

**NATIONAL STATISTICAL INSTITUTE**

**INTERMEDIATE QUALITY REPORT**

**EU-SILC 2007 OPERATION**

**BULGARIA**

**SOFIA, JUNE 2009**

CONTENTS	Page
<b>INTRODUCTION</b>	3
<b>1. COMMON CROSS-SECTION EUROPEAN UNION INDICATORS</b>	4
1.1. Common cross-sectional EU indicators based on the cross-sectional component of EU-SILC	4
1.1.1. Portfolio of Overarching Indicators calculated from SILC	4
1.1.2. Streamlined Social Inclusion Portfolio: Social Inclusion indicators calculated from EU-SILC	5
1.1.3. Portfolio of Pension Indicators calculate from SILC –Adequacy of pensions	9
1.2. Other indicators	12
1.2.1. Equivalised disposable income	12
1.2.2. Distribution of poor population	12
<b>2. ACCURACY</b>	13
2.1. Sample design	13
2.2. Sampling errors	17
2.3. Non-sampling errors	18
2.3.1. Sampling frame and coverage errors	18
2.3.2. Measurement and processing errors	18
2.3.3. Non-response errors	19
2.4. Mode of data collection	25
2.5. Interview duration	26
<b>3. COMPARABILITY</b>	27
3.1. Basic concepts and definitions	27
3.2. Components of income	29
3.2.1 Income definitions	36
3.2.2. The source or procedure used for the collection of income variables	36
3.2.3. The form in which income variables at component level have been obtained	36
3.2.4. The method used for obtaining income target variables in the required form	36
<b>4. COHERENCE</b>	36
4.1. Comparison of EU-SILC and HBS results	36
4.2. Comparison of Laeken Indicators based on EU-SILC 2006 and EU-SILC 2007	38
4.3. Comparison of income target variables – EU SILC 2006 and 2007	40

## **INTRODUCTION**

The Survey on Income and Living Conditions (SILC) in Bulgaria is an annual survey implemented by the NSI in the framework of Regulation (EC) No 1177/2003 of the European Parliament and of the Council. Basic aim of the survey is the study, both at European and national level of households' living conditions in relation to their income. The survey is the reference for comparative statistics on income distribution and social exclusion in the European Union.

The National Statistical Institute is making great efforts to precisely reflect the socio-economic situation of the country and its impact on the well-being of the people. Poverty assessment is one of the priorities of the NSI statistical survey program. This issue is widely discussed both by authorities and public and the need of regular and comparable with other countries information on poverty and its persistence for some groups is obvious. Implementing the EU-SILC project will provide the policy makers with suitable information on poverty indicators to help them to monitor poverty.

According to the methodology for measuring poverty, the poverty line is calculated with its relative concept and it is defined at 60% of the median total equalized disposable income of the household, using modified OECD equalized scale. 'Equivalent size' refers to the OECD modified scale which gives a weight of 1.0 to the first adult, 0.5 to other persons aged 14 or over who are living in the household and 0.3 to each child aged under 14.

As total equalized disposable income of the household is considered total net income (that is income after deducting taxes and social contributions) received from all household members.

More specifically the income components included in the survey are:

- Income from work
- Income from property
- Social transfers and pensions
- Monetary transfers from other households and
- Imputed income from the use of company car

This document provides common cross-sectional EU indicators based on the cross-sectional component of EU-SILC, a description of the accuracy, precision, the comparability and the coherence of the administrative data.

It is structured following the guidelines in the Commission Regulation (EC) no. 28/2004 (annex II). The report is divided in four chapters:

- (1) Common Cross-sectional European Union Indicators
- (2) Accuracy
- (3) Comparability
- (4) Coherence

## 1. COMMON CROSS-SECTIONAL EUROPEAN UNION INDICATORS

### 1.1. Common cross-sectional EU indicators based on the cross-sectional component of EU-SILC

The common cross sectional EU indicators refer to those indicators in Council of the Open method of coordination, based on the cross sectional sample of year 2007, with reference income period calendar year (2006). The indicators below have been calculated using Eurostat SAS program.

#### 1.1.1. Portfolio of Overarching Indicators calculated from SILC\_2007

*Table 1. [OV-1a] At-risk-of poverty threshold (illustrative values)*

Type of household	Euro	PPS
One person household	888	2006
Household with 2 adults end 2 children younger than 14 years	1865	4212

*Table 2. [OV-1a] At-risk-of poverty rate after social transfers (by age and gender)*

Age	Total	Male	Female
Total	22	21	23
0-17	30	-	-
18-64	19	19	19
65+	23	15	29

*Table 3. [OV-1b] Relative median at-risk-of poverty gap after social transfers (by age and gender)*

Age	Total	Male	Female
Total	34	32	38
0-17	44	-	-
18-64	40	41	40
65+	18	18	17

*Table 4. [OV-11] In-work at-risk-of-poverty rate (by gender)*

Total	Male	Female
6	6	6

**Table 5. [OV-2] Inequality of income distribution**  
S80/20 income quintile share ratio

<b>S80/S20 quintile share ratio</b>	6,9
-------------------------------------	-----

**Table 6. [OV-7a] Relative median income ratio**

<b>Relative median income ratio</b> (Persons aged 65 years and over compared to persons aged between 45 and 54 years)	0.7
--	-----

**Table 7. [OV-7b] Aggregate replacement ratio**

	<b>Total</b>	<b>Male</b>	<b>Female</b>
Ratio of income from pensions of persons aged between 65 and 74 years and income from work of persons aged between 50 and 59 years	0.36	0.40	0.37

**Table 8. [OV-C11] At-risk-of-poverty rate before social transfers (by age and gender). %**

<b>Age</b>	<b>Total</b>	<b>Male</b>	<b>Female</b>
Total	42	40	43
Y0_17	39	-	-
Y18_64	33	31	34
Y65_MAX	77	78	76

### 1.1.2. Streamlined Social Inclusion Portfolio: Social Inclusion indicators calculated from EU-SILC

**Table 9. [SI-P1] At-risk-of-poverty threshold (illustrative values)**

<b>Type of household</b>	<b>Euro</b>	<b>PPS</b>
One person household	888	2006
Household with 2 adults and 2 children younger than 14 years	1865	4212

**Table 10. [SI-P1a] At-risk-of-poverty rate by gender and selected age groups. %**

Age	Total	Male	Female
Total	22	21	23
Y0_17	30	-	-
Y18_64	19	19	19
Y65_MAX	23	15	29

