-poverty gap: Female Age more then 64	0,125	0,0114	1,13	838	807
Median income below the at-risk-of-povertythreshold	274738,328	3010,7704	1,11	14216	13 682
HCR P.L.as 50% median	0,070	0,0043	1,31	14216	13 682
HCR P.L.as 70% median	0,177	0,0053	1,28	14216	13 682
HCR P.L.as 40% median	0,041	0,0026	1,29	14216	13 682
Gini coefficient	0,251	0,0051	0,96	14216	13 682
Mean equivalised disposable income	274738,328	2192,6299	1,01	14216	13 682

## 2.3 Non-sampling errors

### 2.3.1 Sampling frame and coverage errors

The sampling frame is a copy of the central population register called BEBAS. This register is monthly updated with information from local population register offices. There should be no coverage errors connected to this frame, except for the extremely few cases of emigrations which are wrongly coded as non-response instead of non-eligible because their emigration were not registered in the population register. 59 persons could not be contacted because they were living at an unknown address (see table 1, section 2.3.3.3). This is the maximum number of persons, which could be ineligible because they have emigrated.

Over-coverage due to deaths and emigration between updating of the sampling frame and the interview is almost always discovered during the fieldwork. Under-coverage due to immigration between the updating of the sampling frame and interview is small. This is partly because immigration is relatively small (roughly 67 000 in 2008), and partly because the new sampling frame is updated very frequently.

### 2.3.2a Measurement errors

In every survey there are various sources of both measurement and processing errors. Measurement errors occur in different phases and for different reasons. These reasons can be divided into five sub-groups: Information system, setting/environment, mode of data collection, the respondent, the interview and finally the instrument. We will concentrate on the sources most likely to be found in this survey, and they are classified under respondent, the interview and the instrument.

In every survey there is a chance of respondents giving an incorrect answer. The question/answer process can be seen in four different phases. First there is the understanding and interpretation of the

actual question. If there are difficult terms or complicated wording, this may cause errors. In EU-SILC, the questions regarding inter-household transfers may be subject to this kind of errors because of the understanding of inter-household transfer and the term regular. Also the question on lowest monthly income to make ends meet (HS130) seems difficult to understand for many respondents.

The second phase is where the respondent recalls information. Errors in this phase may rise if the information necessary is hard to retrieve because it is old, complicated or not available to the respondent. In EU-SILC some of the questions about housing costs are quite complicated even for the person responsible for the dwelling. This may affect the accuracy of the answers given. Apart from this, we have no suspicion of frequent errors caused by difficulties in information retrieval.

The third phase is evaluating and selecting the information necessary to answer the question. In this phase, the respondent may actually have the right kind of information to answer the question correctly, but still end up with a wrong answer. This type of error is most frequent when the question is complicated and requires much information. Typical questions from EU-SILC may be questions requiring the respondent to select different economic components necessary for a specific question. Again the questions regarding inter-household transfers may be mentioned, but also the subjective evaluation of how difficult it is "to make ends meet", where the respondent has to choose which components to include in income.

The fourth and final phase is the actual formulating of the answer. This may cause errors if the respondents mastering of the language in use is weak, if the answer requires use of complicated terms or if the communication between the interviewer and the respondent is not optimal.

Measurement errors under the label "interview" are first effects of the data collection mode. In EU-SILC, all interviews are conducted by telephone. The interview is quite short, and the questionnaire is composed to avoid questions requiring visual aids. We therefore believe that errors caused by mode are minimal.

Interviewer effects may also be labelled under errors caused by interview. The interviewers used in EU-SILC were among the approximately 230 of the ordinary interviewer staff assigned to Statistics Norway.

Approximately 130 of these interviewers are locally based interviewers who are part time employees with individual agreements ranging from 500 to 1200 hours of work per year. These interviewers are stationed in the sample areas according to the standard sampling frame. The 100 centrally based interviewers are working from Statistics Norway's call centres in Oslo and Kongsvinger (where Statistics Norway has offices).

When hired, all interviewers must complete an education consisting of self-studies and written tasks in two stages. The locally based interviewers are gathered to an obligatory three-day course (for centrally based interviewers two days) before they are hired for a trial period of 6 months. Before the end of the trial period and permanent hiring, all new interviewers are given a personal follow-up talk. As part of the general follow-up and education of locally based interviewers, telephone conferences are held on occasion. The centrally based interviewers have a supervisor on each work shift, and each call-centre has a co-ordinator who also follows up the interviewers on regular basis.

The specific training for EU-SILC consists of an obligatory interview guide following the survey. This guide contains information about the survey, description of the sample, time limits (start and end) and a mentioning and instructions for some of the questions. Locally based interviewers are paid to read this instruction. In addition, they are paid a fixed price (estimated number of hours) for test interviewing before starting the actual work. In EU-SILC 2008, the estimated time destined to reading of instruction and training was 4 hours per interviewer. The centrally based interviewers are, in addition to reading the specific survey guide, given an oral presentation of the survey (briefing).

The danger of systematic interviewer effects is reduced through training, but also by using a relatively large number of interviewers.

The questionnaire may also be the cause of measurement errors. We have tried to establish a questionnaire according to the recommendations of Eurostat. In cases where EU-SILC variables and variables which are standard in our national surveys are close, we have preferred to use the national standards which are well tested. We shall comment on these variables and other cases where there might be deviations from Eurostat standards.

#### HH010

The standard Norwegian question is much more detailed, but most categories are easily translated to Eurostat categories. To construct the Eurostat categories we added a question on number of apartments/flats in the building.

#### HH030

Only rooms of at least 6 sqm are included. The consequences for comparability are negligible.

#### HH090

'For the sole use of the household' is not included in the Norwegian questionnaire.

#### HH040

We have split this question in two: Rot in windows or floor and Leaking roof, damp walls or floor.

#### HS160

The Norwegian question asks 'not enough **daylight**'.

#### HH020

The Norwegian question is more detailed. However it is quite clear how to aggregate categories to construct the Eurostat categories of owners and tenants. To distinguish between tenants paying rent at or below market price we asked whether the rent that is paid is market rent (question Husleie2). To distinguish households with a rent-free accommodation we asked whether the household pay rent (question Husleie1).

#### HY130G

The Norwegian question differs because it excludes alimonies to former spouse/children. Information on alimonies is taken from register. HY130 is therefore calculated as a sum of information from register and from interview.

