

Statistics Iceland
January 2013

FINAL QUALITY REPORT

EU-SILC-2010

Iceland

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1. COMMON LONGITUDINAL EUROPEAN UNION INDICATORS BASED ON THE LONGITUDINAL COMPONENT OF EU-SILC

Iceland does not have access to SAS software and has not been able to calculate the longitudinal indicators.

2. Accuracy

2.1. Sample design

2.1.1 Type of sampling

There were four even one-stage simple random samples without stratification used for the 2010 EU-SILC in Iceland.

2.1.2 Sampling units

The sampling units are persons aged 16 years or more living in private households, selected from the Icelandic population register.

2.1.3 Stratification and sub-stratification criteria

The sample is post stratified, see 2.8.

2.1.4 Sample size and allocation criteria

The gross sample size was 4,218 persons, set to meet demands for minimum effective sample size of both the cross-sectional and the longitudinal components.

2.1.5 Sample selection schemes

The sample plan for EU-SILC is a simple random sample in one step, and no upper age limit.

2.1.6 Sample distribution over time

The sample is a rotating panel sample of approximately 4,000 individuals selected by simple random sampling from the national register in the end of the year 2007. The sample is divided into four rotation groups of approximately 1,000 individuals, each of which is replaced by another 1,000 participants every successive year.

2.1.7 Renewal of sample: Rotational groups

The households of the selected respondents are the household units. Each person (and respective household) drawn remains in the sample for four years and rotates as shown in table 2.1.

Table 2.1 Rotation of waves in the Icelandic SILC survey

Year t		t+1		t+2		t+3	
Wave number	Number in sample	Wave number	Number in sample	Wave number	Number in sample	Wave number	Number in sample
1	1.000	1	1.000	1	1.000	1	1.000
2	1.000	2	1.000	2	1.000	2	1.000
3	1.000	3	1.000	3	1.000	3	1.000
4	1.000	4	1.000	4	1.000	4	1.000

Notes:

	Those drawn new in sample year t
	Those drawn new in sample year t-1
	Those drawn new in sample year t-2
	Those drawn new in sample year t-3
	Those drawn new in sample year t+1
	Those drawn new in sample year t+2
	Those drawn new in sample year t+3

Persons 16 years of age are added to the sample every year in order to make up for the aging of the sample. Those who are 16 years old in 2007 will be 20 years old in 2010 and therefore there is need to add 16 year old persons to the sample every year. The gross number in the sample increases with those supplements.

2.1.8. Weighting

2.1.8.1 Design factor

The probability of a household being selected is equal to the number of persons aged 16 and older in the household. The weight for households and for all adult household members is the inverse of the number of adult household members as calculated in **DB080**, the household design weight:

$$DB080 = \frac{1}{n_{16+}}$$

Where
 n_{16+} = number of persons age 16+ in the respondents households

2.1.8.2 Nonresponse adjustments

Post stratification weights are used to adjust the data to the population. The information on the population comes from the national register. The weights both adjust for nonresponse and sampling error. The post stratification weights are based on age (14 groups total, 12 groups for 16 and older and 2 groups below 16), sex and residence (2 groups).

2.1.8.3 Adjustments to external data

Results are only calibrated with numbers from the national register as described above. Further description of those adjustments can be seen in intermediate report for 2008 and in other older reports.

2.1.8.4 Final longitudinal weights

Longitudinal weights are done using the same methods as cross sectional weights except the base is the wave of entrance into the survey and not the survey year as is the case in the cross sectional component. Since the base of the longitudinal weight is approximately $\frac{1}{4}$ of the cross sectional weight the average longitudinal weight produced was approximately 4 times larger than the cross sectional weight for the same individual.

2.1.8.5 Longitudinal nonresponse, wave attrition between 2004 and 2005

No measures were taken to counter attrition between waves in the 2007-2010 longitudinal data. The reason is lack of relationship of tendency to respond to survey variables for the 2004-2005 longitudinal surveys. The final quality report for 2007 describes this study.

2.1.8.6 Adjustments to external data

The national register is used to adjust the cross sectional weights taking into account the age, sex and area of residence. This process is described in sections 2.1.8.2 and 2.1.8.3. Considerable work was put into adjusting wave attrition to different variables in the survey as described in the final report for 2007. These attempts produced no relation of attrition to survey variables, including variables received from the national register.

2.1.8.7 Final longitudinal weights

See 2.1.8.4 and 2.1.8.5.

2.1.8.8. Final cross sectional weight

See 2.1.8.3.

2.1.9 Substitutions

No substitutions were applied.

2.2 Sampling errors

2.2.1. Standard errors and effective sample size

There were 4,218 households in the 2010 sample. During the field period, 250 of these proved to be non-eligible (either deceased, living in institutions or emigrated), thus giving a net sample of 3,968 households. Interviews were completed for 3,021 of them.