**Table 11. [SI-P3] Relative median at-risk-of-poverty gap, by age and gender. %**

Age	Total	Male	Female
Total	34	38	32
Y0_17	44	-	-
Y18_64	40	40	41
Y65_MAX	18	17	18

**Table 12. [SI-P8] Proportion of population lacking at least three items in the 'economic strain and durables' dimension of the material deprivation items by age, gender and at-risk-of-poverty status**

age	sex	incgrp	2007
<b>TOTAL</b>	<b>T</b>	A_MD60	65q
		B_MD60	94q
		TOTAL	72q
	<b>M</b>	A_MD60	65q
		B_MD60	94q
		TOTAL	71q
	<b>F</b>	A_MD60	65q
		B_MD60	94q
		TOTAL	72q
<b>Y0_17</b>	<b>T</b>	A_MD60	62q
		B_MD60	96q
		TOTAL	72q
<b>Y18_64</b>	<b>T</b>	A_MD60	63q
		B_MD60	94q
		TOTAL	69q
	<b>M</b>	A_MD60	63q
		B_MD60	93q
		TOTAL	69q
	<b>F</b>	A_MD60	63q
		B_MD60	95q
		TOTAL	69q

<b>Y65_MAX</b>	<b>T</b>	A_MD60	<b>77q</b>
		B_MD60	<b>92q</b>
		TOTAL	<b>81q</b>
	<b>M</b>	A_MD60	<b>77q</b>
		B_MD60	<b>87q</b>
		TOTAL	<b>78q</b>
	<b>F</b>	A_MD60	<b>78q</b>
		B_MD60	<b>94q</b>
		TOTAL	<b>82q</b>

**Table 13.** [SI-S1] At-risk-of-poverty rate, by age and gender. %

<b>Age</b>	<b>Total</b>	<b>Male</b>	<b>Female</b>
Total	22	21	23
Y0_17	30	-	-
Y18_24	24	23	25
Y25_49	19	19	19
Y50_64	17	17	17
Y65_MAX	23	15	29

**Table 14.** [SI-S1a1] At-risk-of-poverty rate, by household type. %

<b>Household type</b>	<b>%</b>
Total	22
Households without dependent children	18
One adult younger than 64 years	29
One adult older than 65 years	55
Single female	54
Single male	28
Two adults younger than 65 years	16
Two adults, at least one aged 65 years and over	15
Three or more adults	10
Households with dependent children	25
Single parent with dependent children	30
Two adults with one dependent child	12
Two adults with two dependent children	22
Two adults with three or more dependent children	71
Three or more adults with dependent children	26

**Table 15. [SI-S1b1] At-risk-of-poverty rate, by work intensity of household by gender and selected age. %**

Household type	Work intensity	Age	Total	Male	Female
Households without dependent children	Max work		1	1	1
	Some work	Total	11	12	10
	None work		35	35	34
Households with dependent children	Max work		2	2	2
	Some ge 05	Total	12	12	12
	Some lt 05		53	54	51
	None work		87	87	87
Households without dependent children	Max work		-	-	-
	Some work	0_17	-	-	-
	None work		-	-	-
Households with dependent children	Max work		3	-	-
	Some eg 05	0_17	15	-	-
	Some lt 05		63	-	-
	None work		89	-	-
Households without dependent children	Max work		1	1	1
	Some work	18_64	11	12	10
	None work		40	48	33
Households with dependent children	Max work		2	1	3
	Some eg 05	18_64	11	11	11
	Some lt 05		50	51	50
	None work		87	88	87
Households without dependent children	Max work		-	-	-
	Some work	65_MAX	12	11	14
	None work		21	13	36
Households with dependent children	Max work		1	-	1
	Some eg 05	65_MAX	6	2	9
	Some lt 05		16	13	18
	None work		69	63	75

**Table 16. [SI-S1c] At-risk-of-poverty rate, by most frequent activity status and by gender. %**

Activity status	Total	Male	Female
Employment	6	6	6
Non employment	32	31	32
Unemployment	56	61	51
Retired	23	17	27
Inactive population - Other	19	16	21



**Table 17. [SI-S1d] At-risk-of-poverty rate, by accommodation tenure status and by gender and selected age group. %**

Accommodation status	Age	Total	Male	Female
Owner	Total	21	20	23
Rent	Total	29	32	26
Owner	0_17	29	-	-
Rent	0_17	41	-	-
Owner	18_64	19	19	19
Rent		26	28	24
Owner	65_MAX	24	15	30
Rent		6	7	6

**Table 18. [SI-S1e] Dispersion around et-risk-of-poverty threshold [by gender and by gender and selected age group. %**

Threshold	Age	Total	Male	Female
40% of median	Total	11	11	11
	0_17	18	-	-
	18_64	11	11	11
	65_MAX	5	3	6
50% of median	Total	16	15	16
	0_17	24	-	-
	18_64	15	15	15
	65_MAX	12	7	16
70% of median	Total	29	27	30
	0_17	37	-	-
	18_64	25	25	25
	65_MAX	34	25	41

**Table 19. [SI-S4] Mean number of items lacked by persons considered as deprived in the 'economic strain and durables' dimension by age, gender and at-risk-of-poverty status**

age	sex	Total	Male	Female
<b>TOTAL</b>	A_MD60	4	4.1	4
	B_MD60	5.6	5.7	5.5
	TOTAL	4.5	4.5	4.5
<b>Y0_17</b>	A_MD60	4		
	B_MD60	6		
	TOTAL	4.8		
<b>Y18_64</b>	A_MD60	4	4	4
	B_MD60	5.6	5.7	5.5
	TOTAL	4.4	4.5	4.4
<b>Y65_MAX</b>	A_MD60	4.1	4.1	4.2

	B_MD60	5	5.1	4.9
	TOTAL	4.4	4.3	4.4

**Table 20.** [SI-C1] Inequality of income distribution S80/20 income quintile share ratio

<b>S80/S20 quintile share ratio</b>	6.9
-------------------------------------	-----

**Table 21.** [SI-C2] Inequality of income distribution Gini coefficient

<b>Gini coefficient</b>	35
-------------------------	----

**Table 22.** [SI-C6] At-risk-of-poverty rate before social transfers, by gender and selected age groups (except pensions).%