#### HH070

When asking about interest on mortgage the respondents can choose whether they will report the amount per year, quarter or month. There are some cases where period and amount do not correspond, or the size of the mortgage and interest does not correspond, maybe due to interviewer errors. These cases have been corrected at by evaluation of each case. In cases where structural insurance, mandatory services and charges or cost of utilities are missing, average values based on post stratification of the size of the dwelling (and dwelling type for cost of utilities) have been imputed. Tax on dwellings for owners is not taken into account in HH070.

#### HH080G

The same as for HY130G applies. HY080 is calculated as a sum of information from register and from interview.

#### PL030

The only difference is that the Norwegian question is only asked respondents working less than 32 hours a week. Persons working 32 hours or more a week are considered as 'carrying out a job or profession'. The interviewer reads the categories.

PL110

We ask for the name and address of the firm. Industry is coded from register information on the firm.

PL060

The question explicitly mentions that paid overtime and extra work at home shall be included.

PH020

In addition to chronic illness the question mentions 'any consequence of injury or any disability'.

PH030

This variable is built on three questions to ensure that all the information needed for the variable is of good quality.

1: ' Does this (chronic illness) lead to limitations in your daily activities'

2: ' Have these limitations lasted for at least six months'

3: ' Would you say that you are strongly limited or somewhat limited'?

PE010

This variable combines information from interview and register. A person is considered as in education if he/she is in education according to PL030 (=3) or if they are in education according to register information.

PE020

This information is taken from register. The register information is per 1 October 2007.

PE040

This information is also taken from register per 1 October 2007.

In connection with the 2003 data collection, no specific field-testing of the questionnaire was done. The questionnaire was by large the same as in the pilot survey conducted in June 2002, and our opinion was that further field testing was unnecessary. Before finalising the questionnaire it was submit to a structured interviewer test, where three experienced interviewers tested by pre-defined profiles. In cases where EU-SILC variables and standard variables in our surveys are close we have used the national standards, which are well tested.

The 2008 questionnaire is similar to the 2003-2007 questionnaires, only with a few minor adjustments.

### **2.3.2b Processing errors**

The data collection mode in the Norwegian EU-SILC is CATI, using the interview programme Blaise developed in the Netherlands. Data entry controls are built into the electronic questionnaire, and there is less need for post data control. Control of data in the programme is done in various ways.

First, all selections are done automatically by the programme, thus reducing the risk of errors in the selections done by interviewers. This also reduces the number of signals and checks necessary. Second, all numeric variables have absolute limits for data entry, for example when entering the number of hours worked per week it is impossible to enter numbers above 168. Thirdly, and similar, there are built inn checks (hard error) which it is impossible to override. An obvious example is that year and date of birth is checked against the date of the interview. Last there are signals (soft error) which gives a warning to the interviewer if the answer is either unlikely because it is extreme or because it does not correspond to answers given to questions asked earlier. These signals can be overridden if the answer in question is confirmed.

Examples of signals, checks and value limits for the target variables are given in table 2.2. For an overview of filters in the questionnaire we refer to the written questionnaire. No errors of any importance have been detected in the post data-collection process except some confusion on id for

household members where we need to programme a wider range of signals and checks. This error only occurs for persons who are not members of the household according to the population register. For mother, father or spouse id is assigned automatically based on kinship from register.

**Table 2.2 Signals, checks and value limits for target variables**

Variable	Description	SIGNAL (Soft error)	CHECK (Hard error)	Value
RB070	Month of birth	AGE <= 105	DATE <= TODATE	
RB080	Year of birth	AGE <= 105	DATE <= TODATE	
RB210	Basic activity status	IF RB210=3 AND AGE < 50		
RB220	Father id		NOT RB030	
RB230	Mother id		NOT RB030	
RB240	Spouse/partner id		NOT RB030	
RL020	Education at compulsory school	NOT [10..40]		0...50
RL030/40/60	Child-care at centre-based services/day-care center/grand parents			1...50
PB130	Month of birth	AGE <= 105	DATE <= TODATE	
PB140	Year of birth	AGE <= 105	DATE <= TODATE	
PB160	Father id		NOT PB030	
PB170	Mother id		NOT PB030	
PB180	Spouse/partner id		NOT PB030	
PE030	Age completed initial education	<= 13	> AGE	12..80
PL030	Self-defined current activity status	IF PL030 = 4 AND AGE < 50 IF PL030 = 6 AND AGE > 30		
PL060	Number of hours usually worked per week in main job	>= 70		0..168
PL100	Total number of hours usually worked in second, third... jobs	>=40 PL100+PL060>=100		0..168
PY200G	Gross monthly earnings for employees	Hourly NOT [40..500] Weekly NOT [100..7000] "Fortnightly" NOT [100.20000] Monthly NOT [100..50000] Yearly NOT [10000..800000]		
HY080G	Regular inter-household cash transfer received			0..999997
HY130G	Gross regular inter-household cash transfer paid			0..999997
HH030	Number of rooms available to household			0..50

HH031	Year of contract or purchasing or installation		1900..2004
HH060	Current rent related to occupied dwelling, if any	Monthly NOT [500..10000] Quarterly NOT [1500..30000] Yearly NOT [6000..120000]	
HH061	Subjective rent related to non-tenant paying rent at market price	>= 15000	0..99997

Professional coders at Statistics Norway, who also do the coding in the Labour force survey, do coding of occupation and industry. The coding is based on information from the interview, but also with support from registers. Industry is coded from information on the name and address of workplace. This is in most cases gathered from register (for the selected respondents) in advance of the interview. If the respondent confirms this information, no post-interview coding is necessary. Income is also gathered from register, so no editing is necessary.

### 2.3.3 Non-response errors

#### 2.3.3.1 Achieved sample size

- In our database there are 5 553 households that have completed an interview that is accepted.
- In our database there are 10 897 persons who are 16 years or older and are members of households that have completed an interview that is accepted.
- In our database there are 5 553 selected respondents who are members of households that have completed an interview that is accepted.

