

# CYPRUS

## **INTERMEDIATE QUALITY REPORT**

### **STATISTICS ON INCOME AND LIVING CONDITIONS 2010**

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## **PREFACE**

The present quality report complies with the Commission Regulation (EC) No 1177/2003 Article 16. The structure of the report follows Commission Regulation No 28/2004 and presents results on common cross-sectional European Union indicators, accuracy, comparability and coherence of the EU-SILC survey 2010.

## 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 given below are based on the cross-sectional component of EU-SILC 2010 and they were calculated using the SAS programs provided by Eurostat.

#### 1.1.1 At-risk-of-poverty threshold (illustrative values)

1 person household (euros)	10.188,8
2 adults and 2 dependent children (euros)	21.396,5

#### 1.1.2 At-risk-of-poverty rate (%), by age and gender

<b>Total</b>	<b>Total</b>	<b>15,8</b>
	0 – 17	13,6
	18 – 24	11,0
	25 – 49	10,9
	50 – 64	13,5
	65+	41,2
	18+	16,4
	18 – 64	11,6
<b>Male</b>	<b>Total</b>	<b>14,3</b>
	18 – 24	12,4
	25 – 49	9,0
	50 – 64	10,2
	65+	38,5
	18+	14,2
	18 – 64	9,9
<b>Female</b>	<b>Total</b>	<b>17,2</b>
	18 – 24	9,6
	25 – 49	12,7
	50 – 64	16,7
	65+	43,5
	18+	18,5
	18 – 64	13,3

### 1.1.3 At-risk-of-poverty rate (%), by most frequent activity status and by gender

Age 18+	At work		<b>Total</b>	<b>6,9</b>
			Male	5,8
			Female	8,3
	Not at work		<b>Total</b>	<b>29,7</b>
			Male	30,3
			Female	29,3
		Unemployed	<b>Total</b>	<b>39,7</b>
			Male	42,1
			Female	37,1
		Retired	<b>Total</b>	<b>41,1</b>
			Male	39,2
			Female	42,8
		Other inactive	<b>Total</b>	<b>18,7</b>
			Male	15,9
			Female	20,0

### 1.1.4 At-risk-of-poverty rate (%), by household type

All households without dependent children	<b>Total</b>		<b>21,8</b>
	1 person household	Total	33,6
		Male	20,4
		Female	46,7
		0 – 64	19,1
		65+	57,6
	2 adults without dependent children	both 0 – 64	15,1
		at least one 65+	42,0
	Other household without dependent children		8,8
All households with dependent children	<b>Total</b>		<b>11,2</b>
	Single parent	At least 1 dep.	24,8
	2 adults	1 dep. Child	10,5
		2 dep. Children	8,5
		3+ dep. Children	16,1
	Other household with dependent children		8,6

### 1.1.5 At-risk-of-poverty rate (%), by accommodation tenure status

Age 0+	<b>Total</b>	<b>15,8</b>
	Owner or rent free	14,9
	Tenant	23,5

### 1.1.6 At-risk-of-poverty rate (%), by work intensity of the household

All households without dependent children	WI=0	40,9
	0<WI<1	11,8
	WI=1	10,6
All households with dependent children	WI=0	61,0
	0<WI<0,5	49,0
	0,5<=WI<1	13,9
	WI=1	3,0

### 1.1.7 Dispersion around the risk-of-poverty threshold

<b>Total</b>	At-risk-of-poverty rate (40% of median)	3,3
	At-risk-of-poverty rate (50% of median)	8,4
	At-risk-of-poverty rate (70% of median)	23,4

### 1.1.8 At-risk-of-poverty rate (%), before all social transfers including old-age/survivor's pensions, by gender and age group

<b>Total</b>	<b>Total</b>	<b>32,1</b>
	0 – 17	26,6
	18+	33,5
	18 – 64	23,4
	65+	86,4
<b>Male</b>	<b>Total</b>	<b>29,7</b>
	18+	30,3
	18 – 64	20,7
	65+	84,9
<b>Female</b>	<b>Total</b>	<b>34,4</b>
	18+	36,6
	18 – 64	26,1
	65+	87,8

### 1.1.9 At-risk-of-poverty rate (%), before all social transfers except old-age/survivor's pensions, by gender and age group

<b>Total</b>	<b>Total</b>	<b>23,3</b>
	0 – 17	25,8
	18+	22,7
	18 – 64	18,2
	65+	46,0
<b>Male</b>	<b>Total</b>	<b>21,7</b>
	18+	20,3
	18 – 64	16,3
	65+	42,8
<b>Female</b>	<b>Total</b>	<b>24,9</b>
	18+	24,9
	18 – 64	20,0
	65+	48,7



### 1.1.10 Relative median at-risk-of-poverty gap, by age and gender

<b>Total</b>	<b>Total</b>	<b>18,0</b>
	0 – 17	16,2
	18+	18,6
	18 – 64	18,0
	65+	19,4
<b>Male</b>	<b>Total</b>	<b>16,7</b>
	18+	17,1
	18 – 64	17,1
	65+	17,1
<b>Female</b>	<b>Total</b>	<b>18,7</b>
	18+	19,4
	18 – 64	18,6
	65+	20,7

### 1.1.11 Income distribution S80/S20

S80/S20 quintile share ratio	4,4
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### 1.1.12 Inequality of income distribution: Gini coefficient (%)

Gini coefficient	29,1
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## 1.2. Other indicators

### 1.2.1. Equivalised disposable income: 19.610,5 EURO

### 1.2.2. The unadjusted gender pay gap

The unadjusted gender pay gap indicator will not be computed on the basis of the EU-SILC survey, but from the Wages and Salaries Survey conducted by the Labour Statistics Unit.

## 2. ACCURACY

### 2.1. Sample design

#### 2.1.1. Type of sample design (stratified, multi-stage, clustered)

The sample was drawn from the 2001 Census of Population sampling frame, which was updated by the Electricity Authority of Cyprus (E.A.C.) list of new domestic consumers (between 2002 and 2008). The sample design was one-stage stratification.

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

The sampling units are private households, which were selected with simple random sampling within each stratum.

### 2.1.3. Stratification and sub-stratification criteria

Geographical stratification criteria were used for the sample selection. The households were stratified in 9 strata based on District (Urban / Rural), i.e. 1) Lefkosia Urban, 2) Lefkosia Rural, 3) Ammochostos Rural<sup>(1)</sup>, 4) Larnaka Urban, 5) Larnaka Rural, 6) Lemesos Urban, 7) Lemesos Rural, 8) Pafos Urban, 9) Pafos Rural.

### 2.1.4. Sample size and allocation criteria

According to the Regulation (EC) No 1177/2003 Article 9, the minimum effective sample size for Cyprus is 3.250 households and 7.500 persons aged 16 or over. As the sample is based on a rotational design of 4 replications with a rotation of one replication per year, the selection of one new sub-sample was required. More specifically, for 2010 one sub-sample of 2009 survey was dropped (R1), and a new sub-sample (R1) was separately selected in the same manner as in 2005, so as to represent the whole population. Due to the non-response of 2009 survey and the number of non existent or not successfully contacted addresses, the initial sample of 2010 survey was 4.579 households. The status of our sample for the 2010 round in each rotational group is as follows:

	Total	R1	R2	R3	R4	R1
Status of sample	4.579	869	806	773	800	2.200

The diagram shows two arrows originating from the R1 columns of the table. The first arrow points from the R1 column (869) to the word 'dropped'. The second arrow points from the R1 column (2.200) to the word 'new'.

