

**Intermediate Quality Report
Relating to the
EU-SILC 2010 Operation**

Austria



Vienna, 22nd December 2011

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0. Preface

This report is the Intermediate Quality Report of EU-SILC 2010. Like in the previous years, the report follows the structure outlined in the Commission Regulation No. 28/2004.

This regulation defines four chapters.

The first chapter presents the common cross-sectional indicators and other indicators of interest calculated on the basis of the EU-SILC datasets in Austria.

The second chapter deals with accuracy and covers all factors that affect the closeness of estimations and results to the exact or true value of the measurement. As in the previous years, the chapter includes an additional section on the imputation procedures applied in the operation of EU-SILC 2010 (Section 2.6).

The third chapter reports on comparability and describes all differences between standard definitions and the definitions applied in the survey in Austria. Furthermore, it describes how these definitions are applied. The description of the application of definitions in the survey does not necessarily imply a difference to the common EUROSTAT definition.

The fourth and last chapter which deals with coherence, presents the comparisons of the EU-SILC 2010 data with external data. In this report, the data of EU-SILC 2010 have been compared with the data of EU-SILC 2010, the Wage Tax Statistics 2009, the National Accounts 2009 and the Microcensus 2010.

1. Common cross-sectional indicators

Table 1: Common cross-sectional indicators EU-SILC 2010

Indicator			Value	Achieved sample size	Total item non response		
OV-1a SI-P1 Europe 2020	At-risk-of-poverty rate after social transfers by age and sex, in %	All (>= 0 years)	Total	12.1	1,623	0	
			Men	10.7	682	0	
			Women	13.5	941	0	
		<=17 years	Total	14.3	399	0	
			18-24 years	Total	13.7	154	0
				Men	12.2	68	0
		25-49 years	Women	15.3	86	0	
			Total	10.6	476	0	
			Men	9.4	196	0	
		50-64 years	Women	11.8	280	0	
			Total	9.4	252	0	
			Men	9.5	115	0	
		65+ years	Women	9.3	137	0	
			Total	15.2	342	0	
			Men	10.4	104	0	
		>=18 years	Women	18.7	238	0	
			Total	11.6	1,224	0	
			Men	10.0	483	0	
		18-64 years	Women	13.2	741	0	
			Total	10.7	882	0	
			Men	9.9	379	0	
		<=64 years	Women	11.5	503	0	
			Total	11.5	1,281	0	
			Men	10.7	578	0	
			Women	12.3	703	0	
			Europe 2020 At-risk-of-poverty or social exclusion rate by age and sex, in %				
			All (>= 0 years)	Total	16.6	2,214	0
Men	14.7	914		0			
Women	18.4	1,300		0			
<=17 years	Total	18.8	512	0			
	18-64 years	Total	16.1	1,343	0		
		Men	14.3	544	0		
<=64 years	Women	17.9	799	0			
	Total	15.8	359	0			
	Men	11.0	110	0			
	Women	19.4	249	0			
	Europe 2020 At-risk-of-poverty or social exclusion rate by household type, in %						
	Single total	27.5	552	0			
Single <65 years	29.6	372	0				
Single 65+ years	23.9	180	0				
Single male	23.1	179	0				
Single female	30.8	373	0				
2 adults, no children, at least one 65+	14.6	222	0				
2 adults, no children, both < 65	16.6	306	0				

Indicator		Value	Achieved sample size	Total item non response	
	Other households without children	6.4	82	0	
	Single parent, at least one child	38.3	268	0	
	2 adults, 1 child	12.1	155	0	
	2 adults, 2 children	10.5	203	0	
	2 adults, 3+ children	24.7	269	0	
	Other households with children	15.4	157	0	
	Households without children total	16.9	1,162	0	
	Household with children total	16.2	1,052	0	
Europe 2020	People living in households with very low work intensity by age and sex, in %				
	All (>= 0 years)	Total	6.0	814	0
		Men	5.4	325	0
		Women	6.6	489	0
	<=17 years	Total	6.0	171	0
	18-64 years	Total	7.6	643	0
		Men	6.4	241	0
		Women	8.7	402	0
Europe 2020	People living in households with very low work intensity by age and sex, in %				
	Single total		10.9	209	0
	Single <65 years		17.1	209	0
	Single male		11.8	90	0
	Single female		10.2	119	0
	2 adults, no children, at least one 65+		3.1	49	0
	2 adults, no children, both < 65		8.2	164	0
	Other households without children		3.6	48	0
	Single parent, at least one child		19.6	139	0
	2 adults, 1 child		3.8	56	0
	2 adults, 2 children		1.5	31	0
	2 adults, 3+ children		8.6	75	0
	Other households with children		4.3	43	0
	Households without children total		6.8	470	0
	Household with children total		5.1	344	0
Europe 2020	Severely materially deprived people by age and sex, in %				
	All (>= 0 years)	Total	4.3	522	0
		Men	3.9	219	0
		Women	4.6	303	0
	<=17 years	Total	5.7	138	0
	18-64 years	Total	4.5	338	0
		Men	3.9	133	0
		Women	5.2	205	0
	<=64 years	Total	2.0	46	0
		Men	(1.3)	14	0
		Women	2.5	32	0
Europe 2020	Severely materially deprived people by household type, in %				
	Single total		6.8	129	0
	Single <65 years		8.6	102	0
	Single 65+ years		3.6	27	0
	Single male		5.6	42	0
	Single female		7.6	87	0

Indicator		Value	Achieved sample size	Total item non response		
	2 adults, no children, at least one 65+	1.6	24	0		
	2 adults, no children, both < 65	4.4	74	0		
	Other households without children	(1.6)	17	0		
	Single parent, at least one child	13.4	80	0		
	2 adults, 1 child	3.0	39	0		
	2 adults, 2 children	3.7	48	0		
	2 adults, 3+ children	7.0	70	0		
	Other households with children	3.8	41	0		
	Households without children total	3.9	244	0		
	Household with children total	4.8	278	0		
SI-S1a At-risk-of-poverty rate after social transfers by household, in %						
Europe 2020	Single total	22.1	435	0		
	Single <65 years	21.4	261	0		
	Single 65+ years	23.2	174	0		
	Single male	17.8	135	0		
	Single female	25.2	300	0		
	2 adults, no children, at least one 65+	11.8	172	0		
	2 adults, no children, both < 65	9.8	170	0		
	Other households without children	2.8	38	0		
	Single parent, at least one child	28.2	195	0		
	2 adults, 1 child	8.6	102	0		
	2 adults, 2 children	7.8	172	0		
	2 adults, 3+ children	17.9	212	0		
	Other households with children	12.6	127	0		
	Households without children total	12.1	815	0		
	Household with children total	12.1	808	0		
SI-S1c At-risk-of-poverty after social transfers by main activity and sex, in %						
>= 18 years	Employed	Total	5.0	290	0	
		Men	5.0	154	0	
		Women	4.8	136	0	
	Inactive total	Total	19.5	917	0	
		Men	18.2	322	0	
		Women	20.4	595	0	
	Unemployed	Total	41.2	198	0	
		Men	46.0	95	0	
		Women	36.8	103	0	
	Pension	Total	13.6	410	0	
		Men	10.9	152	0	
		Women	15.9	258	0	
	Other inactive	Total	22.7	305	0	
		Men	24.9	75	0	
		Women	22.1	230	0	
	18-64 years	Employed	Total	5.0	289	0
			Men	5.1	153	0
			Women	4.8	136	0
Inactive total		Total	23.1	576	0	
		Men	25.4	219	0	
		Women	21.6	357	0	

Indicator			Value	Achieved sample size	Total item non response	
Unemployed		Total	41.3	197	0	
		Men	46.0	95	0	
		Women	37.0	102	0	
Pension		Total	12.1	118	0	
		Men	12.1	52	0	
		Women	12.2	66	0	
Other inactive		Total	21.9	257	0	
		Men	24.4	72	0	
		Women	21.1	185	0	
SI-S1d	At-risk-of-poverty after social transfers by tenure status, in %					
Owner or rent-free		Total	7.9	737	0	
		Men	6.4	297	0	
		Women	9.2	440	0	
Tenant		Total	19.4	886	0	
		Men	18.2	385	0	
		Women	20.5	501	0	
OV-1a	SI-P1	At-risk-of-poverty threshold, in euro				
		Single	12,371	14,085	0	
		2 adults, 2 children	25,979	14,085	0	
OV-2	SI-C1	Inequality of income distribution, income quintile share ratio				
		S80/S20	3.74	14,085	0	
	SI-C2	Inequality of income distribution, income quintile share ratio				
		Gini-coefficient	26.1	14,085	0	
OV-1b	SI-P3	Relative median at-risk-of-poverty gap by age and sex, in %				
All (>= 0 years)		Total	17.2	219	0	
		Men	17.5	303	0	
		Women	16.7	138	0	
<=17 years		Total	20.2	338	0	
		18-64 years	Total	19.0	39	0
			Men	18.8	48	0
65+ years		Women	19.3	70	0	
		Total	15.5	42	0	
		Men	15.3	87	0	
Women		Women	15.5	24	0	
		SI-S1e				
		Dispersion around the risk-of-poverty threshold, in %				
40%						
All (>= 0 years)		Total	2.3	314	0	
		Men	2.1	132	0	
		Women	2.6	182	0	
<=17 years		Total	2.8	79	0	
		18-64 years	Total	2.5	201	0
			Men	2.3	89	0
65+ years		Women	2.7	112	0	
		Total	1.3	34	0	
		Men	(0.9)	10	0	
Women		Women	1.6	24	0	
		50%				

Indicator		Value	Achieved sample size	Total item non response
All (>= 0 years)	Total	6.2	837	0
	Men	5.5	351	0
	Women	6.8	486	0
<=17 years	Total	7.8	220	0
18-64 years	Total	5.9	492	0
	Men	5.3	209	0
	Women	6.4	283	0
65+ years	Total	5.6	125	0
	Men	4.5	45	0
	Women	6.3	80	0
70%				
All (>= 0 years)	Total	20.1	2,716	0
	Men	18.4	1,183	0
	Women	21.8	1,533	0
<=17 years	Total	25.4	695	0
18-64 years	Total	17.1	1,426	0
	Men	16.2	630	0
	Women	18.0	796	0
65+ years	Total	26.1	595	0
	Men	19.4	195	0
	Women	31.0	400	0
OV-9 SI-C5	At-risk-of-poverty-rate anchored at a fixed moment in time, in %			
All (>= 0 years)	Total	11.0	1,445	0
	Men	9.7	607	0
	Women	12.2	838	0
<=17 years	Total	13.3	366	0
18-64 years	Total	9.9	798	0
	Men	9.1	343	0
	Women	10.6	455	0
65+ years	Total	12.8	281	0
	Men	8.7	83	0
	Women	15.8	198	0
OV-C1 SI-C6	At-risk-of-poverty rate before social transfers by age and sex, in %			
Before social transfers except old-age and survivors' benefits				
All (>= 0 years)	Total	24.1	3,263	0
	Men	23.1	1,492	0
	Women	25.0	1,771	0
<=17 years	Total	36.8	1,019	0
18-64 years	Total	22.2	1,860	0
	Men	21.5	844	0
	Women	23.0	1,016	0
65+ years	Total	17.4	384	0
	Men	12.8	122	0
	Women	20.8	262	0
Before social transfers including old-age and survivors' benefits				
All (>= 0 years)	Total	42.8	5,944	0
	Men	39.6	2,651	0
	Women	45.8	3,293	0

Indicator			Value	Achieved sample size	Total item non response	
	<=17 years	Total	38.7	1,076	0	
	18-64 years	Total	31.7	2,737	0	
		Men	29.2	1,171	0	
		Women	34.1	1,566	0	
	65+ years	Total	89.3	2,131	0	
		Men	87.4	927	0	
		Women	90.7	1,204	0	
OV-11	SI-C8	At-risk-of-poverty rate of employed persons, in %				
		Total	5.0	290	0	
		Male	5.0	154	0	
		Female	4.8	136	0	
		Full-time	3.9	161	0	
		Part-time	6.8	84	0	
	SI-P2	At-persistent-risk-of-poverty, in %				
		2006-2009	6.2	149	0	
	SI-P8	Material deprivation, in %				
	Total		10.6	1,305	0	
			Not at-risk-of-poverty	6.5	716	0
			At-risk-of-poverty	40.6	589	0
	Male	total	9.8	561	0	
			Not at-risk-of-poverty	6.2	318	0
			At-risk-of-poverty	39.7	243	0
	Female	total	11.4	744	0	
			Not at-risk-of-poverty	6.7	398	0
			At-risk-of-poverty	41.2	346	0
	SI-S4	Intensity of material deprivation, in %				
	Total		3.6	1,305	0	
			Not at-risk-of-poverty	3.5	716	0
			At-risk-of-poverty	3.8	589	0
	Male	total	3.6	561	0	
			Not at-risk-of-poverty	3.5	318	0
			At-risk-of-poverty	3.8	243	0
	Female	total	3.6	744	0	
			Not at-risk-of-poverty	3.4	398	0
			At-risk-of-poverty	3.8	346	0
	SI-S6	Overcrowding rate by poverty status, in %				
		Total	12.1	1,527	0	
		Not at-risk-of-poverty	9.6	1,094	0	
		At-risk-of-poverty	30.5	433	0	
	SI-S6	Overcrowding rate by at-risk-of-poverty excluding single person households, in %				
		Total	12.1	1,304	0	
		Not at-risk-of-poverty	9.5	942	0	
		At-risk-of-poverty	35.0	362	0	

Indicator		Value	Achieved sample size	Total item non response	
SI-S6	Overcrowding rate by degree of urbanisation, in %				
	Densely populated area	23.0	994	0	
	Intermediate area	6.7	232	0	
	Thinly populated area	5.6	301	0	
SI-S6	Overcrowding rate by household type, in %				
	Single total	12.1	223	0	
	Single <65 years	14.4	170	0	
	Single 65+ years	8.1	53	0	
	Single male	14.1	112	0	
	Single female	10.7	111	0	
	2 adults, no children, at least one 65+	2.4	26	0	
	2 adults, no children, both < 65	4.7	80	0	
	Other households without children	6.8	84	0	
	Single parent, at least one child	28.1	194	0	
	2 adults, 1 child	10.2	135	0	
	2 adults, 2 children	11.0	208	0	
	2 adults, 3+ children	27.6	316	0	
	Other households with children	23.7	261	0	
	Households without children total	7.0	413	0	
	Household with children total	17.7	1,114	0	
SI-C12	Housing deprivation, in %				
	Leaking roof	14.8	1,959	0	
	No shower/bath	0.6	72	0	
	No toilet	1.2	145	0	
	Problem with darkness	6.9	918	0	
	Neither shower/bath nor toilet	0.4	49	0	
SI-C13	Median share of housing cost by age and poverty status				
	All (>= 0 years)	total	14.2	14,085	0
		Not at-risk-of-poverty	13.1	12,462	0
		At-risk-of-poverty	28.3	1,623	0
	<=17 years	total	15.3	2,941	0
	18-64 years	total	13.9	8,790	0
		Not at-risk-of-poverty	12.9	7,908	0
		At-risk-of-poverty	32.0	882	0
	65+ years	total	14.2	2,354	0
		Not at-risk-of-poverty	13.3	2,012	0
		At-risk-of-poverty	20.2	342	0
SI-C13	Median share of housing cost by age and sex				
	All (>= 0 years)	Total	14.2	14,085	0
		Men	13.8	6,777	0
		Women	14.5	7,308	0
	<=17 years	Total	15.3	2,941	0
	18-64 years	Total	13.9	8,790	0
		Men	13.6	4,210	0
		Women	14.1	4,580	0
	65+ years	Total	14.2	2,354	0

Indicator		Value	Achieved sample size	Total item non response
	Men	13.0	1,043	0
	Women	15.0	1,311	0
SI-C13	Median share of housing cost by degree of urbanisation			
	Densely populated area	17.3	4,697	0
	Intermediate area	13.5	3,655	0
	Thinly populated area	12.3	5,733	0

2. Accuracy

Accuracy refers to the closeness of computations or estimates to the exact or true value. Accordingly, this chapter reports on all circumstances affecting the difference between the estimates and the true but unknown value.

