Intermediate Quality Report

**For EU-SILC 2009 operation
Cross sectional data**

Hungary

29. November 2010.

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Introduction

The present intermediate quality report follows the structure outlined in Commission Regulation (EC) No 28/2004. The regulation defines 3 chapters to ensure constant documentation on quality of EU-SILC instrument. The three chapters reports 3 dimensions of quality as accuracy, comparability and coherence. According to article 16 of EC regulation No 1177/2003 of European Parliament of the Council of 16th June 2003 concerning Community Statistics on Income and Living Conditions (EU-SILC) this report covers only the cross sectional indicators.

1. Common Cross Sectional European Union Indicators

2009 was the fifth year of EU-SILC survey in Hungary. On the basis of the cross sectional data the calculated Laeken Indicators are presented here.

Table 1. Laeken Indicators EU-SILC2009

				2009	Standard error	Effective sample size
1	Risk-of-poverty threshold	1 person hh	$$NAT	715187	4644,79	1938
	(illustrative values)		EUR	2844	18,47	1938
			PPS	4175	27,11	1938
		2 adults 2 dep. children	$NAT	1501892	9754,06	2608
			EUR	5972	38,78	2608
			PPS	8767	56,94	2608
2	Risk-of-poverty rate	Total	Total	12	0,49	16516
	by age and gender		M	13	0,56	7337
			F	12	0,50	9463
		0-17	Total	21	1,10	3059
		0-64	Total	14	0,57	13587
			M	14	0,62	6503
			F	14	0,60	7314
		18-64	Total	12	0,50	11085
			M	12	0,56	5005
			F	12	0,52	6125
		18-24	Total	18	1,23	1776
			M	17	1,58	773
			F	19	1,60	935
		25-49	Total	13	0,63	5324
			M	12	0,68	2731
			F	14	0,70	2573
		50-64	Total	8	0,52	4232
			M	9	0,74	2045
			F	7	0,56	2198
		65+	Total	5	0,50	2403
			M	3	0,62	775
			F	5	0,58	1771
3	Risk-of-poverty rate	Total	Total	6	0,40	5559
	by most frequent activity		M	7	0,51	3000
	(a) At work		F	5	0,47	2830
	(d) Not at work	Total	Total	14	0,64	5936
			M	14	0,89	2228
			F	14	0,67	4003
	(e1) Of which:	Total	Total	47	2,89	518
	Unemployed		M	49	3,61	258
			F	45	3,57	307
	(e2) Of which:	Total	Total	4	0,37	3732
	Retired		M	3	0,51	1159
			F	5	0,47	2608
	(f) Of which:	Total	Total	19	1,34	1670
	Other inactive		M	17	1,75	741
			F	20	1,67	983
4	Risk-of-poverty rate	All hh no dep. childr.	Total	7	0,43	8035
	by household type					
		1 person hh	M	20	1,84	556
		1 person hh	F	11	0,88	1667
		1 person hh <65yrs		19	1,40	1004
		1 person hh 65+		9	0,95	923
		2 adults no dep. childr.	(both < 65)	8	0,98	2104
		2 adults no dep. childr.	(at least one 65+)	3	0,60	1258
		Other hh no dep. childr.		4	0,80	2169
		All hh with dep. childr.		17	0,84	8855
		Single parent	(at least 1 child)	26	3,06	761
		2 adults 1 dep. child		10	1,32	1855
		2 adults 2 dep. childr.		16	1,64	2271
		2 adults 3+ dep. childr.		31	2,91	2533
		Other hh with dep. childr.		14	1,74	1427
5	Risk-of-poverty rate by accomondation tenurestatus					
	(a) Owner or rent-free		Total	12	0,52	14358
	(b) Tenant		Total	25	2,86	1135

				2009	Standard error	Effective sample size
6	*Risk-of-poverty rate*	*All hh no dep. childr.*	*WI = 0*	11	1,28	1125
	by work intensity of		*0 < WI < 1*	9	1,24	1735
	the household		*WI = 1*	2	0,45	1815
		All hh with dep. childr.	*WI = 0*	60	4,64	514
			0 < WI < 0.5	45	5,83	471
			0.5 <= WI < 1	15	1,92	2350
			WI = 1	4	0,78	5583
7	*Risk-of-poverty rate*	*Total*	*Total*	51	0,50	18470
	before and after transfers		*M*	49	0,61	7949
	by age and gender		*F*	54	0,54	10975
	(a) before all transfers	*0-17*	*Total*	51	1,17	3432
		18-64	*Total*	43	0,49	15586
			M	41	0,59	6617
			F	45	0,51	9569
		65+	*Total*	88	0,73	2888
			M	90	1,07	1106
			F	87	0,85	1829
	(b) including pensions	*Total*	*Total*	29	0,50	17542
			M	29	0,61	7432
			F	28	0,52	10128
		0-17	*Total*	46	1,16	3517
		18-64	*Total*	28	0,56	11234
			M	28	0,68	4779
			F	28	0,57	6988
		65+	*Total*	9	0,71	2227
			M	7	0,85	951
			F	11	0,83	1668
13	*Relative median*	*Total*	*Total*	16	0,87	16613
	risk-of-poverty gap		*M*	16	0,96	8110
	by age and gender		*F*	16	0,90	8888
		0-17	*Total*	17	1,50	3077
		18-64	*Total*	17	0,83	12556
			M	17	0,92	5539
			F	17	0,87	6538
		65+	*Total*	13	1,71	2466
			M	16	3,91	1059
			F	12	1,39	1671
14	*S80/S20 quintile share ratio*			3,5	0,05	7468
15	*Gini coefficient*			0,247	0,30	7966

2. Accuracy

2.1. Sample design

2.1.1. Type of sampling

2009 was the fifth year for the Hungarian EU-SILC survey. In 2009 a new rotational group (number 8) with 3837 dwellings was introduced. The Hungarian EU-SILC survey was a supplementary survey in 2005, it was carried out in the sub sample of the Micro census sample

The rotational group 5 and 7 have a stratified two stage sample design in a part of the population (part I., type I.), while a stratified one stage sample design on the other part of the population (part II., type II.). Part II. population consists of mostly the bigger localities, part I. consists of the rest. Group 6 and 8 have a stratified three stage sample design in a part of the population (part III, type III), while a stratified two stage sample design on the other part of the population (part IV., type IV.). Part IV. population consists of mostly the bigger localities, part III. consists of the rest.

