

Department of Living Standard and Labour Statistics



Final Quality Report

For EU-SILC 2007-2006-2005 longitudinal operation

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Introduction

The present final 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 longitudinal indicators.

1. Common Longitudinal European Union Indicators

2007 was the third year of EU-SILC survey in Hungary as a part of a longitudinal sample. For the three-year panel of EU-SILC 2007-2006-2005 no longitudinal indicators were specified.

2. Accuracy

2.1. Sample design

2.1.1. Type of sampling

EU-SILC is a longitudinal panel survey using rotational groups. In the first year of the survey households were selected into 4 rotational groups and in each subsequent year of the survey one rotational group was excluded while a new one was added. The longitudinal sample consists of the rotational groups remaining in the sample for 3 years in context of this report meaning the R3 and R4 component of the sample in 2005, 2006 and 2007.

In 2005 the sample of the Hungarian EU-SILC survey was a sub-sample of the Income survey sample which was a sub-sample of the micro census sample. It had a stratified two stage sample design in a part of the population (part I., type I., one PSU per stratum), 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. The second wave of EU-SILC was launched in 2006. In 2006 a new rotational group with 4103 dwellings was introduced with a sample design coinciding with the previous year sample design. The third wave of EU-SILC was launched in 2007. The newly introduced rotational group consisted of 6315 dwelling using the same selection method.

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.

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: 2, 3 or 4 micro census strata similar in size of localities were collapsed. Within these collapsed strata only one locality was selected for EU-SILC (one PSU per stratum).

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

2.1.4. Sample size and allocation criteria

7925 dwellings were selected in 2005 regarding the three-year longitudinal components. Based on the minimum effective sample size we took expected non-response rate at the first wave and attrition over time into account. Our aim was to achieve a nearly proportional allocation for the realized sample. We calculate higher non-response rate in urban area, and somewhat lower non-response rate in the rural area. There were 3838 follow-up households plus 87 split off households in 2006 giving altogether 3925 households in the longitudinal R3 and R4 component in 2006. There were 3516 follow up households plus 66 split off households in 2007 giving altogether 3585 households in the longitudinal R3 and R4 component in 2007.

Table 1. Sample size and household interviews, longitudinal R3 and R4 component-

Longitudinal component	2005		2006				2007			
	number	%								
used address	7929	100	3838	100	87	100	3516	100	66	100
address existed	6327	79.8	3838	100	82	94.3	3516	100	65	98.5
address not existed	1602	20.2	0	0	5	5.7	0	0	1	1.5
gross sample addresses	6327	100	3838	100	82	100	3516	100	65	100
successfully contacted	6320	99.9	3838	100	78	95.1	3516	100	64	98.5
addresses not successfully contacted	7	0.1	0	0	4	4.9	0	0	1	1.5
successfully contacted address	6320	100	3838	100	78	100	3516	100	64	100
household questionnaire completed	3939	62.3	3514	91.6	60	76.9	3249	92.4	51	79.7
refusal to cooperate	2257	35.7	247	6.4	13	16.7	159	4.5	11	17.2
entire household away for the duration of the fieldwork	89	1.4	55	1.4	4	5.1	40	1.2	0	0
household unable to respond	14	0.2	15	0.4	0	0	11	0.3	0	0
other reason	21	0.3	7	0.2	1	1.3	57	1.6	2	3.1
successful household questionnaire interview	3939	100	3514	100	60	100	3249	100	51	100
accepted for the database	3939	100	3514	100	60	100	3249	100	51	100
interview rejected	0	0	0	0	0	0	0	0	0	0

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Table 2. Households and persons in the longitudinal R3 R4 components

	2005	2006	2007	Total
Used address	7929	3925	3582	15436
successfully contacted address	6320	3916	3580	13816
successful and accepted interview	3939	3574	3300	10813
persons	10148	9559	8276	27983
personal interviews	8351	7641	6691	22683

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. Before selection dwellings were sorted by the characteristic of area, enumeration district and serial number of dwellings.

2.1. 6. Sample distribution over time

The field work was carried out in May and June in 2005 with the reference month of April 2005. The field work was carried out in May, June in 2006 with reference month of April 2006. The field work was carried out in March, April and May in 2007 with reference month of March 2007. The field work period covered nearly three months because of field work allocation and workload related reasons in 2007.

Table 3. Number of successful interviews by date of interview in longitudinal R3 R4 components

	2005	2006	2007	Total
April	0	0	3 182	3 182
May	3 743	3 496	118	7 357
June	196	78	0	274

2.1.7. Sample distribution over time

2005 was the first year of EU-SILC in Hungary. The 13 975 selected dwellings 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 dwellings were introduced. In 2007 the second rotational group (of size 1697) was dropped and R6 component with 6315 households were introduced.

Table 4. Size of rotational groups (selected sample)

	2005	2006	2007	2008
Rotational group1	2702	-	-	-
Rotational group2	3344	1697	-	-
Rotational group3	3731	1910	1716	-
Rotational group4	4198	2116	1924	1805
Rotational group5	-	4130	2635	2345
Rotational group6	-	-	6315	3187
Rotational group7	-	-	-	4103
Total sample	13975	9853	12590	11440

2.1.8. Weighting

This chapter describes the computation of weights of longitudinal EU-SILC 2007-2006-2005.

2.1.8.1. Design factors

For the first wave of each subsample 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 dwellings in stratum j , and l_j is the number of selected dwellings.

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 strata. Primary weight in stratum j , $w'_j = L_j / l'_j$, where l'_j is the number of observed dwellings.

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 the constantly updated Census 2001 and other surveys. Iterative raking scale method was applied. For the integrative calibration the following controls were used:

- Population totals of 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 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 longitudinal weights

For the second and following waves of EU-SILC longitudinal components the following information will be provided

Calculating RB063 three-year longitudinal weight for panel 2005-2006-2007

1. RB060 base weight in 2005

- IN 2005 the base weight is equal to the final cross-sectional weight multiplied with a factor so that each sub sample (rotational group 3 and 4) represents the whole population.

2. Adjustment of RB060 for attrition between 2005 and 2006

- First all non-respondents were classified into class IN-SCOPE, OUT-OF-SCOPE or UNKNOWN.
- Using logistic regression model, non-respondents in class UNKNOWN were assigned to either IN-SCOPE or OUT-OF-SCOPE class.
- Within the frame of respondents and non-respondents IN-SCOPE we applied logistic regression model to calculate probability of remaining in the panel 2005-2006 (**prob56**). The following variables were used in the model:
 - region
 - type of locality
 - male
 - age group
 - whether they moved
 - size of household
 - activity
 - educational level
 - OECD1 income
 - poverty indicator
 - state of health
 - marital status.