2.1. Sampling Design

2.1.1. Type of sampling

EU-SILC in Austria uses an integrated rotational design meaning that each year about one fourth of the sample is replaced by a new rotational group. Beginning in 2004, EU-SILC 2010 was the seventh year of EU-SILC in Austria as a panel. Each rotational group of the sample 2010 entered the survey in a different year: 2007 (R3), 2008 (R4), 2009 (R1) and 2010 (R2).

2.1.2. Sampling units

Sampling units are dwelling units registered in the ZMR. The sampling frame consisted of all accommodations with at least one person aged 16 or older who has her/his main residence (*Hauptwohnsitzmeldung*) in these accommodations. Institutional housing facilities, dwelling units where no person with his/her main residence in the dwelling is 16 years or older were excluded from the sample as well as units that have been selected for the prior samples of EU-SILC.

2.1.3. Stratification

The first wave sample of EU-SILC 2010 is a one-stage stratified probability sample. The sample of the first wave was stratified according to 206 interviewer units (*Sprengel*). These are regional divisions of federal territory which may be approximately combined to Austrian provinces (NUTS 2 units). For example Lower Austria contains 30 interviewer units and Burgenland can be divided into 13 interviewer units.

2.1.4. Sample size and allocation criteria

The necessary sample size for Austria was determined in view of framework regulation (1177/2003) to guarantee an effective sample size of 4,500 households. The quantity of the effective sample size is dependent on the so called “design effect” (*deff*) of the at-risk-of-poverty rate. The design effect is a measure of the change in variance that occurs if a sampling design different to simple random sampling is used.¹ If the design effect is larger than one, more than 4,500 households have to be interviewed in order to achieve the aspired effective sample size. For the survey year 2007 a design effect of approximately 1.33 was estimated by Statistics Austria. In order to estimate the at-risk-of-poverty rate with the same precision that a simple random sample would provide, the sample had to be enlarged by one third². Therefore a sample of about 6,000 households had to be drawn in 2010 to achieve an effective sample size of 4,500. Using the resulting response rates of the last year’s survey the expected response rates for 2010 were determined as 65% for the first wave sample and 82.5% for the follow-up wave samples. In view of these expected response rates a first year gross sample of 3,221 households (at existing addresses) and a follow-up gross sample of 4,742 households would lead to a net cross-sectional sample of about 6,000 households.

¹ The design effect *deff* of an estimator \hat{Y} refers to the factor resulting from the division of the variance estimate from the survey data by the variance estimate if simple random sampling had been used:

$$\text{Deff} = \frac{\hat{V}(\hat{Y})}{\hat{V}_{\text{SRS}}(\hat{Y})}$$

See „Variance estimation methodology“, http://www.statistik.at/web_de/static/subdokumente/b_eu-silc-2004_variance_estimation_methodology.pdf

² During the planning phase of the first wave sample of EU-SILC 2009 in the beginning of the year 2009, the latest data available were from EU-SILC 2007. Therefore the design effect from 2007 was used as an estimate for the design effect of 2009.

Table 2: Sampling Scheme EU-SILC 2010

	Gross sample size	Expected response rate	Rejected due to deficient quality**	Expected net sample size rounded	Design effect (at-risk-of-poverty-rate)	Effective sample size
First wave	3,221	65.0%	18	2,076	1.33	1,557
Follow-up waves	4,742	82.5%	69	3,843		
Follow-up waves (including split-off households)*				3,924	1.33	2,943
All waves	7,963			6,000	1.33	4,500

Source: Statistics Austria, EU-SILC 2010

*including estimated 81 split-off households based on previous years' experience

**Estimated values based on previous years' experiences

In order to compensate for ineligible elements in the sampling frame (e.g. address no longer existent) - which was estimated as 6.3%³ - the size of the first wave sample was determined 3,437 addresses. Seven of these addresses from the first wave sample turned out to be double entries. After eliminating these seven addresses, 3,430 households remained in the first wave sample.

Including the 157 split-off households the total number of addresses in the sample amounted to 8,309 (two addresses couldn't be edited). 168 of these addresses turned out to be nonexistent (not a proper dwelling unit, dwelling unit is not occupied etc). From the remaining 8,141 addresses in the gross sample 8,051 addresses could be contacted, 90 households could not be contacted. For 6,236 of the successfully contacted addresses interviews could be conducted, 1,815 households refused to or couldn't take part in an interview. 48 household interviews had to be excluded because of poor quality which led to 6,188 completed household questionnaires which could be used for analysis. Table 3 describes the sample composition in detail.

³ Estimated value based on the quantity of eligible households in the first wave sample of EU-SILC 2009.

Table 3: Sample Size EU-SILC 2010

	Total		First wave addresses		Follow-up addresses	
	N	%	N	%	N	%
Gross sample EU-SILC 2010*	8.311	100,0	3.430	41,3	4.881	58,7
Address edited	8.309	100,0	3.430	41,3	4.879	58,7
Address not edited	2	0,02	0	0,0	2	0,02
Used Addresses	8.309	100,0	3.430	100,0	4.879	100,1
Addresses existent	8.141	98,0	3.265	95,2	4.876	100,0
Addresses not existent***	168	2,0	165	4,8	3	0,1
Contacted Addresses	8.141	100,0	3.265	100,0	4.879	100,0
Addresses successfully contacted	8.051	98,9	3.254	99,7	4.797	98,3
Addresses not successfully contacted	90	1,1	11	0,3	82	1,7
Successfully contacted addresses	8.051	100,0	3.254	100,0	4.797	100,0
Household questionnaire completed	6.236	77,5	2.013	61,9	4.223	88,0
Refusal to co-operate	1.348	16,7	969	29,8	379	7,9
Entire household entirely away for the duration of fieldwork	232	2,9	144	4,4	88	1,8
Household unable to respond	117	1,5	87	2,7	30	0,6
Other reasons	118	1,5	41	1,3	77	1,6
Successful household questionnaire	6.236	100,0	2.013	100,0	4.223	100,0
Interview accepted for the database	6.188	99,2	2.005	99,6	4.183	99,1
Interview rejected**	48	0,8	8	0,4	40	0,9

Source: Statistics Austria, EU-SILC 2010

* Including split-households in follow-up addresses

**48 household interviews had to be excluded due to quality issues and were coded as "refusal to cooperate" in db130, because these households will not be approached again in any further wave of the survey.

*** The 3 follow-up addresses coded as "addresses not existent" are not coded DB120 = 23 but DB120 = 21 (address cannot be located).

2.1.5. Sample selection schemes

The first wave sampling process was carried out according to a stratified one-stage probability sample with disproportional allocation and without replacement. It was planned to select 3,437 addresses for the first wave rotational group of 2010 (R2/10). The number of selected households was determined as approximately 0.1% of all eligible addresses. The starting point in the development of the first wave sample was a proportional allocation by province. However, different expected response rates should be taken into account by the sampling design. The expected response rates of the first wave sample of 2010 were estimated with the response rates of the first wave sample of EU-SILC 2009. For example more addresses were drawn in Vienna because in Vienna the response rate tends to be lower than the average response rate on national level. For provinces with comparatively low response rate (e.g. Vorarlberg and Vienna) an oversample of about 10.5% was applied. So the resulting sample selection scheme facilitated a disproportional allocation in order to compensate for different response rates in different provinces.

Table 4 shows a comparison of the disproportional allocation used in the first wave sample of EU-SILC 2010 and a hypothetical proportional allocation.

Table 4: Allocation of addresses first wave sample EU-SILC 2010

Province	proportional allocation (hypothetical)	disproportional allocation (applied)	Difference disprop. - prop. allocation %
Burgenland	107	105	-1.8
Carinthia	228	203	-11.0
Lower Austria	635	580	-8.6
Upper Austria	555	527	-5.1
Salzburg	214	201	-6.3
Styria	479	484	1.0
Tyrol	274	293	6.9
Vorarlberg	143	158	10.4
Vienna	802	886	10.5
Total	3,437	3,437	0.0

Source: Statistics Austria, EU-SILC 2010

The sample of the follow-up waves 2010 resulted from the successfully interviewed households in 2009. These households are provided in the 2010 rotations R3/07, R4/08 and R1/09.

2.1.6. Sample distribution over time

The fieldwork of EU-SILC 2010 was done exclusively by Statistics Austria. The fieldwork for the operation 2010 started in March and ended in November.

Table 5: Sample distribution of EU-SILC 2010 during fieldwork

	Total			First wave Interview			Follow-up interview s		
	Interviewed	in %	cum. %	Interviewed	in %	cum. %	Interviewed	in %	cum. %
Total	6,188	100.0	100.0	1,717	100.0	100.0	4,471	100.0	100.0
March	942	15.2	15.2	295	17.2	17.2	647	14.5	14.5
April	819	13.2	28.5	309	18.0	35.2	510	11.4	25.9
May	1,062	17.2	45.6	343	20.0	55.2	719	16.1	42.0
June	1,408	22.8	68.4	318	18.5	73.7	1,090	24.4	66.3
July	849	13.7	82.1	210	12.2	85.9	639	14.3	80.6
August	592	9.6	91.7	138	8.0	93.9	454	10.2	90.8
September	395	6.4	98.0	89	5.2	99.1	306	6.8	97.6
October	98	1.6	99.6	12	0.7	99.8	86	1.9	99.6
November	23	0.4	100.0	3	0.2	100.0	20	0.4	100.0

Source: Statistics Austria, EU-SILC 2010

2.1.7. Renewal of the sample: rotational groups

2010 was the seventh year of EU-SILC in Austria. Hence, each of the four rotational groups entered the survey in different years and the oldest rotational group was interviewed for the fourth time (R3, 2007). The following table gives an overview on the performance of each rotational group in EU-SILC 2010. The response rates are calculated as a percentage of the accepted household interviews of successfully contacted addresses.

Table 6: Rotational groups (with split households) 2010

Rotational groups	Total	R3	R4	R1	R2
First wave		2007	2008	2009	2010
Gross sample EU-SILC 2010	8,311	1,305	1,494	2,082	3,430
Successfully contacted addresses	8,051	1,272	1,477	2,048	3,254
Accepted household interviews	6,188	1,170	1,296	1,717	2,005
Response rate (%)*	76.9	89.7	86.7	82.5	61.6

Source: Statistics Austria, EU-SILC 2010

* (1) First wave (R2 - 2010): Number of successful interviews accepted for the database divided by the number of successfully contacted addresses. (2) Follow-up waves: Number of successful interviews accepted for the database divided by the number of addresses in the gross sample

Table 7: Rotational groups (without split households) 2010

Rotational groups	Total	R3	R4	R1	R2
First wave		2007	2008	2009	2010
Gross sample EU-SILC 2010	8,154	1,257	1,452	2,015	3,430
Successfully contacted addresses	7,958	1,252	1,446	2,006	3,254
Accepted household interviews	6,129	1,160	1,276	1,688	2,005
Response rate (%)*	77.0	92.3	87.9	83.8	61.6

Source: Statistics Austria, EU-SILC 2010

* (1) First wave (R2 - 2010): Number of successful interviews accepted for the database divided by the number of successfully contacted addresses. (2) Follow-up waves: Number of successful interviews accepted for the database divided by the number of addresses in the gross sample

2.1.8. Weighting

This chapter describes the procedure to calculate the cross-sectional weights of the Austrian sample of EU-SILC 2010. The calculations comply in general with the EUROSTAT recommendations on the calculation of weights. Main document of reference was the current version of EU-SILC Doc. 65 (2010 operation).

2010 was the seventh year of the integrated cross-sectional and longitudinal survey. The Austrian EU-SILC follows the EUROSTAT recommendation for a rotational design with four subsamples (upon its full implementation). Each subsample had to be weighted separately first and special treatment in a final step was required to reach a combined cross sectional weight.

The cross sectional sample consisted of all four subsamples: one cross-sectional sample in 2010 and three longitudinal samples which were traced from the samples introduced in 2007, 2008 and 2009. The main objective of the weighting procedure was to make sure that the combined sample was representative of the total cross-sectional target population living in private households in Austria in the reference period.

2.1.8.1. Design factor

The design weight was calculated with reference to the design of the sample to take into account the different inclusion probabilities of the selection units in the first wave sample of EU-SILC 2010. The idea was that if the inclusion probability of an element is low, it should be assigned a higher weight. The design weight then was calculated as the inverse of the inclusion probability of the selection unit. Since the selection probability p_s is the same within each stratum, the design weights d_s are also constant within each stratum s (of $K=206$ strata).

$$d_s = \frac{1}{p_s} \quad s \in \{1, 2, \dots, K\} \quad (1)$$

2.1.8.2. Non-response adjustments

The aim of non-response weights is the reduction of the bias caused by unit non-response on household level. The correction of this bias ideally requires knowledge of the response probability of each of the responding households. The households could then be re-weighted by the inverse of this probability. The estimation strategy applied for the first wave households by Statistics Austria was similar to the strategy for the first wave households in 2009.

Sample selected in 2010 (first wave)

For the estimation of weights a logistic regression model was set up to estimate the response probabilities \hat{r}_h of each household with explanatory variables known prior to the questionnaire.

$$\hat{r}_h = P(\text{Resp} = 1|X_j) = \frac{\exp(\hat{\beta}_0 + \hat{\beta}_1 X_1 + \dots + \hat{\beta}_J X_J)}{1 + \exp(\hat{\beta}_0 + \hat{\beta}_1 X_1 + \dots + \hat{\beta}_J X_J)} \quad (2)$$

The final model was obtained by using a stepwise optimization algorithm to exclude insignificant explanatory variables. For example, the age of the oldest person in the household (according to the administrative records) did not appear to be a sufficiently reliable predictor for non-response. The final model consisting of twelve significant predictors and the intercept (total final model $\chi^2=44.7$, $df=59$; final model maxed-rescaled $R^2=0.0333$).

The non-response weights are calculated as the inverse of the estimated response probability \hat{r}_h . The non-response adjustment of the design weights d_s is carried out by multiplying the design weights by the non-response weights. This way the loss of design weights caused by households refusing to take part in the questionnaire can be compensated.

$$b_h = d_s \cdot \frac{1}{\hat{r}_h} \quad h \in \{1, \dots, H\} \quad (3)$$

Non-response adjustment between 2009 and 2010 (follow-up waves)

Unlike the non-response weighting in the initial first wave sample, weighting for longitudinal non-response is oriented towards individuals. Between two waves a certain amount of respondents could not successfully be traced, even if their former households remained in the sample. Those individuals who left the target population due to natural mortality or migration were of no further concern for weighting since these processes reflect true changes in the target population (i.e. residents in private households in the reference period).

What was of concern, however, is the selectivity of participation in the survey over time either due to refusals or difficulties in tracing particularly mobile individuals. In essence, the procedure distributed the base weights of these attritors among similar individuals in the sample. These longitudinal non-response weights are multipliers for the previous waves' weights (i.e. non-response adjusted design weights).

