



EU-SILC UK 2005

---

# Quality Report

Office for National Statistics

---

**David Matthews**  
**Liam Murray**  
**Francis Jones**  
**Steven Rogers**

Office for National Statistics  
Government Buildings  
Cardiff Rd  
Newport  
NP10 8XG  
Email: [ghs@ons.gsi.gov.uk](mailto:ghs@ons.gsi.gov.uk)

© Crown copyright

## Table of Contents

	<b>Page</b>
<b>Preface</b>	<b>4</b>
<b>1. Common cross-sectional European Union indicators</b>	<b>5</b>
<b>2. Accuracy</b>	<b>8</b>
2.1 Sampling design	8
2.1.1 Type of sampling	8
2.1.2 Sampling units (one stage, two stages)	8
2.1.3 Stratification and sub-stratification criteria	8
2.1.4 Sample size and allocation criteria	9
2.1.5 Sample selection schemes	9
2.1.6 Sample distribution over time	9
2.1.7 Renewal of sample: rotational groups	10
2.1.8 Weightings	11
2.1.8.1 Design Factor	11
2.1.8.2 Non-response adjustments	11
2.1.8.3 Adjustments to external data (level, variables used and sources)	12
2.1.8.4 Final cross-sectional weight	13
2.1.9 Substitutions	13
2.2 Sampling errors	13
2.2.1 Standard errors and effective sample size	13
2.3 Non-sampling errors	16
2.3.1 Sampling frame and coverage errors	16
2.3.2 Measurement and processing errors	17
2.3.2.1 Measurement errors	17
2.3.2.2 Processing errors	17
2.3.3 Non-response errors	18
2.3.3.1 Achieved sample size	18
2.3.3.2 Unit non-response	19
2.3.3.3 Distribution of households	20
2.3.3.4 Distribution of substituted units	20
2.3.3.5 Item non-response	20
2.3.3.6 Total item non-response	23
2.4 Mode of data collection	28
2.5 Interview duration	28
2.6 Imputation procedure	29
2.7 Imputed rent	29
2.8 Company cars	29

<b>3.</b>	<b>Comparability</b>	<b>30</b>
3.1	Basic concepts and definitions	31
3.2	Components of income	33
3.2.1	Differences between the national definitions and standard EU-SILC definitions, and an assessment, of the consequences of the differences mentioned	33
3.2.2	The source or procedure for the collection of income variables	35
3.2.3	The form in which income variables at component level have been obtained	35
3.2.4	The method used for obtaining income target variables in the required form	35
<b>4.</b>	<b>Coherence</b>	<b>36</b>
4.1	Comparison of income target variables and the number of persons who receive income from each 'income component', with external sources	36

## Index of Tables

<b>Table</b>		<b>Page</b>
1.1	Laeken-Indicators EU-SILC 2005	5
2.1	Distribution of the EU-SILC UK sample over time	10
2.2	Renewal of sample: Rotational groups	10
2.3	Mean, total number of observations and standard errors for income components (unweighted)	13
2.4	Mean, total number of observations and standard errors for income components (weighted)	15
2.5	Contact at address	17
2.6	Sample size and accepted interviews	18
2.7	Distribution of original units by 'record of contact at address'	19
2.8	Distribution of address contacted by 'household questionnaire result' and by household interview acceptance	20
2.9	Distribution of item non-response (before imputation)	21
2.10	Distribution of item non-response (after imputation)	22
2.11	Number of observations and total item non-response	23
2.12	Distribution of RB250 and RB260	28
2.13	Distribution of household members aged 16 and over by 'RB250'	28
2.14	Distribution of household members aged 16 and over by 'RB260'	28
2.15	Interview duration in minutes (mean)	28
2.16	Average carbon dioxide (CO <sub>2</sub> ) emission by Cylinder Capacity	30
2.17	Band price of a motor vehicle based on Cylinder Capacity and average carbon dioxide (CO <sub>2</sub> ) emissions	30
2.18	Tax rate based on carbon dioxide (CO <sub>2</sub> ) emission rate (per cent)	30

## **Annexes**

Annex 1	Government Office Region regional stratifier	38
Annex2	Socio-economic groups (Operational categories and sub-categories of NS-SEC)	39

## **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 the year  $n+1$  (2005+1) an intermediate quality report relating to the common cross-sectional EU indicators based on the cross-sectional component of 2005.*

## 1. Common cross-sectional European Union indicators

2005 was the initial year of the EU-SILC UK. As such, in accordance with Eurostat regulation, only cross-sectional indicators have been provided within this report.

**Table 1.1 Laeken-Indicators EU-SILC 2005**

Indicator	Value	Achieved sample size	Total item non response
At-risk-of-poverty rate after social transfers – total	19.12	25504	38%
At-risk-of-poverty rate after social transfers – men total	18.73	12335	38%
At-risk-of-poverty rate after social transfers – women total	19.5	13169	38%
At-risk-of-poverty rate after social transfers – 0-15 years	22.66	5377	38%
At-risk-of-poverty rate after social transfers – 16-24 years	22.72	2480	38%
At-risk-of-poverty rate after social transfers – 25-49 years	14.04	8684	38%
At-risk-of-poverty rate after social transfers – 50-64 years	16.5	4781	38%
At-risk-of-poverty rate after social transfers – 65+ years	26.57	4182	38%
At-risk-of-poverty rate after social transfers – 16+ years	18.26	20127	38%
At-risk-of-poverty rate after social transfers – 16-64 years	16.26	15945	38%
At-risk-of-poverty rate after social transfers – 0-64 years	17.74	21322	38%
At-risk-of-poverty rate after social transfers – men 16-24 years	23.6	1203	38%
At-risk-of-poverty rate after social transfers – men 25-49 years	13.3	4176	38%
At-risk-of-poverty rate after social transfers – men 50-64 years	16.52	2318	38%
At-risk-of-poverty rate after social transfers – men 65+ years	24.1	1920	38%
At-risk-of-poverty rate after social transfers – men 16+ years	17.47	9617	38%
At-risk-of-poverty rate after social transfers – men 16-64 years	16.04	7697	38%
At-risk-of-poverty rate after social transfers – men 0-64 years	17.84	10415	38%
At-risk-of-poverty rate after social transfers – women 16-24 years	21.83	1277	38%
At-risk-of-poverty rate after social transfers – women 25-49 years	14.75	4508	38%
At-risk-of-poverty rate after social transfers – women 50-64 years	16.49	2463	38%
At-risk-of-poverty rate after social transfers – women 65+ years	28.49	2262	38%
At-risk-of-poverty rate after social transfers – women 16+ years	19	10510	38%
At-risk-of-poverty rate after social transfers – women 16-64 years	16.47	8248	38%
At-risk-of-poverty rate after social transfers – women 0-64 years	17.64	10907	38%
<b>At-risk-of-poverty rate after social transfers – by employment status</b>			
At-risk-of-poverty rate after social transfers – employed	8.16	10159	
At-risk-of-poverty rate after social transfers – unemployed	53.88	297	
At-risk-of-poverty rate after social transfers – retired	27.83	4272	
At-risk-of-poverty rate after social transfers – other inactive	33.29	3002	
<b>At-risk-of-poverty rate after social transfers – by gender and employment status</b>			
At-risk-of-poverty rate after social transfers – men, employed	8.7	5221	
At-risk-of-poverty rate after social transfers – men, unemployed	53.69	165	
At-risk-of-poverty rate after social transfers – men, retired	26.58	1851	
At-risk-of-poverty rate after social transfers – men, other inactive	35.6	942	
At-risk-of-poverty rate after social transfers – women, employed	7.58	4938	
At-risk-of-poverty rate after social transfers – women, unemployed	54.12	132	
At-risk-of-poverty rate after social transfers – women, retired	28.73	2421	
At-risk-of-poverty rate after social transfers – women, other inactive	32.12	2060	
<b>At-risk-of-poverty rate after social transfers – by marital status</b>			
At-risk-of-poverty rate after social transfers – single, <65 years	22.7	1702	

