Relating to the EU-SILC UK Operation 2007-2010

Final Quality Report

Office for National Statistics

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Table of contents

List of tables

List of figures

Preface

According to article 16 of the Regulation (EC) no. 1177/2003 of the European Parliament and of the Council of 16 June 2003 concerning Community statistics on income and living conditions (EU-SILC), Member States and the Commission (Eurostat) will produce the following reports:

Member States shall produce by the end of year N+2 (2012), final quality reports that cover both cross-sectional and longitudinal components in relation to the year of the survey N (2010).

Note on the UK EU-SILC survey

In 2008 the Office for National Statistics (ONS) launched the Integrated Household Survey (IHS) for Great Britain. In the IHS a questionnaire is comprised of two sections: a suite of core IHS questions followed by individual survey modules. The General Household Survey (GHS) was chosen as a module of the IHS and in recognition the name was changed to the General Lifestyle Survey (GLF). The Northern Ireland component is collected as part of the Living Conditions Survey (LCS). This report provides quality information for EU-SILC which is collected as part of the GLF and LCS questionnaires in 2010.

Version control

This version of the 2007-10 UK EU-SILC Final Quality Report relates to and is consistent with the indicators and microdata transmitted to Eurostat on the 27th March 2012. Users should be aware that microdata available via Eurostat may not be consistent with the indicators if either have been recently revised and so should contact Eurostat for further information.

Microdata and indicator revisions

There has been one version of the 2007-10 UK EU-SILC longitudinal data sent to Eurostat as listed below.

Version	Date delivered to Eurostat	Revision summary
V1	27/3/12	First version sent to Eurostat after quality assurance and approval by the Department for Work and Pensions.

1. Common longitudinal European Union indicators

In 2010 the longitudinal UK EU-SILC data comprise a panel over four years from 2007 to 2010.

In order to estimate the percentage of panel persons living at-risk-of-poverty, the at-risk-of-poverty threshold has to be recalculated for each year of the four years longitudinal rotation to remove bias due to a threshold, which was estimated for the cross-sectional population of each year from 2007 to 2010 instead of the longitudinal population.

Persistent at-risk-of-poverty occurs if a panel person is at-risk-of-poverty in the last wave of the four years panel (2010) and has been at-risk-of-poverty at least two times during the preceding waves. Table 1 shows possible combinations of being at-risk-of-poverty which are contained in the longitudinal indicator:

Table 1: Types of at-persistent-risk-of-poverty

2010	2009	2008	2007	Duration of at-risk-of-poverty (years)
At-risk	At-risk	At-risk	At-risk	4
At-risk	At-risk	At-risk	Not-at-risk	3
At-risk	At-risk	Not-at-risk	At-risk	3
At-risk	Not-at-risk	At-risk	At-risk	3

According to the EU-SILC longitudinal dataset 7.4% of all persons of the population from 2007-2010 are at-persistent-risk-of-poverty.

Table 2: Persistent at-risk-of-poverty rate by gender and age, 2010

At-risk-of-poverty		
Age	Sex	%
Total	T	7.4
	M	7.0
	F	7.7
0 - 17	T	7.6
18 – 64	T	5.8
	M	5.9
	F	5.7
65+	T	11.9
	M	9.8
	F	13.6

2. Accuracy

Accuracy denotes the closeness of computations or estimates to the exact or true population values.

2.1 Sampling design

2.1.1 Type of sampling

Data for EU-SILC UK 2010 are collected from two sources. First, data are collected by the Office for National Statistics (ONS), using the General Lifestyle Survey (GLF). Second, to ensure that EU-SILC is representative of the UK, a sample of approximately 300 households is selected by NISRA (Northern Ireland Statistics and Research Agency) using the Living Conditions Survey (LCS). This small additional sample represents the (approximately) 2% of the UK population that live in Northern Ireland. All of the data analysis and processing is undertaken by ONS.

In 2010, 12,261 addresses were sampled. Each year approximately 70% of the sample is rolled forward from previous years and the remaining 30% is a new “Wave 1” sample. EU-SILC UK aims to interview all adults aged 16 or over at every household at the sampled address. EU-SILC Great Britain uses a probability, stratified two-stage sample design. The sample design in Northern Ireland is a simple random sample.

2.1.2 Sampling units (one stage, two stages)

The sample frame, the Postcode Address File, is ordered by postcode sectors. The postcode sectors are the Primary Sampling Units (PSU-1) for EU-SILC and the Secondary Sampling Units (PSU-2) are addresses within those sectors. Further information on the sampling unit is given in section 2.1.3 and Figure 1.

2.1.3 Stratification and sub-stratification criteria

Stratification involves the division of the population into sub-groups, or strata, from which independent samples are taken. This ensures that a representative sample is drawn with respect to the stratifiers. Stratification of a sample can lead to substantial improvements in the precision of the survey estimators provided that the strata are chosen such that members of the same strata are as similar as possible in respect to the characteristics of interest. The bigger the differences between strata, the greater the gain in the precision of the survey estimates.

Initially, postcode sectors for Great Britain were allocated to 30 major strata. These were based on the 10 regions in England (subdivided between the former Metropolitan and non-Metropolitan counties), five subdivisions in Scotland, two in Wales and one in Northern Ireland (Annex 1). In addition, London was subdivided into quadrants (Northwest, Northeast,

Southwest and Southeast) with each quadrant being divided into inner and outer areas (Annex 1). Using a finer division of London significantly improves the precision of estimates.

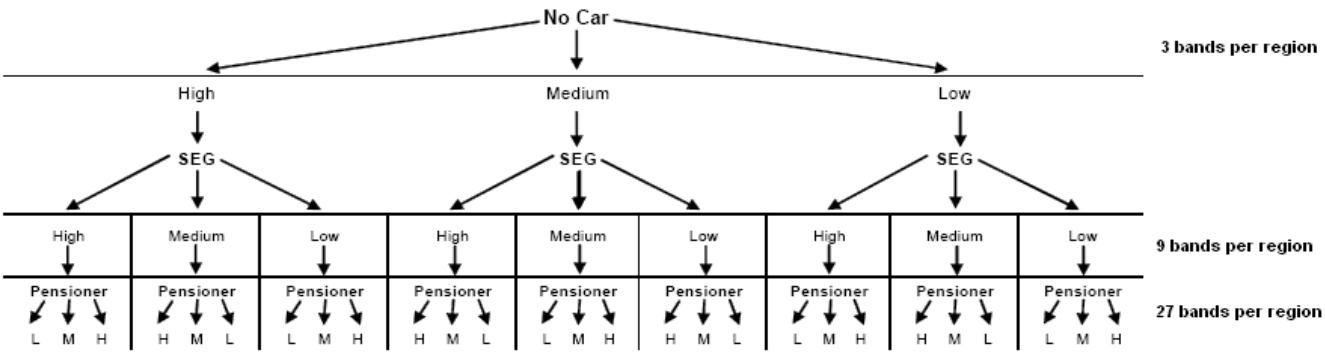
It should be noted that regions and strata do not exactly map onto each other. There are 30 strata in Great Britain but 37 regions. Some strata contain cases from two or more regions and some regions contribute cases to more than one stratum.

Within each major stratum, postcode sectors were then stratified according to selected indicators taken from the 2001 Census. Sectors were initially ranked according to the proportion of households with no car, then divided into three bands containing approximately the same number of households. Within each band, sectors were re-ranked according to the proportion of households with a household reference person in socio-economic groups 1 to 5 and 13 (Annex 2), and these bands were then subdivided into three further bands of approximately equal size. Finally, within each of these bands, sectors were re-ranked according to the proportion of people who were pensioners. As shown in Figure 1, the ranking by pensioners and socio-economic group is carried out in reverse order so as to maximise similarity between one band and the next. A systematic sample of postcode sectors (PSUs) is selected from the ordered frame resulting in an implicit stratification of the sample. PSUs were then paired up to form pseudo-minor strata. The implicit stratification of the sample makes it possible to increase the precision of the survey estimates while ensuring good geographical coverage. It is just the major strata that are provided in the microdata D file.

Major strata were then divided into minor strata with equal numbers of addresses, the number of minor strata per major strata being proportionate to the size of the major stratum, so larger PSUs have more chance of being selected. In 2005 the frame was divided into 720 strata. In 2006, 588 of these were rolled forward to the next wave in the longitudinal design. There were 132 pseudo wave 4 strata which were replaced and an additional 96 strata added, giving 816 for 2006. In 2007, 648 of these were again rolled forward to the next wave in the longitudinal design. There were 168 pseudo wave 4 strata which were replaced and an additional 60 strata added, giving 876 for 2007. In 2008, 684 of these were rolled forward to the next wave in the longitudinal design. There were 192 pseudo wave 4 strata which were replaced and an additional 36 strata added, giving 912 for 2008. In 2009 and 2010 the 684 waves 1, 2 and 3 strata were rolled forward to the next wave in the longitudinal design. The 228 wave 4 strata were replaced each year with 228 new wave 1 strata, giving 912 minor strata in total each year.

Each PSU formed a quota of work for an interviewer. Within each of the 228 new PSUs, 23 addresses were randomly selected.

Figure 1: Stratification of the sampling unit.



2.1.4 Sample size and allocation criteria

Regulation 1177/2003 states that member states have to achieve a minimum effective sample size. For the UK and for the cross-sectional component this is 7,500 households and 13,750 persons aged 16 and above. For the longitudinal component this is 5,750 households and 10,500 persons aged 16 and above.

The sample design for UK EU-SILC was based on the assumption that a design effect of 1.25 would be achieved under the design. In 2007, 13,478 addresses were selected for survey, yielding a sample of 9,275 eligible households. Within these households 21,942 people were residents of whom 17,484 were eligible for a personal interview (aged at least 16 years of age).

In 2008, 13,051 addresses were selected for survey, yielding a sample of 8,936 eligible households. Within these households 21,043 people were residents of whom 16,825 were eligible for a personal interview (aged at least 16 years of age).

In 2009, 12,530 addresses were selected for survey, yielding a sample of 8,365 eligible households. Within these households 19,415 people were residents of whom 15,646 were eligible for a personal interview (aged at least 16 years of age).

In 2010, 12,261 addresses were selected for survey, yielding a sample of 8,109 eligible households. Within these households 18,713 people were residents of whom 15,120 were eligible for a personal interview (aged at least 16 years of age).

The design effect for 2010 has not yet been calculated. The methodology for calculating the design effect is currently under discussion with Eurostat.

Table 3: Households and persons in the longitudinal component

	Longitudinal Sample 2007-2010				
	2007	**2008**	**2009**	**2010**	**Total**
Used Addresses	5,462	8,653	10,752	6,929	31,796
Addresses successfully contacted	4,601	7,810	10,752	6,929	30,092
Interview accepted for database	3,206	5,318	6,852	5,197	20,573
Persons	7,606	12,759	16,190	12,121	48,676
Personal interviews	6,067	10,035	12,790	9,595	38,487

2.1.5 Sample selection schemes

EU-SILC Great Britain uses a two-stage sampling scheme:

1. Selection of a Primary Sampling Units (PSUs) utilising a probability proportional to size sampling scheme, and selecting one PSU per stratum with a systematic selection procedure based on a random starting point.
2. Systematic random sampling of 23 addresses within a PSU.

The sample design in Northern Ireland is a simple random sample.

Table 4: Sample size, addresses and household interviews

	Longitudinal Sample 2007-2010																			
	2007		2008						2009						2010					
			Total households (DB110>0)		Follow-up households (DB110=1,2, 11)		Split households (DB110=8)		Total households (DB110>0)		Follow-up households (DB110=1,2,11)		Split households (DB110=8)		Total households (DB110>0)		Follow-up households (DB110=1,2,11)		Split households (DB110=8)	
	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%	n	%
Used addresses	5,462	100.0	8,653	100.0	3,191	100.0	30	100.0	10,752	100.0	5,299	100.0	37	100.0	6,929	100.0	6,824	100.0	77	100.0
Addresses existent	4,608	84.4	7,822	90.4	3,191	100.0	30	100.0	10,752	100.0	5,299	100.0	37	100.0	6,929	100.0	6,824	100.0	77	100.0
Add. non-existent	854	15.6	831	9.6	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Gross sample	4,608	100.0	7,822	100.0	3,191	100.0	30	100.0	10,752	100.0	5,299	100.0	37	100.0	6,929	100.0	6,824	100.0	77	100.0
Add. successfully contacted	4,601	99.8	7,810	99.8	3,191	100.0	30	100.0	10,752	100.0	5,299	100.0	37	100.0	6,929	100.0	6,824	100.0	77	100.0
Add. not contacted	7	0.2	12	0.2	0	0.0	30	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0
Successfully contacted add.	4,601	100.0	7,810	100.0	3,191	100.0	30	100.0	10,752	100.0	5,299	100.0	37	100.0	6,929	100.0	6,824	100.0	77	100.0
Hhld questionnaire completed DB130=11	3,206	69.7	5,318	68.1	2,286	71.6	30	100.0	6,852	63.7	3,908	73.7	37	100.0	5,197	75.0	5,120	75.0	77	100.0
Refusal DB130=21,22	1,214	26.4	1,926	24.7	524	16.4	0	0.0	1,974	18.4	728	13.7	0	0.0	961	13.9	961	14.1	0	0.0
Unable to respond DB130=23	165	3.6	225	2.9	65	2.0	0	0.0	244	2.3	80	1.5	0	0.0	171	2.5	171	2.5	0	0.0
Other reasons DB130=24	16	0.3	118	1.5	108	3.4	0	0.0	1,289	12.0	209	3.9	0	0.0	301	4.3	301	4.4	0	0.0
DB130 Missing	0	0.0	223	2.9	208	6.5	0	0.0	393	3.7	374	7.1	0	0.0	299	4.3	271	4.0	0	0.0
Hhld questionnaire completed	3,206	100.0	5,318	100.0	2,286	100.0	30	100.0	6,852	100.0	3,908	100.0	37	100.0	5,197	100.0	5,120	100.0	77	100.0
Interview accepted DB135=1	3,206	100.0	5,318	100.0	2,286	100.0	30	100.0	6,852	100.0	3,908	100.0	37	100.0	5,197	100.0	5,120	100.0	77	100.0
Interview rejected DB135=2	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

2.1.6 Sample distribution over time

Household interviews for EU-SILC UK are spread evenly throughout the calendar year. Typically a small number of interviews will be completed in January and February of the following year.