	2003	2004	2005	2006	2007	2008
Number of household with accepted interview	5852	6046	5991	5765	6013	5553
Number of persons 16 years and older	11709	12113	11912	11917	11706	10897
Number of sample persons with completed interview	5852	6046	5991	5765	6013	5553
Number of household members with completed interview	5715	6064	5921	6152	5693	5344

### 2.3.3.2 Unit non-response

#### *For the total sample:*

RA	DB120=11	8 798	0,993
	(DB120=all)-(DB120=23)	8 857	

RH	DB135=1	5 553	0,631
	DB130=all	8 798	

RP	RB250=11+12+13	10 897	1,000
	RB245=1+2+3	10 897	

$$\text{Ra is: } \frac{8798}{8857} = 0.993$$

$$\text{Rh is: } \frac{5553}{8798} = 0.631$$

$$\text{Rp is: } \frac{10897}{10987} = 1.000$$

Individual non-response rates, NRp is:  $(1-1.000)*100 = 0$

Overall individual non-response rates (\*NRp) are:  $(1-(\text{Ra}*\text{Rh}*\text{Rp}))*100 = 37,3$

#### *For new entries:*

RA	DB120=11	1131	0,993
	(DB120=all)-(DB120=23)	1139	

RH	DB135=1	708	0,626
	DB130=all	1131	

RP	RB250=11+12+13	1346	1,000
	RB245=1+2+3	1346	

$$\text{Ra is: } \frac{1131}{1139} = 0.993$$

$$\text{Rh is: } \frac{708}{1131} = 0.626$$

$$\text{Rp is: } \frac{1346}{1346} = 1.000$$

Individual non-response rates, NRp is:  $(1-1.000)*100 = 0$

Overall individual non-response rates (\*NRp) are:  $(1-(\text{Ra}*\text{Rh}*\text{Rp}))*100 = 37,8$

**Table 2.4.2.1. Household response rates: Comparison of results between wave 2006 (t) and wave 2005 (t-1)<sup>1</sup>**

		SAMPLE OUTCOME IN WAVE 2006											
		db135 =1	db135 =2	db120 =22	db130 = 22	db130 = 23	db130 = 24	db130 = 21	db120 = 21	db110 = 3-7	db110 = 10	db120 = 23	Total
SAMPLE OUTCOME IN WAVE 2005													
<b>db130 = 11</b>													
db135 = 1	3 323	1	0	89	42	39	303	2	0	0	0	0	3 799
db135 = 2	1	0	0	0	0	0	1	0	0	0	0	0	2
DB110 = 8	0	0	0	0	0	0	0	0	0	0	0	0	0
DB110 = 9	3 324	1	0	89	42	39	304	2	0	0	0	0	3 801
Total	3 324	1	0	89	42	39	304	2	0	0	0	0	3 801

**Table 2.4.2.2. Household response rates: Comparison of results codes between wave 2007 (t) and wave 2006 (t-1).**

		2007 (t)											
		Db130=11											
		Db13 5=1	db135 =2	db120 =22	db130 = 22	db130 = 23	db130 = 24	db130 = 21	db120 = 21	db110 = 3-7	db110 = 10	db120 = 23	Total
<b>2006 (t-1)</b>													
<b>db130 = 11</b>													
db135 = 1	2972	4	0	85	38	49	171	1	0	0	0	0	3320
db135 = 2	1	0	0	0	0	0	0	0	0	0	0	0	1
<b>db120 = 22</b>													
NH													
NONH	0	0	0	0	0	0	0	0	0	0	0	0	0
<b>db130 = 22</b>													
NH													
NONH	51	0	0	23	2	2	8	0	0	0	0	0	86
<b>db130 = 23</b>													
NH													
NONH	13	0	0	2	19	5	3	0	0	0	0	0	42
<b>db130 = 24</b>													
NH													
NONH	11	0	0	1	0	20	1	0	0	0	0	0	33
db130 = 21													304
db120 = 21													2
db110 = 3-7													0
db110 = 10													0
db130 = 23													42
<b>Total</b>	3048	4	0	111	59	76	183	1	0	0	0	0	3482
db110 = 8													0
db110 = 9													0

<sup>1</sup> Only respondents from all four waves (2005-2008) are included in this and the following two tables



**Table 2.4.2.3. Household response rates: Comparison of results codes between wave 2008 (t) and wave 2007 (t-1).**

	2008 (t)											
	Db130=11											
	db135 =1	db135 =2	db120 =22	db130 = 22	db130 = 23	db130 = 24	db130 = 21	db120 = 21	db110 = 3-7	db110 = 10	db120 = 23	Total
<b>2007 (t-1)</b>												
<b>db130 = 11</b>												
db135 = 1	2831	2	0	117	26	38	185	0	0	0	0	3199
db135 = 2	2	0	0	2	0	0	1	0	0	0	0	5
<b>db120 = 22</b>												
NH												
NONH	0	0	0	0	0	0	0	0	0	0	0	0
<b>db130 = 22</b>												
NH												
NONH	42	0	0	32	1	6	14	0	0	0	0	95
<b>db130 = 23</b>												
NH												
NONH	14	0	0	2	14	8	9	0	0	0	0	47
<b>db130 = 24</b>												
NH												
NONH	5	0	0	2	0	3	3	0	0	0	0	13
db130 = 21												223
db120 = 21												1
db110 = 3-7												0
db110 = 10												0
db130 = 23												68
<b>Total</b>	2894	2	0	155	41	55	212	0	0	0	0	3359
db110 = 8												0
db110 = 9												42

	2006	2007	2008
Wave response rate	0,875	0,875	0,862
Refusal rate	0,080	0,053	0,063
Non-contacted and others	0,034	0,055	0,063
Longitudinal follow-up rate 1 (05-06)	0,919		
Longitudinal follow-up rate 2 (06-07)		0,926	
Longitudinal follow-up rate 3 (07-08)			0,916
Follow-up ratio		0,926	0,929
Achieved sample size	0,875	0,918	0,905

**Table 2.3.2.4 Personal interview response rates**

The table for personal interview response rates is not given.

Personal response rates seem less relevant with the Norwegian sampling method and tracing. In Norway the sample persons are the selected respondents. Only the selected respondents are

followed from wave t to t+1. The household members who are not selected respondents (co-residents) are not followed from wave to wave. They may belong to the household of the selected respondent in year t+1 or they may have moved to another household. The household members who belong to the household of the selected respondent in the year t and t+1 will not constitute a representative sample. Hence longitudinal analysis will have to use only then sample of selected persons, the sample of all household members cannot be used.

With a household sample all persons in the households in the first wave are sample persons. Then it is relevant to ask f.i. how many from wave t-1 are interviewed in wave t. It is less relevant when the sample is a sample of persons (selected respondents), and when co-residents in the first wave are not considered sample persons that have to be followed in later waves.

Hence we consider that in the case when the sample consists only of selected sample persons the table for personal interview response rates will be similar to the table for household interview response rates.