For persons in the panel 2005-2006 we calculated $\text{RB060}/\max(0.5, \text{prob56})$, that is prob56 was bounded with a lower bound of 0,5.

3. Adjustment for attrition between 2006 and 2007

- The same method was applied as for attrition between 2005 and 2006, which resulted in a weight $(\text{RB060}/\max(0.5, \text{prob56}))/\max(0.5, \text{prob67})$ for three-year panel persons. For three-year panel persons this is equal to Rb060 base weight in 2007.

4. Final longitudinal weight RB063

- The above calculated weight is multiplied with a factor proportional to the size of the sub sample, resulted in the final three-year longitudinal weight.

Calculating RB062 two-year longitudinal weight for 2006-2007

1. RB060 base weight in 2006

- IN 2006 the base weight is equal to the final cross-sectional weight multiplied with a factor so that each sub sample (rotational group 3, 4 and 5) represents the whole population.

2. Adjustment of RB060 for attrition between 2006 and 2007

- First all non-respondents were classified into class IN-SCOPE, OUT-OF-SCOPE or UNKNOWN.
- Using logistic regression model, non-respondents in class UNKNOWN were put into either IN-SCOPE or OUT-OF-SCOPE class.
- Within the frame of respondents and non-respondents IN-SCOPE we applied logistic regression model to calculate probability of remaining in the panel 2006-2007 (**prob67**). The following variables were used in the model:
 - region
 - type of locality
 - male

- age group
- whether they moved
- size of household
- activity
- educational level
- OECD1 income
- poverty indicator
- state of health
- marital status.

For persons in the panel 2006-2007 we calculated $RB060/\max(0.5, \text{prob67})$.

3. Final longitudinal weight RB062

- The above calculated weight is multiplied with a factor proportional to the size of the sub sample, resulted in the final two-year longitudinal weight.

Calculating RB060 base weight in 2007

- For panel persons the base weight is equal to the previous year's base weight adjusted for panel attrition as described above.
- For newly born children the base weight is equal to the mother's base weight in 2007.

2.1.8.5. Non-response adjustments

Non-response adjustments occur only in relation with panel attrition, where previous wave's base weights are adjusted.

This adjustment made in two steps:

- First all non-respondents were classified into class IN-SCOPE, OUT-OF-SCOPE or UNKNOWN.
- Using logistic regression model, non-respondents in class UNKONWN were put into either IN-SCOPE or OUT-OF-SCOPE class.

Within the frame of respondents and non-respondents IN-SCOPE we applied logistic regression model to calculate probability of remaining in the panel. The following variables were used in the model:

- region
- type of locality
- male
- age group
- whether they moved
- size of household
- activity
- educational level
- OECD1 income
- poverty indicator
- state of health
- marital status.

2.1.8.6. Adjustments to external data (level, variable used and sources)

Adjustment to external data occurs only in creation DB090 final cross sectional weight for the longitudinal database.

DB090 final cross-sectional weight in 2007

- It is based on RB060 base weight in 2007 (described in 2.1.8.4).
- GWSM was applied, resulted in a household cross-sectional weight.
- A final calibration was applied. Level, variable used and sources are described in 2.1.8.3.

2.1.8.7. Final longitudinal weight - see chapter 2.1.8.5

2.1.9. Substitution

There was no substitution in the survey.

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2.2. Sampling errors

Table 5. Mean, total number of observation before and after imputation, standard error, effective sample size – unweighted –longitudinal R3 R4 components in 2005

Income component		Mean	Nr of observation		Standard error	Effective sample size
			Before imputation	After imputation		
<i>Gross income components on personal level</i>						
PY010G	Employee cash or near-cash income	1150376	3066	4088	12 562	3 751
PY021G	Company car	256055	55	55	46 037	53
PY050G	Cash benefit or losses from self-employment	1104785	606	717	13 258	546
PY070G	Value of goods produced by own-consumption	.	0	0	0,00	
PY080G	Pension from individual private plans	225650	44	44	342	41
PY090G	Unemployment benefit	228817	378	450	1 076	452
PY100G	Old-age benefit	716377	2417	2505	5 391	2 178
PY110G	Survivor's benefit	218701	96	98	380	86
PY120G	Sickness benefit	128889	305	305	538	277
PY130G	Disability benefit	389586	691	865	1 981	723
PY140G	Education related allowances	74933	109	109	177	96
HY010	Total household gross income	2122710	3037	3939	40 376	3 244
HY020	Total disposable household income	1686603	3037	3939	25 273	3 208
HY022	Total disp.hhold income before soc.trans other than old-age benefit and survivor's benefit	1474948	1732	3890	25 047	3 184
HY023	Total disp.hhold income before soc.transfers including old-age and survivor's benefit	1174250	2688	3340	29 533	2 742
HY040G	Income from rental of a property or land	396174	73	73	119 981	73
HY050G	Family/Children related allowances	276506	1161	1292	8 740	1 086
HY060G	Social exclusion not elsewhere classified	120862	458	458	9 519	374
HY070G	Housing allowances	45365	131	131	4 082	125
HY080G	Regular interhousehold cash transfers received	149699	587	587	8 739	557
HY090G	Interest, dividends, profit from capital investment	287666	38	38	164 665	36
HY100G	Interest repayment on mortgage	222497	313	313	14 664	280
HY110G	Income received by people under 16	114220	24	24	38 980	21
HY120G	Regular taxes on wealth	14400	1843	1843	396	1 894
HY130G	Regular interhousehold cash transfers paid	108285	718	718	8 387	614
HY140G	Tax on income and social contribution	633754	355	2546	24 280	2 089

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 Table 6. Mean, total number of observation before and after imputation, standard error, effective sample size – unweighted–longitudinal R3 R4 components in 2006