Table 5: Sample distribution over time

	Year of Survey			
	2007	**2008**	**2009**	**2010**
January	192	391	521	404
February	253	429	554	453
March	277	426	624	453
April	331	467	532	435
May	242	430	578	494
June	287	473	581	463
July	281	458	610	438
August	285	436	606	443
September	245	448	565	405
October	284	474	597	463
November	293	463	575	474
December	186	379	437	272
January	45*	44#	64&	
February	5*		8&	
Total	3,206	5,318	6,852	5,197

* data collected in 2008
# data collected in 2009
& data collected in 2010

2.1.7 Renewal of sample: rotational groups

In the UK, 2005 was the first year for the EU-SILC survey. To accommodate EU-SILC, the General Household Survey (GHS) adopted a new sample design in line with Eurostat requirements, changing from a cross-sectional to a longitudinal format.

The sample design follows a four-year sample rotation in which households remain in the sample for four years (waves) with one quarter of the sample being replaced each year. Each quarter of the sample is known as a replication, and each replication is representative of the target population. Figure 2 illustrates how the design operates.

The system was fully established from 2008 (year 4 onwards). The sample from 2008 onwards, for any one year, consists of four replications which have been in the survey for one, two, three or four years.

Figure 2: Renewal of sample: rotational groups.

Sample replication	Year 1 (2005)	Year 2 (2006)	Year 3 (2007)	Year 4 (2008)	Year 5 (2009)	Year 6 (2010)	Year 7 (2011)
1	1st						
2	1st	2nd					
3	1st	2nd	3rd				
4	1st	2nd	3rd	4th			
5		1st	2nd	3rd	4th		
6			1st	2nd	3rd	4th	
7				1st	2nd	3rd	4th
8					1st	2nd	3rd
9						1st	2nd
10							1st

Table 6: Addresses and completed interviews by rotational group

	2007		2008		2009		2010	
	Used addresses	Completed and accepted interviews	Used addresses	Completed and accepted interviews	Used addresses	Completed and accepted interviews	Used addresses	Completed and accepted interviews
R2	5,462	3,206	3,236	2,316	2,343	1,817	1,838	1,536
R3	-	-	5,417	3,002	3,012	2,128	2,150	1,680
R4	-	-	-	-	5,397	2,907	2,941	1,981
missing	-	2,256	-	3,335	-	3,900	-	1,732
Total	5,462	5,462	8,653	8,653	10,752	10,752	6,929	6,929

2.1.8 Weights

This section describes the methods used to calculate weights for the UK EU-SILC 2010 survey. The methods are broadly consistent with those recommended by Eurostat. The longitudinal survey weights are derived through combining the appropriate longitudinal base weights for each panel, according to the number of panels used to create each of the output datasets. The longitudinal base weights essentially are attrition-adjusted, carried-forward wave 1 cross-sectional weights for a given panel.

Adjustments, in general, are made to improve the accuracy of data, meaning the closeness of survey-based estimations or computations to the 'true' values. These adjustments are made at wave 1 through model-based non-response adjustments and calibration. For subsequent waves the inverse of the response propensities is used as an attrition weight.

2.1.8.1 The Horvitz-Thompson design weight

Addresses are selected for the first wave of each panel using a random probability design, the detail of which is outlined in the preceding sections of this report. The design weight for a household is calculated as the inverse of the inclusion probability for the sample address

(e.g, a standard Horvitz-Thompson (HT) estimator). The HT estimator is then adjusted by a two-step procedure to produce the wave 1 cross-sectional weight.

2.1.8.2 Initial non-response adjustments

Non-response to the surveys (GLF and LCS) used to produce the EU-SILC data can introduce bias into the estimator. For the UK data, an attempt is made to correct for this bias through weighting households based on their estimated propensity to respond. For EU-SILC, non-response can occur at any given wave.

A non-response model exists for the GLF which comprises a number of adjustment classes. These classes were constructed by linking households selected for the 2001 GHS (the earlier version of the GLF) to the 2001 Census. The Census is mandatory in the UK and so both responders and non-responders to the GLF can be matched to Census records. Response classes were formed based on households' propensity to respond to the survey, condition on certain combinations of characteristics available in both the Census and the survey. The reciprocal of the response propensity is used as the non-response weight.

2.1.8.3 Calibration to population totals

Calibration is used in the weighting procedure both to improve precision and to ensure consistency with known population totals. The EU-SILC sample is based on the population of private households, which means that the population totals used in the weighting need to be those created from counts of people living in private households.

At the time the weights were being constructed the most appropriate version of the population totals available for weighting were those produced for the Labour Force Survey (LFS). The LFS derives household population estimates by excluding residents of institutions from population projections based on mid-year estimates. However, certain groups in institutions are included in the population totals (e.g., nurses in nursing homes).

The population information and EU-SILC UK data were grouped into twelve age by sex categories and into six regional categories to form weighting classes. The initial non-response adjusted HT weight is adjusted, using Stats Canada's Generalized Estimation System (GES), so that the final weights ensure that the weighted totals for the above demographic categories match the population totals.

Age-group by sex

0-4	Males and Females		
5-15	Males and Females		
16-24	Males	16-24	Females
25-44	Males	25-44	Females
45-64	Males	45-64	Females
65-74	Males	65-74	Females
75+	Males	75+	Females

Regions

Metropolitan
Non-metropolitan
London
South East
Wales
Scotland
Northern Ireland

2.1.8.4 The longitudinal base-weight

The longitudinal base-weight is the foundation block for the creation of each of the two, three and four year panel final longitudinal weights, RB062, RB063 and RB064 respectively. Necessarily, these weights are only given for the last year (e.g., 2010).

For a given rotational panel, the longitudinal base weight (RB060) at wave 1 corresponds to the initial final cross-sectional calibration described immediately above (e.g., the design weight adjusted for non-response and calibrated to the UK population totals). It is then adjusted for attrition at each subsequent wave, as described below.

2.1.8.5 Non-response adjustments (attrition in subsequent waves)

Attrition is a form of non-response found on longitudinal surveys between waves. The 2010 EU-SILC is the survey's sixth year in the UK; this meant that approximately three-quarters of sampled households had been surveyed in 2009. As these sampled households had previously participated in the survey, details of respondents and non-respondents were linked back to their corresponding information at the previous wave. Logistic regression was used to model the likelihood of response in the current wave against the characteristics of households at their interview in the previous wave. A variety of household variables such as household composition, region, accommodation type and long standing illness were tested for inclusion. Characteristics determined as significant by the logistic regression model (at the 5% significance level) were used to weight for this attrition. The variables found to be significant are listed below.

Table 7: Variables included in the logistic regression model of household attrition in 2010

Variable
Age of household reference person
Any qualification (any resident)
Current wave
Drinking amount of the household reference person
Dwelling type
Ethnicity of household reference person
Government Office Region
Household composition
Number of calls made to the household to arrange the interview

Number of partial interviews in household
Number of people in household who smoke nowadays
Number of people in the household who checked their payslip during interview
Number of people in the household who refused or answered 'don't know' to a known sensitive question
Tenure
When household reference person arrived in UK

2.1.8.6 Adjustments to external data (longitudinal population)

For any given rotational panel, we define the longitudinal population at any calendar time as the initial private household population at the time the sample was drawn minus those people who have moved out of the population between sampling and the interview time. We therefore construct our estimate of the longitudinal population initially using the population totals at the first wave. We then subtract number of deaths and out-migrations between sampling and the survey to estimate the longitudinal population.

Unfortunately we do not have robust estimates of institutionalisation – the other major potential source of losses to the private household population, so we do not adjust the longitudinal population for such loss. Consequently, we expect our estimates of the longitudinal population to be on the high.

For example, 2008 wave 2 would use the 2007 mid-year population estimates minus deaths and emigrants in 2008. 2009 wave 3 would also use the 2007 population estimate but would remove the 2009 deaths and emigrants figures as well as the 2008 deaths and emigrant figures.

The deaths estimate for the UK is calculated using the 'Ministry of Justice Annual Report of Coroners Statistics in England and Wales'. The number of emigrants for the UK is taken from the published 'ONS International Migration Estimates'.

2.1.8.7 Final longitudinal weight (subsequent waves)

The final longitudinal weight takes the trimmed and population adjusted weight described above and averages over the relevant number of panels (e.g., three panels for the two-wave longitudinal dataset to create RB062). A number of special circumstances are worth noting.

In general, co-residents joining sample households receive a zero longitudinal base-weight. Immigrants are assigned a non-zero base weight value calculated as the average weight of existing household members and newborns receive their mother's weight.

RB060 is produced from the base weights and is scaled so that the sum of the weights over those individuals in scope for the longitudinal dataset equals the estimated size of the relevant longitudinal population.

For the longitudinal weights (RB062, RB063, RB064) persons that have moved in from outside the sample, are newly born, have moved out or died are given a zero weight.

2.1.8.8 Final household cross-sectional weight

The final cross sectional weight (DB090) is calculated from the base weights.

2.1.9 Substitutions

In 2010, no substitutions were made.

2.2 Sampling errors

The following tables present the means, number of observations and standard errors for the key income variables for the cross-sectional component in 2010 and for each wave of the longitudinal component 2007-2010. The means are calculated across all households, including those who have not recorded any income against the component.

At the time of creating this report the data for Tables 13-16 are not available. These data will be updated as soon as possible.

Table 8: Mean, total number of observations and standard errors for income components (weighted) - 2010 cross-sectional

Income component	Mean	Unweighted number of observations		Standard error
		Before imputation	After imputation	
Total household income variables				
Total household gross income	36,632	3,184	8,109	558.5
Total disposable household income	27,735	3,215	8,109	345.9
Total disposable household income before social transfers other than old-age and survivor benefits	24,890	3,485	8,109	371.7
Total disposable household income before social transfers including old-age and survivors' benefits	19,733	4,085	8,109	353.9
Gross income components at household level				
Income from rental of a property or land	453	8,047	8,109	51.6
Family/child related allowances	891	7,901	8,109	19.7
Social exclusion not elsewhere classified	340	7,937	8,109	16.2
Housing allowances	582	7,980	8,109	21.9
Regular inter-household cash transfer received	105	8,103	8,109	20.9
Interest, dividends, etc.	510	7,514	8,109	37.4
Interest repayments on mortgage	1,400	8,031	8,109	35.8
Income received by people aged under 16	10	8,105	8,109	2.0
Regular taxes on wealth	1,054	7,727	8,109	10.2
Regular inter-household cash transfer paid	190	8,102	8,109	31.6
Tax on income and social contributions	7,653	4,350	8,109	213.1
Value of goods produced for own consumption	0	0	0	-
Gross income components at personal level				
Employee cash or near cash income	12,409	9,476	15,120	224.0
Non-cash employee income	140	15,103	15,120	8.7
Employer's social insurance contribution	2,088	-	-	46.0
Contributions to individual private pension plans	218	14,777	15,120	11.7
Cash benefits or losses from self-employment	1,857	14,893	15,120	158.3
Pension from individual private plans	184	14,878	15,120	21.0
Unemployment benefits	71	15,110	15,120	8.5
Old-age benefits	2,899	13,945	15,120	69.6
Survivor's benefits	20	15,107	15,120	3.5
Sickness benefits	120	15,043	15,120	7.5
Disability benefits	159	14,999	15,120	9.0
Education-related allowances	48	15,109	15,120	5.9
Gross monthly earnings for employees	1,230	9,508	15,120	20.3

Table 9: Mean, total number of observations and standard errors for income components 2007 part of longitudinal (weighted)