### 2.3.3.3 Distribution of household.

**Table 2.4.4.1a Distribution of households by DB110, DB120, DB130 and DB135. 2005**

<b>HOUSEHOLD STATUS</b>	<b>Total</b>	<b>DB110=1</b>	<b>DB110=2</b>	<b>DB110=3</b>	<b>DB110=7</b>	<b>DB110=9</b>	<b>DB110=10</b>
Number in sample	5 147	0	0	0	0	5 147	0
Percent	100	0,0	0,0	0,0	0,0	100,0	0,0
<b>RECORD OF CONTACT AT ADDRESS</b>	<b>Total</b>	<b>DB120=11</b>	<b>DB120=21</b>	<b>DB120=22</b>	<b>DB120=23</b>		
Number in sample (DB110=2,8,10)	0	0	0	0	0		
Percent	0	0,0	0,0	0,0	0,0		
<b>HOUSEHOLDS QUESTIONNAIRE RESULT</b>	<b>Total</b>	<b>DB130=11</b>	<b>DB130=21</b>	<b>DB130=22</b>	<b>DB130=23</b>	<b>DB130=24</b>	
Number in sample (DB120=11 or DB110=1)	5 136	3 808	1 086	56	166	20	
Percent	100	74,1	21,1	1,1	3,2	0,4	
<b>HOUSEHOLD INTERVIEW ACCEPTANCE</b>	<b>Total</b>	<b>DB135=1</b>	<b>DB135=2</b>				
Number in sample (DB130=11)	3 808	3 806	2				
Percent	100	99,9	0,1				

**Table 2.4.4.1b Distribution of households by DB110, DB120, DB130 and DB135. 2006**

<b>HOUSEHOLD STATUS</b>							
	<b>Total</b>	<b>DB110 =1</b>	<b>DB110=2</b>	<b>DB110=3</b>	<b>DB110=7</b>	<b>DB110=9</b>	<b>DB110=10</b>
Number in sample	3 973	3 340	497	0	0	136	0
Percent	100	84,1	12,5	0,0	0,0	3,4	0,0
<b>RECORD OF CONTACT AT ADDRESS</b>	<b>Total</b>	<b>DB120=11</b>	<b>DB120=21</b>	<b>DB120=22</b>	<b>DB120=23</b>		
Number in sample (DB110=2,8,10)	497	495	2	0	0		
Percent	100	99,6	0,4	0,0	0,0		
<b>HOUSEHOLDS QUESTIONNAIRE RESULT</b>	<b>Total</b>	<b>DB130=11</b>	<b>DB130=21</b>	<b>DB130=22</b>	<b>DB130=23</b>	<b>DB130=24</b>	
Number in sample (DB120=11 or DB110=1)	3 962	3 340	332	92	46	152	
Percent	100	84,3	8,4	2,3	1,2	3,8	
<b>HOUSEHOLD INTERVIEW ACCEPTANCE</b>	<b>Total</b>	<b>DB135=1</b>	<b>DB135=2</b>				
Number in sample (DB130=11)	3 340	3 339	1				
Percent	100	100,0	0,0				

**Table 2.4.4.1c Distribution of households by DB110, DB120, DB130 and DB135. 2007**

<b>HOUSEHOLD STATUS</b>							
	<b>Total</b>	<b>DB110 =1</b>	<b>DB110=2</b>	<b>DB110=3</b>	<b>DB110=7</b>	<b>DB110=9</b>	<b>DB110=10</b>
Number in sample	3 763	3 263	454	46	0	0	0
Percent	100	86,7	12,1	1,2	0,0	0,0	0,0
<b>RECORD OF CONTACT AT ADDRESS</b>	<b>Total</b>	<b>DB120=11</b>	<b>DB120=21</b>	<b>DB120=22</b>	<b>DB120=23</b>		
Number in sample (DB110=2,8,10)	454	453	1	0	0		
Percent	100	99,8	0,2	0,0	0,0		
<b>HOUSEHOLDS QUESTIONNAIRE RESULT</b>	<b>Total</b>	<b>DB130=11</b>	<b>DB130=21</b>	<b>DB130=22</b>	<b>DB130=23</b>	<b>DB130=24</b>	
Number in sample (DB120=11 or DB110=1)	3 753	3 240	230	135	68	80	
Percent	100	86,3	6,1	3,6	1,8	2,1	
<b>HOUSEHOLD INTERVIEW ACCEPTANCE</b>	<b>Total</b>	<b>DB135=1</b>	<b>DB135=2</b>				

Number in sample (DB130=11)	3 240	3 235	5				
Percent	100	99,8	0,2				

**Table 2.4.4.1d Distribution of households by DB110, DB120, DB130 and DB135. 2008**

<b>HOUSEHOLD STATUS</b>	<b>Total</b>	<b>DB110=1</b>	<b>DB110=2</b>	<b>DB110=3</b>	<b>DB110=7</b>	<b>DB110=9</b>	<b>DB110=10</b>
Number in sample	3 965	3 088	469	0	0	408	0
Percent	100	77,9	11,8	0,0	0,0	10,3	0,0
<b>RECORD OF CONTACT AT ADDRESS</b>	<b>Total</b>	<b>DB120=11</b>	<b>DB120=21</b>	<b>DB120=22</b>	<b>DB120=23</b>		
Number in sample (DB110=2,8,10)	469	469	0	0	0		
Percent	100	100	0	0	0		
<b>HOUSEHOLDS QUESTIONNAIRE RESULT</b>	<b>Total</b>	<b>DB130=11</b>	<b>DB130=21</b>	<b>DB130=22</b>	<b>DB130=23</b>	<b>DB130=24</b>	
Number in sample (DB120=11 or DB110=1)	3 956	3 318	322	195	53	68	
Percent	100	83,9	8,1	4,9	1,3	1,7	
<b>HOUSEHOLD INTERVIEW ACCEPTANCE</b>	<b>Total</b>	<b>DB135=1</b>	<b>DB135=2</b>				
Number in sample (DB130=11)	3 318	3 316	2				
Percent	100	99,9	0,1				

#### 2.3.3.4 Distribution of persons by membership status

**Table 2.4.4.2. Distribution of persons by membership status (RB110). 2008.**

		<b>Current household members</b>				<b>Not current household members</b>			
	Total	RB110=1	RB110=2	RB110=3	RB110=4	RB120=2-4	RB110=6	RB110=7	
Total	8 871	8 103	0	238	96	22	15	5	
Percent	100	91,3	0,0	2,7	1,1	0,2	0,2	0,1	

