

**Intermediate Quality Report  
Relating to the  
EU-SILC 2009 Operation**

**Austria**



**Vienna, 22nd December 2010**

## Table of content

0.	Preface .....	3
1.	Common cross-sectional indicators .....	4
2.	Accuracy .....	11
2.1.	Sampling Design .....	11
2.1.1.	Type of sampling .....	11
2.1.2.	Sampling units.....	11
2.1.3.	Stratification .....	11
2.1.4.	Sample size and allocation criteria .....	12
2.1.5.	Sample selection schemes .....	14
2.1.6.	Sample distribution over time.....	15
2.1.7.	Renewal of the sample: rotational groups .....	16
2.1.8.	Weighting .....	16
2.1.9.	Substitutions.....	21
2.2.	Sampling Errors.....	21
2.2.1.	Standard errors and effective sample size .....	21
2.2.2.	Variance estimation.....	22
2.3.	Non-sampling Errors .....	22
2.3.1.	Sampling frame and coverage errors.....	22
2.3.2.	Measurement and processing error .....	22
2.3.3.	Non-response error .....	24
2.4.	Mode of data collection .....	28
2.5.	Interview duration .....	29
2.6.	Imputation procedure .....	30
2.6.1.	General remarks .....	30
2.6.2.	Procedure to handle missing personal interviews .....	30
2.6.3.	Procedure to handle missing item non-response .....	31
3.	Comparability .....	34
3.1.	Basic Concepts and definitions .....	34
3.2.	Components of income .....	34
3.2.1.	Differences between national definitions and standard EU-SILC definitions.....	34
3.2.2.	The source or procedure used for the collection of income variables .....	36
3.2.3.	The form in which income variables at component level have been obtained .....	36
3.2.4.	The method used for obtaining income target variables.....	36
4.	Coherence.....	37
4.1.	Description of data sources.....	37
4.2.	Comparisons .....	38
5.	Annex .....	43

## Index of Tables and Figures

Table 1: Common cross-sectional indicators EU-SILC 2009 .....	4
Table 2: Sampling Scheme EU-SILC 2009 .....	14
Table 3: Sample Size EU-SILC 2009 .....	14
Figure 1: Sample selection scheme EU-SILC 2009 .....	15
Table 4: Sample distribution of EU-SILC 2009 during fieldwork .....	16
Table 5: Rotational groups (with split households) 2009 .....	16
Table 6: Rotational groups (without split households) 2009 .....	16
Figure 2: Flags for Austrian income variables .....	24
Table 7: Achieved sample size and accepted interviews 2009 .....	25
Table 9: Distribution of DB110 .....	26
Table 10: Distribution of DB120 .....	26
Table 11: Distribution of DB130 .....	26
Table 12: Distribution of DB135 .....	26
Table 13: Item non-response on household level .....	27
Table 14: Item non-response on personal level .....	28
Table 15: Data status (RB250) by rotational groups of household members aged 16+ .....	28
Table 16: Type of interview (RB260) by rotational groups .....	29
Table 17: Proportion of proxy interviews in follow-up interviews by mode .....	29
Table 18: Distribution of basic activity status by proxy interviews and by mode .....	29
Table 19: Mean interview duration by rotational group in minutes .....	30
Table 20: Mean interview duration for follow-up waves by interview mode in minutes .....	30
Table 21: List of variables used in the two distance functions .....	31
Figure 3: Editing procedure for income data .....	33
Table 22: Income target variables on household level: EU-SILC 2008 and EU-SILC 2009 .....	39
Table 23: Income target variables on personal level: EU-SILC 2008 and EU-SILC 2009 .....	39
Table 24: Comparison of gross annual income of employees 2008 – wage tax statistics 2008 and EU-SILC 2009 (employed for at least one month in 2008) .....	40
Table 25: Comparison of gross annual income of employees 2008: wage tax statistics 2008 and EU-SILC 2009 (employed for the entire year) .....	41
Table 26: Comparison between National accounts 2008 and EU-SILC 2009 (in Mio Euro) .....	41
Table 27: Comparison of tenure status – Microcensus 2009 and EU-SILC 2009 .....	42
Table 28: Comparison of rent payments and costs of services and charges by size of usable living area and number of inhabitants in the region – Microcensus 2009 and EU-SILC 2009 ....	42
Table 29: Strata of the first wave sample EU-SILC 2009 .....	43
Table 30: Common cross-sectional indicators EU-SILC 2009 .....	47

## **0. Preface**

This report is the Intermediate Quality Report of EU-SILC 2009. 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 2009 (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 2009 data with external data. In this report, the data of EU-SILC 2009 have been compared with the data of EU-SILC 2008, the Wage Tax Statistics 2008, the National Accounts 2008 and the Microcensus 2009.

# 1. Common cross-sectional indicators

Table 1: Common cross-sectional indicators EU-SILC 2009

Indicator		Value	Achieved sample size	Total item non response
<b>OV-1a</b>	<b>SI-P1 At-risk-of-poverty rate after social transfers by age and sex, in %</b>			
	Total	12.0	13,610	0
	All (>= 0 years)			
	Men	10.7	6,540	0
	Women	13.2	7,070	0
	<=17 years			
	Total	13.4	2,927	0
	18-24 years			
	Total	11.9	1,053	0
	Men	11.3	545	0
	Women	12.6	508	0
	25-49 years			
	Total	10.3	4,766	0
	Men	9.8	2,294	0
	Women	10.9	2,472	0
	50-64 years			
	Total	11.0	2,544	0
	Men	10.0	1,180	0
	Women	12.0	1,364	0
	65+ years			
	Total	15.1	2,320	0
	Men	10.7	1,020	0
	Women	18.4	1,300	0
	>=18 years			
	Total	11.7	10,683	0
	Men	10.2	5,039	0
	Women	13.1	5,644	0
	18-64 years			
	Total	10.8	8,363	0
	Men	10.1	4,019	0
	Women	11.4	4,344	0
	<=64 years			
	Total	11.4	11,290	0
	Men	10.8	5,520	0
	Women	12.0	5,770	0
<b>SI-S1a</b>	<b>At-risk-of-poverty rate after social transfers by household type, in %</b>			
	Single total	20.4	1,897	0
	Single <65 years	18.3	1,178	0
	Single 65+ years	23.8	719	0
	Single male	15.7	737	0
	Single female	23.8	1,160	0
	2 adults, no children, at least one 65+	12.0	1,614	0
	2 adults, no children, both < 65	11.8	1,880	0
	Other households without children	3.6	1,143	0
	Single parent, at least one child	29.2	711	0
	2 adults, 1 child	9.1	1,611	0
	2 adults, 2 children	6.9	2,260	0
	2 adults, 3+ children	19.2	1,203	0
	Other households with children	8.6	1,291	0
	Households without children total	12.7	6,534	0
	Household with children total	11.4	7,076	0

<b>SI-S1b</b>	<b>At-risk-of-poverty rate after social transfers by work intensity (w) of the household, in %</b>			
Housholds without children	w=0	25.4	1,003	1,812
	0 < w < 1	10.1	1,586	1,812
	w=1	3.9	2,140	1,812
	w=0	48.1	301	1,812
Housholds with children	0 < w < 0,5	39.2	451	1,812
	0,5 < =w < 1	12.1	2,761	1,812
	w=1	3.3	3,556	1,812

<b>SI-S1c</b>	<b>At-risk-of-poverty rate after social transfers by main activity and sex, in %</b>			
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>= 18 years

Employed	Total	6.0	5,872	0
	Men	6.0	3,176	0
	Women	5.9	2,696	0
	Total	18.7	4,722	0
Inactive total	Men	17.1	1,823	0
	Women	19.7	2,899	0
Unemployed	Total	38.0	447	0
	Men	42.8	182	0
	Women	34.0	265	0
	Total	14.2	3,098	0
Pension	Men	11.3	1,397	0
	Women	16.6	1,701	0
Other inactive	Total	21.0	1,156	0
	Men	22.5	232	0
	Women	20.6	924	0

18-64 years

Employed	Total	6.0	5,836	0
	Men	6.0	3,152	0
	Women	5.9	2,684	0
	Total	21.7	2,438	0
Inactive total	Men	23.5	827	0
	Women	20.6	1,611	0
Unemployed	Total	38.1	440	0
	Men	42.7	178	0
	Women	34.4	262	0
	Total	13.0	961	0
Pension	Men	12.7	406	0
	Women	13.2	555	0
Other inactive	Total	20.7	1,016	0
	Men	22.6	231	0
	Women	20.1	785	0

65+ years

Inactive total	Total	15.3	2,284	0
	Men	10.8	996	0
	Women	18.5	1,288	0
	Total	14.7	2,137	0
Pension	Men	10.7	991	0
	Women	18.0	1,146	0