Income component	Mean	Unweighted number of observations		Standard error
		Before imputation	After imputation	
Total household income variables				
Total household gross income	36,618	1,839	3,206	1179.6
Total disposable household income	27,477	1,829	3,206	790.5
Total disposable household income before social transfers other than old-age and survivor benefits	25,174	1,994	3,206	824.4
Total disposable household income before social transfers including old-age and survivors' benefits	20,506	2,206	3,206	652.7
Gross income components at household level				
Income from rental of a property or land	374	3,175	3,206	68.3
Family/child related allowances	676	3,014	3,206	49.9
Social exclusion not elsewhere classified	371	3,126	3,206	45.4
Housing allowances	447	3,141	3,206	45.4
Regular inter-household cash transfer received	109	3,193	3,206	20.2
Interest, dividends, etc.	1,326	2,700	3,206	214.8
Interest repayments on mortgage	2,225	3,206	3,206	115.5
Income received by people aged under 16	12	3,205	3,206	6.4
Regular taxes on wealth	970	2,989	3,206	16.5
Regular inter-household cash transfer paid	199	3,192	3,206	34.0
Tax on income and social contributions	7,972	2,281	3,206	397.8
Gross income components at personal level				
Employee cash or near cash income	12,398	5,308	6,067	357.4
Non-cash employee income	195	6,037	6,067	17.0
Contributions to individual private pension plans	174	6,045	6,067	13.8
Cash benefits or losses from self-employment	1,693	5,951	6,067	137.9
Value of goods produced for own consumption	0	6,067	6,067	0
Pension from individual private plans	139	5,990	6,067	25.2
Unemployment benefits	37	6,051	6,067	5.00
Old-age benefits	2,661	5,571	6,067	251.6
Survivor's benefits	28	6,062	6,067	7.1
Sickness benefits	128	6,015	6,067	9.9
Disability benefits	114	6,000	6,067	10.7
Education-related allowances	39	6,055	6,067	9.0
Gross monthly earnings for employees	1,238		6,067	

Table 10: Mean, total number of observations and standard errors for income components 2008 part of longitudinal (weighted)

Income component	Mean	Unweighted number of observations		Standard error
		Before imputation	After imputation	
Total household income variables				
Total household gross income	38,382	3,106	5,318	1770.2
Total disposable household income	28,598	3,294	5,318	1065.7
Total disposable household income before social transfers other than old-age and survivor benefits	26,158	3,408	5,318	1082.9
Total disposable household income before social transfers including old-age and survivors' benefits	21,335	3,643	5,318	1080.1
Gross income components at household level				
Income from rental of a property or land	411	5,247	5,318	48.6
Family/child related allowances	748	5,127	5,318	44.8
Social exclusion not elsewhere classified	327	5,197	5,318	30.2
Housing allowances	459	5,304	5,318	28.9
Regular inter-household cash transfer received	141	5,299	5,318	25.8
Interest, dividends, etc.	1,074	4,479	5,318	93.9
Interest repayments on mortgage	1,983	5,295	5,318	81.0
Income received by people aged under 16	12	5,312	5,318	4.0
Regular taxes on wealth	1,023	4,805	5,318	14.1
Regular inter-household cash transfer paid	228	5,267	5,318	25.8
Tax on income and social contributions	8,533	3,625	5,318	713.6
Gross income components at personal level				
Employee cash or near cash income	13,016	8,716	10,035	308.7
Non-cash employee income	200	10,034	10,035	15.4
Contributions to individual private pension plans	227	9,924	10,035	17.0
Cash benefits or losses from self-employment	2,193	9,747	10,035	411.3
Value of goods produced for own consumption	0	10,035	10,035	0
Pension from individual private plans	218	9,886	10,035	28.5
Unemployment benefits	39	10,025	10,035	7.4
Old-age benefits	2,733	9,192	10,035	78.1
Survivor's benefits	22	10,021	10,035	4.6
Sickness benefits	138	9,971	10,035	10.6
Disability benefits	122	9,945	10,035	8.4
Education-related allowances	75	9,995	10,035	14.2
Gross monthly earnings for employees	1,303		10,035	

Table 11: Mean, total number of observations and standard errors for income components 2009 part of longitudinal (weighted)

Income component	Mean	Unweighted number of observations		Standard error
		Before imputation	After imputation	
Total household income variables				
Total household gross income	35,716	4,503	6,852	737.0
Total disposable household income	27,163	4,564	6,852	467.7
Total disposable household income before social transfers other than old-age and survivor benefits	24,388	4,963	6,852	510.0
Total disposable household income before social transfers including old-age and survivors' benefits	19,266	5,481	6,852	506.7
Gross income components at household level				
Income from rental of a property or land	409	6,807	6,852	55.8
Family/child related allowances	897	6,556	6,852	53.1
Social exclusion not elsewhere classified	404	6,679	6,852	32.8
Housing allowances	550	6,713	6,852	35.9
Regular inter-household cash transfer received	120	6,841	6,852	20.4
Interest, dividends, etc.	690	6,345	6,852	71.7
Interest repayments on mortgage	1,452	6,719	6,852	53.4
Income received by people aged under 16	7	6,852	6,852	3.2
Regular taxes on wealth	1,034	6,153	6,852	12.6
Regular inter-household cash transfer paid	175	6,836	6,852	17.4
Tax on income and social contributions	7,335	5,595	6,852	273.3
Gross income components at personal level				
Employee cash or near cash income	12,145	11,917	12,790	251.0
Non-cash employee income	160	12,751	12,790	10.4
Contributions to individual private pension plans	212	12,502	12,790	11.8
Cash benefits or losses from self-employment	1,847	12,572	12,790	132.4
Value of goods produced for own consumption	0	12,790	12,790	0
Pension from individual private plans	172	12,630	12,790	17.5
Unemployment benefits	59	12,770	12,790	4.9
Old-age benefits	2,897	11,701	12,790	69.4
Survivor's benefits	21	12,777	12,790	4.3
Sickness benefits	134	12,720	12,790	8.0
Disability benefits	149	12,664	12,790	8.5
Education-related allowances	39	12,770	12,790	5.1
Gross monthly earnings for employees	1,194		12,790	

Table 12: Mean, total number of observations and standard errors for income components 2010 part of longitudinal (weighted)

Income component	Mean	Unweighted number of observations		Standard error
		Before imputation	After imputation	
Total household income variables				
Total household gross income	35,499	2,065	5,197	920.2
Total disposable household income	27,057	2,099	5,197	553.4
Total disposable household income before social transfers other than old-age and survivor benefits	24,273	2,275	5,197	595.0
Total disposable household income before social transfers including old-age and survivors' benefits	18,558	2,707	5,197	594.4
Gross income components at household level				
Income from rental of a property or land	428	5,168	5,197	49.6
Family/child related allowances	873	5,077	5,197	57.6
Social exclusion not elsewhere classified	329	5,085	5,197	31.5
Housing allowances	590	5,109	5,197	46.1
Regular inter-household cash transfer received	67	5,195	5,197	15.3
Interest, dividends, etc.	503	4,827	5,197	37.9
Interest repayments on mortgage	1,327	5,151	5,197	57.7
Income received by people aged under 16	11	5,194	5,197	3.7
Regular taxes on wealth	1,051	5,048	5,197	14.3
Regular inter-household cash transfer paid	158	5,192	5,197	16.2
Tax on income and social contributions	7,233	2,819	5,197	370.8
Value of goods produced for own consumption	0	0	0	
Gross income components at personal level				
Employee cash or near cash income	12,398	6,048	9,595	289.1
Non-cash employee income	137	9,585	9,595	10.3
Contributions to individual private pension plans	228	9,396	9,595	15.1
Cash benefits or losses from self-employment	1,706	9,477	9,595	154.1
Value of goods produced for own consumption	0	9,595	9,595	0
Pension from individual private plans	195	9,458	9,595	24.0
Unemployment benefits	56	9,590	9,595	5.3
Old-age benefits	3,320	8,826	9,595	85.8
Survivor's benefits	23	9,591	9,595	4.7
Sickness benefits	123	9,555	9,595	8.7
Disability benefits	169	9,518	9,595	10.9
Education-related allowances	45	9,590	9,595	7.7
Gross monthly earnings for employees	1,192	6,066	9,595	

Table 13: The mean, the number of observations (before and after imputations) and the standard error for the equivalised disposable income 2007 (weighted R2)

Equivalised disposable income	Mean	Number of observations		Standard error	S.E./Mean
		Before Imputation	After imputation		%
By household size					
1 household member					
2 household members					
3 household members					
4 and more household members					
By age groups					
< 25					
25 - 34					
35 - 44					
45 - 54					
55 - 64					
65 +					
By sex					
Male					
Female					
Total					

Table 14: The mean, the number of observations (before and after imputations) and the standard error for the equivalised disposable income 2008 (weighted R2, R3)

Equivalised disposable income	Mean	Number of observations		Standard error	S.E./Mean
		Before Imputation	After imputation		%
By household size					
1 household member					
2 household members					
3 household members					
4 and more household members					
By age groups					
< 25					
25 - 34					
35 - 44					
45 - 54					
55 - 64					
65 +					
By sex					
Male					
Female					
Total					

Table 15: The mean, the number of observations (before and after imputations) and the standard error for the equivalised disposable income 2009 (weighted R2, R3 & R4)

Equivalised disposable income	Mean	Number of observations		Standard error	S.E./Mean
		Before Imputation	After imputation		%
By household size					
1 household member					
2 household members					
3 household members					
4 and more household members					
By age groups					
< 25					
25 - 34					
35 - 44					
45 - 54					
55 - 64					
65 +					
By sex					
Male					
Female					
Total					

Table 16: The mean, the number of observations (before and after imputations) and the standard error for the equivalised disposable income 2010 (weighted R2, R3 & R4)

Equivalised disposable income	Mean	Number of observations		Standard error	S.E./Mean
		Before Imputation	After imputation		%
By household size					
1 household member					
2 household members					
3 household members					
4 and more household members					
By age groups					
< 25					
25 - 34					
35 - 44					
45 - 54					
55 - 64					
65 +					
By sex					
Male					
Female					
Total					

Table 17: The mean, the number of observations (before and after imputations) and the standard error for the equivalised disposable income for the cross-sectional component of 2010 (weighted)

Equivalised disposable income	Mean	Number of observations		Standard error	S.E./Mean
		Before Imputation	After imputation		%
By household size					
1 household member	14,498	1,127	2,378	254.87	0.018
2 household members	19,026	3,392	6,096	328.63	0.017
3 household members	19,368	2,613	3,474	489.00	0.025
4 and more household members	16,793	5,330	6,765	366.04	0.022
By age groups					
< 25	16,168	3,971	5,239	296.17	0.018
25 - 34	18,689	1,417	1,846	439.43	0.024
35 - 44	19,617	1,825	2,406	438.79	0.022
45 - 54	19,675	1,979	2,606	426.32	0.022
55 - 64	19,394	1,671	2,611	395.58	0.020
65 +	14,556	1,482	3,747	213.03	0.015
By sex					
Male	18,053	6,112	9,013	237.90	0.013
Female	17,207	6,350	9,700	218.15	0.013
Total	17,625	12,462	18,713	218.13	0.012

2.3 Non-sampling errors

Survey results are subject to various sources of error. The total error in a survey estimate is the difference between the estimate derived from the sample data collected and the true value for the population.

2.3.1 Sampling frame and coverage errors

The target population of EU-SILC UK is all private households and their current members at the time of data collection. Persons living in collective households and in institutions are excluded from the target population.

The sampling frame for the first wave is the small users file of the Postcode Address File (PAF). This is an up-to-date list of all addresses maintained by the UK Post Office. For the GLF (and therefore EU-SILC) all Scottish offshore islands and the Isles of Scilly are excluded from the frame because of excessive interview travel costs. The impact of such coverage error on UK EU-SILC is minimal.

2.3.2 Measurement and processing errors

2.3.2.1 Measurement errors

Substantial efforts have been made to avoid measurement errors, for example, through extensive interviewer training and thorough questionnaire testing. With regards to interviewer training, face-to-face and telephone interviewers who work on EU-SILC UK are recruited only after careful selection procedures after which they take part in an initial training course. Before working on EU-SILC they attend a briefing and new recruits are always supervised either by being accompanied in the field by a Field Manager or monitored by a Telephone Interviewing Unit supervisor (TIUs). All interviewers who continue to work on EU-SILC are observed regularly in their work.

2.3.2.2 Processing errors

Data collection is carried out by face-to-face interviewers using Computer Assisted Personal Interviewing (CAPI) on laptop computers. Blaise software (developed by Statistics Netherlands) is used, which is an integrated system for survey processing. The use of Blaise enables a reduction in processing errors as data can be “checked” as it is entered by interviewers. For example, income data are “checked” at the point of collection to make sure that net values are not greater than gross values for an individual. Data are also rotated forward from the previous wave for certain questions, including personal information and labour variables. This allows the interviewer to query and correct any inconsistencies between waves.