At-risk-of-poverty rate after social transfers – single, 65+ years	32.14	1411	
At-risk-of-poverty rate after social transfers – single, male	24.33	1357	
At-risk-of-poverty rate after social transfers – single, female	28.48	1756	
At-risk-of-poverty rate after social transfers – single, total	26.64	3113	
At-risk-of-poverty rate after social transfers – 2 adults, no children, both <65	11.52	4274	
At-risk-of-poverty rate after social transfers – 2 adults, no children, at least one 65+	23.66	2882	
At-risk-of-poverty rate after social transfers – other households without children	14.44	2026	
At-risk-of-poverty rate after social transfers – single parent, at least one child	37.18	1830	
At-risk-of-poverty rate after social transfers – 2 adults, 1 child	10.97	2385	
At-risk-of-poverty rate after social transfers – 2 adults, 2 children	13.18	3884	
At-risk-of-poverty rate after social transfers – 2 adults, 3+ children	28.53	2003	
At-risk-of-poverty rate after social transfers – other households with children	14.01	1637	
At-risk-of-poverty rate after social transfers – households without children	18.7	12295	
At-risk-of-poverty rate after social transfers – households with children	19.07	11739	
At-risk-of-poverty rate after social transfers – owner or rent-free	14.03	18716	
At-risk-of-poverty rate after social transfers – tenant	32.04	6767	
At-risk-of-poverty rate after social transfers – households without children, $w = 0^1$	38.46	1835	
At-risk-of-poverty rate after social transfers – households without children, $0 < w < 1$	17.37	1999	
At-risk-of-poverty rate after social transfers – households without children, $w = 1$	5.24	5458	
At-risk-of-poverty rate after social transfers – households with children, $w = 0$	53.51	1866	
At-risk-of-poverty rate after social transfers – households with children, $0 < w < 0.5$	39.04	410	
At-risk-of-poverty rate after social transfers – households with children, $w = 1$	9.55	7397	
Median of the equivalised disposable household income			
At-risk-of-poverty threshold – single (PPS)	10553.37	25504	38%
At-risk-of-poverty threshold – 2 adults, 2 children (PPS)	22162.08	25504	38%
Inequality of income distribution S80/S20 income quintile share ratio	5.841	25504	38%
Relative median at-risk-of-poverty gap – total	22.71	4807	38%
Relative median at-risk-of-poverty gap – men total	24.19	2270	38%
Relative median at-risk-of-poverty gap – women total	21.6	2537	38%
Relative median at-risk-of-poverty gap – 0-15 years	20.55	1198	38%
Relative median at-risk-of-poverty gap – 16-64 years	25.74	2520	38%
Relative median at-risk-of-poverty gap – 65+ years	18.66	1089	38%
Relative median at-risk-of-poverty gap – 16+ years	23.54	3609	38%
Relative median at-risk-of-poverty gap – men, 16-64 years	28.56	1186	38%
Relative median at-risk-of-poverty gap – men, 65+ years	18.14	454	38%
Relative median at-risk-of-poverty gap – men, 16+ years	25.14	1640	38%
Relative median at-risk-of-poverty gap – women, 16-64 years	23.26	1334	38%
Relative median at-risk-of-poverty gap – women, 65+ years	19.57	635	38%
Relative median at-risk-of-poverty gap – women, 16+ years	21.81	1969	38%

Median income below the at-risk-of-poverty threshold – total			
Median income below the at-risk-of-poverty threshold – men total			
Median income below the at-risk-of-poverty threshold – women total			
Median income below the at-risk-of-poverty threshold – 0-15 years			
Median income below the at-risk-of-poverty threshold – 16-64 years			
Median income below the at-risk-of-poverty threshold – 65+ years			
Median income below the at-risk-of-poverty threshold – 16+ years			
Median income below the at-risk-of-poverty threshold – men, 16-64 years			
Median income below the at-risk-of-poverty threshold – men, 65+ years			
Median income below the at-risk-of-poverty threshold – men, 16+ years			
Median income below the at-risk-of-poverty threshold – women, 16-64 years			
Median income below the at-risk-of-poverty threshold – women, 65+ years			
Median income below the at-risk-of-poverty threshold – women, 16+ years			
Dispersion around the risk-of-poverty threshold – 40%	6.44	25504	38%
Dispersion around the risk-of-poverty threshold – 50%	11.88	25504	38%
Dispersion around the risk-of-poverty threshold – 70%	27.16	25504	38%
Before social transfers except old-age and survivor's benefits			
At-risk-of-poverty rate before social transfers – total	42.82	25504	38%
At-risk-of-poverty rate before social transfers – men total	40.23	12335	38%
At-risk-of-poverty rate before social transfers – women total	45.28	13169	38%
At-risk-of-poverty rate before social transfers – 0-15 years	42.85	5377	38%
At-risk-of-poverty rate before social transfers – 16-64 years	31.12	15945	38%
At-risk-of-poverty rate before social transfers – 65+ years	91.2	4182	38%
At-risk-of-poverty rate before social transfers – 16+ years	42.81	20127	38%
At-risk-of-poverty rate before social transfers – men, 16-64 years	28.38	7697	38%
At-risk-of-poverty rate before social transfers – men, 65+ years	89.54	1920	38%
At-risk-of-poverty rate before social transfers – men, 16+ years	39.22	9617	38%
At-risk-of-poverty rate before social transfers – women, 16-64 years	33.78	8248	38%
At-risk-of-poverty rate before social transfers – women, 65+ years	92.5	2262	38%
At-risk-of-poverty rate before social transfers – women, 16+ years	46.16	10510	38%
Before social transfers including old-age and survivors' benefits			
At-risk-of-poverty rate before social transfers – total	30.75	25504	38%
At-risk-of-poverty rate before social transfers – men total	29.17	12335	38%
At-risk-of-poverty rate before social transfers – women total	32.24	13169	38%
At-risk-of-poverty rate before social transfers – 0-15 years	42.04	5377	38%
At-risk-of-poverty rate before social transfers – 16-64 years	26.33	15945	38%
At-risk-of-poverty rate before social transfers – 65+ years	34.94	4182	38%
At-risk-of-poverty rate before social transfers – 16+ years	28.01	20127	38%
At-risk-of-poverty rate before social transfers – men, 16-64 years	24.66	7697	38%
At-risk-of-poverty rate before social transfers – men, 65+ years	30.01	1920	38%
At-risk-of-poverty rate before social transfers – men, 16+ years	25.61	9617	38%
At-risk-of-poverty rate before social transfers – women, 16-64 years	27.95	8248	38%
At-risk-of-poverty rate before social transfers – women, 65+ years	38.8	2262	38%
At-risk-of-poverty rate before social transfers – women, 16+ years	30.24	10510	38%



Gini coefficient	34.384	25504	38%
Mean equivalised disposable income (PPS)	21256.88	25504	38%
Gender pay gap			

## 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 2005 is collected from two sources. First, data is collected by the Office of National Statistics (ONS), using the General Household Survey. Second, to ensure that EU-SILC is representative of the UK, a sample of 300 households is collected by NISRA (Northern Ireland Statistics and Research Agency) using the Continuous Household Survey (CHS). This small additional sample represents the (approximately) 2% of the UK population that live in Northern Ireland. All of the data analysis and manipulation is undertaken by ONS.

In 2005, 17004 addresses were sampled. EU-SILC UK aims to interview all adults aged 16 or over at every household at the sampled address. EU-SILC UK uses a probability, stratified two-stage sample design.

#### 2.1.2 Sampling units (one stage, two stages)

Households are sampled from the small users Postcode Address File (PAF). This is an up to date list of all addresses maintained by the UK Post Office. The Postcode address file is ordered by postcode sector, which are similar in size to a UK electoral ward area. 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.

