Statistisk sentralbyrå
Statistics Norway

INTERMEDIATE QUALITY REPORT

EU-SILC 2010 operation

Statistics Norway

1. Common cross-sectional European Union Indicators

Indicators are calculated by using the SAS-programs developed by Eurostat, available at the CIRCA website.

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

Table 1.1. At-risk-of-poverty rate after social transfers by age and gender, 2009-2010. Percent. [OV-1a]

	Sex	2009	2010
Total	Total	12	11
	Male	10	10
	Female	12	12
0-17 years	Total	12	12
18-64 years	Total	12	11
	Male	11	11
	Female	12	11
65 years and over	Total	12	12
	Male	4	4
	Female	19	19

Table 1.2. At-risk-of-poverty rate after social transfers by most frequent activity status and gender, 2009-2010. Percent. [SI-S1c]

	Sex	2009	2010
Employment	Total	6	5
	Male	6	5
	Female	6	5
Non employment	Total	23	21
	Male	20	18
	Female	25	23
Unemployment	Total	39	31
	Male	41	40
	Female	37	19
Retired	Total	13	13
	Male	5	4
	Female	20	20
Inactive population – Other	Total	32	29
	Male	35	34
	Female	30	26

Table 1.3. At-risk-of-poverty rate after social transfers by household type, 2009-2010. Percent. [SI-S1a]

	2009	2010
Total	11	11
Households without dependent children	14	13
One adult younger than 64 years	27	26
One adult older than 65 years	29	30
Single female	32	31
Single male	23	24
Two adults younger than 65 years	7	5
Two adults, at least one aged 65 years and over	2	1
Three or more adults	6	5
Households with dependent children	10	9
Single parent with dependent children	29	29
Two adults with one dependent child	4	4
Two adults with two dependent children	3	3
Two adults with three or more dependent children	10	8
Three or more adults with dependent children	13	10

Table 1.4. At-risk-of-poverty rate after social transfers by tenure status and gender and selected age groups, 2009-2010. Percent. [SI-S1d]

Age	Sex	Tenure status	2009	2010
Total	**Total**	Owner	6	7
		Rent	40	40
	Male	Owner	5	6
		Rent	36	41
	Female	Owner	7	9
		Rent	43	39
0-17 years	**Total**	Owner	7	8
		Rent	44	50
18-64 years	**Total**	Owner	5	6
		Rent	42	39
	Male	Owner	4	6
		Rent	37	41
	Female	Owner	5	6
		Rent	46	38
65 years and over	**Total**	Owner	10	12
		Rent	20	19
	Male	Owner	4	3
		Rent	13	16
	Female	Owner	15	18
		Rent	26	21

Table 1.5. Inequality of income distribution S80/20 ratio. 2009-2010. [SI-C1]

	2009	2010
S80/S20	3.5	3,4

Table 1.6. Relative median at-risk-of-poverty gap broken down by age and gender. 2009-2010. Percent. [OV-1b]

	Sex	2009	2010
Total	Total	21	19
	Male	26	24
	Female	18	16
0-17 years	Total	18	20
18-64 years	Total	29	26
	Male	30	28
	Female	27	24
65 years and over	Total	11	12
	Male	8	13
	Female	11	11

Table 1.7. Inequality of income distribution Gini coefficient. 2009-2010. [SI-C2]

	2009	2010
GINI	24	24

1.2. Secondary Laeken indicators of social cohesion

Table 1.8. At-risk-of-poverty rate before social transfers by age and gender, 2009. Percent. [SI-C6]

	Sex	2009	2010
Total	Total	25	27
	Male	23	25
	Female	27	28
0-17 years	Total	28	29
18-64 years	Total	25	26
	Male	23	25
	Female	27	28
65 years and over	Total	22	24
	Male	13	17
	Female	28	30

1.3. Other indicators

1.3.1 Equivalised disposable income
The equivalised disposable income is based on other sources than EU-SILC

1.3.2 The gender pay gap
The gender pay gap is based on other national sources than EU-SILC.

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 (se quality report for

2007). From 2008 on, the sample is selected only according to the new design because all respondent from the old sample were rotated out.

The sample in 2010 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 has been used in 2010.

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 2010 sample consists of 9 306 persons 16 years and over. During the field period, 274 of these proved to be non-eligible (either dead or emigrated), thus giving a gross sample of 9 032 persons. We succeeded in interviewing 5 236 of these (net sample), a response rate of 58.0 percent. 5 227 interviews were accepted in the data file.

In all households interviewed there were 10 204 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 2010 survey this gives an achieved effective sample size of 5 031 households and 9 821 persons.

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

Table 2.1 DB075: Rotation group

Rotation group	Frequency
1 = 2004-2011	1 175
2 = 2005-2012	1 151
3 = 2006-2013	1 097
4 = 2007-2014	1 184

5 = 2008-2015	1 114
6 = 2009-2016	1 356
7 = 2010-2017	1 063
8 = 2003-2010	1 167

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, se previous intermediate quality reports.

