CYPRUS

FINAL QUALITY REPORT

STATISTICS ON INCOME AND LIVING CONDITIONS 2005

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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 2005.

1. COMMON CROSS-SECTIONAL EUROPEAN UNION INDICATORS

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

As 2005 was the initial year for the EU-SILC survey in Cyprus, only the cross-sectional indicators are provided. They were calculated using the SAS programs provided by Eurostat.

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

1 person household (euros)	7.894,13
2 adults and 2 dependent children (euros)	16.577,67

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

Total	**Total**	**16,2**
	0 - 15	12,4
	16 - 24	11,5
	25 - 49	10,1
	50 - 64	14,3
	65+	50,7
	16+	17,1
	16 - 64	11,4
	0 - 64	11,6
Male	**Total**	**14,6**
	0 - 15	13,2
	16 - 24	12,7
	25 - 49	8,6
	50 - 64	10,6
	65+	47,3
	16+	15,0
	16 - 64	10,0
	0 - 64	10,7
Female	**Total**	**17,7**
	0 - 15	11,6
	16 - 24	10,3
	25 - 49	11,5
	50 - 64	17,8
	65+	53,5
	16+	19,2
	16 - 64	12,8
	0 - 64	12,5

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

Age 16+	**Total**		**Total**	**17,1**
			Male	14,8
			Female	19,2
	At work		**Total**	**6,5**
			Male	6,4
			Female	6,6
	Not at work		**Total**	**30,6**
			Male	31,2
			Female	30,2
		Unemployed	**Total**	**37,1**
			Male	46,2
			Female	30,9
		Retired	**Total**	**48,7**
			Male	46,4
			Female	50,7
		Other inactive	**Total**	**18,8**
			Male	16,2
			Female	20,0

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

All households without dependent children	**Total**		**26,3**
	1 person household	**Total**	47,9
		Male	29,1
		Female	58,7
		0 – 64	27,1
		65+	70,0
	2 adults without dependent children	both 0 – 64	13,5
		at least one 65+	47,2
	Other household without dependent children		10,9
All households with dependent children	**Total**		**10,7**
	Single parent	At least 1 dep.	35,1
	2 adults	1 dep. Child	9,4
		2 dep. Children	8,8
		3+ dep. Children	14,3
	Other household with dependent children		8,0

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

Age 0+	**Total**	**16,2**
	Owner or rent free	15,3
	Tenant	22,8

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

All households without dependent children	WI=0	46,8
	0<WI<1	11,5
	WI=1	8,7
All households with dependent children	WI=0	72,4
	0<WI<0.5	33,9
	0.5<=WI<1	14,1
	WI=1	2,6

1.1.7 Dispersion around the risk-of-poverty threshold, by gender

At-risk-of-poverty rate (40% of median)	**Total**	**3,8**
	Male	2,8
	Female	4,7
At-risk-of-poverty rate (50% of median)	**Total**	**9,0**
	Male	7,6
	Female	10,4
At-risk-of poverty rate (70% of median)	**Total**	**23,8**
	Male	22,3
	Female	25,4

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

Total	**Total**	**29,3**
	0 - 15	20,6
	16+	31,5
	16 - 64	21,9
	65+	87,6
Male	**Total**	**27,4**
	0 - 15	21,2
	16+	29,1
	16 - 64	20,0
	65+	87,3
Female	**Total**	**31,1**
	0 - 15	19,9
	16+	33,8
	16 - 64	23,9
	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

Total	**Total**	**21,8**
	0 - 15	19,8
	16+	22,3
	16 - 64	16,8
	65+	54,4
Male	**Total**	**20,3**
	0 - 15	20,2
	16+	20,4
	16 - 64	15,6
	65+	50,7
Female	**Total**	**23,3**
	0 - 15	19,4
	16+	24,2
	16 - 64	18,1
	65+	57,5

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

Total	**Total**	**19,4**
	0 - 15	17,1
	16+	20,4
	16 - 64	19,1
	65+	21,3
Male	**Total**	**17,4**
	16+	17,9
	16 - 64	16,5
	65+	19,6
Female	**Total**	**21,1**
	16+	21,6
	16 - 64	21,0
	65+	23,4