Table 2.2.1.A The mean, the total number of observations and the standard errors for the following income components (unweighted data) by wave for the year 2010

	Wave	Mean	SE	Count
HY010_2	2	8055,8	239,6	662
HY020_2	2	5864,5	173,3	662
HY022_2	2	5199,2	180,5	662
HY023_2	2	4417,4	179,3	662
HY040G_2	2	47,5	10,2	662
HY090G_2	2	757,3	117,6	662
HY050G_2	2	162,5	17,3	662
HY060G_2	2	10,5	4,2	662
HY070G_2	2	109,2	7,4	662
HY080G_2	2	81,3	9,7	662
HY081G_2	2	67,5	8,8	662
HY100G_2	2	474	21,8	662
HY110G_2	2	22,2	3,3	662
HY120G_2	2	64,3	1,9	662
HY130G_2	2	77,6	9,9	662
HY131G_2	2	52,8	7,5	662
HY140G_2	2	2049,3	75,8	662
PY010_2	2	2842	95	1444
PY020_2	2	110,5	14,6	1444
PY021_2	2	49,3	7,8	1444
PY050_2	2	88,4	12,9	1444
PY090_2	2	75,1	8,6	1444
PY100_2	2	386,3	32,8	1444
PY110_2	2	58,2	12,4	1444
PY120_2	2	0,4	0,4	1444
PY130_2	2	112,9	18,3	1444
PY140_2	2	3,2	0,7	1444
HY010_3	3	8502,2	283,1	606
HY020_3	3	6146,3	193,3	606
HY022_3	3	5570,2	196,9	606
HY023_3	3	4677,2	188,2	606
HY040G_3	3	71,7	15,5	606
HY090G_3	3	736,8	108,8	606
HY050G_3	3	145,7	16,2	606
HY060G_3	3	11,4	5,5	606
HY070G_3	3	101,3	6,2	606
HY080G_3	3	74,6	9	606
HY081G_3	3	66,2	8,4	606
HY100G_3	3	503,7	24,8	606
HY110G_3	3	34,1	6,4	606
HY120G_3	3	67,8	1,9	606
HY130G_3	3	75,3	9,7	606
HY131G_3	3	46,1	7,4	606
HY140G_3	3	2212,8	95,5	606
PY010_3	3	3092	94,9	1298
PY020_3	3	100,5	7,8	1298

PY021_3	3	38,8	5,4	1298
PY050_3	3	114,3	19,9	1298
PY090_3	3	72,5	8,9	1298
PY100_3	3	431,5	38,2	1298
PY110_3	3	43,9	9,3	1298
PY120_3	3	1,5	1,5	1298
PY130_3	3	87,5	16	1298
PY140_3	3	9,4	6,4	1298
HY010_4	4	8121,6	248,8	518
HY020_4	4	5927,5	178,8	518
HY022_4	4	5390,6	177,2	518
HY023_4	4	4513,8	184,3	518
HY040G_4	4	50,2	10,2	518
HY090G_4	4	742,7	113	518
HY050G_4	4	163,5	18,2	518
HY060G_4	4	1,6	1,2	518
HY070G_4	4	133,6	36,1	518
HY080G_4	4	79,9	9,9	518
HY081G_4	4	66,2	8,4	518
HY100G_4	4	539,2	29,4	518
HY110G_4	4	23,1	4,6	518
HY120G_4	4	68,6	2,1	518
HY130G_4	4	62,1	8,9	518
HY131G_4	4	39,3	7,2	518
HY140G_4	4	2063,4	79,7	518
PY010_4	4	2978,5	102,8	1089
PY020_4	4	109,2	10,4	1089
PY021_4	4	52,5	8	1089
PY050_4	4	131,1	17,8	1089
PY090_4	4	57,9	8	1089
PY100_4	4	369,8	31,2	1089
PY110_4	4	78,5	27,8	1089
PY120_4	4	1,2	1,2	1089
PY130_4	4	72,2	14,5	1089
PY140_4	4	3,5	1,3	1089

Table 2.2.1.B The mean, the number of observations and the standard error for the equivalised disposable income breakdown by sex, age groups and household size (unweighted data) in 2009 by wave