Deleting rotational groups and adding new rotational groups and supplementing the sample resulted in a sample in 2010 of 9 306 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 26 August 2010.

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.
New entries in 2010 are coded with DB075 = 7

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 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. The weights are then calculated as 'gross sample n / net sample n' in each stratum.

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 31.12.2009).

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.

2.1.8.4. Final cross-sectional weight
See 2.1.8.2

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. 2010

	Estimate	Standard error	Kish	N	Effective sample size
HCR, after social transfers: Age 0-15	0.1027	0.0094	1.2727	2 815	2 709
HCR, after social transfers: Age 16-24	0.2940	0.0164	1.3347	1 783	1 716
HCR, after social transfers: Age 25-49	0.0897	0.0064	1.2974	4 378	4 214
HCR, after social transfers: Age 50-64	0.0460	0.0052	1.2661	2 589	2 492
HCR, after social transfers: Age more then 64	0.1139	0.0102	1.4105	1 675	1 612
HCR, after social transfers: Male	0.1008	0.0053	1.3169	6 657	6 407
HCR, after social transfers: Female	0.1219	0.0058	1.3458	6 585	6 338
HCR, after social transfers: Male Age 0-15	0.1054	0.0105	1.2800	1 421	1 368
HCR, after social transfers: Male Age 16-24	0.2875	0.0209	1.3704	937	902
HCR, after social transfers: Male Age 25-49	0.0918	0.0113	1.3122	2 134	2 054
HCR, after social transfers: Male Age 50-64	0.0402	0.0058	1.1990	1 313	1 264
HCR, after social transfers: Male Age more then 64	0.0410	0.0067	1.3381	852	820
HCR, after social transfers: Female Age 0-15	0.1000	0.0108	1.2652	1 394	1 342
HCR, after social transfers: Female Age 16-24	0.3010	0.0233	1.2974	846	814
HCR, after social transfers: Female Age 25-49	0.0876	0.0071	1.2758	2 244	2 160
HCR, after social transfers: Female Age 50-64	0.0517	0.0069	1.3092	1 276	1 228
HCR, after social transfers: Female Age more then 64	0.1743	0.0166	1.3497	823	792
HCR, after social transfers: Male Age more then 16	0.0997	0.0061	1.3261	5 236	5 039
HCR, after social transfers: Female Age more then 16	0.1274	0.0058	1.3575	5 191	4 996
HCR, after social transfers: Male Age 16-64	0.1129	0.0071	1.3324	4 384	4 219
HCR, after social transfers: Female Age 16-64	0.1138	0.0059	1.2910	4 366	4 202

HCR, after social transfers: Male Age 0-64	0.1111	0.0060	1.3214	5 805	5 587
HCR, after social transfers: Female Age 0-64	0.1108	0.0061	1.2858	5 762	5 546
HCR, after social transfers: One person hh under 65 years	0.2765	0.0161	1.0229	880	847
HCR, after social transfers: One person hh 65 years and over	0.2834	0.0246	1.0780	354	341
HCR, after social transfers: One person hh male	0.2463	0.0185	1.0275	639	615
HCR, after social transfers: One person hh female	0.3122	0.0188	1.0517	595	573
HCR, after social transfers: One person hh total	0.2786	0.0134	1.0430	1 234	1 188
HCR, after social transfers: 2 adults, nodependant children, both adults under 65 years	0.0568	0.0066	1.0833	2 127	2 047
HCR, after social transfers: 2 adults, nodependant children, at least one adult 65 years or	0.0140	0.0026	1.0231	1 468	1 413
HCR, after social transfers: Other hh withoutdependant children	0.0431	0.0079	1.0811	1 146	1 103
HCR, after social transfers: Single parent hh,one or more dependant children	0.3101	0.0317	1.0721	630	606
HCR, after social transfers: 2 adults, onedependant child	0.0417	0.0101	1.0919	1 154	1 111
HCR, after social transfers: 2 adults, twodependant children	0.0301	0.0054	1.0617	2 876	2 768
HCR, after social transfers: 2 adults, three ormore dependant children	0.0854	0.0143	1.1113	2 050	1 973
HCR, after social transfers: Other hh withdependant children	0.3308	1.5568	0.9826	11	11
HCR, after social transfers: Hh withoutdependant children	0.1302	0.0057	1.3203	5 975	5 751
HCR, after social transfers: Hh with dependantchildren	0.0943	0.0073	1.2581	6 721	6 469
HCR, after social transfers: Accommodationtenure status:Owner or rent free	0.0735	0.0045	1.3713	12 141	11 685
HCR, after social transfers: Accommodationtenure status:Tenant	0.4005	0.0213	1.1173	1 068	1 028
HCR, after social transfers: Main activitystatus: Employed	0.0502	0.0035	1.2954	6 330	6 092
HCR, after social transfers: Main activitystatus: Unemployed	0.2869	0.0401	1.2959	193	186
HCR, after social transfers: Main activitystatus: Retired	0.1266	0.0116	1.4047	1 445	1 391
HCR, after social transfers: Main activitystatus: Other inactive	0.1736	0.0085	1.2891	5 063	4 873
HCR, after social transfers: Main activitystatus: Employed, Male	0.0502	0.0054	1.2773	3 315	3 191
HCR, after social transfers: Main activitystatus: Unemployed, Male	0.3638	0.0555	1.2729	110	106
HCR, after social transfers: Main activitystatus: Retired, Male	0.0390	0.0067	1.3543	729	702
HCR, after social transfers: Main activitystatus: Other inactive, Male	0.1784	0.0105	1.3132	2 401	2 311
HCR, after social transfers: Main activitystatus: Employed, Female	0.0502	0.0043	1.3157	3 015	2 902
HCR, after social transfers: Main activitystatus: Unemployed, Female	0.1634	0.0357	1.2165	83	80
HCR, after social transfers: Main activitystatus: Retired, Female	0.1969	0.0186	1.3318	716	689