Income component		Mean	Nr of observation		Standard error	Effective sample size
			Before imputation	After imputation		
<i>Gross income components on personal level</i>						
PY010G	Employee cash or near-cash income	1278634	3337	3597	13 420	3 382
PY021G	Company car	76212	356	356	6 998	352
PY050G	Cash benefit or losses from self-employment	1702121	336	477	12 050	401
PY070G	Value of goods produced by own-consumption	.	0	0	0,00	
PY080G	Pension from individual private plans	171454	38	38	266	33
PY090G	Unemployment benefit	191317	455	455	1 094	448
PY100G	Old-age benefit	775591	2178	2303	6 423	2 195
PY110G	Survivor's benefit	303199	118	118	661	90
PY120G	Sickness benefit	80712	398	398	401	339
PY130G	Disability benefit	530437	576	586	2 146	509
PY140G	Education related allowances	87664	200	200	269	173
<hr/>						
HY010	Total household gross income	2299853	3571	3571	41 171	3 143
HY020	Total disposable household income	1894229	3572	3572	33 082	3 115
HY022	Total disp.hhold income before soc.trans other than old-age benefit and survivor's benefit	1701514	3507	3507	32 825	3 141
HY023	Total disp.hhold income before soc.transfers including old-age and survivor's benefit	1466825	2826	2826	42 041	2 399
HY040G	Income from rental of a property or land	254134	56	56	83 061	41
HY050G	Family/Children related allowances	291246	1125	1125	10 611	921
HY060G	Social exclusion not elsewhere classified	40822	188	188	7 442	151
HY070G	Housing allowances	51135	315	315	3 283	295
HY080G	Regular interhousehold cash transfers received	337378	365	365	49 775	402
HY090G	Interest, dividends, profit from capital investment	371837	43	43	93 246	40
HY100G	Interest repayment on mortgage	229235	259	259	14 587	235
HY110G	Income received by people under 16	46250	4	4	23 812	3
HY120G	Regular taxes on wealth	15203	1612	1612	408	1 605
HY130G	Regular interhousehold cash transfers paid	229333	341	341	20 859	318
HY140G	Tax on income and social contribution	598610	2245	2245	16 237	2 008

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 Table 7. Mean, total number of observation before and after imputation, standard error, effective sample size –unweighted- longitudinal R3 R4 components in 2007

Income component		Mean	Nr of observation		Standard error	Effective sample size
			Before imputation	After imputation		
<i>Gross income components on personal level</i>						
PY010G	Employee cash or near-cash income	1409439	3203	3329	15 801	3 026
PY021G	Company car	397471	34	34	140 939	35
PY050G	Cash benefit or losses from self-employment	714953	687	693	10 416	632
PY070G	Value of goods produced by own-consumption	43584	403	403	430	294
PY080G	Pension from individual private plans	336667	12	12	285	12
PY090G	Unemployment benefit	240177	402	402	1 533	379
PY100G	Old-age benefit	844449	2128	2167	6 578	2 106
PY110G	Survivor's benefit	415686	97	97	795	81
PY120G	Sickness benefit	94128	422	422	496	407
PY130G	Disability benefit	503265	632	635	2 569	522
PY140G	Education related allowances	101989	95	95	193	88
<hr/>						
HY010	Total household gross income	2446044	3298	3298	43 090	2 998
HY020	Total disposable household income	1975275	3298	3298	28 717	2 931
HY022	Total disp.hhold income before soc.trans other than old-age benefit and survivor's benefit	1722905	3262	3262	28 431	2 892
HY023	Total disp.hhold income before soc.transfers including old-age and survivor's benefit	1392968	2692	2692	35 888	2 320
HY040G	Income from rental of a property or land	551103	56	56	229 505	43
HY050G	Family/Children related allowances	391681	1035	1037	11 491	866
HY060G	Social exclusion not elsewhere classified	76516	132	132	15 405	135
HY070G	Housing allowances	47295	265	265	4 466	201
HY080G	Regular interhousehold cash transfers received	114074	380	380	7 873	368
HY090G	Interest, dividends, profit from capital investment	693065	38	38	198 143	35
HY100G	Interest repayment on mortgage	205302	627	627	9 690	542
HY110G	Income received by people under 16	230752	4	4	138 892	3
HY120G	Regular taxes on wealth	14338	1826	1826	320	1 460
HY130G	Regular interhousehold cash transfers paid	95007	290	290	8 338	279
HY140G	Tax on income and social contribution	722693	2074	2074	23 445	1 949

Table 8. Mean, total number of observation before and after imputation, standard error – weighted- longitudinal R3 R4 components in 2005

Income component		Mean	Nr of observation		Standard error
			Before imputation	After imputation	
<i>Gross income components on personal level</i>					
PY010G	Employee cash or near-cash income	1192662	3066	4088	14 191
PY021G	Company car	269380	55	55	51 775
PY050G	Cash benefit or losses from self-employment	1169864	606	717	13 234
PY070G	Value of goods produced by own-consumption	.	0	0	0,00
PY080G	Pension from individual private plans	219263	44	44	326
PY090G	Unemployment benefit	233718	378	450	1 122
PY100G	Old-age benefit	718295	2417	2505	5 273
PY110G	Survivor's benefit	227154	96	98	488
PY120G	Sickness benefit	130646	305	305	618
PY130G	Disability benefit	406513	691	865	2 235
PY140G	Education related allowances	71286	109	109	190
<i>Gross income components on household level</i>					
HY010	Total household gross income	2190608	3037	3939	43 497
HY020	Total disposable household income	1718071	3037	3939	27 156
HY022	Total disp.hhold income before soc.trans other than old-age benefit and survivor's benefit	1500421	1732	3890	26 903
HY023	Total disp.hhold income before soc.transfers including old-age and survivor's benefit	1242623	2688	3340	31 877
HY040G	Income from rental of a property or land	412910	73	73	122 385
HY050G	Family/Children related allowances	263946	1161	1292	8 450
HY060G	Social exclusion not elsewhere classified	127890	458	458	11 459
HY070G	Housing allowances	47009	131	131	4 543
HY080G	Regular interhousehold cash transfers received	158603	587	587	10 333
HY090G	Interest, dividends, profit from capital investment	403681	38	38	240 650
HY100G	Interest repayment on mortgage	229030	313	313	15 899
HY110G	Income received by people under 16	105049	24	24	33 887
HY120G	Regular taxes on wealth	14756	1843	1843	434
HY130G	Regular interhousehold cash transfers paid	112192	718	718	9 865
HY140G	Tax on income and social contribution	664800	355	2546	24 837

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 Table 9. Mean, total number of observation before and after imputation, standard error –
 weighted- longitudinal R3 R4 components in 2006