The weighting procedure was based upon a logistic regression model which predicts response probabilities among those individuals who were enumerated in the previous wave ($t-1$) and who were eligible in the current wave (t). Given the vast information available in the personal and household questionnaire such a model could be reasonably sophisticated. Again the rationale is to distribute previous year's base weights $RB060_p^{(t-1)}$ for the attritors among similar respondents remaining in the sample. Like in the case of adjusting for non-response in the first year wave, a logistic regression model was used to estimate the response probabilities of the persons eligible in the follow-up waves of 2010 (see formula (2)). To compensate for the loss of weights caused by attrition, the previous year's base weights $RB060_p^{(t-1)}$ were multiplied by the inverse of the estimated response rates \hat{r}_p of each person and thus leading to the current year's base weights $RB060_p^{(t)}$.

$$RB060_p^{(t)} = \frac{RB060_p^{(t-1)}}{\hat{r}_p(t)} \quad t \in \{2,3,4\} \quad (4)$$

A few methodological refinements were implemented for the preparation of such a model. In order to include all eligible respondents some explanatory variables had to be imputed, using a straightforward hot deck procedure using age and the household as stratification variables. Given the vast number of potential explanatory variables a stepwise optimisation algorithm was employed to identify significant predictors in a logistic regression model in which predictors were recoded into dichotomous dummy variables. Normally, when the objective of a model is to identify the dimensions according to which a phenomenon can be best characterised, categorical variables are treated blockwise, i.e. the respective dummy variables are entered into or removed from a model simultaneously. Categories with too few observations to produce significant differences in response rates would then usually be collapsed by eyeballing the data. With a large number of predictors it becomes a cumbersome and time consuming task to choose between competing alternatives, involving decisions each time. Further, the optimization algorithm model would automatically select variables with many categories which combine the predictive power of several dummies. In order to avoid this problem all categorical variables were automatically transformed into dummy variables. Hence the degrees of freedom for each predictor were equal. Then all the potential dummy predictors were entered separately into the

stepwise algorithm, filtering only those categories which appeared to significantly improve the chi square statistic. The parameter estimates obtained from such a model are somewhat difficult to interpret as they do not necessarily have clear-cut reference categories. While these kinds of models are certainly not ideal to improve the understanding of the substantial process leading to non-response, it could still be held as a useful reduction of the vast number of potential predictors to obtain a reasonable ratio between the model's degrees of freedom and its chi square statistic. Furthermore, it involves hardly substantial intervention by the researcher and could be fully automated.

In principle, the procedure to obtain longitudinal non-response weights was identical for all follow-up waves (R3/07; R4/08; R1/09), only that it would be advisable to estimate response probabilities separately because the reasons (and thus relevant predictors) for attrition may shift away from deliberate refusals to more mobility related problems the more mature the panel becomes. In practice however, weighting the initial sample of the two year panel, the three year panel and the four year panel became slightly more complex. The tracing rules imply that respondents who were missed in one year remained eligible in one subsequent wave. In the case of the 2008 first wave sample this referred to individuals who did not respond in 2009 but re-entered the sample in 2010. For the four year panel another problem arose. Since respondents who refused to answer the questionnaire for two consecutive waves were not followed up, two scenarios of re-entries were possible. That is an absence in 2008 or in 2009. Thereby EUROSTAT's recommendations distinguish clearly between those individuals who were absent in the target population (e.g. temporarily abroad, or institutionalized) or those who were not in the sample for other reasons. The former case inevitably augments the total of weights as it will augment the population total and can be treated analogously to newborns by receiving the weight of another household member or the average of other household members. In practice the population status of absent individuals was difficult to determine as respondents currently do not provide such retrospective information. The second case is somewhat more complex since the weight of temporary attritors had already been distributed among other sample persons. If such returnees should regain their weight this could only be achieved by reducing other respondent's weights. According to EUROSTAT'S guidelines this could be solved by sharing the weights within the household into which the returnee enters. In the Austrian situation however returnees are practically always complete households and there are no weights to be shared. Assigning these households a zero weight would come next to a massive waste of effort and money spent to collect information of the many returning individuals concerned.

The alternative solution followed in the Austrian survey was to stop following up persons who re-entered the sample in 2010. Thus the longitudinal non-response adjustment could be done on the basis of respondents who were interviewed in 2009 and were enumerated again in 2010.

The model for response probabilities between 2009 and 2010 in Rotation 1/09 produced 55 coefficients which differed significantly⁴ from zero (total $\chi^2=616.46$; $df=55$; model maxed-rescaled $R^2=0.2213$). The models for the non-response rates in R4/08 (37 coefficients; total $\chi^2= 398.28$; $df=37$; model maxed-rescaled $R^2=0.2202$) and R3/07 (7 coefficients; total $\chi^2= 221.96$; $df=7$; model maxed-rescaled $R^2=0.1608$) yielded similar results.

Trimming

After response probabilities were estimated, the attrition weights were trimmed such that the condition stated in EU-SILC Doc 65 (2010 operation):

$$1/C \leq \frac{\omega_i^{(2)}/\bar{\omega}^{(2)}}{\omega_i^{(1)}/\bar{\omega}^{(1)}} \leq C \quad (5)$$

is fulfilled for a value of 2 for C:

$$1/2 \leq \frac{RB060_p^{(t)} / \overline{RB060_p^{(t)}}}{RB060_p^{(t-1)} / \overline{RB060_p^{(t-1)}}} \leq 2 \quad (6)$$

⁴ $\alpha = 10\%$

Base weight

The base weights $RB060_p^{(t)}$ for all further calculation were produced by multiplying the design weights d_s with the inverse of the estimated response probabilities \hat{r}_h (similar to formula (3)). The non-response adjusted weights b_h (see formula (3)) of the first wave sample were calibrated to reliable external data in order to establish coherence according to important marginal distributions of the population (see chapter 2.1.8.3 for details on the calibration procedure). These calibrated weights of the first year wave are the base weights for next year's second wave. The basis for the cross-sectional weights had to be on household level. In order to achieve this, the mean of the personal base weights within a household had to be assigned to each individual. However, before this could be done, non-sample persons, i.e. new-borns and new entrants, had to receive personal base weights too.

Newborns and new entrants

Following EUROSTAT's guidelines, individuals who were newly born received their mother's weight or, alternatively the average weight of sample persons in the household. In principle new entrants from outside the target population should be treated analogously. In absence of the required information of their former population status all other cohabitants were assigned zero base weights.

Weight sharing

After every person in each household of the follow-up waves had received a personal base weight, the average over all persons m in each household h was calculated:

$$w_h^{(t)} = \frac{1}{m} \sum_{i=1}^m RB060_i^{(t)} \quad t \in \{2,3,4\} \quad (7)$$

These new household weights $w_h^{(t)}$ are the basis of all further calculations for the cross-sectional weights belonging to the follow-up waves. Weight sharing is not necessary for households of the first wave sample, because the non-response adjusted weights b_h are already on household level and are available for every person in all first-wave households.

$$w_h^{(1)} = b_h \quad (8)$$

2.1.8.3. Adjustment to external data (Calibration)

In accordance with the guidelines of EUROSTAT described in the EU-SILC Doc 65 (2010 operation) all the four rotational subsamples were adjusted to external marginal distributions in 2010. Like in EU-SILC 2010 the calibration was done using the SAS macro "CALMAR" developed by INSEE.

As in previous years the main data source for calibration was the Microcensus, a quarterly household survey with a sample of about 23,000 randomly selected households. As a reference data base the average of the four quarters of the Microcensus 2010 was chosen. The Microcensus operates with a rotational design like EU-SILC. The Microcensus incorporates the Labour Force Survey, and due to the size of the sample it is also one of the most important sources for socio-demographic information in Austria. Additionally data from the main association of Austrian Social Security Institutions (*Hauptverband der österreichischen Sozialversicherungsträger*) were used to provide an accurate number of people who were receiving unemployment benefits.⁵

The adjustments were carried out on household level and on individual level and were done with reference to the following variables:

- Household level: the household size (four categories: 1, 2, 3 household members and households with 4 and more household members), tenure status (two categories: rented flat/house or owned), and region (nine categories: Nuts II level).
- Individual level: Sex, age

In addition to these variables adjustments were implemented to achieve coherence in

- the number of foreign citizens using Microcensus data
- the number of recipients of unemployment benefits for a duration of more than one months

⁵ People who received benefits for more than one month during the income reference period were counted.

An “integrative” calibration design was applied with the target that on individual level every person of the household should be assigned the same weight. The individual characteristics were aggregated on household level, and dummy variables were constructed for every parameter of the individual adjustment characteristics. Using CALMAR to carry out these adjustments, a bounded method (logit method) of CALMAR was used, which defined lower and upper values for the weight adjustment factors and thus avoiding too extreme weights. Finally adjusted weight W_h for each household h were obtained.

$$W_h = g_h \times w_h \quad (9)$$

2.1.8.4. Final cross-sectional weights

Combination of the four subsamples

The three subsamples were representative of slightly different target populations, since the initial samples of 2007, 2008 and 2009 could not represent individuals who were not in the target population at the time the sample was drawn. This can be referred to as “IN-Population” and consists mostly of migrants of the years 2007, 2008 or 2009. Their weights need to be inflated accordingly to give an unbiased representation of the population in scope. Consequently, when subsamples were combined those parts of the population which entered the population needed to be given higher weights. In the case of four subsamples the inflation factors were 3.16, 1.7 and 1.25 respectively⁶ if the new entrants were represented in two, three or four subsamples. All initial samples were drawn from a population register which contains information on the previous population status. So it was possible to identify that part of a sample which could not have been selected into earlier samples as these individuals were only later added to the sampling frame.

Final calibration

Adjustments in general were done to reduce bias in the data. At this stage household weights of the combined subsamples were again adjusted to external marginal distributions using the procedure described in chapter 2.1.8.3 yielding the final cross-sectional weights $DB090_h$ on household level and $RB050_p$ on personal level respectively.

$$DB090_h = RB050_p = g_h \times W_h \quad (10)$$

2.1.9. Substitutions

Not applicable since no substitutions were necessary for EU-SILC 2010.

2.2. Sampling Errors

Sampling errors refer to the variability of estimates that occurs at random because of the use of a sample instead of a census. The guidelines for the quality report require reporting on the effective sample size and the standard errors for the main estimates.

2.2.1. Standard errors and effective sample size

2.2.2. Variance estimation

The standard errors and boundaries of the corresponding confidence intervals belonging to the cross-sectional indicators of EU-SILC 2010 can be found in Table 34 of the annex. All of the standard errors were estimated with the linearization technique.

2.3. Non-sampling Errors

2.3.1. Sampling frame and coverage errors

The sampling frame of the first wave households of EU-SILC 2010 was, as in the previous years, the ZMR. In 2010, 3,437 addresses were selected at the beginning of the fieldwork to constitute the

⁶ These factors take into account the sizes of the subsamples compared to the whole cross-sectional sample and therefore are more accurate than the factors 4/1, 4/2 and 4/3 proposed in the guidelines of EUROSTAT described in the EU-SILC Doc 65 (2010 operation).

rotational group 2, but seven addresses were excluded from the gross sample⁷ so that the gross sample was reduced to 3,430 addresses. The ZMR is a continuously updated population register based on the registration of the main residence. It contains information on the person (date and place of birth, etc.) and on the address(es) of a person. The ZMR is administrated by the Federal Ministry of the Interior (BMI). Data of the ZMR are delivered quarterly to Statistics Austria. The reference date for the sampling of EU-SILC 2010 was the 30th of September 2009. Households of the previous waves of EU-SILC (2006-2009) were excluded from the sampling frame.

Though the ZMR is expected to provide an updated image of the resident population of Austria, the sample nevertheless contained obsolete units, mainly due to changes that occurred between the reference date and the fieldwork. These changes are for example persons who emigrated or died since the reference date or persons who did not report changes of their main residence in time. Other units, for example accommodations newly built since the reference date, were not included in the sampling frame.

One problem connected with the sampling frame is the construction of the connection of persons living in one dwelling unit. The entries of the ZMR comprise information on individuals and there is no key or link to identify all persons that are living in a dwelling. So the connection of dwelling units has to be constructed by the individual address characteristics. The connections constructed in this way are not always correct, mainly because of spelling errors or differences of the spelling of the addresses. However, the ZMR is regarded as the most reliable source for drawing representative samples and is also used in other surveys in Austria like the Microcensus/Labour Force Survey.

2.3.2. Measurement and processing error

2.3.2.1. Measurement error

Measurement errors are defined as the difference between the value of a certain variable (provided by the respondent) and the true, but unknown value of this variable. If the distribution of the error made at each single response is not random, the resulting statistic is biased. Elements affecting measurement are:

1. The questionnaire (e.g. the design, content, question wording, sensitivity of questions)
2. The interviewer (e.g. characteristics, behaviour, experience, workload, explanations, probing)
3. The respondents (e.g. problems arising during the cognitive response process, proxy interviews)
4. The interview situation (e.g. environment, presence of other persons, pressure of time)

The occurrence and effects of these errors is almost unavoidable. Nonetheless, Statistics Austria developed various routines to reduce these effects and errors. The following describes the implemented routines regarding the questionnaire and the interviewers. Information on the mode of data collection and proxy interviews is provided in chapter 2.4.

The questionnaire of EU-SILC is standardised and was developed according to EU-SILC regulations and EUROSTAT guidelines. The questionnaires for CATI and CAPI mode are identically implemented.

The standardised question wording should include all necessary information to answer the question. If respondents or interviewers need further information to answer the question additional definitions and explanations are integrated in the electronic questionnaire and written remarks for each question are allowed.

CAPI interviewers use showcards to present different income sources, income ranges and other longer categorical answering scales. This visual aid cannot be given in telephone interviews (CATI). Over the telephone this information has to be read out to the respondents. The cognitive answering process therefore can be influenced by other effects in CAPI than in CATI data, e.g. primacy respectively recency effects.

In order to achieve a high response rate and facilitate interviews with migrant households, translations of the questionnaire in Turkish and Bosnian, Croatian and Serbian were used in EU-SILC 2010. For CATI interviews, native speaking interviewers conducted the interviews in these languages. For CAPI

⁷ These seven addresses were due to an error in the selection process already in the sample of EU-SILC (address duplicates; not part of the population) and had to be excluded.

interviews, the interviewers could use the translated questionnaire to solve problems of the respondents in understanding specific questions.

Interviewer

In order to reduce interviewer effects it is necessary to provide interviewers with sufficient training and supporting measures. Overall, 161 CAPI interviewers and 13 CATI interviewers conducted the interviews for EU-SILC 2010. For EU-SILC 2010 interviewers which have already worked for previous EU-SILC waves did not receive a conventional training at Statistics Austria but were required to make a test interview on their laptop computer to learn about revisions of the questionnaire and the questions for the module 2010. Additionally, the interviewers received trainings materials and questionnaires on paper as well as a feedback of their last years' work.

19 new interviewers were trained before the fieldwork and received additional training at the beginning of the fieldwork. 8 interviewers that joined during the fieldwork period and replaced terminating interviewer were trained during the summer. The CATI interviewers were trained before the fieldwork period in March, and were continuously instructed by supervisors.