HCR, after social transfers: Main activitystatus: Other inactive, Female	0.1693	0.0105	1.2660	2 662	2 562
HCR, after social transfers: Work intensity: hhwithout dependent children, w=0	0.5046	0.0641	1.1212	219	211
HCR, after social transfers: Work intensity: hhwithout dependent children, 0<w<1	0.1254	0.0170	1.2091	1 878	1 808
HCR, after social transfers: Work intensity: hhwithout dependent children, w=1	0.0576	0.0074	1.2674	4 624	4 450
HCR, after social transfers: Work intensity: hhwith dependent children, w=0	0.2320	0.0118	1.2265	1 931	1 859
HCR, after social transfers: Work intensity: hhwith dependent children, 0<w<0.5	0.3656	0.0541	1.2785	144	139
HCR, after social transfers: Work intensity: hhwith dependent children, 0.5<=w<1	0.0951	0.0132	1.4134	1 054	1 014
HCR, after social transfers: Work intensity: hhwith dependent children, w=1	0.0456	0.0065	1.2959	2 846	2 739
HCR, before social transfers including pensions:Male Age 0-15	0.2781	0.0158	1.1750	1 421	1 368
HCR, before social transfers including pensions:Male Age 16-24	0.4010	0.0213	1.2644	937	902
HCR, before social transfers including pensions:Male Age 25-49	0.2236	0.0103	1.2247	2 134	2 054
HCR, before social transfers including pensions:Male Age 50-64	0.2126	0.0129	1.1898	1 313	1 264
HCR, before social transfers including pensions:Male Age more then 64	0.1980	0.0146	1.0944	852	820
HCR, before social transfers including pensions:Female Age 0-15	0.2857	0.0183	1.1722	1 394	1 342
HCR, before social transfers including pensions:Female Age 16-24	0.4352	0.0203	1.2012	846	814
HCR, before social transfers including pensions:Female Age 25-49	0.2468	0.0107	1.2081	2 244	2 160
HCR, before social transfers including pensions:Female Age 50-64	0.2437	0.0138	1.1681	1 276	1 228
HCR, before social transfers including pensions:Female Age more then 64	0.3086	0.0201	1.2145	823	792
HCR, before social transfers excluding pensions:Male Age 0-15	0.2850	0.0160	1.1702	1 421	1 368
HCR, before social transfers excluding pensions:Male Age 16-24	0.4163	0.0212	1.2513	937	902
HCR, before social transfers excluding pensions:Male Age 25-49	0.2293	0.0105	1.2169	2 134	2 054
HCR, before social transfers excluding pensions:Male Age 50-64	0.2495	0.0135	1.1701	1 313	1 264
HCR, before social transfers excluding pensions:Male Age more then 64	0.8670	0.0114	0.9700	852	820
HCR, before social transfers excluding pensions:Female Age 0-15	0.2954	0.0183	1.1678	1 394	1 342
HCR, before social transfers excluding pensions:Female Age 16-24	0.4459	0.0198	1.1942	846	814
HCR, before social transfers excluding pensions:Female Age 25-49	0.2536	0.0109	1.2024	2 244	2 160