Data are converted from Blaise to SPSS and are edited using this software. At this stage there is further checking for the consistency and plausibility of data. For example, comparisons are made with the income data recorded at the previous wave to check for consistency.

2.3.3 Non-response errors

There are two main types of non-response errors - unit non-response and item non-response.

In strictly controlled circumstances, interviewers are allowed to conduct a proxy interview with a close household member to reduce unit non-response errors. Proxy interviews are only used where it has proved impossible, despite repeated calls, to contact a particular member of a household in person. In these cases, some questions are omitted, for example those which are more subjective such as those relating to health.

Further effort is directed towards reducing item non-response by converting these proxy interviews to full interviews. Attempts are made to contact the household member, who was unavailable during the initial face-to-face interview, and ask them the questions that were omitted from the proxy interview. It was established through extensive research that the most efficient way of re-contacting these respondents was by employing Telephone Unit (TIU) interviewers who could contact a widely dispersed population more efficiently than would be possible by conducting face-to-face interviews.

A problem specific to the UK concerns missing income data for some respondents. In the first three months of the 2007 survey, respondents were allowed to refuse to answer all income questions. As such, information for these respondents is missing (approximately 60 individuals in 2007). In addition, proxy respondents are not asked any income questions, apart from one question relating to 'total personal disposable income' (this has also been rectified, since November 2007 proxy respondents have been asked to provide full income information). As a consequence of this, for the survey year 2007 there are a relatively large number of individuals for whom income information has been wholly imputed.

2.3.3.1 Achieved sample size

Table 18: Sample size and accepted interviews by year and rotational group

		2007	2008	2009	2010	Total
Accepted household interviews	R2	3,206	2,316	1,817	1,536	8,875
	R3	-	3,002	2,128	1,680	6,810
	R4	-	-	2,907	1,981	4,888
Personal interview accepted						
Number of persons aged 16 and above	R2	6,067	4,382	3,390	2,871	16,710
	R3	-	5,653	4,016	3,152	12,821
	R4	-	-	5,384	3,572	8,956
Sample persons	R2	6,067	4,264	3,205	2,640	16,176
	R3	-	5,653	3,922	3,002	12,577
	R4	-	-	5,384	3,488	8,872
Co-residents	R2	-	118	185	231	534
	R3	-	-	94	150	244
	R4	-	-	-	84	84

2.3.3.2 Unit non-response

Table 19: Indicators on unit non-response by rotational group (2007)

	R2
Addresses successfully contacted	4,601
Valid addresses selected	4,608
Ra - address contact rate	99.8%
Household interviews completed	3,206
Eligible households	4,601
Rh - proportion of completed interviews	69.7%
NRh - household non-response rate	30.3%
Person interviews completed	6,067
Number of eligible individuals	6,067
Rp - proportion of completed interviews	100.0%
*NRp – overall individual non-response rates =(1-(Ra * Rh * Rp)) * 100	30.4%

Table 20: Household response rates - comparison of results codes between wave 2 2008 and wave 1 2007 (R2)

Sample outcome in wave 1 – 2007		Sample outcome in wave 2 - 2008											
		DB130=11											
		DB135 = 1	DB135 = 2	DB120=22	DB130=22	DB130=23	DB130=24	DB130=21	DB120=21	NC	DB110=10	DB120=23	**Total**
DB130=11	DB135 = 1	2,286	0	0	0	65	108	524	0	15	0	0	2,998
	DB135 = 2	0	0	0	0	0	0	0	0	0	0	0	0
	Total	2,286	0	0	0	65	108	524	0	15	0	0	2,998
New household in wave 2 -2008													
2008	DB110=8	0	0	0	0	0	0	0	0	NA	NA	0	0
	DB110=9	0	0	0	0	0	0	0	0	NA	NA	0	0
	Total	2,286	0	0	0	65	108	524	0	15	0	0	2,998
		A	B	C	D	E	F	G	H	I	J	K	T

Wave response rate =	**0.763**
Refusal rate =	**0.175**
No-contacted and others =	**0.036**
Longitudinal follow-up rate =	**0.820**
Follow-up ratio =	**0.820**
Achieved sample size ratio =	**0.713**

Table 21: Household response rates - comparison of results codes between wave 3 2009 and wave 2 2008 (R2)

Sample outcome in wave 2 - 2008		Sample outcome in wave 3 - 2009											
		DB130=11											
		DB135 = 1	DB135 = 2	DB120=22	DB130=22	DB130=23	DB130=24	DB130=21	DB120=21	NC	DB110=10	DB120=23	**Total**
DB130=11	DB135 = 1	1,769	0	0	0	33	89	260	0	10	0	0	2,161
	DB135 = 2	0	0	0	0	0	0	0	0	0	0	0	0
	Total	1,769	0	0	0	33	89	260	0	10	0	0	2,161
DB120 = 22	NH	0	0	0	0	0	0	0	0	0	0	0	0
DB130=22	NH	0	0	0	0	0	0	0	0	0	0	0	0
DB130=23	NH	0	0	0	0	0	0	0	0	0	0	0	0
DB130=24	NH	0	0	0	0	0	0	0	0	0	0	0	0
New household in wave 3 -2009													
2009	DB110=8	0	0	0	0	0	0	0	0	NA	NA	0	0
	DB110=9	0	0	0	0	0	0	0	0	NA	NA	0	0
	Total	1,769	0	0	0	33	89	260	0	10	NA	0	2,161

Wave response rate =	**0.819**
Refusal rate =	**0.120**
No-contacted and others =	**0.041**
Longitudinal follow-up rate =	**0.875**
Follow-up ratio =	**0.875**
Achieved sample size ratio =	**0.774**

Table 22: Household response rates - comparison of results codes between wave 4 2010 and wave 3 2009 (R2)

Sample outcome in wave 3 - 2009		Sample outcome in wave 4 - 2010											
		DB130=11											
		DB135 = 1	DB135 = 2	DB120=22	DB130=22	DB130=23	DB130=24	DB130=21	DB120=21	NC	DB110=10	DB120=23	**Total**
DB130=11	DB135 = 1	1,487	0	0	0	34	51	152	0	7	0	0	1,731
	DB135 = 2	0	0	0	0	0	0	0	0	0	0	0	0
	Total	1,487	0	0	0	34	51	152	0	7	0	0	1,731
DB120 = 22	NH	0	0	0	0	0	0	0	0	0	0	0	0
DB130=22	NH	0	0	0	0	0	0	0	0	0	0	0	0
DB130=23	NH	0	0	0	0	0	0	0	0	0	0	0	0
DB130=24	NH	0	0	0	0	0	0	0	0	0	0	0	0
New household in wave 4 -2010													
2010	DB110=8	0	0	0	0	0	0	0	0	NA	NA	0	0
	DB110=9	0	0	0	0	0	0	0	0	NA	NA	0	0
	Total	1,487	0	0	0	34	51	152	0	7	NA	0	1,731

Wave response rate =	**0.859**
Refusal rate =	**0.088**
No-contacted and others =	**0.029**
Longitudinal follow-up rate =	**0.908**
Follow-up ratio =	**0.908**
Achieved sample size ratio =	**0.841**

Table 23: Person interview outcome in wave 2 (R2)

2008

		RB250=11,12,13	RB250=21	RB250=22	RB250=23	RB250=31	RB250=32	RB250=33	HHinc1 DB110=3-6	HHinc2 DB110=7	Pn RB110=6 or RB120=2,3	P1 RB110=4 or -1	Total
Sample persons from previous wave													
Row													
1	RB110=1-2	4,196	0	0	0	0	0	0					4,196
2	RB110=6												20
3	RB110=-1												0
4	RB120=2												14
5	RB120=3												13
6	RB120=4												96
7	DB135=2,-1 or DB110=7 or DB120=21-23,-1 or DB130=21-24,-1												0
8	DB110=3-6												0
New sample persons													
9	Reached age 16	68	0	0	0	0	0	0	0	0	0	0	68
10	Sample additions	0	0	0	0	0	0	0					0
	Non-sample persons 16+												
11	From Wave 1 -2007	0	0	0	0	0	0	0	0	0	0	0	0
	Not from Wave 1- 2007	0	0	0	0	0	0	0	0	0	0	0	0
	Sample persons from sample not forwarded from last wave (excluding died or not eligible according to tracing rules)												
13	From 2007												0
Sum of rows:													
	1,3,6,7,9,10	4,264	0	0	0	0	0	0	0	0	0	0	4,360
	1,3,6,7,9,10,13	4,264	0	0	0	0	0	0	0	0	0	0	4,360
	1,3,6,7,9,10,11	4,264	0	0	0	0	0	0	0	0	0	0	4,360

Wave response rate of sample persons =	0.978	Achieved sample size ratio for sample persons =	0.976
Wave response rate of co-residents =	1.000	Achieved sample size ratio for sample persons and co-residents =	0.976
Longitudinal follow-up rate =	0.978	Achieved sample size ratio for co-residents selected the first wave =	-
Rate (RB250=21) =	0.000	Response rate for non-sample persons =	-
Rate (RB250=22) =	0.000		
Rate (RB250=23) =	0.000		
Rate (RB250=31) =	0.000		
Rate (RB250=32) =	0.000		
Rate (RB250=33) =	0.000		

Table 24: Person interview outcome in wave 3 (R2)

2009

Row		RB250=11,12,13	RB250=21	RB250=22	RB250=23	RB250=31	RB250=32	RB250=33	HHinc1	HHinc2	Pn	P1	Total
Sample persons from previous wave													
1	RB110=1-2	3,175	0	0	0	0	0	0					3,175
2	RB110=6												13
3	RB110=-1												0
4	RB120=2												3
5	RB120=3												4
6	RB120=4												42
7	DB135=2,-1 or DB110=7 or DB120=21-23,-1 or DB130=21-24,-1												0
8	DB110=3-6												0
New sample persons													
9	Reached age 16	29	0	0	0	0	0	0	0	0	0	0	29
10	Sample additions	0	0	0	0	0	0	0					0

Non-sample persons 16+

11	From Wave 2 -2008	118	0	0	0	0	0	0	0	0	0	0	118
	Not from Wave 2- 2008	96	0	0	0	0	0	0	0	0	0	0	96

Sample persons from sample not forwarded from last wave (excluding died or not eligible according to tracing rules)

13	From 2008												0

Sum of rows:

	1,3,6,7,9,10	3,204	0	0	0	0	0	0	0	0	0	0	3,246
	1,3,6,7,9,10,13	3,204	0	0	0	0	0	0	0	0	0	0	3,246
	1,3,6,7,9,10,11	3,322	0	0	0	0	0	0	0	0	0	0	3,364

Wave response rate of sample persons =	0.987	Achieved sample size ratio for sample persons =	0.983
Wave response rate of co-residents =	1.000	Achieved sample size ratio for sample persons and co-residents =	0.984
Longitudinal follow-up rate =	0.987	Achieved sample size ratio for co-residents selected the first wave =	0.814
Rate (RB250=21) =	0.000		1.000
Rate (RB250=22) =	0.000		
Rate (RB250=23) =	0.000		
Rate (RB250=31) =	0.000		
Rate (RB250=32) =	0.000		
Rate (RB250=33) =	0.000		

Table 25: Person interview outcome in wave 4 (R2)

2010

		RB250=11,12,13	RB250=21	RB250=22	RB250=23	RB250=31	RB250=32	RB250=33	HHinc1	HHinc2	Pn	P1	Total
Sample persons from previous wave													
Row													
1	RB110=1-2	2,638	0	0	0	0	0	0					2,638
2	RB110=6												13

3	RB110=-1												0
4	RB120=2												4
5	RB120=3												6
6	RB120=4												30
7	DB135=2,-1 or DB110=7 or DB120=21-23,-1 or DB130=21-24,-1												0
8	DB110=3-6												0

New sample persons

9	Reached age 16	0	0	0	0	0	0	0	0	0	0	0	0
10	Sample additions	0	0	0	0	0	0	0					0

Non-sample persons 16+

11	From Wave 3-2009	185	0	0	0	0	0	0	0	0	0	0	185
	Not from Wave 3- 2009	59	0	0	0	0	0	0	0	0	0	0	59

Sample persons from sample not forwarded from last wave (excluding died or not eligible according to tracing rules)

13	From 2009												0

Sum of rows:

	1,3,6,7,9,10	2,638	0	0	0	0	0	0	0	0	0	0	2,638
	1,3,6,7,9,10,13	2,638	0	0	0	0	0	0	0	0	0	0	2,638
	1,3,6,7,9,10,11	2,823	0	0	0	0	0	0	0	0	0	0	2,823

Wave response rate of sample persons =	0.989	Achieved sample size ratio for sample persons =	0.976
Wave response rate of co-residents =	n/a	Achieved sample size ratio for sample persons and co-residents =	0.989
Longitudinal follow-up rate =	0.989	Achieved sample size ratio for co-residents selected the first wave =	0.319
Rate (RB250=21) =	0.000	Response rate for non-sample persons	1.000
Rate (RB250=22) =	0.000		
Rate (RB250=23) =	0.000		
Rate (RB250=31) =	0.000		
Rate (RB250=32) =	0.000		
Rate (RB250=33) =	0.000		