		Total	23.1	140	0
	Other inactive	Men	-	-	-
		Women	23.3	139	0
<b>SI-S1d</b>	<b>At-risk-of-poverty rate after social transfers by tenure status, in %</b>				
		Total	8.5	9,039	0
	Owner or rent-free	Men	7.1	4,408	0
		Women	9.7	4,631	0
		Total	18.1	4,571	0
	Tenant	Men	17.0	2,132	0
		Women	19.1	2,439	0
<b>OV-1a</b>	<b>SI-P1</b>	<b>At-risk-of-poverty threshold, in euro</b>			
		Single	11931.5	13,610	0
		2 adults, 2 children	25056.1	13,610	0
<b>OV-2</b>	<b>SI-C1</b>	<b>Inequality of income distribution, income quintile share ratio</b>			
		S80/S20	3.66	13,610	0
	<b>SI-C2</b>	<b>Inequality of income distribution, income quintile share ratio</b>			
		Gini-coefficient	0.26	13,610	0
<b>OV-1b</b>	<b>SI-P3</b>	<b>Relative median at-risk-of-poverty gap by age and sex, in %</b>			
		Total	17.2	1,589	0
	All (>= 0 years)	Men	18.7	671	0
		Women	16.1	918	0
	<=17 years	Total	18.6	378	0
		Total	20.1	851	0
	18-64 years	Men	20.7	371	0
		Women	19.1	480	0
		Total	12.6	360	0
	65+ years	Men	13.9	116	0
		Women	12.5	244	0
<b>SI-S1e</b>	<b>Dispersion around the risk-of-poverty threshold, in %</b>				
	<b>40%</b>				
		Total	3.0	13,610	0
	All (>= 0 years)	Men	3.0	6,540	0
		Women	3.1	7,070	0
	<=17 years	Total	3.3	2,927	0
		Total	3.2	8,363	0
	18-64 years	Men	3.4	4,019	0
		Women	3.1	4,344	0
		Total	1.9	2,320	0
	65+ years	Men	1.3	1,020	0
		Women	2.4	1,300	0
	<b>50%</b>				
		Total	6.1	13,610	0
	All (>= 0 years)	Men	5.8	6,540	0
		Women	6.4	7,070	0
	<=17 years	Total	7.4	2,927	0
		Total	6.0	8,363	0
	18-64 years	Men	5.9	4,019	0
		Women	6.1	4,344	0

	Total	5.1	2,320	0
65+ years	Men	4.2	1,020	0
	Women	5.8	1,300	0
<b>70%</b>				
	Total	20.0	13,610	0
All (>= 0 years)	Men	18.3	6,540	0
	Women	21.6	7,070	0
<=17 years	Total	24.2	2,927	0
	Total	17.5	8,363	0
18-64 years	Men	16.7	4,019	0
	Women	18.4	4,344	0
	Total	24.4	2,320	0
65+ years	Men	18.3	1,020	0
	Women	28.9	1,300	0

<b>OV-9</b>	<b>SI-C5</b>	<b>At-risk-of-poverty-rate anchored at a fixed moment in time, in %</b>		
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	Total	10.9	13,610	0
All (>= 0 years)	Men	9.7	6,540	0
	Women	12.1	7,070	0
<=17 years	Total	11.9	2,927	0
	Total	9.8	8,363	0
18-64 years	Men	9.3	4,019	0
	Women	10.3	4,344	0
	Total	14.0	2,320	0
65+ years	Men	9.8	1,020	0
	Women	17.2	1,300	0

<b>OV-C1</b>	<b>SI-C6</b>	<b>At-risk-of-poverty rate before social transfers by age and sex, in %</b>		
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**Before social transfers except old-age and survivors' benefits**

	Total	24.1	13,610	0
All (>= 0 years)	Men	23.1	6,540	0
	Women	25.0	7,070	0
<=17 years	Total	36.1	2,927	0
	Total	22.1	8,363	0
18-64 years	Men	21.5	4,019	0
	Women	22.7	4,344	0
	Total	17.9	2,320	0
65+ years	Men	12.8	1,020	0
	Women	21.6	1,300	0

**Before social transfers including old-age and survivors' benefits**

	Total	42.9	13,610	0
All (>= 0 years)	Men	39.7	6,540	0
	Women	45.9	7,070	0
<=17 years	Total	39.1	2,927	0
	Total	31.8	8,363	0
18-64 years	Men	29.1	4,019	0
	Women	34.4	4,344	0
	Total	89.2	2,320	0
65+ years	Men	88.8	1,020	0
	Women	89.6	1,300	0

<b>OV-11</b>	<b>SI-C8 At-risk-of-poverty rate of employed persons, in %</b>				
	Total	6.0	5,372	0	
	Male	6.0	2,940	0	
	Female	5.9	2,432	0	
	Full-time	4.7	4,230	0	
	Part-time	7.0	1,142	0	
	<b>SI-P2 At-persistent-risk-of-poverty, in %</b>				
	2005-2008	5.6	2,511	0	
	<b>SI-P8 Material deprivation, in %</b>				
	Total	10.9	13,610	0	
		Not at-risk-of-poverty	7.4	12,021	0
		At-risk-of-poverty	36.9	1,589	0
	Male	total	10.3	6,540	0
		Not at-risk-of-poverty	7.1	5,869	0
		At-risk-of-poverty	37.2	671	0
	Female	total	11.5	7,070	0
		Not at-risk-of-poverty	7.7	6,152	0
		At-risk-of-poverty	36.6	918	0
	<b>SI-S4 Intensity of material deprivation, in %</b>				
	Total	3.6	1,322	0	
		Not at-risk-of-poverty	3.4	790	0
		At-risk-of-poverty	3.8	532	0
	Male	total	3.6	584	0
		Not at-risk-of-poverty	3.5	357	0
		At-risk-of-poverty	3.9	227	0
	Female	total	3.6	738	0
		Not at-risk-of-poverty	3.4	433	0
		At-risk-of-poverty	3.8	305	0
	<b>SI-S5 Housing cost overburden by poverty status, in %</b>				
	Total	5.1	13,016	0	
	Not at-risk-of-poverty	1.9	11,571	0	
	At-risk-of-poverty	29.5	1,445	0	
	<b>SI-S5 Housing cost overburden by degree of urbanisation, in %</b>				
	Densely populated area	8.8	4,360	0	
	Intermediate area	3.4	3,347	0	
	Thinly populated area	2.5	5,309	0	
	<b>SI-S5 Housing cost overburden by income quintiles, in %</b>				
	1. quintile	19.9	2,426	0	
	2. quintile	3.9	2,570	0	
	3. quintile	1.6	2,673	0	
	4. quintile	0.3	2,641	0	
	5. quintile	0.3	2,706	0	

<b>SI-S6 Overcrowding rate by poverty status, in %</b>					
	Total	13.2	13,610	0	
	Not at-risk-of-poverty	11.0	12,021	0	
	At-risk-of-poverty	29.3	1,589	0	
<b>SI-S6 Overcrowding rate by at-risk-of-poverty excluding single person households, in %</b>					
	Total	13.5	11,712	0	
	Not at-risk-of-poverty	11.3	10,519	0	
	At-risk-of-poverty	32.5	1,193	0	
<b>SI-S6 Overcrowding rate by degree of urbanisation, in %</b>					
	Densely populated area	22.4	4,416	0	
	Intermediate area	9.6	3,516	0	
	Thinly populated area	7.0	5,678	0	
<b>SI-S6 Overcrowding rate by household type, in %</b>					
	Single total	11.4	1,897	0	
	Single <65 years	12.6	1,178	0	
	Single 65+ years	9.3	719	0	
	Single male	14.3	737	0	
	Single female	9.2	1,160	0	
	2 adults, no children, at least one 65+	2.8	1,614	0	
	2 adults, no children, both < 65	5.3	1,880	0	
	Other households without children	8.7	1,143	0	
	Single parent, at least one child	29.9	711	0	
	2 adults, 1 child	11.8	1,611	0	
	2 adults, 2 children	8.7	2,260	0	
	2 adults, 3+ children	34.1	1,203	0	
	Other households with children	25.9	1,291	0	
	Households without children total	7.4	6,534	0	
	Household with children total	18.9	7,076	0	
<b>SI-C12 Housing deprivation, in %</b>					
	Leaking roof	15.3	13,610	0	
	No shower/bath	0.7	13,610	0	
	No toilet	1.3	13,610	0	
	Problem with darkness	6.5	13,610	0	
	Neither shower/bath nor toilet	0.5	13,610	0	
	No deprivation: 0 items	80.2	13,610	0	
	Deprivation: 1 item	16.2	13,610	0	
	Deprivation: 2 items	3.3	13,610	0	
	Deprivation: 3 items	0.2	13,610	0	
<b>SI-C13 Median share of housing cost by age and poverty status</b>					
	All	total	13.8	13,016	0
	(>= 0 years)	Not at-risk-of-poverty	12.7	11,571	0
		At-risk-of-poverty	29.0	1,445	0
	<=17 years	total	14.5	2,876	0
		Not at-risk-of-poverty	13.5	2,505	0
		At-risk-of-poverty	26.4	371	0
	18-64 years	total	13.6	8,139	0
		Not at-risk-of-poverty	12.5	7,324	0
		At-risk-of-poverty	32.4	815	0
	65+ years	total	13.8	2,001	0

	Not at-risk-of-poverty	12.7	1,742	0
	At-risk-of-poverty	23.3	259	0
<b>SI- C13</b>	<b>Median share of housing cost by age and sex</b>			
	Total	13.8	13,016	0
All (>= 0 years)	Men	13.5	6,283	0
	Women	14.2	6,733	0
<=17 years	Total	14.5	2,876	0
	Total	13.6	8,139	0
18-64 years	Men	13.4	3,917	0
	Women	13.9	4,222	0
	Total	13.8	2,001	0
65+ years	Men	12.7	899	0
	Women	15.0	1,102	0
<b>SI- C13</b>	<b>Median share of housing cost by degree of urbanisation</b>			
	Densely populated area	17.0	4,360	0
	Intermediate area	13.5	3,347	0
	Thinly populated area	11.4	5,309	0

Source: Statistic Austria, EU-SILC 2009

OV = Overarching Indicator, SI = Social Inclusion, P = Primary, S = Secondary, C = Context

## 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 quarter. EU-SILC 2009 was the sixth year of EU-SILC in Austria as a panel. Each rotational group of the sample 2009 entered the survey in a different year: 2006 (R2), 2007 (R3), 2008 (R4) and 2009 (R1).