2.3.2.2. Processing error

Data processing results in a complete, adjusted and weighted data set that can be used for analysis. To improve the quality of the collected data, processing shall correct for measurement error or prior processing error. If these corrections are not done accurately, the value of a variable after processing is more distant from the true value of the measured concept than the original response was. This further deviation is defined as processing error (Groves, R. et. al (2004): p.53ff). Potential sources for processing error are all steps in the production of the final dataset where values of variables are entered, altered, imputed or weights for the estimation are computed. Data processing basically consists of these steps:

1. Data entry in electronic questionnaire (CAPI and CATI)
2. Data editing
3. Imputation of missing values
4. Weighting
5. Computing of EU-SILC European and national target variables

Controlling mechanisms are implemented in each of the above steps to limit the incidence of processing errors. These mechanisms consist of:

1. Control of the design of procedures to prevent processing errors
2. Checks to detect processing errors
3. Correction of detected errors depending on the process that caused the error

The procedures applied during processing are based on the principles of standardisation and traceability. All relevant procedures in the questionnaire and post-collection-processing are documented in SPSS source code and therefore highly standardised. The program files are included in a predefined process which prevents omitting steps. All steps can be repeated if technical problems emerge. Data alterations are implemented using generalised editing rules to avoid single case solutions which could bias the data. Traceability is achieved by documentation of the processing in source code, log-files, descriptions, reports and datasets saved at different stages. Income variables are flagged to document the source and alterations of the variable's value.

Table 8: Flags for Austrian income variables

Flag value	Description
-2	Not applicable
-1	No answer and not (yet) imputed
1	Value according to survey
2	Value from category imputation
3	Value from net-gross or gross-net conversion
4	Value logically deduced
5	Value statistically imputed with longitudinal method
6	Value statistically imputed with cross-sectional method
7	Value from survey was corrected
8	Value computed from a monthly income (this code applies only to variables of annual income)

Checks to detect processing errors have been implemented in the electronic questionnaire (programmed in Blaise), where the entry of a response is checked for ranges and inconsistencies. Problems are indicated to the interviewer. Checks in the electronic questionnaire have to be commented by the interviewer, for example when according to the activity calendar the respondent has been employed during the last year but does not declare any employee-income. Correction of not accepted values and inconsistencies that are indicated to the interviewer during the interview is possible by repeating the question or re-entering the value in the questionnaire. Another option is to comment the problem in a remark field which is accounted for during data-editing. The same applies to obligatory interviewer comments.

During post-data-collection-processing the checks included in the questionnaire are repeated and additional checks are conducted. They include formal data checks (e.g. checking of completeness of data copies, correctness of routings and ranges, ratios and balances of entered or computed values, frequencies of new variables) but also checks which use cross-sectional, longitudinal or external information to evaluate plausibility and consistency. Interviewer comments are also taken into account. If necessary, collected values are altered or the value is deleted and thus marked to be imputed later on. Interviewer remarks also can give background information which supports the collected value. Repeated description of the same constellation indicates the necessity of adapting either the question or the check in the next survey.

Distributions and frequency tables of main variables are produced after each major step in the processing to assess the impact of each procedure and to check that the distribution did not become biased. For the evaluation of extensive changes in procedures or newly integrated features dissemination of documentation and reports to all team members and their review and discussion prove to be useful. Final distributions of income variables, European and national indicators are compared with various data sources (e.g. previous EU-SILC waves, ECHP, Microcensus, LFS, HBS, tax statistics and national accounts; see also chapter 4) to identify implausible distributions. As the last step the EUROSTAT target variables are checked by the EUROSTAT SAS checking program to detect errors in computation and coding. Cases which are identified by the checking program but are considered correct are commented and sent to EUROSTAT with the first data transmission. Nevertheless, EUROSTAT's checks after receiving the datasets mostly identify some remaining problems.

Processing error that arises during post-data-collection-processing mostly can be corrected by adaptation of existing procedures which are repeated after being modified. After correction checks should not identify any more errors or implausible cases and EUROSTAT receives clean datasets. For the Austrian EU-SILC cross-sectional data 2010 two data transmissions were made, because some data problems were only detected after the first transmission.

2.3.3. Non-response error

Non-response errors are influenced on the one hand by the differences between respondents and non-respondents for a specific statistic and on the other hand by the extent of non-response. The latter can be measured by non-response rates and is described in the following paragraphs.

2.3.3.1. Achieved sample size

In EU-SILC 2010 6,188 household interviews were accepted for the database. Thereof, 2,005 interviews were from first wave households (rotational group 2). On personal level the achieved sample contained 11,493 persons aged at least 16 years. Of these persons 11,432 personal interviews could be conducted, 61 personal interviews were missing and had to be fully imputed.

Table 9: Achieved sample size and accepted interviews 2010

Rotational groups		Total	R3	R4	R1	R2
First wave			2007	2008	2009	2010
Accepted household interview s	N	6,188	1,170	1,296	1,717	2,005
DB135 = 1	%	100.0	18.9	20.9	27.7	32.4
Number of persons aged 16 and older	N	11,493	2,224	2,402	3,174	3,693
RB245 = 1 + 2 + 3	%	100.0	19.4	20.9	27.6	32.1
Accepted personal interview s	N	11,432	2,212	2,391	3,149	3,680
RB250 = 11 + 12 + 13	%	100.0	19.3	20.9	27.5	32.2
Fully imputed personal interview s	N	61	12	11	25	13
RB250 = 14	%	100.0	19.7	18.0	41.0	21.3

Source: Statistics Austria, EU-SILC 2010

2.3.3.2. Unit non-response

Table 10: Household and individual non-response rate

Rotational group	Total	R3	R4	R1	R2
First wave		2007	2008	2009	2010
Household non-response					
Total sample*	8,311	1,305	1,494	2,082	3,430
Address not existent (DB120 = 23)	165	0	0	0	165
Addresses successfully contacted (DB120 = 11)	8,051	1,272	1,477	2,048	3,254
Ra - Address localisation rate of eligible addresses in %	98,86	97,47	98,86	98,37	99,66
Interview in database (DB135=1)	6,188	1,170	1,296	1,717	2,005
Rh - Household response rate for localised addresses in %	76,86	91,98	87,75	83,84	61,62
NRh - Household non-response rate in %	24,02	10,34	13,25	17,53	38,59
Individual non-response					
Eligible persons (RB245 = 1+2+3)	11,493	2,224	2,402	3,174	3,693
Personal interview s (RB250 = 11+12+13)	11,432	2,212	2,391	3,149	3,680
Rp - Complete personal interview s in %	99,47	99,46	99,54	99,21	99,65
NRp - Overall individual non-response rate	24,42	10,83	13,65	18,18	38,81

Source: Statistics Austria, EU-SILC 2010

*Total sample refers to db120>0 and to two addresses which could not be edited

2.3.3.3. Distribution of households by record of contact at address (DB120), by household questionnaire result (DB130) and by household interview acceptance (DB135)

Austria has implemented a rotational sampling design. Therefore also non-response due to household status coded in DB110 for the longitudinal component is presented in the following table.

Table 11: Distribution of DB110

Rotational group	Total		R3		R4		R1		R2	
			2007		2008		2009		2010	
First wave	N	%	N	%	N	%	N	%	N	%
Total (DB110 > 0)	8,311	100.0	1,305	100.0	1,494	100.0	2,082	100.0	3,430	100.0
Total households in scope (DB110 = 1+2+7+11+9)	8,255	99.3	1,298	99.5	1,473	98.6	2,054	98.7	3,430	100.0
Household out of scope (DB110 = 3-6)	56	0.7	7	0.5	21	1.4	28	1.3	-	-
Total household out of scope (DB110 = 3-6)	56	100.0	7	100.0	21	100.0	28	100.0	-	-
Household moved to a collective institution (DB110 = 3)	7	12.5	1	14.3	3	14.3	3	10.7	-	-
Household moved abroad (DB110 = 4)	11	19.6	2	28.6	5	23.8	4	14.3	-	-
All household members died (DB110 = 5)	23	41.1	1	14.3	10	47.6	12	42.9	-	-
No sample person in household and more than one reason of 3,4 and 5 applies (DB110 = 6)	15	26.8	3	42.9	3	14.3	9	32.1	-	-

Source: Statistics Austria, EU-SILC 2010

Table 12: Distribution of DB120

Rotational group	Total		R3		R4		R1		R2	
			2007		2008		2009		2010	
First wave	N	%	N	%	N	%	N	%	N	%
Total (DB120 > 0)	8,309	100.0	1,305	100.0	1,493	100.0	2,081	100.0	3,430	100.0
Address contacted (DB120 = 11)	8,051	96.9	1,272	97.5	1,477	98.9	2,048	98.4	3,254	94.9
Address non-contacted (DB120 = 21 - 23)	258	3.1	33	2.5	16	1.1	33	1.6	176	5.1
Total Address non-contacted	258	100.0	33	100.0	16	100.0	33	100.0	176	100.0
Address cannot be located (DB120 = 21)	88	34.1	31	93.9	16	100.0	33	100.0	8	4.5
Address unable to access (DB120 = 22)	5	1.9	2	6.1	0	0.0	0	0.0	3	1.7
Address does not exist or is a non-residential address or is unoccupied or not principal residence (DB120 = 23)	165	64.0	0	0.0	0	0.0	0	0.0	165	93.8

Source: Statistics Austria, EU-SILC 2010

Table 13: Distribution of DB130

Rotational group	Total		R3		R4		R1		R2	
			2007		2008		2009		2010	
First wave	N	%	N	%	N	%	N	%	N	%
Total	8,051	100.0	1,272	100.0	1,477	100.0	2,048	100.0	3,254	100.0
Household questionnaire completed (DB130 = 11)	6,188	76.9	1,170	92.0	1,296	87.7	1,717	83.8	2,005	61.6
Interview not completed (DB130 = 21 - 24)	1,863	23.1	102	8.0	181	12.3	331	16.2	1,249	38.4
Total interview not completed (DB130 = 21 - 24)	1,863	100.0	102	100.0	181	100.0	331	100.0	1,249	100.0
Refusal to co-operate (DB130 = 21)	1,396	74.9	65	63.7	114	63.0	240	72.5	977	78.2
Entirely household temporarily away (DB130 = 22)	232	12.5	19	18.6	32	17.7	37	11.2	144	11.5
Household unable to respond (DB130 = 23)	117	6.3	5	4.9	8	4.4	17	5.1	87	7.0
Other reasons (DB130 = 24)	118	6.3	13	12.7	27	14.9	37	11.2	41	3.3

Source: Statistics Austria, EU-SILC 2010

Table 14: Distribution of DB135

Rotational group First wave	Total		R3		R4		R1		R2	
			2007		2008		2009		2010	
	N	%	N	%	N	%	N	%	N	%
Household questionnaire completed	6.188	100,0	1.170	100,0	1.296	100,0	1.717	100,0	2.005	100,0
Interview accepted for the data base (DB135 = 1)	6.188	100,0	1.170	100,0	1.296	100,0	1.717	100,0	2.005	100,0
Interview rejected (DB135 = 2)*	0	0,0	0	0,0	0	0,0	0	0,0	0	0,0

Source: Statistics Austria, EU-SILC 2010

* 48 household interviews had to be excluded due to quality issues and were coded as "refusal to cooperate" in db130, because these households will not be approached again in any further wave of the survey. Therefore, these households are not coded as rejected interviews in DB135

In DB135 (Household interview acceptance) all interviews are coded as accepted (Table 14). The interviews that have not been accepted are coded as "refusal to co-operate" (DB130 = 21) and are not tracked in the subsequent waves. Household interviews are mostly rejected because of item non-response and individual unit non-response that results in sparse information on the household's income situation. Withholding information on key questions is a form of refusal and it is unlikely that the household will change its attitude in the following waves. In total 48 interviews (0.8%) were excluded due to quality problems. The distribution of rejected interviews in EU-SILC 2010 with reference to the whole sample is shown in chapter 2.1.4, Table 3.

2.3.3.4. Distribution of substituted units by DB120, DB130 and DB135

Not applicable: no substitutions of sample addresses have been made.

2.3.3.5. Item non-response

Item non-response for the collected income components is presented in Table 15 on household level for net values (where applicable). The components imputed rent (HY030), interest payments on mortgages (HY100) are not included in the tables because these variables are not directly collected from the respondents.

Table 15: Item non-response on household level

	Households receiving income		Full information		Partial information		Missing value	
	N	%	N	%	N	%	N	%
HY010 Total household gross income	6,188	100.0	2,152	34.8	3,686	59.6	350	5.7
HY020 Total disposable household income	6,188	100.0	4,685	75.7	1,477	23.9	26	0.4
HY022 Total disposable household income before social transfers other than old-age and survivor's benefits	6,097	98.5	4,666	76.5	1,384	22.7	47	0.8
HY023 Total disposable household income including old-age and survivor's benefits	5,807	93.8	4,561	78.5	1,112	19.1	134	2.3
HY040N Income from rental of a property or land	384	6.2	368	95.8	5	1.3	11	2.9
HY050N Family/child related allowances	2,089	33.8	2,081	99.6	8	0.4	0	0.0
HY060N Social exclusion not elsewhere classified	332	5.4	323	97.3	7	2.1	2	0.6
HY070N Housing allowances	324	5.2	303	93.5	18	5.6	3	0.9
HY080N Regular inter-household cash transfer received	548	8.9	526	96.0	19	3.5	3	0.5
HY090N Interest, profits from capital investment	4,702	76.0	4,031	85.7	259	5.5	412	8.8
HY110N Income received by people aged under 16	71	1.1	68	95.8	0	0.0	3	4.2
HY130N Regular inter-household cash transfer paid	695	11.2	664	95.5	23	3.3	8	1.2
HY145N Repayments/receipts for tax adjustments	3,078	49.7	3,029	98.4	27	0.9	22	0.7
HY140G Tax on income and social Contributions	6,089	98.4	2,127	34.9	3,908	64.2	54	0.9
Hy170N Value of goods produced by own consumption	288	4.7	276	95.8	0	0.0	12	4.2

Source: Statistics Austria, EU-SILC 2010

Table 16: Item non-response on personal level

	Persons receiving income		Full information		Partial information		Missing value	
	N	%	N	%	N	%	N	%
py010N Employee cash or near cash income	6,385	55.6	5,669	88.8	429	6.7	287	4.5
py020N Employee non-cash income	1,409	12.3	1,053	74.7	38	2.7	318	22.6
py035N Contributions to individual private pension plans	3,117	27.1	2,930	94.0	1	0.0	186	6.0
py050N Cash benefits or losses from self-employment	1,355	11.8	1,176	86.8	52	3.8	127	9.4
py080N Pension from individual private plans	50	0.4	46	92.0	1	2.0	3	6.0
py090N Unemployment benefits	876	7.6	834	95.2	21	2.4	21	2.4
py100N Old-age benefits	3,013	26.2	2,740	90.9	167	5.5	106	3.5
py110N Survivor's benefits	145	1.3	134	92.4	0	0.0	11	7.6
py120N Sickness benefits	361	3.1	305	84.5	9	2.5	47	13.0
py130N Disability benefits	310	2.7	299	96.5	5	1.6	6	1.9
py140N Education-related allowances	206	1.8	190	92.2	0	0.0	16	7.8
PY200G Gross monthly earnings for employees	5,580	48.6	3,869	69.3	1,711	30.7	0	0.0

Source: Statistics Austria, EU-SILC 2010

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

For the total non-response and the number of observations in the sample of the cross-sectional European Union indicators, the equivalised disposable income see chapter 2.

2.4. Mode of data collection

Austria uses a sample of households, so for the variable RB245 only the codes 1 and 4 are eligible. All persons are coded "1" in RB245.

