

FINAL QUALITY REPORT

EU-SILC-2005

Norway

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2.0 Accuracy

2.1 Sampling design

2.1.1 Type of sampling

The sample for EU-SILC in Norway is composed of the sample for an existing longitudinal survey established in 1997, using a specific sampling design, and a new sample with a different design in 2003. Hence two different types of sampling are used in the Norwegian EU-SILC 2005. The sample in 2003 was divided in eight rotational groups, mainly five groups in the old longitudinal sample and three groups in the new sample in 2003. In 2005 two of the eight rotational groups from the 2003-sample (from the old longitudinal survey) were deleted and two new rotational groups were included in the 2005-sample.

The old sample used systematically random sampling in two stages. In the first stage primary sample areas were drawn to establish a sampling frame for face-to-face interviews (Statistics Norway's standard sampling frame). Sample areas were stratified (see 2.1.3). In the second stage, respondents were drawn with a probability designed to make the sample self-weighting, i.e. all persons in the sampling frame have the same probability of selection (see also 2.1.5). The primary sampling units are not clustered.

When drawing the new samples in 2003, 2004 and 2005, systematically random sampling in one stage was used. The systematic element stems from the stratification (see 2.1.3) and arrangement of the population register.

2.1.2 Sampling units

In the new part of the sample, the sample units are persons aged 16 years or more registered in the central population register (inhabitants). In the old part of the sample, primary sampling units are municipalities or groups of municipalities from the different strata in the sampling frame (see also 2.1.3). Secondary sampling units are persons aged 16 years or more registered in the central population register.

2.1.3 Stratification and sub-stratification criteria

The old part of the sample the standard sampling frame for face-to-face interviews has been used. In this the country is first divided into a number of primary sampling areas and these again are divided into 109 subpopulations, called strata. The criteria for stratification of primary sampling areas are economic classification¹, population density, centrality and a prognoses classification². The aim is to create strata, which are as homogenous as possible, but still geographically concentrated. The primary sampling units are municipalities or aggregates of municipalities. Municipalities with few inhabitants are grouped together with other municipalities to ensure that each sampling area consists of at least 7 per cent of the total number of inhabitants in the stratum the unit belongs to. In some cases small municipalities close to highly populated municipalities are put together with the large one in that region. All municipalities with more than 30 000 inhabitants and some with 25 000 to 30 000 inhabitants make separate strata. In the first stage, one primary sampling area from each stratum was selected. In the second stage, the respondents were drawn from a population

¹ Classification of municipalities following the Population and housing census in 1990 (FoB90). Based on the nature of industry in each municipality.

² This classification is based on data on commutation, newspaper coverage, communications, commerce and districts for unemployment offices (Statistics Norway 1984).

register. The units in the population register were arranged by family number and personal code within the family. This was done to avoid that two or more persons within the same household were selected to the sample.

The new part of the sample

The primary stratification criterion for the sample is age. The design chosen implicates that age is the central criterion for representativity. The sample is drawn as a proportion p of the population within one-year groups. In addition, the population register was arranged to ensure geographical representativity. This was done by municipality and postal codes. As in the old part of the sample, the register was 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, 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 2005 sample consists of 8 619 persons 16 years and over. During the field period, 282 of these proved to be non-eligible (either dead or emigrated), thus giving a gross sample of 8 337 persons. We succeeded in interviewing 5 996 of these (net sample), a response rate of 71,9 percent. 5 991 interviews were accepted.

In all households interviewed there were 11 913 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 2004 survey this gives an achieved effective sample size of 5 776 households and 11 465 persons.

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

Effective longitudinal sample size from wave one to wave two is 4484.

2.1.5 Sample selection schemes

As mentioned the sample for the Norwegian EU-SILC 2005 consists of an existing sample for a longitudinal survey on Living conditions started in 1997, and of a new part drawn to implement the sampling plan for EU-SILC.