	Mean	SE	count
W1: 1 person hh	2692,1	103,7	286
W1: 2 persons hh	3839,4	171,6	1204
W1: 3 persons hh	3329,7	86,3	1317
W1: 4+ persons hh	3327	78,5	3577
W1: Age <=24	3106,6	58,2	2536
W1: Age 25-34	2986,8	63,8	780
W1: 35-44	3493	142,2	875
W1: Age 45-54	3733,9	121,2	970
W1: Age 55-64	4463,9	282,2	640
W1: Age 65+	3178	155,5	583
W1: Male	3416,7	60,3	3274
W1: Female	3336,1	61,5	3110
W2: 1 person hh	2795,9	101,5	271
W2: 2 persons hh	3968,4	132	1122
W2: 3 persons hh	3533,6	77,7	1125
W2: 4+ persons hh	3558,7	120,3	3134
W2: Age <=24	3301,7	90,7	2240
W2: Age 25-34	3217,6	72,5	638
W2: 35-44	3570,9	141,9	755
W2: Age 45-54	3794,1	90,7	860
W2: Age 55-64	4478,9	153,1	603
W2: Age 65+	3672,6	211	556
W2: Male	3599	64,5	2876
W2: Female	3533,1	72,6	2776
W3: 1 person hh	2982,4	139,5	164
W3: 2 persons hh	4429,2	192,2	670
W3: 3 persons hh	3735,2	102,5	693
W3: 4+ persons hh	3665,5	133,8	1955
W3: Age <=24	3462,6	104,1	1357
W3: Age 25-34	3452,5	115,7	394
W3: 35-44	3836,6	157,2	463
W3: Age 45-54	3730,8	92,4	528
W3: Age 55-64	4970,8	241,2	378
W3: Age 65+	3998	265,6	362
W3: Male	3782	80,1	1763
W3: Female	3777,5	87,5	1719
W4: 1 person hh	2933,8	178	74
W4: 2 persons hh	4122,3	215,9	316
W4: 3 persons hh	3731	186,9	326
W4: 4+ persons hh	3390,4	110,9	797
W4: Age <=24	3236,9	89,5	584
W4: Age 25-34	3304,9	139,3	168
W4: 35-44	3553	134,6	204
W4: Age 45-54	4038	204,1	205

W4: Age 55-64	4630,3	317,3	175
W4: Age 65+	3571,3	218,7	177
W4: Male	3594	89,2	782
W4: Female	3582,3	93,2	731

For 2010 standard errors take clustering into account for the first time using the survey package of the R software.

2.3 Nonsampling errors

Errors other than sampling errors can be placed in three categories: coverage errors, nonresponse errors and measurement errors.

2.3.1 Sampling frame and coverage errors

The sampling frame is the population register of Iceland in the end of the year 2009. Eligible for the sample were all persons 16 and older who were living in Iceland according to the register. Those registered at institutions were excluded from the sample.

The national register is updated continuously. However, it does not always contain correct information on changing of residence. People may move abroad or to an institution without giving that information to the national register. Therefore the national register over represents young people who tend to go abroad for their studies and older people who sometimes maintain a private address in spite of living in an institution.

This is adjusted for with information received during the data collection process. For instance if it turns out that 5% of 25-29 years old females from the capital area are living abroad in spite of being in the register then the population frame is adjusted to these information and the relevant group is decreased by 5%. These adjustments are made before calculating the post stratification weights.

Under coverage of foreign citizens who live in Iceland is possible but it can be hard to assess. However it is likely that most foreign citizens who live here are working legally and are therefore in the national register. The fact that Iceland is an island makes it hard for foreigners to enter and stay in the country without being registered.

2.3.2 Measurement and processing errors

Errors of this kind can be classified into three categories: Design errors, interviewer errors and processing errors.

2.3.2.1 Design errors

The questionnaire may be the cause of measurement errors. The phrasing of questions can cause misunderstanding as can the ordering of questions affect responses. The work of designing the survey electronically in Blaise also leaves room for errors.

Here are some comments on those variables and other cases where there might be deviations from Eurostat standards.

The design errors are discussed in the intermediate report for 2008.

Longitudinal variables

R-section

RB140: Iceland has had problems with questions about former household members. None of these questions was included until 2007. In 2007 attempts were made to fix this and improvements were made but problems still remained since for those cases when the „selected respondent“ moved from one household to another there was confusion and information were not gathered. Therefore for a certain percentage of households we are missing information for these variables. This was only fixed for the 2010 survey.

RB150: Same as RB140

RB160: Same as RB140

RB170: Same as RB140.

RB180: Same as RB140.

RB190: Same as RB190

H-section

HB100: We only have the total interview length for the years 2004-2006. The length of separate parts of the survey was first collected in 2007.

HS130: There is a high percentage of DK answers. A follow up question was added to the questionnaire in 2007 resulting in lower percentage of missing data. People seem to have a problem with answering this question and we have not been able to get a higher response rate.

HH061: Same as for HS130: Follow up question was included in 2007 resulting in lower item missing data. Hard to see what else can be done since people are unwilling to give the information.

HH081: There is a very low percentage in Iceland without a bath or a shower in the dwelling. We did not collect the information for HH081 until the 2010 survey. Instead we use HH080.

P-section

PL160: Before 2008 those who entered the survey for the first time were not asked this question. It was only for 2nd, 3rd and 4th wave that they were asked. For 2007 there was also a programming error resulting in more people missing the question. This was fixed before the 2008 survey.

PL170: For the year 2007 these are just missing values because the respondent did not want to give an answer or could not answer the question. For the year 2008 a syntax error was fixed and the data should be ok now.

PL190: We only started collecting this information in 2007.

PL200: The question was first asked in 2007.

PL210A-L

The data was first collected by month for 2007. Before that we only have the number of months over the year as is collected for the cross sectional data set.

PY031G: We have no information for this variable.

2.3.2.2. Interviewer and processing errors

We refer to the 2007 final quality report for interviewer and processing errors. No changes were made between 2007 and 2009 that should affect them.