Table 17: Data status (RB250) by rotational groups of household members aged 16+

Rotational groups	Total		R3		R4		R1		R2	
	N	%	N	%	N	%	N	%	N	%
First wave			2007		2008		2009		2010	
Information completed only from interview (11)	11,432	99.5	2,212	99.5	2,391	99.5	3,149	99.2	3,680	99.6
Information completed from full-record imputation (14)	61	0.5	12	0.5	11	0.5	25	0.8	13	0.4
Total	11,493	100.0	2,224	100.0	2,402	100.0	3,174	100.0	3,693	100.0

Source: Statistics Austria, EU-SILC 2010

Table 18: Type of interview (RB260) by rotational groups

Rotational groups	Total		R3		R4		R1		R2	
	N	%	N	%	N	%	N	%	N	%
First wave			2007		2008		2009		2010	
CAP1 (2)	6,082	53.2	719	32.5	845	35.3	1,179	37.4	3,339	90.7
CAT1 (3)	3,788	33.1	1,125	50.9	1,160	48.5	1,501	47.7	2	0.1
Proxy (5)	1,562	13.7	368	16.6	386	16.1	469	14.9	339	9.2
Total	11,432	100.0	2,212	100.0	2,391	100.0	3,149	100.0	3,680	100.0

Source: Statistics Austria, EU-SILC 2010

Proxy interviews

Overall, 13.7% of all personal questionnaires were filled with proxy interviews, this means that another household member responded to the questionnaire. Proxy interviews are only allowed as an exception if a respondent is either away from the household, incapacitated or ill and this status is sustained for the duration of the fieldwork.

The survey aims on the one hand to keep the proxy-rate low, but on the other hand to achieve a high response rate. However, a proxy interview is better than no information at all. To comply with quality standards the proxy-rate should not exceed 20% of all personal questionnaires. So, EU-SILC 2010 is the first wave of EU-SILC where this aim has been achieved. This was mainly achieved by improved trainings of interviewers. In the last year, the proxy-rate was 22.6%.

Table 19 shows the distribution of proxy interviews of all interviews across mode. Personal CATI interviews have, as in the last years, a higher share of proxy interviews (19.2%) than CAPI interviews (9.8%).

Table 19: Proportion of proxy interviews in all interviews by mode

	Total		CAPI		CATI	
	N	%	N	%	N	%
Personal interview	9,870	86.3	6,082	90.2	3,788	80.8
Proxy interview	1,562	13.7	659	9.8	903	19.2
Total	11,432	100.0	6,741	100.0	4,691	100.0

Source: Statistics Austria, EU-SILC 2010

Table 20 shows the distribution of proxy interviews of follow-up interviews by mode of interviewing. The proxy-rate in follow-up interviews is slightly higher, but is still, also for CAPI-interviews, below 20%.

Table 20: Proportion of proxy interviews in follow-up interviews by mode

	Total		CAPI		CATI	
	N	%	N	%	N	%
Personal interview	6,529	84.2	2,743	89.5	3,786	80.8
Proxy interview	1,223	15.8	322	10.5	901	19.2
Total	7,752	100.0	3,065	100.0	4,687	100.0

Source: Statistics Austria, EU-SILC 2010

The lower proxy-rate in EU-SILC 2010 was achieved by better instructions of the interviewers in which cases proxy interviews are allowed and encouraging interviewers to make appointments with respondents in paid employment, since persons working have a higher probability for a proxy interview.

As in previous EU-SILC waves, the proxy-rates differ with the basic activity status of the respondents for whom the proxy interview was conducted. Retired and unemployed persons are in both modes and in all rotational groups more likely to give a personal interview than persons in paid employment or self-employment: the share of these groups is lower in the group of proxy interviews whereas the share of people in work is higher in the group of proxy interviews (Table 21).

Table 21: Distribution of basic activity status by proxy interviews and by mode

	First wave				Follow-up CAPI				Follow-up CATI				Total			
	Proxy		Total		Proxy		Total		Proxy		Total		Proxy		Total	
	N	%	N	%	N	%	N	%	N	%	N	%	N	%	N	%
Total	339	100.0	3,680	100.0	322	100.0	3,065	100.0	901	100.0	4,687	100.0	1,562	100.0	11,432	100.0
Working	186	54.9	2,029	55.1	178	55.3	1,585	51.7	457	50.7	2,610	55.7	821	52.6	6,224	54.4
Unemployed	15	4.4	156	4.2	11	3.4	137	4.5	24	2.7	134	2.9	50	3.2	427	3.7
Retired	69	20.4	1,036	28.2	68	21.1	976	31.8	245	27.2	1,272	27.1	382	24.5	3,284	28.7
Other inactive	69	20.4	459	12.5	65	20.2	367	12.0	175	19.4	671	14.3	309	19.8	1,497	13.1

Source: Statistics Austria, EU-SILC 2010

2.5. Interview duration

Table 22: Mean interview duration by rotational group in minutes

Rotational group	Total	R3	R4	R1	R2
First wave		2007	2008	2009	2010
Personal questionnaire	15.6	14.7	15.1	15.3	16.7
Household questionnaire	14.2	13.1	13.1	13.6	16.0
Total interview duration per household	43.0	40.9	41.0	41.6	46.6

Source: Statistics Austria, EU-SILC 2010

The total interview duration was on average 43 minutes in EU-SILC 2010 (Table 22). Compared to EU-SILC 2009 this means a reduction of about two minutes. The interview duration for personal and household interviews was also reduced. The highest reduction of total interview duration took place in the two year rotation R1/2009 where it dropped from about 48 to about 42 minutes. Table 23 shows the mean interview duration for follow-up waves by interview mode. CATI interviews are on average shorter than CAPI interviews: personal questionnaires conducted with CATI are about one minute shorter, CATI household interviews are three minutes shorter, and the total interview duration for the household is about three minutes shorter than their CAPI counterparts. The differences of the mean interview duration for follow-up waves have – on average – slightly increased compared to the last year. This is mainly due to a decrease of the interview duration of CATI interviews.

Table 23: Mean interview duration for follow-up waves by interview mode in minutes

	Total	CAPI	CATI
Personal questionnaire	15.7	16.1	14.9
Household questionnaire	14.4	15.4	12.4
Total interview duration per household	43.5	45.0	40.5

Source: Statistics Austria, EU-SILC 2010

2.6. Imputation procedure

The chapter describes the imputation procedures applied in EU-SILC 2010. A description of imputation procedures is not foreseen in the template of the intermediate quality report, but it seems helpful to present this description to provide a comprehensive picture of the data production process. The imputation process and strategy in EU-SILC 2010 resembles the procedures and strategies applied in the previous years.

2.6.1. General remarks

Imputation refers to all procedures to either insert entire personal interviews or estimate and insert variable values that are missing due to item non-response. These procedures comprise deductive, deterministic and stochastic methods.

Deductive methods refer to imputation procedures in which the true value of a missing item is logically deduced. This means that the value is either deduced from other variables of the survey or is derived from legal regulations. An example for the first mode of deductions is the net-gross-net conversion, when either the gross value or the net value is given and the corresponding missing value is calculated by applying general rules. An example for the latter mode is when the value of the childcare benefit (*Kinderbetreuungsgeld*) is missing and the effectual value can be inserted.

The difference between deterministic and stochastic methods is whether the calculation procedure to calculate the missing item includes a residual term or not. Deterministic methods were primarily used in cases when the integration of a residual term seemed unreasonable (e.g. for imputations of durations). Stochastic methods were mainly used to estimate missing income variables. Imputation procedures were both applied to complete missing information because of unit-non response (imputation of missing personal questionnaires) or because of item-non response (e.g. missing income information).

2.6.2. Procedure to handle missing personal interviews

Statistics Austria replaces missing personal interviews of persons who could not be interviewed because of temporary absence, because of refusal of cooperation or because of other reasons. The

general idea was to apply a distance function to determine an appropriate donor case to complete the information for the missing interview. The distance function uses a given set of variables to compute the similarity of interviews and ranks the interviews accordingly. Then the nearest neighbour was determined as a donor, given that a set of minimum requirements is fulfilled:

- The donor case and the case with the missing personal interview share the same sex
- The donor case is not a proxy interview
- The donor case should share the same employment status⁸

The imputation strategy allowed for two possibilities: either the person has been interviewed in the previous survey EU-SILC 2009 or the person was interviewed for the first time in EU-SILC 2010.

The imputation strategy used is based on the calculation of a distance function which allows identifying similar cases that can be used as donor cases in a hot deck imputation procedure. According to the available information, different sets of variables are used to calculate the distance function (Table 24).

Table 24: List of variables used in the two distance functions

Imputation of missing personal interview s	
Based on last years' interview (N = 58)	Based on register information (N = 60)
Sex	Sex
Age	Age
Current employment situation	Household size
Household size	Employment status
Federal state (Nuts2)	Federal state (Nuts2)
Number of persons younger than 18 years in the household	Number of persons younger than 18 years in the household
Number of persons older than 60 years in the household	Number of persons older than 60 years in the household
Highest level of education	Household income
Household income	Population density
Number of months working	
Number of months in self-employment	
Suffer from any illness or condition / limitation of activities because of health problems	

61 missing personal interviews were imputed in EU-SILC 2010. For 28 persons information from the last years' interview could be used and for 33 persons only the register information from the current wave could be used.

2.6.3. Procedure to handle missing item non-response

As far as item non-response is concerned, Statistics Austria in general only imputes net income variables, missing gross variables are calculated by the net-gross conversion. Item non-response of income variables occurs because of three reasons: either the information whether an income of a particular type is received or not is missing, or the information about the months an income component is received is missing, or the amount of the income is missing.

Table 25 describes the procedure for missing information for income questions.

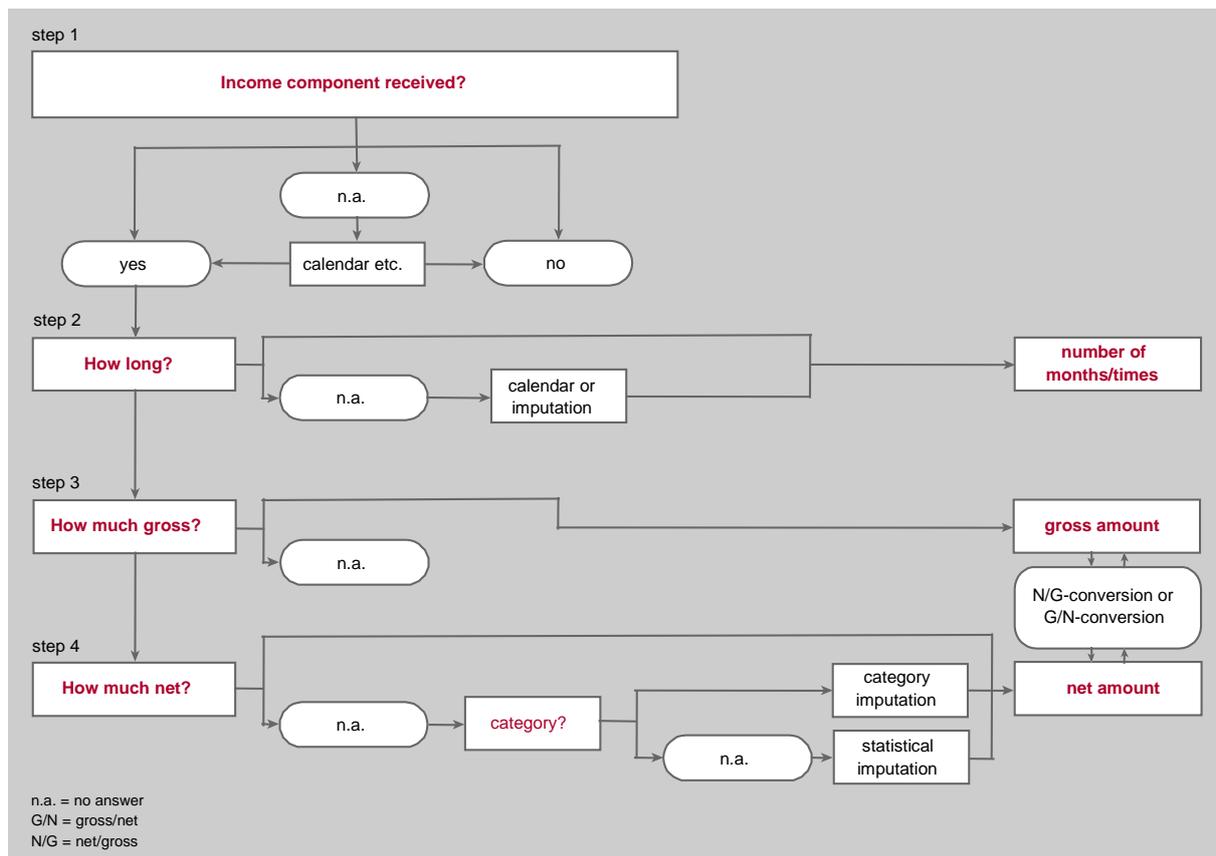
If the information whether an income component is received is missing, Statistics Austria tries to deduce this information from other variables (e.g. the information on main activity). If it is not possible to derive this information from other questions of the questionnaire (e.g. the activity calendar), it is assumed that no income of this kind was received.

If the information about the number of months is missing, Statistics Austria again tries to derive the length of a period an income component is received from other variables of the survey. If this is not possible, a conditional random value is imputed. This means that the random value does not range automatically from 1 to 12, but that the range of the value is limited by additional information given in the questionnaire.

⁸ This is done by determining the number of ranks up until this constraint must be fulfilled. Compared to the first two constraint this third constraint is not compulsory.

The question of missing income values receives special attention. Basically, the respondents have more than one possibility to provide information about their income: they can provide either the gross or the net income amount, or they can provide information about their income by declaring an income category. The latter possibility is foreseen to reduce the number of missing income values. The interviewer presents show cards to support the respondent to identify the approximate range, and in case of unwillingness to respond, to reduce the burden to give an answer. If an income variable is missing but either the gross or the net amount is declared, the corresponding missing value is computed according to a model based on Austrian tax data. If the respondent declares an income category to give the information about the income received, Statistics Austria then assigns an income value by selecting a random value from the distribution of valid cases from within this income category.

Table 25: Editing procedure for income data



If the respondent refuses to give any information about the income, Statistics Austria applies deductive, stochastic and deterministic methods of imputation. Deductive methods are applied when the "correct" value can be calculated from information from the questionnaire or the legal regulations. Estimations made by these methods produce comparatively exact results that are relatively close to the missing true value. For other missing income information Statistics Austria applies two approaches: longitudinal and cross-sectional imputation. The longitudinal method is used when the person with the missing information has declared a value in previous waves. For all other cases the cross-sectional imputation method is used.

The longitudinal imputation procedure is based on the row-and-column-method of Little and Su⁹. As suggested by the name, the method uses the row effects and the column effects of the data to identify an appropriate donor case. The row effect, then, is the development of the variable between waves, and the column effect quantifies the relation of one case to all other observations in the sample. This results in a total effect that is used to sort the data file. The nearest neighbour is then used as a donor value.

For cross-sectional imputation Statistics Austria uses regression models as estimation procedures. The estimated values are added with a residual term to prevent the reduction of variance. This estimation procedure requires the specification of several regression models per income component to

⁹ Little, Roderick J.A. / Su, Hong-Jin (1989), Item Non-response in Panel Surveys. In: Duncan, G./Kalton, G./Kasprzyk, D./ Singh, M.P. (1989), Panel Surveys. New York, p. 400-425

ensure that a value can be estimated in case of missing values in predictor variables in the most sophisticated models.

The predictors are selected according to their predictive capability (variation of the R^2) and / or according to theoretical assumptions about the response variable. In cases where no regression model can be specified the missing information is estimated by using the group means or the group median of the distribution added with a random residual term.

3. Comparability

This chapter deals with the differences between EUROSTAT definitions and the definitions applied in EU-SILC 2010 in Austria. The impact of differences on the comparability is also described.