1.1.11 Income distribution S80/S20

S80/S20 quintile share ratio	4,3

1.1.12 Inequality of income distribution: Gini coefficient (%)

Gini coefficient	28,8

1.1.13 Distribution of total population and poor population by age and gender (%)

		Poor population	Total population
Total	**Total**	**100**	**100**
	0 - 15	15,6	20,3
	16 - 24	10,4	14,6
	25 - 49	23,0	37,0
	50 - 64	14,5	16,4
	65+	36,5	11,6
	16+	84,4	79,7
	16 - 64	47,9	68,0
	0 - 64	63,5	88,4
Male	**Total**	**100**	**100**
	16 - 24	13,1	15,1
	25 - 49	21,5	36,7
	50 - 64	11,7	16,3
	65+	34,6	10,7
	16+	80,9	78,8
	16 - 64	46,3	68,1
	0 - 64	65,4	89,3
Female	**Total**	**100**	**100**
	16 - 24	8,2	14,1
	25 - 49	24,3	37,2
	50 - 64	16,7	16,6
	65+	38	12,6
	16+	87,2	80,5
	16 - 64	49,2	67,9
	0 - 64	62,0	87,4

1.1.14 Distribution of total population and poor population by most frequent activity status and gender (%)

			Poor Population	Total population
Total	**Total 16+**		**100**	**100**
	At work		21,4	56,1
	Not at work		78,6	43,9
		Unemployed	5,1	2,3
		Retired	45,1	15,8
		Other inactive	28,3	25,7
Male	**Total 16+**		**100**	**100**
	At work		28,6	66,1
	Not at work		71,4	33,9
		Unemployed	6,1	2,0
		Retired	46,6	14,9
		Other inactive	18,6	17,1
Female	**Total 16+**		**100**	**100**
	At work		16,1	46,7
	Not at work		83,9	53,3
		Unemployed	4,4	2,7
		Retired	44,1	16,7
		Other inactive	35,4	34,0

1.1.15 Distribution of total population and poor population by household type (%)

			Poor population	Total population
Total			**100**	**100**
All households without dependent children			56,9	34,9
	1 person household	Total	16,0	5,4
		Male	3,5	2,0
		Female	12,4	3,4
		0 – 64	4,7	2,8
		65+	11,3	2,6
	2 adults without dependent children	Both 0 – 64	7,2	8,6
		At least one 65+	25,5	8,7
	Other household without dependent children		8,2	12,2
All households with dependent children			43,1	65,1
	Single parent (at least 1 child)		5,9	2,7
	2 adults	1 dep. Child	5,7	9,7
		2 dep. Child	14,6	26,7
		3+ dep. child	9,4	10,6
	Other household with dependent children		7,6	15,3

1.1.16 Distribution of total population and poor population by accommodation tenure status (%)

	Poor Population	Total population
Total	**100**	**100**
Owner-occupier or rent free	83,6	88,3
Tenant	16,4	11,7

1.1.17 Distribution of total population and poor population by working intensity of the household (%)

		Poor population	Total population
Total	**Total**	**100**	**100**
All households without dependent children	WI=0	17,6	4,6
	0<WI<1	13,4	14,3
	WI=1	7,2	10,2
All households with dependent children	WI=0	10,5	1,8
	0<WI<0.5	9,2	3,3
	0.5<=WI<1	34,6	30,1
	WI=1	7,5	35,7

1.2. Other indicators

1.2.1. Equivalised disposable income: 8.759,54 CYP

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 2005). 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[(1)], 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 3250 households and 7500 persons aged 16 or over. Combining the effective sample size requirements with the expected non-response rate and the non existent or not successfully contacted addresses it was decided for the initial sample to be 4600 households. The sample was allocated in the 9 strata stated above proportionately to the number of households in each stratum.