### 2.3.3.5 Item non-response

**Table 2.4.5.1 Distribution of item non-response.**

	<b>A</b>	<b>B</b>	<b>C</b>
	% having received an amount	% with missing values (before imputation) <sup>2</sup>	% with partial information (before imputation) <sup>3</sup>
HY010: Total household gross income		100	
HY020: Total disposable household income		100	
HY022: Total disposable household income before social transfers other than old-age and survivors benefits		100	
<b>Gross income component at household level</b>			
HY040G: Gross income from rental of a property of land		2,6	
HY050G: Family related allowances		39,1	
HY060G: Social assistance		3,1	
HY070G: Housing allowances		2,8	
HY080G: Regular inter-household cash transfer received		8,8	
HY090G: Gross interest dividends, profit from capital investments in unincorporated business		99,8	
HY130G: Gross regular inter-household cash transfer paid		4,1	
HY140G: Tax on income and social contributions		97,3	
<b>Gross income component at personal level</b>			
PY010G: Gross employee or near cash income		78,0	
PY020G: Gross non-cash employee income		53,1	
PY030G: Employer's social insurance contribution		77,8	
PY035G: Contributions to individual pensions schemes		0,0	
PY050: Gross cash benefits or losses from self-employment (including royalties)		7,9	
PY080G: Gross regular pension from private schemes (other than those covered under ESSPROS)		4,3	
PY090G: Gross unemployment benefits		2,2	
PY100G: Gross old-age benefits		18,1	
PY110G: Gross survivor benefits		0,7	
PY120G: Gross sickness benefits		19,8	
PY130G: Gross disability benefits		13,1	
PY140G: Education-related allowances		8,9	

<sup>2</sup> Since information on income is taken from register there are no missing values.

## 2.4 Mode of data collection

**Table 2.4.1. Distribution of household members aged 16 and over by RB250, 2005-2008.**

<b>HOUSEHOLD MEMBERS 16+ (RB245 = 1 TO 3)</b>										
<b>2005</b>										
	Total	RB250=11	RB250=12	RB250=13	RB250=21	RB250=22	RB250=23	RB250=31	RB250=32	RB250=33
Total	7 979	0	0	7 667	1	0	39	24	0	248
%	100	-	-	96,1	-	-	0,5	0,3	-	3,1
<b>2006</b>										
	Total	RB250=11	RB250=12	RB250=13	RB250=21	RB250=22	RB250=23	RB250=31	RB250=32	RB250=33
Total	6672	0	150	6482	0	0	4	0	0	36
%	100	-	2,2	97,2	-	-	0,1	-	-	0,5
<b>2007</b>										
	Total	RB250=11	RB250=12	RB250=13	RB250=21	RB250=22	RB250=23	RB250=31	RB250=32	RB250=33
Total	6345	0	132	6213	0	0	0	0	0	0
%	100	-	2,1	97,9	-	-	-	-	-	-
<b>2008</b>										
	Total	RB250=11	RB250=12	RB250=13	RB250=21	RB250=22	RB250=23	RB250=31	RB250=32	RB250=33
Total	6424	0	129	6295	0	0	0	0	0	0
%	100	-	2,0	98,0	-	-	-	-	-	-
<b>SAMPLE PERSONS 16+ (RB245 = 1 TO 3 AND RB100 = 1)</b>										
<b>2005</b>										
	Total	RB250=11	RB250=12	RB250=13	RB250=21	RB250=22	RB250=23	RB250=31	RB250=32	RB250=33
Total	3806	0	0	3806	0	0	0	0	0	0
%	100	-	-	100	-	-	-	-	-	-
<b>2006</b>										
	Total	RB250=11	RB250=12	RB250=13	RB250=21	RB250=22	RB250=23	RB250=31	RB250=32	RB250=33
Total	3340	0	0	3339	0	0	1	0	0	0
%	100	-	-	100,0	-	-	0,0	-	-	-
<b>2007</b>										
	Total	RB250=11	RB250=12	RB250=13	RB250=21	RB250=22	RB250=23	RB250=31	RB250=32	RB250=33
Total	3235	0	0	3235	0	0	0	0	0	0
%	100	-	-	100	-	-	-	-	-	-
<b>2008</b>										
	Total	RB250=11	RB250=12	RB250=13	RB250=21	RB250=22	RB250=23	RB250=31	RB250=32	RB250=33
Total	3316	0	0	3316	0	0	0	0	0	0
%	100	-	-	100	-	-	-	-	-	-
<b>CO-RESIDENTS 16+ (RB245 = 1 TO 3 AND RB100 = 2)</b>										
<b>2005</b>										
	Total	RB250=11	RB250=12	RB250=13	RB250=21	RB250=22	RB250=23	RB250=31	RB250=32	RB250=33
Total	4173	0	0	3861	1	0	39	24	0	248

%	100	-	-	92,5	0,0	-	0,9	0,6	-	5,9
<b>2006</b>										
	Total	RB250=11	RB250=12	RB250=13	RB250=21	RB250=22	RB250=23	RB250=31	RB250=32	RB250=33
Total	3332	0	150	3143	0	1	3	0	0	36
%	100	-	4,5	94,3	-	0,0	0,1	-	-	1,1
<b>2007</b>										
	Total	RB250=11	RB250=12	RB250=13	RB250=21	RB250=22	RB250=23	RB250=31	RB250=32	RB250=33
Total	3110	0	132	2978	0	0	0	0	0	0
%	100	-	4,2	95,8	-	-	-	-	-	-
<b>2008</b>										
	Total	RB250=11	RB250=12	RB250=13	RB250=21	RB250=22	RB250=23	RB250=31	RB250=32	RB250=33
Total	3108	0	129	2979	0	0	0	0	0	0
%	100	-	4,2	95,8	-	-	-	-	-	-

**Table 2.4.2. Distribution of household members by RB260, 2005-2008.**

<b>HOUSEHOLD MEMBERS 16+ (RB245 = 1 TO 3) AND RB250 = 11 OR 13</b>							
<b>2005</b>							
	Total	RB260=1	RB260=2	RB260=3	RB260=4	RB260=5	MISSING
Total	7667	0	50	5540	0	2065	12
%	100	0,0	0,7	72,3	0,0	26,9	0,2
<b>2006</b>							
	Total	RB260=1	RB260=2	RB260=3	RB260=4	RB260=5	MISSING
Total	6482	0	17	4540	0	1920	5
%	100	0,0	0,3	70,0	0,0	29,6	0,1
<b>2007</b>							
	Total	RB260=1	RB260=2	RB260=3	RB260=4	RB260=5	MISSING
Total	6213	0	16	4416	0	1778	3
%	100	0,0	0,3	71,1	0,0	28,6	0,0
<b>2008</b>							
	Total	RB260=1	RB260=2	RB260=3	RB260=4	RB260=5	MISSING
Total	6295	0	11	4481	0	1803	0
%	100	0,0	0,2	71,2	0,0	28,6	0,0
<b>SAMPLE PERSONS 16+ (RB245 = 1 TO 3 AND RB100 = 1) AND RB250 = 11 OR 13</b>							
<b>2005</b>							
	Total	RB260=1	RB260=2	RB260=3	RB260=4	RB260=5	MISSING
Total	3806	0	34	3765	0	0	7
%	100	0,0	0,9	98,9	0,0	0,0	0,2
<b>2006</b>							
	Total	RB260=1	RB260=2	RB260=3	RB260=4	RB260=5	MISSING
Total	3339	0	13	3323	0	0	3
%	100	0,0	0,4	99,5	0,0	0,0	0,1
<b>2007</b>							