Age	Total	Male	Female
Total	26	25	27
0_17	34	-	-
18_64	23	23	23
Y65_MAX	28	18	35

**Table 23.** [SI-C8] In-work at-of-risk-of-poverty rate (by full time/part work).%

Type of work	%
Full time	5
Part time	15

### 1.1.3. Portfolio of Pension Indicators calculate from SILC – Adequacy of pensions

**Table 24.** [PN-P1] At-risk-of-poverty rate of older people.%

Age	Total	Male	Female
0_64	21	22	21
65_MAX	23	15	29

**Table 25.** [PN-P2] Relative median income ratio of elderly people (65+)

	<b>Total</b>	<b>Male</b>	<b>Female</b>
Relative median income ratio of elderly people (65+)	0.7	0.81	0.63

**Table 26.** [PN-P3] Aggregate replacement ratio.

	<b>Total</b>	<b>Male</b>	<b>Female</b>
Aggregate replacement ratio	0.36	0.40	0.37

**Table 27.** [PN-S1] At-risk-of-poverty rate of the older people. %

<b>Age</b>	<b>Total</b>	<b>Male</b>	<b>Female</b>
0_59	22	22	21
0-74	21	21	21
60+	22	15	26
75+	30	18	38

**Table 28.** [PN-S2] Relative median income ratio of elderly people (60+)

	<b>Total</b>	<b>Male</b>	<b>Female</b>
Relative median income ratio of elderly people (60+)	0.73	0.83	0.66

**Table 29.** [PN-S4] Inequality of income distribution S80/20 income quintile share ratio.

	<b>Age</b>	<b>S80/20</b>
Inequality of income distribution S80/20 income quintile share ratio	0-64	7.7
	65+	4.0

**Table 30.** [PN-S5] Relative median at-risk-of-poverty gap of elderly people.%

<b>Age</b>	<b>Total</b>	<b>Male</b>	<b>Female</b>
65+	18	17	18
75+	18	15	21

**Table 31.** [SI-S6] At risk of poverty rate for pensioners. %

	<b>Total</b>	<b>Male</b>	<b>Female</b>
At risk of poverty rate for pensioners	23	17	27

**Table 32.** [PN-S7] At risk of poverty rate of older people by accommodation tenure status. %

<b>Accommodation tenure status</b>	<b>Age</b>	<b>Total</b>
Owner	60+	22
Rent		19
Owner	65+	24
Rent		6
Owner	75+	30
Rent		54

**Table 33.** [PN-S8] Dispersion around the at-risk-of-poverty threshold. %

<b>Threshold</b>	<b>Age</b>	<b>%</b>
50% of median	60+	12
	65+	12
	75+	17
70% of median	60+	32
	65+	34
	75+	40

**Table 34.** [PN-P9] Gender differences in the at risk of poverty rate of older people.

<b>Age</b>	<b>Gender differences</b>
0-64	-6
65+	-30

**Table 35.** [PN-P10] Gender differences in the relative median income ratio of older people.

Household type	Gender differences
Single person (Persons aged 65 years and over compared to persons aged less than 65 years)	0.04

**Table 36.** [PN-S10] Gender differences in the relative median income ratio of older people.

Household type	Gender differences
Single person (Persons aged 60 years and over compared to persons aged less than 60 years)	0.02
Single person (Persons aged 70 years and over compared to persons aged less than 75 years)	-0.08

## 1.2. Other indicators

### 1.2.1. Equivalised disposable income

	National currency	Euro
Mean equivalised disposable income	3 351.18	1 713.46

## 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 subsamples and follows stratified two-stage cluster sampling design.

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 stage 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 substratification criteria

The general population and administrative-territorial division by statistical districts of the settlement, from which the sample for the survey is formed, comprises all the households in the country. 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.

Subsample № 1 is replaced by subsample № 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.

*Table 35. Sampling design information for each subsample (rotational group)*

STRATUM - NUTS3	1st stage - PSU			2nd stage - Households		
	total	urban	rural	total	urban	rural
01 Blagoevgrad	12	7	5	60	35	25
02 Burgas	16	11	5	80	55	25
03 Varna	18	15	3	90	75	15
04 Veliko Tarnovo	12	8	4	60	40	20
05 Vidin	5	3	2	25	15	10
06 Vratsa	9	5	4	45	25	20
07 Gabrovo	6	5	1	30	25	5
08 Dobrich	8	5	3	40	25	15
09 Kardzhali	5	2	3	25	10	15
10 Kyustendil	6	4	2	30	20	10

11	Lovech	7	4	3	35	20	15
12	Montana	7	4	3	35	20	15
13	Pazardzhik	11	7	4	55	35	20
14	Pernik	6	4	2	30	20	10
15	Pleven	12	8	4	60	40	20
16	Plovdiv	27	19	8	135	95	40
17	Razgrad	5	2	3	25	10	15
18	Ruse	10	7	3	50	35	15
19	Silistra	5	2	3	25	10	15
20	Sliven	8	5	3	40	25	15
21	Smolyan	5	3	2	25	15	10
22	Sofia Capital	51	48	3	255	240	15
23	Sofia	11	6	5	55	30	25
24	Stara Zagora	14	10	4	70	50	20
25	Targovishte	6	3	3	30	15	15
26	Haskovo	10	7	3	50	35	15
27	Shumen	8	5	3	40	25	15
28	Yambol	6	4	2	30	20	10
	<b>Total</b>	<b>306</b>	<b>213</b>	<b>93</b>	<b>1530</b>	<b>1065</b>	<b>465</b>

### 2.1.6. Sample distribution over time

As the survey is annual, the sample of households is not distributed over time. The survey is carried from May to August of the year 2007 with reference period of data the previous year (2006).

*Table 38. Sample distribution (household questionnaire) over time*

Month	Data	Number	%
May	1 – 10	764	13.1
	11 – 20	2204	37.7
	21 – 31	2268	38.8
June	1 – 10	408	7.0
	11 – 20	37	0.6
	21 – 31	22	0.4
July	1 – 10	1	0.0
	11 – 20	4	0.1
	21 – 31	78	1.3
August	1 – 10	53	0.9
	11 – 20		
	21 – 31	3	0.1
	<b>Total</b>	<b>5842</b>	<b>100.00</b>

\*Note: no data for 28 households

### 2.1.7. Renewal of sample: rotational groups

### 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. Each of the panels is kept in the sample for four consecutive years before being replaced by another panel of the same size. Exception is made for the first three years where one sub-sample is surveyed only once, one is surveyed twice and one is surveyed three times.