Moreover, this chapter also reports on the application of definitions in EU-SILC 2010. It is important to note that these descriptions do not necessarily affect the comparability of the variables concerned. The EUROSTAT definitions are specified in EU-SILC Doc 65 (2010 operation).

As requested, the first part of the chapter reports on the basic concepts and definitions applied in EU-SILC and the second part reports on the income components in particular.

3.1. *Basic Concepts and definitions*

(a) Reference population

No difference to the common definition.

(b) Private household

No difference to the common definition.

(c) Household membership

No difference to the common definition.

(d) Income reference period(s) used

No difference to the common definition. The income reference year was 2009.

(e) The period for taxes on income and social insurance contributions

No difference to the common definition. The reference period was 2009, accordingly the repayments and receipts of tax adjustments are recorded if the money was paid or received in this year.

(f) The reference period for taxes on wealth

There are no taxes on wealth in Austria.

(g) The lag between the income reference period and current variables

This refers to the lag between the income reference period and the household interview date. The fieldwork lasted from 1st March to 8th November. The gap between the income reference period and the interview date exceeded the required eight months by 10 weeks.

(h) The total duration of the data collection of the sample

The data collection period lasted 36 weeks.

(i) Basic information on activity status during the income reference period

This information was collected in the interview by an activity calendar covering each month of the income reference period.

3.2. *Components of income*

In the following section we describe the collection of income components in EU-SILC 2010 in Austria and the application of definitions for income components. Please note that the description of the application of definitions, the description of the data collection procedure and the computation procedure do not necessarily indicate a difference from EUROSTAT definitions and the variable definitions in the relevant documents (mainly EU-SILC Doc 65 (2010 operation)).

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

The following lists contains all variables for which we think an explanation is necessary to understand the application of EUROSTAT's definitions in EU-SILC 2010 in Austria.

(a) Total household gross income (HY010)

The Austrian questionnaire includes questions on two income components that are not explicitly specified in the target variables of EU-SILC. These components are incomes received by persons for

their compulsory military or civilian service and “other incomes not elsewhere classified”. The latter question was included to avoid under-recording caused by misunderstandings. An additional open question requests the respondents to clarify the source of these “other incomes”, if possible. Then, if plausible, these other incomes not elsewhere classified were included in employee income (PY010), income from self-employment (PY050) or old-age benefit (PY100) on individual level. The income from compulsory military or civilian service was integrated in the income of employees (PY010). Consequently, the total household gross income (HY010) and the other total household incomes include these two income components. The treatment of these income components does not affect the comparability of the total household income and is consistent with EUROSTAT guidelines.

(b) Total disposable household income (HY020)

See above (HY010)

(c) Total disposable household income, before social transfers other than old age and survivors' benefits (HY022)

See above (HY010)

(d) Total disposable household income, before social transfers including old-age and survivors' benefits (HY023)

See above (HY010)

(e) Cash or near-cash employee income (PY010)

This variable includes payments in kind for the private use of company cars, income from compulsory military services, other income not elsewhere classified if plausible and proportional lump-sum payments if the person is employed for more than 1 month. This complies with the EUROSTAT definition.

(f) Non-cash employee income (PY020)

According to EU-SILC Doc 65 (2010 operation) non-cash employee income includes the following sub-components: Free or subsidised meals, free or subsidised housing, housing related expenses, other goods and services. PY020 is not included in the household incomes.

(g) Cash profits of losses from self-employment (PY050)

The income component includes also other income not elsewhere classified if plausible (see above (HY010)). The addition of these other income is the result of plausibilisation.

Sales revenues from home production (like sold fruits from the own garden) are added to PY050 according to EU-SILC Doc 65 (2010 operation). The questions on privately sold goods were asked on household level to avoid double reporting. The whole amount is attributed to the person with the highest income from self-employment or, in case that there is no self-employed person within the household to the person with the lowest personal income.

To gather the information on self-employment incomes the net amount from self-employment and the amounts paid for social security and income tax for self-employment are asked. Based on this information the gross amount is calculated.

The definitions and calculations for this variable is consistent with EUROSTAT's definition of the target variable.

(h) Unemployment benefits (PY090)

This component includes proportional lump-sum payments, if the person is unemployed (for at least 2 months).

(j) Old-age benefits (PY100)

Old-age benefits also include other income not elsewhere classified if plausible and proportional lump-sum payments if the person is retired (at least 2 monthly regular payments, up to the total lump-sum payment). Since the standard retirement age in Austria is 65 years for men and 60 years for women, it contains all pension benefits paid to persons aged 65/60 years or older. This complies with the EUROSTAT definition.

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

The information on income components is asked from the respondents; No register information is used to obtain income information. To collect the required information to fill the EU-SILC target variables,

the income components are split into more differentiated sub-components. These sub-components are defined according to the Austrian regulations and benefit system. For some components only the receipt was asked and the amount was calculated. For example, the respondents were not asked to give the amount of the family allowance, because the amount was calculated on the basis of the information about the family situation (number and age of children).

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

For all variables the net and the gross values were asked from the respondents, except for self-employment incomes, for which only the net income was asked.

3.2.4. The method used for obtaining income target variables

For all variables the net and the gross values were collected. If either the net or the gross value was missing for PY010 or PY100, the missing value was calculated on the basis of a net-gross conversion and vice versa. Missing gross values for incomes from self-employment (PY050) were calculated on the basis of the tax payments and social contributions stated by the respondents, missing values for income from employment (PY010) or pension incomes (PY100) are calculated on the basis of the wage tax statistics.

4. Coherence

The aim of the chapter on coherence is to validate the data of EU-SILC 2010 with other data sources. The first section describes these other data sources, the second section presents the comparisons. As for EU-SILC 2010 the data sources used for the validation were: (a) the preceding EU-SILC survey (EU-SILC 2009) (b) Wage tax statistics 2009 (c) National accounts 2009 (d) Microcensus 2010.

4.1. Description of data sources

(a) EU-SILC 2009

EU-SILC 2010 was the seventh regular wave of EU-SILC in Austria with a rotational design. In 2010, the fieldwork was done by the fieldwork organisation of Statistics Austria. Compared to EU-SILC 2009, the share of CATI interviews was expanded.

The following comparison focuses on the income target variables in EU-SILC 2010 and EU-SILC 2009. The table presents the median, the number of receiving households/persons and the sum of each income component.

(b) Wage tax statistics 2009

The wage tax statistics (WTS) records the incomes of employees and pensioners if the income is gained at source in Austria. Here, the WTS is used to validate the distribution of the most important income component on personal level, the income from employment (PY010). The comparison with pension incomes is more complex due to conceptual reasons: the WTS covers all pensions regardless of the age of the beneficiary and the type of the pension. In EU-SILC the pension income is only accounted as such when the beneficiary has reached the legal retirement age. Additionally, the WTS does not record pensions of civil servants. Therefore the comparison of pensions in the WTS and EU-SILC is omitted and only incomes from employment are compared.

For this comparison conceptual differences between WTS and EU-SILC are to be considered. An important share of these differences can be explained by the different coverage of EU-SILC and the WTS. The following lists the main differences:

1. EU-SILC does not cover persons outside private households;
2. EU-SILC cannot cover persons who have died or moved to another country between the tax reference period and the fieldwork period;
3. EU-SILC does not cover employment incomes received by persons who are aged 15 year or younger¹⁰;
4. Sum lump-sum payments are registered in the WTS but only partially in EU-SILC;
5. WTS includes an unknown number of fictitious income records by which taxpayers attempt to achieve a more advantageous tax base.

(c) National Accounts 2009

The Austrian National Accounts (NA) provide data on the income approach of the GDP. The sector accounts are available only for the combined sectors S14 and S15 (private households and non-profit institutions serving households (NPISH)). The disposable income in that sector can be used for comparison with EU-SILC total income amounts.

For the comparison the values of the national accounts have to be adjusted. This means that the following amounts and estimates have to be deducted from the basic value of the national accounts:

1. The estimated income value of NPISHs (sector S15) in the case of disposable income. Separated figures for sector S14 (private households) and sector S15 are only calculated for gross income. The total amount of individual consumption of NPISHs (account P3) is used as a proxy for disposable income of NPISHs and therefore deducted here.
2. The estimated income value of persons not living in private households. The proportion of persons not living in private households is estimated 1.21 (100,900 of 8,363,000 persons in 2009).

¹⁰ "Incomes received by people aged under 16" are recorded in variable HY110N/G on household level and it is not differentiated between income from employment and other means of income.

3. The estimated income value of transfers from reserves. This value is estimated on the basis of the household budget survey (HBS) 2009/10 as 1.1% of the total expenditures of private households.
4. The income relevant part of imputed rents. These data also come from the NA (account B2N).

Moreover, other relevant conceptual differences between the income concepts of the NA and EU-SILC cannot be quantified:

1. Non-cash income and lump-sum payments are included in the NA but not to the same extent in EU-SILC.
2. The NA uses estimates for black economy, income from tips for employees in the hotel, restaurant and cab driver sector, missing incomes due to time lags in the registers, value of self production for construction sites, car repair and housekeeping. The total of the estimates was 8.0% of the GDP in 2008 (~19,900 million Euro). The proportion relevant for disposable income of private households was not estimated in this comparison but might explain some differences.
3. Self employed income in the NA is a balancing item. There are some difficulties to differ between self employed income for private households and not withdrawn gains from enterprises.
4. Charity donations and membership fees are estimated in the NA and deducted from the disposable income but not in EU-SILC.
5. Transnational transfers are included in the NA.
6. For the net lending/net borrowing for NPISHs no estimate was available and was assumed to be zero.
7. Property incomes paid (account D4) are 2009 3467,2 Million Euros. These incomes refer in particular to interests for mortgages and are not reflected in the income target variables of EU-SILC (HY010 and HY020).

(d) Microcensus 2010

The Austrian Microcensus is a quarterly household survey with a sample of more than 22,000 randomly selected households. The Microcensus operates like EU-SILC with a rotational longitudinal design. The Microcensus is the basis of the Austrian labour force survey (LFS) and because of the size of the sample it is one of the most important sources for socio-demographic information in Austria.

In this report Microcensus data are used to compare information on the legal status of housing and housing costs with the information recorded in EU-SILC. Since the Microcensus is one of the main data sources on housing statistics in Austria it is a valuable basis for comparisons. Furthermore, the information used for the calculation of imputed rents in EU-SILC is taken from the Microcensus. Thus, the comparison is not only of importance for the variables taken into account but also – at least indirectly – for the validity of imputed rents.

However, the Microcensus and EU-SILC apply different concepts and use different variables. For example, the definition of the tenure status is different in EU-SILC and the Microcensus. Hence, some categories of the tenure status of the original variable in EU-SILC and the Microcensus are merged to allow for the comparison.

4.2. Comparisons

(a) EU-SILC 2009 – income target variables

The following tables compare the income components of EU-SILC 2009 and 2010. The median total household income and the total disposable households income of EU-SILC 2010 is by about 5% higher than in 2009.

Most of the other income components feature a higher median in EU-SILC 2010, apart from family related allowances (HY050N), income received from persons aged under 16 (HY110N), repayments/receipts for tax adjustments (HY145N) and interest repayments (HY100)¹¹.

¹¹ Please note that the latter variable is not included in the total household income.

Table 26: Income target variables on household level: EU-SILC 2009 and EU-SILC 2010

		EU-SILC 2009			EU-SILC 2010		
		Median (in €)	House- holds	Sum (in Mio €)	Median (in €)	House- holds	Sum (in Mio €)
hy010	Total household gross income*	39,750	3,597,658	172,631	40,834	3,624,300	182,125
hy020	Total disposable household income*	29,864	3,597,658	126,359	31,125	3,624,300	132,643
hy030n	Imputed rents	4,453	2,480,844	11,663	5,075	2,518,355	12,728
hy040n	Income from rental of property or land	4,000	182,280	1,487	3,600	212,109	2,060
hy050n	Family/children related allowances	4,675	1,158,367	6,325	4,735	1,147,630	6,133
hy060n	Social exclusion not elsewhere classified	200	178,233	232	250	207,933	366
hy070n	Housing allowances	1,440	171,519	271	1,440	204,608	317
hy080n	Regular inter-household cash transfer received	2,880	280,893	1,138	3,000	275,290	1,224
hy090n	Interest, dividends, Profit	170	2,533,731	1,658	147	2,693,023	1,741
hy100n	Interest repayments on mortgage	1,000	904,415	1,534	1,173	802,499	1,479
hy110n	Income received from people aged under 16	1,747	56,094	199	1,452	34,779	96
hy130n	Regular inter-household cash transfer paid	2,940	386,640	1,446	2,880	422,113	1,637
hy145n	Repayments/receipts for tax adjustment	-300	1,839,399	-668	-300	1,771,274	-619
hy140g	Tax on income and social contributions	8,911	3,549,164	44,781	8,926	3,549,352	47,834

Source: Statistics Austria, EU-SILC 2009 and EU-SILC 2010

On personal level the income from employees – the main source of income of households – in 2010 is about 6% higher than in 2009. As on household level, the median of the most income components are higher in 2010 than in 2009, the exceptions are sickness benefits (PY120N) and contributions to individual private plans (PY035N).¹²

Table 27: Income target variables on personal level: EU-SILC 2009 and EU-SILC 2010

		EU-SILC 2009			EU-SILC 2010		
		Median (in €)	Persons	Sum (in Mio €)	Median (in €)	Persons	Sum (in Mio €)
py010n	Employee cash or near cash income*	16,946	3,789,285	69,967	17,500	3,867,343	73,984
py020n	Non-cash employee income*	630	629,947	774	600	819,128	1,125
py035n	Contribution to individual pension plans	730	1,816,464	2,001	800	1,792,673	1,979
py050n	Cash benefit or losses from self-employment	9,688	724,712	11,140	9,596	802,591	11,382
py080n	Pension from individual private plans	3,360	25,410	136	3,600	28,646	160
py090n	Unemployment benefits	2,900	559,536	2,302	3,000	671,757	2,771
py100n	Old-age benefits	15,395	1,730,944	28,685	15,760	1,753,052	29,849
py110n	Survivor' benefits	6,212	74,000	532	6,908	75,272	571
py120n	Sickness benefits	1,200	228,225	541	1,215	222,309	461
py130n	Disability benefits	12,507	185,572	2,220	12,372	183,402	2,246
py140n	Education-related benefits	960	155,241	302	1,200	133,369	301
py200g	Gross monthly earnings for employees	1,850	3,316,732	7,169	1,900	3,379,753	7,557

Source: Statistics Austria, EU-SILC 2009 and EU-SILC 2010

¹² Please note that the contributions to individual private plans do not affect the calculation of the total household income.

(b) Wage tax statistics 2009 – cross annual incomes of employees

As in the last years the distribution of employees' income from the wage tax statistics and EU-SILC are quite similar. The number of employees in EU-SILC is slightly lower than in the wage tax statistics. This underreporting of employees is maybe due to coverage differences between EU-SILC and the WTS as well as a possible underestimation of short employment spells in EU-SILC.

Underreporting of shorter employments spells with lower annual wage is also a possible explanation for the overestimation of wage at the lower fringe of the income distribution in EU-SILC. While overall the match between the two statistics is quite satisfying, EU-SILC data tend to underestimate higher incomes and overestimates lower incomes. Thus the income distribution of EU-SILC overestimates the equality of the income distribution of employees' income.