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
TOTAL	**250.538**	**172.276**	**78.262**	**4.600**	**3.172**	**1.428**
LEFKOSIA	**98.959**	74.796	24.163	**1.818**	**1.374**	**444**
AMMOCHOSTOS	**13.406**	0	13.406	**248**	**0**	**248**
LARNAKA	**40.368**	25.048	15.320	**744**	**460**	**284**
LEMESOS	**69.433**	54.888	14.545	**1.279**	**1.013**	**266**
PAFOS	**28.372**	17.544	10.828	**511**	**325**	**186**

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

For the data collection 20 interviewers were appointed, 8 in Lefkosia district, 4 in Larnaka/ Ammochostos, 6 in Lemesos and 2 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 2005 sample results are shown in the table below:

Table 2.1.4.2 : Sample size

Addresses in initial sample	**4.600**
Addresses used for the survey	4.185
Addresses out of scope	415
Addresses used	**4.185**
Addresses successfully contacted	4.137
Addresses not successfully contacted	48
Addresses successfully contacted	**4.137**
Household questionnaire completed	3.746
Refusal to cooperate	243
Entire household away for the duration of fieldwork	61
Household unable to respond	54
Other reasons for not completing the Household questionnaire	33
Household questionnaire completed	**3.746**
Interviews accepted for database	3.746
Interviews rejected for database	0

The 415 addresses which 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 48 addresses were not successfully contacted. Out of the 4.137 addresses successfully contacted, 3.746 households completed the Household questionnaire and were all accepted for the database. Thus, the achieved sample size was 3.746 households, 11.541 persons in total and 8.997 persons aged 16 or over.

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 1st of May 2005 to 31st of August 2005.

Table 2.1.6.1 : Sample distribution over time

Period	Addresses in initial sample	Addresses out of scope	Addresses used	Addresses not successfully contacted	Non-response	Household Questionnaire Completed
01/05 - 15/05	418	38	380	3	36	341
01/05 - 31/05	1.143	82	1.061	10	106	945
01/05 - 15/06	1.842	149	1.693	22	155	1.516
01/05 - 30/06	2.527	220	2.307	34	220	2.053
01/05 - 15/07	3.180	282	2.898	37	273	2.588
01/05 - 31/07	3.780	323	3.457	42	319	3.096
01/05 - 15/08	4.330	391	3.939	48	362	3.529
01/05 - 31/08	4.600	415	4.185	48	391	3.746

2.1.7. Renewal of sample: rotational groups

The sample was divided in 4 sub-samples as it is based on a rotational design of 4 replications with a rotation of one replication per year. From one year to the next, some replications are retained while others are dropped and replaced by new replications. Each sub-sample was separately selected so as to represent the whole population. The next year one sub-sample is going to be dropped and substituted by a new one.

The size of each Rotational Group for the 2005 survey is shown in Table 2.1.7.1:

Table 2.1.7.1: Size of the Rotational Groups

	Total	R1	R2	R3	R4
Addresses in initial sample	4.600	1.197	1.135	1.119	1.149
Household Questionnaire completed	3.746	979	924	907	936
Interviews Accepted for database	3.746	979	924	907	936

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 065/04. The design weight of a household is the inverse of its inclusion probability that is the probability belonging to the selected sample of households:

$$DB080_i = \frac{1}{\pi_i} = \frac{1}{\frac{n_i}{N_i}} = \frac{N_i}{n_i}, \qquad i=1,\ldots,9$$

π_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

2.1.8.2. Non-response adjustments

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 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 variables used at household level were the household size (household size=1, household size=2, household size=3, household size≥4) and the tenure status (tenure status=1 (i.e. owned or provided free), tenure status =2 (i.e. rented)). At personal level the calibration variables used were the distribution of population by age (age≤15, 16≤age≤19, 20≤age≤24, …, 70≤age≤74, age≥75) and gender.

Based on this calibration procedure and using the weight after non-response adjustment as the initial weight (DB080), 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 and then applying calibration methods.