#### 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 (i.e. the proportion of units sampled from any particular stratum will equal the proportion in the population with that characteristic). Stratification of a sample can lead to substantial improvements in the precision of survey estimates.

Initially, postcode sectors were allocated to 30 major strata. These were based on the 10 Government Office Regions in England, 5 subdivisions in Scotland, 2 in Wales and 1 in Northern Ireland. The English regions were divided between the former Metropolitan and non-Metropolitan counties. 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 in the regional stratifier has a large effect on the increase in precision.

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.

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. The sampling frame was divided into 576 minor strata and one PSU selected from each. Of the 576 PSUs selected, 48 were randomly allocated to each month of the year. Each PSU formed a quota of work for an interviewer. Within each PSU, 23 addresses were randomly selected.

#### **2.1.4 Sample size and allocation criteria**

Member states have to achieve a Minimum Effective Sample size which for UK is 7,500 households and 13,750 persons aged 16 or older.

In 2005, 17,004 addresses were selected for survey, yielding a sample of 10,826 eligible households.

Within these households 25,504 people were residents of which 20,115 were eligible for a personal interview (aged at least 16 years of age).

We estimate that these numbers correspond to effective sample sizes of 8,660 households, and 16,092 adults over the age of 16.

#### **2.1.5 Sample selection schemes**

EU-SILC UK uses a two-stage sampling scheme:

1. Selection of a Primary Sampling Units (PSUs) utilising a probability proportional to size sampling scheme.
2. Systematic random sampling of 23 addresses within a PSU.

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

Information for EU-SILC UK is collected week by week throughout the year by personal interview. In 2005, interviews took place from April 2005 to February 2006 (12-months fieldwork was condensed into 9 months to facilitate the change of the survey period from financial to calendar year). Despite the EU-SILC sample being structured on a 9-month fieldwork collection period, the field period for 2005 data was extended until February 2006 to account for a high-number of interviews and re-issues that had been unallocated due to field capacity issues as of 30<sup>th</sup> December 2005.

**Table 2.1 Distribution of the EU-SILC UK sample over time**

Date of interview	Number of households
01/04/05 – 30/04/05	1031
01/05/05 – 31/05/05	1242
01/06/05 – 30/06/05	1213
01/07/05 – 31/07/05	1148
01/08/05 – 31/08/05	1212
01/09/05 – 30/09/05	1274
01/10/05 – 31/10/05	1243
01/11/05 – 30/11/05	1382
01/12/05 – 31/12/05	898
01/01/06 – 31/01/06	113
01/02/06 – 28/02/06	70
<b>Total</b>	<b>10,826</b>

<sup>1</sup> An error during data-collection meant that this data was not captured for all of the households surveyed in Northern Ireland.

The survey was carried out using Computer Assisted Personal Interviewing (CAPI) on laptop computers by face-to-face interviewers. In addition, some telephone interviewers were used to convert EU-SILC UK proxy interviews to full interviews.

### 2.1.7 Renewal of sample: rotational groups

2005 was the initial year for the common EU-SILC survey. In 2005, the GHS adopted a new sample design in line with European requirements, changing from a cross-sectional to a longitudinal design.

The new sample design follows a four-yearly sample rotation in which households remain in the sample for four years (waves) and one quarter of the sample is replaced each year. Each quarter of the sample is known as a replication.

Once the system is fully established (from year 4 onwards - 2008) the sample for any one year consists of 4 replications which have been in the survey for 1, 2, 3 or 4 years. As 2005 is the first year of this longitudinal design, this sample does not contain any follow-up interviewers.

**Table 2.2 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)
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
8					1st	2nd
9						1st

## **2.1.8 Weightings**

This section describes the computation of the weights of the UK sample of EU-SILC 2005. The calculations comply in general with the EUROSTAT recommendations on the calculation of weights.

### **2.1.8.1 Design factor**

The design factor, or deft, of an estimate  $p$  is the ratio of the standard error of  $p$  compared to that, that would have resulted had the survey design been a simple random sample of the same size.

The design weight is calculated with reference to the design of the sample to take into account the inclusion probability of the selection unit. Within the UK, direct sampling of addresses is used, but no extra weighting is applied to account for sampling households within addresses. The design weight, is defined as the inverse of the probability of selection. This is derived indirectly by dividing the population size or individuals by the sample size of individuals.

### **2.1.8.2 Non-response adjustments**

All surveys accept that there will be some degree of non-response, although great efforts are made to keep it to a minimum.

The aim of non-response weights is the reduction of bias caused by unit non-response on a household level. The correlation of this bias requires a knowledge of the response probability of each of the responding households. The households can then be re-weighted by the inverse of this probability.

Weighting for unit non-response involves giving each respondent a weight so that they represent the non-respondents who are similar to them in terms of survey characteristics. To be able to use this method, information about non-respondents is needed. By their very nature, however, non-responding households yield very little information.

Within-household non-response inflation factor, which is related to Eurostat's recommendation in PB040 (i.e. spreading the original weight a non-responder receives across responding members of their household), has not been supplied. However, a household non-response inflation factor has been provided based on household non-response UK Census-linked weights.

The Census was found to be the most appropriate source of information about non-responding addresses on EU-SILC UK. Unlike EU-SILC UK, which relies upon voluntary co-operation from respondents, the Census is mandatory, therefore non-response is kept to an absolute minimum. By matching Census addresses with the sampled addresses of EU-SILC UK it was possible to match the address details of the EU-SILC UK respondents as well as the non-respondents with corresponding information gathered from the Census for the same address. It was then possible to identify any types of household that were being under-represented in the survey.

## Adjustments to external data (level, variables used and sources)

Adjustments, in general, are made to improve the accuracy of data, meaning the closeness of survey-based estimations or computations to the “true” values.

The EU-SILC sample is based on private households, which means that the population totals used in the weighting need to relate to people in private households. These totals are the same as those used on the British Labour Force Survey (LFS). The LFS derives household population estimates by excluding residents of institutions from population projections based on mid-year estimates.

The population information and EU-SILC UK data were grouped into twenty-eight age by sex categories within six regional categories to form weighting classes. The weighting consists of adjusting the existing weights (including factors for design and non-response) 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		
16-19	Males	16-19	Females
20-24	Males	20-24	Females
25-29	Males	25-29	Females
30-34	Males	30-34	Females
35-39	Males	35-39	Females
40-44	Males	40-44	Females
45-49	Males	45-49	Females
50-54	Males	50-54	Females
55-59	Males	55-59	Females
60-64	Males	60-64	Females
65-69	Males	65-69	Females
70-74	Males	70-74	Females
75+	Males	75+	Females

### *Regions*

Metropolitan  
Non-metropolitan  
London  
South East  
Wales  
Scotland  
Northern Ireland

This procedure, also known as population based weighting or grossing, was carried out using the GES SAS macro. This method ensures that all individuals within a household are given the same final weights.

#### 2.1.8.4 Final cross-sectional weight

The final cross-sectional weight was obtained after “integrative” calibration. Integrative calibration can use calibration variables defined at the individual and household level (only individual variables were used in this instance).

Eurostat recommend using NUTSII. EU-SILC UK has not used NUTSII, instead, a region variable used on the British General Household Survey has been utilised. A detailed classification like NUTSII poses the problem of small cells (when there are not enough respondents within a calibration group).

#### 2.1.9 Substitutions

In 2005, no substitutions were made.

#### 2.2 Sampling errors

Sampling errors: refers to the variability that occurs at random because of the use of a sample rather than a census.