<sup>(1)</sup> Ammochostos Urban is an area not under the effective control of the Government of the Republic of Cyprus.

The allocation of the sample in the 9 strata is shown in the table below:

**Table 2.1.4.1 : Population and sample distribution**

DISTRICT	N			n		
	NO. OF HOUSEHOLDS - CENSUS & EAC			DISTRIBUTION OF THE SAMPLE		
	TOTAL	URBAN	RURAL	TOTAL	URBAN	RURAL
<b>TOTAL</b>	<b>301.049</b>	<b>204.456</b>	<b>96.593</b>	<b>4.579</b>	<b>3.099</b>	<b>1.480</b>
<b>LEFKOSIA</b>	<b>115.192</b>	88.685	26.507	<b>1.735</b>	1.304	431
<b>AMMOCHOSTOS</b>	<b>17.574</b>	0	17.574	<b>264</b>	0	264
<b>LARNAKA</b>	<b>48.787</b>	29.279	19.508	<b>770</b>	470	300
<b>LEMESOS</b>	<b>80.742</b>	62.463	18.279	<b>1.275</b>	985	290
<b>PAFOS</b>	<b>38.754</b>	24.029	14.725	<b>535</b>	340	195

For the data collection 23 interviewers were appointed, 8 in Lefkosia district, 5 in Larnaka/ Ammochostos, 7 in Lemesos and 3 in Pafos. The sampled households were grouped as much as possible in small areas so as to minimise travelling expenses. Each interviewer had to visit on average 15 households per week.

The 2010 sample results are shown in the table below:

**Table 2.1.4.2 : Sample size**

<b>Addresses in initial sample</b>	<b>4.579</b>
Addresses used for the survey	4.210
Addresses out of scope	369
<b>Addresses used</b>	<b>4.210</b>
Addresses successfully contacted	4.191
Addresses not successfully contacted	19
<b>Addresses successfully contacted</b>	<b>4.191</b>
Household questionnaire completed	3.780
Refusal to cooperate	306
Entire household away for the duration of fieldwork	22
Household unable to respond	72
Other reasons for not completing the Household questionnaire	11
<b>Household questionnaire completed</b>	<b>3.780</b>
Interviews accepted for database	3.780
Interviews rejected for database	0

The 369 addresses that were out of scope of the survey correspond to vacant accommodation, or buildings used as secondary residences or for business purposes, or demolished housing units. Furthermore, 19 addresses were not successfully contacted. Out of the 4.191 addresses successfully contacted, 3.780 households completed the Household questionnaire and were all accepted for the database. This was above the minimum effective sample size (3.250 households) requested by the Regulation (EC) No 1177/2003 Article 9. Thus, the achieved sample size was 3.780 households, 11.088 persons in total and 9.106 persons aged 16 or over. In order to achieve this, the number of households of the new sub-sample selected was increased from 1.153 to 2.200.

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

The sample was selected from each stratum with simple random sampling.

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

Table 2.1.6.1 that follows gives an overview of the cumulative sample development during the fieldwork period from the 15<sup>th</sup> of March 2010 to the 15<sup>th</sup> of August 2010.

**Table 2.1.6.1 : Sample distribution over time**

<b>Period</b>	<b>Addresses in initial sample</b>	<b>Addresses out of scope</b>	<b>Addresses used</b>	<b>Addresses not successfully contacted</b>	<b>Non-response</b>	<b>Household Questionnaire Completed</b>
<b>15/03 – 31/03</b>	591	42	549	0	41	508
<b>15/03 – 15/04</b>	965	78	887	1	69	817
<b>15/03 – 30/04</b>	1.505	133	1.372	3	104	1.265
<b>15/03 – 15/05</b>	2.141	161	1.980	6	147	1.827
<b>15/03 – 31/05</b>	2.789	204	2.585	9	197	2.379
<b>15/03 – 15/06</b>	3.438	233	3.205	9	238	2.958
<b>15/03 – 30/06</b>	4.130	320	3.810	11	316	3.483
<b>15/03 – 15/07</b>	4.435	347	4.088	17	370	3.701
<b>15/03 – 31/07</b>	4.575	368	4.207	19	410	3.778
<b>15/03 – 15/08</b>	4.579	369	4.210	19	411	3.780

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

The sample in the first round was divided in 4 sub-samples as it was based on a rotational design of 4 replications with a rotation of one replication per year. Each sub-sample was

separately selected so as to represent the whole population. Every year one sub-sample is going to be dropped and substituted by a new one. Thus for 2010 one specific sub-sample, pre-selected from 2006 (R1), was dropped and substituted by a new one (R1). The new sub-sample was also separately selected, so as to represent the whole population.

The size of each Rotational Group for the 2010 survey is shown in Table 2.1.7.1:

**Table 2.1.7.1: Size of the Rotational Groups**

	<b>Total</b>	<b>R1</b>	<b>R2</b>	<b>R3</b>	<b>R4</b>
<b>Addresses in initial sample</b>	<b>4.579</b>	<b>2.200</b>	<b>806</b>	<b>773</b>	<b>800</b>
<b>Household Questionnaire completed</b>	3.780	1.558	758	714	750
<b>Interviews Accepted for database</b>	3.780	1.558	758	714	750

## 2.1.8. Weightings

### 2.1.8.1. Design factor

The methodology that was used for the computation of the weights of the survey is the one proposed in Doc. EU-SILC 065/09. For a household in the new panel 1 (R1) – new panel 1 replaced the old panel 1 of the first ,second, third and the fourth wave - the design weight is the inverse of its inclusion probability that is the probability belonging to the selected sample of households:

$$DB080_i = \frac{1}{\pi_i} = \frac{1}{\frac{n_i}{N_i}} = \frac{N_i}{n_i}, \quad i=1,\dots,9$$

$\pi_i$  = the probability of a household to be selected from stratum i

$n_i$  = the sample size of stratum i

$N_i$  = the total number of households in the sampling frame of stratum i

For households in the older panels, the household design weights were calculated by following the methodology proposed by Eurostat in Doc. 065/09. The general steps followed were:

- Computation of panel person base weights
- Correction for non response due to attrition
- Computation of base weights for persons entering panel households for the first time, i.e. newborns of sample women or persons moving into sample households from abroad
- Non-panel persons (co-residents) have a basic panel weight equal to zero

- Computation of household weights by averaging within household over all household members

### 2.1.8.2. Non-response adjustments (for new panel)

The aim of non-response adjustments is to reduce the bias due to non-response, i.e. household was contacted (DB120=11) but household questionnaire was not completed (DB130≠11). The empirical response rate within each stratum provides an estimate of the response probability for all the households of the stratum. The weight of a household after correction for the non-response at the household level is:

$$DB080_i * \frac{1}{\hat{p}_i}$$

$DB080_i$  = the design weight of a household in stratum i before non-response adjustment

$\hat{p}_i$  = the estimated response probability of the household in stratum i

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

The next step is to combine the entire sample (panels 1 – 4) and apply the calibration procedure. The target of the calibration procedure is to improve the accuracy of the estimated household and personal weights by using external known information. Eurostat recommends an “*integrative*” calibration. The idea is to use calibration variables defined at both household and individual level. The individual variables are aggregated at the household level by calculating household totals such as the number of male/female in the household, the number of persons aged 16 and over etc. After that, calibration is done at the household level using the household variables and the individual variables in their aggregate form.