When establishing the sample for the longitudinal survey on living conditions in 1997, a main goal was to establish a link to the Population and housing census in 1990 (FoB90), and to prior population and housing censuses. This link was established by drawing a "supersample" from FoB90, using this as the basis for drawing units for the sample. From this "supersample", a self-weighting stratified sample of 5 000 persons aged 16-79 was drawn, using Statistics Norway's general sample plan for face-to-face interviews. In the following years, this sample was supplemented with 16-years olds, and new immigrants to maintain the cross sectional qualities of the sample. This "old sample" was a systematically random sample, drawn in two steps, but in such a way that all persons had the same probability of selection (self-weighting sample).

In EU-SILC, the link to FoB90 was no longer of importance, neither was the use of Statistics Norway's sample plan important, since EU-SILC is conducted by telephone interviewing. The new sample plan for EU-SILC meant systematically random sampling in one step, and no upper age limit. The age-representativity criterion implicates unequal probabilities, but this should not be a problem as long as representativity is ensured. The new sample is drawn in one step from the database BEBAS, which is a monthly updated copy of the Norwegian population register.

Before adding the new part of the sample, drawn in accordance with the new sample plan, the old sample was supplemented with persons aged 80 or more in 1997, using the old two-step sampling and the FoB90 "supersample". The old sample then consisted of 5 309 persons, and on the basis of the number of persons in each one-year age group, the number needed in the new sample, drawn in accordance to the new sample plan, was estimated. The number in each age group was estimated by p^* number in population and then subtracting the number in the old sample. A total of 3 199 persons were selected and added to the existing 5 309, giving a total of 8 508 in 2003. Deleting rotational groups and adding new rotational groups and supplementing the sample resulted in a sample in 2005 of 8619 persons.

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. The periodical groups were based on rotational groups. Referring to table 2.1, periodical group 1 with start of interviewing 31 January was made up of rotational groups 7 and 8. Periodical group 2 with start of interviewing 14 February was made up of rotational groups 5 and 6. Periodical group 3 with start of interviewing 28 February was made up of rotational groups 3 and 4, and finally; periodical group 4 with start of interviewing 14 March was made up of rotational groups 1 and 2. Interviewing of all groups ended 30 June.

2.1.7 Renewal of sample: Rotational groups

In the Norwegian design, each 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, some respondents in the old sample will belong to the sample for eleven years, while some will belong for only six years.

Approximately 1 060 - 1 070 persons will constitute one rotational group. In 2005 the groups were constituted as shown in table 2.1

Table 2.1 Rotational groups 2005

Rotational group	N	Drawn according to...	Last year in sample
Group 1	1212	New design	2011
Group 2	1229	New design	2012
Group 3	1037	Old design	2005
Group 4	1035	Old design	2006
Group 5	1022	Old design	2007
Group 6	1030	New design	2008
Group 7	1026	New design	2009
Group 8	1028	New design	2010

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 31.12.2004).

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 longitudinal weights

In the Norwegian SILC we try to contact all selected respondents in year T in the relevant rotational groups passed on from the year T-1, even if they were not interviewed in the year T-1. In addition, selected respondents who **were** non-eligible because they emigrated or lived in an institution in the year T-1 are traced, and their eligibility in the year T is checked. The longitudinal weights are designed only to adjust for non-response.

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 treated in 2.1.4.

Standard errors for equivalised disposable income have been calculated using simplifying assumptions. A program for more exact estimation of standard errors is being developed.

Table 2.2.1. Standard errors for equivalised disposable income. 2005

	Mean Standard error		Number of observations
All persons	249 762	9 859	15716
Household size			
1	1 196 278	10 174	1315
2	2 298 978	34 146	4155
3	2 573 367	5 798	2780
4 and more	231 361	4 224	7466
Age			
Under 25 years	212 246	5 682	5775
25-34 years	231 114	2 823	1962
35-44 years	234 187	2 831	2454
45-54 years	278 529	7 086	2362
55-64 years	328 793	45 933	1703
65 years and over	222 531	41 593	1460
Sex			
Male	259 196	10 199	7979
Female	240 501	9 843	7735