This design ensures an overlap of 75% between two consecutive years, 50% between three consecutive years and finally 25% between four years.

For the 2007 survey the sub-sample № 5 was selected as a replacement of the sub-sample № 1.

### 2.1.8. Weightings

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.

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

##### Design weights

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.

##### Non-response adjustment

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.

##### Adjustments to external data (calibration)



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

#### Base weights

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. 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.

### Adjustments to external data (calibration)

The last stage of calculations consisted in combining the four independent sub-samples, 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.

### Final cross-sectional weights

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 Intermediate Quality Report

subpopulation	est	stat_se	kish	n
HCR, after social transfers: Age 0-15	0.320956	0.0157207	1.145974	1 844
HCR, after social transfers: Age 16-2	0.299877	0.0151431	1.142028	1 508
HCR, after social transfers: Age 25-4	0.231860	0.0094646	1.158528	4 091
HCR, after social transfers: Age 50-6	0.201462	0.0106059	1.201563	2 596
HCR, after social transfers: Age more	0.223774	0.0108667	1.158970	2 401
HCR, after social transfers: Male	0.240068	0.0087307	1.166769	5 986
HCR, after social transfers: Female	0.251266	0.0081160	1.159383	6 454
HCR, after social transfers: Male Age	0.347016	0.0191103	1.157837	977
HCR, after social transfers: Male Age	0.302477	0.0184413	1.138355	758
HCR, after social transfers: Male Age	0.229346	0.0101916	1.159716	2 016
HCR, after social transfers: Male Age	0.202003	0.0118561	1.204270	1 239

HCR, after social transfers: Male Age	0.148113	0.0107634	1.109133	996
HCR, after social transfers: Female A	0.293469	0.0180504	1.125983	867
HCR, after social transfers: Female A	0.297171	0.0185720	1.145420	750
HCR, after social transfers: Female A	0.234427	0.0105397	1.156782	2 075
HCR, after social transfers: Female A	0.200977	0.0115247	1.199079	1 357
HCR, after social transfers: Female A	0.276291	0.0138911	1.170570	1 405
HCR, after social transfers: Male Age	0.220025	0.0080937	1.169234	5 009
HCR, after social transfers: Female A	0.244375	0.0077368	1.166604	5 587
HCR, after social transfers: Male Age	0.235044	0.0090649	1.167398	4 013
HCR, after social transfers: Female A	0.234910	0.0086608	1.164999	4 182
HCR, after social transfers: Male Age	0.255726	0.0097182	1.164583	4 990
HCR, after social transfers: Female A	0.245141	0.0092565	1.155665	5 049
HCR, after social transfers: One pers	0.281294	0.0235064	1.217798	328
HCR, after social transfers: One pers	0.502633	0.0268335	1.183985	540
HCR, after social transfers: One pers	0.262235	0.0226477	1.216483	298
HCR, after social transfers: One pers	0.499401	0.0261948	1.203900	570
HCR, after social transfers: One pers	0.409075	0.0204590	1.202198	868
HCR, after social transfers: 2 adults	0.189483	0.0155257	1.212142	1 022
HCR, after social transfers: 2 adults	0.133568	0.0114024	1.093890	1 298
HCR, after social transfers: Other hh	0.144714	0.0138229	1.195926	2 056
HCR, after social transfers: Single p	0.293790	0.0347624	1.222849	205
HCR, after social transfers: 2 adults	0.158859	0.0152815	1.119964	1 215
HCR, after social transfers: 2 adults	0.252730	0.0211770	1.161020	1 320
HCR, after social transfers: 2 adults	0.752223	0.0306076	1.179156	454
HCR, after social transfers: Other hh	0.288526	0.0163375	1.144478	4 002
HCR, after social transfers: Hh witho	0.195768	0.0093034	1.188953	5 244
HCR, after social transfers: Hh with	0.280940	0.0119545	1.148326	7 196
HCR, after social transfers: Accommod	0.242604	0.0081685	1.162247	11 775
HCR, after social transfers: Accommod	0.315238	0.0403751	1.170323	510
HCR, after social transfers: Main act	0.138401	0.0072069	1.149139	4 443
HCR, after social transfers: Main act	0.519171	0.0181738	1.164043	1 688
HCR, after social transfers: Main act	0.219702	0.0093374	1.160859	3 562
HCR, after social transfers: Main act	0.290885	0.0129208	1.146241	2 682
HCR, after social transfers: Main act	0.135802	0.0078250	1.120012	2 398
HCR, after social transfers: Main act	0.569061	0.0203870	1.159378	778
HCR, after social transfers: Main act	0.166746	0.0101284	1.136718	1 466
HCR, after social transfers: Main act	0.319931	0.0166990	1.158619	1 311
HCR, after social transfers: Main act	0.141489	0.0082930	1.181702	2 045
HCR, after social transfers: Main act	0.475640	0.0213244	1.159193	910
HCR, after social transfers: Main act	0.256546	0.0111177	1.169639	2 096
HCR, after social transfers: Main act	0.264203	0.0140269	1.127476	1 371
HCR, after social transfers: Work int	0.860079	0.0238477	1.039830	923
HCR, after social transfers: Work int	0.236693	0.0139660	1.118766	4 701
HCR, after social transfers: Work int	0.115435	0.0115985	1.208605	1 572
HCR, after social transfers: Work int	0.319206	0.0143231	1.192040	2 345
HCR, after social transfers: Work int	0.275829	0.0391987	1.284666	408
HCR, after social transfers: Work int	0.051917	0.0057402	1.065660	1 237
HCR, after social transfers: Work int	0.120608	0.0115853	1.218254	1 254
HCR, before social transfers includin	0.367452	0.0194276	1.141055	977

