

**NATIONAL STATISTICAL INSTITUTE**

**FINAL QUALITY REPORT**

**EU-SILC 2006-2007**

**BULGARIA**

**SOFIA, February 2010**

CONTENTS	Page
<b>INTRODUCTION</b>	3
<b>1. COMMON LONGITUDINAL EUROPEAN UNION INDICATORS</b>	3
<b>2. ACCURACY</b>	
2.1. Sample design	3
2.2. Sampling errors	8
2.3. Non-sampling errors	16
2.3.1. Sampling frame and coverage errors	16
2.3.2. Measurement and processing errors	16
2.3.3. Non-response errors	18
2.4. Mode of data collection	27
2.5. Imputation procedure	28
2.6. Imputed rent	29
2.7. Company car	29
<b>3. COMPARABILITY</b>	
3.1. Basic concepts and definitions	29
3.2. Components of income	32
3.2.1 Differences between the national definitions and standard EU-SILC definitions	32
3.2.2. The source or procedure used 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
3.3. Tracing rules	35
<b>4. COHERENCE</b>	
4.1. Comparison of income target variables with external sources	35

## **INTRODUCTION**

Bulgaria started EU\_SILC implementation in 2004 with two pilot surveys (cross-sectional - April 2004 and longitudinal - October 2004).

The fieldwork of the first two waves (2006 and 2007) was done by tender winner – the external agency BBSS \_ Gallup international. Since 2008 with annual grants from EC NSI is doing all project implementation activities.

The present quality report is the final quality report on EU-SILC 2007 carried out in Bulgaria according to the structure outlined in Commission Regulation No.28/2004. This report provides information on accuracy, comparability and coherence of data with external sources.

The EU-SILC operations in Bulgaria started in 2006, so by the year 2007 the panel had not been accomplished yet. Three of the 4 sub-samples (which form the total sample of the EU-SILC 2007) make up a panel lasting for the two consecutive years: 2006 and 2007.

### **1. COMMON LONGITUDINAL EUROPEAN UNION INDICATORS BASED ON THE LONGITUDINAL COMPONENT OF EU-SILC**

Longitudinal indicators are not available, as no rotational group has yet been in the survey for four years.

## **2. ACCURACY**

### **2.1. Sample design**

#### **2.1.1. Type of sampling design**

Four-year rotation panel is used for EU-SILC in Bulgaria. It contains 4 independent sub-samples and follows stratified two-stage cluster sampling design. In each subsequent year of survey one rotational group was excluded and new one was added.

For EU SILC 2007 there were included those households in sampling, which had been in the year 2006 in rotational groups 2, 3 and 4. Households included in the year 2006 into 1st rotational group were excluded and for EU SILC 2007 replaced by new selected households - 5<sup>th</sup> rotational group.

Separated strata are formed based on the country administrative-territorial division. All private households in the country are covered.

#### **2.1.2. Sampling units**

Two stages sampling on a territorial principle is implemented as follows:

- on the first stage - the census enumeration units (PSU) are selected;

- on the second stage - the households are identified.

### **2.1.3. Stratification and sub-stratification criteria**

The general population and administrative-territorial division by statistical districts of the settlement comprises all the households in the country, from which the sample for the survey is formed. Population census 2001 data base was used as sampling frame. Sampling frame was updated according to the administrative changes occurred in human settlements statute in Bulgaria – some villages was recognized as towns; transition of municipalities or settlements from one administrative district to another.

The sample is stratified by administrative-territorial districts in the country (NUTS3) and the household's location. As a result 56 strata are formed (28 of urban and 28 of rural population). Municipalities and settlements are ranged according to the number of their population within each stratum.

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

In the first year of the survey (2006) the total sample size was 6120 households grouped in 1224 PSUs. Sub-sample № 1 is replaced by sub-sample № 5, selected in 2007 survey, which contains the same size - 306 census units and 1530 households.

Hence, the (cross-sectional) sample for SILC 2007 contains:

- 4340 “old” (longitudinal 2006) households and
- 1530 “new” households (drawn in 2007)

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

The number of census enumeration units (PSU) is calculated for each strata included in the sample. The clusters on the first stage are chosen with probability proportion to population size (number of households) in the PSUs.. Systematic sampling of secondary units (households) in each primary unit Selected is applied. Each PSU contains 5 households.

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

Survey for the year 2006 was carried out from July to September 2006.

Survey for the year 2007 was carried out from May to August 2007.

### **2.1.7. Renewal of sample: rotational groups**

The selected sample of first-stage units was divided into four sub-samples, equal in size. Starting from 2006 one of the sub-samples is eliminated and replaced by a new one, selected independently as described above. For the 2007 survey the sub-sample № 5 was selected as a replacement of the sub-sample № 1.

Sample size for longitudinal component for the Bulgaria was 6982 households, or 18247 persons aged 16 and over.

**Table 1 Number of selected households in longitudinal component of EU SILC survey**

		Rotational group			Total
		2	3	4	
Year of the survey	2006	1383	1381	1395	4159
	2007	964	930	929	2823
Total		2347	2311	2324	6982

DB135=1		Rotational group			Total
		2	3	4	
Year of the survey	2006	957	925	923	2805
	2007	964	930	929	2823
Total		1921	1855	1852	5628

### 2.1.8. Weightings

#### *Introduction*

Weighting scheme was generally in line with documents “DESCRIPTION OF TARGET VARIABLES: Cross-sectional and Longitudinal 2008 operation”, “CROSS-SECTIONAL WEIGHTING: FROM SECOND YEAR ON”, "EU-SILC weighting procedures: an outline", etc. This section will describe in detail the actual algorithm used.

Weighting factors were calculated as required to take into account the units’ probability of selection, non-response and to adjust the sample to external data relating to the distribution of households and persons in the target population, such as sex and age, residence or region (NUTS II).

In what follows we describe the procedure of obtaining cross-sectional weights of 2006 for each sub-sample independently (for the sub-samples 1, 2, 3 and 4 surveyed for the first time) and base, cross-sectional and longitudinal weights of 2007 for the sub-samples 2, 3 and 4 surveyed for the second time and one new sub-sample surveyed for the first time this year.

*Households started in 2006, participate for the first time (4 sub-samples)*

#### **2.1.8.1. Design factor**

For a first year of the survey, the design weights are equal to the inverses of the corresponding household inclusion probabilities. These weights are household design weights DB080.

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

Correction for non-response was done with design weights computed at the previous step.

A classical procedure consists in modifying the design weights by a factor inversely proportional to the response rate within each "homogeneous group". Coefficients of these corrections were computed separately according to classes of locality as ratios: sum of design weights of selected units to the sum of design weights of responding units.

### **2.1.8.3. Adjustment to external data (level, variables used and sources)**

Weights, calculated at the previous step are adjusted to external sources. Calibration is done on individual-level data, imposing equality of g-weights for individuals in the same household. We used truncated linear function in order to limit g-weights close enough to 1.

To do this, the information about individuals was used – the number of persons by:

- Region (NUTS 2)
- Residence – urban/rural
- Age groups and gender

This information was derived from the demographic statistics.

#### **Final cross-sectional weights**

After calibration we get the final *household cross-sectional weight DB090*.

*Personal cross-sectional weight of a person (RB050)* is equal to the cross-sectional weight DB090 of its household.

*Personal cross-sectional weights for all household members aged 16 and over (PB040)* are obtained by correction for within household non-response of the RB050. After that the same calibration method as described above is used in order to adjust the weights to external sources.

### **2.1.8.4. Final longitudinal weight**

Due to the fact that 2006 is the first year of the survey in Bulgaria, the final longitudinal weights are identical to the base weights.