	Total	RB260=1	RB260=2	RB260=3	RB260=4	RB260=5	MISSING
Total	3235	0	9	3225	0	0	1
%	100	0,0	0,3	99,7	0,0	0,0	0,0
<b>2008</b>							
	Total	RB260=1	RB260=2	RB260=3	RB260=4	RB260=5	MISSING
Total	3316	0	9	3307	0	0	0
%	100	0,0	0,3	99,7	0,0	0,0	0,0
<b>CO-RESIDENTS 16+ (RB245 = 1 TO 3 AND RB100 = 2) AND RB250 = 11 OR 13</b>							
<b>2005</b>							
	Total	RB260=1	RB260=2	RB260=3	RB260=4	RB260=5	MISSING
Total	3861	0	16	1775	0	2065	5
%	100	0,0	0,4	46,0	0,0	53,5	0,1
<b>2006</b>							
	Total	RB260=1	RB260=2	RB260=3	RB260=4	RB260=5	MISSING
Total	3143	0	4	1217	0	1920	2
%	100	0,0	0,1	38,7	0,0	61,1	0,1
<b>2007</b>							
	Total	RB260=1	RB260=2	RB260=3	RB260=4	RB260=5	MISSING
Total	2978	0	7	1191	0	1778	0
%	100	0,0	0,2	40,0	0,0	59,7	0,0
<b>2008</b>							
	Total	RB260=1	RB260=2	RB260=3	RB260=4	RB260=5	MISSING
Total	2979	0	2	1174	0	1803	0
%	100	0,0	0,1	39,4	0,0	60,5	0,0

## 2.5 Imputation procedure

In the estimation of HH070, imputations are made on item non-response for items apart from rent and interests on mortgage:

Insurance: Average values based on dwelling size (7 groups based on sqm) are imputed for those with item non-response.

Service bills: Imputed by same method as insurance.

Utility bills: Average values based on dwelling type and size (13 groups) are imputed for those with item non-response.

Imputations for one or more items are done for approximately 40% of all households.

No other imputations are done.

## 2.6 Imputed rent

Imputed rent is calculated by using data from the Norwegian rental survey 2007, where 7 681 renters were interviewed about their rent. The households are post-stratified by region and dwelling size, and values are imputed according to the same method as used in the national HBS.



The regions used are Oslo (1), the county of Akershus and cities Stavanger, Bergen Trondheim and Tromsø (2), other densely populated areas with 20 000 or more inhabitants (3), other densely populated areas with 2000 – 19999 inhabitants (4), and finally other areas not included in 1-4 (5). In Oslo, we also separate households with dwellings more and less than 100 sqm. The imputed values (per month) in 2007 are as follows:

Area 1 and less than 100 sqm:  $HY030 = 3766.80 + (62.12 * sqm)$

Area 1 and 100 sqm or more:  $HY030 = 4894.22 + (49.87 * sqm)$

Area 2:  $HY030 = 3261.60 + (41.21 * sqm)$

Area 3:  $HY030 = 3053.88 + (28.65 * sqm)$ ;

Area 4:  $HY030 = 3402.29 + (15.48 * sqm)$ ;

Area 5:  $HY030 = 2923.18 + (11.43 * sqm)$ ;

## 2.7 Company cars

In 2005, 2006 and 2008 the estimated value of using a company car is reported in PY021.

In 2007 the total value of company car and other non-cash employee income is included in PY020. Other non-cash employee income included in this variable is:

- Electronic communication paid by employer (telephone, internet connection etc)
- Insurance against accidents and other insurances
- Advantage of subsidised loans
- Advantage of subsidised stocks in the company
- Other taxable payments in kind such as electricity, accommodation, holidays/travels, transport etc.

## 2.8 Interview duration

The total average interview length was approximately 21 minutes<sup>1</sup>.

# 3. Comparability

## 3.1 Basic concepts and definitions

### The reference population

The reference population is persons aged 16 years or more at December 31 2007 who are living outside an institution.

### The private household definition

A private household is defined as individuals that share food, meaning that they either do not pay for their food or that they share expenses for food. The definition does not require that they eat at the same times or that they are related.

### The household membership

Persons will be considered as household members if they spend most of their nights at the address of the household.

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<sup>1</sup> Average estimated by excluding all recorded interviews lasting less than 5 and more than 120 minutes. Recording of interview time may be disturbed if the interviewer either forgets to close the electronic questionnaire, or opens it after completing the interview to make corrections.

1. A spouse/cohabitant who registered at the household address but is absent from the dwelling because of work, education or conscription is still considered a member of the household. In case the spouse/cohabitant have moved from the dwelling but juridical still owns (part of) the dwelling is not considered as a member of the household.
2. Persons aged 18 years and more who are absent because of education are considered members of the household if they spend a minimum of 4 days a week at the address of the household.
3. Persons aged 17 years and younger who are absent because of education are considered as members of the household.
4. Persons temporarily absent from the dwelling for less then 6 months are not considered as permanent residents unless they do not have a private address elsewhere.
5. Persons in institutions (including children) and in private care are considered as living permanently at their place of residence if the stay exceeds 6 months. Individuals admitted to hospitals or imprisoned are considered as permanent residents where they had their last place of permanent residency.
6. Persons in conscription service are members of the household that they were members of before the conscription.

#### The income reference period

The income reference period is the calendar year n-1.

#### The period for taxes on income and social insurance contributions

The period for taxes on income and social insurance contributions is the calendar year n-1.

#### The reference period for taxes on wealth

The reference period for taxes on wealth is the calendar year n-1.