Income component		Mean	Nr of observation		Standard error
			Before imputation	After imputation	
<i>Gross income components on personal level</i>					
PY010G	Employee cash or near-cash income	1337895	3337	3597	15 525
PY021G	Company car	77366	356	356	7 301
PY050G	Cash benefit or losses from self-employment	1901575	336	477	17 451
PY070G	Value of goods produced by own-consumption	.	0	0	0,00
PY080G	Pension from individual private plans	166956	38	38	257
PY090G	Unemployment benefit	201214	455	455	1 386
PY100G	Old-age benefit	780299	2178	2303	6 345
PY110G	Survivor's benefit	296527	118	118	724
PY120G	Sickness benefit	83208	398	398	559
PY130G	Disability benefit	543675	576	586	2 305
PY140G	Education related allowances	85999	200	200	264
<i>Gross income components on household level</i>					
HY010	Total household gross income	2418094	3571	3571	51 524
HY020	Total disposable household income	1975818	3572	3572	42 852
HY022	Total disp.hhold income before soc.trans other than old-age benefit and survivor's benefit	1784329	3507	3507	43 135
HY023	Total disp.hhold income before soc.transfers including old-age and survivor's benefit	1597323	2826	2826	52 918
HY040G	Income from rental of a property or land	306737	56	56	121 745
HY050G	Family/Children related allowances	269887	1125	1125	9 848
HY060G	Social exclusion not elsewhere classified	43932	188	188	11 818
HY070G	Housing allowances	54526	315	315	4 542
HY080G	Regular interhousehold cash transfers received	335715	365	365	53 030
HY090G	Interest, dividends, profit from cap.investment	438498	43	43	116 474
HY100G	Interest repayment on mortgage	234233	259	259	18 407
HY110G	Income received by people under 16	59757	4	4	21 101
HY120G	Regular taxes on wealth	16241	1612	1612	591
HY130G	Regular interhousehold cash transfers paid	247458	341	341	30 586
HY140G	Tax on income and social contribution	610187	2245	2245	18 338

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 Table 10. Mean, total number of observation before and after imputation, standard error
 – weighted- longitudinal R3 R4 components in 2007

Income component		Mean	Nr of observation		Standard error
			Before imputation	After imputation	
<i>Gross income components on personal level</i>					
PY010G	Employee cash or near-cash income	1498936	3203	3329	18 162
PY021G	Company car	660557	34	34	250 147
PY050G	Cash benefit or losses from self-employment	928684	687	693	14 641
PY070G	Value of goods produced by own-consumption	44760	403	403	532
PY080G	Pension from individual private plans	510680	12	12	540
PY090G	Unemployment benefit	279861	402	402	2 583
PY100G	Old-age benefit	855659	2128	2167	6 961
PY110G	Survivor's benefit	433654	97	97	893
PY120G	Sickness benefit	103724	422	422	630
PY130G	Disability benefit	525925	632	635	3 013
PY140G	Education related allowances	103181	95	95	218
<i>Gross income components on household level</i>					
HY010	Total household gross income	2546465	3298	3298	54 608
HY020	Total disposable household income	2025526	3298	3298	36 525
HY022	Total disp.hhold income before soc.trans other than old-age benefit and survivor's benefit	1765083	3262	3262	35 997
HY023	Total disp.hhold income before soc.transfers including old-age and survivor's benefit	1487868	2692	2692	43 553
HY040G	Income from rental of a property or land	486481	56	56	197 825
HY050G	Family/Children related allowances	377400	1035	1037	12 211
HY060G	Social exclusion not elsewhere classified	66867	132	132	11 433
HY070G	Housing allowances	47165	265	265	4 261
HY080G	Regular interhousehold cash transfers received	114573	380	380	9 249
HY090G	Interest, dividends, profit from cap.investment	936479	38	38	315 916
HY100G	Interest repayment on mortgage	208521	627	627	10 456
HY110G	Income received by people under 16	152378	4	4	145 542
HY120G	Regular taxes on wealth	14895	1826	1826	417
HY130G	Regular interhousehold cash transfers paid	92011	290	290	9 820
HY140G	Tax on income and social contribution	745132	2074	2074	27 286

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Table 11. Mean, number of observation, Standard error for Disposable Income – longitudinal R3 R4 components in 2005- weighted

Disposable income	Mean	Number of observation	Standard error
<i>Equivalised disposable income By household size</i>			
1 household member	850980	996	18 324
2 household member	1024040	2454	19 327
3 household member	1032471	2163	24 565
4 and more household member	974364	4535	29 178
<i>Population by age groups</i>			
Under 25	926548	2907	24 633
25-34	1056924	1458	25 831
35-44	1021516	1201	24 510
45-54	1001016	1561	32 962
55-64	1071458	1252	25 565
65+	931136	1769	10 409
<i>Population by gender</i>			
Male	1008461	4724	16 362
Female	967658	5424	14 200
<i>Total</i>	986652	10148	11 894

Table 12. Mean, number of observation, Standard error for Disposable Income – longitudinal R3 R4 components in 2006- weighted

disposable income	Mean	Number of observation	Standard error
<i>Equivalised disposable income by household size</i>			
1 household member	938028	906	52 486
2 household member	1184014	2186	38 025
3 household member	1159931	1950	44 799
4 and more household member	1060932	4224	45 076
<i>Population by age groups</i>			
Under 25	1001132	2677	40 192
25-34	1231697	1304	36 625
35-44	1098604	1112	58 414
45-54	1192850	1372	55 829
55-64	1191015	1149	37 045
65+	1009970	1652	20 043
<i>Population by gender</i>			
Male	1118983	4323	26 484
Female	1081122	4943	25 202
<i>Total</i>	1098786	9266	21 800

Table 13. Mean, number of observation, Standard error for Disposable Income –

longitudinal R3 R4 components in 2007- weighted

disposable income	Mean	Number of observation	Standard error
<i>Equivalentised disposable income by household size</i>			
1 household member	957774	844	45 661
2 household member	1231002	1994	34 972
3 household member	1248854	1791	49 434
4 and more household member	1091784	3923	31 854
<i>Population by age groups</i>			
Under 25	1143913	8552	27 474
25-34	1038719	2426	38 203
35-44	1260431	1173	46 409
45-54	1135074	1025	39 299
55-64	1224611	1264	35 425
65+	1267277	1066	16 999
<i>Population by gender</i>			
Male	1165192	3987	21 555
Female	1125328	4565	19 783
<i>Total</i>	1143913	8552	19 666

2.3. Non-sampling errors

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

2.3.1. Sampling frame and coverage errors

The 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 $30,000 / 4,260,000 \approx 0.7 \%$

2.3.2. Measurement and processing errors

AS EU-SILC is an integrated model, both the cross sectional and the longitudinal component are in the same survey, issues on measurement errors (questionnaires, fieldwork monitoring and data controlling, etc.) reported in the intermediate report are valid, hence not reported again.