*Households started in 2007 and their split-offs, participate for the first time (one new sub-sample)*

### **2.1.8.5. Non-response adjustments**

The new sub-sample is a usual random sample from population and it does not depend on other sub-samples. The 2007 base weights for the new sub-sample are calculated according to above described steps.

#### **Base weights**

The weights for the rest 3 sub-samples are obtained with the following procedure.

#### **Correction for attrition**

To obtain base weights for 2007 we now need to correct for attrition that has happened in the sub-samples of the so called sample persons i.e. those who were in the surveyed sample at the age of 14 and over in 2006 and who should be surveyed in 2007.

Prior to any corrections we need to exclude from consideration persons that became out-of-scope in 2007 as they are not considered as non-response. Out-of-scope are persons that were dead by 2007, became institutionalized or had left the country for longer period.

Note the following “special cases” of base weights calculations:

- children born to sample women get the base weight of the mother;
- persons moving into sample household from outside the survey population or so called “co-residents” receive the average of base weights of existing household members;
- persons moving into sample households from other non-sample households in the population receive zero base weight.

Average of these weights over all household members (including co-residents) is assigned to each member.

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

The last stage of calculations consisted in combining the four independent subsamples, applying the above described calibration technique.

As a result, household cross-sectional weight DB090 and personal cross-sectional weight RB050 are obtained for individuals from the three sub-samples surveyed for the second time and from the one sub-sample surveyed for the first time.

#### **2.1.8.7. Final longitudinal weight**

Panel for longitudinal data file with two-years-duration was created by data on households or persons per three rotational groups of cross-sectional component. For the subsamples 2, 3 and 4, surveyed for the second time, the base weights were determined by the correction of the base weights from the previous year. The base weight of 2006 was adjusted by non-response and households’ and individuals’ falling out of the population surveyed. The calculations were performed on the subsets of the so called sample persons i.e. those who were in the surveyed sample in 2006 and who should be surveyed in 2007.

Longitudinal sample is defined as individuals who have been members of an enumerated household throughout the period 2006 to 2007 inclusive. differs from by persons in the original sample who left the population between years 2006 and 2007, and by persons still in the population whose household was enumerated at 2006 but not at 2007.

The new co-residents (entering 2007) continue to be assigned a zero base weight.

Weights were recalculated according to duration of longitudinal data files (taking into account that each rotational group represents population of Bulgaria). Because there is two-years-duration (data file comprises of three rotational groups), so the final longitudinal weights are divided by 3.

### **2.1.8.8. Final household cross-sectional weight**

The household weights resulting from this procedure of calibration are the household cross-sectional weights as in the second year of the survey.

*Personal cross-sectional weights for all household members aged 16 and over (PB040)* are obtained by correction for within household non-response of the RB050. After that the same calibration method as described above is used in order to adjust the weights to external sources.

### **Longitudinal weights**

According to Professor Vijay VERMA at the very first delivery of longitudinal data, data covering only 2 years are involved and, in the standard design, all 3 new sub-samples have been selected at the same time. Hence cross-sectional weights calculated at the previous step directly give the required longitudinal weights.

### **2.1.9. Substitutions**

No substitution was applied if the household did not enter the survey.

## **2.2. Sampling errors**

### **2.2.1. Standard error and effective sample size**

Computations of standard errors were carried out using SAS programs for the SILC Final Quality Report

**Table 1 Mean, total number of observations (before and after imputation) and standard error for income components 2006, longitudinal component (households & persons, weighted mean, (R2, R3 and R4)**

Income components	Mean	Number of observations		Standard error
		Before imputation	After imputation	
Total household gross income (HY010)	6 407	1812	2 805	122
Total disposable household income (HY020)	5 530	711	2 805	97
Total disposable household income before social transfers except old-age and survivor's benefits (HY022)	5 200	726	2 805	99
Total disposable household income before social transfers including old-age and survivor's benefit (HY023)	3 765	1098	2 805	105
<b><i>Net income components at household level</i></b>				
Income from rental of a property or land (HY040N)	359	462	462	39
Family related allowances (HY050N)	392	790	790	12

Social exclusion not elsewhere classified (HY060N)	344	599	710	15
Housing allowance (HY070N)	190	2	2	56
Regular inter-household cash transfer received (HY080N)	1 029	214	219	128
Interests, dividends, etc. (HY090N)	3 321	3	3	3 411
Interest repayments on mortgage (HY100N)	1 837		56	169
Income received by people aged < 16 (HY110N)	723	34	34	86
Taxes on wealth (HY120N)	42	2264	2 417	1
Regular inter-household cash transfer paid (HY130N)	746	112	112	116
Tax on income and social contributions (HY140N)	1 388	1535	1 535	43

**Gross income components at household level**

Income from rental of a property or land (HY040G)	363	462	462	40
Family related allowances (HY050G)	392	790	790	12
Social exclusion not elsewhere classified (HY060G)	344	599	710	15
Housing allowance (HY070G)	190	2	2	56
Regular inter-household cash transfer received (HY080G)	1 029	214	219	128
Interests, dividends, etc. (HY090G)	4 085	3	3	4 321
Interest repayments on mortgage (HY100G)	1 837		56	169
Income received by people aged < 16 (HY110G)	723	34	34	86
Taxes on wealth (HY120G)	42	2264	2 417	1
Regular inter-household cash transfer paid (HY130G)	746	112	112	116
Tax on income and social contributions (HY140G)	1 388	1535	1 535	43

**Net income components at personal level**

Employee cash or near cash income (PY010N)	3 050	2000	2 774	46
Net non-cash employee income (PY020N)	1 372	76	76	58
Cash benefits or losses from self-employment (PY050N)	3 226	466	561	273
Value of goods produced by own-consumption (PY070N)	656	956	956	26
Pension from individual private plans (PY080N)				
Unemployment benefits (PY090N)	664	90	90	48
Old age benefits (PY100N)	1 572	2300	2 311	22
Survivor's benefits (PY110N)	335	262	265	15
Sickness benefits (PY120N)	754	46	46	123
Disability benefits (PY130N)	814	317	321	37
Education-related allowances (PY140N)	305	114	114	48

**Gross income components at personal level**

Employee cash or near cash income (PY010G)	3 720	1621	2 774	60
Net non-cash employee income (PY020G)	1 372	76	76	58
Cash benefits or losses from self-employment (PY050G)	3 714	464	561	331
Value of goods produced by own-consumption (PY070G)	656	956	956	26
Pension from individual private plans (PY080G)				
Unemployment benefits (PY090G)	664	90	90	48
Old age benefits (PY100G)	1 572	2300	2 311	22
Survivor's benefits (PY110G)	335	262	265	15
Sickness benefits (PY120G)	754	46	46	123
Disability benefits (PY130G)	814	317	321	37
Education-related allowances (PY140G)	305	114	114	48

**Table 2 Mean, total number of observations (before and after imputation) and standard error for income components 2007, longitudinal component (households & persons, weighted mean, (R2, R3 and R4)**