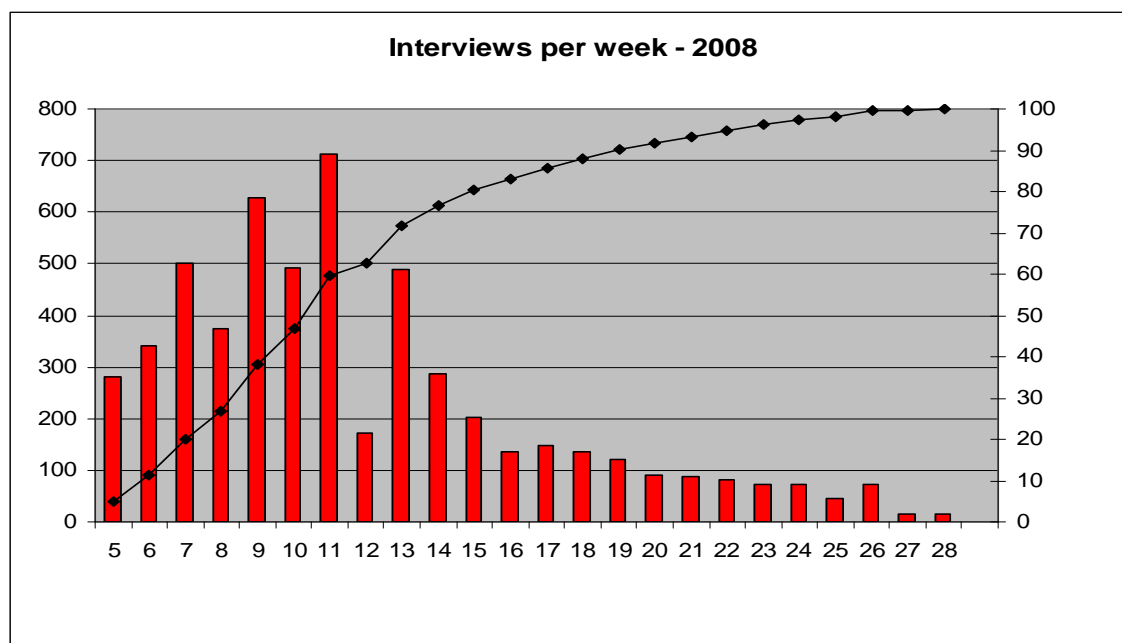
#### The lag between the income reference period and current variables

The income variables are collected from registers and the interval between the end of the income reference period and the time of interview for current variables is maximum 6 months

#### The total duration of the data collection of the sample

The interviews were carried out starting 28 January and ending 7 July. Figure 3.1 shows the number of interviews for every week of the data collection period. Poles indicating number of interviews, line indicating cumulative share of interviews. The line shows that by week 14, approximately 77 percent of the interviews were completed. The drop in number of interviews in week 12 can be explained by the Easter holidays.

**Figure 3.1 Number of interviews per week**



The basic concepts remain basically unchanged from 2003 to 2008

## 3.2. Components of income

### 3.2.1 Differences between the national definitions and standard EU-SILC definitions, and an assessment of the consequences of the differences mentioned in respect to target variables.

This section gives an overview of how income data from registers have been organised in order to compare with income concepts outlined in the EU-SILC guidelines. In addition references are made to any departures from these guidelines.

All income data derived from registers are recorded gross at component level. All income data are collected at the individual level (i.e. the person registered as the receiver of the income item). This also concerns typically ‘household’ related income such as housing benefits and social assistance. Register data also includes the income of children aged 13-16 years at the individual level. The income of children aged 12 and younger are, however, included in their parent’s income (e.g. interest received).

#### Total household gross income (HY010):

The sum of all components: HY040G + HY050G + HY060G + HY070G + HY080G + HY090G + HY110G + the sum for all household members of: PY010G + PY021G + PY050G + PY090G + PY100G + PY110G + PY120G + PY130G + PY140G.

Comments: HY030G (imputed rent) is not calculated. Hence HY100G (interest paid on mortgages) has not been deducted when constructing HY010.

#### Total disposable income (HY020):

Defined as Total gross income minus (HY130G + HY140G).

Note: HY120G (regular taxes on wealth) is included in HY140G and HY100G (interest on mortgage) has not been calculated.

Total disposable household income before social transfers except old-age and survivor's benefits (HY022)

Defined as HY020 minus the sum for all household members of: (PY090N + PY120N + PY130N + PY140N) + HY050N + HY060N + HY070N.

Total disposable household income before social transfers including old-age and survivor's benefits (HY023)

Defined as HY020 minus the sum for all household members of: (PY090N + PY100N + PY110N + PY120N + PY130N + PY140N) + HY050N + HY060N + HY070N.

Income from rental of property or land (HY040G)

Defined as net income from rentals (buildings, dwellings, land etc.)

Family/children-related allowances (HY050)

Includes the following components:

- child allowance
- maternity benefits (daily cash benefit for working mothers and lump sum benefit for non-working mothers)
- cash-for-care benefit
- child support for single parents (education and childcare)
- transitional benefit to single parents

Deviation from the SILC concept:

The current register data covers only roughly 50% of the total amount paid out in daily cash maternity benefit. The remaining amount is included in PY010 (Gross employee cash or near cash income).

Social assistance (HY060):

Includes the total amount received in social assistance (benefits and loans).

Housing allowance (HY070):

Includes dwelling support in cash received by renters and owner-occupiers.

Deviation from the SILC concept:

The benefit from renting a subsidised dwelling is not included in the income concept.

Regular inter-household cash transfer received (HY080):

Includes alimonies and paid maintenance from former spouse (or advance payment from the government). Information on regular private cash support received by children living in separate households (e.g. students) is collected from the interview.

Interest, dividends, profit from capital investment in unincorporated business ((HY090):

Interest and dividends are taxable income. In addition some other minor income items are included, e.g. profit from life insurance and certain types of income from abroad (lottery winnings etc.).

Regular taxes on wealth (HY120):

Included in HY140: Total tax on income.

Regular inter-household cash transfer paid (HY130);

Includes paid maintenance to children and former spouse (alimony). These payments appear as deductions in the tax return. Information on regular cash support provided by parents to children living in separate households (e.g. students) is included from the interview.

Total tax on income and social contribution (HY140);

Include assessed income and wealth taxes and social contributions.

Deviation from the SILC concept:

The variable includes both taxes on income and wealth. It is difficult to identify each tax components because all taxes are recorded net, i.e. after special tax deductions (e.g. special tax deduction for residents of Finnmark, tax deduction for received dividends, tax deduction for low-income households etc.).

Gross Employee Cash income (PY010);

Defined as the sum of all wages and salaries including overtime, holiday pay, tips and bonuses.