HCR, before social transfers excluding pensions:Female Age 50-64	0.3190	0.0146	1.1361	1 276	1 228
HCR, before social transfers excluding pensions:Female Age more then 64	0.9296	0.0077	0.9257	823	792
Median equivalised disposable income	281 468.0952	2 039.6222	1.1157	13 248	12 751
At-risk-of-poverty threshold, one person hh	133 719.7553	2 538.6069	1.0250	1 234	1 188
At-risk-of-poverty threshold, hh 2 adults 2dependent children	178 548.6810	1 790.6508	1.0277	2 876	2 768
S80/S20	3.3966	0.0981	1.1435	13 248	12 751
Relative median at-risk-of-poverty gap: Male Age0-15	0.1924	0.0118	1.0777	1 421	1 368
Relative median at-risk-of-poverty gap: Male Age16-24	0.3947	0.0110	1.1935	937	902
Relative median at-risk-of-poverty gap: Male Age25-49	0.2239	0.0302	1.1172	2 134	2 054
Relative median at-risk-of-poverty gap: Male Age50-64	0.1876	0.0842	1.0978	1 313	1 264
Relative median at-risk-of-poverty gap: Male Agemore then 64	0.1249	0.0140	1.0809	852	820
Relative median at-risk-of-poverty gap: FemaleAge 0-15	0.1917	0.0084	1.0770	1 394	1 342
Relative median at-risk-of-poverty gap: FemaleAge 16-24	0.3536	0.0113	1.1629	846	814
Relative median at-risk-of-poverty gap: FemaleAge 25-49	0.1472	0.0370	1.0972	2 244	2 160
Relative median at-risk-of-poverty gap: FemaleAge 50-64	0.1669	0.0630	1.0906	1 276	1 228
Relative median at-risk-of-poverty gap: FemaleAge more then 64	0.1115	0.0073	1.1251	823	792
Median income below the at-risk-of-povertythreshold	302 977.3495	2 231.8150	1.1157	13 248	12 751
HCR P.L.as 50% median	0.0602	0.0038	1.3310	13 248	12 751
HCR P.L.as 70% median	0.1805	0.0056	1.2954	13 248	12 751
HCR P.L.as 40% median	0.0350	0.0026	1.3428	13 248	12 751
Gini coefficient	0.2358	0.0037	0.9207	13 248	12 751
Mean equivalised disposable income	302 977.3495	2 070.9409	1.0120	13 248	12 751

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 in stead of non-eligible because their emigration were not registered in the population register. 274 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 74 000 in 2010), and partly because the new sampling frame is updated very frequently.

2.3.2 Measurement and processing 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, nearly 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 150 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. Theses interviewers are stationed in the sample areas according to the standard sampling frame. The approximately 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 2010, 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.

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).

HH030
Only rooms of at least 6 sqm are included. The consequences for comparability are negligible.

HH040
We have split this question in two: Rot in windows or floor and Leaking roof, damp walls or floor.

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.

HH090
'For the sole use of the household' is not included in the Norwegian questionnaire.

HS160
The Norwegian question asks 'not enough **day**light'.

HY080G
The same as for HY130G applies. HY080 is calculated as a sum of information from register and from interview.

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.

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 2009.

PE040
This information is also taken from register per 1 October 2009.

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 2010 questionnaire is similar to the 2003-2008 questionnaires, only with a few minor adjustments.

2.3.2.2. 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 currentactivity 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
HY080G	Regular inter-household cash transfer received			0..999997
HY130G	Gross regular inter-household cash transfer paid			0..999997
HH030	Number of rooms			0..50

	available to household		
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 5 227 households that have completed an interview that is accepted.
- In our database there are 10 204 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 5 227 selected respondents who are members of households that have completed an interview that is accepted.

2.3.3.2. Unit non-response

For the total sample:

RA	DB120=11	9 032	0,971
	(DB120=all)-(DB120=23)	9 306	
RH	DB135=1	5 227	0,579
	DB130=all	9 032	
RP	RB250=11+12+13	10 204	1,000
	RB245=1+2+3	10 204	

Ra is: $\dfrac{9032}{9306} = 0.971$

Rh is: $\dfrac{5227}{9032} = 0.579$

Rp is: $\dfrac{10204}{10204} = 1.000$

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

Overall individual non-response rates (*NRp) are: (1-(Ra*Rh*Rp))*100 = 43,8

For new entries:

RA	DB120=11	1 037	0,976
	(DB120=all)-(DB120=23)	1 063	
RH	DB135=1	629	0,607
	DB130=all	1 037	
RP	RB250=11+12+13	1 237	1,000
	RB245=1+2+3	1 237	

Ra is: $\dfrac{1037}{1063} = 0.976$

Rh is: $\dfrac{629}{1037} = 0.607$

Rp is: $\dfrac{1237}{1237} = 1.000$

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

Overall individual non-response rates (*NRp) are: (1-(Ra*Rh*Rp))*100 = 40,8

2.3.3.3 Distribution of household.

Table 2.3.3.3.1. Distribution of original units by record of contact at address. Total.

	Number	Percent
Total	**9071**	**100**
Address contacted (DB120=11)	9032	99.6
Address non-contacted (DB120=21 to 23)	39	0.4
Total address non-contacted (DB120=21 to 23)	**39**	**100**
Address can not be located (DB120=21)	39	100
Address unable to access (DB120=22)	-	-
Address does not exist or in non residential address or is unoccupied or not principal residence (DB120=23)	-	-

Table 2.3.3.3.1a. Distribution of original units by record of contact at address. Rotation group 1.