##### 2.2.1 Standard errors and effective sample size

**Table 2.3 Mean, Total Number of Observations and Standard Errors for Income Components (unweighted).**

Income Component	Mean	Number of Observations	Standard Error
<b>Total household income variables</b>			
Total household gross income	32971.34	10826	550.44
Total disposable household income	24613.18	10826	341.91
Total disposable household income before social transfers other than old-age and survivor benefits	22278.22	10826	346.49
Total disposable household income before social transfers including old-age and survivors' benefits	17923.33	10826	347.68
<b>Net income components at household level</b>			
Income from rental of a property or land	237.35	10826	17.78
Family/child related allowances	843.45	10826	18.11
Social exclusion not elsewhere classified	460.65	10826	15.90
Housing allowances	451.64	10826	13.73
Regular inter-household cash transfer received	213.82	10826	34.20
Interest, dividends, etc.	690.12	10826	38.97
Interest repayments on mortgage	Not supplied	Not supplied	Not supplied
Income received by people aged under 16	Not supplied	Not supplied	Not supplied
Regular taxes on wealth	Not supplied	Not supplied	Not supplied
Regular inter-household cash transfer paid	Not supplied	Not supplied	Not supplied
Tax on income and social	Not supplied	Not supplied	Not supplied

contributions			
Repayments/receipts for tax adjustment	Not supplied	Not supplied	Not supplied
<b>Gross income components at household level</b>			
Income from rental of a property or land	297.05	10826	24.31
Family/child related allowances	734.94	10826	16.04
Social exclusion not elsewhere classified	415.98	10826	15.43
Housing allowances	451.64	10826	13.73
Regular inter-household cash transfer received	213.82	10826	34.20
Interest, dividends, etc.	885.97	10826	53.24
Interest repayments on mortgage	1534.72	10662	29.51
Income received by people aged under 16	11.12	10826	1.57
Regular taxes on wealth	900.49	10826	5.91
Regular inter-household cash transfer paid	149.19	10826	10.88
Tax on income and social contributions	7308.48	10826	212.34
<b>Net income components at personal level</b>			
Employee cash or near cash income	7986.53	20115	99.80
Non-cash employee income	144.70	20115	6.38
Contributions to individual private pension plans	Not supplied	Not supplied	Not supplied
Cash benefits or losses from self-employment	1460.07	20115	149.72
Value of goods produced for own-consumption	0	20115	0
Pension from individual private plans	11.26	20115	3.04
Unemployment benefits	37.26	20115	3.68
Old-age benefits	2320.21	20115	54.55
Survivor's benefits	23.62	20115	2.87
Sickness benefits	132.50	20115	5.88
Disability benefits	108.90	20115	5.11
Education-related allowances	33.07	20115	4.12
<b>Gross income components at personal level</b>			
Employee cash or near cash income	11017.02	20115	150.90
Non-cash employee income	211.40	20115	9.70
Contributions to individual private pension plans	100.57	20115	5.30
Cash benefits or losses from self-employment	2047.91	20115	245.07
Value of goods produced for own consumption	0	20115	0
Pension from individual private plans	14.21	20115	4.29
Unemployment benefits	37.56	20115	3.72
Old-age benefits	2511.82	20115	59.37
Survivor's benefits	25.11	20115	3.12
Sickness benefits	132.50	20115	5.88
Disability benefits	108.90	20115	5.11
Education-related allowances	33.07	20115	4.12
Gross monthly earnings for employees	1538.89	20115	19.25

**Table 2.4 Mean, Total Number of Observations (before and after imputation) and Standard Errors for Income Components (weighted).**

<b>Income Component</b>	<b>Mean</b>	<b>Number of Observations</b>	<b>Standard Error</b>
<b>Total household income variables</b>			
Total household gross income	32909.67	25,362,199	860.31
Total disposable household income	24517.55	25,362,199	521.56
Total disposable household income before social transfers other than old-age and survivor benefits	22171.16	25,362,199	525.43
Total disposable household income before social transfers including old-age and survivors' benefits	18147.15	25,362,199	518.68
<b>Net income components at household level</b>			
Income from rental of a property or land	226.24	25,362,199	16.58
Family/child related allowances	796.92	25,362,199	12.67
Social exclusion not elsewhere classified	468.12	25,362,199	15.10
Housing allowances	469.22	25,362,199	14.87
Regular inter-household cash transfer received	224.58	25,362,199	33.64
Interest, dividends, etc.	643.50	24,973,806	37.35
Interest repayments on mortgage	Not supplied	Not supplied	Not supplied
Income received by people aged under 16	Not supplied	Not supplied	Not supplied
Regular taxes on wealth	Not supplied	Not supplied	Not supplied
Regular inter-household cash transfer paid	Not supplied	Not supplied	Not supplied
Tax on income and social contributions	Not supplied	Not supplied	Not supplied
Repayments/receipts for tax adjustment	Not supplied	Not supplied	Not supplied
<b>Gross income components at household level</b>			
Income from rental of a property or land	283.30	25,362,199	22.78
Family/child related allowances	696.68	25,362,199	11.37
Social exclusion not elsewhere classified	424.14	25,362,199	14.79
Housing allowances	469.22	25,362,199	15.88
Regular inter-household cash transfer received	224.58	25,362,199	33.64
Interest, dividends, etc.	828.16	25,362,199	51.59
Interest repayments on mortgage	1513.54	25,362,199	25.21
Income received by people aged under 16	10.31	25,362,199	1.43
Regular taxes on wealth	877.05	25,362,199	5.67
Regular inter-household cash transfer paid	153.07	25,362,199	11.03
Tax on income and social contributions	7362.01	25,362,199	341.35
<b>Net income components at personal level</b>			
Employee cash or near cash income	8045.15	47,194,526	89.26
Non-cash employee income	136.76	47,194,526	5.91
Contributions to individual private	Not supplied	Not supplied	



pension plans			
Cash benefits or losses from self-employment	1275.81	47,194,526	82.01
Value of goods produced for own-consumption	0	47,194,526	0
Pension from individual private plans	11.16	47,194,526	3.90
Unemployment benefits	40.44	47,194,526	3.70
Old-age benefits	2137.22	47,194,526	35.33
Survivor's benefits	24.90	47,194,526	2.99
Sickness benefits	136.67	47,194,526	6.07
Disability benefits	111.82	47,194,526	5.30
Education-related allowances	40.04	47,194,526	5.27
<b>Gross income components at personal level</b>			
Employee cash or near cash income	11070.44	47,194,526	137.31
Non-cash employee income	199.44	47,194,526	8.97
Contributions to individual private pension plans	96.26	46,951,979	5.13
Cash benefits or losses from self-employment	1748.84	47,194,526	128.82
Value of goods produced for own consumption	0	47,194,526	0
Pension from individual private plans	14.26	47,194,526	5.51
Unemployment benefits	40.73	47,194,526	3.73
Old-age benefits	2307.25	47,194,526	39.23
Survivor's benefits	26.46	47,194,526	3.24
Sickness benefits	136.67	47,194,526	6.07
Disability benefits	111.82	47,194,526	5.30
Education-related allowances	40.04	47,194,526	5.27
Gross monthly earnings for employees	1523.69	47,194,526	18.56

## 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.

There are no known coverage errors associated with EU-SILC UK.

**Table 2.5 Contact at address**

	<b>Frequency</b>	<b>Percent</b>	<b>Cumulative percent</b>
Address contacted (11)	15429	90.7	90.7
Address cannot be located (21)	23	0.1	90.8
Address unable to access (22)	2	0.0	90.8
Address does not exist or is non-residential or is unoccupied or not principal address (23)	1424	8.4	99.2
Missing	126	0.7	99.9
Total	17004	100	

### **2.3.2 Measurement and processing errors**

#### **2.3.2.1 Measurement errors**

Measurement error occurs when data are consistently biased in a certain way, such that the variation from the true values for the population will not average to zero over repeats of the survey. For example, if a certain section of the population is excluded from the sampling frame, estimates may be biased because non-respondents to the survey have different characteristics to respondents. Another cause of bias may be that interviewers systematically influence responses in one way or another. Substantial efforts have been made to avoid measurement errors, for example, through extensive interviewer training and by weighting the data collected for non-response.