2.3 Non-sampling errors

2.3.1 Sampling frame and coverage errors

There are two kinds of sampling frame in this survey because the sample was made up of two separate samples (see 2.1). In the old part of the sample, the sample frame is a register of participants in the Population and housing census in 1990 (FoB90), living in the selected sample areas. This register is annually updated with information from the central population register. There are two kinds of possible coverage errors in this frame. The first is the exclusion of all those living in areas outside the sampling frame, the second is the exclusion of those not participating in FoB90. Both sources are assumed to be minimal. The first one because the selected areas are representative of their stratum, the second one because all inhabitants were obliged to participate in FoB90. To avoid under-coverage of immigrants in the years following 1997, the sample was supplemented with new immigrants each following year.

In the new part of the sample, 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.

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 (40 000 in 2005, of whom about 10 000 were Norwegian citizens), 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 apartment, and 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 150 of the ordinary interviewer staff assigned to Statistics Norway. These interviewers are part time employees with individual agreements ranging from 500 to 1200 hours of work per year. The interviewers are locally based, stationed in the sample areas according to the standard sampling frame. When hired, all interviewers must complete an education consisting of self-studies and written tasks in two stages. Then, all are gathered to an obligatory three-day course 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 interviewers, telephone conferences are held on occasion.

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. All 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 2005, the estimated time destined to reading of instruction and training was 3,5 hours per interviewer. As a part of the follow-up and continuous training of interviewers, a telephone conference where interviewers with relatively poor results took part was arranged. The aim was to improve their results through motivation and advises.

The danger of systematic interviewer effects is reduced through training, but also by using a relatively large number of interviewers. 116 interviewers worked on the Norwegian survey. The number of interviews per interviewer ranged from 1 to 160. Any systematic error done by a single interviewer should therefore not affect the data in any significant way.

The questionnaire may also be the cause of measurement errors. We have tried to build 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 counted. 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 we suspect that period and amount do not correspond, maybe due to interviewer errors. We have tried to correct these cases. Interest on mortgage is net, tax is subtracted. For tenants rent payments are net, housing benefits are subtracted. For households where electricity etc is included in the rent these expenses are imputed and subtracted from the rent. Tax on dwellings is not taken into account in HH070.

HH080G

The same as for HY130G. 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 2003. Some may have started in education after this date. Hence there is some missing (3 per cent of all persons with current education activity.

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 2005 questionnaire is similar to the 2003 questionnaire, but there are a few changes.

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
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 5 991 households that have completed an interview that is accepted.
- In our database there are 11 912 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 5 991 selected respondents who are members of households that have completed an interview that is accepted.

	2003	2004	2005
Number of household with accepted interview	5852	6046	5991
Number of persons 16 years and older	11709	12113	11912
Number of sample persons with completed interview	5852	6046	5991
Number of household members with completed interview	5715	6064	5921

2.3.3.2. Unit non-response

RA	DB120=11	8298	0,995
	(DB120=all)-(DB120=23)	8337	
RH	DB135=1	5991	0,719
	DB130=all	8337	
RP	RB250=11+12+13	11912	0,992
	RB245=1+2+3	12007	

$$\text{Ra is: } \frac{8298}{8337} = 0.995$$

$$R_h \text{ is: } 0, \frac{5991}{8337} = 0.72$$

$$R_p \text{ is: } \frac{11912}{12007} = 0.992$$

Individual non-response rates, NR_p is: (1-0.99)*100=1

Overall individual non-response rates (* NR_p) are: (1-(R_a*R_h*R_p))*100=29,0

Table 2.3.3.2.1. Household response rates. Comparison of results between wave 2003 and 2004, and between wave 2004 and 2005

	SAMPLE OUTCOME IN WAVE 2004											
	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 2003												
db130 = 11												
db135 = 1	4659	2	0	104	33	2	254	5	3	0	0	5059
db135 = 2	0	0	0	0	0	0	0	0	0	0	0	0
DB110 = 8	0	0	0	0	0	0	0	0	0		0	0
DB110 = 9	0	0	0	0	0	0	0	0	0		0	0
Total	4659	2	0	104	33	2	254	5	3	0	0	5059