	Number	Percent
Total	**1150**	**100**
Address contacted (DB120=11)	1142	99,3
Address non-contacted (DB120=21 to 23)	8	0,7
Total address non-contacted (DB120=21 to 23)	**8**	**100**
Address can not be located (DB120=21)	8	100
Address unable to access (DB120=22)		
Address does not exist or in non residential address or is unoccupied or not principal residence (DB120=23)		

Table 2.3.3.3.1b. Distribution of original units by record of contact at address. Rotation group 2.

	Number	Percent
Total	**1121**	**100**
Address contacted (DB120=11)	1117	99,6
Address non-contacted (DB120=21 to 23)	4	0,4
Total address non-contacted (DB120=21 to 23)	**4**	**100**
Address can not be located (DB120=21)	4	100
Address unable to access (DB120=22)		
Address does not exist or in non residential address or is unoccupied or not principal residence (DB120=23)		

Table 2.3.3.3.1c. Distribution of original units by record of contact at address. Rotation group 3.

	Number	Percent
Total	**1076**	**100**
Address contacted (DB120=11)	1071	99,5
Address non-contacted (DB120=21 to 23)	5	0,5
Total address non-contacted (DB120=21 to 23)	**5**	**100**
Address can not be located (DB120=21)	5	100
Address unable to access (DB120=22)		
Address does not exist or in non residential address or is unoccupied or not principal residence (DB120=23)		

Table 2.3.3.3.1d. Distribution of original units by record of contact at address. Rotation group 4.

	Number	Percent
Total	**1149**	**100**
Address contacted (DB120=11)	1144	99,6
Address non-contacted (DB120=21 to 23)	5	0,4
Total address non-contacted (DB120=21 to 23)	**5**	**100**
Address can not be located (DB120=21)	5	100
Address unable to access (DB120=22)		
Address does not exist or in non residential address or is unoccupied or not principal residence (DB120=23)		

Table 2.3.3.3.1e. Distribution of original units by record of contact at address. Rotation group 5.

	Number	Percent
Total	**1074**	**100**
Address contacted (DB120=11)	1066	99,3
Address non-contacted (DB120=21 to 23)	8	0,7
Total address non-contacted (DB120=21 to 23)	**8**	**100**
Address can not be located (DB120=21)	8	100
Address unable to access (DB120=22)		
Address does not exist or in non residential address or is unoccupied or not principal residence (DB120=23)		

Table 2.3.3.3.1f. Distribution of original units by record of contact at address. Rotation group 6.

	Number	Percent
Total	**1318**	**100**
Address contacted (DB120=11)	1316	99,8
Address non-contacted (DB120=21 to 23)	2	0,2
Total address non-contacted (DB120=21 to 23)	**2**	**100**
Address can not be located (DB120=21)	2	100

	Number	Percent
Address unable to access (DB120=22)		
Address does not exist or in non residential address or is unoccupied or not principal residence (DB120=23)		

Table 2.3.3.3.1g. Distribution of original units by record of contact at address. Rotation group 7.

	Number	Percent
Total	**1039**	**100**
Address contacted (DB120=11)	1037	99,8
Address non-contacted (DB120=21 to 23)	2	0,2
Total address non-contacted (DB120=21 to 23)	**2**	**100**
Address can not be located (DB120=21)	2	100
Address unable to access (DB120=22)		
Address does not exist or in non residential address or is unoccupied or not principal residence (DB120=23)		

Table 2.3.3.3.1h. Distribution of original units by record of contact at address. Rotation group 8.

	Number	Percent
Total	**1144**	**100**
Address contacted (DB120=11)	1139	99,6
Address non-contacted (DB120=21 to 23)	5	0,4
Total address non-contacted (DB120=21 to 23)	**5**	**100**
Address can not be located (DB120=21)	5	100
Address unable to access (DB120=22)		
Address does not exist or in non residential address or is unoccupied or not principal residence (DB120=23)		

Table 2.3.3.3.2. Distribution of address contacted by household questionnaire result and by household interview acceptance. Total

	Number	Percentage
Total	**9032**	**100**
Household questionnaire completed (DB130=11)	5236	58,0
Interview not completed (DB130=21 to 24)	3796	42,0
Total interview not completed (DB130=21 to 24)	**3796**	**100**
Refusal to co-operate (DB130=21)	2510	66,1
Entire household temporarily away for duration of fieldwork (DB130=22)	756	19,9
Household unable to respond (illness, incapacity, etc) (DB130=23)	455	12,0
Other reason	75	2,0
Household questionnaire completed (DB135=1+2)	**5236**	**100**
Interview accepted for data base (DB135=1)	5227	99,8
Interview rejected (DB135=2)	9	0,2

Table 2.3.3.3.2a. Distribution of address contacted by household questionnaire result and by household interview acceptance. Rotation group 1