2.1.2. Sampling units

In type I. sample design PSU-s are localities, SSU-s are dwellings. In type II. PSU-s are dwellings. In type III. sample design PSU-s are localities, SSU-s are enumeration districts, USU-s are households. In type IV. PSU-s are enumeration districts, SSU-s are households.

2.1.3. Stratification criteria

Localities of Hungary were stratified by size.

The micro census mother sample's stratification has an effect on the stratification of SILC sample. The micro census sample was designed to provide reliable estimates of the main demographic indicators for the 176 General Electoral Districts (GEDs) of the country. The GEDs were roughly of the same size, the average being 24000 in terms of dwellings. Each GED has a 2 % sample of its own, resulting in a self-weighting 2 % overall sample of the country. Some GEDs are towns or segments of major cities, other GEDs consist of a number of smaller localities. Localities within GEDs were stratified by size (number of dwellings). In strata with more than one locality, only one locality (PSU) was selected for micro census.

Micro census has 806 localities in the sample, but EU-SILC could not allow more than 370, which resulted in collapsing some micro census strata together and consider them as EU-SILC strata. Collapsing micro census strata was carried out within county: micro census strata similar in size of localities were collapsed. Within these collapsed strata some localities were selected for EU-SILC .

Strata with one locality constitute the part of the population where we have one stage sample design (type II.), strata with more than one locality constitute the other part, where two stage sample design was applied (type I.).

Localities were stratified by county and category of size for rotational group 6 and 8. Bigger localities (of part IV.) are self-representing localities. Within selected localities the households were stratified by the characteristic of the head of household.

2.1.4. Sample size and allocation criteria

12156 households were selected in 2009. Based on the minimum effective sample size we took expected non-response rate at the first wave and attrition over time into account. We calculate higher non-response rate in urban area, and somewhat lower non-response rate in the rural area.

Table 2. Sample size

	Number
Selected addresses	12156
Contacted addresses	11787
Can not be located	13
Unable to access	1
Non-residential, unoccupied, not principal residence	355

2.1.5. Sample selection shames

Localities were selected with pps, where size is measured by the number of dwellings. Dwellings in a selected locality were selected systematically. For type III. and IV. localities and enumeration districts were selected with pps, where size is measured by the number of dwellings. Households were selected in a simple random way.

2.1. 6. Sample distribution over time

The field work was carried out in March , April and May 2009 with reference month of March 2009. The field work period covered three months because of field work allocation and workload related reasons. Those follow-up households moved to new location were interviewed in June.

Table 3. Fieldwork timing and sample development over time

Weeks of interview	Achieved sample size	Distribution of achieved sample
2 March - 8 March	486	4.90%
9 March - 15 March	1406	14.18%
16 March - 22 March	1591	16.05%
23 March – 29 March	1188	11.99%
30 March - 5 April	886	8.94%
6 April - 12 April	917	9.25%
13 April - 19 April	1289	13.00%
20 April - 26 April	1351	13.63%
27 April - 3 May	618	6.23%
4 May - 10 May	125	1.26%
11 May - 17 May	20	0.20%
18 May - 24 May	2	0.02%
25 May - 31 May	0	0.00%
1 June - 7 June	0	0.00%
8 June- 14 June	0	0.00%
15 June - 21 June	17	0.17%
22 June - 28 June	16	0.16%
Total	9912	100.00%

2.1.7. Renewal of the sample, rotational groups

2005 was the first year of EU-SILC in Hungary. The 13 975 selected households were divided into 4 rotational groups, sized 2702, 3344, 3731 and 4198, where we took the expected attrition into account. In 2006 the first rotational group (of size 2702) was dropped out and 4130 new households were introduced. In 2007 rotational group 2 (of size 1697) was dropped and 6315 new households were introduced as rotational group 6. In 2008 rotational group 3 (of size 1716) was dropped and 4122 new households were introduced as rotational group 7. Rotational group4 was dropped and rotational group8 with size 3837 was introduced in 2009.

Table 4. Size of rotational groups (selected sample)

	2005	2006	2007	2008	2009
Rotational group1	2 702	-	-	-	-
Rotational group2	3 344	1 697	-	-	-
Rotational group3	3 731	1 863	1 708	-	-
Rotational group4	4 198	2 077	1 920	1 805	-
Rotational group5	-	4 130	2 655	2 345	2 312
Rotational group6	-	-	6 315	3 187	3 099
Rotational group7	-	-	-	4 122	2 908
Rotational group8	-	-	-		3 837
Total sample	13 975	9 767	12 598	11459	12 156

2.1.8. Weighting

This chapter describes the computation of weights of EU-SILC sample 2009.

2.1.8.1. Design factors

For group 5 and 7 it was calculated by strata; in stratum j the design weight, the reciprocal of inclusion probability $w_j = L_j / l_j$, where L_j is the total number of units in stratum j, and l_j is the number of selected units. $w_j \in [740, 1135]$ for each group. For rotational group 6 and 8 the same calculation was made with the exception, that weighting classes were defined by regions, category of size of localities and characteristic of head of households (household strata), and that L_j is the estimated number of units in class j. This estimation comes from the frame (master sample) information of HBS which is of size 200000 in terms of household.

2.1.8.2. Non-response adjustments

Non-response weights were introduced to reduce bias caused by unit non-response on household level. Non-response adjustment was applied by the same classes as design factors were calculated by. Primary weight in class j, $w_j^{'} = L_j / l_j^{'}$, where $l_j^{'}$ is the number of observed units.

2.1.8.3. Adjustment to external data

The aim of this adjustment was to improve the accuracy of data using socio-economical information available from the constantly updated Census 2001 and other surveys.