Income components	Mean	Number of observations		Standard error
		Before imputation	After imputation	
Total household gross income (HY010)	7446	1158	2823	150
Total disposable household income (HY020)	6347	1153	2823	124
Total disposable household income before social transfers except old-age and survivor's benefits (HY022)	6050	1021	2823	126
Total disposable household income before social transfers including old-age and survivor's benefit (HY023)	4763	496	2823	130
<b><i>Net income components at household level</i></b>				
Income from rental of a property or land (HY040N)	366	383	383	38
Family related allowances (HY050N)	388	577	577	19
Social exclusion not elsewhere classified (HY060N)	357	507	507	25
Housing allowance (HY070N)	160	2	2	101
Regular inter-household cash transfer received (HY080N)	906	252	252	79
Interests, dividends, etc. (HY090N)	266	9	9	109
Interest repayments on mortgage (HY100N)	2449	57	57	223
Income received by people aged < 16 (HY110N)	495	52	52	83
Taxes on wealth (HY120N)	116	2311	2311	4
Regular inter-household cash transfer paid (HY130N)	654	157	157	99
Tax on income and social contributions (HY140N)	1565	1610	1610	43
<b><i>Gross income components at household level</i></b>				
Income from rental of a property or land (HY040G)	374	383	383	41
Family related allowances (HY050G)	388	577	577	19
Social exclusion not elsewhere classified (HY060G)	357	507	507	25
Housing allowance (HY070G)	160	2	2	101
Regular inter-household cash transfer received (HY080G)	906	252	252	79
Interests, dividends, etc. (HY090G)	294	9	9	138
Interest repayments on mortgage (HY100G)	2449	57	57	223
Income received by people aged < 16 (HY110G)	495	52	52	83
Taxes on wealth (HY120G)	116	2311	2311	4
Regular inter-household cash transfer paid (HY130G)	654	157	157	99
Tax on income and social contributions (HY140G)	1565	1610	1610	43
<b><i>Net income components at personal level</i></b>				
Employee cash or near cash income (PY010N)	3291	1724	2903	49
Net non-cash employee income (PY020N)	398	392	392	29
Cash benefits or losses from self-employment (PY050N)	2732	819	973	263
Value of goods produced by own-consumption (PY070N)	614	1031	1031	23
Pension from individual private plans (PY080N)	1080	1	1	286
Unemployment benefits (PY090N)	718	54	54	78

Old age benefits (PY100N)	1689	2273	2343	19
Survivor's benefits (PY110N)	867	29	29	73
Sickness benefits (PY120N)	519	84	84	249
Disability benefits (PY130N)	1009	378	378	41
Education-related allowances (PY140N)	206	15	15	40

**Gross income components at personal level**

Employee cash or near cash income (PY010G)	4036	1211	2903	63
Net non-cash employee income (PY020G)	398	392	392	29
Cash benefits or losses from self-employment (PY050G)	3110	779	973	309
Value of goods produced by own-consumption (PY070G)	614	1031	1031	23
Pension from individual private plans (PY080G)	1080	1	1	286
Unemployment benefits (PY090G)	718	54	54	78
Old age benefits (PY100G)	1689	2273	2343	19
Survivor's benefits (PY110G)	867	29	29	73
Sickness benefits (PY120G)	519	84	84	249
Disability benefits (PY130G)	1009	378	378	41
Education-related allowances (PY140G)	206	15	15	40

**Table 3 Mean, total number of observations (before and after imputation) and standard error for income components 2006 (households & persons, weighted mean, cross sectional sample 2006)**

Income components	Mean	Number of observations		Standard error
		Before imputation	After imputation	
Total household gross income (HY010)	6 639	2784	4 341	107
Total disposable household income (HY020)	5 702	1126	4 341	83
Total disposable household income before social transfers except old-age and survivor's benefits (HY022)	5 374	1141	4 341	85
Total disposable household income before social transfers including old-age and survivor's benefit (HY023)	3 994	1702	4 341	90

**Net income components at household level**

Income from rental of a property or land (HY040N)	368	671	671	31
Family related allowances (HY050N)	382	1190	1 190	9
Social exclusion not elsewhere classified (HY060N)	347	883	1 072	14
Housing allowance (HY070N)	149	3	3	49
Regular inter-household cash transfer received (HY080N)	944	344	351	86
Interests, dividends, etc. (HY090N)	2 570	4	4	2 545
Interest repayments on mortgage (HY100N)	1 802	93	93	143
Income received by people aged < 16 (HY110N)	763	51	51	74
Taxes on wealth (HY120N)	43	3457	3 690	1
Regular inter-household cash transfer paid (HY130N)	752	171	171	84
Tax on income and social contributions (HY140N)	1 481	2377	2 377	41

**Gross income components at household level**

Income from rental of a property or land (HY040G)	371	671	671	32
Family related allowances (HY050G)	382	1190	1 190	9
Social exclusion not elsewhere classified (HY060G)	347	883	1 072	14

Housing allowance (HY070G)	149	3	3	49
Regular inter-household cash transfer received (HY080G)	944	344	351	86
Interests, dividends, etc. (HY090G)	3 161	4	4	3 208
Interest repayments on mortgage (HY100G)	1 802	93	93	143
Income received by people aged < 16 (HY110G)	763	51	51	74
Taxes on wealth (HY120G)	43	3457	3 690	1
Regular inter-household cash transfer paid (HY130G)	752	171	171	84
Tax on income and social contributions (HY140G)	1 481	2377	2 377	41

***Net income components at personal level***

Employee cash or near cash income (PY010N)	3 186	3009	4 308	45
Net non-cash employee income (PY020N)	1 415	125	125	49
Cash benefits or losses from self-employment (PY050N)	3 422	668	813	207
Value of goods produced by own-consumption (PY070N)	625	1370	1 370	22
Pension from individual private plans (PY080N)				
Unemployment benefits (PY090N)	670	144	144	45
Old age benefits (PY100N)	1 577	3416	3 436	17
Survivor's benefits (PY110N)	369	412	417	18
Sickness benefits (PY120N)	605	65	65	82
Disability benefits (PY130N)	838	507	515	32
Education-related allowances (PY140N)	296	153	153	40

***Gross income components at personal level***

Employee cash or near cash income (PY010G)	3 904	2475	4 308	60
Net non-cash employee income (PY020G)	1 415	125	125	49
Cash benefits or losses from self-employment (PY050G)	3 964	697	813	255
Value of goods produced by own-consumption (PY070G)	625	1370	1 370	22
Pension from individual private plans (PY080G)				
Unemployment benefits (PY090G)	670	144	144	45
Old age benefits (PY100G)	1 577	3416	3 436	17
Survivor's benefits (PY110G)	369	412	417	18
Sickness benefits (PY120G)	605	65	65	82
Disability benefits (PY130G)	838	507	515	32
Education-related allowances (PY140G)	296	153	153	40
Gross monthly earnings for employees (PY200G)	354	2984	4 023	5

**Table 4 Mean, total number of observations (before and after imputation) and standard error for income components 2007 (households & persons, weighted mean, cross sectional sample 2007)**

Income components	Mean	Number of observations		Standard error
		Before imputation	After imputation	
Total household gross income (HY010)	7275	1 735	4270	130
Total disposable household income (HY020)	6152	1 731	4270	106
Total disposable household income before social transfers except old-age and survivor's benefits (HY022)	5900	1 529	4270	107
Total disposable household income before social transfers including old-age and survivor's benefit (HY023)	4672	759	4270	111

**Net income components at household level**

Income from rental of a property or land (HY040N)	355	562	562	35
Family related allowances (HY050N)	384	836	836	16
Social exclusion not elsewhere classified (HY060N)	325	730	730	17
Housing allowance (HY070N)	299	3	3	154
Regular inter-household cash transfer received (HY080N)	903	379	379	66
Interests, dividends, etc. (HY090N)	416	15	15	170
Interest repayments on mortgage (HY100N)	2542	86	86	214
Income received by people aged < 16 (HY110N)	463	69	69	65
Taxes on wealth (HY120N)	120	3 505	3505	3
Regular inter-household cash transfer paid (HY130N)	668	227	227	80
Tax on income and social contributions (HY140N)	1633	2 436	2436	40