#### **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 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, all income data is “checked” at the point of collection to make sure that Net values are not greater than Gross values for an individual.

Data is converted from Blaise to SPSS and is edited using this software. At this stage there is further checking for the consistency and plausibility of data.

#### **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, opinion-type questions, questions on health and income are omitted.

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 2005 survey, respondents were allowed to refuse to answer all income questions (this option was removed from the questionnaire in January 2007). As such, information for these respondents is missing (approximately 300 individuals). 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 2005 there is a relatively large number of individuals for whom income information has been wholly imputed. In 2005, income information was wholly imputed for 11% of individual respondents. These rates of personal non-response should reduce to some extent in 2007, and reduce significantly from 2008 onwards.

### 2.3.3.1 Achieved sample size

2005 was the initial year of EU-SILC UK insofar as the cross-sectional component is concerned. EU-SILC 2005 did not comprise a longitudinal component.

**Table 2.6 Sample size and accepted interviews**

Sample size	Total
Persons 16 years and older	20115
Number of accepted personal questionnaires	20115
Accepted household interviews	10826

### 2.3.3.2 Unit non-response

*Household non-response rates (NRh):*

$$NRh = (1 - (Ra * Rh)) * 100$$

Ra = Number of addresses successfully contacted / Number of valid addresses selected.

Rh = Number of household interviews completed and accepted for data base / number of eligible households at contacted addresses.

$$Ra = 15429 \text{ (DB120 = 11)} / 17004 \text{ (DB120 = all)} - 1424 \text{ (DB120 = 23)}.$$

$$Ra = 0.99$$

$$Rh = 10826 \text{ (DB135 = 1)} / 17004 \text{ (DB130 = all)}.$$

$$R_h = 0.63$$

$$NR_h = (1 - (0.99 * 0.63)) * 100$$

$$NR_h = 38\%$$

*Individual non-response rates (NR<sub>p</sub>):*

$$NR_p = (1 - (R_p)) * 100$$

R<sub>p</sub> = Number of personal interviews completed / number of eligible individuals in the household whose interviews were completed and accepted for the database.

$$R_p = 20115 (RB250 = 11 + 12 + 13) / 20115 (RB245 = 1 + 2 + 3)$$

$$R_p = 1$$

*Overall individual non-response rates (NR<sub>p</sub>):*

$$NR_p = (1 - (0.99 * 0.63 * 1)) * 100$$

$$NR_p = 38\%$$

### 2.3.3.3 Distribution of households

**Table 2.7**      **Distribution of original units by ‘record of contact at address’**

	<b>Number</b>	<b>Percentage</b>
<b>Total (DB120 = 11to23)</b>	<b>16878</b>	<b>100</b>
Address contacted (DB120 = 11)	15429	91.4
Address non-contacted (DB120 = 21 to 23)	1449	8.6
<b>Total address non-contacted (DB120 = 21 to 23)</b>	<b>1449</b>	<b>100</b>
Address cannot be located (DB120 = 21)	23	1.6
Address unable to access (DB120 = 22)	2	0.1
Address does not exist or is non-residential or is unoccupied or not principal residence (DB120 = 23)	1424	98.3

**Table 2.8 Distribution of address contacted by ‘household questionnaire result’ and by household interview acceptance.**

	<b>Number</b>	<b>Percentage</b>
<b>Total</b>	<b>15429</b>	<b>100</b>
Household questionnaire completed (DB130 = 11)	10826	70.2
Interview not completed (DB130 = 21 to 24)	4603	29.8
<b>Total interview not completed (DB130 = 21 to 24)</b>	<b>4603</b>	<b>100</b>
Refusal to co-operate (DB130 = 21)	3672	79.8
Entire household temporarily away for duration of fieldwork (DB130 = 22)	0	0
Household unable to respond (illness, incapacity) (DB130 = 23)	261	5.7
Other reasons (DB130 = 24)	670	14.5
<b>Household questionnaire completed (DB135 = 1+2)</b>	<b>10826</b>	<b>100</b>
Interview accepted for database (DB135 = 1)	10826	100
Interview rejected (DB135 = 2)	0	0

### 2.3.3.4 Distribution of substituted units

No substituted units were used as part of EU-SILC 2005.

### 2.3.3.5 Item non-response

All variables provided for EU-SILC 2005 (UK) contain full information. No partial information is provided for any variable.

**Table 2.9 Distribution of item non-response (before imputation)**

<b>Variable</b>	<b>Full Information</b>		<b>Missing Value</b>	
	<b>Count</b>	<b>Per cent</b>	<b>Count</b>	<b>Per cent</b>
Household gross income	6598	67.2	3222	32.8
Total disposable household income	6975	71.0	2845	29.0
Total disposable household income before social transfers other than old-age and survivor’s benefits	6382	65.0	3438	35.0
Total disposable household income before social transfers including old-age and survivors’ benefits	6383	65.0	3437	35.0
<b>Net income components at household level</b>				
Income from rental of a property or land	8877	90.4	943	9.6
Family/child related allowances	8796	89.6	1024	10.4
Social exclusion not elsewhere classified	8851	90.1	969	9.9
Housing allowances	9696	98.7	124	1.3
Regular inter-household cash transfer received	8987	91.5	833	8.5
Interest, dividends etc.	8144	82.9	1676	17.1
Income received by people aged under 16	0	0	9820	100
Regular taxes on wealth	0	0	9820	100
Regular inter-household cash transfer paid	0	0	9820	100
Tax on income and social	0	0	9820	100

contributions				
Repayments / receipts for tax adjustment	0	0	9820	100
<b>Gross income components at household level</b>				
Income from rental of a property or land	8953	91.2	867	8.8
Family/child related allowances	8796	89.6	1024	10.4
Social exclusion not elsewhere classified	8851	90.1	969	9.9
Housing allowances	9696	98.7	124	1.3
Regular inter-household cash transfer received	8987	91.5	833	8.5
Interest, dividends etc	9721	99.0	99	
Income received by people aged under 16	9820	100	0	0
Regular inter-household cash transfer paid	8991	91.6	829	8.4
Tax on income and social contributions	6901	70.3	2919	29.7
<b>Net income components at personal level</b>				
Employee cash or near cash income	16153	96.9	522	5.3
Non-cash employee income	16675	100	0	0
Contributions to individual private pension plans	0	0	16675	100
Cash benefits or losses from self-employment	16657	99.9	18	0.2
Value of goods produced for own-consumption	16675	100	0	0
Pension from individual private plans	16625	99.7	50	0.3
Unemployment benefits	16667	99.9	8	0.1
Old-age benefits	16049	96.2	626	3.8
Survivor's benefits	16661	99.9	14	0.1
Sickness benefits	16583	99.4	92	0.6
Disability benefits	16534	99.2	141	0.8
Education-related allowances	16670	100	5	0
<b>Gross income components at personal level</b>				
Employee cash or near cash income	15631	93.7	1044	6.3
Non-cash employee income	16675	100	0	0
Contributions to individual private pension plans	16585	99.5	90	0.5
Cash benefits or losses from self-employment	16662	99.9	13	0.1
Value of goods produced for own-consumption	16675	100	0	0
Pension from individual private plans	16468	98.8	207	1.2
Unemployment benefits	16667	100	8	0
Old-age benefits	16064	96.3	611	3.7
Survivor's benefits	16649	99.8	26	0.2
Sickness benefits	16583	99.4	92	0.6
Disability benefits	16534	99.2	141	0.8
Education-related allowances	16670	100	5	0
Gross monthly earnings for employees	8221	49.3	8454	50.7