Iterative raking scale method were applied. For the integrative calibration the following controls were used:

- Population totals for sex * age * region groups defined by ages 0-14, 15-29, 30-59, 60 or more;

- Population totals for sex * age * type of locality groups defined by ages 0-14, 15-29, 30-59, 60 or more;

- Population totals for activity status * type of locality groups

- Population totals of the actives for education level * type of locality groups

- Total number of households for household* type of locality groups.

Calibration was carried out with a self made SAS program.

2.1.8.4. Final cross-sectional weights

After calibrating the new and former rotational groups separately, those adjusted weights were reduced proportional to the group size. Finally, one more calibration was applied for the overall sample with a small number of iterations. Final cross-sectional weights for the whole sample are in the interval [110,1100].

2.1.9. Substitution

There was no substitution in the survey.

2.2. Sampling errors
Table 5. Mean, total number of observation before and after imputation, Standard errors – unweighted

Income component		Mean	Nr of observation		Standard error	Effective sample size
			Before imputation	After imputation		
Gross income components on personal level						
PY010G	Employee cash or near-cash income	1623942	9594	9829	10381	7665
PY020G	Non-cash employee income	74058	1076	1079	186	842
PY050G	Cash benefit or losses from self-employment	890541	2006	2167	5066	1600
PY070G	Value of goods produced by own-consumption	40285	8556	8556	610	3924
PY080G	Pension from individual private plans	535293	37	37	305	30
PY090G	Unemployment benefit	266277	1073	1074	774	587
PY100G	Old-age benefit	1044202	5797	5900	4600	5291
PY110G	Survivor's benefit	501420	261	261	649	144
PY120G	Sickness benefit	111823	1265	1332	406	855
PY130G	Disability benefit	676142	1539	1708	2133	1115
PY140G	Education related allowances	168834	306	306	256	243
HY010	Total household gross income	2810807	9322	9909	25179	7150
HY020	Total disposable household income	2190380	9322	9911	16054	6771
HY022	Total disp.hhold income before soc.trans other than old-age benefit and survivor's benefit	1902800	9392	9770	16398	6629
HY023	Total disp.hhold income before soc.transfers including old-age and survivor's benefit	1445375	8202	8509	18356	6402
HY040G	Income from rental of a property or land	553329	166	166	93933	190
HY050G	Family/Children related allowances	409991	3293	3295	7139	2181
HY060G	Social exclusion not elsewhere classified	135317	579	579	10402	321
HY070G	Housing allowances	50091	954	954	1499	666
HY080G	Regular interhousehold cash transfers received	194276	1782	1782	6964	1300
HY090G	Interest, dividends, profit from capital investment	1159393	80	81	212475	69
HY100G	Interest repayment on mortgage	215139	1403	1403	3353	912
HY110G	Income received by people under 16	132716	10	10	37246	8
HY120G	Regular taxes on wealth	14811	5294	5294	195	3258
HY130G	Regular interhousehold cash transfers paid	136155	1921	1921	5918	1418
HY140G	Tax on income and social contribution	896980	6470	6470	14640	4800

Table 6. Mean, total number of observation before and after imputation, Standard errors – weighted

Income component		Mean	Nr of observation		Standard error
			Before imputation	After imputation	
Gross income components on personal level					
PY010G	Employee cash or near-cash income	1621374	3835259	3938506	7862
PY020G	Non-cash employee income	74810	421105	422261	196
PY050G	Cash benefit or losses from self-employment	1074571	855634	939174	4951
PY070G	Value of goods produced by own-consumption	40484	3267369	3267369	587
PY080G	Pension from individual private plans	569888	14453	14453	396
PY090G	Unemployment benefit	267210	416171	416559	692
PY100G	Old-age benefit	1048213	2209326	2247909	2482
PY110G	Survivor's benefit	482880	87716	87716	540
PY120G	Sickness benefit	111630	498301	524837	433
PY130G	Disability benefit	677155	553036	613134	1655
PY140G	Education related allowances	162289	102755	102755	193
HY010	Total household gross income	2944966	3551391	3800767	20246
HY020	Total disposable household income	2275418	3551108	3801315	12487
HY022	Total disp.hhold income before soc.trans other than old-age benefit and survivor's benefit	1985007	3587934	3759429	12943
HY023	Total disp.hhold income before soc.transfers including old-age and survivor's benefit	1521096	3184304	3329081	14391
HY040G	Income from rental of a property or land	563642	63144	63144	83555
HY050G	Family/Children related allowances	417322	1293814	1295797	4556
HY060G	Social exclusion not elsewhere classified	126209	215287	215287	10041
HY070G	Housing allowances	50041	347539	347539	1677
HY080G	Regular interhousehold cash transfers received	189354	651745	651745	7224
HY090G	Interest, dividends, profit from cap.investment	1208454	36617	37604	228152
HY100G	Interest repayment on mortgage	217108	557910	557910	3496
HY110G	Income received by people under 16	147857	4065	4065	43615
HY120G	Regular taxes on wealth	15335	2103784	2103784	224
HY130G	Regular interhousehold cash transfers paid	134562	721711	721711	6005
HY140G	Tax on income and social contribution	929010	2598652	2598652	14008

Table 7. Mean, number of observation, Standard error for Disposable Income

Disposable income	Mean	Number of observation	Standard error	Effective sample size
Equivalised disposable income By household size				
1 household member	1184372	2714	15680	2265
2 household member	1453791	5866	16198	2362
3 household member	1384634	5709	17786	1244
4 and more household member	1213060	10764	14221	1790
Population by age groups				
Under 25	1169047	7175	10839	5811
25-34	1408949	3252	17429	2204
35-44	1289981	3313	17259	2858
45-54	1348006	3714	17456	2631
55-64	1466215	3585	18745	2826
65+	1303493	4014	10998	3648
Population by gender				
Male	1322806	11546	9039	8333
Female	1292507	13507	7396	10957
Total	1306843	25053	7312	7213

2.3. Non-sampling errors

Survey results are subject to various sources of error. Total error in a survey estimate is the difference between the estimate derived from the sample data collected and the true value for the population.