The calibration variable used at household level was the household type:

1. One adult no dependent children.
2. At least two adults no dependent children.
3. One adult with at least one dependent child.
4. Two adults with one dependent child.
5. Two adults with two dependent children.
6. Two adults with at least three dependent children.
7. At least two adults and at least one dependent child.

At personal level the calibration variables used were the distribution of population by age ( $\text{age} \leq 15$ ,  $16 \leq \text{age} \leq 19$ ,  $20 \leq \text{age} \leq 24$ , ...,  $70 \leq \text{age} \leq 74$ ,  $\text{age} \geq 75$ ) and gender.

Based on this calibration procedure and using the weight after non-response adjustment as the initial weight, the household (DB090) and the personal (RB050) cross-sectional weights were calculated.

Calibration procedures were further used for the calculation of cross-sectional weights for household members aged 16 and over (PB040) and for the children aged 0 to 12 years (inclusive) (RL070). For both PB040 and RL070 the personal cross-sectional weight RB050 was used as the initial weight. The calibration variables used for the cross-sectional weight of household members aged 16 and over were the distribution of population aged 16 and over by age (five years age groups) and gender. The respective calibration variable for the children cross-sectional weight for childcare (RL070) was the distribution of population aged 0 to 12 by single years of age.

#### **2.1.8.4. Final cross-sectional weight**

The final cross-sectional weights were calculated as described above, i.e. using DB080 after non-response adjustment as the initial weight for new panel and base weights adjusted for non-response due to attrition for older panels. The calibration methods were then applied on the total sample.

#### **2.1.9. Substitutions**

No substitution procedures were applied.

##### **2.1.9.1. Method of selection of substitutes**

Not applicable.

##### **2.1.9.2. Main characteristics of substituted units compared to original units, by region (NUTS 2) if available**

Not applicable.

##### **2.1.9.3. Distribution of substituted units by record of contact at address (DB120), household questionnaire result (DB130) and household interview acceptance (DB135) of the original units**

Not applicable.

## **2.2. Sampling errors**

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

The sampling frame is divided into 4 Urban areas and 5 Rural areas in Cyprus. These 9 geographic areas are regarded as strata and independent sample of households is selected from each stratum.

Let  $h$  denote the stratum  $h=1, 2, 3, 4, 5, 6, 7, 8, 9$

Let  $i$  denote the selected household

Let  $k$  denote the member of the household

Suppose the total of a variable of interest is  $T$ . Then our estimate is

$$\hat{T} = \sum_{h=1}^9 \sum_i \sum_k w_{hik} t_{hik} \quad (1)$$

Where  $\hat{T}$  is the estimate of  $T$

$w_{hik}$  is the weight of the  $k^{\text{th}}$  member of household  $i$  in the  $h^{\text{th}}$  stratum

$t_{hik}$  is the value of the variable of interest of  $k^{\text{th}}$  member in household  $i$  in the  $h^{\text{th}}$  stratum

### Variance estimation

The objective is to estimate or approximate precision of the estimator under consideration.

Suppose the total of a variable of interest is  $T$  and our estimate  $\hat{T}$  is defined by (1).

We are to estimate  $V = \text{Var}(\hat{T})$  or the coefficient of variation  $\sqrt{V}/T$ . Since the latter is obviously estimated by  $\sqrt{\hat{V}}/\hat{T}$ , we focus on  $\hat{V}$ . Since the sample is stratified, the variance can be separately estimated in strata:

$$\hat{V} = \sum_{h=1}^9 \hat{V}_h \quad (2)$$

Now we proceed to estimation of the variances  $\hat{V}_h$  in strata.

The estimator of the **Total** is  $\hat{T}_h = \sum_i \sum_k w_{hik} t_{hik}$ .

The following estimator gives the variance of a simple random sample for the latter:



$$\hat{V}_h(\hat{T}_h) = \frac{n_h(1-f_h)}{n_h-1} \sum_{i=1}^{n_h} (t_{hi\bullet} - \bar{t}_{h\bullet\bullet})^2, \quad (3)$$

where  $t_{hi\bullet} = \sum_k w_{hik} t_{hik}$ ,

$$\bar{t}_{h\bullet\bullet} = \left( \sum_i t_{hi\bullet} \right) / n_h, \quad h=1, 2, 3, 4, 5, 6, 7, 8, 9$$

and  $f_h = n_h / N_h$

Suppose the **Mean** of a variable of interest  $y$  is  $\bar{Y}$ . Then the estimator  $\hat{\bar{Y}}_h$  for stratum  $h$  is:

$$\hat{\bar{Y}}_h = \left( \sum_i \sum_k w_{hik} y_{hik} \right) / \left( \sum_i \sum_k w_{hik} \right)$$

and the variance of  $\hat{\bar{Y}}_h$  is:

$$\hat{V}_h(\hat{\bar{Y}}_h) = \frac{n_h(1-f_h)}{n_h-1} \sum_{i=1}^{n_h} (y_{hi\bullet} - \bar{y}_{h\bullet\bullet})^2$$

Where  $y_{hi\bullet} = \left( \sum_k w_{hik} (y_{hik} - \hat{\bar{Y}}) \right) / \left( \sum_i \sum_k w_{hik} \right)$

$$\bar{y}_{h\bullet\bullet} = \left( \sum_i y_{hi\bullet} \right) / n_h$$

The coefficient of variation and the effective sample size for each indicator are shown in the tables that follow:

### 2.2.1.1 At-risk-of-poverty rate (%), by age and gender

		Value	Standard Error	Coefficient of Variation (%)	Design Effect	Actual Sample Size	Effective Sample Size
<b>Total</b>	<b>Total</b>	<b>15,8</b>	<b>0,4</b>	<b>2,4</b>	<b>1,25</b>	<b>11.088</b>	<b>8.870</b>
	0 - 17	13,6	0,9	6,3	1,49	2.369	1.588
	18 - 24	11,0	1,0	9,1	1,26	1.279	1.013
	25 - 49	10,9	0,6	5,5	1,54	3.581	2.312
	50 - 64	13,5	0,8	6,0	1,13	2.122	1.884
	65+	41,2	1,3	3,1	0,95	1.737	1.821
	18+	16,4	0,4	2,6	1,20	8.719	7.242
	18 - 64	11,6	0,4	3,7	1,37	6.982	5.100
<b>Male</b>	<b>Total</b>	<b>14,3</b>	<b>0,6</b>	<b>3,8</b>	<b>1,37</b>	<b>5.318</b>	<b>3.870</b>
	18 - 24	12,4	1,5	12,4	1,34	670	500
	25 - 49	9,0	0,8	9,3	1,80	1.606	890
	50 - 64	10,2	1,0	10,3	1,19	1.038	870
	65+	38,5	1,9	5,0	1,00	777	773
	18+	14,2	0,6	4,3	1,33	4.091	3.085
	18 - 64	9,9	0,6	6,1	1,54	3.314	2.146
<b>Female</b>	<b>Total</b>	<b>17,2</b>	<b>0,5</b>	<b>3,1</b>	<b>1,16</b>	<b>5.770</b>	<b>4.974</b>
	18 - 24	9,6	1,3	13,3	1,15	609	529
	25 - 49	12,7	0,9	6,7	1,36	1.975	1.447
	50 - 64	16,7	1,2	7,3	1,09	1.084	991
	65+	43,5	1,7	3,9	0,92	960	1.047
	18+	18,5	0,6	3,3	1,12	4.628	4.132
	18 - 64	13,3	0,6	4,7	1,25	3.668	2.944