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

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

$$\hat{T} = \sum_{h=1}^{9} \sum_{i} \sum_{k} w_{hik} t_{hik} \qquad (1)$$

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

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

t_{hik} is the value of the variable of interest of k^{th} member in household i in the h^{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 $V = Var(\hat{T})$ 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:

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

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:

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

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

$\bar{t}_{h\bullet\bullet} = \left(\sum_i t_{hi\bullet}\right) / n_h$. 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:

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

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

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

Table 2.2.1.1: Mean (weighted), the total number of observations (before and after imputation) and Standard errors for Income components (entire sample)

Income Components at household level	Mean	Number of observations		Standard error
		Before imputation	After imputation	
Total household gross income (HY010)	18.239,49	3.636	3.746	256,49
Total disposable household income (HY020)	16.337,83	3.743	3.746	222,95
Total disposable household income before social transfers other than old-age and survivors´ benefits (HY022)	15.510,59	3.702	3.705	215,51
Total disposable household income before social transfers including old-age and survivors´ benefits (HY023)	14.747,42	3.352	3.355	232,46
Gross income from rental of a property or land (HY040G)	4.363,44	309	309	341,97
Family/children related allowances (HY050G)	647,63	2.058	2.058	17,20
Social exclusion not elsewhere classified (HY060G)	2.382,58	113	113	175,24
Housing allowances (HY070G)	2.628,03	107	107	301,72
Regular inter-household cash transfer received (HY080G)	2.329,86	266	266	179,13
Interest, dividends, profit from capital investment in unincorporated business (HY090G)	3.101,23	265	265	495,55
Income received by people aged under 16 (HY110G)	935,60	7	7	547,96
Regular taxes on wealth (HY120G)	47,76	2.263	2.263	2,19
Regular inter household cash transfer paid (HY130G)	2.159,50	399	399	133,86
Tax on income and social insurance contributions (HY140G)	1.650,83	3.636	3.746	41,12

Table 2.2.1.1 (ctd.): Mean (weighted), the total number of observations (before and after imputation) and Standard errors for Income components (entire sample)

Income Components at personal level	Mean	Number of observations		Standard error
		Before imputation	After imputation	
Employee cash or near cash income (PY010G)	9.738,71	4.467	4.598	140,33
Non-cash employee income (PY020G)	1.676,39	88	88	127,95
Cash benefits or losses from self-employment (PY050G)	10.265,10	845	854	346,58
Pension from individual private plans (PY080G)	3.584,86	17	17	528,93
Unemployment benefits (PY090G)	1.935,38	325	325	593,84
Old-age benefits (PY100G)	5.003,26	1.656	1.656	135,62
Survivor benefits (PY110G)	3.774,49	92	92	232,25
Sickness benefits (PY120G)	902,78	97	97	102,46
Disability benefits (PY130G)	3.300,86	142	142	156,37
Education-related allowances (PY140G)	1.464,11	454	454	41,03

Table 2.2.1.2 : Mean (weighted), the total number of observations (before and after imputation) and Standard errors for the Equivalised disposable income (entire sample)

Equivalised disposable income	Mean	Number of observations		Standard error
		Before imputation	After imputation	
Subclasses by household size				
1 household member	6.773,59	551	562	264,49
2 household members	8.410,96	2.076	2.110	228,93
3 household members	9.368,15	1.824	1.881	113,17
4 and more	8.854,11	6.685	6.988	62,08
Population by age group				
< 25	8.522,41	4.012	4.188	73,20
25 to 34	9.846,39	1.408	1.460	263,06
35 to 44	8.882,86	1.600	1.661	115,67
45 to 54	9.653,14	1.487	1.552	167,31
55 to 64	9.591,05	1.226	1.267	200,99
65+	6.095,88	1.403	1.413	121,89
Population by sex				
Male	8.806,60	5.463	5.680	85,06
Female	8.695,41	5.673	5.861	86,71

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 2005). 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 2001 and 2005. 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.

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.

The questionnaire for EU-SILC was developed on the basis of the EU-SILC Doc. 065 and Doc. 055. It was further developed after the pilot survey which was carried out during the period 14/06/2004 to 23/07/2004. During the pilot phase the cohesion and interpretation of the questionnaire as well as the duration of interview were examined. Even though, the questionnaire was well tested, some questions were still difficult to be answered with precision. Difficulties due to memory lapses were encountered in questions regarding intergenerational transmission of poverty, income from interests, dividends and shares (HY 090). Furthermore, difficulties were also encountered in distinguishing the various 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 was organised at the head offices of the Statistical Service by Statistical Officers responsible for the EU-SILC survey. The aim of the seminars was to ensure that the interviewers were uniformly trained both in regard to the content of the questionnaire and their behaviour during the interview. During the first week, the training mainly focused on the understanding of the terminology used in the questionnaire. Main emphasis was given on difficult definitions and on explaining the various public benefits as well as on the importance of the accuracy of the information collected. On the second 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 20 interviewers the seminars were also attended by 5 supervisors. Each one of them was responsible for a group of 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.