2.3.1. Sampling frame and coverage errors

The target population of EU-SILC is the Hungarian population living in private household in the territory of Hungary. Persons living in collective households and in institutions are excluded. The sampling frame is an updated dataset of addresses used in the 2001 population and housing census, thus the under-coverage is due to the new buildings completed after the last updating.

The under-coverage in percentages amounts to about $\approx 0.7\,\%$.

2.3.2. Measurement and processing errors
2.3.2.1. Measurement errors

Measurement errors can be defined as a bias between the recorded value on the basis of the respondent answer and the real, true, but unknown value of the given variable. The sources of the difference can be:
  i. questionnaire problem
  ii. data collection problem
  iii. respondent misinterpreting the question

These unavoidable problems were kept in mind during the preparations of the data collection and following steps were done to reduce them.

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Based on the experiences of the previous waves (EU-SILC2005, EU-SILC2006, EU-SILC2007, EU-SILC2008) the following steps were done:

- The questionnaire was formed according to Eurostat recommendations.
- To avoid non-response of respondents because of personal data-protections reasons we have kept the separated data sheet for the names and birth date of the respondents. It was called address sheet (Címkártya).
- A detailed manual was complied for interviewers to deepen their knowledge about the structure of the questionnaire and the management of the interview.

Field work organization, Interviewers training

Regional Office of North Great Plain centered in Debrecen is responsible for organization and fieldwork related to social surveys including EU-SILC. Any other responsibility related to EU-SILC including questionnaire design, data checking, imputation, analysis and study of the results belongs to Living Standard and Labour Force Statistics Department in the Central Office located in Budapest. The organization of the field-work of the survey year 2009 was based on the experiences of the previous years.

The training for interviewers was organized by Debrecen regional Office with support of Living Standard and Labour Force Statistics Department.

A uniformed training schedule and script were used for training. The training contained four parts:

- General information
- Specific difficulties of the questionnaires (theoretical part)
- Problems with the two questionnaires which were asked before the fieldwork (test interviewing)
- Procedure of controlling.

Fieldwork, controlling

During the fieldwork Debrecen Regional Office monitored the ratio of the address contacted and the response rate in case of each interviewer.
Supervisors at Debrecen Office controlled the timing of the interviewing and work quality of the interviewers. There were extra checks on data of the visited households. After the fieldwork the supervisors called 5% of the households by phone asked about the interviewer (whether the interviewer visited the households, was he/she polite, etc.).

We used personal paper and pencil assisted (PAPI) interviews during the data collection.

2.3.2.2. Processing errors

Blaise was used as data entry program. The data entry program was tested by colleagues of Debrecen Regional Office and head office experts. After the testing the data entry program was corrected.
Approximately 50 colleagues made the data entry. A hot-line was established for any kind of problem during the recording. All the calls were answered by experts and IT specialist in the head office.
The program contained checks to ensure the basic data consistency.

After entry the data were controlled in various ways. The main elements of the controlling were the following:
- Identification numbers controlling
- Outlier controlling
- Data consistency checking (for instance, basic demographic data – highest education level attained; basic demographic data – economic status; economic status under the income reference period – the income components)
- Controlling of the amount of social transfers

2.3.3. Non-response errors

The sample of EU-SILC 2009 wave designed according to the expected panel mortality and response rate in 4 rotational groups.

Table 8. Sample size and rotational groups on household level

Household level	Total	R1	R2	R3	R4
Selected sample size	11707	3714	2242	2966	2785
Achieved sample size	9912	3331	1953	2364	2264
Achieved/Selected sample size	0.847	0.897	0.871	0.797	0.813

Table 9. Sample size and rotational groups on personal level

Personal level	Total	R1	R2	R3	R4
Selected sample size	25053	8422	4892	6025	5714
Achieved sample size	20973	7000	4146	4986	4841
Achieved/Selected sample size	0.837	0.831	0.848	0.828	0.847

2.3.3.2. Unit non-response

Household non-response rates (NRh)- for the total sample

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

Ra=$\frac{\text{Number of addresses successfully contacted}}{\text{Number of valid addresses selected}}$= $\frac{\Sigma[DB120=11]}{\Sigma[DB120=all] – \Sigma[DB120=23]}$= **0.9988**

Rh= $\frac{\text{Nr of hhold interviews completed \& accepted for database}}{\text{Number of eligible households at contacted addresses}}$ = $\frac{\Sigma[DB135=1]}{\Sigma[DB130=all]}$ = **0.8467**

NRh=(1-(0.9935*0.8097))*100=**15.43 %**

Household non-response rates (NRh) – for the new replication

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

Ra=$\frac{\text{Number of addresses successfully contacted}}{\text{Number of valid addresses selected}}$= $\frac{\Sigma[DB120=11]}{\Sigma[DB120=all] – \Sigma[DB120=23]}$= **0.9986**

Rh= $\frac{\text{Nr of hhold interviews completed \& accepted for database}}{\text{Number of eligible households at contacted addresses}}$ = $\frac{\Sigma[DB135=1]}{\Sigma[DB130=all]}$ = **0.8129**

NRh=(1-(0.9986*0.8129))*100=**18.82 %**

Individual non-response rate (NRp)- for the total sample

NRp=(1-(Rp))*100

Rp=   Number of personal interviews completed   =
       Number of eligible individuals in the households whose interviews were
       completed and accepted for the data base

Σ[RB250=11]   =**0.9992**
  Σ[RB245=1]

*Overall individual non-response rate (*NRp)- for the total sample*

NRp=(1-(Ra*Rh*Rp))*100

NRp=(1-(0.9988*0.8467*0.9992)*100=**15.50 %**

Individual non-response rate (NRp)- for the new replication

NRp=(1-(Rp))*100

Rp=   Number of personal interviews completed   =
       Number of eligible individuals in the households whose interviews were
       completed and accepted for the data base

Σ[RB250=11]   =**1.00**
  Σ[RB245=1]

*Overall individual non-response rate (*NRp)- for the new replication*

NRp=(1-(Ra*Rh*Rp))*100

NRp=(1-(0.9986*0.8129*1.00))*100=**18.82 %**

2.3.3.3. *Distribution of households by "record of contact address"(DB120), by "household questionnaire result" (DB130) and by "household interview acceptance" (DB135), for each rotational group and for the total*
Table 10. Distribution of DB120