### 2.2.1.2 At-risk-of-poverty rate (%), by most frequent activity status and by gender

			Value	Standard Error	Coefficient of Variation (%)	Design Effect	Actual Sample Size	Effective Sample Size
Age 18+	At work	Total	6,9	0,4	6,1	1,43	4.556	3.188
		Male	5,8	0,5	9,3	1,52	2.423	1.596
		Female	8,3	0,7	8,2	1,35	2.133	1.580
	Not at work	Total	29,8	0,8	2,7	1,11	4.005	3.621
		Male	30,4	1,3	4,4	1,18	1.595	1.352
		Female	29,5	1,0	3,4	1,06	2.410	2.278
	Unemployed	Total	39,7	3,9	9,8	1,72	233	135
		Male	42,1	5,5	13,1	1,78	119	67
		Female	37,1	5,5	14,7	1,64	114	69
	Retired	Total	41,1	1,2	3,0	0,96	1.848	1.923
		Male	39,2	1,8	4,7	1,03	850	821
		Female	42,8	1,7	3,9	0,90	998	1.108
	Other inactive	Total	18,7	1,0	5,3	1,14	1.924	1.694
		Male	15,9	1,8	11,0	1,28	626	489
		Female	20,0	1,2	6,0	1,09	1.298	1.189

### 2.2.1.3 At-risk-of-poverty rate (%), by household type

			Value	Standard Error	Coefficient of Variation (%)	Design Effect	Actual Sample Size	Effective Sample Size
<b>All hh no dep. children</b>	<b>Total</b>		<b>21,8</b>	<b>0,7</b>	<b>3,0</b>	<b>1,24</b>	<b>4.350</b>	<b>3.500</b>
	1 person hh	Total	33,6	2,0	6,1	1,54	649	421
	2 adults no dep. children	both 0 - 64	15,1	1,4	9,3	1,63	844	516
		at least one 65+	42,0	1,4	3,3	0,88	1.382	1.578
	Other hh no dep. children		8,8	0,7	8,3	1,28	1.475	1.154
<b>All hh with dep. children</b>	<b>Total</b>		<b>11,2</b>	<b>0,5</b>	<b>4,1</b>	<b>1,36</b>	<b>6.738</b>	<b>4.954</b>
	Single parent	At least 1 dep. child	24,8	3,0	12,1	1,77	291	165
	2 adults	1 dep. child	10,5	1,1	10,6	1,47	927	628
		2 dep. children	8,5	0,7	7,9	1,02	1.864	1.833
		3+ dep. children	16,1	1,2	7,6	1,34	1.643	1.223
	Other hh with dep. children		8,6	0,7	8,5	1,32	2.013	1.528

### 2.2.1.4 At-risk-of-poverty rate (%), by accommodation tenure status

		Value	Standard Error	Coefficient of Variation (%)	Design Effect	Actual Sample Size	Effective Sample Size
<b>Age 0+</b>	<b>Total</b>	<b>15,8</b>	<b>0,4</b>	<b>2,4</b>	<b>1,25</b>	<b>11.088</b>	<b>8.870</b>
	Owner or rent free	14,9	0,4	2,6	1,16	10.187	8.782
	Tenant	23,5	1,6	7,0	1,77	901	510

### 2.2.1.5 At-risk-of-poverty rate (%), by work intensity of the household

		Value	Standard Error	Coefficient of Variation (%)	Design Effect	Actual Sample Size	Effective Sample Size
<b>All hh no dep. children</b>	WI=0	40,9	2,2	5,5	1,12	610	544
	0<WI<1	11,8	0,9	7,9	1,68	1.506	897
	WI=1	10,6	0,9	8,6	1,23	1119	909
<b>All hh with dep. children</b>	WI=0	61,0	4,6	7,5	1,13	142	126
	0<WI<0.5	49,0	2,9	5,9	1,07	371	348
	0.5<=WI<1	13,9	0,8	5,6	1,43	2.974	2.083
	WI=1	3,0	0,4	11,8	1,36	3.246	2.385

### 2.2.1.6 Dispersion around the risk-of-poverty threshold

		Value	Standard Error	Coefficient of Variation (%)	Design Effect	Actual Sample Size	Effective Sample Size
<b>Total</b>	<b>At-risk-of-poverty rate (40% of median)</b>	<b>3,3</b>	<b>0,2</b>	<b>5,5</b>	<b>1,16</b>	<b>11.088</b>	<b>9.575</b>
	<b>At-risk-of-poverty rate (50% of median)</b>	<b>8,4</b>	<b>0,3</b>	<b>3,4</b>	<b>1,21</b>	<b>11.088</b>	<b>9.133</b>
	<b>At-risk-of poverty rate (70% of median)</b>	<b>23,4</b>	<b>0,4</b>	<b>1,9</b>	<b>1,27</b>	<b>11.088</b>	<b>8.765</b>

### 2.2.1.7 At-risk-of-poverty rate (%), before all social transfers including old-age/survivor's pensions, by gender and age group

		Value	Standard Error	Coefficient of Variation (%)	Design Effect	Actual Sample Size	Effective Sample Size
<b>Total</b>	<b>Total</b>	<b>32,1</b>	<b>0,5</b>	<b>1,6</b>	<b>1,32</b>	<b>11.088</b>	<b>8.394</b>
	0 - 17	26,6	1,1	4,2	1,48	2.369	1.597
	18+	33,5	0,6	1,7	1,30	8.719	6.697
	18 - 64	23,4	0,6	2,5	1,38	6.982	5.059
	65+	86,4	1,1	1,2	1,35	1.737	1.290
<b>Male</b>	18+	30,3	0,8	2,7	1,38	4.091	2.971
	18 - 64	20,7	0,8	3,9	1,49	3.314	2.230
	65+	84,9	1,6	1,9	1,36	777	571
<b>Female</b>	18+	36,6	0,8	2,2	1,25	4.628	3.708
	18 - 64	26,1	0,8	3,1	1,30	3.668	2.819
	65+	87,8	1,4	1,6	1,33	960	720

**2.2.1.8 At-risk-of-poverty rate (%), before all social transfers except old-age/survivor's pensions, by gender and age group**

		Value	Standard Error	Coefficient of Variation (%)	Design Effect	Actual Sample Size	Effective Sample Size
<b>Total</b>	<b>Total</b>	<b>23,3</b>	<b>0,5</b>	<b>1,9</b>	<b>1,30</b>	<b>11.088</b>	<b>8.529</b>
	0 - 17	25,8	1,1	4,2	1,47	2.369	1.615
	18+	22,7	0,5	2,2	1,25	8.719	6.964
	18 - 64	18,2	0,5	2,9	1,37	6.982	5.104
	65+	46,0	1,3	2,8	0,98	1.737	1.780
<b>Male</b>	18+	20,3	0,7	3,5	1,34	4.091	3.035
	18 - 64	16,3	0,7	4,5	1,48	3.314	2.245
	65+	42,8	2,0	4,6	1,03	777	757
<b>Female</b>	18+	24,9	0,7	2,8	1,18	4.628	3.909
	18 - 64	20,0	0,7	3,7	1,29	3.668	2.852
	65+	48,7	1,7	3,6	0,94	960	1.021

**2.2.1.9 Mean equivalised disposable income (EURO)**

	Value	Standard Error	Design Effect	Actual Sample Size	Effective Sample Size
Mean equivalised disposable income	19.610,5	142,69	1,05	11.088	10.590

**2.3. Non-sampling errors**

**2.3.1. Sampling frame and coverage errors**

The list of households from the 2001 Census of Population was used as sampling frame with a supplementary list of newly constructed houses (built after 2001 up to 2008). The Statistical Service of Cyprus was provided by the Electricity Authority of Cyprus (E.A.C.) with a list of domestic electricity consumers, which contained all the new connections of electricity between 2002 and 2008 (last update April of 2008). The E.A.C. distinguishes domestic consumers from other consumers (e.g. industrial etc). It has been established that each domestic electricity consumer registered by the E.A.C. corresponds to the statistical definition of a housing unit. Each of these new electricity meter connections represented one new household.