HCR, before social transfers includin	0.281072	0.0179902	1.123850	758
HCR, before social transfers includin	0.232773	0.0108848	1.140376	2 016
HCR, before social transfers includin	0.229399	0.0123133	1.187727	1 239
HCR, before social transfers includin	0.171474	0.0114286	1.096699	996
HCR, before social transfers includin	0.305764	0.0183145	1.112583	867
HCR, before social transfers includin	0.305986	0.0183654	1.142938	750
HCR, before social transfers includin	0.228916	0.0110374	1.132764	2 075
HCR, before social transfers includin	0.223213	0.0117379	1.190896	1 357
HCR, before social transfers includin	0.326730	0.0136223	1.158906	1 405
HCR, before social transfers excludin	0.415334	0.0197160	1.138639	977
HCR, before social transfers excludin	0.326751	0.0192504	1.118335	758
HCR, before social transfers excludin	0.282918	0.0114078	1.126046	2 016
HCR, before social transfers excludin	0.362368	0.0144349	1.146044	1 239
HCR, before social transfers excludin	0.765093	0.0141092	1.197618	996
HCR, before social transfers excludin	0.349141	0.0187627	1.119896	867
HCR, before social transfers excludin	0.364408	0.0201849	1.142121	750
HCR, before social transfers excludin	0.277990	0.0117248	1.124353	2 075
HCR, before social transfers excludin	0.444923	0.0154285	1.152314	1 357
HCR, before social transfers excludin	0.750173	0.0124351	1.160201	1 405
Median equivalised disposable income	2 768	27.0629361	1.150796	12 440
At-risk-of-poverty threshold, one per	1 104	36.3892154	1.205489	868
At-risk-of-poverty threshold, hh 2 ad	1 658	136.7185560	1.146604	1 320
S80/S20	11.096998	0.9279209	1.120912	12 440
Relative median at-risk-of-poverty ga	0.492499	0.0365348	1.141651	977
Relative median at-risk-of-poverty ga	0.684406	0.0411919	1.130482	758
Relative median at-risk-of-poverty ga	0.545907	0.1399400	1.144048	2 016
Relative median at-risk-of-poverty ga	0.476638	0.0358297	1.155167	1 239
Relative median at-risk-of-poverty ga	0.189443	0.0132556	1.146706	996
Relative median at-risk-of-poverty ga	0.541463	0.0089989	1.158905	867
Relative median at-risk-of-poverty ga	0.611766	0.0230901	1.154409	750
Relative median at-risk-of-poverty ga	0.635269	0.0119708	1.144112	2 075
Relative median at-risk-of-poverty ga	0.421578	0.0074908	1.156465	1 357
Relative median at-risk-of-poverty ga	0.189750	0.0086004	1.151971	1 405
Median income below the at-risk-of-po	3 351	22.2152978	1.150796	11 827
HCR P.L.as 50% median	0.193407	0.0082481	1.178757	12 440
HCR P.L.as 70% median	0.304193	0.0085168	1.149852	12 440
HCR P.L.as 40% median	0.154684	0.0076389	1.197266	12 440
Gini coefficient	0.331753	0.0060795	1.083582	11 827
Mean equivalised disposable income	3 351	45.8682527	1.109788	11 827

## 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. Student's 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.

As there was a period of 2 months between the drawing of households and the start of survey, or data in ISD is not yet updated (sometimes the delay could be from 6 months to 1 year), over-coverage, under-coverage and misclassification could be happen.

Over-coverage:

- dead persons
- households currently living abroad
- Address is not the principal residence
- no household in selected address (dwelling is inhabitant, used for non housing purposes)

Under-coverage:

- Persons who moved from a household to create a new household
- Immigrants who came in country before the survey.

Misclassification:

Household who moved from a region to another region of territory of the country

### **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 39.** Number of households for which an interview is accepted for the database. Rotational group breakdown and total

Rotational group	Households	%
1	1.039	24.3
2	1.089	25.5
3	1.067	25.0
4	1.075	25.2
Total	4.270	100.0

**Table 40.** Number of persons of 16 years or older who are members of the households for which the interview is accepted for the database, and who completed a personal interview. Rotational group breakdown and total

Rotational group	Households' members	%
1	3.080	24.8
2	3.087	24.8
3	3.167	25.5
4	3.106	25.0
Total	12.440	100.0

### 2.3.3.2. Unit non-response

- Household non-response rates  $NRh = [1 - (Ra * Rh)] * 100 = 27.18\%$ ,

where

$$Ra = \frac{\text{Number of addresses successfully contacted}}{\text{Number of valid addresses selected.}} = \frac{[DB120 = 11] 5708}{[DB120 = all] - [DB120 = 23] 5870 - 6} = 0.973397 = 0.973$$

$$Ra = 0.973$$

Ra – the address contact rate

$$Rh = \frac{\text{Number of household interviews completed and accepted for the database}}{\text{Number of eligible households at contacted addresses.}} = \frac{[DB135=1] 4270}{[DB130=all] 5708} = 0.748073 = 0.748$$

$$Rh = 0.748$$

Rh – the proportion of complete household interviews accepted for the database

$$NRh=(1-0.973*0.748)*100= 27.18\%$$

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

$$Rp = \frac{\text{Number of personal interview completed}}{\text{Number of eligible individuals}} = \frac{10,355}{10,596} = 0,977256$$

Rp – the proportion of complete personal interviews within the households accepted for the database

$$NRp=(1-0.977)*100=2.27\%$$

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

$$*NRp = [1 - (0.973 * 0.748 * 0.977)] * 100 = 28.84\%;$$

- *Information on non-response*

		total	Rotation 1	Rotation 2	Rotation 3	Rotation 4
All households	Ra	0.9734	0.9463	0.9882	0.9827	0.9778
	Rh	0.7481	0.7195	0.7594	0.7530	0.7608
	Rp	0.9773	0.9705	0.9784	0.9798	0.9802
	NRp	2.27	2.95	2.16	2.02	1.98
	*NRp	28.84	33.92	26.57	27.50	27.08

Ra – the address contact rate

Rh – the proportion of complete household interviews accepted for the database

Rp – the proportion of complete personal interviews within the households accepted for the database

NRp - Individual non-response rates

\*NRp - Overall individual non-response rates

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

**Table 41.** Distribution of households by ‘record of contact at address’ (DB120)

	Number of households	%
Total (DB120 =11 to 23)	5870	100.0
Address contacted (DB120 =11)	5708	97.3
Address non-contacted (DB120 =21 to 23)	162	2.8
Address cannot be located (DB120 =21)	62	1.0
Address unable to access (DB120 =22)	94	1.6
Address does not exist (DB120 =23)	6	0.1