DB120- Contact address	Total	R1	R2	R3	R4
Address contacted (11)	11787	3752	2251	2987	2797
Address can not be located (21)	13	2	1	7	3
Address unable to access (22)	1	0	0	0	1
Address does not exist or etc (23)	355	83	60	105	107
Total	12156	3837	2312	3099	2908

Table 11. Distribution of DB130

DB130- Household questionnaire result	Total	R1	R2	R3	R4
Household questionnaire completed (11)	9912	3331	1953	2364	2264
Refusal to co-operate (21)	1208	284	178	460	286
Entire household temporarily away (22)	466	85	75	113	193
Household unable to respond (23)	110	14	36	29	31
Other reason(24)	11	0	0	0	11
Total	11707	3714	2242	2966	2785

Table 12. Distribution of DB135

DB135- Household interview acceptance	Total	R1	R2	R3	R4
Interview accepted for database (1)	9912	3331	1953	2364	2264
Interview rejected (2)	0	0	0	0	0
Total	9912	3331	1953	2364	2264

2.3.3.5.   Item non-response

The item non-response is covered by the following tables about completeness of information regarding each income item on household level and personal level as well.

Table 13 .Item non-response on household level by income items

Income items		Household having received an amount		Full information		Partial information		Missing	
		count	%	count	%	count	%	count	%
HY010	Total household gross income	9322	94.0	8735	93.7	587	6.3	0	0
HY020	Total disposable household income	9322	95.4	8898	95.5	424	4.5	0	0
HY022	Total disp.hhold income before soc.trans other than old-age benefit and survivor's benefit	9392	96.3	9199	97.9	193	2.1	0	0
HY023	Total disp.hhold income before soc.transfers including old-age and survivor's benefit	8202	84.1	8055	98.2	147	1.8	0	0
HY040G	Income from rental of a property or land	166	1.7	166	100.0	0	.0	0	0
HY050G	Family/Children related allowances	3293	33.2	3291	99.9	2	.1	0	0
HY060G	Social exclusion not elsewhere classified	579	5.8	579	100.0	0	.0	0	0
HY070G	Housing allowances	954	9.6	954	100.0	0	.0	0	0
HY080G	Regular interhousehold cash transfers received	1782	18.0	1782	100.0	0	.0	0	0
HY090G	Interest, dividends, profit from capital investment	80	.8	80	100.0	0	.0	0	0
HY100G	Interest repayment on mortgage	1403	14.2	1403	100.0	0	.0	0	0
HY110G	Income received by people under 16	10	.1	10	100.0	0	.0	0	0
HY120G	Regular taxes on wealth	5294	53.4	5294	100.0	0	.0	0	0
HY130G	Regular interhousehold cash transfers paid	1921	19.4	1921	100.0	0	.0	0	0
HY140G	Tax on income and social contribution	6470	65.3	6470	100.0	0	.0	0	0

Table 14. Item non-response on personal level by personal income items

Personal income items		Persons having received an amount		Full information		Partial information		Missing	
		count	%	count	%	count	%	count	%
PY010G	Employee cash or near-cash income	9594	45.8	9388	97.9	206	2.1	0	0
PY020G	Non-cash employee income	1076	5.1	1075	99.9	1	0.1	0	0
PY050G	Cash benefit or losses from self-employment	2006	9.6	1933	96.4	73	3.6	0	0
PY070G	Value of goods produced by own-consumption	8556	40.8	8556	100.0	0	0.0	0	0
PY080G	Pension from individual private plans	37	.2	37	100.0	0	0.0	0	0
PY090G	Unemployment benefit	1073	5.1	1072	99.9	1	0.1	0	0
PY100G	Old-age benefit	5797	27.6	5697	98.3	100	1.7	0	0
PY110G	Survivor's benefit	261	1.2	261	100.0	0	0.0	0	0
PY120G	Sickness benefit	1265	6.0	1198	94.7	67	5.3	0	0
PY130G	Disability benefit	1539	7.4	1519	98.7	20	1.3	0	0
PY140G	Education related allowances	306	1.5	306	100.0	0	0.0	0	0

2.4. Mode of data collection

Distribution of persons aged 16 or over by"data status" (RB250) and by "type of interview" (RB260)

Table 15. Distribution of RB250

RB250- Data status	Total	R1	R2	R3	R4
Information completed only from interview(11)	20957	6990	4146	4980	4841
From register…no reason (12-33)	16	10	0	6	0
Total	20973	7000	4146	4986	4841

Table 16. Distribution of RB260

RB260- Contact address	Total	R1	R2	R3	R4
PAPI (1)	18627	6121	3755	4394	4357
CAPI, CATI, Other(2,3,4)	0	0	0	0	0
Proxy(5)	2330	869	391	586	484
Total	20957	6990	4146	4980	4841

Table 17. Interview duration in minutes

Interview	Mean	By household size	Mean
Household interview	29	HH with 1 member	43
Personal interview	16	HH with 2 members	60
Total (at household level)	62	HH with 3 members	70
		HH with 4 members	77
		HH with 5+ members	85
		Total	62

2.5. Imputation procedure

According to the principles of the detailed methodology of EU-SILC (Doc. 065/04) we applied imputation for the case of item non-response. The aim was to insert a value where the original data is missing due to item non-response. The inserted value was estimated on the basis of following procedures:
  i.   deterministic method
  ii.   stochastic method

Deterministic method was covering the cases, when the missing value can be determined by several available background information at the given record. Practically it was used for social incomes and benefits. Most of the benefit income items had got fixed amount according to the corresponding governmental measures and regulations. When the respondents were not able to give us the exact value of childcare benefit (*Családi pótlék)*, we imputed the value of childcare benefit according to the information about the number, age and activity status of the children at the household. Similar imputation was done, when the respondent did not report the value of his unemployment benefit. In this case we imputed the value the official unemployment benefit minimum to this variable.