2.3.3.3 Distribution of households

Table 26: Distribution of households by DB110

		Total	1	2	3	4	5	6	7	8	9	10	11
2007		5,462	0	0	0	0	0	0	0	0	5,462	0	0
	%	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0	0.0
2008		8,653	2,920	63	0	9	6	0	0	30	5,417	0	208
	%	100.0	33.7	0.7	0.0	0.1	0.1	0.0	0.0	0.3	62.6	0.0	2.4
2009		10,752	4,818	107	4	6	9	0	0	37	5,397	0	374
	%	100.0	44.8	1.0	0.0	0.1	0.1	0.0	0.0	0.3	50.2	0.0	3.5
2010		6,929	6,412	141	5	5	18	0	0	77	0	0	271
	%	100.0	92.5	2.0	0.1	0.1	0.3	0.0	0.0	1.1	0.0	0.0	3.9

Table 27: Distribution of households by DB120

		Total	11	21	22	23
2007		5,462	4,601	5	2	854
	%	100.0	84.2	0.1	0.0	15.6
2008		5,510	4,667	4	8	831
	%	100.0	84.7	0.1	0.1	15.1
2009		5,541	5,541	0	0	0
	%	100.0	100.0	0.0	0.0	0.0
2010		218	218	0	0	0
	%	100.0	100.0	0.0	0.0	0.0

Table 28: Distribution of households by DB130

		Total	11	21	22	23	24
2007		4,601	3,206	1,214	0	165	16
	%	100.0	69.7	26.4	0.0	3.6	0.3
2008		7,587	5,318	1,926	0	225	118
	%	100.0	70.1	25.4	0.0	3.0	1.6
2009		10,359	6,852	1,974	0	244	1,289
	%	100.0	66.1	19.1	0.0	2.4	12.4
2010		6,630	5,197	961	0	171	301
	%	100.0	78.4	14.5	0.0	2.6	4.5

Table 29: Distribution of households by DB135

		Total	1	2
2007		3,206	3,206	0
	%	100.0	100.0	0.0
2008		5,318	5,318	0
	%	100.0	100.0	0.0
2009		6,852	6,852	0
	%	100.0	100.0	0.0
2010		5,197	5,197	0
	%	100.0	100.0	0.0

2.3.3.4 Distribution of persons

Table 30: Distribution of persons by membership status RB110

			Current household members				Not current household members	
		Total	**1**	**2**	**3**	**4**	**5**	**6**
2007		7,606	7,606	0	0	0	0	0
	%	100.0	100	0	0	0	0	0
2008		12,759	12,356	33	137	48	165	20
	%	100.0	96.8	0.3	1.1	0.4	1.3	0.2
2009		16,190	15,577	40	221	97	217	38
	%	100.0	96.2	0.2	1.4	0.6	1.3	0.2
2010		12,121	11,306	116	236	109	313	41
	%	100.0	93.3	1.0	1.9	0.9	2.6	0.3

2.3.3.5 Item non-response

All income variables provided for EU-SILC have been fully imputed.

Table 31: Item non-response at household and personal level 2007

		Longitudinal sample 2007-2010: 2007 part							
		Households having received an amount		Full information		Partial information		Missing information	
		Total	%	Total	%	Total	%	Total	%
Total income component									
HY010	Total gross household income	3,197	99.7	1,832	57.1	1,273	39.7	92	2.9
HY020	Total disposable household income	3,203	99.9	1,828	57.0	1,340	41.8	35	1.1
HY022	Total disposable household income before social transfers other than old-age and survivors benefits	3,130	97.6	1,920	59.9	1,151	35.9	59	1.8
HY023	Total disposable household income before social transfers including old-age and survivors benefits	3,050	95.1	2,052	64.0	896	27.9	102	3.2
Gross income components at household level									
HY040	Income from rental of property or land	166	5.2	135	4.2	3	0.1	28	0.9
HY050	Family related allowance	1,004	31.3	812	25.3	120	3.7	72	2.2
HY060	Social exclusion not elsewhere classified	326	10.2	246	7.7	36	1.1	44	1.4
HY070	Housing allowance	411	12.8	346	10.8	0	0.0	65	2.0
HY080	Regular inter	106	3.3	93	2.9	0	0.0	13	0.4

	household cash transfer received								
HY090	Interest, dividends etc	1,575	49.1	1,071	33.4	128	4.0	376	11.7
HY100	Interest repayments on mortgage	1,265	39.5	1,265	39.5	0	0.0	0	0.0
HY110	Income received by people aged under 16	38	1.2	37	1.2	0	0.0	1	0.0
HY120	Regular taxes on wealth	2,943	91.8	2,728	85.1	0	0.0	215	6.7
HY130	Regular inter household cash transfer paid	160	5.0	147	4.6	0	0.0	13	0.4
HY140	Tax on income and social contributions	2,704	84.3	1,781	55.6	648	20.2	275	8.6
Gross income components at personal level		Persons having received an amount		Full information Partial information		Missing information Full information		Partial information Missing information	
PY010	Employee cash or near cash income	3,150	51.9	2,391	39.4	185	3.0	574	9.5
PY020	Non-Cash employee income	242	4.0	212	3.5	22	0.4	8	0.1
PY035	Contribution to individual private pension plans	605	10.0	583	9.6	0	0.0	22	0.4
PY050	Cash benefits or losses from self-employment	454	7.5	338	5.6	0	0.0	116	1.9
PY070	Value of goods produced by own-consumption	-	-	-	-	-	-	-	-
PY080	Pension from individual private plans	232	3.8	155	2.6	0	0.0	77	1.3
PY090	Unemployment benefits	74	1.2	58	1.0	0	0.0	16	0.3
PY100	Old-age benefits	1,859	30.6	1,366	22.5	391	6.4	102	1.7
PY110	Survivor benefits	29	0.5	24	0.4	2	0.0	3	0.0
PY120	Sickness benefits	189	3.1	137	2.3	0	0.0	52	0.9
PY130	Disability benefits	207	3.4	140	2.3	12	0.2	55	0.9
PY140	Education-related allowances	60	1.0	48	0.8	0	0.0	12	0.2

Table 32: Item non-response at household and personal level 2008

		Longitudinal sample 2007-2010: 2008 part							
		Households having received an amount		Full information		Partial information		Missing information	
		Total	%	Total	%	Total	%	Total	%
Total income component									
HY010	Total gross household income	5,288	99.4	3,093	58.2	2,091	39.3	104	2.0
HY020	Total disposable household income	5,297	99.6	3,290	61.9	1,975	37.1	32	0.6
HY022	Total disposable household income before social transfers other than	5,181	97.4	3,288	61.8	1,757	33.0	136	2.6

	old-age and survivors benefits								
HY023	Total disposable household income before social transfers including old-age and survivors benefits	5,041	94.8	3,383	63.6	1,376	25.9	282	5.3
Gross income components at household level									
HY040	Income from rental of property or land	297	5.6	227	4.3	24	0.5	46	0.9
HY050	Family related allowance	1,618	30.4	1,430	26.9	150	2.8	38	0.7
HY060	Social exclusion not elsewhere classified	503	9.5	382	7.2	61	1.1	60	1.1
HY070	Housing allowance	683	12.8	669	12.6	0	0.0	14	0.3
HY080	Regular inter household cash transfer received	178	3.3	159	3.0	0	0.0	19	0.4
HY090	Interest, dividends etc	2,438	45.8	1,613	30.3	181	3.4	644	12.1
HY100	Interest repayments on mortgage	1,965	36.9	1,946	36.6	8	0.2	11	0.2
HY110	Income received by people aged under 16	0	0.0	0	0.0	0	0.0	0	0.0
HY120	Regular taxes on wealth	4,871	91.6	4,375	82.3	0	0.0	496	9.3
HY130	Regular inter household cash transfer paid	294	5.5	244	4.6	4	0.1	46	0.9
HY140	Tax on income and social contributions	4,382	82.4	2,706	50.9	1,266	23.8	410	7.7
Gross income components at personal level		Persons having received an amount		Full information Partial information		Missing information Full information		Partial information Missing information	
PY010	Employee cash or near cash income	5,142	51.2	3,842	38.3	336	3.3	964	9.6
PY020	Non-Cash employee income	364	3.6	364	3.6	0	0.0	0	0.0
PY035	Contribution to individual private pension plans	1,030	10.3	924	9.2	7	0.1	99	1.0
PY050	Cash benefits or losses from self-employment	761	7.6	476	4.7	58	0.6	227	2.3
PY070	Value of goods produced by own-consumption	-	-	-	-	-	-	-	-
PY080	Pension from individual private plans	471	4.7	326	3.2	0	0.0	145	1.4
PY090	Unemployment benefits	104	1.0	94	0.9	0	0.0	10	0.1
PY100	Old-age benefits	3,228	32.2	2,405	24.0	725	7.2	98	1.0
PY110	Survivor benefits	48	0.5	34	0.3	3	0.0	11	0.1
PY120	Sickness benefits	304	3.0	240	2.4	0	0.0	64	0.6
PY130	Disability benefits	352	3.5	262	2.6	15	0.1	75	0.7
PY140	Education-related allowances	138	1.4	98	0.9	0	0.0	40	0.4

Table 33: Item non-response at household and personal level 2009

		Longitudinal sample 2007-2010: 2009 part							
		Households having received an amount		Full information		Partial information		Missing information	
		Total	%	Total	%	Total	%	Total	%
Total income component									
HY010	Total gross household income	6,823	99.6	4,479	65.4	2,260	33.0	84	1.2
HY020	Total disposable household income	6,840	99.8	4,557	66.5	2,255	32.9	28	0.4
HY022	Total disposable household income before social transfers other than old-age and survivors benefits	6,650	97.1	4,766	69.6	1,803	26.3	81	1.2
HY023	Total disposable household income before social transfers including old-age and survivors benefits	6,448	94.1	5,082	74.2	1,122	16.4	244	3.6
Gross income components at household level									
HY040	Income from rental of property or land	333	4.9	288	4.2	11	0.2	34	0.5
HY050	Family related allowance	2,038	29.7	1,745	25.5	233	3.4	60	0.9
HY060	Social exclusion not elsewhere classified	754	11.0	581	8.5	92	1.3	81	1.2
HY070	Housing allowance	961	14.0	822	12.0	2	0.0	137	2.0
HY080	Regular inter household cash transfer received	220	3.2	209	3.1	2	0.0	9	0.1
HY090	Interest, dividends etc	2,400	35.0	1,894	27.6	108	1.6	398	5.8
HY100	Interest repayments on mortgage	2,354	34.4	2,225	32.5	64	0.9	65	0.9
HY110	Income received by people aged under 16	0	0.0	0	0.0	0	0.0	0	0.0
HY120	Regular taxes on wealth	6,234	91.0	5,540	80.9	0	0.0	694	10.1
HY130	Regular inter household cash transfer paid	299	4.4	284	4.1	1	0.0	14	0.2
HY140	Tax on income and social contributions	5,346	78.0	4,094	59.7	927	13.5	325	4.7
Gross income components at personal level		Persons having received an amount		Full information Partial information		Missing information Full information		Partial information Missing information	
PY010	Employee cash or near cash income	6,176	48.3	5,311	41.5	351	2.7	514	4.0
PY020	Non-Cash employee income	399	3.1	360	2.8	18	0.1	21	0.2
PY035	Contribution to individual private pension plans	1,348	10.5	1,062	8.3	1	0.0	285	2.2
PY050	Cash benefits or losses from self-	984	7.7	769	6.0	9	0.1	206	1.6

	employment								
PY070	Value of goods produced by own-consumption	-	-	-	-	-	-	-	-
PY080	Pension from individual private plans	592	4.6	432	3.4	0	0.0	160	1.3
PY090	Unemployment benefits	227	1.8	207	1.6	0	0.0	20	0.2
PY100	Old-age benefits	4,424	34.6	3,335	26.1	1,033	8.1	56	0.4
PY110	Survivor benefits	55	0.4	42	0.3	2	0.0	11	0.1
PY120	Sickness benefits	366	2.9	296	2.3	0	0.0	70	0.5
PY130	Disability benefits	501	3.9	376	2.9	34	0.3	91	0.7
PY140	Education-related allowances	147	1.1	127	1.0	0	0.0	20	0.2