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. The coding requested was minimal, i.e. occupation

(2 digits ISCO), economic activity (2 digits NACE) 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

	Total	R1	R2	R3	R4
Persons 16 years and over	9.018	2.361	2.206	2.188	2.263
Number of sample persons	9.018	2.361	2.206	2.188	2.263
Number of accepted personal questionnaires	8.997	2.357	2.199	2.182	2.259
Accepted household interviews	3.746	979	924	907	936

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

Address contact rate:

$$\text{Ra}=\frac{\sum[DB120=11]}{\sum[DB120=all]-\sum[DB120=23]}=\frac{4137}{4600-415}=0{,}98853$$

Proportion of complete household interviews accepted for the database:

$$\text{Rh}=\frac{\sum[DB135=1]}{\sum[DB130=all]}=\frac{3746}{4137}=0{,}905487$$

Household non-response rate:

NRh=(1-(Ra*Rh))*100=10,489%

Individual non-response rates (NRp)

RB245 is the respondent status

RB250 is the data status

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

$$Rp=\frac{\sum[RB250=11+12+13]}{\sum[RB245=1+2+3]}=\frac{8997}{9018}=0,997671$$

Individual non-response rate:

NRp=(1-Rp)*100=0,2329%

Overall individual non-response rates (* NRp)

* NRp=(1-(Ra*Rh*Rp))*100=10,698%

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), for each rotational group and for the total

Table 2.3.3.3.1 : Distribution of DB120

DB120 – Contact at address	Total	R1	R2	R3	R4
Address contacted (11)	4.137	1.071	1.038	1.002	1.026
Address cannot be located (21)	48	15	7	11	15
Address unable to access (22)	0	0	0	0	0
Address does not exist or empty etc. (23)	415	111	90	106	108
Total	**4.600**	**1.197**	**1.135**	**1.119**	**1.149**

Table 2.3.3.3.2 : Distribution of DB130

DB130 – Household questionnaire result	Total	R1	R2	R3	R4
Household questionnaire completed (11)	3.746	979	924	907	936
Refusal to co-operate (21)	243	52	78	61	52
Entire household temporarily away (22)	61	17	14	15	15
Household unable to respond (23)	54	15	14	13	12
Other reasons (24)	33	8	8	6	11
Total	**4.137**	**1.071**	**1.038**	**1.002**	**1.026**

Table 2.3.3.3.3 : Distribution of DB135

DB135 – Household interview acceptance	Total	R1	R2	R3	R4
Interview accepted for database (1)	3.746	979	924	907	936
Interview rejected (2)	0	0	0	0	0
Total	**3.746**	**979**	**924**	**907**	**936**

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

Item non-response	% of households having received an amount	% of households with missing values	% of households with partial information (before imputation)
Total household gross income HY010	100,0	0,0	2,9
Total disposable household income HY020	100,0	0,0	0,1
Total disposable household income before social transfers other than old-age and survivor's benefits HY022	98,9	0,0	0,1
Total disposable household income before social transfers including old-age and survivor's benefits HY023	89,5	0,0	0,1
Income from rental of a property or land HY040G	8,3	0,0	0,0
Family/children related allowances HY050G	54,9	0,0	0,0
Social exclusion not elsewhere classified HY060G	3,0	0,0	0,0
Housing allowances HY070G	2,9	0,0	0,0
Regular inter-household cash transfer received HY080G	7,1	0,0	0,0
Interest, dividends, profit from capital investment in unincorporated business HY090G	7,1	0,0	0,0
Income received by people aged under 16 HY110G	0,2	0,0	0,0
Regular taxes on wealth HY120G	60,4	0,0	0,0
Regular inter household cash transfer paid HY130G	10,7	0,0	0,0