Stochastic method was covering the cases of item non-response for work related income items. The estimations were based on linear or logarithmic regression models built up for the income items. We tested several models and chose the ones with the highest R^2. If we could not assign a regression model to describe the missing information, the mean value of the group was used.

2.6. Imputed rent

The purchase of the dwelling is regarded primary as capital formation (investment) and not consumer expenditure. However the ownership of a dwelling is considered to produce a service – a shelter -, which is actually consumed over time by the household. As consequence, it is required to estimate the price of the shelter, by imputation of rental, since no monetary transaction involved. This imputed rental is a part of household consumption expenditure. The inclusion of imputed rent in gross disposable income as well give better basis for comparison of standards of living between households with different housing behaviour patterns and with EU member states.

According to regulation imputed rent should be estimated only for those dwellings used as a main residence and for all households do not reporting full rent either because they are owner occupiers or paying lower price than the market rent. Market rent is the rent due to the right to use an unfurnished dwelling on the private market, excluding charges for heating, water, electricity, etc.

Hungary has got a special housing market situation in the aspect of imputed rental calculation. The share of market rental sector is 3 %. Owner occupiers constitute 97 % of the total housing market. Personal attitudes and social circumstances make stronger the role of private property in the housing market. Geographical and physical attributes and mainly the location of the dwelling within the country determines mostly the value of a dwelling, and possibility to let it on the rental market. Comparison of standard of living on the basis of EU-SILC survey between different social groups is not affected by the minor groups of market renters. The calculation of imputed rent is reasoned by international comparison of data within EU.

Regression method was used to calculate the value of imputed rent on household level.
We asked the value of subjective rent on household level. The following question was asked in the questionnaire: "How much you should pay as a rent for a dwelling similar to your current one either in size, number of rooms and conditions in your close neighborhood?" The value of the subjective rent was used as a dependent variable in the regression calculation. Wide set of explaining variable and linear regression models were tested as well. The one with the highest R^2 was chosen. There were 450 households where the established function did not fit and those records received the self-assessed value as an estimated imputed rent.

Table 18. Regression model for imputed rent calculation

Coefficients	Unstandardized B	t	Sig.
(Constant)	-5150	-2699	0.007
Market price of the dwelling	1926	52127	0.000
Complex indicator of settlement facilities	3336	13248	0.000
Cost of housing maintenance	0.213	12283	0.000
County	-0.327	-9229	0.000
More than 1 bathrooms	4.432	5190	0.000
Detached house	-4.614	-7279	0.000
District heating	-3.183	-4393	0.000
Number of rooms	0.754	3211	0.001
Indoor flushing toilet	1.876	2265	0.024
Technical condition of the dwelling	1.036	2193	0.028

Selection mechanism: stepwise
R square: 0.551

Table19. Number of imputed records

Household with estimated imputed rent	9462
Households with self assessed value as imputed rent	450
Household with actual market rental	238
Total	9912

2.7. Company car

A question was used to determine the value of private use of company car in on the questionnaire. It was answered by the respondents reporting use of company cars. The respondent had to estimate this value and this estimation was used in the database.

3. Comparability

This chapter will report the differences between Eurostat definitions and definitions Hungary applied in EU-SILC 2009.

3.1. Basic concepts and definitions

i. *Reference population*
No difference to common definition

ii. *Private household definition*
No difference to common definition

iii. *Household membership*
No difference to common definition

iv. *Income reference period*
Fixed twelve month period was used, which was the previous calendar year 2008.

v. *Period for taxes on income and social insurance*
No difference to common definition

vi. *Reference period for taxes on wealth*
The reference period for taxes on wealth was the same as income tax period. We included the tax on motorcars and property tax. Tax was imposed on motorcars on the basis of it's' weight and it was compulsory for the owner. Property tax could be imposed by the local municipality. It was not used in every settlement, and had several options for reductions for the property owners.

vii. *The lag between the income reference period and the current variables*
The lag between the income reference period and the current variables is 3 months since the reference time of interviewing was 1 March 2009.

viii. *Total duration of data collection of the sample*
The data collection lasted 15 weeks.

ix. *Basic information on activity during the income reference period*
Activity information was asked for each month of the income reference period in the questionnaire.

3.2. Components of income

3.2.1. Differences between the national definitions and standard EU-SILC definitions and assessment of consequences of the differences

i.   *Total household gross income*
        No difference to common definitions.
ii.   *Total disposable household income*
        No difference to the common methodology.
iii.   *Total disposable household income, before social transfers other than old-age benefit and survivors' benefit*
        No difference to the common methodology.
iv.   *Total disposable household income, before social transfers including old-age and survivors' benefit*
        No difference to the common methodology.
v.   *Imputed rent*
        Any difference to common methodology was described at 2.6.
vi.   *Income from rental of property or land*
        No difference to the common methodology.
vii.   *Family/children related allowances*
        The sophisticated child related allowance system of Hungary was covered here. For the age of 6 moths of the baby, the mother can stay at home with the baby on a *Child birth leave* receiving the amount of a normal sickpay, about 80 % of her former salary. For the age of 2 years of the child the mother or the father of the child can stay home receiving *Child care allowance(Gyed)*, which is equals to 75 % of her/his former salary, but not higher than 101 100 HUF (about 364 Euro/months). Until the age of 3 of the child the parent can stay home receiving *Child care aid (Gyes),* which equals to the minimum old age pension (about 104 Euro). This allowance can be passed to the any of grandparents who is responsible for the daily care of the child if the parent goes back to work again. If the family has got 3 or more children and the mother does not work full time (max. 20 hours a week) or does not work at all she can receive *Child care benefit (Gyet),* which equals to the minimum old-age pension until the youngest child does not fulfill the age of 8.
viii.   *Social exclusion payment not elsewhere classified*
        No difference to common methodology

3.2.2. The source or procedure used for collecting income variables

All the income variables were collected from the respondents. The income target variables were grouped into more detailed sub-components according to Hungarian tax and benefit system.

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

Gross income data were collected for the income items but in case of certain benefits according to tax law which were not considered to be belonging to the taxable income net value were asked, like old-age pension or family allowance.