Table 2.3.3.2.2. Household response rates: Comparison of results codes between wave t and wave t-1.³

	Wave 2 (t =2005)											
	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
Wave 1 (t-1 = 2004)												
db130 = 11												
db135 = 1	3 625	0	0	14	30	6	228	1	50	0	0	3 954
db135 = 2												
db120 = 22												
NH												
NONH												
db130 = 22												
NH												
NONH	11	0	0	1	0	0	2	0	2	0	0	16
db130 = 23												
NH												
NONH	13	0	0	0	10	0	2	0	0	0	0	25
db130 = 24												
NH												

³ Only respondents from all three waves (2003, 2004 and 2005) are included in this table

NONH	2	0	0	0	0	0	2	0	0	0	0	4
db130 = 21												227
db120 = 21												1
db110 = 3-7												79
db110 = 10												0
db130 = 23												26
Total	3 651	0	0	15	40	6	234	1	52	0	0	3 999
db110 = 8									NA	NA		
db110 = 9	17	0	0	2	0	0	1	0	NA	NA	0	

	2004	2005
Wave response rate	0,921	0,916
Refusal rate	0,050	0,058
Non-contacted and others	0,029	0,028
Longitudinal follow-up rate 1 (03-04)	0,949	
Longitudinal follow-up rate 2 (04-05)		0,929
Follow-up ratio	0,999	0,989
Achieved sample size	0,921	0,917

Personal interview response rates

The table for personal interview response rates is not given. Personal response rates seems 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 2.3.3.3.1 Distribution of households by DB110, DB120, DB130 and DB135. 2005

HOUSEHOLD STATUS	Total	DB110=1	DB110=2	DB110=3	DB110=7	DB110=9	DB110=10
Number in sample	4 009	3 453	500	0	52	4	0
Percent	100	86,1	12,4	0,0	1,3	0,1	0,0
RECORD OF CONTACT AT ADDRESS	Total	DB120=11	DB120=21	DB120=22	DB120=23		
Number in sample (DB110=2,8,10)	500	499	1	0	0		
Percent	100	99,8	0,2	0	0		
HOUSEHOLDS QUESTIONNAIRE RESULT	Total	DB130=11	DB130=21	DB130=22	DB130=23	DB130=24	
Number in sample (DB120=11 or DB110=1)	3 956	3 660	235	15	40	6	
Percent	100	92,5	5,9	0,4	1,0	0,2	
HOUSEHOLD INTERVIEW ACCEPTANCE		Total	DB135=1	DB135=2			
Number in sample (DB130=11)		3 660	3 660	0			
Percent		100,0	100,0	0,0			

2.3.3.4 Distribution of persons for membership status (RB110)

Table 2.3.3.4.1. Distribution of persons by membership status (RB110). 2005.

			Current household members				Not current household members		
	Total	RB110=1	RB110=2	RB110=3	RB110=4	RB120=2-4	RB110=6	RB110=7	
Number in sample	9 603	9 152	0	226	120	24	1	80	
Percent	100,0	95,3	-	2,4	1,2	0,2	0,0	0,8	

2.3.3.5 Item non-response

Table 2.3.3.5.1 Distribution of item non-response.

	A	B	C
	% of household having received an amount	% of household with missing values (before imputation) ⁴	% of household with partial information (before imputation) ³
Total household gross income		100	
Total disposable household income		100	
Total disposable household income before social transfers other than old-age and survivors benefits		100	
Gross income component at household level			
Gross income from rental of a property of land		2	
Family related allowances		40	
Social assistance		5	
Housing allowances		3	
Regular inter-household cash transfer received		10	
Gross interest dividends, profit from capital investments in unincorporated business		99	
Gross regular inter-household cash transfer paid		9	
Tax on income and social contributions		97	
Gross income component at personal level			
Gross employee or near cash income		77	
Gross non-cash employee income		2	
Contributions to individual pensions schemes		3	
Gross cash benefits or losses from self-employment (including royalties)		10	
Gross regular pension from private schemes (other than those covered under ESSPROS)		3	
Gross unemployment benefits		4	
Gross old-age benefits		16	
Gross survivor benefits		1	
Gross sickness benefits		14	
Gross disability benefits		14	
Education-related allowances		9	

⁴ Since information on income is taken from register there are no missing values.