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

Item non-response	% of persons 16+ having received an amount	% of persons with missing values	% of persons with partial information (before imputation)
Employee cash or near cash income PY010G	51,1	0	1,46
Non-cash employee income PY020G	0,98	0	0
Contributions to individual private pension plans PY035G	2,18	0	0
Cash benefits or losses from self-employment PY050G	9,49	0	0,1
Pension from individual private plans PY080G	0,19	0	0
Unemployment benefits PY090G	3,61	0	0
Old-age benefits PY100G	18,41	0	0
Survivor benefits PY110G	1,02	0	0
Sickness benefits PY120G	1,08	0	0
Disability benefits PY130G	1,58	0	0
Education-related allowances PY140G	5,05	0	0

2.4. Mode of data collection

The mode of data collection for EU-SILC survey was CAPI. PAPI was only used in the extreme case of a technical problem with the interviewer's laptop. Proxy interviews occurred mainly for persons serving as national guards or for students fully supported by their parents and temporarily away; both of these categories were considered to be members of their parents' households. 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	%
Total	9.018	100	2.361	100	2.206	100	2.188	100	2.263	100
information completed only from interview (11)	8.997	99,8	2.357	99,8	2.199	99,7	2.182	99,7	2.259	99,8
individual unable to respond and no proxy possible (21)	0	0,0	0	0,0	0	0,0	0	0,0	0	0,0
refusal to co-operate (23)	18	0,2	2	0,1	7	0,3	5	0,2	4	0,2
person temporarily away and no proxy possible (31)	3	0,0	2	0,1	0	0,0	1	0,1	0	0,0
no contact for other reasons (32)	0	0,0	0	0,0	0	0,0	0	0,0	0	0,0
information not completed: reason unknown (33)	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	%
Total	8.997	100	2.357	100	2.199	100	2.182	100	2.259	100
face to face interview-PAPI (1)	28	0,3	6	0,2	6	0,3	7	0,3	9	0,4
face to face interview-CAPI (2)	7.764	86,3	2.024	85,9	1.917	87,2	1.870	85,7	1.953	86,5
proxy interview (5)	1205	13,4	327	13,9	276	12,5	305	14,0	297	13,1

2.5. Imputation procedure

No specific imputation procedure was applied, since there were no non-response items. Only in the very few cases where gross income or taxes on income at source or social insurance contributions were impossible to collect, the interviewers were instructed to collect at least net value for the specific income component. It was then converted to gross by applying the existing tax system and social insurance contributions rules.

2.6. Imputed rent

No method was used to calculate imputed rent. Imputed rent was self-evaluated, due to the fact that rental market in Cyprus is very small (10%-11%).

2.7. Company cars

To valuate the benefit of private use of company car the approach of 'Valuation on the basis of accrued saving' according to Doc. EU-SILC 065 was followed. In order to valuate the amount the recipient would have to pay over the reference period to enjoy the same benefit from the use of own vehicle the sum of (i) & (ii) below were computed:

(i) **Depreciation** over the reference period in the capital value of the car,

(ii) Coverage by the employer of other costs which would normally fall on the user of his/her own car. The latter may cover car insurance and possibly maintenance and major repair costs, but would normally exclude fuel and other running costs.

External sources had to be used to construct suitable average schedules for (i) and (ii), rather than to collect (i) and (ii) from individual respondents.

The main requirement was to construct a 'depreciation model':

$$\text{Depreciation} = \frac{\text{Purchase prices - Selling prices at X}}{\text{X}},$$

where X = 'the average age of a company car'

To calculate the 'Purchase price' and the 'Selling price', the make, the model, the registration year and other characteristics of the car were used. A list of prices and manufacturer's recommended retail prices (RRP) were also used for a wide range of new cars. If the RRP was not available, then it was estimated based on the price of a similar car or the price relative to other cars with a similar pricing structure. The list price included VAT and vehicle registration tax. For calculating 'the average age of a company car', an average of 5 was considered.

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 2005 the income reference period was 2004.

The period for taxes on income and social insurance contributions

The period for taxes payments/refunds and social insurance contributions was 2004. Tax refunds received during 2004 referred to income received in previous years.

Reference period for taxes on wealth

The reference period for taxes on wealth was 2004.