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

The income items were divided into sub-components according to the Hungarian tax regulations and benefit practice in the questionnaire. The personal and household incomes were separated. Gross income items were asked for work related incomes and other incomes belonging to the personal tax system and net income items were asked for benefits and other allowances. The following steps were taken to obtain income target variables in the required form.

 i. The subcomponents were summed up to obtain the income items on personal income level.

 ii. While Hungary has a personal income tax system, the household type incomes had to be connected to household members. It was done on the basis of the income type, eg. Agricultural income was connected to the household member(s) reporting agricultural activity. Obviously just adult members were involved.

 iii. The value of taxable income was calculated for each household member.

 iv. The total household gross income was calculated for the household including all income types on basis of the process listed at i. and ii.

 v. On the basis of value of taxable income for each household member, the value of personal income tax and social insurance fee was calculated. The deductions were summed up for total of the household.

 vi. The total disposable income on household level was calculated as difference between the total household gross income and the total tax deductions.

3.3. Tracking rules

No difference to common methodology.

4. Coherence

Coherence refers to comparison of target variables and common cross-sectional indicators with external sources.

Labour Force Survey (LFS)
LFS is main reference source for labour force data. Labor force data on the activity status of the population was used for the calibration and output comparison as well.

Table 20. Number of persons aged 16-74 by self-classification and by gender in HU-LFS and in HU-EU-SILC, 2009

Age-group	HU-LFS			HU-SILC		
	Men	Women	Total	Men	Women	Total
Persons						
Working	2024885	1709644	3734529	2063841	1753520	3817361
Unemployed	334041	258029	592070	260573	220664	481237
Pupil, student, further training, unpaid work experience	379479	377746	757225	388751	396341	785092
In retirement or in early retirement or permanently disabled	828455	1159739	1988194	881112	1237043	2118155
Fulfilling domestic tasks and care responsibilities	13218	388070	401288	7243	362610	369853
Other inactive person	50063	56929	106992	50414	54981	105395
Total	**3630141**	**3950157**	**7580298**	**3651934**	**4025159**	**7677093**
Distribution (%)						
Working	55.8	43.3	49.3	56.5	43.6	49.7
Unemployed	9.2	6.5	7.8	7.1	5.5	6.3
Pupil, student, further training, unpaid work experience	10.5	9.6	10.0	10.6	9.8	10.2
In retirement or in early retirement or permanently disabled	22.8	29.4	26.2	24.1	30.7	27.6
Fulfilling domestic tasks and care responsibilities	0.4	9.8	5.3	.2	9.0	4.8
Other inactive person	1.4	1.4	1.4	1.4	1.4	1.4
Total	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**	**100.0**

In a strict sense EU-SILC datasets are not considered as external sources, but it provides the opportunity to compare the cross-sectional results of 4 waves. However some changes were introduced in the formulation of questions but the data were produced under the same frame and definitions and procedures. All the target variables are available for the comparison.

The income items reflect the changes of the economic situation of Hungarian households well. In a country of a rapid social and economic transition it is quite plausible to see a certain restructuring among the income items even on a very short period of one year. There is an increase on the employment cash income and self-employment related income while the non-cash income has been narrowed by the income tax regulations. At certain items – like pension from individual private plans or income of household members under 16 – the number of observations was small.

Last but not least the final output of EU-SILC is the annual calculation of the common cross sectional indicators (Laeken indicators).The common cross sectional indicators receives great attention from the public and official users as well. HCSO publish a study on this topic every year describing the results in Hungarian. The latest study was published in October 2010.

http://portal.ksh.hu/pls/ksh/docs/hun/xftp/idoszaki/laekindikator/laekindikator09.pdf

Table 21. Comparison of income target variables EU-SILC 2006, 2007,2008, 2009 (weighted)

weighted		2006		2007		2008		2009	
		mean	standard error	mean	standard error	mean	standard error	mean	standard error
PY010G	Employee cash or near-cash income	1 378 174	21 143	1 410 237	15 474	1 489 381	13 517	1621374	7862
PY020G	Non-cash employee income	70 510	4 241	98 653	15 256	76 487	225	74810	196
PY050G	Cash benefit or losses from self-employment	1 861 218	99 261	893 234	58 792	942 774	12 658	1074571	4951
PY070G	Value of goods produced by own-consumption	0	0	49 644	4 830	48 988	342	40484	587
PY080G	Pension from individual private plans	171 382	32 102	388 738	139 349	444 017	255	569888	396
PY090G	Unemployment benefit	185 629	13 192	247 210	18 395	263 042	915	267210	692
PY100G	Old-age benefit	796 206	7 538	861 340	5 508	949 236	21 543	1048213	2482
PY110G	Survivor's benefit	316 294	18 156	439 261	29 782	410 948	579	482880	540
PY120G	Sickness benefit	81 945	5 346	104 599	7 263	103 112	519	111630	433
PY130G	Disability benefit	526 610	9 731	521 900	10 406	588 141	2 267	677155	1655
PY140G	Education related allowances	88 714	6 017	112 671	8 121	152 376	233	162289	193

Table 21. Comparison of income target variables EU-SILC 2006, 200, 2008, 2009 (weighted)- continued -