#### 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 sampling process was carried according to a stratified, two-stage probability sample without replacement. It was planned to select 3,644 addresses for the first wave rotational group of 2008 (R1/09). The number of selected households was determined as approximately 0.1% of all eligible addresses.<sup>1</sup>

There are three main strata according in the first wave sample of EU-SILC 2009 which are constructed according to geographic criteria with a specified sampling design carried out in each one of them.

Main-Stratum 1 (41% of first wave sample): Addresses in interviewer units (*Sprengel*) with a populated area of less than 50 km<sup>2</sup>.

The first stratum consists of addresses which belong to interviewer units with a comparatively small populated area (smaller than 50 km<sup>2</sup>). Those interviewer units which have the largest population are all in main-stratum 1 (e.g. all interviewer units of Vienna are in stratum 1). The sampling design of main-stratum 1 was carried out with a stratified sample with oversampling according to socio-economic criteria. Therefore main-stratum 1 was stratified by federal states (*Bundesländer* – NUTS 2 regions) and the following socio-economic target groups:

1. Households with a higher probability to be at-risk-of-poverty: Households with at least one person with Turkish citizenship and/or a citizenship from a former Yugoslavian country and/or households with more than two children or single parent households and/or persons below the age of 30 living alone.
2. Migrants (including migrants which belong to target group 1)
3. Households that cannot be classified according to 1 and 2

The number of sample households that had to be drawn from each stratum was specified in advance. Households in target group 3 were selected with constant probability. Households belonging to target group 1 or 2 were assigned a higher selection probability (*oversampling*): The selection probability for households with a higher likelihood to be at-risk-of-poverty received a selection probability that was 1.225 times higher and the selection probability for households from target group 2 was doubled. The oversampling of risk households in the sample should ameliorate the precision of the sample with regard to the main indicators on poverty.

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<sup>1</sup> However, 12 addresses turned out to be already part of the EU-SILC 2009 follow-up waves and two households did not belong to the population. After excluding these 14 addresses, 3,630 remained in the first wave sample (see Table 3).

Main-Stratum 2 (52% of first wave sample): Addresses in interviewer units (*Sprengel*) with a populated area of at least 50 km<sup>2</sup> and high population density.

The second main-stratum consists of Addresses in large interviewer units (50 km<sup>2</sup> or more) which are also situated in an area with a comparatively high population density. This measure of population density was carried out by counting the number of households within a quadratic grid cell (*Rasterzelle*) of 500m x 500m. Only households in grid cells with ten or more households belong to main-stratum 2. These households were selected by a stratified two-stage, probability proportional to size ( $\pi ps$ )<sup>2</sup> sample without replacement. The selection of the primary sampling units (*PSUs*) of main-stratum 2 was stratified by interviewer units.

Main-Stratum 3 (7% of first wave sample): Addresses in interviewer units (*Sprengel*) with a populated area of at least 50 km<sup>2</sup> and low population density.

The third main-stratum is composed of addresses in large interviewer units (50 km<sup>2</sup> or more) that are situated in grid cells with less than ten households. These households were selected by a stratified two-stage, probability proportional to size ( $\pi ps$ ) sample without replacement. The sample of main-stratum 3 was stratified by municipalities (*Gemeinden*).

A list of the strata, their sizes and the corresponding sampling stage is provided in Table 29 in the annex.

#### 2.1.4. Sample size and allocation criteria

The necessary sample effective 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 a simple random sampling is used.<sup>3</sup> 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 third<sup>4</sup>. Therefore a sample of about 6,000 households had to be drawn in 2009 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 2009 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 3,448 households and a follow-up gross sample of 4,458 households would lead to a net cross-sectional sample of 6,000 households.

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<sup>2</sup> Särndal Carl-Erik / Swensson Bengt / Wretman Jan (2003), Model Assisted Survey Sampling. Springer. New York, p. 90ff.

<sup>3</sup> 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:

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

See „Variance estimation methodology“, [http://www.statistik.at/web\\_de/static/subdokumente/b\\_eu-silc-2004\\_variance\\_estimation\\_methodology.pdf](http://www.statistik.at/web_de/static/subdokumente/b_eu-silc-2004_variance_estimation_methodology.pdf)

<sup>4</sup> 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 shows the sampling scheme for EU-SILC 2009 that is based on an expected design effect of approximately 1.33.

**Table 2: Sampling Scheme EU-SILC 2009**

	Gross sample size	Expected response rate	Expected net sample size rounded	Design effect (at-risk-of-poverty-rate)	Effective sample size
First wave	3.448	65,0%	2.241	1,33	1.681
Follow-up waves	4.458	82,5%	3.678		
Follow-up waves (including split-off households)*			3.759	1,33	2.819
All waves	7.906		<b>6.000</b>	1,33	<b>4.500</b>

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

Source: Statistics Austria, EU-SILC 2009

In order to compensate for ineligible elements in the sampling frame (e.g. address no longer existent) - which was estimated as 5.6%<sup>5</sup> - the size of the first wave sample was determined 3,644 addresses. 12 of these addresses from the first wave sample turned out to be double entries and two did not belong to the population. After eliminating these 14 addresses, 3,630 households remained in the first wave sample.

Including the 147 split-off households the total number of addresses in the sample amounted to 8,383. 206 of these addresses turned out to be nonexistent (not a proper dwelling unit, dwelling unit is not occupied etc). From the remaining 8,177 addresses in the gross sample 8,098 addresses could be contacted, 79 households could not be contacted. For 5,949 of the successfully contacted addresses interviews could be conducted, 2,149 households refused to take part in an interview. 71 household interviews had to be excluded because of poor quality which led to 5,878 completed household questionnaires which could be used for analysis. Table 3 describes the sample composition in detail.

**Table 3: Sample Size EU-SILC 2009**

	Total		First wave addresses		Follow-up addresses	
	N	%	N	%	N	%
<b>Used Addresses</b>	8.383	100,0	3.630	100,0	4.753	100,0
Addresses existent	8.177	97,5	3.425	94,4	4.752	100,0
Addresses not existent	206	2,5	205	5,6	1	0,0
<b>Gross Sample</b>	8.177	101,0	3.425	100,5	4.752	101,3
Addresses successfully contacted	8.098	100,0	3.407	100,0	4.691	100,0
Addresses not successfully contacted	79	1,0	18	0,5	61	1,3
<b>Successfully contacted addresses</b>	8.098	136,1	3.407	167,7	4.691	119,7
Household questionnaire completed	5.949	100,0	2.031	100,0	3.918	100,0
Refusal to co-operate	1.315	22,1	914	45,0	401	10,2
Entire household entirely away for the duration of fieldwork	576	9,7	321	15,8	255	6,5
Household unable to respond	173	2,9	121	6,0	52	1,3
Other reasons	85	1,4	20	1,0	65	1,7
<b>Successful household questionnaire</b>	5.949	101,2	2.031	100,7	3.918	101,5
Interview accepted for the database	5.878	100,0	2.016	100,0	3.862	100,0
Interview rejected	71	1,2	15	0,7	56	1,5

Source: Statistics Austria, EU-SILC 2009

### 2.1.5. Sample selection schemes

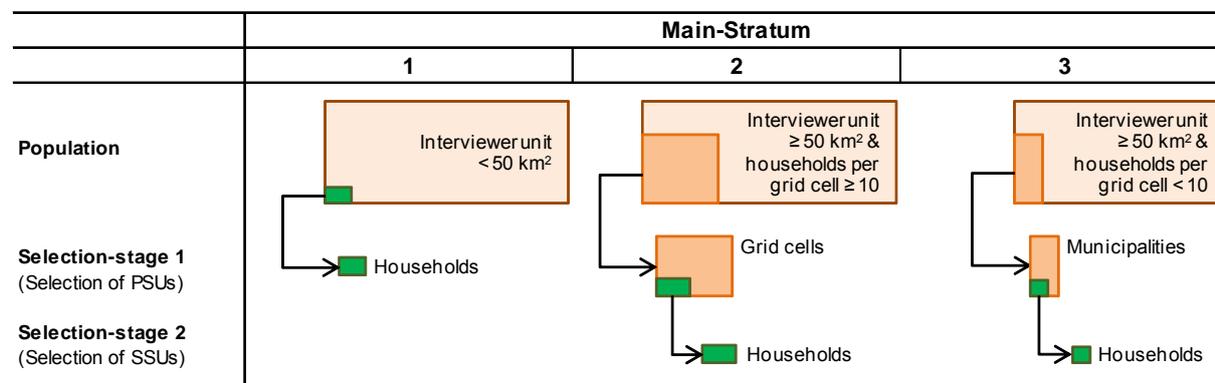
In EU-SILC 2009 a stratified, two-stage probability sample without replacement was used for the selection of the first wave sample. For each of the three main strata a distinct sampling design was applied. In the first main-stratum a single-stage stratified sampling was used, in the main-strata 2 and

<sup>5</sup> Estimated value based on the quantity of eligible households in the first wave sample of EU-SILC 2008.