The lag between the income reference period and current variables

Since EU-SILC 2005 was carried out during May and August 2005 the time lag between the income reference period and current variables varied between 5 to 8 months.

Total duration of the data collection of the sample

The data collection phase of the survey lasted 4 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.

Income variables: imputed rent, interest paid on mortgages, non-cash employee income (except company car), value of goods produced for own consumption and employers´ social insurance contributions were not collected for EU-SILC 2005, since they are mandatory from 2007.

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 the 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.

3.3. Tracing rules

Since 2005 was the initial wave for EU-SILC survey, tracing were not applied.

4. COHERENCE

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

The objective of this section is to evaluate the results of EU-SILC, 2005 on income target variables using external sources. The most recent results available on income prior to EU-SILC, 2005, are those from the Household Budget Survey, 2003 (HBS, 2003). When comparing the two surveys it is essential to keep in mind the differences in the concepts, methodologies as well as the purposes they serve. Discrepancies may arise not only because of methodological differences but also by the fact that in every step of HBS survey more attention was given on the dimension of expenditure rather than on income.

In the two tables that follow results from both surveys are shown. They present the percentages of households and persons having received an amount on a specific income target variable as well as its mean value per household.

Income from social exclusion not elsewhere classified (HY060G) and housing allowances (HY070G) were grouped together since they were not separately recorded in HBS. Furthermore income from old-age pension (PY100G) and survivors´ benefit (PY110G) were also grouped together since in HBS persons aged 63 and over were not treated as receiving old-age pension independently of the benefit actually received. The big difference between HBS, 2003 and EU-SILC, 2005 on family/children allowances (HY050G) can be explained by a change occurred in the Government social policy during 2004. From 2004 onwards every household having at least one dependent child would receive an amount per child, whereas prior to 2004 this amount was only given to households with at least 3 dependent children. For HBS the variable for non cash employee income (PY020G) included all income in kind and not only the company car which is the case for EU-SILC. It should also be mentioned that income questions in HBS were answered by persons aged 15 and over whereas in EU-SILC by those 16 and over.

Table 4.1.1: Comparison with external sources for all income target variables at household level

Income target variable	EU-SILC 2005		HOUSEHOLD BUDGET SURVEY 2003	
	% of households having received an amount	Mean (weighted) income per household (CY £)	% of households having received an amount	Mean (weighted) income per household (CY £)
Total household gross income HY010	100,0	18.239	99,9	17.718
Total disposable household income HY020	100,0	16.338	99,9	16.016
Total disposable household income before social transfers other than old-age and survivor's benefits HY022	98,9	15.342	99,6	15.382
Total disposable household income before social transfers including old-age and survivor's benefits HY023	89,5	13.273	90,3	13.315
Income from rental of a property or land HY040G	8,3	341	8,7	390
Family/children related allowances HY050G	54,9	350	16,5	133
Social exclusion not elsewhere classified HY060G/ Housing allowances HY070G	5,9	152	6,1	135
Regular inter-household cash transfer received HY080G	7,1	172	6,0	136
Interest, dividends, profit from capital investment in unincorporated business HY090G	7,1	219	17,7	165
Regular taxes on wealth HY120G	60,4	28	46,9	21
Regular inter household cash transfer paid HY130G	10,7	223	7,3	151

Table 4.1.2: Comparison with external sources for all income target variables at individual level

Income target variable	EU-SILC 2005		HOUSEHOLD BUDGET SURVEY 2003	
	% of persons 16+ having received an amount	Mean (weighted) income per household (CY £)	% of persons 15+ having received an amount	Mean (weighted) income per household (CY £)
Employee cash or near cash income PY010G	51,1	12.091	50,8	12.119
Non-cash employee income PY020G	1,0	41	1,2	86
Cash benefits or losses from self-employment PY050G	9,5	2.263	10,1	2.225
Unemployment benefits PY090G	3,6	169	2,5	89
Old-age benefits PY100G/ Survivor benefits PY110G	19,4	2.115	20,1	2.132
Sickness benefits PY120G	1,1	23	0,7	16
Disability benefits PY130G	1,6	120	1,7	132
Education-related allowances PY140G	5,1	182	4,5	196