	Number	Percentage
Total	**1142**	**100**
Household questionnaire completed (DB130=11)	673	58,9
Interview not completed (DB130=21 to 24)	469	41,1
Total interview not completed (DB130=21 to 24)	**469**	**100**
Refusal to co-operate (DB130=21)	339	72,3
Entire household temporarily away for duration of fieldwork (DB130=22)	74	15,8
Household unable to respond (illness, incapacity, etc) (DB130=23)	46	9,8

	Number	Percentage
Other reason	10	2,1
Household questionnaire completed (DB135=1+2)	**673**	**100**
Interview accepted for data base (DB135=1)	671	99,7
Interview rejected (DB135=2)	2	0,3

Table 2.3.3.3.2b. Distribution of address contacted by household questionnaire result and by household interview acceptance. Rotation group 2

	Number	Percentage
Total	**1117**	**100**
Household questionnaire completed (DB130=11)	651	58,3
Interview not completed (DB130=21 to 24)	466	41,7
Total interview not completed (DB130=21 to 24)	**466**	**100**
Refusal to co-operate (DB130=21)	319	68,5
Entire household temporarily away for duration of fieldwork (DB130=22)	76	16,3
Household unable to respond (illness, incapacity, etc) (DB130=23)	62	13,3
Other reason	9	1,9
Household questionnaire completed (DB135=1+2)	**651**	**100**
Interview accepted for data base (DB135=1)	650	99,8
Interview rejected (DB135=2)	1	0,2

Table 2.3.3.3.2c. Distribution of address contacted by household questionnaire result and by household interview acceptance. Rotation group 3

	Number	Percentage
Total	**1071**	**100**
Household questionnaire completed (DB130=11)	581	54,2
Interview not completed (DB130=21 to 24)	490	45,8
Total interview not completed (DB130=21 to 24)	**490**	**100**
Refusal to co-operate (DB130=21)	312	63,7
Entire household temporarily away for duration of fieldwork (DB130=22)	98	20,0
Household unable to respond (illness, incapacity, etc) (DB130=23)	69	14,1
Other reason	11	2,2
Household questionnaire completed (DB135=1+2)	**581**	**100**
Interview accepted for data base (DB135=1)	581	100
Interview rejected (DB135=2)	0	0

Table 2.3.3.3.2d. Distribution of address contacted by household questionnaire result and by household interview acceptance. Rotation group 4

	Number	Percentage
Total	**1144**	**100**
Household questionnaire completed (DB130=11)	682	59,6
Interview not completed (DB130=21 to 24)	462	40,4
Total interview not completed (DB130=21 to 24)	**462**	**100**
Refusal to co-operate (DB130=21)	304	65,8
Entire household temporarily away for duration of fieldwork (DB130=22)	89	19,3
Household unable to respond (illness, incapacity, etc) (DB130=23)	59	12,8
Other reason	10	2,2
Household questionnaire completed (DB135=1+2)	**682**	**100**
Interview accepted for data base (DB135=1)	682	100
Interview rejected (DB135=2)	0	0

Table 2.3.3.3.2e. Distribution of address contacted by household questionnaire result and by household interview acceptance. Rotation group 5

	Number	Percentage
Total	**1066**	**100**
Household questionnaire completed (DB130=11)	618	58,0
Interview not completed (DB130=21 to 24)	448	42,0
Total interview not completed (DB130=21 to 24)	**448**	**100**
Refusal to co-operate (DB130=21)	289	64,5
Entire household temporarily away for duration of fieldwork (DB130=22)	95	21,2
Household unable to respond (illness, incapacity, etc) (DB130=23)	58	12,9
Other reason	6	1,3
Household questionnaire completed (DB135=1+2)	**618**	**100**
Interview accepted for data base (DB135=1)	616	99,7
Interview rejected (DB135=2)	2	0,3

Table 2.3.3.3.2f. Distribution of address contacted by household questionnaire result and by household interview acceptance. Rotation group 6

	Number	Percentage
Total	**1316**	**100**
Household questionnaire completed (DB130=11)	727	55,2
Interview not completed (DB130=21 to 24)	589	44,8
Total interview not completed (DB130=21 to 24)	**589**	**100**
Refusal to co-operate (DB130=21)	375	63,7
Entire household temporarily away for duration of fieldwork (DB130=22)	144	24,4
Household unable to respond (illness, incapacity, etc) (DB130=23)	54	9,2
Other reason	16	2,7
Household questionnaire completed (DB135=1+2)	**727**	**100**
Interview accepted for data base (DB135=1)	725	99,7
Interview rejected (DB135=2)	2	0,3

Table 2.3.3.3.2g. Distribution of address contacted by household questionnaire result and by household interview acceptance. Rotation group 7

	Number	Percentage
Total	**1037**	**100**
Household questionnaire completed (DB130=11)	630	60,8
Interview not completed (DB130=21 to 24)	407	39,2
Total interview not completed (DB130=21 to 24)	**407**	**100**
Refusal to co-operate (DB130=21)	259	63,6
Entire household temporarily away for duration of fieldwork (DB130=22)	94	23,1
Household unable to respond (illness, incapacity, etc) (DB130=23)	51	12,5
Other reason	3	0,7
Household questionnaire completed (DB135=1+2)	**630**	**100**
Interview accepted for data base (DB135=1)	629	99,8
Interview rejected (DB135=2)	1	0,2