Deviations from the SILC concept:

- payments to foster parents (included in wages, cannot be separated from wages)
- severance and termination pay ( ----- “ -----)
- sickness benefits that are not directly paid out to the employee (i.e. compensation from the Social Security Scheme to the employer)

With the exception of sickness benefits these deviations are expected to be of a minor importance.

Gross non-cash employee income (PY020);

In 2008 this variable includes:

- Electronic communication paid by employer (telephone, internet connection etc)
- Insurance against accidents and other insurances
- Advantage of subsidised loans
- Advantage of subsidised stocks in the company
- Other taxable payments in kind such as electricity, accommodation, holidays/travels, transport etc.

In 2007 PY020 includes the total value of company car and other non-cash employee income mentioned above.

PY020 is not reported for 2005 and 2006.

Cash benefits or losses from self-employment (PY050);

Entrepreneurial income is collected net in register data. Gross cash losses thus appear as negative amounts.

Deviation from the SILC concept:

It has not been possible to identify – and thus deduct from self-employment income – interest paid on business loans.

Non-cash income from self-employment – value of own goods for own consumption (PY070);

The tax-assessed benefit from consuming own goods (estimated by the tax authorities) is included in gross cash income from self-employment (PY050).

Unemployment benefits (PY090):

Includes unemployment benefits for employees and unemployment benefits for the self-employed.

Deviation from the SILC concept:

No information available on benefits (in-kind) related to vocational training.

Old-age function (PY100):

Include old-age pension from the social security system and occupational pensions.

Deviation from the SILC concept:

It was not possible to split the different types of occupational pensions into different functions, e.g. old-age, disability or survivor's pension. Instead all types of occupational pensions have been included under the old-age function.

Survivor's benefits (PY110):

Includes survivor's pension from the National Insurance Scheme. In addition several minor income items have been included that are received mainly by survivors, e.g. tax-free wage income and holiday pay earned by the deceased.

Deviation from the SILC concept:

Not possible to include funeral grants in the income concept. This benefit is transferred directly to the firm of undertakers.

Social benefits in the sickness (PY120):

Includes sickness benefits paid by the National Insurance Scheme directly to the employee (i.e. after day 16 of sickness).

Deviation from the SILC concept:

The current register data covers only roughly 50% of the total amount paid out in daily cash sickness benefit. The remaining amount (compensation to the employer) is included in PY010 (Gross employee cash or near cash income).

Disability benefits (PY130):

Include disability pension from the National Insurance Scheme, basic and attendance benefit and rehabilitation benefits.

Deviation from the SILC concept:

Early retirement benefit is included in occupational pension, i.e. old-age function.

Education related allowances (PY140):

Include student grants from the State Educational Loan Fund.

### **3.2.2 Comparison between the national definition of income and standard EU-SILC definition**

For 2003 there are only minor differences in the amount of total income and disposable (after-tax) income based on national definitions and the corresponding figures based on SILC definitions. As is shown in table 1, the difference amounted to about 5 billion NOK (or ca 0.5 per cent) for both income concepts.

The main explanation for the difference between the two income definitions is that the national definition comprises some income items that are not part of the SILC income definition. This is for example the case for certain fringe benefits other than company cars (e.g. free newspapers and telephone, low-interest loans, private insurance paid by employers etc.). In addition the SILC definition does not include *capital gains*, while this is the case in the national definition. In 2003 this income item amounted to a negative value of roughly 2 billion NOK in Norway. Finally, the national definition includes payments from a private pension scheme. Although this item is collected in SILC (PY080G), it is not included in the definition of income.

**Table 3.2.2.1 Total gross income and disposable income. Billion NOK. 2003**

	SILC definition	National definition	Difference
Total Gross income	975,0	979,8	4,8
Disposable income <sup>1</sup>	734,5	739,3	4,8

<sup>1</sup> In the national definition this income concept refers to 'After-tax income'.

In addition there are differences between national practice and SILC in income definitions at the component level, although these differences have almost no impact on total gross income and disposable income. In the definition of employee income (wages and salaries) the national definition for example includes sickness benefit and maternity allowance, while in the SILC definition these components are considered part of transfers. For self-employment income sickness benefit is again included in the national definition, but not in the SILC definition (transfer). In addition several types of pensions are specified in the SILC income concept (e.g. old-age pension, disability pension and survivor's pension), while in the national definition these programmes are all part of 'Social security benefits'.

**Table 3.2.2.2 Comparison of income components. The national definition and EU-SILC. Billion NOK. 2003**

Income component	SILC	National definition
Employee income	607,5	627,3
Self-employment income	48,7	50,6
Property income	86,8	84,9
Transfers received	232,0	216,9
Total income	975,0	979,8
Taxes and negative transfers	240,5	240,5
Disposable (after-tax) income	734,5	739,3

### **3.2.3. The source used for the collection of income variables**

All income data in the EU-SILC are collected from various administrative and statistical registers. The main registers used are:

(a) The Tax Return Register

(Employee income, self-employment income, taxable pensions etc.)

(b) The Tax Register for Personal Tax Payers

(Assessed taxes, social security contributions)

(c) National Insurance Service

(Family allowances, attendance benefits, cash-for-care, child care benefits to single parents)

(d) Register for end-of-the-year Certificates

(Unemployment benefits, sickness and maternity allowance, company car),

(e) State Educational Loan Fund

(Education related benefits),

(f) The State Housing Bank

(Dwelling support)

(g) Social statistics

(Social assistance)

A comprehensive data file on income is created by linking the total resident population to all the different income registers. The key that links the individual to the registers is the Personal Identification Number.

### **3.2.4. The form in which income variables at component level have been obtained**

The register data only report gross income at component level. Total assessed taxes and contribution to social security are collected separately from tax registers.

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

All income data recorded gross at component level.

## **3.3 Tracing rules**

In the Norwegian EU-SILC the respondent (person/selected respondent) is selected from the population register. All household members of the selected respondent are included in the



survey. If the household composition changes between waves, household members are not traced. We only trace the selected respondent. Tracing is done by using updated data from the population register, data from the previous data collection and by searching for phone numbers. The interviewer can also apply different ad-hoc methods to trace respondents.

## **4. COHERENCE**

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

With the exception of inter-household transfers all the income data in SILC are from register. Hence, in our opinion, there is no point in comparing the results from SILC-Norway with external sources since the source we would compare with is the source used in SILC-Norway. In 3.2.1 we compared with national definitions. If we compare SILC-Norway with information from register using SILC-definitions we will only measure the effects of non-response that are not corrected through weighting.