3 a two-stage was conducted. In the main strata 2 and 3 the PSUs were selected with probability proportional to size.

Figure 1 shows the different sample selection schemes according to the three main strata.

**Figure 1: Sample selection scheme EU-SILC 2009**



In the first main-stratum 1,490 households were selected with stratified sampling with proportional allocation for most strata and disproportional allocation for some strata. As mentioned in chapter 2.1.3 households with higher probability to be at-risk-of-poverty were selected with a probability 1.225 times higher than the sampling fraction resulting from a proportional allocation in a specific federal state. For migrant households (including those with a higher at-risk-of-poverty) the selection probability was determined two times higher. Households not belonging to one of these groups were selected with a probability equal to the sampling fraction stemming from proportional allocation in a specific federal state.

Main-stratum 2 employed a two-stage stratified sampling design with proportional allocation in each interviewer unit. The population of this main-stratum consists of households in interviewer units with an inhabited area of at least 50 km<sup>2</sup> and ten or more households in each grid cell. In the first stage 635 grid cells were selected with a probability proportional to the number of households belonging to the population in the grid cell. In the second stage three households were selected in each grid cell. For each interviewer unit, this procedure is self weighting. The two-stage sampling design here facilitates a constant overall selection probability in each interviewer unit. This selection probability is the product of the selection probability (sampling fraction) of the primary selection unit (PSU) and the secondary selection unit (SSU). Finally 1,905 households were drawn in main stratum 2.

The sampling design of main-stratum 3 is similar to the one used in main-stratum 2, only this time the PSUs are municipalities and not grid cells. The population of this main-stratum consists of households in interviewer units with an inhabited are of at least 50 km<sup>2</sup> and less than ten households in each grid cell. The sample was selected with federal states as strata. In the first selection-stage 83 households were drawn with a probability proportional to the number of households in each municipality. In the second stage three households were drawn in each selected municipality, resulting in 249 selected households.

### 2.1.6. Sample distribution over time

The complete fieldwork of EU-SILC 2009 was done exclusively by the Statistics Austria. The fieldwork for the operation 2009 started in April and ended in October.

**Table 4: Sample distribution of EU-SILC 2009 during fieldwork**

	Total			First wave Interview			Follow-up interview s		
	Interview ed	in %	cum. %	Interview ed	in %	cum. %	Interview ed	in %	cum. %
<b>Total</b>	5.878	100,0	100,0	2.016	100,0	100,0	3.862	100,0	100,0
April	574	9,8	9,8	351	17,4	17,4	223	5,8	5,8
May	1.735	29,5	39,3	895	44,4	61,8	840	21,8	27,5
June	1.303	22,2	61,4	507	25,1	87,0	796	20,6	48,1
July	1.226	20,9	82,3	189	9,4	96,3	1.037	26,9	75,0
August	572	9,7	92,0	20	1,0	97,3	552	14,3	89,3
September	393	6,7	98,7	36	1,8	99,1	357	9,2	98,5
October	75	1,3	100,0	18	0,9	100,0	57	1,5	100,0

Source: Statistics Austria, EU-SILC 2009

### 2.1.7. Renewal of the sample: rotational groups

2009 was the sixth 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 (R2, 2006). The following table gives an overview on the performance of each rotational group in EU-SILC 2009. The response rates are calculated as a percentage of the accepted household interviews of successfully contacted addresses.

**Table 5: Rotational groups (with split households) 2009**

Rotational groups	Total	R2	R3	R4	R1
First wave		2006	2007	2008	2009
Sample EU-SILC 2009	8.383	1.320	1.520	1.913	3.630
Successfully contacted addresses	8.098	1.304	1.502	1.885	3.407
Accepted household interview s	5.878	1.153	1.257	1.452	2.016
Response rate (%)	72,6	87,3	82,7	75,9	59,2

Source: Statistics Austria, EU-SILC 2009

Rotational groups R2, R3 and R4 contained overall 147 split households. These households provided 69 household interviews. Table 6 shows the composition of the rotational groups by year without split households

**Table 6: Rotational groups (without split households) 2009**

Rotational groups	Total	R2	R3	R4	R1
First wave		2006	2007	2008	2009
Sample EU-SILC 2009	8.215	1.270	1.461	1.854	3.630
Successfully contacted addresses	7.972	1.272	1.453	1.840	3.407
Accepted household interview s	5.809	1.130	1.231	1.432	2.016
Response rate (%)	72,9	89,0	84,3	77,2	59,2

Source: Statistics Austria, EU-SILC 2009

### 2.1.8. Weighting

This chapter describes the procedure to calculate the cross-sectional weights of the Austrian sample of EU-SILC 2009. 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 (2009 operation).

2009 was the sixth 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 2009 and three longitudinal samples which were traced from the samples introduced in 2006, 2007 and 2008. 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 inclusion probability of the selection unit in the first wave sample of EU-SILC 2009. 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.

As in previous years, sampling elements were households. To obtain selection probabilities in the first main stratum (see chapter 2.1.5), the number of selected households per stratum was divided by the number of eligible households. Since the sample design incorporates oversampling for some households with certain geographic and socioeconomic characteristics, these households had higher selection probabilities. In the main-strata 2 and 3 the selection probability is the product of the sampling fraction of the PSU and the sampling fraction of the SSU. The inverses of these probabilities finally provided the design weights for the first wave sample, whereas households with enlarged selection probability received a smaller design weight. 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  $K=159$  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 2008.

*Sample selected in 2009 (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.

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

The final model was obtained by using a stepwise optimisation 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  $\chi^2=80.82$ ,  $df=12$ ; final model maxed-rescaled  $R^2=0.0314$ ).

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 household refusing to take part in the questionnaire can be compensated.

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

*Non-response adjustment between 2008 and 2009 (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 attriters 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 2009 (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 (R2/06; R3/07; R4/08), 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 2007 first wave sample this referred to individuals who did not respond in 2006 but re-entered the sample in 2009. 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 2007 or in 2008. 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 attriters 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 2009. Thus the longitudinal non-response adjustment could be done on the basis of respondents who were interviewed in 2008 and were enumerated again in 2009.

The model for response probabilities between 2008 and 2009 in Rotation 4/08 produced 49 coefficients which differed significantly<sup>6</sup> from zero (total  $\chi^2=380.32$ ;  $df=49$ ; model maxed-rescaled  $R^2=0.1332$ ). The models for the non-response rates in R3/07 (21 coefficients; total  $\chi^2= 307.29$ ;  $df=21$ ; model maxed-rescaled  $R^2= 0.1435$ ) and R2/06 (45 coefficients; total  $\chi^2= 589.6253$ ;  $df=45$ ; model maxed-rescaled  $R^2=0.3393$ ) yielded similar results.

### *Trimming*

After response probabilities were estimated, the attrition weights were trimmed such that the condition stated in EU-SILC Doc 65 (2008 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:

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

### *Base weight*

The base weights  $RB060_p^{(t)}$  for all further calculation were produced by multiplying the design weights with the inverse of the estimated response probability (see formula (3)). The non-response adjusted weights  $b_h$  (see formula (4)) 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 between 2005 and 2008 receive 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:

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

---

<sup>6</sup>  $\alpha = 10\%$

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 (2009 operation) all the four rotational subsamples were adjusted to external marginal distributions in 2009. Like in EU-SILC 2008 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 22,000 randomly selected households. As a reference data base the average of the four quarters of the Microcensus 2009 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.<sup>7</sup>

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

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 2006, 2007 and 2008 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 2006, 2007 or 2008. 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.<sup>8</sup> In the case of four subsamples the inflation factors were 4/1, 4/2 and 4/3 respectively if the new entrants

<sup>7</sup> People who received benefits for more than one month during the income reference period were counted.

<sup>8</sup> Currently the population status of individuals can only be determined with a certain propensity for all household members. Register data from the original sample is used to determine whether a household contains individuals who entered the population after the previous sample had been drawn, i.e. who were not in the sampling frame in  $t-1$ . Since no unique matching on the individual level is possible, the weights of all members living in such households are inflated by the same factor, proportional to the share of new entrants in the household.

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 sample 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 2009

## **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**

Standard errors in EU-SILC are approximated by the same procedures that were applied in the previous years. This may not capture the full complexity of the variance of estimates.