Table 34: Item non-response at household and personal level 2010

		Longitudinal sample 2007-2010: 2010 part							
		Households having received an amount		Full information		Partial information		Missing information	
		Total	%	Total	%	Total	%	Total	%
Total income component									
HY010	Total gross household income	5,176	99.6	2,054	39.5	2,716	52.3	406	7.8
HY020	Total disposable household income	5,187	99.8	2,099	40.4	3,027	58.2	61	1.2
HY022	Total disposable household income before social transfers other than old-age and survivors benefits	5,054	97.2	2,142	41.2	2,818	54.2	94	1.8
HY023	Total disposable household income before social transfers including old-age and survivors benefits	4,901	94.3	2,421	46.6	2,348	45.2	132	2.5
Gross income components at household level									
HY040	Income from rental of property or land	272	5.2	244	4.7	4	0.1	24	0.5
HY050	Family related allowance	1,439	27.7	1,322	25.4	87	1.7	30	0.6
HY060	Social exclusion not elsewhere classified	517	9.9	406	7.8	20	0.4	91	1.8
HY070	Housing allowance	706	13.6	618	11.9	1	0.0	87	1.7
HY080	Regular inter household cash transfer received	136	2.6	134	2.6	0	0.0	2	0.0
HY090	Interest, dividends etc	1,942	37.4	1,578	30.4	74	1.4	290	5.6
HY100	Interest repayments on mortgage	1,736	33.4	1,693	32.6	0	0.0	43	0.8
HY110	Income received by people aged under 16	0	0.0	0	0.0	0	0.0	0	0.0

HY120	Regular taxes on wealth	4,766	91.7	4,627	89.0	0	0.0	139	2.7
HY130	Regular inter household cash transfer paid	236	4.5	232	4.5	0	0.0	4	0.1
HY140	Tax on income and social contributions	3,878	74.6	1,509	29.0	1,191	22.9	1,178	22.7
Gross income components at personal level		Persons having received an amount		Full information Partial information		Missing information Full information		Partial information Missing information	
PY010	Employee cash or near cash income	4,547	47.4	1,009	10.5	640	6.7	2,898	30.2
PY020	Non-Cash employee income	285	3.0	276	2.9	0	0.0	9	0.1
PY035	Contribution to individual private pension plans	1,037	10.8	848	8.8	0	0.0	189	2.0
PY050	Cash benefits or losses from self-employment	659	6.9	552	5.8	3	0.0	104	1.1
PY070	Value of goods produced by own-consumption	-	-	-	-	-	-	-	-
PY080	Pension from individual private plans	533	5.6	397	4.1	0	0.0	136	1.4
PY090	Unemployment benefits	148	1.5	143	1.5	0	0.0	5	0.1
PY100	Old-age benefits	3,660	38.1	2,896	30.2	696	7.3	68	0.7
PY110	Survivor benefits	47	0.5	43	0.4	0	0.0	4	0.0
PY120	Sickness benefits	250	2.6	210	2.2	1	0.0	39	0.4
PY130	Disability benefits	381	4.0	305	3.2	12	0.1	64	0.7
PY140	Education-related allowances	104	1.1	99	1.0	0	0.0	5	0.1

2.4 Mode of data collection

Table 35: Distribution of household members by data status – all household members (16+)

		RB250								
		Total	**11**	**12**	**14**	**21**	**23**	**31**	**32**	**33**
2007	Number	6,067	6,067	0	0	0	0	0	0	0
	%	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2008	Number	10,035	10,035	0	0	0	0	0	0	0
	%	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2009	Number	12,790	12,790	0	0	0	0	0	0	0
	%	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2010	Number	9,595	9,595	0	0	0	0	0	0	0
	%	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 36: Distribution of household members by data status – sample persons (16+)

		RB250								
		Total	**11**	**12**	**14**	**21**	**23**	**31**	**32**	**33**
2007	Number	6,067	6,067	0	0	0	0	0	0	0
	%	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2008	Number	9,917	9,917	0	0	0	0	0	0	0
	%	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2009	Number	12,511	12,511	0	0	0	0	0	0	0
	%	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2010	Number	9,130	9,130	0	0	0	0	0	0	0
	%	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 37: Distribution of household members by data status – co-residents (16+)

		RB250								
		Total	**11**	**12**	**14**	**21**	**23**	**31**	**32**	**33**
2007	Number	0	0	0	0	0	0	0	0	0
	%	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2008	Number	118	118	0	0	0	0	0	0	0
	%	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2009	Number	279	279	0	0	0	0	0	0	0
	%	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
2010	Number	465	465	0	0	0	0	0	0	0
	%	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0

Table 38: Distribution of household members by type of interview – all household members (16+)

		RB260					
		Total	**1**	**2**	**3**	**4**	**5**
2007	Number	5,933	0	5,291	0	0	642
	%	100.0	0.0	89.2	0.0	0.0	10.8
2008	Number	9,868	0	8,707	8	0	1,153
	%	100.0	0.0	88.2	0.1	0.0	11.7
2009	Number	12,563	0	11,187	0	0	1,376
	%	100.0	0.0	89.0	0.0	0.0	11.0
2010	Number	9,432	0	8,612	0	0	820
	%	100.0	0.0	91.3	0.0	0.0	8.7

Table 39: Distribution of household members by type of interview – sample persons (16+)

		RB260					
		Total	**1**	**2**	**3**	**4**	**5**
2007	Number	5,933	0	5,291	0	0	642
	%	100.0	0.0	89.2	0.0	0.0	10.8
2008	Number	9,775	0	8,651	8	0	1,116
	%	100.0	0.0	88.5	0.1	0.0	11.4
2009	Number	12,313	0	11,007	0	0	1,306
	%	100.0	0.0	89.4	0.0	0.0	10.6
2010	Number	9,014	0	8,330	0	0	684
	%	100.0	0.0	92.4	0.0	0.0	7.6

Table 40: Distribution of household members by type of interview – co-residents (16+)

		RB260					
		Total	**1**	**2**	**3**	**4**	**5**
2007	Number	0	0	0	0	0	0
	%	100.0	0.0	0.0	0.0	0.0	0.0
2008	Number	93	0	56	0	0	37
	%	100.0	0.0	60.2	0.0	0.0	39.8
2009	Number	250	0	180	0	0	70
	%	100.0	0.0	72.0	0.0	0.0	28.0
2010	Number	418	0	282	0	0	136
	%	100.0	0.0	67.5	0.0	0.0	32.5

2.5 Imputation procedure

The strategy used to impute UK EU-SILC was consistent with the options proposed in the following Eurostat task-force documents associated with donor-based imputation methodology:

EU-SILC 74/02
EU-SILC 136/04
EU-SILC 154/05

The UK EUSILC Imputation Strategy was developed with the primary aims of imputing for all item level missingness, resolving inconsistencies, and preserving both cross-sectional and longitudinal relationships in the responses for the households and persons affected. The strategy was also designed to preserve the maximum amount of observed data.

Meeting the aims of the strategy was not trivial as the cross-sectional and longitudinal correlations were both nested and complex. In any one year, the UK EUSILC dataset contained over 400 routing and income variables: routing variables indicated whether or not the respondent received an amount, whilst the amount itself was specified by one or more consecutive variables. Missing values were present in both the routing and the amounts collected.

Further complications included:

- legal constraints which make some combinations of the routing variables invalid;
- highly correlated relationships amongst subsets of the variables, for example, earnings before and after taxation followed by an associated time period for which the payment relates;
- panel aspects of the survey that introduced further correlations between years in addition to those within year.

To meet the aims of the imputation strategy the ONS implemented an iterative, two-stage imputation process: Stage 1 focused on the imputation of missing routing; Stage 2 focused on the imputation of missing amounts and time periods.

The imputation process was supported by statistical tools and used standard statistical techniques for panel data, including:

- SAS (Statistical Analysis System) – to facilitate deductive imputation. This was applied to correct for missing values by implementing propositional relationships in the data based

on logical rules and legal constraints. For example, using gross values with auxiliary variables to derive missing net values.

- SPSS AnswerTree - to identify key predictors to partition the data into homogeneous classes for subsequent imputation.

- CANCEIS (CANadian Census Edit and Imputation System) - for stochastic imputation. CANCEIS implements a highly efficient nearest neighbour imputation method that preserves the shape of the distribution whilst also estimates and maintains observed relationships and distributional parameters. Stochastic imputation ensures less distortion in the estimates of variance. Asymmetric trimming was also applied as a refinement to exclude outlying values which might have otherwise caused excessive influence. The quality of the final data was validated in two ways: by calculating expected values and comparing pre- and post-imputation distributions.

2.6 Imputed rent

A UK EU-SILC imputed rent variable was supplied for the first time in 2007. Estimates of imputed rent were generated through the use of hedonic regression modelling, using the Heckman Two-Step method. The explanatory variables used in the regression were region, type of dwelling (flat, semidetached/terraced house, detached house), ownership of a car, value of dwelling (council tax band, except Northern Ireland), thermal comfort (ability to keep home adequately warm) and seniority (year of contract). The Heckman Two-Step procedure requires the dependent variable, in this case rent, to be converted to a log linear variable. Hence, predicted imputed rent was estimated as log linear variable. A back-log transformation was done to produce imputed rent in its proper form.

2.7 Company cars

In the UK, company cars are taxed based on their carbon dioxide (CO_2) emissions. Therefore, UK EU-SILC assigns the benefit of having access to a company car as being equal to the level of tax. However, it is difficult to estimate the level of tax, and therefore the following method is used.

EU-SILC UK asks several questions about company cars. First, the survey establishes whether the household has any company cars. Second, it establishes what the manufacturer's list price for the vehicle was when it was new. If the respondent is unable to provide an answer, they are asked which price band they think the company car sits in. If the respondent gives a band price the answer is translated into a mid-point price. For example, a Mazda saloon with a band price between £10,001-£13,000 would be given a list price of £11,500. If the list price is unknown, the make, model and engine size are established for each vehicle.

The estimation of the value of using a company car for private purposes (excluding payment of fuel) is done using the following elements:

1. Type of fuel used;
2. Data from VCA (Vehicle Certification Agency, UK);
3. Price of the car.

Once the price of the car is known (using one of the methods described above) a factor based on fuel type and emissions of the engine is applied to that list price. However, this is problematic as EU-SILC UK has no way of identifying what the cylinder capacity (cc) of the car in question is and therefore no real idea about what the car emissions would be. Although data on the make and model of each car is collected, the quality of answers given by respondents is extremely variable, for instance, answers such as 'a red Ford' offer little value to a calculation.

Nevertheless, prior to 2010 the cylinder capacity and emissions information was obtained by using data from the VCA. The VCA provide data on approximately 770 car types registered in the UK.

The 770 car types were banded together into three cylinder capacity engine group sizes in an attempt to get an average emission for each band.

Table 41: Average CO_2 emission by cylinder capacity

Cylinder capacity (cc)	Average CO_2 emission
Up to 1400	145
1401 to 2000	187
2001 to 4000	246

Once this process was completed an assumption was made that the cylinder capacity of a car is linked to the price of the car.

The data for 2008/09 are shown in Table 42.

Table 42: Band price of a motor vehicle based on cylinder capacity and average CO_2 emissions

Cylinder capacity	Average CO_2 emissions	Car price (£)
Up to 1400cc	145	0 – 11,999
1401 to 2000cc	187	12,000 – 24,999
2001 to 4000cc	246	25,000 – 99,999

Cars that fall into a price band are given the appropriate cylinder capacity and the data in Table 43 used to apply an appropriate tax rate (the tax rate used by Her Majesties Revenue and Customs) to value the benefit for tax purposes.

Table 43: Tax rate based on CO_2 emission rates (per cent)

2008/2009 CO_2 emissions	CO_2 tax emission rate (percentage rate)
145	17
187	25
246	35

For 2010 a slightly different methodology was applied. Instead of linking the list price of vehicles to cylinder capacity, the combination of the list price of the vehicle and the fuel type are used to calculate the appropriate tax rate. The data in Tables 44-46 are used to assign an appropriate tax rate for 2010.

Table 44: 2010 Tax rate based on CO_2 emission rates – petrol (per cent)

Car price (£)	CO_2 tax emission rate (percentage rate)
0-18,999	15
19,000-39,999	26
40,000-99,999	35

Table 45: 2010 Tax rate based on CO_2 emission rates – diesel (per cent)

Car price (£)	CO_2 tax emission rate (percentage rate)
0-18,999	18
19,000-39,999	29
40,000-99,999	38

Table 46: 2010 Tax rate based on CO_2 emission rates – other (per cent)

Car price (£)	CO_2 tax emission rate (percentage rate)
All	15

These percentage rates in Tables 43-46 were the factors that were applied to the car prices to produce a monetary benefit for each company car in a household.

$$\text{Car benefit} = \text{Car price} \times CO_2 \text{ tax emission rate}$$

3. Comparability

This section reports on the differences between Eurostat definitions and the definitions the UK applied in EU-SILC 2010. It also reports on the impact of these differences with regards to comparability.

3.1 Basic concepts and definitions

Reference population
No difference to the common definition.

Private household
A household is defined as:

> "a single person or a group of people who have the address as their only or main residence and who either share one meal a day or share the living accommodation" (General Lifestyle Survey 2007, 2008, 2009 and 2010).

A group of people is not counted as a household solely on the basis of a shared kitchen or bathroom.

The household membership

A person is in general regarded as living at an address if he or she (or the informant) considers the address to be his or her main residence. There are however, certain rules which take precedent over this criterion.

From 2008 students who are living in halls of residence are also included as residents of the household sampled even if they are not *in situ* at the time of the interview. Other children of any age away from the home in a temporary job and children under 16 at boarding school are always included in the parental household.