**Gross income components at household level**

Income from rental of a property or land (HY040G)	361	562	562	36
Family related allowances (HY050G)	384	836	836	16
Social exclusion not elsewhere classified (HY060G)	325	730	730	17
Housing allowance (HY070G)	299	3	3	154
Regular inter-household cash transfer received (HY080G)	903	379	379	66
Interests, dividends, etc. (HY090G)	432	15	15	175
Interest repayments on mortgage (HY100G)	2542	86	86	214
Income received by people aged < 16 (HY110G)	463	69	69	65
Taxes on wealth (HY120G)	120	3 505	3505	3
Regular inter-household cash transfer paid (HY130G)	668	227	227	80
Tax on income and social contributions (HY140G)	1633	2 436	2436	40

**Net income components at personal level**

Employee cash or near cash income (PY010N)	3428	2469	4366	49
Net non-cash employee income (PY020N)	409	634	634	25
Cash benefits or losses from self-employment (PY050N)	2789	1157	1402	200
Value of goods produced by own-consumption (PY070N)	604	1451	1451	22
Pension from individual private plans (PY080N)	632	2	2	520
Unemployment benefits (PY090N)	795	77	77	87
Old age benefits (PY100N)	1709	3273	3386	17
Survivor's benefits (PY110N)	858	64	64	89
Sickness benefits (PY120N)	366	110	110	94
Disability benefits (PY130N)	919	464	464	33
Education-related allowances (PY140N)	330	19	19	225

**Gross income components at personal level**

Employee cash or near cash income (PY010G)	4229	1790	4366	64
Net non-cash employee income (PY020G)	409	634	634	25
Cash benefits or losses from self-employment (PY050G)	3183	1122	1402	236
Value of goods produced by own-consumption (PY070G)	604	1451	1451	22
Pension from individual private plans (PY080G)	632	2	2	520
Unemployment benefits (PY090G)	795	77	77	87
Old age benefits (PY100G)	1709	3273	3386	17

Survivor's benefits (PY110G)	858	64	64	89
Sickness benefits (PY120G)	366	110	110	94
Disability benefits (PY130G)	919	464	464	33
Education-related allowances (PY140G)	330	19	19	225
Gross monthly earnings for employees (PY200G)	386	2914	3984	5

**Table 5 Mean, number of observations and standard error for the equivalised disposable income breakdown by sex, age groups and household size, longitudinal component 2006, (R2, R3 and R4)**

Equivalised disposable income	Mean	Number of observations		Standard error
		Before imputation	After imputation	
Subclasses by household size				
1 household member	2 356	495	524	93
2 household members	3 032	71	798	76
3 household members	3 338	53	546	117
4 and more	2 909	92	896	79
all household members	2 935	711	2 764	45
Population by age group				
< 25	2 798	341	2 219	70
25 - 34	3 126	141	1 018	96
35 - 44	3 089	106	1 052	93
45 - 54	3 354	126	1 188	97
55 - 64	3 021	176	1 105	116
65 +	2 554	357	1 560	46
Population by sex				
Male	2 974	518	3 877	54
Female	2 924	729	4 265	54
all persons	2 948	1247	8 142	51

**Table 6 Mean, number of observations and standard error for the equivalised disposable income breakdown by sex, age groups and household size, longitudinal component 2007, (R2, R3 and R4)**

Equivalised disposable income	Mean	Number of observations		Standard error
		Before imputation	After imputation	
Subclasses by household size				
1 household member	2339	381	541	93
2 household members	3231	378	777	96
3 household members	3765	182	530	121
4 and more	3331	212	873	119
all household members	3217	1153	2721	58
Population by age group				
< 25	3156	651	2203	120

25 - 34	3565	314	1035	109
35 - 44	3603	266	1030	194
45 - 54	3780	330	1162	102
55 - 64	3379	409	1087	96
65 +	2745	839	1672	46

Population by sex				
Male	3368	1268	3889	69
Female	3260	1541	4300	86
all persons	3313	2809	8189	73

**Table 7 Mean, number of observations and standard error for the equivalised disposable income breakdown by sex, age groups and household size, 2006, (cross sectional sample 2006)**

Equivalised disposable income	Mean	Number of observations		Standard error
		Before imputation	After imputation	
Subclasses by household size				
1 household member	2 336	787	841	72
2 household members	3 180	129	1 244	73
3 household members	3 556	73	832	90
4 and more	3 032	137	1 357	69
all households	3 057	1 126	4 274	38

Population by age group				
< 25	2 932	507	3 359	58
25 - 34	3 423	218	1 594	85
35 - 44	3 225	165	1 606	76
45 - 54	3 559	272	1 785	88
55 - 64	3 136	580	1 655	88
65 +	2 555	1 937	2 390	37

Population by sex				
Male	3 151	793	5 874	48
Female	3 039	1144	6 515	44
all persons	3 094	1937	12 389	44

**Table 8 Mean, number of observations and standard error for the equivalised disposable income breakdown by sex, age groups and household size, 2007, ((cross sectional sample 2007)**

Equivalised disposable income	Mean	Number of observations		Standard error
		Before imputation	After imputation	
Subclasses by household size				
1 household member	2499	592	823	114
2 household members	3238	559	1161	79
3 household members	3968	264	800	124
4 and more	3346	316	1297	104

all household members	3273	1731	4109	54
Population by age group				
< 25	3144	950	3148	97
25 - 34	3689	425	1458	101
35 - 44	3604	420	1529	141
45 - 54	3801	479	1715	99
55 - 64	3419	610	1629	85
65 +	2741	1176	2347	46
Population by sex				
Male	3407	1862	5675	66
Female	3282	2198	6151	69
all persons	3342	4060	11826	64

## 2.3. Non-sampling errors

### 2.3.1. Sampling frame and coverage errors

The samples for EU-SILC 2006 and EU-SILC 2007 were selected from the sampling frame based on the Population census 2001 data base. This base includes all private households and their current members residing in the territory. Persons living in collective households and in institutions are excluded from the target population. The whole territory of Bulgaria is divided into statistical districts and census enumerated units:

- around 12000 statistical districts, with average 250 households per district;
- around 38000 census enumerated units, with average 75 households per unit

EU-SILC in Bulgaria, as it has already been mentioned, is carried out by applying the two-stage stratified sampling with PSU (census enumerated units) and final unit - household. The frame is updated every ten (10) years through the general population census. Only sampling frame was updated regularly according to the administrative changes occurred. Students and worker's hostels and residents are excluded in first stage of selection of PSU. This is applied because student's and worker's households rarely stay on the same addresses and it is hard to be traced.

Addresses and household data in selected PSUs are updated according to data stored in Information System "Demography" (ISD). ISD was started in 2005 and released officially in 2007. This system includes data from 1992 and 2001 Population and housing censuses, from the current demographic statistics since 1995 up to now. Data source for the natural movement and the internal migration of the population are the forms of National civil registration system: certificate of birth, certificate of civil marriage, certificate of death, certificate of divorce and card for present address.

In the longitudinal component consist of the sub-samples 2, 3 and 4.

### 2.3.2. Measurement and processing errors

As with any other statistical survey, EU-SILC may be burdened with non-sampling errors which occur at various stages of the survey and which cannot be eliminated completely. This mainly applies to

interviewers' errors at the stage of collecting the information, errors due to the respondents' misunderstanding of questions and inaccurate or sometimes even false answers as well as the errors taking place at the stage of data recording.

For building up the questionnaires we adopted the initially proposed questionnaires of Eurostat as the basis (documents Commission Regulation (EC) 315/2006 and EU-SILC065). The structure of the questionnaires is similar to these ones. The majority of the questions are almost literally copied and translated.