The estimated design effect upon which the EU-SILC 2009 sample was designed amounted to 1.33 (calculated upon EU-SILC 2007). The estimation of the design effect of the analysed data of EU-SILC 2009 also yielded a value of 1.33. Dividing the actual sample of 5,878 households by the design effect of 1.33 yields an effective sample size of approximately 4,420 households in EU-SILC 2009. Since the target response rates could not be fully met, the effective sample size is slightly lower than demanded by the regulation (4,500). Nonetheless the effective sample size remains clearly within the margin of tolerance with respect to the uncertainty involved in the estimation of the design effect.<sup>9</sup>

For the estimation of standard errors for the cross-sectional indicators Statistics Austria applied mostly the linearization method. The linearization method is based on the idea of finding a linear representation for the indicator under consideration. On the basis of this linearization a confidence interval is computed.<sup>10</sup> A drawback of the linearization technique lies in the variance estimation of the at-risk-of-poverty indicator for small groups where only the values of a few equivalised household incomes are near the median of all equivalised household incomes. For example, the linearization needed for the variance estimation of the at-risk-of-poverty rate before social transfers (including old-age and survivors' benefits) for the group of women aged 65 and over leads to a massive overestimation with confidence intervals of extreme width. An alternative for the estimation of the variance lies in resampling procedures, like the bootstrap. This method produces a large number (e.g. 5,000) of repeated samples with replacement. The standard error of an indicator can then be estimated by the standard deviation of the estimated values of the indicator across the resamples. The bootstrap method produced plausible confidence intervals for the at-risk-of-poverty rate before social transfers (including old-age and survivors' benefits) for the group of women aged 65 and other groups where the linearization method did not produce plausible estimates. However, the cross-sectional weights of each resample had to be recalibrated to the marginal distributions used for calibrating the original sample. This led to a considerably long computing time (about 10 seconds for each resample, or about 14 hours for a bootstrap with 5,000 samples), which is a drawback of the bootstrap method.

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<sup>9</sup> "It can be considered that deviations of less than 10-15% from regulation targets are in the margin of tolerance implied by the degree of accuracy in the estimation of the design effect by EUROSTAT." Report from the Commission to the Council and to the European Parliament on the implementation of Regulation (EC) No 1177/2003 of the European Parliament and of the Council of 16 June 2003, page 6.

<sup>10</sup> For a more detailed description please refer to the Austrian intermediate quality report of EU-SILC 2005.

## **2.2.2. Variance estimation**

The standard errors and boundaries of the corresponding confidence intervals belonging to the cross-sectional indicators of EU-SILC 2009 can be found in Table 30 of the annex. Since most of the standard errors are estimated with the linearization technique, the few cases where the bootstrap had to be applied are marked with an asterisk.

## **2.3. Non-sampling Errors**

### **2.3.1. Sampling frame and coverage errors**

The sampling frame of the first wave households of EU-SILC 2009 was, as for the previous years, the ZMR. In 2009, 3,644 were selected at the beginning of the fieldwork to constitute the rotational group 1, but 14 addresses were excluded from the gross sample<sup>11</sup> so that the gross sample was 3,630 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 2009 was the 31<sup>st</sup> of September 2008. Households of the previous waves of EU-SILC (2005-2008) were excluded from the sample 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 the 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 the basis of the EU-SILC regulations and EUROSTAT guidelines. The questionnaires for CATI and CAPI mode are identically implemented.

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<sup>11</sup> These 14 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.

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 2009. For CATI interviews, native speaking interviewers conducted the interviews in these languages. For CAPI 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, 162 CAPI interviewers and 45 CATI interviewers conducted the interviews for EU-SILC 2009. For EU-SILC 2009 interviewers which have already worked for EU-SILC 2008 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 2009. Additionally, the interviewers received trainings materials and questionnaires on paper as well as a feedback of their last years' work.

52 new interviewers were trained before the fieldwork and received additional training at the beginning of the fieldwork. 38 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.

**Figure 2: 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. Nevertheless, for the Austrian EU-SILC cross-sectional data 2009 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 2009 5.878 household interviews were accepted for the database. Thereof, 2,016 interviews were from first wave households (rotational group 1). On personal level the achieved sample contains 11,062 persons aged at least 16 years. Of these persons 10,944 personal interviews could be conducted, 118 personal interviews were missing and had to be fully imputed.

**Table 7: Achieved sample size and accepted interviews 2009**

Rotational groups		Total	R2	R3	R4	R1
First wave			2006	2007	2008	2009
Accepted household interview s	N	5.878	1.153	1.257	1.452	2.016
DB135 = 1	%	100,0	19,6	21,4	24,7	34,3
Number of persons aged 16 and older	N	11.062	2.209	2.399	2.687	3.767
RB245 = 1 + 2 + 3	%	100,0	20,0	21,7	24,3	34,1
Accepted personal interview s	N	10.944	2.185	2.366	2.639	3.754
RB250 = 11 + 12 + 13	%	100,0	20,0	21,6	24,1	34,3
Fully imputed personal interview s	N	118	24	33	48	13
RB250 = 14	%	100,0	20,3	28,0	40,7	11,0

Source: Statistics Austria, EU-SILC 2009

### 2.3.3.2. Unit non-response

**Table 8: Household and individual non-response rate**

Rotational group	Total	R2	R3	R4	R1
First wave		2006	2007	2008	2009
<b>Household non-response</b>					
Total sample (DB120 = ALL)	8.383	1.320	1.520	1.913	3.630
Address not existant (DB120 = 23)	205	0	0	0	205
Addresses successfully contacted (DB120 = 11)	8.098	1.304	1.502	1.885	3.407
Ra - Address localisation rate of eligible addresses in %	99,02	98,79	98,82	98,54	99,47
Interview in database (DB135=1)	5.878	1.153	1.257	1.452	2.016
Rh - Household response rate for localised addresses in %	72,59	88,42	83,69	77,03	59,17
NRh - Household non-response rate in %	28,12	12,65	17,30	24,10	41,14
<b>Individual non-response</b>					
Eligible persons (RB245 = 1+2+3)	11062	2209	2399	2687	3767
Personal interview s (RB250 = 11+12+13)	10944	2185	2366	2639	3754
Rp - Complete personal interview s in %	98,93	98,91	98,62	98,21	99,65
NRp - Overall individual non-response rate	28,89	13,6	18,44	25,45	41,34

Source: Statistics Austria, EU-SILC 2009

### 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 9: Distribution of DB110**

Rotational group	Total		R2		R3		R4		R1	
			2006		2007		2008		2009	
First wave	N	%	N	%	N	%	N	%	N	%
Total	8.383	100,0	1.320	100,0	1.520	100,0	1.913	100,0	3.630	100,0
Total households in scope (DB110 = 1+2+7+11)	4.571	54,5	1.268	96,1	1.486	97,8	1.847	96,5	3.630	100,0
Household out of scope (DB110 = 3-6)	55	0,7	19	1,4	15	1,0	21	1,1	-	-
Total household out of scope (DB110 = 3-6)	55	100,0	19	100,0	15	100,0	21	100,0	-	-
Household moved to a collective institution (DB110 = 3)	11	20,0	5	26,3	3	20,0	3	14,3	-	-
Household moved abroad (DB110 = 4)	13	23,6	2	10,5	2	13,3	9	42,9	-	-
All household members died (DB110 = 5)	28	50,9	12	63,2	8	53,3	8	38,1	-	-
No sample person in household and more than one reason of 3,4 and 5 applies (DB110 = 6)	3	5,5	0	0,0	2	13,3	1	4,8	-	-

Source: Statistics Austria, EU-SILC 2009

**Table 10: Distribution of DB120**

Rotational group	Total		R2		R3		R4		R1	
			2006		2007		2008		2009	
First wave	N	%	N	%	N	%	N	%	N	%
Total	8.383	100,0	1.320	100,0	1.520	100,0	1.913	100,0	3.630	100,0
Address contacted (DB120 = 11)	8.098	96,6	1.304	98,8	1.502	98,8	1.885	98,5	3.407	93,9
Address non-contacted (DB120 = 21 - 23)	285	3,4	16	1,2	18	1,2	28	1,5	223	6,1
Total Address non-contacted	285	100,0	16	100,0	18	100,0	28	100,0	223	100,0
Address cannot be located (DB120 = 21)	77	27,0	16	100,0	17	94,4	28	100,0	16	7,2
Address unable to access (DB120 = 22)	3	1,1	0	0,0	1	5,6	0	0,0	2	0,9
Address does not exist or is a non-residential address or is unoccupied or not principal residence (DB120 = 23)	205	71,9	0	0,0	0	0,0	0	0,0	205	91,9

Source: Statistics Austria, EU-SILC 2009

**Table 11: Distribution of DB130**

Rotational group	Total		R2		R3		R4		R1	
			2006		2007		2008		2009	
First wave	N	%	N	%	N	%	N	%	N	%
Total	8.098	100,0	1.304	100,0	1.502	100,0	1.885	100,0	3.407	100,0
Household questionnaire completed (DB130 = 11)	5.878	72,6	1.153	88,4	1.257	83,7	1.452	77,0	2.016	59,2
Interview not completed (DB130 = 21 - 24)	2.220	27,4	151	11,6	245	16,3	433	23,0	1.391	40,8
Total interview not completed (DB130 = 21 - 24)	2.220	100,0	151	100,0	245	100,0	433	100,0	1.391	100,0
Refusal to co-operate (DB130 = 21)	1.395	62,8	76	50,3	144	58,8	242	55,9	933	67,1
Entirely household temporarily away (DB130 = 22)	576	25,9	41	27,2	74	30,2	140	32,3	321	23,1
Household unable to respond (DB130 = 23)	173	7,8	13	8,6	11	4,5	28	6,5	121	8,7
Other reasons (DB130 = 24)	76	3,4	21	13,9	16	6,5	23	5,3	16	1,2

Source: Statistics Austria, EU-SILC 2009

**Table 12: Distribution of DB135**

Rotational group	Total		R2		R3		R4		R1	
			2006		2007		2008		2009	
First wave	N	%	N	%	N	%	N	%	N	%
Household questionnaire completed	5.878	100,0	1.153	100,0	1.257	100,0	1.452	100,0	2.016	100,0
Interview accepted for the data base (DB135 = 1)	5.878	100,0	1.153	100,0	1.257	100,0	1.452	100,0	2.016	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 2009

In DB135 (Household interview acceptance) all interviews are coded as accepted (Table 12). 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 71 interviews (1.2%) were excluded due to quality problems. Table 3 gives the distribution of rejected interviews in EU-SILC 2009 with reference to the whole sample.