Children aged 16 or over who live away from home for the purposes of either work or study and come home only for holidays are not included at the parental address under any circumstances.

Anyone who has been away from the address continuously for six months or longer is excluded.

Anyone who has been living continuously at the address for six months or longer is included even if she has his or her main residence elsewhere.

Addresses used only as second homes are never counted as a main residence.

Income reference period

EU-SILC UK, like other official income surveys in the UK, uses continuous interviewing with interviews spread evenly throughout the year. The survey measures current income. So for example, for income from earnings and benefits, respondents will provide figures which relate most commonly to the last week, two weeks, or month. With earnings in particular, respondents are asked for usual earnings. These figures, which represent current (and usual) incomes are then annualised (weekly estimates multiplied by 52, monthly by 12 etc). Income from self-employment can be reported for a variety of periods, but it is always up-rated (using the UK's average earnings index) to the interview date. For income from investment and employee non-cash income respondents are most likely provide their most recent annual or half-yearly income that they received from this source. This income would be annualised, although there is no up-rating.

This approach is adopted in the UK because it is much easier for respondents to provide estimates of current income, than income for a specific reference period, say the most recent financial year. In the UK only a relatively small proportion of the adult population fill in tax returns, and the rest of the population probably never actually calculate what their annual income is. For this reason, it would be very difficult to collect an estimate of annual income corresponding to a fixed reference year.

So the estimates of income do not correspond strictly to an income reference year. However we can regard each household's estimate of annualised current income, as corresponding to a 12 month period centred on the interview date. So for a household interviewed in early January 2010, we can regard their income as being measured for the period July 2009 to June 2010, and similarly for a household interviewed in December 2010, the income estimate can be regarded as referring to the period July 2010 to June 2011. Since interviews

are spread evenly throughout the year, for any one survey year, the interview reference periods collectively, are centred on the calendar year. And therefore it is reasonable to regard aggregate statistics produced from the full annual datasets, as measuring annual income in the current survey year. So the EU-SILC UK 2010 survey measures current annual income in 2010.

In the UK, household income statistics, and especially aggregate statistics such as those that are produced from EU-SILC, are generally used and interpreted on the assumption that this distinction between annualised current income, and what might be called a 'true' annual income, is small[1].

The period for taxes on income and social insurance contributions
As above.

The reference period for taxes on wealth
The reference period for taxes on wealth is based on data provided for the financial years April 2009–March 2010 and April 2010–March 2011. All interviewing for EU-SILC UK took place between 1st January 2010 and 28th February 2011.

The lag between income reference period and current variables
Since the survey measures current income, there is no lag between the income variables and the other variables.

The total duration of the data collection of the sample
EU-SILC UK makes use of continuous interviewing with data collection being evenly spread over complete calendar years. In practice a small number of interviews are not completed until early the following year. In 2010, 99.0% of interviews took place between 1st January 2010 and 31st December 2010, with the remaining interviews completed between 1st January 2011 and 28th February 2011.

Basic information on activity status during the income reference period
Basic information on activity status is collected using a rolling (moving) 12-month period. Therefore, respondents are asked to provide their current activity status and their activity status for the 12-month period preceding this interview.

3.2 Components of income

3.2.1 Differences between the national definitions and standard EU-SILC definitions, and an assessment, if available, of the consequences of the differences mentioned

This section describes the major differences between the national definitions, EU-SILC UK and standard EU-SILC definitions. The 'national definition' of household income is taken to be the Before Housing Costs (BHC) measure of income used in the Department for Work and Pensions (DWP) publication Households Below Average Income (HBAI), the source for national poverty statistics.

Total disposable household gross income (HY010)
Total disposable household income (HY020)

[1] A Comparison of Current and Annual Measures of Income in the British Household Panel Survey; Journal of Official Statistics, Vol. 22, No. 4, 2006, pp. 733–758

Total disposable household income before social transfers other than old-age and survivor's benefits (HY022)
Total disposable household income before social transfers including old-age and survivor's benefits
Differences between the national definition and the EU-SILC definition of income have been described below, for each of the components of EU-SILC income.

Imputed rent (HY030G/N)
Imputed rent is not included in the national definition of household income. This variable was not provided as part of EU-SILC data prior to 2007 when it became mandatory.

Income from rental of a property or land (HY040G/N)
No major differences between the national and EU-SILC definition.

Family/children related allowances (HY050G/N)
The national definition of income includes the cash value of free school meals provided to children from disadvantaged homes. This is not included in the EU-SILC definition of income.

Social exclusion not elsewhere classified (HY060G/N)
Housing allowances (HY070G/N)
Regular inter-household cash transfer received (HY080G/N)
Interest, dividends, profit from capital investments in unincorporated business (HY090G/N)
No major differences between the national and EU-SILC definitions.

Interest repayments on mortgage (HY100G/N)
Interest repayments on mortgages are not included as deductions within either the national or EU-SILC definitions of income, because neither includes imputed rent.

Income received people aged under 16 (HY110G)
The national definition of income includes income received by people aged under 16, as does the EU-SILC definition of income.

Regular taxes on wealth (HY120G)
No difference between the national and EU-SILC definitions.

Regular inter-household cash transfer paid (HY130G/N)
No major differences between the national and EU-SILC definitions.

Tax on income and social contributions (HY140G)
In the national definition of income, contributions to private pensions are deducted from income. In the EU-SILC definition of income, contributions to private pensions are not deducted, rather they are considered as a use of disposable income.

Repayments/receipts for tax adjustments (HY145N)
This component of income is included in the national definition of income. In EU-SILC, this component is not measured directly. For most components of income, gross and net incomes are collected separately, with taxes computed as the difference between gross and net incomes. Repayments/receipts for tax adjustments are assumed to be captured as part of this difference between gross and net incomes, and hence recorded under HY140G.

Cash or near-cash employee income (PY010G/N)
No major differences between the national and EU-SILC definitions.

Non-cash employee income (PY020G/N)
The national definition does not include non-cash employee income, whereas EU-SILC includes an estimate for company cars (although not any fuel provided by the employer). EU-SILC UK only includes income from a company car but not the other possible sources of income highlighted by Eurostat. For EU-SILC UK it is deemed to complex to collect data on these other sources of non-cash employee income.

Cash profits or losses from self-employment (including royalties) (PY050G/N)
No conceptual differences between the national and EU-SILC definitions.

Value of goods produced for own consumption (PY070G/N and HY170G/N)
This component of income is assumed to be zero in the UK in both the national definition and in UK EU-SILC. This question is not asked and the variables are set to zero in the microdata. Home grown fruit and vegetables are assumed to have a negligible benefit when calculating household income, in many cases being grown for pleasure rather than to save money. Monetary benefits may even be negative when production costs are taken into account. Data from the Living Costs and Food survey show that less than 3% of households record this type of income and even for those that do it accounts for less than 0.5% of their disposable income.

Unemployment benefits (PY090G/N)
No major differences between the national and EU-SILC definitions. However, for EU-SILC UK only regular redundancy payments are collected and one-off lump sum redundancy payments excluded.

Old-age benefits (PY100G/N)
All benefits included as old-age benefits are also included in the national definition of income. However in the national definition, income from private pensions is included whereas in EU-SILC income from private pensions is only be included in the definition of income from 2007 onwards. In addition, the national definition also includes the value of free television licences provided to those over the age of 75.

Survivors' benefits (PY110G/N)
Sickness benefits (PY120G/N)
Disability benefits (PY130G/N)
No major differences between the national and EU-SILC definitions.

Education-related allowances (PY140G/N)
In the national definition of income, student loans are included as income, and student loan repayments are deducted from income. However in EU-SILC, student loans are not treated as income, and loan repayments are not deducted from income.

Gross monthly earnings for employees (PY200G/N)
No major differences between the national and EU-SILC definitions.

3.2.2 The source or procedure for the collection of income variables

All income variables are collected at the point of interview. It is not mandatory for respondents to provide any documentation to support their answers. However, interviewers are being encouraged to ask respondents whether it is possible to consult their payslip (if they are working).

No information is collected from registers.

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

For most income components which are subject to taxation and/or social security contributions, respondents are asked to provide net and gross amounts. The only exception to this is income from interest, dividends and capital investments, which is collected either gross or net, and for which tax paid is then estimated.

Total income for an individual/household refers to income at the time of the interview. If the last pay packet/cheque was unusual, for example it included holiday pay in advance or a tax refund, the respondent is asked for usual pay. No account is taken of whether a job is temporary or permanent.

3.2.4 The method used for obtaining income target variables in the required form

Gross and net income variables were asked separately, if applicable. See section 2.6 for more detail.

3.3 Tracing rules

For UK EU-SILC 2008, persons aged 14 and above who could not be contacted in 2007 where not always re-contacted in 2008. Furthermore, information on *former residents* was not collected. A similar process was followed between 2008 and 2009, and 2009 and 2010.

4. Coherence

Coherence refers to the comparison of target variables with external sources. The target variables in EU-SILC UK are a set of compulsory variables, defined by Eurostat.

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

Results from two other survey sources have been used to validate EU-SILC results – the Family Resources Survey and the Living Costs and Food Survey.

Family Resources Survey

The Family Resources Survey (FRS) collects information on the incomes and circumstances of private households in the United Kingdom (or Great Britain before 2002-03). The survey is sponsored by the Department for Work and Pensions.

The FRS is used primarily to validate the indicators of poverty and social exclusion. Before the introduction of EU-SILC, the Laeken and Pensions indicators were produced using data from the FRS. Comparisons between EU-SILC and FRS-based indicators continue so that

any apparent differences between national poverty estimates and EU-SILC estimates can be explained. This work will be ongoing, and in the first four years of EU-SILC, has served as a useful way of validating the new EU-SILC data, and highlighting any possible problems that there might be with the EU-SILC data.

Living Cost and Food Survey

The Living Costs and Food Survey (the UK's Household Budget Survey) is a comprehensive overview of all aspects of household expenditure and income for the year 2010 derived from a survey of around 6,000 households in the UK. Before 2008 the survey was named the Expenditure and Food Survey. It contains analyses of household expenditure on goods and services by household income, composition, size, type and location. The results are widely seen as providing one of the most accurate pictures available of what households in the UK spend their money on today.

EU-SILC income variables have been compared with the detailed income information collected through the Living Costs and Food Survey particularly that which is published in the ONS report 'The Effects of Taxes and Benefits on Household Income'.

5. Known issues with data

See Annex 3: Explanation of Validation Failures for details on validation failures for the indicator programs.

5.1 Variables not asked in error or not asked by proxy

There was an error in the UK questionnaire whereby a number of labour variables were not asked through 2008 and from January-September 2009. This error affects variables:

- PL140, PL160, PL190, PL200

Additionally, the update to ask these variables by proxy response was not implemented on a number of labour variables. This affects:

- PL030/1, PL020, PL060, PL210A-K, PL140, PL160, PL190, PL200

The arrears variables (HS020 and HS030) had used a trailer module question for 2008. There was an error with the trailer module in January of 2008 and so 5.4% of households on the cross-sectional file did not answer the trailer module questions. Additionally, there was an error in the questionnaire whereby these questions were not asked until August 2009.

The UK Imputation method uses a donor method and therefore the extent of the missing data would make it extremely difficult to predict the distribution for these variables. However, the UK methodology team aim to impute the 'arrears' variables (HS020, HS030) using two years data either side of the gap (i.e., 07-08 and 2010-11 during 2012). An updated dataset will be provided as soon as possible.

5.2 Degree of urbanisation (DB100)

For 2010, the degree of urbanisation method has been updated to match that used by the Labour Force Survey. The new classification has increased the proportion of thinly populated areas: on the old method densely populated areas covered 74.6% of the population, intermediate areas 16.2%, thinly populated areas 4.8% and 4.4% were not classifiable. With the revised method densely populated areas covered 62.7% of the population, intermediate areas 18.3%, thinly populated areas 16.1% and 4.4% were not classifiable. The 2006-9 longitudinal data uses the old method.

5.3 Regular taxes on wealth (HY120)

In Great Britain local authorities collect council tax but the council tax does not apply in Northern Ireland. Consequently, the Northern Ireland questionnaire does not ask about council tax. The corresponding tax in Northern Ireland is called rates. Households in Northern Ireland have been given an average value for rates. This section in the questionnaire has been amended for 2012 to ask household rate information.

5.4 Highest ISCED level attained (PE040)

In 2009 and previous years respondents who replied they had “other” qualifications have been coded as having post-secondary non-tertiary level qualifications. This has been revised for 2010, so the “other” category is not used, as it cannot be classified to this level of detail. Longitudinal data has been used to code these cases when it is available, or they have been set to missing when this is not possible. Therefore the distributions of PE040 will differ when comparing pre-2009 and post-2009 data.