In order to finalize the questionnaires, we took into account any observations made on the questionnaires of the previous years (First wave of "EU-SILC Pilot survey – cross-sectional" (2006).

It should also be pointed out that, in our opinion, the quality of data concerning net income categories is much higher than in the case of gross income. The reason is that non-response to the highest degree affected the information on taxes and social and health insurance contributions.

EU-SILC survey in 2007 was carried out in May/August. EU-SILC, as it was in 2006, is a non-obligatory, representative survey of individual households, performed by a face-to-face interview technique with the use of PAPI method. Two types of questionnaire: individual and household questionnaire were applicable. The fieldwork of the first two waves (2006 and 2007) was done by tender winner – the external agency BBSS \_ Gallup international. Since 2008 with annual grants from EC NSI is doing all project implementation activities.

Nevertheless the interviewers' training by the NSI experts the survey turned to be very difficult for them especially the income part. The second wave added new challenge – tracing the households and sample persons. The shortcomings from fieldwork (mainly for second wave) and data entry program without of proper controls reflected the income data quality, which led to tremendous data checking and cleaning work for some group of population (persons without regular jobs, big households surviving on social transfers etc.).

The respondents hesitate in providing income figures and in general deny consulting their tax return, in order to provide exact / correct amounts. Income from interests, dividends in unincorporated businesses is in general not provided from the households. There is a sense that still self-employment income has been under-estimated.

For the small family businesses another fact is observed. Often the budgets of the business and the household are so mixed that the self-employed persons cannot separate them even if they wish to do so. This is also due to the fact that for most of these businesses a fixed tax is paid in the beginning of the year, the so called "patent tax" and from there on the owners of these businesses are not much encouraged to keep records.

There is also a problem with larger businesses. The owners often do not know details of the business' financial operations since this is the task of specially appointed accountants.

Changes occurring in persons' activity status longitudinally resulted in a number of inconsistencies. For example, persons having been working in year N-1 but retired in year N, persons being students in year N-1 and employed in year N, income in year N-1 from persons who died in year N, etc. may result in

these inconsistencies representing though reality. In any case the pre-mentioned examples resulted both in under and over reporting of income.

### 2.3.3. Non-response errors

#### 2.3.3.1. Achieved sample size

**Table 2 Sample size and accepted interviews**

	2006	2007
Accepted household interviews (DB135=1)	2805	2823
Personal Interview accepted (RB250=11)		
Number of persons 16 years and older	6805	6942
Sample Persons	6805	6822
Co-residents	0	120

#### 2.3.3.2. Unit non-response

- **wave 1 = 2006 (subsamples 2, 3 and 4):**

- Household non-response rates  $NRh = [1 - (Ra * Rh)] * 100$ ,

where

$Ra = 0.943$

$Rh = 0.718$

$NRh = 32.36\%$

- Individual non-response rates  $NRp = (1 - Rp) * 100$ ,

$Rp = 0.971$

$NRp = 2.86\%$

- Overall individual non-response rates  $*NRp = [1 - (Ra * Rh * Rp)] * 100$ ,

$*NRp = 34.29\%$ ;

- **Response rate for households wave 2 = 2007 and wave 1 = 2006**

- *Wave response rate = 0.671*

(percentage of households successfully interviewed (DB135=10 which were passed on to wave (from wave t-1) or newly created or added during wave t, excluding those out of scope (under the tracing rules) or non-existent)

- *Longitudinal follow-up rate = 0.852*

(percentage of households which are passed on to wave t+1 for follow-up within the households received into wave t from wave t-1, excluding those out of scope (under the tracing rules) or non-existent)

- *Follow-up rate = 0.866*

(number of households passed on from wave t to wave t+1 in comparison to the number of households received for follow-up at wave t from wave t-1)

- *Achieved sample size ratio = 0.681*

(ratio of the number of households accepted for the database (DB135=1) in wave t to the number of households accepted for the database (DB135=1) in wave t-1)

**Table 10 Household response rates: Comparison of results codes between wave 2 and wave 1**

**Sample outcome in wave 2 = 2007**

		DB130 = 11										Total	
		DB135 = 1	DB135 = 2	DB120 = 22	DB130 = 22	DB130 = 23	DB130 = 24	DB130 = 21	DB120 = 21	NC	DB110 = 10		DB120 = 23
Sample outcome in wave 1													
DB130 = 11	DB135 = 1	2805	0	164	362	124	77	541	74	na	0	0	4147
	DB135 = 2	0	0										0
DB120 = 21													
DB120 = 22													
DB120 = 23													
DB130 = 21													
DB130 = 22													
DB130 = 23													
DB130 = 24													
Total		2805	0	164	362	124	77	541	74	0	0	0	4147
New household in wave 2													
DB110 = 8		<b>18</b>				<b>7</b>	<b>34</b>		1				60
DB110 = 9		0											
Total		2823	0	164	362	131	111	541	75	na	0	0	4207

**Table 11. Personal interview response rate**

<b>Personal interview outcome in wave 2=2007</b>												
		RB250=11,12,13	Not completed because of									Total
			RB250=21	RB250=22	RB250=23	RB250=31	RB250=32	RB250=33	HHnc	Pn	Pl	
row	<b>sample persons (RB100=1 and RB245=1,2,3) from the sample forwarded from last wave (t-1)</b>											
1	RB110=1,2	6822	3		27	29	31	27				6939
2	RB110=6											72
3	RB110=-1											0
4	RB120=2											1
5	RB120=3											65
6	RB120=4											0
	DB135=2 or -1, or DB110=7, or DB120=21- 23 or -1, or DB130=21- 24 or -1											
7												
8	DB110= 3-6											
<b>New sample persons</b>												0
9	Reached age 16	105			1	2	2	2				112
10	Sample additions											0
<b>Non-sample persons 16+</b>												0
11	from wave 2=2007	120			2	1	1					124
12	from wave 1=2006	0										0
Sample persons from sample not forwarded from last wave t-1=2006 (excluded died or not eligible according to the tracing rules)												
13												112
	1+3+6+7+9+10	6927	3	0	28	31	33	29	0	0	0	7051
	1+3+6+7+9+10+13	6927	3	0	28	31	33	29	0	0	0	7163
	1+3+6+7+9+10+11	7047	3	0	30	32	34	29	0	0	0	7175

**• Response rate for persons**

Wave response rate of sample persons = 98.24%

Wave response rate of co-residents = 96.77%

Longitudinal follow-up rate = 96.71%

R (RB250=21) = 0.000

R (RB250=23) = 0.004

R (RB250=31) = 0.004

R (RB250=32) = 0.005

R (RB250=33) = 0.004

achieved sample size ratio for sample persons = 1.002

achieved sample size ratio for sample persons and co-residents = 1.020

achieved sample size ratio for co-residents selected the first wave = 0.000

response rate for non-sample persons = 0.938

**2.3.3.3. Distribution of households by ‘household status’ (DB110), by ‘record of contact at address’ (DB120), by ‘household questionnaire result’ (DB130) and by ‘household interview acceptance’ (DB135)**

**Table 12 Distribution of households by household status (DB110)**

	total	DB110=1	DB110=2	DB110=3	DB110=4	DB110=5	DB110=6	DB110=7	DB110=8	DB110=9	DB110=10
2006											
total	4159	0	0	0	0	0	0	0	0	4159	0
%	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0
2007											
total	2823	2787	18	0	0	0	0	0	18	0	0
%	100.0	98.7	0.6	0.0	0.0	0.0	0.0	0.0	0.6	0.0	0.0

**Table 13 Distribution of households by ‘record of contact at address’ (DB120)**

	total (DB110=2,8,10)	DB120=11	DB120=21	DB120=22	DB120=23	missing
2007						
total		36	36	0	0	0
%		100.0	100.0	0.0	0.0	0.0