Table 2.3.3.6.1 Number of observations and total item non-response.

	Number of sample observation	Number of sample observation not taken into account due to item non- response	Non- response at individual level (if applicable	Non-response at household level
At risk of poverty rate by gender				
Males	7979			
Females	7735			
At risk of poverty rate by age				
Under 16	3709			
16-24	2066			
25-49	5660			
50-64	2821			
65 years and over	1458			
At risk of poverty by age and gender				
Under 16, males	1900			
Under 16, female	1809			
16-24, male	1118			
16-24, female	948			
25-49, male	2770			
25-49, female	2890			
50-64, male	1474			
50-64, female	1347			
65 years and over, male	717			
65 years and over, female	741			
At risk of poverty by gender and main activity, persons 16 and over				
Employed, male	3961			
Employed, female	3504			
Unemployed, male	129			
Unemployed, female	109			
Retired, male	649			
Retired, female	675			
Other inactive, male	1340			
Other inactive, female	1638			
At risk of poverty rate by tenure status				
Owner or rent free	13881			
Tenant	1793			
Missing	42			

At risk of poverty rate by household type

One person, under 64 years	963
One person, 65 years and over	353
One person, male	678
One person, female	638
One person household, total	1316
Two adults under 65 years, no dependent children	3084
Two adults, other, no dependent children	804
Other household without dependent children	1658
Single parent households with dependent children	477
Two adults, one dependent child	1362
Two adults, two dependent children	2551
Two adults, three or more dependent children	1616
Other household with dependent children	2787
Households without dependent children	6862
Households with dependent children	8793
Missing	61

2.4 Mode of data collection

Table 2.4.1. Distribution of household members aged 16 and over by RB250, 2003-2005.

HOUSEHOLD MEMBERS 16+ (RB245 = 1 TO 3)										
2003	Total	RB250=11	RB250=12	RB250=13	RB250=21	RB250=22	RB250=23	RB250=31	RB250=32	RB250=33
Total	8829	0	122	8696	1	0	0	0	0	10
%	100	-	1,4	98,5	0	-	-	-	-	0,1
2004	Total	RB250=11	RB250=12	RB250=13	RB250=21	RB250=22	RB250=23	RB250=31	RB250=32	RB250=33
Total	7898	0	16	7847	0	0	0	1	0	34
%	100	-	0,2	99,4	-	-	-	0	-	0,4
2005	Total	RB250=11	RB250=12	RB250=13	RB250=21	RB250=22	RB250=23	RB250=31	RB250=32	RB250=33
Total	7218	0	23	7149	0	0	23	12	0	11
%	100	-	0,3	99,0	-	-	0,3	0,2	-	0,2
SAMPLE PERSONS 16+ (RB245 = 1 TO 3 AND RB100 = 1)										
2003	Total	RB250=11	RB250=12	RB250=13	RB250=21	RB250=22	RB250=23	RB250=31	RB250=32	RB250=33
Total	4394	0	0	4394	0	0	0	0	0	0
%	100	-	-	100,0	-	-	-	-	-	-
2004	Total	RB250=11	RB250=12	RB250=13	RB250=21	RB250=22	RB250=23	RB250=31	RB250=32	RB250=33
Total	3954	0	0	3954	0	0	0	0	0	0
%	100	-	-	100,0	-	-	-	-	-	-
2005	Total	RB250=11	RB250=12	RB250=13	RB250=21	RB250=22	RB250=23	RB250=31	RB250=32	RB250=33
Total	3660	0	0	3660	0	0	0	0	0	0
%	100	-	-	100,0	-	-	-	-	-	-
CO-RESIDENTS 16+ (RB245 = 1 TO 3 AND RB100 = 2)										
2003	Total	RB250=11	RB250=12	RB250=13	RB250=21	RB250=22	RB250=23	RB250=31	RB250=32	RB250=33
Total	4435	0	122	3893	0	0	0	1	0	34