		2006		2007		2008		2009	
		mean	standard error	mean	standard error	mean	standard error	mean	standard error
Income components on household level									
HY010	Total household gross income	2 447 399	34 664	2 510 148	26 020	2 697 270	41 069	2944966	20246
HY020	Total disposable household income	1 968 043	27 270	1 998 043	17 298	2 101 591	23 423	2275418	12487
HY022	Total disp.hhold income before soc.trans other than old-age benefit and survivor's benefit	1 784 588	28 050	1 737 966	17 327	1 810 434	16 776	1985007	12943
HY023	Total disp.hhold income before soc.transfers including old-age and survivor's benefit	1 595 723	33 000	1 430 903	20 136	1 440 865	34 012	1521096	14391
HY040G	Income from rental of a property or land	278 499	69 557	599 990	113 058	599 283	122 817	563642	83555
HY050G	Family/Children related allowances	268 548	5 755	371 931	7 173	388 899	7 460	417322	4556
HY060G	Social exclusion not elsewhere classified	42 755	8 259	49 203	3 903	105 051	10 562	126209	10041
HY070G	Housing allowances	49 010	2 854	49 971	2 393	50 098	1 980	50041	1677
HY080G	Regular interhousehold cash transfers received	311 243	34 887	111141	5 479	161 739	10 332	189354	7224
HY090G	Interest, dividends, profit from cap.investment	338 028	66 443	783 803	123 903	1 238 220	308 293	1208454	228152
HY100G	Interest repayment on mortgage	249 095	12 549	222 814	7 997	188 086	3 560	217108	3496
HY110G	Income received by people under 16	45 581	26 574	184 734	85 902	72 508	14 864	147857	43615
HY120G	Regular taxes on wealth	15 778	359	14 552	183	14 583	223	15335	224
HY130G	Regular interhousehold cash transfers paid	277 097	21 319	79 198	3 731	118 197	12 587	134562	6005
HY140G	Tax on income and social contribution	649 140	18 330	720 485	13738	851 769	17 561	929010	14008

Table 22. Comparison of Common cross-sectional indicators EU-SILC2006, 2007, 2008, 2009

			2006	**2007**	**2008**	**2009**
At-Risk of poverty threshold (illustrative values)						
	1 person hh	$$NAT	572577	623502	663367	715187
		EUR	2308	2359	2639	2844
		PPS	3778	3975	3993	4175
	2 adults 2 dep. children	$NAT	1202412	1309354	1393070	1501892
		EUR	4847	4955	5542	5972
		PPS	7933	8348	8385	8767
At-Risk-of-poverty rate	Total	Total	16	13	12	12
by age and gender		M	16	13	12	13
		F	16	13	12	12
	0-17	Total	25	19	20	21
	0-64	Total	17	14	14	14
		M	18	14	14	14
		F	17	14	14	14
	18-64	Total	15	12	12	12
		M	15	12	12	12
		F	14	12	12	12
	18-24	Total	18	18	18	18
		M	18	17	16	17
		F	19	19	20	19
	25-49	Total	16	13	12	13
		M	16	12	12	12
		F	16	13	13	14
	50-64	Total	11	9	9	8
		M	12	10	9	9
		F	10	6	8	7
	65+	Total	9	6	4	5
		M	7	3	3	3
		F	11	8	5	5
At-Risk-of-poverty rate	Total	Total	7	6	5	6
by most frequent activity		M	8	7	6	7
(a) At work		F	5	5	4	5
(d) Not at work	Total	Total	20	15	15	14
		M	21	16	15	14
		F	19	15	15	14
(e1) Of which: Unemployed	Total	Total	53	47	48	47
		M	55	53	49	49
		F	51	41	48	45
(e2) Of which: Retired	Total	Total	12	8	7	4
		M	12	8	7	3
		F	12	9	7	5
(f) Of which: Other inactive	Total	Total	26	22	24	19
		M	23	19	20	17
		F	27	24	25	20

Table 22. Comparison of Common cross-sectional indicators EU-SILC2006,2007,2008,2009-cont.-

			2006	2007	2008	2009
Risk-of-poverty rate by household type	*All hh no dep. childr.*		10	8	8	7
	1 person hh	*M*	25	20	23	20
	1 person hh	*F*	15	14	12	11
	1 person hh <65yrs		22	21	22	19
	1 person hh 65+		14	11	8	9
	2 adults no dep. childr.	*(both < 65)*	11	9	9	8
	2 adults no dep. childr.	*(at least one 65+)*	8	4	3	3
	Other hh no dep. childr.		6	4	5	4
	All hh with dep. childr.		21	16	16	17
	Single parent	*(at least 1 child)*	39	29	33	26
	2 adults 1 dep. child		14	12	11	10
	2 adults 2 dep. childr.		18	15	16	16
	2 adults 3+ dep. childr.		33	27	29	31
	Other hh with dep. childr.		15	11	11	14
At-Risk-of-poverty rate by accommodation tenure status						
6						
(a) Owner or rent-free		*Total*	15	12	12	12
(b) Tenant		*Total*	25	22	25	25
7 *Risk-of-poverty rate*	*All hh no dep. childr.*	*WI = 0*	22	16	15	11
by work intensity of		*0 < WI < 1*	9	8	7	9
the household		*WI = 1*	2	3	2	2
	All hh with dep. childr.	*WI = 0*	73	62	56	60
		0 < WI < 0.5	52	42	34	45
		0.5 <= WI < 1	16	13	13	15
		WI = 1	6	6	4	4

Table 22. Comparison of Common cross-sectional indicators EU-SILC2006,2007,2008,2009-cont.-

				2006	2007	2008	2009
9	**Risk-of-poverty rate**	*Total*	*Total*	49	49	52	51
	before and after transfers by age and		*M*	47	47	50	49
	gender		*F*	50	51	54	54
	(a) before all transfers	*0-17*	*Total*	48	49	52	51
		18-64	*Total*	49	49	44	43
			M	47	47	42	41
			F	51	52	46	45
		65+	*Total*	87	88	89	88
			M	89	89	91	90
			F	87	87	88	87
	(b) including pensions	*Total*	*Total*	30	29	30	29
			M	30	30	31	29
			F	29	29	30	28
		0-17	*Total*	44	45	47	46
		18-64	*Total*	29	29	30	28
			M	29	29	30	28
			F	28	29	30	28
		65+	*Total*	14	11	10	9
			M	10	7	7	7
			F	16	13	11	11
13	**Relative median risk-of-poverty gap by age and gender**	*Total*	*Total*	24	20	17	16
			M	25	21	18	16
			F	23	19	17	16
		0-17	*Total*	25	20	17	17
		18-64	*Total*	25	21	18	17
			M	25	21	18	17
			F	24	22	18	17
		65+	*Total*	17	14	10	13
			M	21	10	10	16
			F	16	15	10	12
14	**S80/S20 quintile share ratio**			5.5	3.7	3.6	3.5
15	**Gini coefficient**			0.333	0.257	0.252	0.247