2.3.3. Non-response errors

2.3.3.1. Achieved sample size

Table 14. Sample size and accepted interviews by rotational groups-longitudinal R3 R4 components

	R3	R4	Total
2005			
Accepted household interviews	1875	2064	3939
Accepted personal interviews	3975	4376	8351
Number of persons aged 16 years and older	3975	4376	8351
Sample persons	3975	4376	8351
Co-resident	0	0	0
2006			
Accepted household interviews	1685	1889	3574
Accepted personal interviews	3608	4033	7641
Number of persons aged 16 years and older	3608	4033	7641
Sample persons	3522	3928	7450
Co-resident	86	105	191
2007			
Accepted household interviews	1547	1753	3300
Accepted personal interviews	3123	3568	6691
Number of persons aged 16 years and older	3123	3568	6691
Sample persons	2994	3442	6436
Co-resident	129	126	255

2.3.3.2. Unit non-response

Household non-response rates (NRh)

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

$$Ra = \frac{\text{Number of addresses successfully contacted}}{\text{Number of valid addresses selected}} = \frac{\Sigma[DB120=11]}{\Sigma[DB120=all] - \Sigma[DB120=23]} = 0.998$$

$$Rh = \frac{\text{Nr of hhold interviews completed \& accepted for database}}{\text{Number of eligible households at contacted addresses}} = \frac{\Sigma[DB135=1]}{\Sigma[DB130=all]} = 0.730$$

$$NRh = (1 - (0.998 * 0.7348)) * 100 = 22.098 \%$$

Individual non-response rate (NRp):

$$NRp = (1 - (Rp)) * 100$$

$$Rp = \frac{\text{Number of personal interviews completed}}{\text{Number of eligible individuals in the households whose interviews were completed and accepted for the data base}}$$

$$\frac{\Sigma[RB250=11]}{\Sigma[RB245=1]} = 1.00$$

Overall individual non-response rate (*NRp):

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

$$NRp = (1 - (0.998 * 0.730 * 1.00)) * 100 = 22.098 \%$$

Table 15: Household response rate: Comparison of result codes between wave 2 and wave 1

Sample outcome in wave 1=2005	Sample outcome in wave 2=2006											
	DB130=11		DB120=22	DB130=22	DB130=23	DB130=24	DB130=21	DB120=21	NC	DB110=10	DB120=23	Total
	DB135=1	DB135=2	(DB100=3-7)									
DB130=11 & DB135=1	3514	0	0	55	15	7	247	0	100	1	0	3939
DB130=11 & DB135=2	0	0	0	0	0	0	0	0	0	0	0	0
DB120=21												
DB120=22												
DB120=23												
DB130=21												
DB130=22												
DB130=23												
DB130=24												
Total	3514	0	0	55	15	7	247	0	100	1	0	3939
New households in wave 2=2006												
DB110=8	0	0	0	0	0	0	0	0	0	0	0	0
DB110=9	0	0	0	0	0	0	0	0	0	0	0	0
Total (a 16.sor+19+20.sor)	3514	0	0	55	15	7	247	0	100	1	0	3939
Reference	A	B	C	D	E	F	G	H	I	J	K	T

Wave response rate= A/ (T-K) = 0.892
 Refusal rate = G/(T-K) = 0.063
 No-contacted and others = (B+C+D+F+H+I+J)/(T-K)= 0.041
 Longitudinal follow-up rate= 0.912
 Follow-up ratio= 0.912
 Achieved sample size ratio= 0.892

Table 16: Household response rate: Comparison of result codes between wave 3 and wave 2

Sample outcome in wave 2=2006	Sample outcome in wave 3=2007											
	DB130=11		DB120=22	DB130=22	DB130=23	DB130=24	DB130=21	DB120=21	NC	DB110=10	DB120=23	Total
	DB135=1	DB135=2										
DB130=11 & DB135=1	3249	0	0	0	11	57	159	0	57	1	0	3534
DB130=11 & DB135=2	0	0	0	0	0	0	0	0	0	0	0	0
DB120=21	0	0	0	0	0	0	0	0	0	0	0	0
DB120=22	0	30	0	0	0	0	0	0	0	0	0	30
DB120=23	0	0	0	0	0	0	0	0	0	0	0	0
DB130=21	0	30	0	0	0	0	0	0	57	1	0	88
DB130=22	0	0	0	0	0	0	0	0	0	0	0	0
DB130=23	0	0	0	0	0	0	0	0	0	0	0	0
DB130=24	0	0	0	0	0	0	0	0	0	0	0	0
Total	3249	60	0	0	11	57	159	0	114	2	0	3652
New households in wave 3=2007												
DB110=8	49	0	58	0	0	5	3	0	2	1	0	118
DB110=9	0	0	0	0	0	0	0	0	0	0	0	0
Total	3298	60	58	0	11	62	162	0	116	3	0	3770
Reference	A	B	C	D	E	F	G	H	I	J	K	T

Wave response rate= A/ (T-K) = 0.890
 Refusal rate = G/(T-K) = 0.043
 No-contacted and others = (B+C+D+F+H+I+J)/(T-K)= 0.079
 Longitudinal follow-up rate= 0.939
 Follow-up ratio= 0.970
 Achieved sample size ratio= 0.903

Table 17: Personal interview response rates in wave 2

	2006										Total
	RB250=11,12,13	Not completed because of									
	RB250=21	RB250=22	RB250=23	RB250=31	RB250=32	RB250=33	HH nc	PN	PI		
Sample persons (RB100=1 and RB245=1-3) from the sample forwarded from last wave(2005)											
(1) RB110=1-2	7323	0	0	0	0	0	0	0	81	127	7323
(2) RB110=6											0
(3) RB110=-1											0
(4) RB120=2											0
(5) RB120=3											0
(6) RB120=4											0
(7) DB135=2 or -1, or DB110=7, or DB 120=21-23 or -1, or DB 130=21-24 or -1											0
(8) DB110=3-6											0
New sample persons											
(9) reached age 16	127	0	0	0	0	0	0	0	0	0	127
(10) sample additions	0	0	0	0	0	0	0	0	0	0	0
Non sampe persons 16+											
(11) this wave 2006	from wave 1	0	0	0	0	0	0	0	0	0	0
	no in wave 1	191	0	0	0	0	0	0	0	0	191
(12) earlier wave (2005)	from wave 1										
	no in wave 1										
Sample persons from sample not forwarded from last wave (2005) (excluded, died or not eligible according to tacking rules)											
(13) from 2005											
Sum of rows:											
(1) (3) (6) (7) (9) (10)	7450	0	0	0	0	0	0	0	81	127	7658
(1) (3) (6) (7) (9) (10) (13)	7450	0	0	0	0	0	0	0	81	127	7658
(1) (3) (6) (7) (9) (10) (11)	7641	0	0	0	0	0	0	0	81	127	7849
<i>Reference</i>	A	B	C	D	E	F	G	H	J	K	T