Table 28: Comparison of gross annual income of employees 2009 – wage tax statistics 2009 and EU-SILC 2010 (employed for at least one month in 2009)

	WTS (in Euro)			EU-SILC 2010 (in Euro)		
	Total	Male	Female	Total	Male	Female
10% ...	4,292	6,268	3,151	5,283	9,520	3,780
20% ...	10,071	15,564	7,078	11,394	17,676	7,834
25% ...	12,986	19,553	9,397	14,000	20,611	10,267
30% ...	15,725	22,632	11,539	16,666	22,627	11,998
40% ...	20,689	26,982	15,349	20,915	26,600	15,553
50% ...	25,333	30,888	18,841	24,418	30,200	18,359
60% ...	29,805	35,207	22,803	28,732	34,300	22,001
70% ...	35,000	40,982	27,387	33,600	39,559	26,264
75% ...	38,340	44,866	30,247	36,329	42,580	28,520
80% ...	42,563	49,891	33,667	40,900	47,021	31,717
90% ...	56,525	66,358	44,336	53,080	61,938	41,197
Mean	29,668	36,271	22,265	28,625	35,143	21,436
Persons	3,697,232	1,954,144	1,743,088	3,626,566	1,902,211	1,724,355

Source: Statistics Austria, EU-SILC 2010 and Wage Tax Statistics 2009

Following the assumption that short employment spells are underreported in EU-SILC a restriction to employments lasting the entire year (at least 11 months) should improve the comparison. The comparison is presented in Table 29. The match of the distribution is improved for the lower half of the distribution but not for the higher percentiles. Particularly incomes of male employees are underestimated at the top of the income distribution.

Table 29: Comparison of gross annual income of employees 2009: wage tax statistics 2009 and EU-SILC 2010 (employed for the entire year)

	WTS (in Euro)			EU-SILC 2009 (in Euro)		
	Total	Male	Female	Total	Male	Female
10% ...	10,970	19,111	7,677	11,650	18,800	8,218
20% ...	17,160	25,052	12,629	17,381	23,800	12,600
25% ...	19,600	26,875	14,519	19,180	25,200	14,496
30% ...	21,980	28,564	16,222	21,215	26,884	16,394
40% ...	26,013	31,829	19,307	24,495	30,100	18,900
50% ...	29,803	35,425	22,702	28,014	33,600	22,001
60% ...	33,928	39,906	26,354	32,200	37,240	24,680
70% ...	39,215	46,077	30,900	36,575	42,700	28,732
75% ...	42,688	50,203	33,701	40,600	46,475	31,550
80% ...	47,105	55,373	37,129	43,831	51,200	34,404
90% ...	61,350	72,353	47,896	56,000	67,200	44,019
Mean	34,894	42,803	26,200	33,037	40,068	25,016
Persons	2,874,775	1,505,409	1,369,366	2,918,579	1,555,271	1,363,309

Source: Statistics Austria, EU-SILC 2010 and Wage Tax Statistics 2009

(c) National accounts 2008 – household incomes

In parallel to the results of the previous years, the differences between national accounts and EU-SILC are significant. Again, if property incomes are not considered, the difference is smaller. Though this hints to the problem of collecting and estimating incomes from property, the difference between NA and EU-SILC is still about 7%.

Table 30: Comparison between National accounts 2009 and EU-SILC 2010 (in Mio Euro)

	Gross incomes of private households		Disposable income
	Total	Without property income	
Basic Value from national accounts	218,564	202,517	166,383
Deduction for non-profit organisations 1)	-	-	3,597
Deduction for persons not living in private households 2)	2,723	2,523	2,073
Deduction for value of goods self-consumption 3)	1,375	1,375	1,375
Deduction for imputed rents 4)	7,148	7,148	7,148
Estimate from national accounts	207,318	191,471	152,190
Estimate from EU-SILC 2009	182,125	177,488	132,643
Difference between NA and EU-SILC 2009	12.2	7.3	12.8

Source: Statistics Austria EU-SILC 2010 and national accounts 2009

1) estimated value, as for disposable income only one estimate is produced for NPOs and private households

2) estimated on the basis of the population prognosis; 1.20% in 2009

3) estimate for 1.1% of the total consumption expenditures, HBS 2009/10

4) NA 2009

(d) Microcensus 2010 – Tenure status and rent-payments

The following presents a comparison of the tenure structure and the housing costs for tenured housing in 2010. The comparison shows strong similarities between the two data sets. As the last year, the share of owner occupied housing is similar in both surveys. But different from the last year the share of owner-occupied houses is slightly smaller and the share of owner-occupied apartments is slightly larger in the Microcensus. The share of rented housing also shows high coherence, and the differences are somewhat smaller compared to the last year. The same is the case for sub-tenancies and rent-free housing: the percentages are rather similar, and the differences are slightly smaller than in the last year.

Table 31: Comparison of tenure status – Microcensus 2010 and EU-SILC 2010

	Microcensus 2010		EU-SILC 2010	
	Households	in %	Households	in %
Total	3,624,300	100.0	3,624,300	100.0
House owner	1,425,460	39.3	1,457,581	40.2
Owner of apartment	401,667	11.1	369,546	10.2
Tenure: community housing	286,911	7.9	294,155	8.1
Tenure: cooperative society	575,552	15.9	506,895	14.0
Tenure: other	616,494	17.0	648,698	17.9
Subtenancy	38,917	1.1	64,835	1.8
Rentfree house / apartment	279,299	7.7	282,589	7.8

Source: Statistics Austria, EU-SILC 2010 and Microcensus 2010.

The following table compares the rent payments and the costs of services and charges by the size of usable living area and the number of inhabitants in the region. Overall, the housing costs are only slightly overestimated, the median of the monthly housing costs are only about 5 Euro higher than in the Microcensus. The overestimation is larger for other tenancies. In general, the differences between EU-SILC and the Microcensus are higher in categories with few cases like large apartment from community housing or community housing outside Vienna, but also for larger apartments in general.

Table 32: Comparison of rent payments and costs of services and charges by size of usable living area and number of inhabitants in the region – Microcensus 2010 and EU-SILC 2010

		Microcensus 2010				EU-SILC 2010			
		Total	Community housing	cooperative society	Other tenancies	Total	Community housing	cooperative society	Other tenancies
Total	Median (in €)	395	312	400	430	400	321	407	453
	Number	1,476,916	286,882	575,298	614,737	1,447,649	294,155	506,549	646,945
Usable Living area									
under 60 m ²	Median (in €)	287	250	283	344	300	260	296	354
	Number	567,291	146,218	176,943	244,130	532,756	145,406	141,450	245,900
60 to 120 m ²	Median (in €)	460	417	460	500	480	420	480	507
	Number	842,055	138,441	387,392	316,222	833,944	147,694	355,350	330,901
120 and more m ²	Median (in €)	685	610	721	660	750	(800)	(755)	750
	Number	67,570	2,223	10,963	54,385	80,949	(1,055)	(9,749)	70,145
Inhabitants in the Region									
Vienna	Median (in €)	383	320	450	400	381	318	425	400
	Number	647,346	205,582	160,725	281,039	640,082	196,962	151,872	291,249
> 100,000	Median (in €)	410	330	375	485	438	385	375	486
	Number	199,222	16,045	95,208	87,969	213,691	20,242	86,645	106,805
> 10,000	Median (in €)	396	297	385	450	400	320	410	450
	Number	269,213	31,372	151,269	86,572	263,040	41,022	130,950	91,069
<= 10,000	Median (in €)	400	282	393	440	450	318	440	487
	Number	361,136	33,883	168,096	159,157	330,836	35,930	137,083	157,823

Source: Statistics Austria EU-SILC 2010 and Microcensus 2010.

5. Annex

Table 33: Strata of the first wave sample EU-SILC 2010

Stratum Number	Stratum ID (DB050)	Number of selected addresses
1	131	8
2	132	9
3	133	8
4	134	8
5	135	8
6	136	7
7	137	7
8	138	8
9	139	7
10	140	9
11	141	9
12	142	8
13	143	8
14	231	10
15	232	9
16	233	9
17	234	10
18	235	10
19	236	10
20	237	9
21	238	10
22	239	10
23	240	10
24	241	11
25	242	11
26	243	10
27	244	11
28	245	11
29	246	13
30	247	11
31	248	11
32	249	11
33	250	4
34	331	11
35	332	18
36	333	21
37	334	21
38	335	21
39	336	18
40	337	22
41	338	22
42	339	24
43	340	23
44	341	23

Stratum Number	Stratum ID (DB050)	Number of selected addresses
45	342	19
46	343	21
47	344	18
48	345	20
49	346	18
50	347	19
51	348	18
52	349	18
53	350	20
54	351	21
55	352	20
56	353	22
57	354	11
58	355	20
59	356	21
60	357	23
61	358	25
62	359	11
63	360	12
64	431	20
65	432	24
66	433	21
67	434	14
68	435	20
69	436	19
70	437	14
71	438	19
72	439	17
73	440	21
74	441	28
75	442	20
76	443	20
77	444	19
78	445	20
79	446	20
80	447	23
81	448	18
82	449	20
83	450	20
84	451	23
85	452	22
86	453	8
87	454	24
88	455	32
89	456	19
90	531	7

Stratum Number	Stratum ID (DB050)	Number of selected addresses
91	532	12
92	533	10
93	534	8
94	535	9
95	536	10
96	537	10
97	538	10
98	539	10
99	540	10
100	541	10
101	542	10
102	543	10
103	544	11
104	545	10
105	546	11
106	547	11
107	548	10
108	549	11
109	550	11
110	631	11
111	632	18
112	633	17
113	634	15
114	635	16
115	636	20
116	637	17
117	638	17
118	639	18
119	640	18
120	641	19
121	642	17
122	643	18
123	644	18
124	645	16
125	646	16
126	647	18
127	648	17
128	649	18
129	650	17
130	651	17
131	652	17
132	653	18
133	654	17
134	655	21
135	656	19
136	657	16

Stratum Number	Stratum ID (DB050)	Number of selected addresses
137	658	18
138	731	13
139	732	5
140	733	14
141	734	18
142	735	17
143	736	14
144	738	18
145	739	16
146	740	15
147	741	16
148	742	15
149	743	15
150	744	13
151	745	16
152	746	15
153	747	16
154	748	18
155	749	21
156	750	17
157	831	8
158	832	9
159	833	11
160	834	9
161	835	6
162	836	7
163	837	9
164	838	9
165	839	9
166	840	9
167	841	8
168	842	9
169	843	10
170	844	10
171	845	8
172	846	8
173	847	10
174	848	9
175	931	28
176	932	29
177	933	27
178	934	28
179	935	28
180	936	28
181	937	28
182	938	27

Stratum Number	Stratum ID (DB050)	Number of selected addresses
183	939	28
184	940	30
185	941	30
186	942	28
187	943	28
188	944	28
189	945	27
190	946	27
191	947	27
192	948	27
193	949	27
194	950	29
195	951	28
196	952	28
197	953	28
198	954	29
199	955	31
200	956	28
201	957	13
202	958	28
203	959	28
204	960	28
205	961	28
206	962	28
		3430

Table 34: Common cross-sectional indicators EU-SILC 2010

Indicator			Value	Standard error	Lower bound	Upper bound			
OV-1a SI-P1 Europe 2020	At-risk-of-poverty rate after social transfers by age and sex, in %	All (>= 0 years)	Total	12.1	0.6	11.0	13.2		
			Men	10.7	0.6	9.5	11.8		
			Women	13.5	0.6	12.3	14.7		
		<=17 years	Total	14.3	1.1	12.1	16.4		
			18-24 years	Total	13.7	1.6	10.7	16.7	
				Men	12.2	1.9	8.4	16.0	
		Women		15.3	2.0	11.4	19.2		
		25-49 years	Total	10.6	0.6	9.3	11.9		
			Men	9.4	0.7	8.0	10.9		
			Women	11.8	0.8	10.3	13.3		
		50-64 years	Total	9.4	0.7	8.0	10.9		
			Men	9.5	1.0	7.6	11.4		
			Women	9.3	0.9	7.7	11.0		
		65+ years	Total	15.2	1.0	13.3	17.1		
			Men	10.4	1.1	8.4	12.5		
			Women	18.7	1.2	16.4	21.1		
		>=18 years	Total	11.6	0.5	10.6	12.6		
			Men	10.0	0.6	8.9	11.1		
			Women	13.2	0.6	12.0	14.4		
		18-64 years	Total	10.7	0.6	9.6	11.8		
			Men	9.9	0.6	8.7	11.1		
			Women	11.5	0.7	10.2	12.8		
		<=64 years	Total	11.5	0.6	10.3	12.7		
			Men	10.7	0.7	9.4	12.0		
			Women	12.3	0.7	10.9	13.6		
		Europe 2020	At-risk-of-poverty or social exclusion rate by age and sex, in %	All (>= 0 years)	Total	16.6	0.6	15.4	17.8
					Men	14.7	0.7	13.4	16.0
Women	18.4				0.7	17.0	19.7		
<=17 years	Total			18.8	1.3	16.3	21.3		
	18-64 years			Total	16.1	0.7	14.9	17.4	
				Men	14.3	0.7	12.9	15.8	
Women				17.9	0.8	16.5	19.4		
<=64 years	Total			15.8	1.0	13.9	17.8		
	Men			11.0	1.1	8.9	13.1		
	Women			19.4	1.2	17.1	21.8		
Europe 2020	At-risk-of-poverty or social exclusion rate by household type, in %			Single total	27.5	1.1	25.5	29.6	
				Single <65 years	29.6	1.4	26.9	32.3	
		Single 65+ years	23.9	1.6	20.7	27.2			
		Single male	23.1	1.6	19.9	26.4			
		Single female	30.8	1.4	28.0	33.5			
		2 adults, no children, at least one 65+	14.6	1.3	12.0	17.3			
		2 adults, no children, both < 65	16.6	1.4	13.9	19.3			
		Other households without children	6.4	1.3	3.9	8.9			
		Single parent, at least one child	38.3	3.2	32.0	44.5			
		2 adults, 1 child	12.1	1.8	8.6	15.6			

Indicator		Value	Standard error	Lower bound	Upper bound	
	2 adults, 2 children	10.5	1.6	7.3	13.6	
	2 adults, 3+ children	24.7	3.4	17.9	31.4	
	Other households with children	15.4	2.7	10.2	20.7	
	Households without children total	16.9	0.7	15.6	18.2	
	Household with children total	16.2	1.1	14.1	18.3	
Europe 2020	People living in households with very low work intensity by age and sex, in %					
	All (>= 0 years)	Total	6.0	0.4	5.3	6.7
		Men	5.4	0.4	4.5	6.2
		Women	6.6	0.4	5.8	7.4
	<=17 years	Total	6.0	0.8	4.4	7.6
	18-64 years	Total	7.6	0.4	6.7	8.4
		Men	6.4	0.5	5.4	7.4
		Women	8.7	0.5	7.7	9.8
Europe 2020	People living in households with very low work intensity by age and sex, in %					
	Single total		10.9	0.8	9.4	12.4
	Single <65 years		17.1	1.2	14.8	19.4
	Single male		11.8	1.3	9.2	14.3
	Single female		10.2	0.9	8.4	12.1
	2 adults, no children, at least one 65+		3.1	0.5	2.1	4.1
	2 adults, no children, both < 65		8.2	0.9	6.5	9.9
	Other households without children		3.6	0.8	1.9	5.2
	Single parent, at least one child		19.6	2.8	14.2	25.1
	2 adults, 1 child		3.8	1.0	1.9	5.7
	2 adults, 2 children		1.5	0.6	0.4	2.5
	2 adults, 3+ children		8.6	2.5	3.6	13.5
	Other households with children		4.3	1.4	1.6	7.1
	Households without children total		6.8	0.4	6.0	7.6
	Household with children total		5.1	0.6	3.9	6.3
Europe 2020	Severely materially deprived people by age and sex, in %					
	All (>= 0 years)	Total	4.3	0.4	3.6	5.0
		Men	3.9	0.4	1.4	2.8
		Women	4.6	0.3	1.7	2.8
	<=17 years	Total	5.7	0.8	4.1	7.2
	18-64 years	Total	4.5	0.4	3.7	5.3
		Men	3.9	0.4	3.0	4.7
		Women	5.2	0.5	4.3	6.0
	<=64 years	Total	2.0	0.3	1.3	2.6
		Men	(1.3)	0.4	0.6	2.0
		Women	2.5	0.5	1.6	3.3
Europe 2020	Severely materially deprived people by household type, in %					
	Single total		6.8	0.6	5.6	8.0
	Single <65 years		8.6	0.9	6.9	10.3
	Single 65+ years		3.6	0.7	2.2	5.0
	Single male		5.6	0.9	3.8	7.5
	Single female		7.6	0.8	6.0	9.2
	2 adults, no children, at least one 65+		1.6	0.5	0.7	2.6
	2 adults, no children, both < 65		4.4	0.8	2.9	5.9
	Other households without children		(1.6)	0.7	0.2	2.9
	Single parent, at least one child		13.4	2.4	8.6	18.2