**Table 42.** Distribution of households by 'record of contact at address' (DB120) for each rotational group

	Rotation 1	Rotation 2	Rotation 3	Rotation 4
Total (DB120 =11 to 23)	1530	1451	1444	1445
Address contacted (DB120 =11)	1444	1434	1417	1413
Address non-contacted (DB120 =21 to 23)	86	17	27	32
Address cannot be located (DB120 =21)	32	7	9	14
Address unable to access (DB120 =22)	50	10	16	18
Address does not exist (DB120 =23)	4	0	2	0

**Table 43.** Distribution of households by 'household questionnaire result' (DB130) and by 'household interview acceptance' (DB135)

	Number of households	%
Total (DB130 =all)	5708	100.0
Household questionnaire completed (DB130 =11)	4273	74.9
Interview not completed (DB130 =21 to 24)	1435	25.2
Total interview not completed (DB130 =21 to 24)	1435	100.00
Refusal to co-operate (DB130 =21)	558	38.9
Entire household temporarily away (DB130 =22)	273	19.0
Household unable to respond (DB130 =23)	252	17.6
Other reasons	352	24.5
Household questionnaire completed (DB135=1+2)	4273	100.00
Interview accepted for database (DB135=1)	4270	99.9
Interview rejected (DB135=2)	3	0.1

**Table 44.** Distribution of households by 'household questionnaire result' (DB130) and by 'household interview acceptance' (DB135) for each rotational group

	Rotation 1	Rotation 2	Rotation 3	Rotation 4
Total (DB130 =all)	1444	1434	1417	1413
Household questionnaire completed (DB130 =11)	1040	1089	1067	1077
Interview not completed (DB130 =21 to 24)	404	345	350	336
Refusal to co-operate (DB130 =21)	190	116	115	137
Entire household temporarily away (DB130 =22)	103	61	59	50
Household unable to respond (DB130 =23)	80	64	52	56
Other reasons	31	104	124	93
Household questionnaire completed (DB135=1+2)	1040	1089	1067	1077
Interview accepted for database (DB135=1)	1039	1089	1067	1075
Interview rejected (DB135=2)	1	0	0	2

#### 2.3.3.4. Distribution of substituted units

No substitution was applied in our survey

#### 2.3.3.5. Item non-response

**Table 45.** Item non-response (income variables)

Item non-response	(A) % of households	(B) % of households	(C) % of households
-------------------	---------------------	---------------------	---------------------

	having received an amount	with missing values	with partial information
Total household gross income (HY010)	40.6	2.6	56.7
Total disposable household income (HY020)	40.5	0.6	58.8
Total disposable household income before social transfers except old-age and survivor's benefits (HY022)	35.8	0.6	62.6
Total disposable household income before social transfers including old-age and survivor's benefit (HY023)	17.7	24.6	57.7
<b>Net income components at household level</b>			
Income from rental of a property or land (HY040N)	13.2	86.8	
Family related allowances (HY050N)	19.6	80.4	
Social exclusion not elsewhere classified (HY060N)	17.1	82.9	
Housing allowance (HY070)	0.1	99.9	
Interests, dividends, etc. (HY090N)	0.4	99.6	
Regular inter-household cash transfer received (HY080)	8.9	91.1	
Income received by people aged < 16 (HY110)		100.0	
Taxes on wealth (HY120N)	82.1	17.9	
Regular inter-household cash transfer paid (HY130)	5.3	94.7	
<b>Gross income components at household level</b>			
Income from rental of a property or land (HY040G)	13.2	86.8	
Family related allowances (HY050G)	19.6	80.4	
Social exclusion not elsewhere classified (HY060G)	17.1	82.9	
Housing allowance (HY070G)	0.1	99.9	
Interests, dividends, etc. (HY090G)	0.4	99.6	
Regular inter-household cash transfer received (HY080G)	8.9	91.1	
Income received by people aged < 16 (HY110G)		100.0	
Taxes on wealth (HY120G)	82.1	17.9	
Regular inter-household cash transfer paid (HY130G)	5.3	94.7	
<b>Net income components at personal level</b>	<b>% of persons 16+ having received an amount</b>	<b>% of persons 16+ with missing values</b>	<b>% of persons 16+ with partial information</b>
Employee cash or near cash income (PY010N)	23.8	2.5	15.9
Net non-cash employee income (PY020N)	6.1	93.9	
Cash benefits or losses from self-employment (PY050N)	11.2	1.1	1.2
Pension from individual private plans (PY080N)	0.0		
Unemployment benefits (PY090N)	0.7	99.3	
Old age benefits (PY100N)	31.6	1.1	0
Survivor's benefits (PY110N)	0.6	99.4	
Sickness benefits (PY120N)	1.1	98.9	
Disability benefits (PY130N)	5.6	94.4	

Education-related allowances (PY140N)	0.2	99.8	
<b>Gross income components at personal level</b>			
Employee cash or near cash income (PY010G)	17.3	2.5	22.4
Net non-cash employee income (PY020G)	6.1	93.9	
Cash benefits or losses from self-employment (PY050G)	10.9	0.4	2.2
Pension from individual private plans (PY080G)	0.0		
Unemployment benefits (PY090G)	0.7	99.3	
Old age benefits (PY100G)	31.6	1.1	0
Survivor's benefits (PY110G)	0.6	99.4	
Sickness benefits (PY120G)	1.1	98.9	
Disability benefits (PY130G)	5.6	94.4	
Education-related allowances (PY140G)	0.2	99.8	
Gross monthly earnings for employees (PY200G)	28.1	8.0	2.4

### 2.3.3.6. Total item non-response at unit level of the common cross-sectional European Union indicators based on the cross-sectional component of EU-SILC and for equivalised disposable income

*Table 46. Item non-response at unit level of the common cross-sectional European Union indicators and for equivalised disposable income*

Indicator	Achieved sample size	Total item non-response
At-risk-of-poverty rate after social transfers -total	11826	614
At-risk-of-poverty rate after social transfers -men total	5677	309
At-risk-of-poverty rate after social transfers -women total	6149	305
At-risk-of-poverty rate after social transfers -0-17 years	1759	445
At-risk-of-poverty rate after social transfers -18-64 years	7395	440
At-risk-of-poverty rate after social transfers -men 18-64 years	3624	217
At-risk-of-poverty rate after social transfers -women 18-64 years	3771	223
At-risk-of-poverty rate after social transfers -65+ years	2347	54
At-risk-of-poverty rate after social transfers -men 65+ years	970	17
At-risk-of-poverty rate after social transfers -women 65+ years	1377	14
At-risk-of-poverty threshold -single	866	2
At-risk-of-poverty threshold -2 adults, 2 children	1320	56
Inequality of income distribution S80/S20 income quintile share ratio	12440	

## 2.4. Mode of data collection

EU-SILC is a non-obligatory, representative survey of individual households, performed by a face-to-face interview technique with the use of paper form questionnaires (the so called PAPI method). Two types of questionnaire: individual and household questionnaire are applicable.