2.3.3. Nonresponse errors

In general, males are more difficult to reach than females and young people are harder to reach than older people. People living in the capital region are more often absent from home than people elsewhere in Iceland.

Refusals to participate in the survey are more prevalent among inhabitants of the capital city region and older persons. In contrast, women, people outside the capital city region and young people are less likely to refuse to participate.

To counter bias, the results were weighted by sex, age and residence.

2.3.3.1 Achieved sample size

Wave	Year	Sel.resp	Resp. 16+	Total	
	1	2007	639	1485	1945
Total		2007	639	1485	1945
	1	2008	719	1672	2201
	2	2008	583	1334	1759
Total		2008	1302	3006	3960
	1	2009	749	1736	2238
	2	2009	645	1518	1993
	3	2009	553	1284	1715
Total		2009	1947	4538	5946
	2	2010	662	1660	2113
	3	2010	607	1477	1933
	4	2010	518	1204	1603
Total		2010	1787	4341	5649

2.3.3.2.A. Unit nonresponse

Household nonresponse rates (NRh)

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

Where

$$Ra = \frac{\text{Number of addresses successfully contacted}}{\text{Number of valid addresses selected}}$$

$$Ra = \frac{\sum (DB120 = 11)}{\sum (DB120 = all) - \sum (DB120 = 23)} = \frac{3968}{4218 - 250} = 1$$

$$Rh = \frac{\text{Number of household interviews completed and accepted for database}}{\text{Number of valid addresses selected}}$$

$$Rh = \frac{\sum (DB130 = 1)}{\sum (DB130 = all)} = \frac{3021}{3968} = 0.7613$$

$$NRh = (1 - 0.7613) * 100 = 23.87$$

Individual nonresponse rates (NRp)

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

Where

$$Rp = \frac{\text{Number of personal interviews completed}}{\text{Number of eligible individuals in households where interviews were completed and accepted for database}}$$

$$Rp = \frac{6790}{6790} = 1$$

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

Overall individual nonresponse rates (*NRp)

$$*NRp = (1 - (Ra * Rh * Rp)) * 100 = (1 - (1 * 0.2387 * 1)) * 100 = 76.13$$

2.3.3.2.B Unit nonresponse by rotational group

	1	3	4
Ra	100	100	100
Rh	81,3	88,1	87,3
NRh	18,7	11,9	12,7
Rp	100	100	100
NRp	18,7	11,9	12,7

Ra- Proportion of addresses contacted

Rh – Proportion of complete household interviews accepted for database

NRh – Household nonresponse rate

Rp-Proportion of complete personal interview within the households accepted for data base

NRp – Individual nonresponse rate

For the longitudinal tables it should be noted that there are no split off households (no DB110 = 8) since only selected respondents are followed and whoever are living with them are surveyed. Given the Icelandic design, the only way for a new household to enter the survey in a wave other than the first wave is with a selected respondent who is younger than 16 years in the first wave he or she enters the survey.

2.3.3.2.C Longitudinal tables for calculation of nonresponse

Household response rates: Comparison of result codes between different waves

	DB130=11	DB130=21	DB130=22	DB130=23	DB120=23	Total
G3_W1	639	134	38	12	4	827
G3_W2	583	41	9	4	0	637
G3_W3	553	27	10	6	0	596
G4_W1	719	127	33	11	4	894
G4_W2	645	47	25	1	1	719
G1_W1	749	126	100	13	16	1004

Household response rates: Comparison of results codes between different waves

	W_resp	Refuse	No_cont	Total	F_u_rate	F_u_ratio	Samp_s_ratio
G3_W1	77,3	16,2	6,5	100	83,3	83,3	78,8
G3_W2	91,5	6,4	2	100	93,6	93,6	92,1
G3_W3	92,8	4,5	2,7	100	95,5	95,5	93,7
G4_W1	80,4	14,2	5,4	100	85,3	85,3	81,8
G4_W2	89,7	6,5	3,8	100	93,3	93,3	90
G1_W1	74,6	12,5	12,8	100	85,9	85,9	76,8

Longitudinal response rate for persons

2.3.3.2.E Personal interview outcome.

Group	Wave	Sample	Non sample	Total
	1	1	749	987
	2	2	662	801
	3	3	639	846
	4	4	583	682
	5	5	553	624
	6	6	518	575
	7	7	719	953
	8	8	645	744

4 3 607 705 1312

Wave response rates

	Sample_pers	Non_sample	Total
G1W12	88,4	81,2	84,3
G3W12	91,2	80,6	85,2
G3W23	94,9	91,5	93
G3W34	93,7	92,1	92,9
G4W12	89,7	78,1	83,1
G4W23	94,1	94,8	94,5