Coverage problems encountered were:

1. The frame of the 2001 Census of Population was somehow outdated and as a result some housing units were found to be empty or to be used for other purposes other than housing.
2. Some houses included in the E.A.C. list were used as secondary residence, so they were out of scope of the survey.

3. Some houses listed by the E.A.C. were impossible to be located due to incomplete information regarding their addresses.
4. Housing units built after April 2008, were not included in our sampling frame.

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

#### **2.3.2.1. Measurement errors**

Possible sources of measurement errors are the questionnaire (design, content and wording), the method of data collection, the interviewers and the respondents. As the 2010 EU-SILC round was the 6<sup>th</sup> in the series, quality has considerably improved due to interviewers' feedback, continuous data analysis and research.

The questionnaire for EU-SILC was developed on the basis of the EU-SILC Doc. 065 and Doc. 055. Even though, the questionnaire was well tested and despite the fact that this was the 6<sup>th</sup> wave of the survey, some questions were still difficult to be answered with precision. Difficulties due to memory lapses were encountered in questions regarding income, housing cost, main activity each month as well as for the age at first job especially with older persons. In an effort to minimise these problems respondents were requested to prepare pay slips and utility bills when the interviewer was making an appointment. In the case that the respondents could have the pay slips at a later date then they could send them by fax at the central offices. Difficulties were also encountered in distinguishing the various benefits and pensions. In order to overcome these difficulties a part of the training of the interviewers was focused specifically on social benefits and pensions.

As the method of data collection was Computer Assisted Personal Interviewing (CAPI) many validation and consistency checks were implemented during the interview. This had a positive impact on the quality of the data collected. Additionally, problems usually accounted to the routing of the questionnaire were fully avoided because of CAPI.

In order to reduce interviewer effects a two week training session for all the interviewers and an extra week training for newly recruited interviewers (i.e. those working for the first time in EU-SILC), was organised at the head offices of the Statistical Service. The training was conducted by permanent staff, Statistics Officers responsible for the EU-SILC survey. The aim of the training was to ensure that all interviewers were uniformly trained both in regard to the

content of the questionnaire, as well as their behaviour during the interview. The extra week training for the newcomers focused mainly on the terminology of the survey giving also general information on the previous rounds of the survey. In this way the newcomers were able to follow the other interviewers who worked the year before in the survey. In the second week where all interviewers were together, the training mainly focused on refreshing the terminology used in the questionnaire and on the understanding of new terminology used for the first time in the questionnaire (e.g. Intra household sharing of resources module). Main emphasis was given on difficult definitions and on explaining the various public benefits as well as the importance of the accuracy of the information collected. On the third week the interviewers had intensive sessions on working with their laptops and the electronic questionnaires in the environment of BLAISE. An interviewer manual was prepared explaining each and every single question of the questionnaire as well as their respective possible answers.

Apart from the 23 interviewers the training sessions were also attended by 6 supervisors. Each one of them was responsible for a group of 3 or 4 interviewers. During the fieldwork period the supervisor had meetings with each one of the interviewers in his/her group at least once a week. During these meetings, apart from discussing problems or questions raised during the week, the supervisors also collected (from the interviewers' laptops) all completed questionnaires. Their main duty during the data collection period was to examine the interviewers' work and refer back to them for inconsistencies or for problems identified in connection with terminology. Furthermore the supervisors had to double check some of the answers with respondents either by telephone or by personally visiting the household in question, especially in the case of unusual answers or missing data. Additionally from 2<sup>nd</sup> wave onwards, data for households in the survey for 2 years or more were further checked based on the data from previous years.

#### **2.3.2.2. Processing errors**

Processing errors were reduced because of CAPI and the implementation of validation and consistency checks during the data collection phase (BLAISE software). The processing errors were further reduced as the questionnaires were edited and coded by the supervisors prior to finalising the data files for processing. For the households which were in the survey for at least 2 years an additional tool during editing was the preloading of certain variables from the previous survey. Inconsistencies were further examined with interviewers and in many cases with the households directly. The coding requested was minimal, i.e. occupation (2 digits



ISCO), economic activity (2 digits NACE rev. 2) and country of birth; and was carried out using drop down lists.

The finalised data files prepared by supervisors were then processed using SAS programs with various other logical and consistency checks. The main errors found were connected to self-employment income and the recording of the various benefits and pensions under the correct income variable according to EU-SILC Doc. 065.

Before sending the final D-, R-, H- and P- files, data files were further checked using EUROSTAT's SAS programs.

### **2.3.3. Non-response errors**

#### **2.3.3.1. Achieved sample size**

The table below presents the achieved samples of persons aged 16 years and over, as well as of households, within each rotational group.

**Table 2.3.3.1.1 : Sample Size and Accepted Interviews**

	<b>Total</b>	<b>R1</b>	<b>R2</b>	<b>R3</b>	<b>R4</b>
<b>Persons 16 years and over</b>	<b>9.106</b>	<b>3.720</b>	<b>1.871</b>	<b>1.719</b>	<b>1.796</b>
<b>Number of accepted personal questionnaires</b>	9.106	3.720	1.871	1.719	1.796
<b>Accepted household interviews</b>	3.780	1.558	758	714	750

#### **2.3.3.2. Unit non-response**

##### ***Household non-response rates (NRh)***

DB120 is the record of contact at the address

DB130 is the household questionnaire result

DB135 is the household interview acceptance result

For the new rotational group, i.e. **panel 1 (R1)**:

Address contact rate:

$$Ra = \frac{\sum[DB120 = 11]}{\sum[DB120 = all] - \sum[DB120 = 23]} = \frac{1812}{2200 - 369} = 0,9896$$

Proportion of complete household interviews accepted for the database:

$$Rh = \frac{\sum[DB135 = 1]}{\sum[DB130 = all]} = \frac{1558}{1812} = 0,85982$$

Household non-response rate:

$$NRh = (1 - (Ra * Rh)) * 100 = 14,914\%$$

For the **total sample**:

Address contact rate:

$$Ra = \frac{\sum[DB120 = 11]}{\sum[DB120 = all] - \sum[DB120 = 23]} = \frac{4.191}{4.579 - 369} = 0.9955$$

Proportion of complete household interviews accepted for the database:

$$Rh = \frac{\sum[DB135 = 1]}{\sum[DB130 = all]} = \frac{3.780}{4.191} = 0.9019$$

Household non-response rate:

$$NRh = (1 - (Ra * Rh)) * 100 = 10,216\%$$

**Individual non-response rates (NRp)**

RB245 is the respondent status

RB250 is the data status

For the new rotational group, i.e. **panel 1 (R1)**:

Proportion of complete personal interviews within the households accepted for the database:

$$Rp = \frac{\sum [RB250 = 11 + 12 + 13 + 14^{(1)}]}{\sum [RB245 = 1 + 2 + 3]} = \frac{3.720}{3.720} = 1$$

Individual non-response rate:

$$NRp = (1 - Rp) * 100 = 0\%$$

For the **total sample**:

Proportion of complete personal interviews within the households accepted for the database:

$$Rp = \frac{\sum [RB250 = 11 + 12 + 13 + 14^{(1)}]}{\sum [RB245 = 1 + 2 + 3]} = \frac{9.106}{9.106} = 1$$

<sup>(1)</sup>This code corresponds to individuals for whom the information was completed from full record imputation (3 cases).