**Table 14 .Distribution of households by ‘household questionnaire result’ (DB130)**

	total (DB120=11 or DB110=1)	DB130=11	DB130=21	DB130=22	DB130=23	DB130=24	missing
2006							
total		3909	2805	541	362	124	77
%		100	71.8	13.8	9.3	3.2	2.0
2007							
total		2823	36	0	0	0	2787
%		100.0	1.3	0.0	0.0	0.0	98.7

**Table 15 .Distribution of households by ‘household interview acceptance’ (DB135)**

	total (DB130=11)	DB135=1	DB135=2	missing
2006				
total		2805	2805	0
%		100	100.0	0.0
2007				
total		2879	2879	0
%		100.0	100.0	0.0

### 2.3.3.4. Distribution of persons for membership status (RB110)

**Table 16 Distribution of persons by membership status**

	total	Current household members				Not current household members		
		RB110=1	RB110=2	RB110=3	RB110=4	RB110=5	RB110=6	RB110=7
2007								
total	8573	8077	41	166	46	171	72	0
%	100.0	94.2	0.5	1.9	0.5	2.0	0.8	0.0

**Table 17 Distribution of persons moving out by variable RB120**

	total	RB110 = 5							
		RB120 = 1		RB120 = 2	RB120 = 3	RB120 = 4			
		this person is a current household member of a household this wave	this person is not a current household member						
2007									
total	171	41	64	1	65				
%	100.0	24.0	37.4	0.6	38.0				

### 2.3.3.5. Item non-response

**Table 18 Information on item non-response on household level - households 2006**

Item non-response	households having received an amount		Full information		Partial information		Missing information	
	total	% of all interviewed households	total	%	total	%	total	%
Total household gross income (HY010)	2805	100	1812	64.6	979	34.9	14	0.5
Total disposable household income (HY020)	2805	100	711	25.3	1992	71.0	102	3.6
Total disposable household income before social transfers except old-age and survivor's benefits (HY022)	2794	99.6	726	26.0	1788	64.0	280	10.0
Total disposable household income before social transfers including old-age and survivor's benefit (HY023)	2761	98.4	1098	39.8	1489	53.9	174	6.3
<b>Net income components at household level</b>								
Income from rental of a property or land (HY040N)	462	16.5	462	100				
Family related allowances (HY050N)	790	28.2	790	100				

Social exclusion not elsewhere classified (HY060N)	710	25.3	599	84.4		111	15.6
Housing allowance (HY070N)	2	0.1	2	100			
Regular inter-household cash transfer received (HY080N)	219	7.8	214	97.7		5	2.3
Interests, dividends, etc. (HY090N)	3	0.1	3	100			
Interest repayments on mortgage (HY100N)	56	2.0	56	100			
Income received by people aged < 16 (HY110N)	34	1.2	34	100			
Taxes on wealth (HY120N)	2417	86.2	2264	93.7		153	6.3
Regular inter-household cash transfer paid (HY130N)	112	4	112	100			
Tax on income and social contributions (HY140N)	1535	54.7	1535	100			
<b>Gross income components at household level</b>							
Income from rental of a property or land (HY040G)	462	16.5	462	100			
Family related allowances (HY050G)	790	28.2	790	100			
Social exclusion not elsewhere classified (HY060G)	710	25.3	599	84.4		111	15.6
Housing allowance (HY070G)	2	0.1	2	100			
Regular inter-household cash transfer received (HY080G)	219	7.8	214	97.7		5	2.3
Interests, dividends, etc. (HY090G)	3	0.1	3	100			
Interest repayments on mortgage (HY100G)	56	2.0	56	100			
Income received by people aged < 16 (HY110G)	34	1.2	34	100			
Taxes on wealth (HY120G)	2417	86.2	2264	93.7		153	6.3
Regular inter-household cash transfer paid (HY130G)	112	4	112	100			
Tax on income and social contributions (HY140G)	1535	54.7	1535	100			

**Table 19 Information on item non-response on household level - households 2007**

Item non-response	households having received an amount		Full information		Partial information		Missing information	
	total	% of all interviewed households	total	%	total	%	total	%
Total household gross income (HY010)	2815	99.7	1158	41.1	1629	57.9	28	1.0
Total disposable household income (HY020)	2821	99.9	1153	40.9	1656	58.7	12	0.4
Total disposable household income before social transfers except old-age and survivor's benefits (HY022)	2796	99.0	1021	36.5	1765	63.1	10	0.4

Total disposable household income before social transfers including old-age and survivor's benefit (HY023)	2704	95.8	496	18.3	1512	55.9	696	25.7
<b>Net income components at household level</b>								
Income from rental of a property or land (HY040N)	383	13.6	383	100				
Family related allowances (HY050N)	577	20.4	577	100				
Social exclusion not elsewhere classified (HY060N)	507	18.0	507	100				
Housing allowance (HY070)	2	0.1	2	100				
Regular inter-household cash transfer received (HY080)	252	8.9	252	100				
Interests, dividends, etc. (HY090N)	9	0.3	9	100				
Interest repayments on mortgage (HY100N)	57	2	57	100				
Income received by people aged < 16 (HY110)	52	1.8	52	100				
Taxes on wealth (HY120N)	2311	81.9	2311	100				
Regular inter-household cash transfer paid (HY130N)	157	5.6	157	100				
Tax on income and social contributions (HY140N)	1610	57.0	1610	100				
<b>Gross income components at household level</b>								
Income from rental of a property or land (HY040G)	383	13.6	383	100				
Family related allowances (HY050G)	577	20.4	577	100				
Social exclusion not elsewhere classified (HY060G)	507	18.0	507	100				
Housing allowance (HY070G)	2	0.1	2	100				
Regular inter-household cash transfer received (HY080G)	251	8.9	251	100				
Interests, dividends, etc. (HY090G)	9	0.3	9	100				
Interest repayments on mortgage (HY100G)	57	2.0	57	100				
Income received by people aged < 16 (HY110G)	52	1.8	52	100				
Taxes on wealth (HY120G)	2311	81.9	2311	100				
Regular inter-household cash transfer paid (HY130G)	158	5.6	158	100				
Tax on income and social contributions (HY140G)	1610	57.0	1610	100				

**Table 20 Information on item non-response on individual level - persons 2006**

Item non-response	persons having received an amount	Full information	Partial information	Missing information
-------------------	-----------------------------------	------------------	---------------------	---------------------

	total	%	total	%	total	%	total	%
<b>Net income component at personal level</b>								
Employee cash or near cash income (PY010N)	2774	28.7	2000	72.1	667	24	107	3.9
Net non-cash employee income (PY020N)	76	0.8	76	100				
Cash benefits or losses from self-employment (PY050N)	561	5.8	466	83.1	63	11.2	32	5.7
Value of goods produced by own-consumption (PY070N)	956	9.9	956	100				
Pension from individual private plans (PY080N)	0							
Unemployment benefits (PY090N)	90	0.9	90	100				
Old age benefits (PY100N)	2311	23.9	2300	99.5			11	0.5
Survivor's benefits (PY110N)	265	2.7	262	98.9			3	1.1
Sickness benefits (PY120N)	46	0.5	46	100				
Disability benefits (PY130N)	321	3.3	317	98.8			4	1.2
Education-related allowances (PY140N)	114	1.2	114	100				
<b>Gross income components at personal level</b>								
Employee cash or near cash income (PY010G)	2774	28.7	1621	58.4	1046	37.7	107	3.9
Net non-cash employee income (PY020G)	76	0.8	76	100				
Cash benefits or losses from self-employment (PY050G)	561	5.8	464	86.3	44	7.8	33	5.9
Value of goods produced by own-consumption (PY070G)	956	9.9	956	100				
Pension from individual private plans (PY080G)	0							
Unemployment benefits (PY090G)	90	0.9	90	100				
Old age benefits (PY100G)	2311	23.9	2300	99.5			11	0.5
Survivor's benefits (PY110G)	265	2.7	262	98.9			3	1.1
Sickness benefits (PY120G)	46	0.5	46	100				
Disability benefits (PY130G)	321	3.3	317	98.8			4	1.2
Education-related allowances (PY140G)	114	1.2	114	100				