#### 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 13 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 13: Item non-response on household level**

	Households receiving income		Full information		Partial information		Missing value	
	N	%	N	%	N	%	N	%
HY010 Total household gross income	5.876	100,0	2.256	38,4	3.273	55,7	347	5,9
HY020 Total disposable household income	5.876	100,0	4.141	70,5	1.678	28,6	57	1,0
HY022 Total disposable household income before social transfers other than old-age and survivor's benefits	5.811	98,9	4.145	71,3	1.583	27,2	83	1,4
HY023 Total disposable household income including old-age and survivor's benefits	5.483	93,3	4.024	73,4	1.280	23,3	179	3,3
HY040N Income from rental of a property or land	315	5,4	301	95,6	4	1,3	10	3,2
HY050N Family/child related allowances	1.989	33,8	1.975	99,3	14	0,7	0	0,0
HY060N Social exclusion not elsewhere classified	274	4,7	262	95,6	9	3,3	3	1,1
HY070N Housing allowances	272	4,6	260	95,6	11	4,0	1	0,4
HY080N Regular inter-household cash transfer received	498	8,5	477	95,8	10	2,0	11	2,2
HY090N Interest, profits from capital investment	4.194	71,4	3.477	82,9	239	5,7	478	11,4
HY110N Income received by people aged under 16	98	1,7	93	94,9	0	0,0	5	5,1
HY130N Regular inter-household cash transfer paid	615	10,5	594	96,6	13	2,1	8	1,3
HY145N Repayments/receipts for tax adjustments	3.024	51,4	2.968	98,1	20	0,7	36	1,2
HY140G Tax on income and social Contributions	5.807	98,8	2.377	40,9	3.329	57,3	101	1,7

Source: Statistics Austria, EU-SILC 2009

**Table 14: 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	5.993	54,2	4.930	82,3	716	11,9	347	5,8
py020N Employee non-cash income	988	8,9	507	51,3	14	1,4	467	47,3
py035N Contributions to individual private pension plans	2.988	27,0	2.742	91,8	0	0,0	246	8,2
py050N Cash benefits or losses from self-employment	1.183	10,7	1.046	88,4	16	1,4	121	10,2
py070N Value of goods produced by own consumption	355	3,2	330	93,0	0	0,0	25	7,0
py080N Pension from individual private plans	43	0,4	39	90,7	1	2,3	3	7,0
py090N Unemployment benefits	745	6,7	687	92,2	21	2,8	37	5,0
py100N Old-age benefits	2.944	26,6	2.608	88,6	189	6,4	147	5,0
py110N Survivor's benefits	128	1,2	121	94,5	0	0,0	7	5,5
py120N Sickness benefits	345	3,1	294	85,2	7	2,0	44	12,8
py130N Disability benefits	286	2,6	263	92,0	7	2,4	16	5,6
py140N Education-related allowances	236	2,1	222	94,1	5	2,1	9	3,8
PY200G Gross monthly earnings for employees	5.290	47,8	4.099	77,5	1.191	22,5	0	0,0

Source: Statistics Austria, EU-SILC 2009

### 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 1.

## 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 15: Data status (RB250) by rotational groups of household members aged 16+**

Rotational groups	Total		R2		R3		R4		R1	
	N	%	N	%	N	%	N	%	N	%
First wave			2006		2007		2008		2009	
Information completed only from interview (11)	10.944	98,9	2.185	98,9	2.366	98,6	2.639	98,2	3.754	99,7
Information completed from full-record imputation (14)	118	1,1	24	1,1	33	1,4	48	1,8	13	0,3
Total	11.062	100,0	2.209	100,0	2.399	100,0	2.687	100,0	3.767	100,0

Source: Statistics Austria, EU-SILC 2009

In EU-SILC 2009 10,944 personal questionnaires were collected, thereof 3,122 for the first wave sample. Overall, 2,473 proxy interviews were collected (22.6%), 733 for the first wave (20.6%). For the follow-up wave, 3,561 CATI interviews were collected (64.9% of all personally conducted interviews, 49.5% of all follow-up interviews) and 1,929 CAPI interviews (35.1% of all personally conducted interviews, 26.8% of all follow-up interviews). Proxy interviews amount to 2,473 (22.6%), 773 for the first wave (20.6%) and 1,700 for the follow-up wave (23.6%).

**Table 16: Type of interview (RB260) by rotational groups**

Rotational groups	Total		R2		R3		R4		R1	
	N	%	N	%	N	%	N	%	N	%
First wave			2006		2007		2008		2009	
CAPI (2)	4.910	44,9	487	22,3	642	27,1	800	30,3	2.981	79,4
CATI (3)	3.561	32,5	1.131	51,8	1.160	49,0	1.270	48,1	0	0,0
Proxy (5)	2.473	22,6	567	25,9	564	23,8	569	21,6	773	20,6
Total	10.944	100,0	2.185	100,0	2.366	100,0	2.639	100,0	3.754	100,0

Source: Statistics Austria, EU-SILC 2009

### Proxy interviews

Overall, 22.6% 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. This aim was not achieved but the rate was significantly lower than in the last years' survey (27.2%).

Table 17 shows the distribution of proxy interviews of follow-up interviews across mode. Personal CATI interviews have a higher share of proxy interviews (25.5%) than CAPI interviews (20.0%).

**Table 17: Proportion of proxy interviews in follow-up interviews by mode**

	Total		CAPI		CATI	
	N	%	N	%	N	%
Personal interview	5.490	76,4	1.929	80,0	3.561	74,5
Proxy interview	1.700	23,6	482	20,0	1.218	25,5
Total	7.190	100,0	2.411	100,0	4.779	100,0

Source: Statistics Austria, EU-SILC 2009

The lower proxy-rate in EU-SILC 2009 was achieved by better instructions of the interviewers in which cases proxy interviews are allowed and encouraging interviewer to make appointments with respondents in paid employment.

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 18).

**Table 18: 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	%
<b>Total</b>	<b>773</b>	<b>100,0</b>	<b>3.767</b>	<b>100,0</b>	<b>482</b>	<b>100,0</b>	<b>2.430</b>	<b>100,0</b>	<b>1.218</b>	<b>100,0</b>	<b>4.864</b>	<b>100,0</b>	<b>2.473</b>	<b>100,0</b>	<b>11.061</b>	<b>100,0</b>
Working	462	59,8	2.081	55,2	280	58,1	1.165	47,9	679	55,7	2.800	57,6	1.421	57,5	6.046	54,7
Unemployment	21	2,7	151	4,0	19	3,9	135	5,6	35	2,9	159	3,3	75	3,0	445	4,0
Retired	136	17,6	1.067	28,3	92	19,1	818	33,7	277	22,7	1.297	26,7	505	20,4	3.182	28,8
Other inactive	154	19,9	468	12,4	91	18,9	312	12,8	227	18,6	608	12,5	472	19,1	1.388	12,5

Source: Statistics Austria, EU-SILC 2009

## 2.5. Interview duration

Whilst in EU-SILC 2009 the mean interview duration of personal questionnaires is marginally longer than in EU-SILC 2008 (16.1 compared to 15.7 minutes), the mean duration of the household interviews is significantly shorter than in EU-SILC 2008 (14.8 compared to 17.7 minutes). A possible

explanation are the module questions in EU-SILC 2008 (Over-indebtedness and financial exclusion). Follow-up interviews are considerably shorter than first wave interviews, differences between rotational groups of the follow-up interviews are minor.

**Table 19: Mean interview duration by rotational group in minutes**

Rotational group	Total	R2	R3	R4	R1
First wave		2006	2007	2008	2009
Personal questionnaire	16,1	15,3	15,6	15,8	17,2
Household questionnaire	14,8	13,5	14,3	14,1	16,4
Total interview duration per household	44,9	42,4	43,8	42,9	48,4

Source: Statistics Austria, EU-SILC 2009

Table 20 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 about two minutes shorter, and the total interview duration for the household is about three minutes shorter than their CAPI counterparts.

**Table 20: Mean interview duration for follow-up waves by interview mode in minutes**

	Total	CAPI	CATI
Personal questionnaire	15,6	16,3	15,2
Household questionnaire	14,0	15,5	13,2
Total interview duration per household	43,0	44,9	42,1

Source: Statistics Austria, EU-SILC 2009

## 2.6. Imputation procedure

The chapter describes the imputation procedures applied in EU-SILC 2009. 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 2009 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 status<sup>12</sup>

In contrast to the EU-SILC 2008 operation, no information was collected from persons whose personal questionnaire was missing to use this additional information for the imputation of missing personal interviews.<sup>13</sup> Accordingly, the imputation strategy allowed for two possibilities: either the person has been interviewed in the previous survey EU-SILC 2008 or the person was interviewed for the first time in EU-SILC 2009.

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 21).