Individual non-response rate:

$$NRp = (1 - Rp) * 100 = 0\%$$

**Overall individual non-response rates (\* NRp)**

For the new rotational group, i.e. **panel 1 (R1)**:

$$* NRp = (1 - (Ra * Rh * Rp)) * 100 = 14.912\%$$

For the **total sample**:

$$* NRp = (1 - (Ra * Rh * Rp)) * 100 = 10,216\%$$

**2.3.3.3. Distribution of households (original units) by ‘record of contact at address’ (DB120), by ‘household questionnaire result’ (DB130) and by ‘household interview acceptance’ (DB135), for each rotational group and for the total**

**Table 2.3.3.3.1 : Distribution of DB120**

<b>DB120 – Contact at address</b>	<b>Total</b>	<b>R1</b>	<b>R2</b>	<b>R3</b>	<b>R4</b>
<b>Address contacted (11)</b>	4.191	1812	806	773	800
<b>Address cannot be located (21)</b>	19	19	0	0	0
<b>Address unable to access (22)</b>	0	0	0	0	0
<b>Address does not exist or empty etc. (23)</b>	369	369	0	0	0
<b>Total</b>	<b>4.579</b>	<b>2.200</b>	<b>806</b>	<b>773</b>	<b>800</b>

**Table 2.3.3.3.2 : Distribution of DB130**

<b>DB130 – Household questionnaire result</b>	<b>Total</b>	<b>R1</b>	<b>R2</b>	<b>R3</b>	<b>R4</b>
<b>Household questionnaire completed (11)</b>	3.780	1.558	758	714	750
<b>Refusal to co-operate (21)</b>	306	193	31	41	41
<b>Entire household temporarily away (22)</b>	22	15	3	2	2
<b>Household unable to respond (23)</b>	72	35	14	16	7
<b>Other reasons (24)</b>	11	11	0	0	0
<b>Total</b>	<b>4.191</b>	<b>1812</b>	<b>806</b>	<b>773</b>	<b>800</b>

**Table 2.3.3.3.3 : Distribution of DB135**

<b>DB135 – Household interview acceptance</b>	<b>Total</b>	<b>R1</b>	<b>R2</b>	<b>R3</b>	<b>R4</b>
<b>Interview accepted for database (1)</b>	3.780	1.558	758	714	750
<b>Interview rejected (2)</b>	0	0	0	0	0
<b>Total</b>	<b>3.780</b>	<b>1.558</b>	<b>758</b>	<b>714</b>	<b>1558</b>

**2.3.3.4. Distribution of substituted units (if applicable) by ‘record of contact at address’ (DB120), by ‘household questionnaire result’ (DB130) and by ‘household interview acceptance’ (DB135), for each rotational group and for the total**

Not applicable.

### 2.3.3.5. Item non-response

The tables that follow provide an overview of non-response for all household and individual income variables.

**Table 2.3.3.5.1: Distribution of item non-response, household level income variables**

<b>Item non-response</b>	<b>% of households having received an amount</b>	<b>% of households with missing values (before imputation)</b>	<b>% of households with partial information (before imputation)</b>
<b>Total household gross income HY010</b>	99,9	0,0	2,5
<b>Total disposable household income HY020</b>	99,9	0,0	0,1
<b>Total disposable household income before social transfers other than old-age and survivor's benefits HY022</b>	99,4	0,0	0,1
<b>Total disposable household income before social transfers including old-age and survivor's benefits HY023</b>	90,5	0,0	0,1
<b>Imputed rent HY030G</b>	90,7	na	na
<b>Income from rental of a property or land HY040G</b>	8,2	0,0	0,0
<b>Family/children related allowances HY050G</b>	51,9	0,0	0,0
<b>Social exclusion not elsewhere classified HY060G</b>	0,6	0,0	0,0
<b>Housing allowances HY070G</b>	2,5	0,0	0,0
<b>Regular inter-household cash transfer received HY080G</b>	8,4	0,0	0,0
<b>Interest, dividends, profit from capital investment in unincorporated business HY090G</b>	12,5	0,0	0,0
<b>Interest repayments on mortgage HY100G</b>	10,3	0,0	0,0
<b>Income received by people aged under 16 HY110G</b>	0,0	0,0	0,0
<b>Regular taxes on wealth HY120G</b>	58,7	0,0	0,0
<b>Regular inter household cash transfer paid HY130G</b>	14,9	0,0	0,0
<b>Tax on income and social contributions HY140G</b>	74,8	0,0	2,5
<b>Value of goods produced for own consumption HY170G</b>	5,7	0,0	0,0

**Table 2.3.3.5.2: Distribution of item non-response, personal level income variables**

<b>Item non-response</b>	<b>% of persons 16+ having received an amount</b>	<b>% of persons with missing values (before imputation)</b>	<b>% of persons with partial information (before imputation)</b>
<b>Employee cash or near cash income PY010G</b>	49,2	0,0	1,0
<b>Non-cash employee income PY020G</b>	6,0	0,0	0,0
<b>Company car PY021G</b>	0,9	0,0	0,0
<b>Employer's social insurance contribution PY030G</b>	55,0	0,0	0,0
<b>Contributions to individual private pension plans PY035G</b>	0,4	0,0	0,0
<b>Cash benefits or losses from self-employment PY050G</b>	11,6	0,0	0,1
<b>Pension from individual private plans PY080G</b>	0,7	0,0	0,0
<b>Unemployment benefits PY090G</b>	3,5	0,0	0,0
<b>Old-age benefits PY100G</b>	22,0	0,0	0,0
<b>Survivor benefits PY110G</b>	0,7	0,0	0,0
<b>Sickness benefits PY120G</b>	1,1	0,0	0,0
<b>Disability benefits PY130G</b>	2,6	0,0	0,0
<b>Education-related allowances PY140G</b>	5,8	0,0	0,0

**2.3.3.6. Total item non-response and number of observations in the sample at unit level of the common cross-sectional European Union indicators based on the cross-sectional component of EU-SILC, for equivalised disposable income and for the unadjusted gender pay gap**

The table that follows provides an overview of non-response for individuals regarding common cross-sectional indicators.

**Table 2.3.3.6: Indicator sample size and non-response**

<b>Indicator</b>	<b>Actual Sample Size</b>	<b>Missing values</b>	<b>Remarks</b>	<b>Individual non-response</b>
Mean equivalised disposable income	11.088	0	-	0
Risk of poverty rate by age and gender	11.088	0	-	0
Risk of poverty rate by most frequent activity and gender	8.719	0	-	0
Risk of poverty rate by household type	11.088	0	-	0
Risk of poverty rate: one person household	649	0	-	0
Risk of poverty rate: household with 2 adults and 2 dependent children	1.864	0	-	0
Risk of poverty rate by accommodation tenure status	11.088	0	-	0
Risk of poverty rate by work intensity of the household	9.968	0	1120 persons belonged to households without any member aged 16 to 64 years or households composed solely of students	0
Dispersion around the risk of poverty threshold (ARPT 40%)	11.088	0	-	0
Dispersion around the risk of poverty threshold (ARPT 50%)	11.088	0	-	0
Dispersion around the risk of poverty threshold (ARPT 70%)	11.088	0	-	0
Risk of poverty rate before all social transfers including old age/survivor's pensions by age and gender	11.088	0	-	0
Risk of poverty rate before all social transfers except old age/survivor's pensions by age and gender	11.088	0	-	0
Relative median at risk of poverty gap by age and gender	11.088	0	-	0
S80/S20 quintile share ratio	11.088	0	-	0
Gini coefficient	11.088	0	-	0
Gender pay gap	N.A.	N.A.	N.A.	N.A.