In tables 47 and 48 the distributions of household members aged 16 and over by 'data status (RB250)

and by ‘type of interview’ (RB260) are presented.

**Table 47.** Distribution of household members (RB245=1) by “Data status” (RB250)

	<b>Total</b>	<b>RB250=11</b>	<b>RB250=21</b>	<b>RB250=23</b>	<b>RB250=31</b>	<b>RB250=32</b>	<b>RB250=33</b>
Total	10596	10355	3	42	71	64	61
%	100	97.7	0	0.4	0.7	0.6	0.6
Rotation 1							
Total	2612	2535	0	4	26	23	24
%	100	97.1	0	0.2	1.0	0.9	0.9
Rotation 2							
Total	2635	2578	3	13	19	5	17
%	100	97.8	0	0.5	0.7	0.2	0.6
Rotation 3							
Total	2674	2620	0	8	13	18	15
%	100	98.0	0	0.3	0.5	0.7	0.6
Rotation 4							
Total	2675	2622	0	17	13	18	5
%	100	98.0	0	0.6	0.5	0.7	0.2

**Table 48.** Distribution of household members (RB245=1) by “Type of interview” (RB260)

	<b>Total</b>	<b>Face to face (1)</b>	<b>Proxy interview (5)</b>
Total	10355	7237	3118
%	100	69.9	30.1
Rotation 1			
Total	2535	1809	726
%	100	71.4	28.6
Rotation 2			
Total	2578	1783	795
%	100	69.2	30.8
Rotation 3			
Total	2620	1866	754
%	100	71.2	28.8
Rotation 4			
Total	2622	1779	843
%	100	67.8	32.2

The interviewers decided on proxy interviews only if the substitute respondents were well informed about the situation in the household and there was no other possibility to get the information. Proxy interviews were performed in the following situations:

- no contact with the respondent because of long-term absence (e.g. work in another town or abroad);

- respondent's disability or illness;
- the respondent was only available late at night and was not willing to participate in such a long interview, while at the same time the proxy could provide detailed information, even based on the documents, such as tax statements.

## **2.5. Interview duration**

The average household interview duration was about 28 minutes, while the average individual interview duration was about 21 minutes.

The mean interview duration per household was estimated at 79 minutes. The average has been calculated according to the duration being registered in the questionnaires as the sum of the duration of the household interviews plus the sum of the duration of all personal interviews, divided by the number of household questionnaires completed and accepted for database.

## **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***

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. For SILC 2007; the income reference period is the year 2006

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

The reference period for income tax repayment and compulsory social insurance contributions is the previous calendar year (2006).

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

Taxes on wealth paid during the income reference period (2006) were recorded.

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

The income reference period is the previous calendar year (year 2006) and the current variables refer to the fieldwork period (May - August 2007). Therefore the lag is at minimum 4 months and at maximum 8 months.

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

EU-SILC was performed on the territory of the whole country between May and August 2007.

### ***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 Income definitions**

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

Variables collected since 2007 but not included in the household income (according to recommendations Eurostat):

- interest paid on mortgages;
- non-cash employee income;
- 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;

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

$HY010 = HY040G + HY050G + HY060G + HY070G + HY080G + HY090G + HY110G +$  (for all household members) $[PY010G + PY021G + PY050G + PY090G + PY100G + PY110G + PY120G + PY130G + PY140G]$ .

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

$HY020 = HY010 - HY120G - HY130G - HY140G$

***Total disposable household income, before social transfers other than old age and survivors' benefit (HY022)***

$HY022 = HY020 -$  (for all household members) $[PY090G + PY120G + PY130G + PY140G] - HY050G - HY060G - HY070G$

***Total disposable household income, before social transfers including old age and survivors' benefit (HY023)***

$HY023 = HY020 -$  (for all household members) $[PY090G + PY120G + PY130G + PY140G + HY100G + PY110G] - HY050G - HY060G - HY070G$

***Imputed rent (HY030G)***

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

### ***Income from rental of property or land (HY040G)***

Asked as Eurostat recommends, Income from rental of a property or land refers to the income received, during the income reference period, from renting a property (for example renting a dwelling –not included in the profit/loss of unincorporated enterprises-receipts from boarders or lodgers, or rent from land) after deducting costs such as mortgage interest repayments, minor repairs, maintenance, insurance and other charges.

### ***Family/children related allowances (HY050G)***

Family / children related allowance includes:

- Cash benefits for pregnancy and childbirth;
- Parental paid leave for bringing up small child;
- Birth grant;
- Lump sum benefit for pregnancy;
- Lump sum benefit for childbirth;
- Monthly benefit for bringing up a child;
- Monthly benefit for bringing up child with permanent disabilities;
- Monthly allowance for a child;
- Monthly allowances for children with strong disabilities;
- Monthly allowance for children, accommodated in families of relatives or foster families;
- Monthly allowance for children with disabilities, accommodated in families of relatives or foster families;
- Lump sum for children, accommodated in families of relatives or foster families;
- One-time targeted benefit for pupils first grade

### ***Social exclusion payments not elsewhere classified (HY060G)***

Social benefits in the function ‘social exclusion not elsewhere classified include:

- Targeted benefit for heating;
- Targeted benefit for free traveling by railway or bus transport;
- Lump-sum social aid;
- Monthly social allowance

### ***Housing allowances (HY070G)***

The housing allowances include:

- Targeted benefit for rent payment of municipal dwelling

### ***Regular inter-household cash transfers received (HY080G)***

Regular inter-household cash transfers received refer to regular monetary amounts received, during the income reference period, from other households or persons.

### ***Interest, dividends, profit from capital investments in incorporated businesses (HY090G)***

Interests, dividends, profits from capital investment in an unincorporated business refer to the amount of interest from assets such as bank accounts, certificates of deposit, bonds, etc, dividends and profits from capital investment in an unincorporated business, in which the person does not work, received during the income reference period less expenses incurred.