**Table 2.10 Distribution of item non-response (after imputation).**

Variable	Full Information		Missing Value	
	Count	Per cent	Count	Per cent
Household gross income	10826	100	0	0
Total disposable household income	10826	100	0	0
Total disposable household income before social transfers other than old-age and survivor's benefits	10826	100	0	0
Total disposable household income before social transfers including old-age and survivors' benefits	10826	100	0	0
<b>Net income components at household level</b>				
Income from rental of a property or land	10826	100	0	0
Family/child related allowances	10826	100	0	0
Social exclusion not elsewhere classified	10826	100	0	0
Housing allowances	10826	100	0	0
Regular inter-household cash transfer received	10826	100	0	0
Interest, dividends etc.	10826	100	0	0
Interest repayments on mortgage	Not supplied	Not supplied	Not supplied	Not supplied
Income received by people aged under 16	Not supplied	Not supplied	Not supplied	Not supplied
Regular taxes on wealth	Not supplied	Not supplied	Not supplied	Not supplied
Regular inter-household cash transfer paid	Not supplied	Not supplied	Not supplied	Not supplied
Tax on income and social contributions	Not supplied	Not supplied	Not supplied	Not supplied
Repayments / receipts for tax adjustment	Not supplied	Not supplied	Not supplied	Not supplied
<b>Gross income components at household level</b>				
Income from rental of a property or land	10826	100	0	0
Family/child related allowances	10826	100	0	0
Social exclusion not elsewhere classified	10826	100	0	0
Housing allowances	10826	100	0	0
Regular inter-household cash transfer received	10826	100	0	0
Interest, dividends etc	10826	100	0	0
Interest repayments on mortgage	10662	98.5	164	1.5
Income received by people aged under 16	10826	100	0	0
Regular inter-household cash transfer paid	10826	100	0	0
Tax on income and social contributions	10826	100	0	0
<b>Net income components at personal level</b>				
Employee cash or near cash income	20115	100	0	0
Non-cash employee income	20115	100	0	0
Contributions to individual private pension plans	20005	99.5	110	0.5
Cash benefits or losses from self-employment	20115	100	0	0

Value of goods produced for own-consumption	20115	100	0	0
Pension from individual private plans	20115	100	0	0
Unemployment benefits	20115	100	0	0
Old-age benefits	20115	100	0	0
Survivor's benefits	20115	100	0	0
Sickness benefits	20115	100	0	0
Disability benefits	20115	100	0	0
Education-related allowances	20115	100	0	0
<b>Gross income components at personal level</b>				
Employee cash or near cash income	20115	100	0	0
Non-cash employee income	20115	100	0	0
Contributions to individual private pension plans	20115	100	0	0
Cash benefits or losses from self-employment	20115	100	0	0
Value of goods produced for own-consumption	20115	100	0	0
Pension from individual private plans	20115	100	0	0
Unemployment benefits	20115	100	0	0
Old-age benefits	20115	100	0	0
Survivor's benefits	20115	100	0	0
Sickness benefits	20115	100	0	0
Disability benefits	20115	100	0	0
Education-related allowances	20115	100	0	0
Gross monthly earnings for employees	11021	100	0	0

### 2.3.3.6 Total item non-response

**Table 2.11 Number of observations and total item non-response**

	<b>Number of sample observations</b>	<b>Number of sample observations not taken into account due to item non-response</b>	<b>Non-response at individual level (if applicable)</b>	<b>Non-response at household level</b>
At-risk-of-poverty after social transfers – total	25504	0	0%	38%
At-risk-of-poverty after social transfers – men total	12335	0	0%	38%
At-risk-of-poverty after social transfers – women total	13169	0	0%	38%
At-risk-of-poverty after social transfers – 0-15 years	5377	0	0%	38%
At-risk-of-poverty after social transfers – 16-24 years	2480	0	0%	38%
At-risk-of-poverty after social transfers – 25-49 years	8684	0	0%	38%
At-risk-of-poverty after social transfers – 50-64 years	4781	0	0%	38%
At-risk-of-poverty after social transfers – 65+ years	4182	0	0%	38%
At-risk-of-poverty after social transfers – 16+ years	20127	0	0%	38%
At-risk-of-poverty after social transfers –	15945	0	0%	38%



16-64 years				
At-risk-of-poverty after social transfers – 0-64 years	21322	0	0%	38%
At-risk-of-poverty after social transfers – men 16-24 years	1203	0	0%	38%
At-risk-of-poverty after social transfers – men 25-49 years	4176	0	0%	38%
At-risk-of-poverty after social transfers – men 50-64 years	2318	0	0%	38%
At-risk-of-poverty after social transfers – men 65+ years	1920	0	0%	38%
At-risk-of-poverty after social transfers – men 16+ years	9617	0	0%	38%
At-risk-of-poverty after social transfers – men 16-64 years	7697	0	0%	38%
At-risk-of-poverty after social transfers – men 0-64 years	10415	0	0%	38%
At-risk-of-poverty after social transfers – women 16-24 years	1277	0	0%	38%
At-risk-of-poverty after social transfers – women 25-49 years	4508	0	0%	38%
At-risk-of-poverty after social transfers – women 50-64 years	2463	0	0%	38%
At-risk-of-poverty after social transfers – women 65+ years	2262	0	0%	38%
At-risk-of-poverty after social transfers – women 16+ years	10510	0	0%	38%
At-risk-of-poverty after social transfers – women 16-64 years	8248	0	0%	38%
At-risk-of-poverty after social transfers – women 0-64 years	10907	0	0%	38%
At-risk-of-poverty after social transfers – employed	10159			
At-risk-of-poverty after social transfers – unemployed	297			
At-risk-of-poverty after social transfers – retired	4272			
At-risk-of-poverty after social transfers – other inactive	3002			
At-risk-of-poverty after social transfers – men, employed	5221			
At-risk-of-poverty after social transfers – men, unemployed	165			
At-risk-of-poverty after social transfers – men, retired	1851			
At-risk-of-poverty after social transfers – men, other inactive	942			
At-risk-of-poverty after social transfers – women, employed	4938			
At-risk-of-poverty after social transfers – women, unemployed	132			
At-risk-of-poverty after social transfers – women, retired	2421			
At-risk-of-poverty after social transfers – women, other inactive	2060			
At-risk-of-poverty after social transfers – single, <65 years	1702			

At-risk-of-poverty after social transfers – single, 65+ years	1411			
At-risk-of-poverty after social transfers – single, male	1357			
At-risk-of-poverty after social transfers – single, female	1756			
At-risk-of-poverty after social transfers – single, total	3113			
At-risk-of-poverty after social transfers – 2 adults, no children, both <65	4274			
At-risk-of-poverty after social transfers – 2 adults, no children, at least one 65+	2882			
At-risk-of-poverty after social transfers – other households without children	2026			
At-risk-of-poverty after social transfers – single parent, at least one child	1830			
At-risk-of-poverty after social transfers – 2 adults, 1 child	2385			
At-risk-of-poverty after social transfers – 2 adults, 2 children	3884			
At-risk-of-poverty after social transfers – 2 adults, 3+ children	2003			
At-risk-of-poverty after social transfers – other households with children	1637			
At-risk-of-poverty after social transfers – households without children	12295			
At-risk-of-poverty after social transfers – households with children	11739			
<b>At-risk-of-poverty after social transfers – owner or rent-free</b>				
At-risk-of-poverty after social transfers – owner or rent-free	18716			
<b>At-risk-of-poverty after social transfers – tenant</b>				
At-risk-of-poverty after social transfers – tenant	6767			
<b>At-risk-of-poverty after social transfers – households without children, w=0<sup>1</sup></b>				
At-risk-of-poverty after social transfers – households without children, w=0 <sup>1</sup>	1835			
<b>At-risk-of-poverty rate after social transfers – households without children, 0&lt;w&lt;1</b>				
At-risk-of-poverty rate after social transfers – households without children, 0<w<1	1999			
<b>At-risk-of-poverty after social transfers – households without children, w=1</b>				
At-risk-of-poverty after social transfers – households without children, w=1	5458			
<b>At-risk-of-poverty after social transfers – households with children, w=0</b>				
At-risk-of-poverty after social transfers – households with children, w=0	1866			
<b>At-risk-of-poverty after social transfers – households with children 0&lt;w&lt;0.5</b>				
At-risk-of-poverty after social transfers – households with children 0<w<0.5	410			
<b>At-risk-of-poverty after social transfers – households with children, w=1</b>				
At-risk-of-poverty after social transfers – households with children, w=1	7397			
<b>Median of the equivalised disposable household income</b>				
Median of the equivalised disposable household income				
<b>At-risk-of-poverty threshold – single</b>				
At-risk-of-poverty threshold – single	25504	0	0%	38%
<b>At-risk-of-poverty threshold – 2 adults, 2 children</b>				
At-risk-of-poverty threshold – 2 adults, 2 children	25504	0	0%	38%
<b>Inequality of income distribution S80/S20 income quintile share ratio</b>				
Inequality of income distribution S80/S20 income quintile share ratio	25504	0	0%	38%
<b>Relative median at-risk-of-poverty gap – total</b>				
Relative median at-risk-of-poverty gap – total	4807	0	0%	38%