Longitudinal response rate for DB110-DB135

DB110 Household status

Result	Wave	Group	Count	%	
	9	1	3	2133	100
	1	2	3	1575	86,8
	2	2	3	238	13,1
	4	2	3	1	0,1
	7	2	3	1	0,1
Total		2	3	1815	100
	1	3	3	1675	95,3
	2	3	3	83	4,7
Total		3	3	1758	100
	1	4	3	1573	95,1
	2	4	3	59	3,6
	4	4	3	7	0,4
	5	4	3	8	0,5
	7	4	3	7	0,4
Total		4	3	1654	100
	9	1	4	2379	100
	1	2	4	1999	96,7
	2	2	4	68	3,3
Total		2	4	2067	100
	1	3	4	1867	93,5
	2	3	4	108	5,4
	4	3	4	11	0,6
	5	3	4	6	0,3
	7	3	4	5	0,3
Total		3	4	1997	100
	9	1	1	2493	100
	1	2	1	2022	91
	2	2	1	102	4,6
	3	2	1	2	0,1
	4	2	1	16	0,7
	5	2	1	1	0

	7	2	1	5	0,2
	9	2	1	75	3,4
Total		2	1	2223	100

DB120 Address contacted

DB120	Wave	Group	Count
11	1	1	2477
11	2	1	177
11	1	3	2129
11	2	3	238
11	3	3	83
11	4	3	59
11	1	4	2372
11	2	4	67
11	3	4	108

DB130 Household questionnaire result

Result	Wave	Group	Count	%
11	1	3	1945	91,4
21	1	3	134	6,3
22	1	3	38	1,8
23	1	3	12	0,6
11	2	3	1759	97
21	2	3	41	2,3
22	2	3	9	0,5
23	2	3	4	0,2
Total	2	3	1813	100
11	3	3	1715	97,6
21	3	3	27	1,5
22	3	3	10	0,6
23	3	3	6	0,3
Total	3	3	1758	100
11	4	3	1603	98,2
21	4	3	15	0,9
22	4	3	8	0,5
23	4	3	6	0,4
Total	4	3	1632	100
11	1	4	2201	92,8
21	1	4	127	5,4
22	1	4	33	1,4
23	1	4	11	0,5
11	2	4	1993	96,5
21	2	4	47	2,3
22	2	4	25	1,2
23	2	4	1	0

Total	2	4	2066	100
11	3	4	1933	97,9
21	3	4	28	1,4
22	3	4	12	0,6
23	3	4	2	0,1
Total	3	4	1975	100
11	1	1	2238	90,4
21	1	1	126	5,1
22	1	1	100	4
23	1	1	13	0,5
11	2	1	2113	96,1
21	2	1	62	2,8
22	2	1	18	0,8
23	2	1	6	0,3
Total	2	1	2199	100

DB135 Household interview acceptance

Result	Wave	Group	Count
1	1	1	2238
1	2	1	2113
1	1	3	1945
1	2	3	1759
1	3	3	1715
1	4	3	1603
1	1	4	2201
1	2	4	1993
1	3	4	1933

2.3.3.3 Distribution of households from the cross sectional D-file

Table 2.3.3.3.A Distribution of households by ‘record of contact address’ (DB120)

	Rot 1	Rot 2	Rot 3	Rot 4
Contacted	1034	1022	916	996
Does not exist	53	35	83	79
Total	1087	1057	999	1075

Table 2.3.3.3.B Distribution of households by ‘household questionnaire result’ (DB130)

	Rot 1	Rot 2	Rot 3	Rot 4
Completed	763	809	690	759
Refusal	140	92	127	117
Temporarily away	119	99	86	108
Unable to respond	11	21	13	10
Other reasons	1	1	0	2
Total	1034	1022	916	996

Table 2.3.3.3.C Distribution of households by ‘household interview acceptance’ (DB135)

	Rot 1	Rot 2	Rot 3	Rot 4
Accepted	763	809	690	759
Total	763	809	690	759

Table 2.3.3.4.A. Distribution of persons for membership status (RB110)

Result	Wave	Group	Count	%	
	1	1	3	1945	100
	1	2	3	1655	94,1
	3	2	3	79	4,5
	4	2	3	25	1,4
Total		2	3	1759	100
	1	3	3	1563	91,1
	3	3	3	78	4,5
	4	3	3	26	1,5
	5	3	3	48	2,8
Total		3	3	1715	100
	1	4	3	1456	90,8
	3	4	3	32	2
	4	4	3	25	1,6
	5	4	3	90	5,6
Total		4	3	1603	100
	1	1	4	2201	100
	1	2	4	1823	91,5
	3	2	4	79	4
	4	2	4	24	1,2
	5	2	4	67	3,4
Total		2	4	1993	100
	1	3	4	1734	89,7
	3	3	4	65	3,4
	4	3	4	17	0,9
	5	3	4	117	6,1
Total		3	4	1933	100
	1	1	1	2238	100
	1	2	1	1861	88,1
	3	2	1	86	4,1
	4	2	1	28	1,3
	5	2	1	138	6,5
Total		2	1	2113	100

Table 2.3.3.4.B. Distribution of persons moving out by variable RB120

Result	Wave	Group	Count
1	2	1	119
2	2	1	1
3	2	1	18
1	3	3	40
3	3	3	8
1	4	3	82
2	4	3	1
3	4	3	7
1	2	4	56
2	2	4	1
3	2	4	10
1	3	4	104
2	3	4	1
3	3	4	12

2.3.3.5. Item nonresponse

For cost or income related variables imputation was used to treat item nonresponse.