%	100	-	0,4	98,7	-	-	-	0	-	0,9
2004										
Total	RB250=11	RB250=12	RB250=13	RB250=21	RB250=22	RB250=23	RB250=31	RB250=32	RB250=33	
Total	3944	0	16	3893	0	0	0	1	0	34
%	100	-	0,4	98,7	-	-	-	0	-	0,9
2005										
Total	RB250=11	RB250=12	RB250=13	RB250=21	RB250=22	RB250=23	RB250=31	RB250=32	RB250=33	
Total	3558	0	23	3489	0	0	23	12	0	11
%	100	-	0,7	98,1	-	-	0,7	0,3	-	0,3

Table 2.4.2. Distribution of household members by RB260, 2003-2005.

HOUSEHOLD MEMBERS 16+ (RB245 = 1 TO 3) AND RB250 = 11 OR 13										
2003										
Total	RB260=1	RB260=2	RB260=3	RB260=4	RB260=5	MISSING				
Total	8696	0	47	5427	0	3216	6			
%	100	-	0,5	62,4	-	37,0	0,1			
2004										
Total	RB260=1	RB260=2	RB260=3	RB260=4	RB260=5	MISSING				
Total	7847	0	18	5129	0	2696	4			
%	100	-	0,2	65,4	-	34,4	0,1			
2005										
Total	RB260=1	RB260=2	RB260=3	RB260=4	RB260=5	MISSING				
Total	7149	0	21	5072	0	2052	4			
%	100	-	0,3	71,0	-	28,7	0,1			
SAMPLE PERSONS 16+ (RB245 = 1 TO 3 AND RB100 = 1) AND RB250 = 11 OR 13										
2003										
Total	RB260=1	RB260=2	RB260=3	RB260=4	RB260=5	MISSING				
Total	4354	0	34	4354	0	0	6			
%	100	-	0,8	99,1	-	-	0,1			
2004										
Total	RB260=1	RB260=2	RB260=3	RB260=4	RB260=5	MISSING				
Total	3954	0	11	3942	0	0	1			
%	100	-	0,3	99,7	-	-	0,0			
2005										
Total	RB260=1	RB260=2	RB260=3	RB260=4	RB260=5	MISSING				
Total	3660	0	18	3639	0	0	3			
%	100	-	0,5	99,4	-	-	0,1			
CO-RESIDENTS 16+ (RB245 = 1 TO 3 AND RB100 = 2) AND RB250 = 11 OR 13										
2003										
Total	RB260=1	RB260=2	RB260=3	RB260=4	RB260=5	MISSING				
Total	4302	0	13	1073	0	3216	0			
%	100	-	0,3	24,9	-	74,8	-			
2004										
Total	RB260=1	RB260=2	RB260=3	RB260=4	RB260=5	MISSING				
Total	3893	0	7	1187	0	2696	3			
%	100	-	0,2	30,5	-	69,3	0,1			
2005										
Total	RB260=1	RB260=2	RB260=3	RB260=4	RB260=5	MISSING				
Total	3489	0	3	1433	0	2052	1			
%	100	-	0,1	41,1	-	58,8	0,0			

2.5 Imputation procedure

In 2005 there were 23 household members who could not be linked to the income register. The personal incomes for these were imputed. The sample was stratified by age (16-24, 25-29, 30-66 and 67 +) and employed/self-employed and not active. Averages of the variables for personal income were calculated, and the imputed value of the personal income variables was set equal to the average for the stratum the person belonged to.

2.7 Company car

The value of using a company car is defined as taxable income. The register information is collected and included in Gross non-cash employee income (PY020).