## 2.4. Mode of data collection

The mode of data collection for EU-SILC survey was CAPI. Paper Assisted Personal Interviewing (PAPI) was only used in the extreme case of a technical problem with the interviewer's laptop. Of all completed personal questionnaires 23% were filled with proxy interviews; 44% of them corresponded to persons who were temporarily absent mainly national guards and students who were supported by their parents. For these cases we preferred to have a personal questionnaire filled with a proxy interview rather than a refusal. Also in many cases where a person was not temporarily absent and a proxy interview existed, the interviewer would communicate with the interviewee by telephone and some personal questions would be answered directly by the interviewee.

The following tables present the distribution of individuals aged 16 or over by data status and type of interview.

**Table 2.4.1: Distribution of individuals aged 16 or over by data status and rotational group**

RB250 Data status	Total		R1		R2		R3		R4	
	Count	%	Count	%	Count	%	Count	%	Count	%
<b>Total</b>	<b>9.106</b>	<b>100</b>	<b>3.720</b>	<b>100</b>	<b>1.871</b>	<b>100</b>	<b>1.719</b>	<b>100</b>	<b>1.796</b>	<b>100</b>
<b>information completed only from interview (11)</b>	9.103	100	3.720	100	1.868	99.8	1.719	100	1.796	100
<b>information completed from full record imputation (14)</b>	3	0,0	0	0,0	3	0,2	0	0,0	0	0,0
<b>individual unable to respond and no proxy possible (21)</b>	0	0,0	0	0,0	0	0,0	0	0,0	0	0,0
<b>refusal to co-operate (23)</b>	0	0,0	0	0,0	0	0,0	0	0,0	0	0,0
<b>person temporarily away and no proxy possible (31)</b>	0	0,0	0	0,0	0	0,0	0	0,0	0	0,0
<b>no contact for other reasons (32)</b>	0	0,0	0	0,0	0	0,0	0	0,0	0	0,0
<b>information not completed: reason unknown (33)</b>	0	0,0	0	0,0	0	0,0	0	0,0	0	0,0



**Table 2.4.2: Distribution of individuals aged 16 or over by type of interview and rotational group**

RB260 Type of interview	Total		R1		R2		R3-+		R4	
	Count	%	Count	%	Count	%	Count	%	Count	%
<b>Total</b>	<b>9.103<sup>(1)</sup></b>	<b>100</b>	<b>3.720</b>	<b>100</b>	<b>1.868</b>	<b>100</b>	<b>1.719</b>	<b>100</b>	<b>1.796</b>	<b>100</b>
<b>face to face interview-PAPI (1)</b>	5	0,0	4	0,1	1	0,0	0	0,0	0	0,0
<b>face to face interview-CAPI (2)</b>	7.002	76,9	2.885	77,5	1.415	75,7	1.316	76,6	1.386	77,2
<b>proxy interview (5)</b>	2.096	23,0	831	22,3	452	24,2	403	23,6	410	22,8

(1) The total number of individuals aged 16 and over is 9.106. The information for 3 of these individuals was completed from full record imputation.

## **2.5. Interview duration**

The mean household interview duration was approximately 41 minutes and was calculated as the sum of the duration of all household interviews plus the sum of the duration of all personal interviews, divided by the number of household questionnaires completed and accepted for the database.

## **3. COMPARABILITY**

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

#### *Reference population*

There is no difference to the standard EU-SILC definition, hence the reference population is defined as all the households and their members living in the areas under the effective control of the Government of the Republic of Cyprus. Population in collective households and institutions is excluded.

#### *Private household definition*

No deviation from the standard EU-SILC definition. A private household is a person living alone or a group of persons living together in the same dwelling sharing expenses, including the joint provision of the essentials of living.

#### *Household membership*

The definition of household membership is the one recommended by EUROSTAT. Students (either in Cyprus or abroad) are considered to be members of their parents' household given they are fully financially supported by them.

#### *Income reference period(s) used*

For EU-SILC 2010 the income reference period was 2009.

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

The period for taxes payments/refunds and social insurance contributions was 2009. Tax refunds received during 2009 referred to income received in previous years.

#### *Reference period for taxes on wealth*

The reference period for taxes on wealth was 2009.

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

Since EU-SILC 2010 was carried out during the middle of March and the end of July 2010, the time lag between the income reference period and current variables varied between 3 to 7 months.

#### *Total duration of the data collection of the sample*

The data collection phase of the survey lasted almost 5 months.

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

The information on activity status was collected using an activity calendar covering each month of the income reference period.

## **3.2. Components of income**

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

The total household gross income and its components were calculated based on the definitions of income provided in the Commission Regulation (EC) 1980/2003 and the guidelines given in DOC.065. The definitions were fully applied and an effort was made to collect data as accurately as possible.

Imputed rent was calculated using Heckman Method as one of the methods proposed by Eurostat. The following variables were taken into account for the calculation: type of dwelling, number of rooms, area in square meters, year of construction, heating, air-conditioning and income brackets. Despite the fact that efforts were made to make correct estimates using the Heckman method, however we still have our reservations as regards to the accuracy of these estimates, due to the fact that the rental market in Cyprus is considered quite small.

Interest paid on mortgages is collected asking directly the amount. Over and above, a double check is carried out with an estimation of the amount, which is calculated on the basis of the following questions: year the housing loan was taken, the initial amount borrowed, years of repayment of the initial loan, the monthly payment, the outstanding amount at the end of the previous year, the actual total amount paid on the previous year and the interest rate applied for the loan.

Non-cash employee income (except company car), value of goods produced for own consumption and employers' social insurance contributions were collected according to the guidelines provided by Eurostat.

Gross monthly earnings for employees were not collected as the gender pay gap is calculated from other sources than EU-SILC.

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

Data on income variables were collected by Computer Assisted Personal Interviewing. Each and every income component was separately collected.

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

The instructions to the interviewers were to collect each income component as gross and to record separately taxes on income at source and social insurance contributions. In the very few cases where gross income was impossible to collect, net income was recorded.

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

In the cases where gross income or taxes on income at source or social insurance contributions were impossible to collect, at least net value was collected for the specific income component. It was then converted to gross by applying the existing tax system and social insurance contributions rules.

### **4. COHERENCE**

#### **4.1. Comparison of income target variables and number of persons who receive income from each ‘income component’, with external sources**

In the tables that follow, we compare the results on income components between EU-SILC 2008, EU-SILC 2009 and EU-SILC 2010 at both household and personal level. More specifically in the two tables that follow the percentage of households and persons having received an amount on specific income target variables, as well as their mean value per household are presented.

The results show that the percentage of either households or persons receiving an amount between the four surveys are very close and hence consistent.