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Wave response rate of sample persons = 0.983
Wave response rate of co-residents= 0.000
Longitudinal follow-up rate= 0.983
R(RB250=23)= 0.000
R(RB250=31)= 0.000
R R(RB250=32)= 0.000

Achieved sample size ratio for sample persons= 0.892
Achieved sample size ratio for sampler persons and co-residents= 0.892
Achieved sample size ratio for co-residents in first wave= 0.000
Response rate for non-sample persons= 1.000

Table 18: Personal interview response rates in wave 3

	2007											
	RB250=11,12,13	Not completed because of									Total	
		RB250=21	RB250=22	RB250=23	RB250=31	RB250=32	RB250=33	HH nc	PN	PI		
Sample persons (RB100=1 and RB245=1-3) from the sample forwarded from last wave(2005)												
(1) RB110=1-2	6738	0	0	0	0	0	0	0	0	0	60	6738
(2) RB110=6												
(3) RB110=-1												
(4) RB120=2												
(5) RB120=3												
(6) RB120=4												
(7) DB135=2 or -1, or DB110=7, or DB 120=21-23 or -1, or DB 130=21-24 or -1												
(8) DB110=3-6												
New sample persons												
(9) reached age 16	101	0	0	0	0	0	0	0	0	0	0	101
(10) sample additions	0	0	0	0	0	0	0	0	0	0	0	0
Non sampe persons 16+												
(11) this wave 2007		from wave 1	0	0	0	0	0	0	0	0	0	0
		no in wave 1	104	0	0	0	0	0	0	0	0	104
(12) earlier wave (2006)		from wave 1										
		no in wave 1										
Sample persons from sample not forwarded from last wave (2006) (excluded, died or not eligible according to tacking rules)												
(13) from 2006												
Sum of rows:												
(1) (3) (6) (7) (9) (10)	6839	0	0	0	0	0	0	0	0	0	60	6839
(1) (3) (6) (7) (9) (10) (13)	6839	0	0	0	0	0	0	0	0	0	60	6839
(1) (3) (6) (7) (9) (10) (11)	6943	0	0	0	0	0	0	0	0	0	60	6943

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Wave response rate of sample persons =	1.000	
Wave response rate of co-residents=	0.000	
Longitudinal follow-up rate=	1.000	
R(RB250=23)=	0.000	
R(RB250=32=	0.000	
R R(RB250=33)=	0.000	
Achieved sample size ratio for sample persons=		0.918
Achieved sample size ratio for sampler persons and co-residents=		0.909
Achieved sample size ratio for co-residents in first wave=		0.000
Response rate for non-sample persons=		1.000

2.3.3.3. Distribution of households by “household status” (DB110) “record of contact address”(DB120), by “household questionnaire result” (DB130) and by “household interview acceptance” (DB135)for the longitudinal R3 R4 components

Table 15. Distribution of households by DB110 – longitudinal R3 R4 components

		DB110=										Total
		1	2	3	4	5	6	7	8	9	10	
Total	2005	0	0	0	0	0	0	0	0	7929	0	7929
		0	0	0	0	0	0	0	0	7929	0	7929
	%	0	0	0	0	0	0	0	0	100	0	100
Total	2006	3724	114	9	5	21	0	65	87	0	1	4026
		3724	114	9	5	21	0	65	87	0	1	4026
	%	45.7	1.4	0.1	0.1	0.3	0	0.8	1.1	0	0	100
Total	2007	3460	56	3	1	29	0	24	66	0	1	3640
		3460	56	3	1	29	0	24	66	0	1	3640
	%	95.1	1.5	0.1	0	0.8	0	0.7	1.8	0	0	100

Table 16. Distribution of households by DB120 – longitudinal R3 R4 components

		DB120=					Missing
		11	21	22	23	24	
Total	2005	6320	7	0	1602	0	0
		6320	7	0	1602	0	0
	%	79.7	0.1	0	20.2	0	0
Total	2006	192	4	0	5	0	3724
		192	4	0	5	0	3724
	%	4.9	.1	.0	.1	.0	94.9
Total	2007	120	1	0	1	0	3460
		120	1	0	1	0	3460
	%	3.1	.0	.0	.0	.0	88.2

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Table 17. Distribution of households by DB130

		DB130=					Missing
		11	21	22	23	24	
	2005	3939	2257	89	14	21	0
Total		3939	2257	89	14	21	0
%		62.3	35.7	1.4	.2	.3	0
	2006	3574	260	59	15	8	0
Total		3574	260	59	15	8	0
%		91.3	6.6	1.5	.4	.2	.0
	2007	3300	170	40	11	59	0
Total		3300	170	40	11	59	0
%		92.2	4.7	1.1	.3	1.6	.0

2.3.3.4. Distribution of persons for membership status (RB110)

Table 18. Distribution of households by RB110

		Current household members RB110=				Not current household members RB110=		
		1	2	3	4	5	6	7
	2005	10148	0	0	0	0	0	0
Total		10148	0	0	0	0	0	0
%		100	0	0	0	0	0	0
	2006	8853	99	228	86	194	81	18
Total		8853	99	228	86	194	81	18
%		92.6	1.0	2.4	.9	2.0	.8	.2
	2007	7799	82	131	58	134	58	14
Total		7799	82	131	58	134	58	14
%		94.2	1.0	1.6	.7	1.6	.7	.2

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.

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Table 19 .Item non-response on household level by income items-longitudinal R3 R4 components in 2005

Income items	Household having received an amount		Full information		Partial information		Missing		
	count	%	count	%	count	%	count	%	
HY010	Total household gross income	3939	100.0	3037	77.1	901	22.9	1	0.0
HY020	Total disposable household income	3939	100.0	3037	77.1	901	22.9	1	0.0
	Total disp.hhold income before soc.trans other than old-age benefit and survivor's benefit	3890	98.8	1732	44.5	2143	55.1	15	0.4
HY022	Total disp.hhold income before soc.transfers including old-age and survivor's benefit	3340	84.8	2688	80.5	628	18.8	24	0.7
HY023									
HY040G	Income from rental of a property or land	73	1.9	73	100.0	0	0.0	0	0.0
HY050G	Family/Children related allowances	1292	32.8	1161	89.9	121	9.4	10	0.8
HY060G	Social exclusion not elsewhere classified	458	11.6	458	100.0	0	0.0	0	0.0
HY070G	Housing allowances	131	3.3	131	100.0	0	0.0	0	0.0
	Regular interhousehold cash transfers received	587	14.9	587	100.0	0	0.0	0	0.0
HY080G	Interest, dividends, profit from capital investment	38	1.0	38	100.0	0	0.0	0	0.0
HY090G									
HY100G	Interest repayment on mortgage	313	7.9	313	100.0	0	0.0	0	0.0
HY110G	Income received by people under 16	24	.6	24	100.0	0	0.0	0	0.0
HY120G	Regular taxes on wealth	1843	46.8	1843	100.0	0	0.0	0	0.0
HY130G	Regular interhousehold cash transfers paid	718	18.2	718	100.0	0	0.0	0	0.0
HY140G	Tax on income and social contribution	2546	64.6	355	13.9	0	0.0	2191	86.1