**Table 21 Information on item non-response on individual level - persons 2007**

Item non-response	persons having received an amount		Full information		Partial information		Missing information	
	total	%	total	%	total	%	total	%
<b>Net income component at personal level</b>								
Employee cash or near cash income (PY010N)	2 903	33.9	1724	59.4	1030	35.5	149	5.1
Net non-cash employee income (PY020N)	392	4.6	392	100.0				
Cash benefits or losses from self-employment (PY050N)	973	11.3	819	84.2	86	8.8	68	7.0
Value of goods produced by own-consumption (PY070N)	1031	12.0	1031	100.0				
Pension from individual private plans (PY080N)	1	0	1	100.0				

Unemployment benefits (PY090N)	54	0.6	54	100.0				
Old age benefits (PY100N)	2343	27.3	2273	97.0			70	3.0
Survivor's benefits (PY110N)	29	0.3	29	100.0				
Sickness benefits (PY120N)	84	1.0	84	100.0				
Disability benefits (PY130N)	378	4.4	378	100.0				
Education-related allowances (PY140N)	15	0.2	15	100				
<b>Gross income components at personal level</b>								
Employee cash or near cash income (PY010G)	2903	33.9	1211	41.7	1 543	53.2	149	5.1
Net non-cash employee income (PY020G)	392	4.6	392	100.0				
Cash benefits or losses from self-employment (PY050G)	973	11.3	779	80.1	164	16.9	30	3.1
Value of goods produced by own-consumption (PY070G)	1031	12.0	1031	100.0				
Pension from individual private plans (PY080G)	1	0.0	1	100.0				
Unemployment benefits (PY090G)	54	0.6	54	100.0				
Old age benefits (PY100G)	2343	27.3	2273	97.0			70	3.0
Survivor's benefits (PY110G)	29	0.3	29	100.0				
Sickness benefits (PY120G)	84	1.0	84	100.0				
Disability benefits (PY130G)	378	4.4	378	100.0				
Education-related allowances (PY140G)	15	0.2	15	100				

## 2.4. Mode of data collection

**Table 22 Distribution of household members (RB245=1) by "Data status" (RB250)**

### Wave 1 = 2006

#### Household members 16+

	Total	RB250=11	RB250=21	RB250=23	RB250=31	RB250=32	RB250=33
total	7005	6805	2	59	122	8	9
%	100.0	97.1	0.0	0.8	1.7	0.1	0.1

### Wave 2 = 2007

#### Household members 16+

	Total	RB250=11	RB250=21	RB250=23	RB250=31	RB250=32	RB250=33
total	7063	6942	3	29	30	32	27
%	100.0	98.3	0.0	0.4	0.4	0.5	0.4

#### Sample persons 16+ (RB100=1)

	Total	RB250=11	RB250=21	RB250=23	RB250=31	RB250=32	RB250=33
total	6939	6822	3	27	29	31	27
%	100.0	98.3	0.0	0.4	0.4	0.4	0.4

#### Co-residents 16+ (RB100=2)

	Total	RB250=11	RB250=21	RB250=23	RB250=31	RB250=32	RB250=33
total	124	120		2	1	1	
%	100.0	96.8		1.6	0.8	0.8	

**Table 23 Distribution of household members (RB245=1) by “Type of interview” (RB260)**

**Wave 1 = 2006**

**Household members 16+ (RB250=11)**

	Total	RB260=1	RB260=5	missing
total	6805	5454	1351	
%	100.0	80.1	19.9	

**Wave 2 = 2007**

**Household members 16+ (RB250=11)**

	Total	RB260=1	RB260=5	missing
total	6942	4847	2095	
%	100.0	69.8	30.2	

**Sample persons 16+ (RB100=1 and RB250=11)**

	Total	RB260=1	RB260=5	missing
total	6822	4775	2047	
%	100.0	70.0	30.0	

**Co-residents 16+ (RB100=2 and RB250=11)**

	Total	RB260=1	RB260=5	missing
total	120	72	48	
%	100.0	60.0	40.0	

## 2.5. Imputation procedure

From many methods (deductive, deterministic, stochastic), which were recommended for imputation of income variables, we used method of regression deterministic imputation.

The gross income was obtained by summing up net value, income tax payments and compulsory social insurance contributions. If the information on tax and insurance contributions was missing, the amounts were imputed in order to labour and social insurance legislations. In some cases where only net income amounts were available these had to be converted to gross values using all necessary information.

Imputation procedure, which was used for solution of item non-response, was following:

For imputation of income variables in personal data file there were created following groups:

- Region (NUTS 2)
- Age
- Sex
- Status in employment
- Occupation

## **2.6. Imputed rent**

Imputed rents are estimated for dwellings used as main residence by the households. The imputation is applied for those households that did not report paying rent:

- owners-occupiers
- rent-free tenants

The market rent is the rent due for the right to use an unfurnished dwelling on the private market, excluding charges for heating, water, electricity, etc.

Stratification method based on actual rents (the same used by National Accounts – the same stratification variables and the same market rents). The method is in line with ESA'95 and requirements of Commission Decision 95/309 and Commission Regulation 1722/2005 on the principle of estimating dwelling services.

Stratification variables:

- location (district centre with university, other district centre, smaller town, rural area)
- size of the dwelling
- number of rooms (1, 2, 3, 4+)
- amenities – availability of central heating

Actual market rents – main data sources:

- current price statistics
- household budget survey
- real estate agencies

## **2.7. Company car**

The information on the private use of the company car is collected in the individual questionnaire. Here belongs the respondent's estimated amount he/she has gained by using the company car for private purposes. In case of the missing value (the respondent was using the company car but did not estimate the amount gained) imputation is applied with the use of hot-deck and regression imputation with simulated residuals methods.

## **3. COMPARABILITY**

### **3.1. Basic concepts and definitions**

There were no essential differences between the national concepts and standard EU-SILC concepts.

#### ***The reference population***

The reference population is all citizens officially living at Bulgarian territory (population de facto). The source of our sample is the Census Population 2001. This Census includes all private households and their current members residing in the territory, independently of any socio-economic characteristics they may have. Persons living in collective households and in institutions are excluded from the target population.

### ***The private household definition***

No difference to the common definition in either wave (EU-SILC 2006 and EU-SILC 2007).

The definition of household that Eurostat recommends is used. Household is defined as a person living alone or a group of people who live together in the same dwelling and share expenditures including the joint provision of the essentials of living. Family members living together but not sharing their income and expenditure with other family members make up separate households.

### ***The household membership***

All household members of 16 year and older at the time of the interview, are selected for a personal interview.

The household composition accounted for:

1. Persons usually resident, related to other members
2. Persons usually resident, not related to other members
3. Resident boarders, lodgers, tenants
4. Visitors
5. Line-in domestic servants, au-pairs
6. Persons usually resident, but temporarily absent from the dwelling (for reasons of holiday travel, work, education or similar)
7. Children of the household being educated away from home
8. Persons absent for long periods, but having household ties : persons working away from home
9. Persons temporarily absent but having household ties: persons in hospital, homes or other institutions

Further conditions for inclusion as household members are as follows:

(a) Categories 3,4, and 5:

Such persons must currently have no private address elsewhere; or their actual or intended duration of stay must be six months or more.