Item nonresponse is not assumed to be in the income variables that come from registers. The only income variables where imputation was applied were the ones not received from registers, “regular inter-household cash transfer received”, and “regular inter-household cash transfer paid”, “Non-Cash employee income” and “Company car” (HY080G, HY130G, PY020G and PY021G). Imputations were used for those variables based on survey data.

For HY080G and HY130G a question was added in 2007 for those not knowing the amount paid for alimony asking for the number of children for whom alimony was paid or received. This was done in order to help with imputation.

HH060: When indicating that the household was paying a non-zero amount for rent but not giving the amount imputation was applied. Variables used were area of residence, number of household members, number of rooms in the dwelling and the type of owner of the dwelling (profit – non-profit).

A follow up question was added before the 2007 survey in case of “don’t know” to decrease item nonresponse for HH060.

HH061: There has always been high item nonresponse for the question of imputed rent in Iceland. One reason is the small rental market in Iceland. This becomes especially difficult in smaller towns where it might be hard to say whether certain houses could be rented at all no matter how low the rent would be. To treat this problem we added a follow up question for the 2007 survey encouraging respondents to give their best estimate if they said “don’t know”.

HS130: The question on the lowest monthly income to make ends meet has had high levels of item nonresponse and a follow up question was added to the questionnaire before the 2007 survey to try to reduce that.

PE030: In some cases people had difficulties giving an answer about the year of highest level of education on other household members. We added a follow up question asking to give their best guess.

PL060: Number of working hours was imputed for. If the respondent had reported working hours on earlier waves and was holding the same job the last value given was used. Otherwise when respondent was working but did not give number of hours, regression analysis was used with the variables: personal income, sex, age and whether the respondent claimed to work full time or part time.

Table 2.3.3.5.A Number receiving an amount and item nonresponse for the following income components

	values	imputed	partial
HY010	100	0	0
HY020	99,9	0	0
HY022	97,9	0	0
HY023	91,2	0	0
HY030	83,5	0	0
HY040	6,9	0	0
HY090	99,1	0	0
HY050	40,7	0	0
HY060	2,1	0	0
HY070	41,5	0	0
HY080	17,5	4	0
HY081	14,7	3,3	0
HY100	67,4	0	0
HY110	35,7	0	0
HY120	82,2	0	0
HY130	14,6	3,1	0
HY131	8,1	2,2	0
HY140	99,2	0	0
PY010	82	0	0
PY020	32,9	1,8	0
PY021	7,3	1,1	0
PY030	82,5	0	0
PY035	0	0	0
PY050	9,6	0	0
PY090	10,9	0	0
PY100	13,3	0	0
PY110	7,1	0	0
PY120	0,1	0	0
PY130	4,6	0	0
PY140	2,2	0	0

Table 2.3.3.5.B Number of observations for demographic variables

	Male	Female	Total
Males	3435	3355	6790
Females	2498	2298	4796
Employed	237	252	489
Unemployed	496	618	1114
Inactive	778	668	1446
< 25	514	488	1002
25-34	543	591	1134
45-54	673	689	1362
55-64	489	470	959
65+	438	449	887
Owner	3028	2926	5954

Tenant	405	428	833
One person < 65	179	130	309
One person, 65+	56	120	176
One male	235	0	235
One female	0	250	250
One, total	235	250	485
Two adults < 65, no child	447	421	868
Two adults, no children	334	332	666
Other, no children	344	276	620
Single parent	84	205	289
Two adults, one child	505	483	988
Two adults, two children	555	554	1109
Two adults, three children	449	438	887
Other hh with children	467	384	851
Other HH, no children	1360	1279	2639
HH with children	2060	2064	4124

Equivalized disposable income

Item nonresponse for Equivalized disposable income. The information for the income variables were mainly collected through registers. Only information for HY080, HY130, PY020 and PY021 was received from the interview. Nonresponse for each income variable is shown in table 2.3.3.5.A.

2.4. Mode of data collection

All interviews were done through telephone with the aid of the Blaise software. One week before the start of data collection Statistics Iceland sent a letter to the sampled individuals explaining the purpose of the survey and requesting their cooperation.

Instead of asking about the amounts paid for electricity and heat (which are a part of variable HH070, Total Housing cost) imputations are used based on the HBS (Household Budget Survey). The reason is that it is our belief that people often do not know the amounts they pay for heating and electricity. These bills are often paid automatically through credit cards or automatically taken out of peoples' bank accounts. Some people hardly ever see the bills. Length of the intervals the amounts apply to have also sometimes been hard to establish (1 month, 3 months ect). The HBS (Household budget survey) on the other hand is a face to face survey where the respondents are asked in advance to prepare by keeping bills or bank transcripts handy.