**Table 4.1.1: Comparison between EU-SILC 2008, 2009 and 2010 for all income target variables at household level**

Income target variable	EU-SILC					
	2008		2009		2010	
	% of households having received an amount	Mean (weighted) income per household (EURO)	% of households having received an amount	Mean (weighted) income per household (EURO)	% of households having received an amount	Mean (weighted) income per household (EURO)
Total household gross income HY010	100,0	38.652	100,0	39.677	99,9	40.372
Total disposable household income HY020	100,0	34.625	100,0	35.496	99,9	35.748
Total disposable household income before social transfers other than old-age and survivor's benefits HY022	99,5	32.475	99,5	33.113	99,4	33.300
Total disposable household income before social transfers including old-age and survivor's benefits HY023	90,0	27.838	89,1	27.939	90,5	27.607
Imputed rent HY030G	91,8	5.994	92,7	7.055	90,7	6.844
Income from rental of a property or land HY040G	8,9	804	8,5	740	8,2	706
Family/children related allowances HY050G	50,1	733	51,3	843	51,9	921
Social exclusion not elsewhere classified HY060G	0,7	40	0,6	42	0,6	38
Housing allowances HY070G	1,9	127	2,0	138	2,5	215
Regular inter-household cash transfer received HY080G	8,3	365	7,6	338	8,4	445
Interest, dividends, profit from capital investment in unincorporated business HY090G	11,1	572	11,4	504	12,5	495
Interest repayments on mortgage HY100G	13,6	525	11,9	571	10,3	540
Regular taxes on wealth HY120G	61,2	54	60,0	49	58,7	48
Regular inter household cash transfer paid HY130G	11,5	467	12,2	461	14,9	568
Tax on income and social contributions HY140G	75,1	3.505	73,6	3.670	74,8	4.007
Value of goods produced for own consumption HY170G	N.A.	N.A.	N.A.	N.A.	5,7	16

**Table 4.1.2: Comparison between EU-SILC 2008, 2009 and 2010 for all income target variables at individual level**

Income target variable	EU-SILC					
	2008		2009		2010	
	% of persons 16+ having received an amount	Mean (weighted) income per household (EURO)	% of persons 16+ having received an amount	Mean (weighted) income per household (EURO)	% of persons 16+ having received an amount	Mean (weighted) income per household (EURO)
Employee cash or near cash income PY010G	50,3	24.870	48,7	25.550	49,2	26.236
Non-cash employee income PY020G	7,3	230	6,2	196	6,0	198
Company car PY021G	1,4	83	1,1	73	0,9	69
Employer's social insurance contribution PY030G	45,9	3.179	44,7	3.200	55,0	34.2
Cash benefits or losses from self-employment PY050G	12,2	4.947	11,9	4.608	11,6	4.278
Unemployment benefits PY090G	3,6	434	2,7	516	3,5	391
Old-age benefits PY100G	21,2	4.682	22,5	5.277	22,0	5.535
Survivor benefits PY110G	1,0	177	0,8	204	0,7	158
Sickness benefits PY120G	0,9	50	1,0	55	1,1	65
Disability benefits PY130G	2,5	420	2,5	441	2,6	480
Education-related allowances PY140G	6,4	344	6,3	347	5,8	340

Additionally the income results of EU-SILC 2010 were compared with the income results of the 2009 Household Budget Survey. For both surveys the income reference period was 2009. When comparing the two survey results it is essential to keep in mind the differences between the concepts and methodologies. Discrepancies may further arise by the fact that they serve different purposes; HBS targets household expenditure whereas EU-SILC targets household income.

In the two tables that follow, income results from both surveys are shown. They present the percentage of households and persons having received an amount on a specific income target variable as well as its mean value per household. It should be stated that income questions in HBS were answered by persons aged 15 and over whereas in EU-SILC by those 16 and over. Some income variables were grouped so that comparison could be more relevant. The results of the two surveys are favourably compared.

**Table 4.1.3: Comparison between Household Budget Survey 2009 and EU-SILC 2010 for income variables at household level**

Income target variable	EU-SILC 2010		HOUSEHOLD BUDGET SURVEY 2009	
	% of households having received an amount	Mean income per household (EURO)	% of households having received an amount	Mean income per household (EURO)
Total household gross income HY010	99,9	40.372	100,0	38.358
Total disposable household income HY020	99,9	35.748	100,0	34.564
Income from rental of a property or land HY040G	8,2	706	6,8	685
Family/children related allowances HY050G / Social exclusion not elsewhere classified HY060G	52,5	959	54,4	856
Housing allowances HY070G	2,5	215	1,1	135
Regular inter-household cash transfer received HY080G	8,4	445	9,1	382
Interest, dividends, profit from capital investment in unincorporated business HY090G	12,5	495	12,7	426
Regular taxes on wealth HY120G	58,7	48	61,5	64
Regular inter household cash transfer paid HY130G	14,9	568	12,7	482
Tax on income and social contributions HY140G	74,8	4.007	72,5	3.248

**Table 4.1.4: Comparison between Household Budget Survey 2009 and EU-SILC 2010 for income variables at individual level**

Income target variable	EU-SILC 2010		HOUSEHOLD BUDGET SURVEY 2009	
	% of persons 16+ having received an amount	Mean income per household (EURO)	% of persons 15+ having received an amount	Mean income per household (EURO)
Employee cash or near cash income PY010G	49,2	26.236	54,4	26.147
Non-cash employee income PY020G	6,0	198	n.a	193
Cash benefits or losses from self-employment PY050G	11,6	4.278	n.a.	2.995
Unemployment benefits PY090G	3,5	391	2,9	313
Old-age benefits (PY100G)/ Survivor benefits (PY110G)/ Sickness benefits (PY120G)/ Disability benefits (PY130G)	26,4	6.238	22,4	5.748
Education-related allowances PY140G	5,8	340	6,6	449

The next table presents the labour force participation rates as they were recorded by Labour Force Survey 2010 and EU-SILC 2010. There is one main methodological difference between the two surveys, for LFS students studying abroad or national guards (compulsory army service) are not considered to be part of the population, whereas they are part of the EU-SILC population. Thus, the totals as well as the rates of the ages 16-24 are not comparable. The rest of the results up to the age of 59 fit very well. EU-SILC seems to underestimate the rates for persons aged 60 years and over, but this is understandable since LFS is the core survey with main objective to collect information on employment.



**Table 4.1.5: Comparison between Labour Force Survey 2010 and EU-SILC 2010 for the labour force participation rates**

Age Groups	Total		Males		Females	
	LFS	EU-SILC	LFS	EU-SILC	LFS	EU-SILC
16 - 19	12,1	11,2	12,4	12,1	11,8	10,2
20 - 24	69,5	55,7	68,7	56,1	70,1	55,2
25 - 29	87,6	87,5	90,4	89,4	84,8	85,6
30 - 34	90,5	92,1	95,3	98,7	85,6	85,4
35 - 39	90,0	90,8	94,8	96,4	85,1	85,0
40 - 44	89,3	88,6	96,3	95,1	82,4	82,2
45 - 49	85,6	86,8	94,8	96,7	76,1	76,5
50 - 54	79,5	78,5	89,6	88,0	69,6	69,0
55 - 59	73,0	67,4	87,7	82,4	58,5	52,8
60 - 64	44,1	37,5	60,0	52,5	29,3	23,6
65+	12,9	5,4	20,6	9,5	6,3	1,8
<b>Total</b>	<b>64,8</b>	<b>61,6</b>	<b>72,6</b>	<b>68,7</b>	<b>57,3</b>	<b>54,7</b>