Annex 1: Government Office Region regional stratifier

The Government Office Region regional stratifier:

1. North East Metropolitan
2. North East Non-Metropolitan
3. North West Metropolitan
4. North West Non-Metropolitan
5. Merseyside
6. Yorkshire and Humberside Metropolitan
7. Yorkshire and Humberside Non-Metropolitan
8. East Midlands
9. West Midlands Metropolitan
10. West Midlands Non-Metropolitan
11. Eastern Outer Metropolitan
12. Eastern Other
13. Inner London North-East
14. Inner London North-West
15. Inner London South-East
16. Inner London South-West
17. Outer London North-East
18. Outer London North-West
19. Outer London South-East
20. Outer London South-West
21. South East Outer Metropolitan
22. South East Other
23. South West
24. Wales 1 – Glamorgan, Gwent
25. Wales 2 – Clwydd, Gwynedd, Dyfed, Powys
26. Highlands, Grampian, Tayside
27. Fife, Central, Lothian
28. Glasgow Metropolitan
29. Strathclyde (excluding Glasgow)
30. Borders, Dumfries, Galloway

Annex 2: Socio-economic groups (operational categories and sub-categories of NS-SEC)

Group	Operational categories and sub-categories
1	Employers in large organisations
2	Higher managerial occupations
3	Higher professional occupations
4	Lower professional and higher technical occupations
5	Lower managerial occupations
6	Higher supervisory occupations
7	Intermediate occupations
8	Employers in small organisations
9	Own account workers
10	Lower supervisory occupations
11	Lower technical occupations
12	Semi-routine occupations
13	Routine occupations
14	Never worked and long-term unemployed
15	Full-time students
16	Occupations not stated or inadequately described
17	Not classifiable for other reasons

The category names used for NS-SEC (National Statistics – Socio-Economic Classification) do not refer to ‘skill’. This is quite deliberate since the classification is not based on skill levels.

Annex 3: Explanation of validation failures

Household Register file

Variable	Issue	Explanation/Action
DB040 - Region	None	Please note that this file is using NUTS10 codes.
DB100	2007 427 (8% missing) 2008 833 (10% missing) 2009 866 (8 missing) 2010 642 (9% missing)	We have updated the urban /rural coding to the revised version dated 1st March 2012, but some data is missing at this time

Household Data file

Variable	Issue	Explanation/Action
HS020 - Arrears on utility bills	2008 300 (6% missing) 2009 4136 (60% missing)	Comment: There was an error with the trailer module in January of 2008 and so 6% of households on the cross-sectional file did not answer this variable. Additionally, there was an error in the questionnaire whereby these questions were not asked until August 2009. For the remaining months there were less than 5% missing values
HS030 - Arrears on hire purchase instalments or other loan payments	2008 300 (12% missing) 2009 4136 (75% missing)	Comment: There was an error with the trailer module in January of 2008 and so 6% of households on the cross-sectional file did not answer this variable. Additionally, there was an error in the questionnaire whereby these questions were not asked until August 2009. For the remaining months there were less than 5% missing values
HS130 - Lowest monthly income to make ends meet	2007 209 (7% missing) 2008 274 (5% missing)	Comment: The data have been checked. These respondents felt unable to provide the amounts for this variable.
HH060 - Current rent related to occupied dwelling	2010 1338 cases with flag value error	In 2010 we have switched to using HH061 but the longitudinal validation program is still using HH060. These cases passed cross sectional validation where this change has been implemented
HH060 - Current rent related to occupied dwelling	2007 98 (12% missing) 2008 123 (9% missing) 2009 195 (10% missing) 2010 97 (7% missing)	Comment: The majority of these cases are renting furnished accommodation so cannot be coded to -2 as HH020 is not 2 or 3. These have been given flags of -1. The remaining cases have reported paying zero rent for the accommodation last time it was due.
HH061- Subjective rent related to non-tenant paying rent at market	2007-9: cases with flag error	This variable is missing for 100% of households because the UK do not use a subjective method to calculate imputed rent.

price		
HH061- Subjective rent related to non-tenant paying rent at market price	2007 3206 (100% missing) 2008 5318 (100% missing) 2009 6852 (100% missing)	This variable is missing for 100% of households because the UK do not use a subjective method to calculate imputed rent.

Personal Register file

Variable	Issue	Explanation/Action
RB031 - Year of immigration	2007 7606 (100% missing) 2008 224 (17% missing) 2009 173 (10% missing) 2010 62 (6% missing)	Comment: This variable was introduced in 2008. The missing values are for people who refused to respond. The proportion of missing values is high because there are so few respondents reporting immigration.
RB140 - Month when the person moved out or died	2008 140 (76% missing) 2009 204 (80% missing) 2010 286 (81% missing)	Comment: Question is only asked of people who are discovered to be movers during the interview. There is no data for people who have moved in the 12 months between interviews and have informed us before the interview.
RB150 - Year when the person moved out or died	2008 140 (76% missing) 2009 204 (80% missing) 2010 286 (81% missing)	Comment: As above.
RB170 - Main activity status during the income reference period	2008 123 (66% missing) 2009 167 (65% missing) 2010 227 (64% missing)	Comment: This question is only applicable for non-current household members. The missing values are respondents who have moved out/died but we don't collect the data from these people. For a small amount of people we can derive the data from the previous year but as we are not able to do this for all then the rest will be missing.
RB190 - Year when the person moved in	Invalid values Year PID RB190 RB190_F --- 2010 153920002 2010 1 2010 153920003 2010 1 2010 153920004 2010 1	Comment: This variable had been incorrectly set to the year of interview in previous years. These cases were interviewed in January 2011. The data are not available for the UK at present. We are investigating adding a question to the UK questionnaire to collect the information from 2011.

Personal Data file

Variable	Issue	Explanation/Action
PB140 - Year of birth	Invalid values Year PID PB140 PB140_F --- 2010 195250002 1994 1 2010 196410005 1994 1 2010 196580002 1994 1 2010 196730003 1994 1 2010 197160003 1994 1	Comment: This check failure takes place for cases when age is equal to '15' and is due to the way the Eurostat checking program computes age by subtracting RB080 (year of birth) from RB010 (year of interview) decreased by one. If actual age is worked out by

		taking integer part of 'date of interview - date of birth', in that case age will be higher by '1' year than the age worked out in the checking program. Therefore we would not consider this to be a validation failure, rather a function of the way the survey is done in the UK.
PE040 - Highest ISCED level attained	2007 651 (11% missing) 2008 1156 (12% missing) 2009 1547 (12% missing) 2010 665 (7% missing)	Comment: This question has not been asked by proxy - this will be corrected for 2011. We have also coded cases where 1st qualification listed is "other" so not able to be classified to be missing. The 2012 questionnaire has been modified to clarify these cases.
PL030 - Self-defined current economic status	2007 569 (9% missing) 2008 1207 (12% missing)	Comment: This question has not been asked by proxy - this will be corrected for 2011.
PL031 - Self-defined current economic status	2007 6067 (100% missing) 2008 10035 (100% missing)	Comment: This variable was created in 2009. It is set to missing for previous years.
PL020 - Actively looking for a job	2007 570 (20% missing) 2008 1210 (24% missing)	Comment: This question has not been asked by proxy - this will be corrected for 2011.
PL051	Routing check	This variable has not been calculated, it will replace PL050 in the 2008- 2011 dataset.
PL060 - Number of hours per week worked in main job	2009 1403 (20% missing)	Comment: This question has not been asked by proxy - this will be corrected for 2011.
PL140 - Type of contract	2007 222 (8% missing) 2008 4443 (100% missing) 2009 4895 (79% missing)	This variable was not asked in 2008 nor Jan-Sept 2009 due to an error in the questionnaire. This question was also not asked by proxy for any year.
PL160 - Change of job since last year	2008 5081 (100% missing) 2009 5803 (81% missing)	This variable was not asked in 2008 nor Jan-Sept 2009 due to an error in the questionnaire. This question was also not asked by proxy for any year.
PL180 - Most recent change in the individuals activity status	2007 60 (16% missing) 2008 126 (17% missing) 2009 142 (14% missing) 2010 100 (15% missing)	Comment: The high level of missingness is due to the way the questions were asked. These cases reported a change in 'situation' through the year, but remained in the same activity status. For 2009 the questionnaire asked respondents their status using the old method (i.e., not splitting up employed and self-employed part-time and full-time workers). We did however ask their current status using the new format. Therefore if respondents had changed their situation over the year the full

		data could not be derived.
PL190 - When began first regular job	2007 733 (13% missing) 2008 10035 (100% missing) 2009 9636 (80% missing) 2010 1201 (13% missing)	This variable was not asked in 2008 nor Jan-Sept 2009 due to an error in the questionnaire. This question was also not asked by proxy.
PL200 - Number of years spent in paid work	2007 761 (13% missing) 2008 10035 (100% missing) 2009 9660 (81% missing) 2010 1257 (14% missing)	This variable was not asked in 2008 nor Jan-Sept 2009 due to an error in the questionnaire. This question was also not asked by proxy.
PL210A-K - Main activity in January - Dec	2007 647 (11% missing) 2008 1242 (12% missing) 2009 1634 (13% missing)	Comment: This question was not asked of proxy respondents.
PL211A-L - Main activity in January - Dec	2009 1627 (13% missing)	Comment: This question was not asked of proxy respondents.
PH010 - General health	2007 648 (11% missing)	Comment: Question not asked of proxy respondents in 2007.
PH020 - Suffer from any chronic illness or condition	2007 640 (10% missing)	Comment: Question not asked of proxy respondents in 2007.

Logical Checks – investigate all but comment on top 5 results

Check	Issue	Explanation/Action
#123	RB210 - Age and basic activity status may be not consistent 53 cases	Comment: This check failure takes place for cases when age is equal to '15' and is due to the way the Eurostat checking program computes age by subtracting RB080 (year of birth) from RB010 (year of interview) decreased by one. If actual age is worked out by taking integer part of 'date of interview - date of birth', in that case age will be higher by '1' year than the age worked out in the checking program. Therefore we would not consider this to be a validation failure, rather a function of the way the survey is done in the UK.
#124	RB245 - Age and eligibility are not consistent 330 cases	Comment: This check failure takes place for cases when age is equal to '15' and is due to the way the Eurostat checking program computes age by subtracting RB080 (year of birth) from RB010 (year of interview) decreased by one. If actual age is worked out by taking integer part of 'date of interview - date of birth', in that case age will be higher by '1' year than

		the age worked out in the checking program. Therefore we would not consider this to be a validation failure, rather a function of the way the survey is done in the UK.
#143	RB220 - Father should be the same every year 47 cases	Comment: This check has resulted in 47 failures which have been checked and are due to step-parents moving into the households and this is therefore not an error in the data.
#144	RB230 - Mother should be the same every year 17 cases	Comment: This check has resulted in 17 failures which have been checked and are due to step-parents moving into the households and this is therefore not an error in the data.
#315	RB230 - Child should be at least 15 years younger than its mother 24 cases	Comment: This check failure is not an error in the data per se, rather a result of combination of two factors not taken into account in the checking program, (a) the way EUROSTAT checking program computes age, and (b) the possibility of step-children or adopted children in the household who need not be 15 years younger than their guardian (step-mother/ step-father).
#550	HY010 - No total household income , but components with income 50 cases	Comment: This check failure seems to be a result of the method of the EUROSTAT checking program. For the UK dataset, HY010 has been calculated as the sum of PGROINC, HGROINC and PY070. HNETINC is calculated as HGROINC minus tax variables (HY120, HY130, HY140) and so respondents who do not have an income, but have paid council tax for example, are being incorrectly highlighted by the check.
#570	PY010 - 12 months active as employee, but no income as employee 484 cases	Comment: The first 5 cases have been investigated and no error has been found.
#571	PY050 - 12 months active as self-employee, but no income as self-employee 224 cases	Comment: The first 5 cases have been investigated and no error has been found.
#572	PY090 - 12 months unemployed, but no income from unemployment benefits 277 cases	Comment: The first 5 cases have been investigated and no error has been found.
#573	PY100 - 12 months retired, but no income from old-age benefits 187 cases	Comment: The first 5 cases have been investigated and no error has been found.
#580	Big difference in personal income from one year to the next year 143 cases	Comment: These cases have all been investigated and no errors have been found.

#581	PY010G - Big difference in income from one year to the next year 72 cases	Comment: These cases have all been investigated and no errors have been found.
#750	PL160 = 2 but different PL050 (ISCO) 871 cases	Comment: This check has failed 871 cases. We have investigated a number of these and there seems to be 2 main reasons. Firstly, some respondents have recorded a change of job title even though their employment circumstances remain unchanged i.e. they have moved from one set of duties to another within the same employer, but may not have changed job contract. Secondly, the coding for ISCO is completed manually by the interviewer at the point of interview, based on information they have received from the respondent. Interviewers provide a code that they think best-fits the respondent in question (the interviewer does not have any record of what they coded the respondent as being last year with regards ISCO). One option to improve the way in which this categorisation is recorded for future deliveries is to rotate the information that was provided last year if PL160=2 or to provide a 'soft-check' within the CAPI instrument if the recorded ISCO is different from what was recorded the previous year. This is being investigated for 2012/3.