**Table 21: 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	

118 missing personal interviews were imputed in EU-SILC 2009. For 58 persons information from the last years' interview could be used and for 60 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.

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

<sup>12</sup> 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.

<sup>13</sup> The questionnaire to gather additional from persons with missing personal interviews was abandoned since fewer interviews were missing in EU-SILC 2009

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.

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.

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 Su<sup>14</sup>. 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 ensure that a value can be estimated in case of missing values in predictor variables in the most sophisticated models.

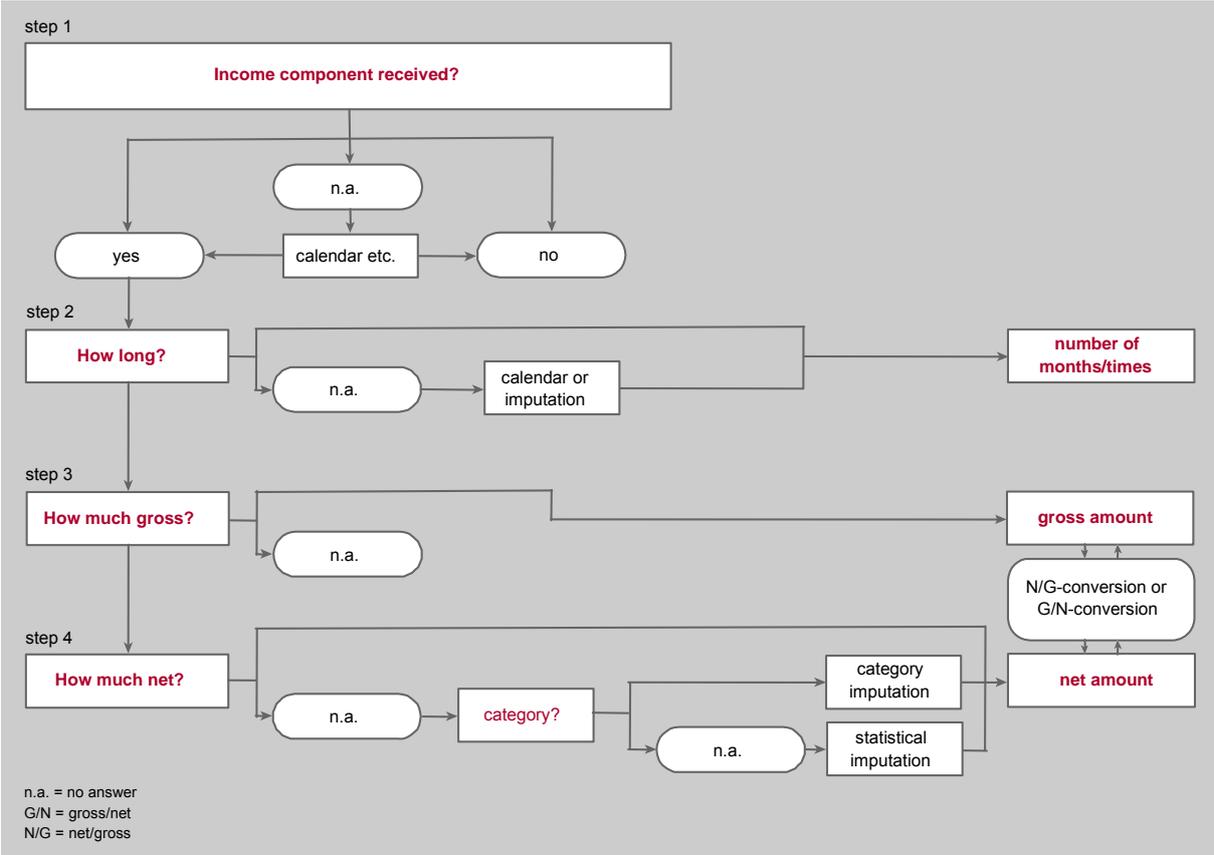
The predictors are selected according to their predictive capability (variation of the  $R^2$ ) and / or according to theoretical assumptions about the response variable. In cases where no regression model can be specified the missing information is estimated by using the group means or the group median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

The following figure describes the procedure for missing information for income questions.

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<sup>14</sup> 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

**Figure 3: Editing procedure for income data**



### **3. Comparability**

This chapter deals with the differences between EUROSTAT definitions and the definitions applied in EU-SILC 2009 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 2009. 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 (2009 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 2008.

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

No difference to the common definition. The reference period was 2008, 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 9<sup>th</sup> April to 15<sup>th</sup> October. The gap between the income reference period and the interview date exceeded the required eight months by 6 weeks.

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

The data collection period lasted 27 weeks. The final files were transmitted from the fieldwork organisation on the 30<sup>th</sup> October.

(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 2009 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 (2009 operation)).

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

The following lists all variables for which we think an explanation is necessary to understand the application of EUROSTAT's definitions in EU-SILC 2009 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 (2009 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 (2009 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 was 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 was 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 2009 with other data sources. The first section describes these other data sources, the second section presents the comparisons. As for EU-SILC 2009 the data sources used for the validation were: (a) the preceding EU-SILC survey (EU-SILC 2008) (b) Wage tax statistics 2008 (c) National accounts 2008 (d) Microcensus 2009.

### 4.1. Description of data sources

#### (a) EU-SILC 2008

EU-SILC was the fifth regular wave of EU-SILC in Austria with a rotational design. In 2008, the fieldwork was done exclusively by the fieldwork organisation of Statistics Austria. Compared to EU-SILC 2007, the share of CATI interviews was significantly expanded.

The following comparison focuses on the income target variables in EU-SILC 2009 and EU-SILC 2008. The table presents the median, the number of receiving households/persons and the sum of each income component.

#### (b) Wage tax statistics 2008

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 younger<sup>15</sup>;
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 2008

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.

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<sup>15</sup> "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.

2. The estimated income value of persons not living in private households. The proportion of persons not living in private households is estimated 1.17% (97,700 of 8,331,900 persons in 2007).
3. The estimated income value of transfers from reserves. This value is estimated on the basis of the household budget survey (HBS) 2004/05 as 1.3% 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 2007 5,363.5 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 2009

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 2008 – income target variables

The following tables compare the income components of EU-SILC 2008 and 2009. The median total household income and the total disposable households income of EU-SILC 2009 is by about 4% higher than in 2008. Most of the other income components feature a higher median in EU-SILC 2009, apart from housing allowances (HY070), regular inter-household transfers (HY080), interests (HY090) and interest repayments (HY100)<sup>16</sup>.

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<sup>16</sup> Please note that the latter variable is not included in the total household income.

**Table 22: Income target variables on household level: EU-SILC 2008 and EU-SILC 2009**

	EU-SILC 2008			EU-SILC 2009		
	Median (in €)	House- holds	Sum (in Mio €)	Median (in €)	House- holds	Sum (in Mio €)
hy010 Total household gross income*	37.873	3.566.159	166.889	39.750	3.597.658	172.631
hy020 Total disposable household income*	28.599	3.566.159	121.206	29.864	3.597.658	126.359
hy030n Imputed rents	3.689	2.463.569	9.691	4.453	2.480.844	11.663
hy040n Income from rental of property or land	3.600	182.738	1.919	4.000	182.280	1.487
hy050n Family/children related allow ances	4.298	1.172.058	5.785	4.675	1.158.367	6.325
hy060n Social exclusion not elsew here classified	200	164.670	257	200	178.233	232
hy070n Housing allow ances	1.500	192.809	313	1.440	171.519	271
hy080n Regular inter-household cash transfer received	3.008	284.430	1.208	2.880	280.893	1.138
hy090n Interest, dividends, Profit	200	2.617.115	1.839	170	2.533.731	1.658
hy100n Interest repayments on mortgage	1.094	966.234	1.751	1.000	904.415	1.534
hy110n Income received from people aged under 16	1.600	65.982	216	1.747	56.094	199
hy130n Regular inter-household cash transfer paid	2.880	364.420	1.409	2.940	386.640	1.446
hy145n Repayments/receipts for tax adjustment	-300	1.719.309	-545	-300	1.839.399	-668
hy140g Tax on income and social contributions	8.661	3.501.681	44.274	8.911	3.549.164	44.781

Source: Statistics Austria, EU-SILC 2008 and EU-SILC 2009

Table 23 compares the income components on personal level of EU-SILC 2008 and 2009. The five main income components (employers income, self-employed income, unemployment benefits, old-age benefits and disability benefits) – except unemployment income - feature only minor increases of the median income and the number of recipients but overall a considerable increase of the recorded sum. The median of the unemployment benefits was considerably lower in EU-SILC 2009 and also the number of recipients was slightly lower than in EU-SILC 2008, resulting in a lower sum of unemployment benefits – in fact, the annual unemployment rate in 2008 (the income reference year of EU-SILC 2009) was lower than in 2007.