Table 2.3.3.3.2h. Distribution of address contacted by household questionnaire result and by household interview acceptance. Rotation group 8

	Number	Percentage
Total	**1139**	**100**
Household questionnaire completed (DB130=11)	674	59,2
Interview not completed (DB130=21 to 24)	465	40,8
Total interview not completed (DB130=21 to 24)	**465**	**100**

Refusal to co-operate (DB130=21)	313	67,3
Entire household temporarily away for duration of fieldwork (DB130=22)	86	18,5
Household unable to respond (illness, incapacity, etc) (DB130=23)	56	12,0
Other reason	10	2,2
Household questionnaire completed (DB135=1+2)	**674**	**100**
Interview accepted for data base (DB135=1)	673	99,8
Interview rejected (DB135=2)	1	0,2

2.3.3.5 Item non-response

Table 2.3.3.5.1 Distribution of item non-response

	A	B	C
		% with missing values	% with partial information
	% having received an amount	(before imputation) [1]	(before imputation) [3]
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		
Gross income component at household level			
HY040G: Gross income from rental of a property of land	4,0		
HY050G: Family related allowances	39,6		
HY060G: Social assistance	3,8		
HY070G: Housing allowances	2,8		
HY080G: Regular inter-household cash transfer received	7,4		
HY090G: Gross interest dividends, profit from capital investments in unincorporated business	99,8		
HY130G: Gross regular inter-household cash transfer paid	4,3		
HY140G: Tax on income and social contributions	97,1		
Gross income component at personal level			
PY010G: Gross employee or near cash income	77,5		
PY020G: Gross non-cash employee income	54,2		
PY030G: Employer's social insurance contribution	76,5		
PY035G: Contributions to individual pensions schemes	0,8		

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[1] Since information on income is taken from register there are no missing values.

PY050: Gross cash benefits or losses from self-employment (including royalties)	9,9
PY080G: Gross regular pension from private schemes (other than those covered under ESSPROS)	4,1
PY090G: Gross unemployment benefits	4,1
PY100G: Gross old-age benefits	18,3
PY110G: Gross survivor benefits	0,8
PY120G: Gross sickness benefits	20,2
PY130G: Gross disability benefits	13,3
PY140G: Education-related allowances	11,2

2.4 Mode of data collection

Table 2.4.1. Distribution of household members aged 16 and over by 'RB250'. Total

	Total	RB250 =12	RB250 =13	RB250 =21	RB250 =23	RB250 =31
Total (RB245 = 1-3)	**10204**	**157**	**10047**			
Percent	**100**	**1,6**	**98,4**			
Selected respondent (RB245 = 2)						
Total	5227		5227			
Percent	100		100			
Household members (RB245 = 3)						
Total	4977	157	4820			
Percent	100	3,2	96,8			

Table 2.4.2 Distribution of household members aged 16 and over by 'RB260'. Total.

	Total	RB260 =2	RB260 =3	RB260 =5
Total (RB245 = 1-3, where RB250 = 11 or 13)	**10045**	**58**	**7593**	**2394**
Percent	**100**	**1,1**	**73,9**	**25,1**
Selected respondent (RB245 = 2)				
Total	5227	41	5186	0
Percent	100	0,9	99,1	0
Household members (RB245 = 3)				
Total	4818	17	2407	2394
Percent	100	0,7	47,2	52,2

2.5 Interview duration

The total average interview length was approximately 19,6 minutes[1]. This is somewhat less than the estimated interview length of 25 minutes. One reason the proportion of proxy interviewing in our survey. We aim to interview each single household member about their employment status, but only 28 per cent of the household members answered these questions themselves. The second reason for short interview length is of course the usage of information from preceding years of data collection to reduce the burden for the respondents. In a panel survey there may also be a "training effect", where repeated interviews have an effect on both respondents and interviewers.

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[1] Average estimated by excluding all recorded interviews lasting less than 5 and more then 60 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.

3. Comparability

3.1 Basic concepts and definitions

The reference population
The reference population is persons aged 16 years or more at December 31 2009 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.

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 2009.

The period for taxes on income and social insurance contributions
The period for taxes on income and social insurance contributions is the calendar year 2009.

The reference period for taxes on wealth
The reference period for taxes on wealth is the calendar year 2009.

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 6 January and ending 26 August. 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 13, approximately 85 percent of the interviews were completed. The drop in number of interviews in week 13 can be explained by the Easter holidays.