3. Comparability

3.1 Basic concepts and definitions

The reference population

The reference population is persons aged 16 years or more at December 31 2005 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 than 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 2005.

The period for taxes on income and social insurance contributions

The period for taxes on income and social insurance contributions is the calendar year 2005.

The reference period for taxes on wealth

The reference period for taxes on wealth is the calendar year 2005.

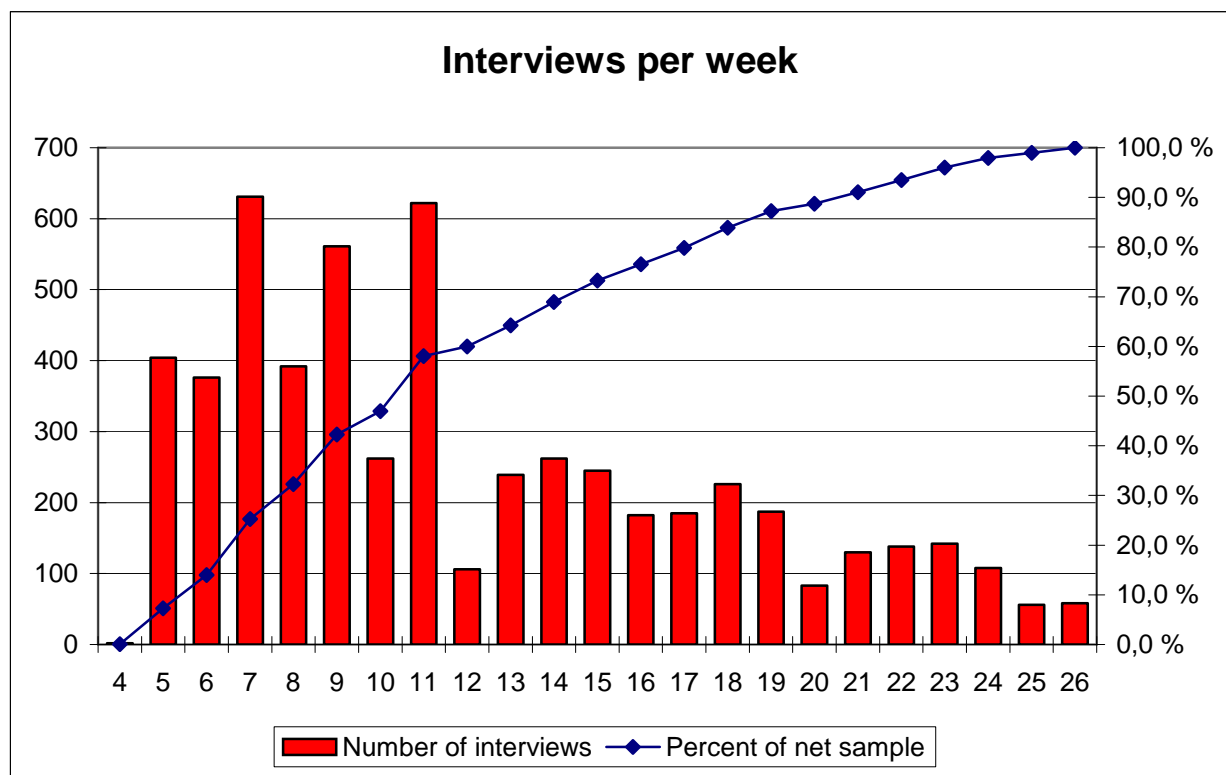
The lag between the income reference period and current variables

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, 2006

The interviews were carried out starting 31 January and ending 30 June. Figure 3.1 shows the number of interviews for every week of the data collection period. The line in the figure shows that by week 15, approximately 74 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 are unchanged from 2003 and 2004 to 2005.

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 + the sum for all household members of: PY010G + PY020G + 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);

Include the estimated value of using a company car.

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.

3.2.1 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 3.2.1.1 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 3.2.1.2 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

3.2.2. 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.

3.2.3. 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.

3.2.4. 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.