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Table 20 .Item non-response on household level by income items-longitudinal R3 R4 components 2006

Income items	Household having received an amount		Full information		Partial information		Missing		
	count	%	count	%	count	%	count	%	
HY010	Total household gross income	3571	99.9	3571	100	0	0	0	0
HY020	Total disposable household income	3572	99.9	3572	100	0	0	0	0
	Total disp.hhold income before soc.trans other than old-age benefit and survivor's benefit	3507	98.1	3507	100	0	0	0	0
HY022	Total disp.hhold income before soc.transfers including old-age and survivor's benefit	2826	79.1	2826	100	0	0	0	0
HY023									
HY040G	Income from rental of a property or land	56	1.6	56	100	0	0	0	0
HY050G	Family/Children related allowances	1125	31.5	1125	100	0	0	0	0
HY060G	Social exclusion not elsewhere classified	188	5.3	188	100	0	0	0	0
HY070G	Housing allowances	315	8.8	315	100	0	0	0	0
	Regular interhousehold cash transfers received	365	10.2	365	100	0	0	0	0
HY080G	Interest, dividends, profit from capital investment	43	1.2	43	100	0	0	0	0
HY090G									
HY100G	Interest repayment on mortgage	259	7.2	259	100	0	0	0	0
HY110G	Income received by people under 16	4	.1	4	100	0	0	0	0
HY120G	Regular taxes on wealth	1612	45.1	1612	100	0	0	0	0
HY130G	Regular interhousehold cash transfers paid	341	9.5	341	100	0	0	0	0
HY140G	Tax on income and social contribution	2245	62.8	2245	100	0	0	0	0

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Table 21 .Item non-response on household level by income items-longitudinal R3 R4 components 2007

Income items	Household having received an amount		Full information		Partial information		Missing		
	count	%	count	%	count	%	count	%	
HY010	Total household gross income	3298	99.9	3298	100	0	0	0	0
HY020	Total disposable household income	3298	99.9	3298	100	0	0	0	0
	Total disp.hhold income before soc.trans other than old-age benefit and survivor's benefit	3262	98.8	3262	100	0	0	0	0
HY022	Total disp.hhold income before soc.transfers including old-age and survivor's benefit	2692	81.6	2692	100	0	0	0	0
HY023									
HY040G	Income from rental of a property or land	56	1.7	56	100	0	0	0	0
HY050G	Family/Children related allowances	1035	31.4	1035	100	0	0	0	0
HY060G	Social exclusion not elsewhere classified	132	4.0	132	100	0	0	0	0
HY070G	Housing allowances	265	8.0	265	100	0	0	0	0
	Regular interhousehold cash transfers received	380	11.5	380	100	0	0	0	0
HY080G	Interest, dividends, profit from capital investment	38	1.2	38	100	0	0	0	0
HY090G									
HY100G	Interest repayment on mortgage	627	19.0	627	100	0	0	0	0
HY110G	Income received by people under 16	4	.1	4	100	0	0	0	0
HY120G	Regular taxes on wealth	1826	55.3	1826	100	0	0	0	0
HY130G	Regular interhousehold cash transfers paid	290	8.8	290	100	0	0	0	0
HY140G	Tax on income and social contribution	2074	62.8	2074	100	0	0	0	0

Table 22. Item non-response on personal level by personal income items-longitudinal R3 R4 components in 2005

Personal income items	Household having received an amount		Full information		Partial information		Missing	
	count	%	count	%	count	%	count	%
PY010G Employee cash or near-cash income	4088	49.0	3066	75.0	520	12.7	502	12.3
PY021G Company car	55	0.7	55	100.0	0	0.0	0	0.0
PY050G Cash benefit or losses from self-employment	717	8.6	606	84.5	32	4.5	79	11.0
PY070G Value of goods produced by own-consumption	0	0.0	0	.	0	.	0	.
PY080G Pension from individual private plans	44	0.5	44	100.0	0	0.0	0	0.0
PY090G Unemployment benefit	450	5.4	378	84.0	71	15.8	1	0.2
PY100G Old-age benefit	2505	30.0	2417	96.5	42	1.7	46	1.8
PY110G Survivor's benefit	98	1.2	96	98.0	0	0.0	2	2.0
PY120G Sickness benefit	305	3.7	305	100.0	0	0.0	0	0.0
PY130G Disability benefit	865	10.4	691	79.9	16	1.8	158	18.3
PY140G Education related allowances	109	1.3	109	100.0	0	0.0	0	0.0

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Table 23. Item non-response on personal level by personal income items-longitudinal R3 R4 components in 2006

Personal income items	Household having received an amount		Full information		Partial information		Missing	
	count	%	count	%	count	%	count	%
PY010G Employee cash or near-cash income	3597	47.1	3337	92.8	49	1.4	211	5.9
PY021G Company car	356	4.7	356	100.0	0	0.0	0	0.0
PY050G Cash benefit or losses from self-employment	477	6.2	336	70.4	2	0.4	139	29.1
PY070G Value of goods produced by own-consumption	0	0.0	0	.	0	.	0	.
PY080G Pension from individual private plans	38	0.5	38	100.0	0	0.0	0	0.0
PY090G Unemployment benefit	455	6.0	455	100.0	0	0.0	0	0.0
PY100G Old-age benefit	2303	30.1	2178	94.6	0	0.0	125	5.4
PY110G Survivor's benefit	118	1.5	118	100.0	0	0.0	0	0.0
PY120G Sickness benefit	398	5.2	398	100.0	0	0.0	0	0.0
PY130G Disability benefit	586	7.7	576	98.3	0	0.0	10	1.7
PY140G Education related allowances	200	2.6	200	100.0	0	0.0	0	0.0

Table 24. Item non-response on personal level by personal income items-longitudinal R3 R4 components in 2007