The distribution of the selected respondents, household members aged 16 or over, and non-selected household members by data status (RB250) and by type of interview (RB260) is shown in the tables below.

Table 2.4 A Distribution of household members age 16 or over by data status (RB250)

	Reg.sel	Reg.not.sel	Non.reg.sel	Non.reg.not.sel
Group 1	0	6	763	976
Group 2	0	7	809	1025
Group 3	0	7	690	793
Group 4	0	7	759	948

Table 2.4 B Distribution of household members age 16 or over by type of interview (RB260)

	Sel.resp	Not.sel	All hh members 16+
Group 1, CATI	763	976	1739
Group 2, CATI	809	1025	1834
Group 3, CATI	690	793	1483
Group 4, CATI	759	948	1707
Total	3021	3742	6763

2.5. Imputation procedure

	2007	2008	2009	2010
HH070_total	2823	2842	2847	2966
HH070_impute	2823	2842	2847	2966
HH060_total	340	346	393	485
HH060_impute	13	21	16	20
HY080_total	476	471	446	525
HY080_impute	91	63	68	122
HY081_total	422	419	395	442
HY081_impute	70	48	63	101
HY130_total	393	424	444	439
HY130_impute	67	58	72	94
HY131_total	253	261	239	241
HY131_impute	40	34	42	65
PL060_total	4822	4939	4507	4566
PL060_impute	108	97	60	85
PY020_total	2022	2232	2249	2233
PY020_impute	110	110	114	123
PY021_total	552	579	512	498
PY021_impute	93	67	64	73
PY030_total	5470	5521	5501	5601
PY030_impute	5470	5521	5501	5601

Imputation was applied when dealing with amounts or working hours and we knew that these amounts were paid or received but did not have the amount or the number. Not imputing would systematically underestimate the amount. For HH070 only amounts for utilities were imputed using the household budget survey.

2.6. Imputed rent

Imputed rent was first delivered with the 2007 data. The method used was the same as for the Icelandic HBS (Household budget survey). Market value of dwellings are received from housing registers: This market value is used to produce imputed rent with the formula: $PH * [r(1+r)^N] / [(1+r)^N - 1]$. Where PH is the market value of the dwelling, r = real interest = 4%, N = lasting time of property = 80 years.

2.7 Company cars

In 2007, a question asking for company car was included in the questionnaire. Data on income are received from tax register. The information from the tax register do not distinguish between company car and other income.

3. Comparability

3.1. Basic concepts and definitions

The reference population

The reference population is persons aged 16 years or more at December 31st in the year 2009, living in private households.

The private household definition

A private household is defined as individuals that share food, meaning that they either do not pay for their food or that they share expenses for food. The definition does not require that they eat at the same times or that they are related.

The household membership

Persons are considered as household members if they spend most of their nights at the address of the household.

Individuals that are temporarily away (not having a private address elsewhere) and will return to the household are considered as household members. As example of this are children in boarding schools, fishermen, individuals admitted to hospitals or imprisoned and those that are working for longer periods away from home.

The income reference period

The income reference period is the calendar year 2009.

The period for taxes on income and social insurance contributions

The period for taxes on income and social insurance contributions is the calendar year 2009.

The reference period for taxes on wealth

The reference period for taxes on wealth is the calendar year 2009.

The lag between the income reference period and current variables

The income variables are collected from registers and the interval between the end of the income reference period and the time of interview for current variables is maximum four and a half months.

The total duration of the data collection of the sample

Table 3.1A Data collection period by year

	Start	End
2007	25.2.2007	8.6.2007
2008	19.2.2008	4.6.2008
2009	9.2.2009	5.5.2009
2010	1.3.2010	11.5.2010

Basic information on activity status during the income reference period

Table 3.1B Activity status of persons 16 years or older

	N	%
Working	4516	70,5
Unemployed	282	4,4
Retired	489	7,6
Other inactive	928	14,5
Not responded	187	2,9
Total	6402	100

3.2. Components of income

3.2.1 Differences between the national definitions and standard EU-SILC definitions, and an assessment of the consequences of the differences mentioned will be reported for the following target variables.

This section gives an overview of how income data from registers have been organised in order to be comparable to the income concepts outlined in the SILC guidelines. In addition references are made to any departures from these guidelines.

All income data derived from registers are recorded gross at component level. All income data are collected at the individual level (i.e. the person registered as the receiver of the income). This also concerns typically “household” related incomes such as housing benefits and social assistance.

Total household gross income (HY010)

The sum of all income components:

HY040G+HY050G+HY060G+HY070G+HY080G+HY090G

Plus the sum for all household members of:

PY010G+PY020G+PY050G+PY090G+PY100G+PY110G+PY120G+PY130G+PY140G.

Total disposable household income (HY020)

Defined as total gross income (HY100G+HY130G+HY140G) minus (HY120G+HY130G+HY140G)

Imputed rent (HY030)

The method used was the same as for the Icelandic HBS (Household budget survey). Market value of dwellings are received from housing registers: This market value is used to produce imputed rent with the formula: $PH * [r(1+r)^N] / [(1+r)^N - 1]$. Where PH is the market value of the dwelling, r = real interest = 4%, N = lasting time of property = 80 years.