Indicator		Value	Standard error	Lower bound	Upper bound	
	2 adults, 1 child	3.0	0.9	1.2	4.7	
	2 adults, 2 children	3.7	1.2	1.3	6.1	
	2 adults, 3+ children	7.0	2.0	3.1	10.9	
	Other households with children	3.8	1.4	1.1	6.5	
	Households without children total	3.9	0.3	3.2	4.5	
	Household with children total	4.8	0.6	3.5	6.0	
SI-S1a	At-risk-of-poverty rate after social transfers by household, in %					
Europe 2020	Single total	22.1	1.0	20.1	24.0	
	Single <65 years	21.4	1.3	18.9	23.9	
	Single 65+ years	23.2	1.6	20.0	26.4	
	Single male	17.8	1.5	14.8	20.8	
	Single female	25.2	1.3	22.6	27.8	
	2 adults, no children, at least one 65+	11.8	1.3	9.2	14.3	
	2 adults, no children, both < 65	9.8	1.2	7.4	12.1	
	Other households without children	2.8	1.0	0.9	4.8	
	Single parent, at least one child	28.2	3.0	22.3	34.0	
	2 adults, 1 child	8.6	1.6	5.4	11.8	
	2 adults, 2 children	7.8	1.2	5.4		
	2 adults, 3+ children	17.9	2.9	12.2	23.7	
	Other households with children	12.6	2.6	7.5	17.6	
	Households without children total	12.1	0.6	11.0	13.2	
	Household with children total	12.1	1.0	10.2	14.0	
SI-S1c	At-risk-of-poverty after social transfers by main activity and sex, in %					
>= 18 years	Employed	Total	5.0	0.4	4.2	5.7
		Men	5.0	0.5	4.1	6.0
		Women	4.8	0.5	3.9	5.8
	Inactive total	Total	19.5	0.9	17.9	21.2
		Men	18.2	1.1	16.0	20.5
		Women	20.4	0.9	18.5	22.2
	Unemployed	Total	41.2	3.1	35.1	47.2
		Men	46.0	4.0	38.2	53.8
		Women	36.8	3.8	29.4	44.3
	Pension	Total	13.6	0.8	12.1	15.1
		Men	10.9	0.9	9.1	12.7
		Women	15.9	1.0	14.0	17.9
	Other inactive	Total	22.7	1.6	19.7	25.8
		Men	24.9	3.7	17.7	32.1
		Women	22.1	1.6	19.0	25.2
18-64 years	Employed	Total	5.0	0.4	4.2	5.7
		Men	5.1	0.5	4.1	6.0
		Women	4.8	0.5	3.9	5.8
	Inactive total	Total	23.1	1.2	20.7	25.5
		Men	25.4	1.9	21.7	29.1
		Women	21.6	1.3	19.1	24.2
	Unemployed	Total	41.3	3.1	35.2	47.3
		Men	46.0	4.0	38.2	53.8
		Women	37.0	3.8	29.5	44.5
	Pension	Total	12.1	1.2	9.8	14.5

Indicator		Value	Standard error	Lower bound	Upper bound		
	Men	12.1	1.7	8.7	15.5		
	Women	12.2	1.5	9.2	15.2		
	Total	21.9	1.7	18.6	25.2		
	Men	24.4	3.7	17.1	31.7		
	Women	21.1	1.7	17.7	24.4		
SI-S1d	At-risk-of-poverty after social transfers by tenure status, in %						
	Owner or rent-free	Total	7.9	0.5	6.8	8.9	
		Men	6.4	0.5	5.4	7.5	
		Women	9.2	0.6	8.1	10.4	
	Tenant	Total	19.4	1.2	17.1	21.7	
		Men	18.2	1.3	15.7	20.7	
		Women	20.5	1.3	18.0	23.0	
OV-1a	SI-P1	At-risk-of-poverty threshold, in euro					
		Single	12,371	102.7	12,169.5	12,572.2	
		2 adults, 2 children	25,979	215.7	25,556.0	26,401.7	
OV-2	SI-C1	Inequality of income distribution, income quintile share ratio					
		S80/S20	3.74	0.18	3.38	4.09	
	SI-C2	Inequality of income distribution, income quintile share ratio					
		Gini-coefficient	26.1	0.4	25.4	26.8	
OV-1b	SI-P3	Relative median at-risk-of-poverty gap by age and sex, in %					
		All (>= 0 years)	Total	17.2	0.9	15.4	19.0
			Men	17.5	1.1	15.4	19.6
			Women	16.7	0.8	15.1	18.3
		<=17 years	Total	20.2	1.9	16.5	23.9
		18-64 years	Total	19.0	1.1	16.8	21.2
			Men	18.8	1.2	16.4	21.2
			Women	19.3	1.3	16.8	21.8
		65+ years	Total	15.5	0.5	14.5	16.5
			Men	15.3	1.3	12.7	17.9
			Women	15.5	0.4	14.8	16.2
SI-S1e	Dispersion around the risk-of-poverty threshold, in %						
	40%						
		All (>= 0 years)	Total	2.3	0.3	1.8	2.9
			Men	2.1	0.3	1.6	2.6
			Women	2.6	0.3	2.0	3.2
		<=17 years	Total	2.8	0.5	1.8	3.8
		18-64 years	Total	2.5	0.3	1.9	3.1
			Men	2.3	0.3	1.7	2.9
			Women	2.7	0.4	1.9	3.4
		65+ years	Total	1.3	0.3	0.8	1.9
			Men	(0.9)	0.3	0.3	1.6
			Women	1.6	0.3	0.9	2.3
	50%						
		All (>= 0 years)	Total	6.2	0.4	5.4	7.0
			Men	5.5	0.4	4.7	6.4
			Women	6.8	0.5	5.9	7.7
		<=17 years	Total	7.8	0.9	6.1	9.5

Indicator			Value	Standard error	Lower bound	Upper bound	
18-64 years	Total		5.9	0.4	5.1	6.7	
	Men		5.3	0.4	4.5	6.2	
	Women		6.4	0.5	5.4	7.4	
65+ years	Total		5.6	0.6	4.3	6.8	
	Men		4.5	0.7	3.1	6.0	
	Women		6.3	0.8	4.8	7.8	
70%							
All (>= 0 years)	Total		20.1	0.7	18.8	21.5	
	Men		18.4	0.7	16.9	19.9	
	Women		21.8	0.7	20.3	23.2	
<=17 years	Total		25.4	1.4	22.6	28.1	
18-64 years	Total		17.1	0.7	15.7	18.4	
	Men		16.2	0.8	14.7	17.7	
	Women		18.0	0.8	16.5	19.5	
65+ years	Total		26.1	1.2	23.8	28.4	
	Men		19.4	1.3	16.8	22.1	
	Women		31.0	1.4	28.3	33.7	
OV-9	SI-C5	At-risk-of-poverty-rate anchored at a fixed moment in time, in %					
		All (>= 0 years)	Total	11.0	0.5	9.9	12.1
			Men	9.7	0.6	8.6	10.9
			Women	12.2	0.6	11.0	13.4
		<=17 years	Total	13.3	1.1	11.2	15.4
		18-64 years	Total	9.9	0.6	8.8	11.0
			Men	9.1	0.6	7.9	10.3
			Women	10.6	0.6	9.4	11.9
		65+ years	Total	12.8	0.9	11.0	14.6
			Men	8.7	1.0	6.8	10.7
			Women	15.8	1.1	13.6	18.0
OV-C1	SI-C6	At-risk-of-poverty rate before social transfers by age and sex, in %					
		Before social transfers except old-age and survivors' benefits					
		All (>= 0 years)	Total	24.1	0.8	22.6	25.5
			Men	23.1	0.8	21.5	24.8
			Women	25.0	0.8	23.4	26.5
		<=17 years	Total	36.8	1.5	33.9	39.8
		18-64 years	Total	22.2	0.8	20.7	23.7
			Men	21.5	0.9	19.8	23.2
			Women	23.0	0.8	21.3	24.6
		65+ years	Total	17.4	1.0	15.4	19.4
			Men	12.8	1.2	10.5	15.1
			Women	20.8	1.3	18.4	23.3
		Before social transfers including old-age and survivors' benefits					
		All (>= 0 years)	Total	42.8	0.8	41.2	44.4
			Men	39.6	0.9	37.8	41.4
			Women	45.8	0.9	44.1	47.5
		<=17 years	Total	38.7	1.5	35.7	41.6
		18-64 years	Total	31.7	0.9	30.0	33.4
			Men	29.2	1.0	27.3	31.1
			Women	34.1	0.9	32.3	36.0

Indicator		Value	Standard error	Lower bound	Upper bound	
65+ years	Total	89.3	0.9	87.6	91.0	
	Men	87.4	1.2	85.0	89.8	
	Women	90.7	0.9	88.9	92.6	
OV-11	SI-C8 At-risk-of-poverty rate of employed persons, in %					
	Total	5.0	0.4	4.2	5.7	
	Male	5.0	0.5	4.1	6.0	
	Female	4.8	0.5	3.9	5.8	
	Full-time	3.9	0.4	3.1	4.6	
	Part-time	6.8	0.9	5.0	8.6	
	SI-P2 At-persistent-risk-of-poverty, in %					
	2006-2009	6.2	0.8	4.5	7.8	
	SI-P8 Material deprivation, in %					
	Total	10.6	0.5	9.5	11.7	
		Not at-risk-of-poverty	6.5	0.5	5.6	7.4
		At-risk-of-poverty	40.6	2.4	35.9	45.3
	Male	total	9.8	0.6	8.6	11.0
		Not at-risk-of-poverty	6.2	0.5	5.2	7.3
		At-risk-of-poverty	39.7	2.9	34.0	45.3
	Female	total	11.4	0.6	10.2	12.5
		Not at-risk-of-poverty	6.7	0.5	5.8	7.7
		At-risk-of-poverty	41.2	2.5	36.3	46.2
	SI-S4 Intensity of material deprivation, in %					
	Total	3.6	0.0	3.5	3.7	
		Not at-risk-of-poverty	3.5	0.1	3.3	3.6
		At-risk-of-poverty	3.8	0.1	3.6	4.0
	Male	total	3.6	0.1	3.5	3.8
		Not at-risk-of-poverty	3.5	0.1	3.3	3.6
		At-risk-of-poverty	3.8	0.1	3.6	4.0
	Female	total	3.6	0.0	3.5	3.7
		Not at-risk-of-poverty	3.4	0.1	3.3	3.5
		At-risk-of-poverty	3.8	0.1	3.6	3.9
	SI-S6 Overcrowding rate by poverty status, in %					
	Total	12.1	0.6	10.9	13.3	
	Not at-risk-of-poverty	9.6	0.6	8.4	10.7	
	At-risk-of-poverty	30.5	2.5	25.6	35.5	
	SI-S6 Overcrowding rate by at-risk-of-poverty excluding single person households, in %					
	Total	12.1	0.7	10.7	13.5	
	Not at-risk-of-poverty	9.5	0.7	8.2	10.8	
	At-risk-of-poverty	35.0	3.2	28.6	41.3	
	SI-S6 Overcrowding rate by degree of urbanisation, in %					
	Densely populated area	23.0	1.3	20.4	25.5	
	Intermediate area	6.7	1.0	4.8	8.7	
	Thinly populated area	5.6	0.8	4.1	7.1	

Indicator		Value	Standard error	Lower bound	Upper bound	
SI-S6	Overcrowding rate by household type, in %					
	Single total	12.1	0.8	10.6	13.7	
	Single <65 years	14.4	1.1	12.3	16.6	
	Single 65+ years	8.1	1.1	6.0	10.3	
	Single male	14.1	1.3	11.5	16.8	
	Single female	10.7	1.0	8.7	12.7	
	2 adults, no children, at least one 65+	2.4	0.8	0.9	3.9	
	2 adults, no children, both < 65	4.7	0.9	3.0	6.4	
	Other households without children	6.8	1.4	4.0	9.6	
	Single parent, at least one child	28.1	2.9	22.3	33.8	
	2 adults, 1 child	10.2	1.6	7.1	13.4	
	2 adults, 2 children	11.0	1.6	7.8	14.2	
	2 adults, 3+ children	27.6	3.3	21.0	34.1	
	Other households with children	23.7	2.8	18.1	29.3	
	Households without children total	7.0	0.5	6.0	8.0	
	Household with children total	17.7	1.1	15.5	19.9	
SI-C12	Housing deprivation, in %					
	Leaking roof	14.8	0.7	13.5	16.1	
	No shower/bath	0.6	0.1	0.4	0.8	
	No toilet	1.2	0.1	0.9	1.5	
	Problem with darkness	6.9	0.4	6.0	7.8	
	Neither shower/bath nor toilet	0.4	0.1	0.2	0.6	
SI-C13	Median share of housing cost by age and poverty status					
	All (>= 0 years)					
		total	14.2	0.2	13.8	14.6
		Not at-risk-of-poverty	13.1	0.1	12.8	13.4
		At-risk-of-poverty	28.3	1.1	26.1	30.5
	<=17 years	total	15.3	0.3	14.7	15.9
	18-64 years	total	13.9	0.2	13.4	14.3
		Not at-risk-of-poverty	12.9	0.2	12.6	13.2
		At-risk-of-poverty	32.0	1.2	29.6	34.3
	65+ years	total	14.2	0.3	13.6	14.7
		Not at-risk-of-poverty	13.3	0.4	12.6	14.1
		At-risk-of-poverty	20.2	1.0	18.2	22.1
SI-C13	Median share of housing cost by age and sex					
	All (>= 0 years)	Total	14.2	0.2	13.8	14.6
		Men	13.8	0.2	13.4	14.3
		Women	14.5	0.2	14.1	14.9
	<=17 years	Total	15.3	0.3	14.7	15.9
	18-64 years	Total	13.9	0.2	13.4	14.3
		Men	13.6	0.3	13.0	14.1
		Women	14.1	0.2	13.6	14.5
	65+ years	Total	14.2	0.3	13.6	14.7
		Men	13.0	0.4	12.2	13.8

Indicator		Value	Standard error	Lower bound	Upper bound
	Women	15.0	0.3	14.5	15.6
SI-C13	Median share of housing cost by degree of urbanisation				
	Densely populated area	17.3	0.4	16.6	18.0
	Intermediate area	13.5	0.3	12.8	14.1
	Thinly populated area	12.3	0.2	11.9	12.8