Personal income items		Household having received an amount		Full information		Partial information		Missing	
		count	%	count	%	count	%	count	%
PY010G	Employee cash or near-cash income	3329	46.9	3203	96.2	7	0.2	119	3.6
PY021G	Company car	34	0.5	34	100.0	0	0.0	0	0.0
PY050G	Cash benefit or losses from self-employment	693	9.8	687	99.1	0	0.0	5	0.7
PY070G	Value of goods produced by own-consumption	403	5.7	403	100.0	0	0.0	0	0.0
PY080G	Pension from individual private plans	12	0.2	12	100.0	0	0.0	0	0.0
PY090G	Unemployment benefit	402	5.7	402	100.0	0	0.0	0	0.0
PY100G	Old-age benefit	2167	30.5	2128	98.2	4	0.2	35	1.6
PY110G	Survivor's benefit	97	1.4	97	100.0	0	0.0	0	0.0
PY120G	Sickness benefit	422	5.9	422	100.0	0	0.0	0	0.0
PY130G	Disability benefit	635	8.9	632	99.5	1	0.2	2	0.3
PY140G	Education related allowances	95	1.3	95	100.0	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 25. Distribution of RB250- longitudinal R3 R4 components

RB250- Data status	2005	2006	2007
Information completed only from interview(11)	8351	7641	6691
From register...no reason (12-33)	0	0	0
Total	8351	7641	6691

Table 26. Distribution of RB260- longitudinal component

RB260- Contact address	2005	2006	2007
PAPI (1)	7466	6670	5472
CAPI, CATI, Other(2,3,4)	0	0	0
Proxy(5)	858	971	1219
missing	27	0	0
Total	8351	13127	11234

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

Imputed rent was not calculated for EU-SILC 2007-2006-2005 longitudinal components.

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

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respondent had to estimate this value and this estimation was used in the database. The variable was compulsory from 2007 but the Hungarian data collection collected this information from the first wave of the survey since 2005. To ensure the comparability of corresponding information PY021G variable was created for the three year longitudinal data and presented among tables of standard error calculation as well.

3. Comparability

This chapter will report the differences between Eurostat definitions and definitions Hungary applied in EU-SILC 2007-2006-2005.

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 2005, 2006, 2007
- 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 was 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 in 2007. While the previous years resulted the lag equals to 4 months since the reference data of the data collections was 1 April in 2006 and in 2005.
- viii. Total duration of data collection of the sample*
The data collection lasted 13 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*
Imputed rent was not calculated.
- 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 months 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 equal to 75 % of her/his former salary, but not higher than 96 600 HUF (about 350 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 105 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.

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- 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. The initial survey year for EU-SILC survey was launched in 2005 although Hungarian Statistical Office calculated the common cross-sectional indicators on the basis of Household Budget Survey data from 2002. It was our aim to provide reliable data and indicators by the new tool, so detailed comparison was done on output- indicator- level between HBS and EU-SILC. From the comparison point of view we were in a very pleasant situation because our Office carried out three surveys focused on Hungarian private households' income and expenditure structures in 2005 with the reference year of 2004. Namely: EU-SILC, HBS, Income Survey (IS). A comparative study was published in Hungarian in August 2006.

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

The final quality report on EU-SILC2005 wave covered the main areas of the comparison such as sample design, imputation and calibration procedures.

Current study focus on the comparison of the target variables on the basis of the first EU-SILC wave (2005) second EU-SILC wave (2006) and third EU-SILC wave(2007) database meaning the comparison of cross sectional variables in each year.

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 two 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. Governmental measures also were taken to encourage unemployed persons to find new job opportunities the decrease of unemployment related allowances is acceptable as well. At certain items – like income of household members under 16 – the number of observations was small.

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 Table 27. Comparison of cross sectional income target variables EU-SILC 2005, 2006
 and 2007 (weighted)

weighted		2005		2006		2007	
		mean	standard error	mean	standard error	mean	standard error
PY010G	Employee cash or near-cash income	1 190 048	18 898	1 378 174	21 143	1 410 237	15 474
PY020G	Non-cash employee income	273 773	29 171	70 510	4 241	98 653	15 256
PY050G	Cash benefit or losses from self-employment	1107 428	63 864	1 861 218	99 261	893 234	58 792
PY070G	Value of goods produced by own-consumption	84 413	6 198	0	0	49 644	4 830
PY080G	Pension from individual private plans	223 454	39 140	171 382	32 102	388 738	139 349
PY090G	Unemployment benefit	235 522	14 374	185 629	13 192	247 210	18 395
PY100G	Old-age benefit	725 935	5 227	796 206	7 538	861 340	5 508
PY110G	Survivor's benefit	216 385	14 113	316 294	18 156	439 261	29 782
PY120G	Sickness benefit	123 267	7 165	81 945	5 346	104 599	7 263
PY130G	Disability benefit	398 041	7 427	526 610	9 731	521 900	10 406
PY140G	Education related allowances	81 073	6 367	88 714	6 017	112 671	8 121
<i>Income components on household level</i>							
HY010	Total household gross income	2 104 914	29 723	2 447 399	34 664	2 510 148	26 020
HY020	Total disposable household income	1 639 022	17 273	1 968 043	27 270	1 998 043	17 298
HY022	Total disp.hhold income before soc.trans other than old-age benefit and survivor's benefit	1 125 088	17 548	1 784 588	28 050	1 737 966	17 327
HY023	Total disp.hhold income before soc.transfers including old-age and survivor's benefit	1 217 498	21 308	1 595 723	33 000	1 430 903	20 136
HY040G	Income from rental of a property or land	347 719	48 525	278 499	69 557	599 990	113 058
HY050G	Family/Children related allowances	270 218	5 301	268 548	5 755	371 931	7 173
HY060G	Social exclusion not elsewhere classified	111 222	7 076	42 755	8 259	49 203	3 903
HY070G	Housing allowances	44 623	3 606	49 010	2 854	49 971	2 393
HY080G	Regular interhousehold cash transfers received	156 467	9 811	311 243	34 887	111141	5 479
HY090G	Interest, dividends, profit from cap.investment	219 051	90 562	338 028	66 443	783 803	123 903
HY100G	Interest repayment on mortgage	219 525	10 937	249 095	12 549	222 814	7 997
HY110G	Income received by people under 16	102 499	22 761	45 581	26 574	184 734	85 902
HY120G	Regular taxes on wealth	14 301	318	15 778	359	14 552	183
HY130G	Regular interhousehold cash transfers paid	113 933	7 053	277 097	21 319	79 198	3 731
HY140G	Tax on income and social contribution	660 784	19 900	649 140	18 330	720 485	13738