### ***Interest paid on mortgage (HY100G)***

Interest paid on mortgage refers to the total gross income, before deducting any tax credit or tax allowance of mortgage interest on the main residence of the household during the income reference period.

It excludes:

- Any other mortgage payments, either interest or principal, made at the same time, such as mortgage protection insurance or home and contents insurance
- Payments on mortgages to obtain money for housing purposes (repairs, renovations etc.) or for non housing purposes
- Repayments of the principal or capital sum

### ***Income received by people aged under 16 (HY110G)***

Income received by people aged under 16 is defined as the gross income received by all household members aged under sixteen during the income reference period.

This income includes:

- Pension from deceased parent;
- Disability pension;
- Education-related allowances

Income received from other household members is not included.

### ***Regular taxes on wealth (HY120G)***

Regular taxes on wealth refers to taxes that are paid periodically on the ownership or use of land or buildings by owners. The regular taxes on wealth provided will be those paid during the income reference period.

### ***Regular inter-household transfers paid (HY130G)***

Regular inter-household cash transfers paid refer to regular monetary amounts paid, during the income reference period to other households or persons.

### ***Tax on income and social insurance contributions (HY140G)***

Tax on income refers to taxes on income, profits and capital gains. They are assessed on the actual or presumed income of individuals, households or tax-unit. They include taxes assessed on holdings of property, land or real estate when these holdings are used as a basis for estimating the income of their owners.

Taxes on income include:

- Taxes on individual, household or tax-unit income (income from self-employment, property, entrepreneurship, pensions, etc.) included taxes deducted by employers (pay-as-you earn taxes) other taxes at source and taxes on the income of owners of unincorporated enterprise paid during the income reference period.
- Tax reimbursement received during the income reference period related to tax paid for the income received during the income reference period or for income received in previous year. This value will be taken into account as a reduction of taxes paid.
- Any interest charged on arrears of taxes due and any fines imposed by taxation authorities.

Social insurance contributions refer to employees' and self-employed contributions paid during the income reference period to either mandatory government or employer-based insurance schemes (pension, health, etc.).

### ***Repayments/receipts for tax adjustments (HY145)***

Repayments/receipts for tax adjustments refer to the money paid to/received from Taxes Authorities related to the income received.

### ***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 form 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.

**4. COHERENCE**

Coherence refers to the comparison of target variables and of the number of persons who receive income from each income component, with external sources (both administrative data and data from other surveys) being considered as reliable.

#### 4.1. Comparison of EU-SILC and HBS results

The objective of this section is to compare HBS (Household Budget Survey) and EU-SILC results. When comparing these two sources we must take into account the discrepancies. The differences are to great extent brought about by the methodological diversity. Here are the main methodological differences:

- Different reference periods for income variables – in HBS the reference period is 1 month and, following Eurostat’s recommendation, the annual income is the monthly income multiplied by 12, which in the case of irregular income, like that from farming, can bring about considerable distortions. In EU-SILC the reference period is a previous calendar year;
- Different types of income are taken into account i.e. in HBS the information is collected both about the income in cash and in kind, while in EU-SILC – only about the income in cash (with a few exceptions), which may be important for the income from farming and social benefits other than retirement pay and pension;
- Different way of data collection – in HBS the respondents make records in the so called diary. They have to determine the data sources themselves and do not have them listed in the diary. In EU-SILC each respondent is asked detailed questions. In EU-SILC all the income missing data are imputed, while there is no imputation in HBS;
- HBS data are not weighted.

**Table 49.** Household by size

Households type	HBS 2005	EU-SILC 2007
One person household	24.3	19.5
Two persons household	32.5	28.0
Three persons household	20.6	20.0
Four or more person household	22.6	32.6

**Table 50.** Structure of population by age %

	HBS 2005	EU-SILC 2007
0-14		13.2
15-24		13.5
25-54		40.3
55-64		13.5
65+		19.5

**Table 51.** Structure of population by level of education, %

	HBS 2005	EU-SILC 2007
Pre-primary		1.7
Completed primary		9.3
Lower secondary		28.0
Upper secondary		44.9

Post-secondary non tertiary		0.9
First stage of tertiary education		15.0
Second stage of tertiary education		0.2

**Table 52. Activity status**

%

	HBS 2005	EU-SILC 2007
Employed	42.74	43.5
Unemployed	10.80	14.6
Economically inactive	46.46	41.9

**Table 53. Status in employment**

%

	HBS 2005	EU-SILC 2007
Employer	1.25	1.2
Self-employed	6.88	6.1
Employee	90.99	91.9
Family worker	0.15	0.8

**Table 54. Tenure status**

%

Tenure status	HBS 2008	EU-SILC 2007
Owner	89.7	87.8
Tenant	10.3	12.2

**Table 55. Bath or shower in dwelling**

Bath or shower in dwelling	HBS 2008	EU-SILC 2007
Yes	85.8	79.5
No	14.2	20.5

**Table 56. Indoor flushing toilet for sole use of household**

Indoor flushing toilet for sole use of household	HBS 2008	EU-SILC 2007
Yes	77.9	65.2
No	22.1	34.8

**Table 57. Dwelling type**

Dwelling type	HBS 2008	EU-SILC 2007
Detached house	44.4	52.5
Semidetached house	13.2	9.3
Apartment or flat	42.3	37.5
Some other kind of accommodation	0.1	0.7

**Table 58. Non monetary household deprivation**

Non monetary household deprivation	HBS 2008	EU-SILC 2007
Telephone	6.1	13.5
Color TV	1.7	6.3
Computer	72.1	39.7
Washing machine	24.0	26.4
Car	57.7	40.4

#### 4.2. Comparison of Laeken Indicators based on HBS 2006 and EU-SILC 2007



**Table 59. Main indicators – comparability – HBS and EU-SILC**

Main indicators	HBS - 2006	EU-SILC 2007
At-risk-of poverty threshold - Euro	1020	888
Household with 2 adults and 2 children younger than 14 years	2142	1865
At-risk-of poverty rate after social transfers. %	14	22
Relative median at-risk-of poverty gap after social transfers	17	34
S80/S20 quintile share ratio	3.5	6.9
At-risk-of-poverty rate before social transfers. %	41	42
Dispersion around at-risk-of-poverty threshold		
40% of median	3	11
50% of median	7	16
70% of median	21	29
Gini coefficient	24	35
At-risk-of-poverty rate before social transfers (except pensions).%	17	26