Relative median at-risk-of-poverty gap – men total	2270	0	0%	38%
Relative median at-risk-of-poverty gap – women total	2537	0	0%	38%
Relative median at-risk-of-poverty gap – 0-15 years	1198	0	0%	38%
Relative median at-risk-of-poverty gap – 16-64 years	2520	0	0%	38%
Relative median at-risk-of-poverty gap – 65+ years	1089	0	0%	38%
Relative median at-risk-of-poverty gap – 16+ years	3609	0	0%	38%
Relative median at-risk-of-poverty gap – men, 16-64 years	1186	0	0%	38%
Relative median at-risk-of-poverty gap – men, 65+ years	454	0	0%	38%
Relative median at-risk-of-poverty gap – men, 16+ years	1640	0	0%	38%
Relative median at-risk-of-poverty gap – women, 16-64 years	1334	0	0%	38%
Relative median at-risk-of-poverty gap – women, 65+ years	635	0	0%	38%
Relative median at-risk-of-poverty gap – women, 16+ years	1969	0	0%	38%
Median income below the at-risk-of-poverty threshold – total				
Median income below the at-risk-of-poverty threshold – men total				
Median income below the at-risk-of-poverty threshold – women total				
Median income below the at-risk-of-poverty threshold – 0-15 years				
Median income below the at-risk-of-poverty threshold – 16-64 years				
Median income below the at-risk-of-poverty threshold – 65+ years				
Median income below the at-risk-of-poverty threshold – men, 16-64 years				
Median income below the at-risk-of-poverty threshold – men, 65+ years				
Median income below the at-risk-of-poverty threshold – women, 16-64 years				
Median income below the at-risk-of-poverty threshold – women, 65+ years				
Median income below the at-risk-of-poverty threshold – women, 16+ years				
Dispersion around the risk-of-poverty threshold – 40%	25504	0	0%	38%
Dispersion around the risk-of-poverty threshold – 50%	25504	0	0%	38%
Dispersion around the risk-of-poverty threshold – 70%	25504	0	0%	38%
At-risk-of-poverty rate before social transfers – total	25504	0	0%	38%
At-risk-of-poverty rate before social transfers – men total	12335	0	0%	38%

At-risk-of-poverty rate before social transfers – women total	13169	0	0%	38%
At-risk-of-poverty rate before social transfers – 0-15 years	5377	0	0%	38%
At-risk-of-poverty rate before social transfers – 16-64 years	15945	0	0%	38%
At-risk-of-poverty rate before social transfers – 65+ years	4182	0	0%	38%
At-risk-of-poverty rate before social transfers – 16+ years	20127	0	0%	38%
At-risk-of-poverty rate before social transfers – men, 16-64 years	7697	0	0%	38%
At-risk-of-poverty rate before social transfers – men, 65+ years	1920	0	0%	38%
At-risk-of-poverty rate before social transfers – men, 16+ years	9617	0	0%	38%
At-risk-of-poverty rate before social transfers – women, 16-64 years	8248	0	0%	38%
At-risk-of-poverty rate before social transfers – women, 65+ years	2262	0	0%	38%
At-risk-of-poverty rate before social transfers – women, 16+ years	10510	0	0%	38%
<b>Before social transfers including old-age and survivors' benefits</b>				
At-risk-of-poverty rate before social transfers – total	25504	0	0%	38%
At-risk-of-poverty rate before social transfers – men total	12335	0	0%	38%
At-risk-of-poverty rate before social transfers – women total	13169	0	0%	38%
At-risk-of-poverty rate before social transfers – 0-15 years	5377	0	0%	38%
At-risk-of-poverty rate before social transfers – 16-64 years	15945	0	0%	38%
At-risk-of-poverty rate before social transfers – 65+ years	4182	0	0%	38%
At-risk-of-poverty rate before social transfers – 16+ years	20127	0	0%	38%
At-risk-of-poverty rate before social transfers – men, 16-64 years	7697	0	0%	38%
At-risk-of-poverty rate before social transfers – men, 65+ years	1920	0	0%	38%
At-risk-of-poverty rate before social transfers – men, 16+ years	9617	0	0%	38%
At-risk-of-poverty rate before social transfers – women, 16-64 years	8248	0	0%	38%
At-risk-of-poverty rate before social transfers – women, 65+ years	2262	0	0%	38%
At-risk-of-poverty rate before social transfers – women, 16+ years	10510	0	0%	38%
<b>Gini coefficient</b>				
Gini coefficient	25504	0	0%	38%
<b>Mean equivalised disposable income</b>				
Mean equivalised disposable income	25504	0	0%	38%
<b>Gender pay gap</b>				
Gender pay gap				

## 2.4 Mode of data collection

**Table 2.12 Distribution of RB250 and RB260**

	Total
<b>RB250 – Data Status</b>	
Information completed only from interview (11)	20115
Interview completed only from registers (12)	0
Total	20115
<b>RB260 – Type of interview</b>	
Face-to-face CAPI (2)	17688
Proxy interview (5)	2131
Missing	316
Total	20115

**Table 2.13 Distribution of household members aged 16 and over by ‘RB250’**

### *Household Members 16+ (RB245 = 1 to 3)*

	Total	RB250 = 11	RB250 = 12	RB250 = 13	RB250 = 21	RB250 = 22	RB250 = 23	RB250 = 31	RB250 = 32	RB250 = 33
<b>Total</b>	20115	20115	0	0	0	0	0	0	0	0
<b>%</b>	100	100	0	0	0	0	0	0	0	0

### *Household Members 16+ (RB245 = 2)*

EU-SILC 2005 (UK) did not use substituted respondents.

### *Household Members 16+ (RB245 = 3)*

EU-SILC 2005 (UK) did not use substituted respondents.

**Table 2.14 Distribution of household members aged 16 and over by ‘RB260’**

### *Household Members 16+ (RB245 = 1 to 3) and RB250 = 11 or 13*

	Total	RB260 = 1	RB260 = 2	RB260 = 3	RB260 = 4	RB260 = 5	Missing
<b>Total</b>	20115	0	17668	0	0	2131	316
<b>%</b>	100	0	87.8	0	0	10.6	1.6

### *Household Members 16+ (RB245 = 2) and RB250 = 11 or 13*

EU-SILC 2005 (UK) did not use substituted respondents.

### *Household Members 16+ (RB245 = 3)*

EU-SILC 2005 (UK) did not use substituted respondents.