Figure 3.1 Number of interviews per week
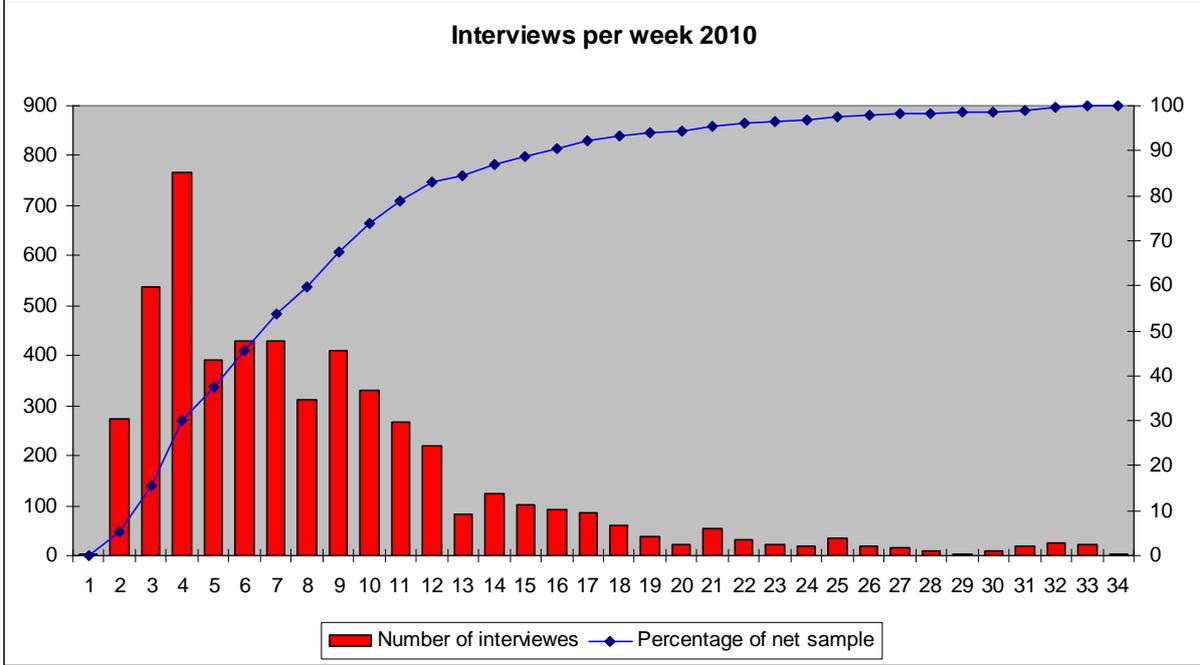
3.3. Components of income

3.3.1 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 + the sum for all household members of: PY010G + PY020G + PY050G + PY090G + PY100G + PY110G + PY120G + PY130G + PY140G.
Comments: HY030G (imputed rent) is not calculated as a part of HY010. 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 as a part of HY020.

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.

Imputed rent (HY030):
Imputed rent is calculated by using data from the Norwegian rental survey 2009, where 10 141 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 2009 are as follows:
Area 1 and less than 100 sqm: HY030 = 4 021,69 + (69,12 * sqm)
Area 1 and 100 sqm or more: HY030 = 5 546,05 + (56,11 * sqm)
Area 2: HY030 = 3 672,24 + (44,65 * sqm)
Area 3: HY030 = 2 907,10 + (34,93 * sqm);
Area 4: HY030 = 3 782,63 + (13,08 * sqm);
Area 5: HY030 = 3 025,89 + (12,92 * sqm);

Income from rental of property or land (HY040):
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 singe 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.).

Interest repayments on mortgage (HY100):
In previous EU-SILC operations (2003-2006) this data has been collected from register. The problem with this has been that register data covers all interest repayments, and not only interests on mortgage. In order to increase the precision of this variable, the interest repayments on mortgage are calculated from the interview data from 2007.

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):
Includes the following elements:
-   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.

Company car (PY021):
Previously included in PY020

Employer's social insurance contribution (PY030):
Defined as paid in employers' national insurance contribution per person.

Deviation from the SILC concept:
Because of the allowance scheme which is per company (and every company has employees in the various zones and age groups) it is virtually impossible to calculate the payroll tax directly per person. Therefore, the calculation is done by companies where we have taken into account the allowance scheme, zones, age, sector and individual exceptions industries.

Optional employer's social insurance contributions (PY031):
Norway does not include this variable, because we are unable to calculate the value. Part of this is still covered as a "non-cash benefits" in PY020.

Contributions to individual private pension plans (PY035):
Defined as deductions for payment of individual pensions.

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).

The variable PY070 is not included in Norwegian data because the value of own goods for own consumption is assumed to be ignorable. Data from the Norwegian HBS in 2006 shows that consumption of own goods is estimated to be only 0,13 percent of the total consumption in the households. In total, the value of own goods for own consumption is less than 400 NKr (appr 50 euro) on average per household.

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. In stead 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.

3.3.2 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.). I 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 3.3.1 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[1]	734,5	739,3	4,8

[1] 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 3.3.2 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.

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.