Total disposable household income before social transfers except old-age and survivor's benefits (HY022)

Defined as HY020 minus the sum for all household members of:

(PY090N+PY120N+PY130N+PY140N) + HY050N+HY060N+HY070N

Total disposable household income before social transfers including old-age and survivor's benefits (HY023)

Defined as HY020 minus the sum for all household members of:

(PY090N+PY100N+PY110N+PY120N+PY130N+PY140N) + HY050N+HY060N+HY070N

Income from rental of property or land (HY040)

Income from hiring out property not contacted to business activity. Deviates from SILC definitions in that no information is available in the register on interest repayments, maintenance, insurance and other charges.

Family/children-related allowances (HY050)

Includes the following income components:

- Family allowance
- Maternity allowance (birth grant)
- Single parent's allowance

Social assistance (HY060)

Includes the total amount received in social assistance.

Housing allowances (HY070)

Includes rent benefits granted to tenants and owners.

Regular inter-household cash transfers received - (HY080)

Includes alimonies received. Information on regular private cash support received by children from parents living in a separate household is included from interview. The same goes for other inter household cash transfers received.

Interest, dividends, profit from capital investment in unincorporated business (HY090):

Interest and dividends are taxable income.

Income received by people aged under 16 (HY110)

Includes the following income components:

- Interests and dividends.

Those are registered in one sum on parent's tax return. If more than one child is in the household it is divided equally between the children.

- Children with income.

Interest repayments on mortgage (HY100)

As interest repayments on mortgage are used for calculating fiscal benefits to owner-occupiers are to be found in registers.

Regular taxes on wealth (HY120)

As the taxes are paid in the following year information is sought in registers from the year before.

Regular inter-household cash transfers paid (HY130)

Information on alimonies paid and regular private cash support to children from parents living in a separate household is included from interview. The same goes for other inter household cash transfers received.

Total Tax on income and social contribution (HY140)

It includes assessed income, wealth taxes and social contributions.

Repayment/receipts for tax adjustment (HY145)

It is included in HY140.

Employee cash or near cash income (PY010)

Deviation from the SILC concept:

It is not possible to separate from employee cash income redundancy compensations that should be included under unemployment benefits. The same goes for wages and salaries during sickness, which is a major part of sickness benefits paid in Iceland.

Non-Cash employee income (PY020G)

The information was retrieved through the questionnaire.

Company car (PY021G)

The information was retrieved through the questionnaire.

Employer's social insurance contribution (PY030G)

The employer's social insurance contribution was calculated based on the income received from the tax register.

Contribution to individual private pension plans (PY035G)

The contribution is usually a percentage of person's income. We have the income amount from the tax register and ask the percentage in the questionnaire.

Cash benefits or losses from self-employment (PY050)

Entrepreneurial income is collected *net* in register data. Royalties are registered as "other income" and not possible to separate and not include here.

Unemployment benefits (PY090)

Deviation from the SILC concept:

It is not possible to separate from employee cash income (PY010) redundancy compensations that should be included here or in PY100.

Old-age function (PY100)

Includes the following income components:

- Old age pension from social security scheme (basic pension).
- Old age pension from compulsory private pension funds (employment pension).

Survivors' function (PY110)

Includes the following income components:

- Survivors' pension from social security scheme.
- Survivors' pension from compulsory private pension funds.
- Death grants.

Social benefits in the sickness (PY120)

All sickness benefits that are included in wages and salaries cannot be specified in registers and are included in PY010.

Disability benefits (PY130):

Includes the following income components:

- Disability benefits and pension from social security scheme (basic pension).
- Disability benefits and pension from compulsory private pension funds (employment pension).

Education related allowance (PY140)

It includes scholarship of various kinds and “educational alimony” received by children at the age of 18 to 20 years living with single parent (e.g. students).

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

Tax register is use for all income variables except for HY080, HY130, PY020 and PY021 (Regular inter-household cash transfer received and paid). For those two variables information are collected through the interview. Those are also the only income variables where imputation was used.

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

The register data only report gross income at component level. Total assessed taxes and contributions to social security are collected separately from tax registers.

3.2.4. The method used for obtaining income target variables in the required form (i.e. as gross values)

All income data are recorded gross at component level.

3.3 Tracing rules

In Iceland a respondent is selected from the national register. Whoever lives with the selected respondent is also included in the survey. If the composition of the households of the selected respondent changes between waves we do not trace other household members. We only trace the selected respondent and if he or she has new household-partners they will be included in the survey. The information used for tracing are received from the national register, information on phone numbers are received from the largest phone company in Iceland. Information from former household members are also used to help locate selected respondents if the selected respondent has moved. All data are collected through telephone.

4. Coherence

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

With the exception of inter-household transfers all the income data in SILC are from register. Hence, in our opinion, there is no point in comparing the results with external sources since the source we would compare with is the source used in SILC.

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