(b) Category 6:

Such persons must currently have no private address elsewhere and their actual or intended duration of absence from the household must be less than six months.

(c) Category 7 and 8:

Irrespective of the actual or intended duration of absence, such persons must currently have no private address elsewhere, must be the partner or child of a household member and must continue to retain close ties with the household and must consider this address to be his/her main residence.

(d) Category 9:

Such person must have clear financial ties to the household and must be actually or prospectively absent from the household for less than six months.

- Usually resident

A person shall be considered as a usually resident member of the household if he/she spends most of his/her daily rest there, evaluated over the past six months. Persons forming new households or joining existing households shall normally be considered as members at their new location; similarly, those leaving to live elsewhere shall no longer be considered as members of the original household. The above mentioned 'past six month' criteria shall be replaced by the intention to stay for a period of six months or more at the new place of residence.

- Intention to stay for a period of six months or more

Account has to be taken of what may be considered as 'permanent' movements in or out of households. Thus a person who has moved into a household for an indefinite period or with their intention to stay for a period of six months or more shall be considered as a household member, even though the person has not yet stayed in the household for six months, and has in fact spent a majority of that time at some other place of residence. Similarly, a person who has moved out of the household to some other place of residence with the intention of staying away for six months or more, shall no longer be considered as a member of the previous household.

- Temporarily absent in private accommodation

If the person who is temporarily absent is in private accommodation, then whether he/she is a member of this (or other) household depends on the length of the absence. Exceptionally, certain categories of persons with very close ties to the household may be included as members irrespective of the length of absence, provided they are not considered members of another private household.

In the application of these criteria, the intention is to minimize the risk that individuals who have two private addresses at which they might potentially be enumerated are not double-counted in the sampling frame. Similarly, the intention is to minimize the risk of some persons being excluded from membership of any household, even though in reality they belong to the private household sector.

### ***The income reference period(s) used***

The income reference period is a fixed twelve-month period, namely the previous calendar year. The income reference period for EU-SILC 2006 was 2005, EU-SILC 2007 was 2006 year.

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

The reference period for income tax repayment and compulsory social insurance contributions were again years 2005 and 2006.

### ***The reference period for taxes on wealth***

Taxes on wealth paid during the income reference period were recorded, properly 2005 and 2006 year.

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

The income reference period is the previous calendar year and the current variables refer to the

fieldwork period. Therefore the lag is at minimum 4 months and at maximum 8 months in each wave.

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

EU-SILC was performed on the territory of the whole country  
2006 year between August 1 and August 31;  
2007 year between May 4 and August 29.

### ***Basic information on activity status during the income reference period***

There were no differences between the national concepts and standard EU-SILC concepts. This information can be obtained by combining the answer for question P6 (PL030) with the answer for question P42 (calendar question),(PL210A—PL210K)

## **3.2. Components of income**

### **3.2.1 Differences between the national definitions and standard EU-SILC definitions**

Differences between the national definitions and standard EU-SILC definitions as follows:

In accordance with EU-SILC 065 (2008 operation) the new income components, mandatory from 2007 operation onwards:

- *PY020G - non-cash employee income;*
- *PY030G – employer’s social insurance contribution;*
- *PY035G – contributions to individual pension plans;*
- *PY080G – pension from individual private plans*
- *HY030G - imputed rent;*
- *HY100G - interest repayments on mortgage;*

have been recorded at component level only and they are not included in the household income (variables: HY010, HY020, HY022 and HY023).

Since 2007, revenue from the use of a company car for private purposes (PY021) was added as a component of the aggregate income

### ***Cash or near-cash employee income (PY010G)***

Employee cash or near cash income refers to the monetary component of the compensation of employees in cash payable by an employer on behalf of the employee to social insurance schemes or tax authorities.

Included are:

- Wages and salaries paid in cash for time worked or work done in main and any secondary or casual job(s)
- Supplement for overtime
- Commission and tips

- Piece rate payments
- Payments for fostering
- Profit sharing and bonuses
- Allowance for working in remote locations, for transport
- Remuneration for time not worked (e.g. holiday payments)
- Supplementary payments (e.g. thirteenth month payment)
- Allowance to the workers in the building constructions

***Non-cash employee income (PY020G)***

Gross non-cash employee income includes:

- Company car and associated costs
- Free of charge or contribution meals within working hours
- Reduced values for electricity, telephone, water etc
- Produced goods provided free of charge or with reduced price to employees

***Non-cash employee income (PY021G)***

This variable includes only the company car and associated costs (e.g. car insurance, taxes and duties), provided for either private use or both private and work use.

***Employer's social insurance contribution (PY030G)***

Employers' contributions are defined as payments made, during the income reference period, by employers for the benefits of their employees to insurers.

***Cash profits or losses from self-employment (including royalties) (PY050G)***

It includes:

- Net operating profit or loss accruing to working owners of, or partners in, an unincorporated enterprise, less interest on business loans.
- Royalties earned on writing, inventions, and so on not included in the profit/loss of unincorporated enterprises.
- Rentals from business buildings, vehicles, equipment, etc not included in the profit/loss of unincorporated enterprises, after deduction of related costs such as interest on associated loans, repairs and maintenance and insurance charges.

***Value of goods produced for own consumption (PY070G)***

The value of goods produced for own consumption refers to the value of food and beverages produced and also consumed within the same household.

The value of goods produced for own consumption are calculated as the market value of goods produced deducting any expenses incurred in the production, not being though counted in total income.

***Pension from individual private plans (PY080G)***

Regular pensions from private plans (other than those covered under ESSPROS) refer to pensions and annuities received, during the income reference period, in the form of interest or dividend income from individual private insurance plans.

***Unemployment benefits (PY090G)***

Unemployment benefits include only Full unemployment benefits

***Old-age benefit (PY100G)***

Old age benefit includes:

- Old age pension
- Anticipated old age pensions
- Supplementary pension from public sector
- Lump sum due to retirement
- Any other cash benefit – periodic and lump-sum benefits.

***Survivors' benefits (PY110G)***

It includes:

- Survival pension
- Supplement to pension in case of deceased spouse
- Death grant
- Other lump-sum payments

***Sickness' benefits (PY0120G)***

Included are:

- Paid sick leave
- Other cash benefits

***Disability benefits (PY0130G)***

Included are:

- Disability pension
- Care allowance for assistance of dependents
- Other cash lump-sum benefits

***Education-related allowances (PY0140G)***

It includes:

- Scholarships

***Gross monthly earnings from employees (PY0200G)***

It refers to the monthly amount in the main job for employees. It includes usual paid overtime, tips, profit share, bonuses. Information on gross monthly earnings for employees has been used only for the calculation of gender pay gap.

**3.2.2. The source or procedure used for the collection of income variables**

All income variables were collected by interview.

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

The interviewers and the respondents have the option of reporting income gross or net (of tax on income at source and, if applicable, of social contributions) at component level. The forms in which the net amounts are recorded in database are net of tax on income at source and of social contributions.

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

The gross income was obtained by summing up net value, income tax prepayments and compulsory social insurance contributions. If the information on tax and insurance contributions was missing, the amounts were imputed on the basis of the results obtained. Only in the case of income from rental of property, the tax paid was subtracted from the gross income.

**3.3. Tracing rules**

Standard EU-SILC tracing rules are applied.

**4. COHERENCE**

In our opinion, there is no point in comparing the results with external sources.