## 2.5 Interview duration

**Table 2.15 Interview duration in minutes (mean)**

Questionnaire	Frequency	Mean (minutes)
Household Questionnaire	8772	14
Individual Questionnaire	15195	26
Total (Household + Individual)	23967*	30

\*Nb. Not all households and individuals have a value for HB100 and PB120 due the way this variable is derived by the UK.

## **2.6 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

All pre-imputation and post-imputation data editing was conducted using custom software written in SAS V8. All donor-based imputation processing was conducted in Canceis. Canceis was developed to perform minimum change nearest neighbour imputation (NIM). NIM was developed by Mike Bankier of Statistics Canada in 1992.

Where whole income records were missing (see section 2.3.3), donor imputation was used at a unit level. In other words, the missing income record was filled with a copy of the income record belonging to another individual with similar characteristics.

## **2.7 Imputed rent**

Imputed rent was not calculated as part of EU-SILC 2005.

## **2.8 Company cars**

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 £10001 – 13000 would be given a 'list' price of £11,500. Third, 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 cylinder capacity and emissions information is obtained by using data from the VCA. The VCA provide data on approximately 770 car types registered in the UK.

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

**Table 2.16 Average CO<sub>2</sub> emission by Cylinder Capacity**

Cylinder Capacity	Average CO <sub>2</sub> emission
Up to 1400	155
1401 to 2000	197
2001 to 4000	252

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

The data for 2004/05 is shown in table 2.17.

**Table 2.17 Band price of a motor vehicle based on CC and average CO<sub>2</sub> emissions**

Cylinder Capacity	Average CO <sub>2</sub> emissions	Car price (£)
Up to 1400cc	155	0 – 11,999
1401 to 2000cc	197	12,000 – 24,999
2001 to 4000cc	252	25,000 – 99,999

Cars that fall into a price band are given the appropriate cylinder capacity and the data in the table 2.18 is used to apply an appropriate tax rate (the tax rate used by Her Majesties Revenue and Customs to value the benefit for tax purposes - raw data supplied by HMRC, UK).

**Table 2.18 Tax rate based on CO<sub>2</sub> emission rates (per cent)**

2004/2005	CO <sub>2</sub> tax emission rate (percentage rate)
155	17
200	26
245	35

These percentage rates are the factor that is applied to the car price to produce a monetary benefit for each company car in a household.

$$\text{Car benefit} = (\text{car price}) * \text{CO}_2 \text{ tax emission rate}$$

### 3. Comparability

This section reports on the differences between EUROSTAT definitions and the definitions the UK applied in EU-SILC 2005. It also reports on the impact of these differences with regards 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 Household Survey 2005).

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.

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.

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.

Anyone who has been away from the address continuously for 6 months or longer is excluded.

Anyone who has been living continuously at the address for 6 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 all other official income surveys in 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 uprated (using the UK's average earnings index) to the interview date. Income from investment and perhaps employee non-cash income are perhaps the two sources of income, where there is some doubt about whether the survey really measures current income. In these cases, what respondents most likely provide is the most recent annual or half-yearly income that they received from this source. This income would be annualised, although there is no uprating.



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 around the interview date. So for a household interviewed in early January 2005, we can regard their income as being measured for the period July 2004 to June 2005, and similarly for a household interviewed in December 2005, the income estimate can be regarded as referring to the period July 2005 to June 2006. Since interviews are spread evenly throughout the year, for any one survey year, the interview reference periods collectively, are centred around 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 2005 survey, measures current annual income in 2005.

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.

***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 year April 2005 – March 2006. All interviewing for EU-SILC UK took place between April 2005 and January 2006.

***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***

Interviews took place between 1<sup>st</sup> April and 31<sup>st</sup> December 2005. The General Household Survey was re-designed to meet the EU-SILC requirement. One aspect of this re-design was the move from financial years (April to March) to calendar years. This move to calendar years meant that the first year of EU-SILC data collection in 2005, actually took place from 1<sup>st</sup> April to 31<sup>st</sup> December 2005. So 12-months of interviewing was condensed into a 9-month period.

From 2006 onwards EU-SILC UK will use continuous interviewing with data collection being evenly spread over complete calendar years.

### ***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 differences between the national definitions and standard EU-SILC definitions.

#### ***Total disposable household gross income (HY010)***

#### ***Total disposable household income (HY020)***

#### ***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 the 2005 EU-SILC data delivery as it is only mandatory from 2007 onwards.

#### ***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)***

No major differences between the national and EU-SILC definitions.

#### ***Housing allowances (HY070G/N)***

No major differences between the national and EU-SILC definitions.

#### ***Regular inter-household cash transfer received (HY080G/N)***

No major differences between the national and EU-SILC definitions.

#### ***Interest, dividends, profit from capital investments in unincorporated business (HY090G/N)***

No major differences between 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).

***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)***

This component of income is assumed to be zero in the UK in both the national definition, and in UK EU-SILC.

***Unemployment benefits (PY090G/N)***

No major differences between the national and EU-SILC definitions.

***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 will only be included in the

definition of income from 2007 onwards. In addition, the national definition also includes the value free television licences provided to those over the age of 75.

***Survivors' benefits (PY110G/N)***

No major differences between the national and EU-SILC definitions.

***Sickness benefits (PY120G/N)***

No major differences between the national and EU-SILC definitions.

***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. Respondents are not asked to provide any documentation to support their answers. No information is collected from registers.

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

For all income components subject to taxation and/or social security contributions, respondents are asked to provide net and gross amounts.

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.

In some cases respondents were able to provide both gross and net figures, but in some cases respondents could provide only one of the two, or in some cases neither. In cases where both were missing, two new values, along with an associated period if required, were imputed from a single donor. However, in cases where only one value was missing, analyses indicated that it was not possible to impute the single missing value in a similar way. Significantly, the difference between gross and net in the imputed data did not always reflect the statistical structure of observed differences between gross and net in records where both values were present. In income from

earnings, for example, there was an observable relationship between the percentage difference between gross and net and an increase in either. Furthermore, the variance at each point along that relationship was quite constrained. This clearly reflected the underlying fiscal facts associated with the income in question. That is, within a relatively narrow margin, the more you earn the more tax you are likely to pay. However, imputing gross or net when only one was missing in a way similar to imputing gross *and* net when both were missing often gave rise to data in conflict with observed relationships.

Due to the complexity of factors underlying the relationships between net and gross, and how those factors might change across different income target variables, it was not feasible to explore and identify an imputation strategy for each individual income question. Consequently, a relatively simple but effective donor selection strategy was implemented.

For all potential donors, 3 new variables were derived. The first indicated the percentage difference between gross and net [perc\_diff]. The second and third were considered to be imputation classes. Net\_col was a collapsed version of net (i.e., net in £5000 increments), while Gross\_col was a collapsed version of gross (i.e., gross in £5000 increments). The size of the increments for different income variables was based on the formula: (net or gross range/20) thus always giving rise to imputation classes with 20 increments.

For records that needed an imputed value for net, the gross\_col imputation class was also derived from the observed value for gross. During imputation the value perc\_diff was selected from a pool of donors who matched exactly on the gross\_col imputation class. Net was then calculated using the imputed perc\_diff and the observed value for gross. A similar procedure was employed for records that needed an imputed value for gross. In this case, however, the perc\_diff value was taken from donors who matched exactly on the net\_col imputation class and gross was calculated from the imputed perc\_diff value and the observed value for net.

This simple strategy not only preserved any implicit relationship between gross and net during imputation, but also the variance in the relationship.

#### **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**

###### **Family Resources Survey**

The Family Resources Survey 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 as a comparator for income variables and indicators of poverty and social exclusion.

## **EFS 2004/05**

The Expenditure and Food Survey is a comprehensive overview of all aspects of household expenditure and income for the year 2004/05 derived from a survey of around 7,000 households in the UK. 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.

EFS 2004/05 is used as a comparison for income variables.

## **Annexes**

### **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.