**Table 23: Income target variables on personal level: EU-SILC 2008 and EU-SILC 2009**

	EU-SILC 2008			EU-SILC 2009		
	Median (in €)	Persons	Sum (in Mio €)	Median (in €)	Persons	Sum (in Mio €)
py010n Employee cash or near cash income*	16.800	3.693.434	67.496	16.946	3.789.285	69.967
py020n Non-cash employee income*	660	560.012	614	630	629.947	774
py035n Contribution to individual pension plans	800	1.625.091	1.790	730	1.816.464	2.001
py050n Cash benefit or losses from self-employment	9.600	713.574	9.813	9.688	724.712	11.140
py070n Value of goods produced for own consumption	200	193.087	108	300	201.486	151
py080n Pension from individual private plans	5.953	31.509	254	3.360	25.410	136
py090n Unemployment benefits	3.000	570.264	2.452	2.900	559.536	2.302
py100n Old-age benefits	14.924	1.711.659	27.364	15.395	1.730.944	28.685
py110n Survivor' benefits	6.729	68.760	484	6.212	74.000	532
py120n Sickness benefits	1.440	215.955	533	1.200	228.225	541
py130n Disability benefits	10.759	189.636	2.120	12.507	185.572	2.220
py140n Education-related benefits	900	133.439	273	960	155.241	302
py200g Gross monthly earnings for employees	1.800	3.296.253	6.775	1.850	3.316.732	7.169

Source: Statistics Austria, EU-SILC 2008 and EU-SILC 2009

(b) Wage tax statistics 2008 – 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 under reporting 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 24: Comparison of gross annual income of employees 2008 – wage tax statistics 2008 and EU-SILC 2009 (employed for at least one month in 2008)**

	WTS (in Euro)			EU-SILC 2008 (in Euro)		
	Total	Male	Female	Total	Male	Female
10% ...	4.267	6.559	3.049	5.880	11.115	3.600
20% ...	10.098	16.107	6.910	11.838	18.096	8.167
25% ...	12.952	19.887	9.160	14.000	20.580	10.063
30% ...	15.679	22.740	11.236	16.576	22.647	11.717
40% ...	20.558	26.865	14.969	20.580	26.400	14.700
50% ...	25.047	30.618	18.375	24.000	30.100	18.000
60% ...	29.404	34.878	22.217	28.000	33.600	21.364
70% ...	34.489	40.565	26.641	33.125	39.200	24.850
75% ...	37.776	44.293	29.400	36.000	42.289	27.034
80% ...	41.892	49.125	32.687	40.000	46.607	30.800
90% ...	55.366	65.024	42.962	51.800	61.180	40.600
Mean	29.288	35.991	21.659	27.645	33.898	20.545
Persons	3.715.976	1.978.004	1.737.972	3.546.352	1.885.701	1.660.651

Source: Statistics Austria, EU-SILC 2009 and Wage Tax Statistics 2008

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 25. 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 on the top of the income distribution.

**Table 25: Comparison of gross annual income of employees 2008: wage tax statistics 2008 and EU-SILC 2009 (employed for the entire year)**

	WTS (in Euro)			EU-SILC 2008 (in Euro)		
	Total	Male	Female	Total	Male	Female
10% ...	11,187	19,726	7,700	11,448	17,734	8,347
20% ...	17,227	24,962	12,475	16,683	22,402	12,000
25% ...	19,635	26,715	14,297	18,200	24,069	13,580
30% ...	21,957	28,327	15,971	20,510	25,799	15,400
40% ...	25,809	31,487	18,963	23,800	29,320	18,000
50% ...	29,468	35,017	22,266	27,300	32,388	21,000
60% ...	33,486	39,443	25,788	30,800	36,008	23,800
70% ...	38,692	45,381	30,188	35,800	42,000	27,400
75% ...	42,072	49,356	32,871	39,200	45,200	30,231
80% ...	46,361	54,287	36,178	42,744	49,600	33,292
90% ...	60,224	70,840	46,615	55,100	63,600	42,747
Mean	34,567	42,425	25,642	31,197	37,502	23,623
Persons	2,890,294	1,536,956	1,353,338	2,943,258	1,606,178	1,337,080

Source: EU-SILC 2009, Wage Tax Statistics 2008

(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 10%.

**Table 26: Comparison between National accounts 2008 and EU-SILC 2009 (in Mio Euro)**

	Gross incomes of private households		Disposable income
	Total	Without property income	
Basic Value from national accounts	222.506	199.122	168.763
Deduction for non-profit organisations 1)	-	-	3.640
Deduction for persons not living in private households 2)	2.603	2.330	1.975
Deduction for value of goods self-consumption 3)	1.446	1.446	1.446
Deduction for imputed rents 4)	6.857	6.857	6.857
Estimate from national accounts	211.600	188.489	154.845
Estimate from EU-SILC 2009	172.450	168.413	126.223
Difference between NA and EU-SILC 2009	18,50	10,65	18,48

Source: Statistics Austria EU-SILC 2009 and national accounts 2008

- 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; 1.17% in 2008
- 3) estimate for 1.3% of the total consumption expenditures, HBS 2004/05
- 4) NA 2008

(d) Microcensus 2009 – Tenure status and rent-payments

The following presents a comparison of the tenure structure and the housing costs for tenured housing in 2009. The comparison shows strong similarities between the two data sets. As in the last year, the share of owner occupied housing is similar in both surveys, even though the share of owner-occupied houses is slightly larger and the share of owner-occupied apartments is slightly smaller in the Microcensus. The share of rented housing also shows high coherence, although the differences are somewhat larger compared to the last year. The same is the case for sub-tenancies and rent-free housing: the percentages are rather similar, but the differences are slightly larger than in the last year.

**Table 27: Comparison of tenure status – Microcensus 2009 and EU-SILC 2009**

	Microcensus 2009		EU-SILC 2009	
	Households	in %	Households	in %
Total	3.598.258	100,0	3.598.420	100,0
House owner	1.448.512	40,3	1.427.144	39,7
Owner of apartment	389.154	10,8	410.360	11,4
Tenure: community housing	278.981	7,8	324.218	9,0
Tenure: cooperative society	558.725	15,5	505.482	14,0
Tenure: other	621.439	17,3	582.542	16,2
Subtenancy	34.431	1,0	65.530	1,8
Rentfree house / apartment	267.016	7,4	283.146	7,9

Source: Statistics Austria, EU-SILC 2009 and Microcensus 2009.

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 slightly overestimated by about 5%, the median of the monthly housing costs are about 20 Euro higher than in the Microcensus. The overestimation is larger for community housing. In parallel, the share of community housing is overestimated in EU-SILC. 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 28: Comparison of rent payments and costs of services and charges by size of usable living area and number of inhabitants in the region – Microcensus 2009 and EU-SILC 2009**

		Microcensus				EU-SILC 2009			
		Total	Community housing	cooperative society	Other tenancies	Total	Community housing	cooperative society	Other tenancies
<b>Total</b>	Median (in €)	380	302	390	405	400	350	410	440
	Number	1.458.324	278.900	558.540	620.884	1.412.241	324.218	505.482	582.542
<b>Usable Living area</b>									
under 60 m2	Median (in €)	280	241	280	320	300	280	300	340
	Number	567.706	143.700	176.815	247.191	526.011	157.451	153.598	214.962
60 to 120 m2	Median (in €)	450	402	450	490	465	430	460	500
	Number	824.896	133.435	371.220	320.241	820.203	162.761	340.133	317.310
120 and more m2	Median (in €)	683	615	700	670	800	559	795	853
	Number	65.722	1.765	10.505	53.452	66.027	4.006	11.751	50.269
<b>Inhabitants in the Region</b>									
Vienna	Median (in €)	366	311	426	380	380	334	450	400
	Number	647.660	193.899	162.661	291.099	627.553	209.255	155.250	263.048
> 100,000	Median (in €)	400	320	363	481	420	400	385	478
	Number	199.255	17.723	92.683	88.849	210.585	31.603	93.868	85.114
> 10,000	Median (in €)	380	290	370	448	400	330	400	460
	Number	261.000	31.446	142.713	86.840	265.513	47.890	128.418	89.205
<= 10,000	Median (in €)	385	273	385	412	425	363	420	436
	Number	350.411	35.832	160.483	154.096	306.314	34.235	126.904	145.175

Source: Statistics Austria EU-SILC 2009 and Microcensus 2009.

## 5. Annex

**Table 29: Strata of the first wave sample EU-SILC 2009**

Stratum Number	Main-Stratum	Sampling Stages	Stratum ID	Number of selected addresses
1	1	single-stage	10010	33
2	1	single-stage	10011	19
3	1	single-stage	10012	5
4	1	single-stage	20010	12
5	1	single-stage	20011	14
6	1	single-stage	20012	3
7	1	single-stage	30010	16
8	1	single-stage	30011	11
9	1	single-stage	30012	2
10	1	single-stage	40010	52
11	1	single-stage	40011	56
12	1	single-stage	40012	13
13	1	single-stage	50010	34
14	1	single-stage	50011	41
15	1	single-stage	50012	12
16	1	single-stage	60010	47
17	1	single-stage	60011	54
18	1	single-stage	60012	21
19	1	single-stage	70010	27
20	1	single-stage	70011	29
21	1	single-stage	70012	9
22	1	single-stage	80010	53
23	1	single-stage	80011	48
24	1	single-stage	80012	13
25	1	single-stage	90010	315
26	1	single-stage	90011	399
27	1	single-stage	90012	148
28	2	two-stage	10820	9
29	2	two-stage	10920	12
30	2	two-stage	11020	9
31	2	two-stage	11120	12
32	2	two-stage	11220	12
33	2	two-stage	11320	12
34	2	two-stage	20120	9
35	2	two-stage	20220	11
36	2	two-stage	20320	12
37	2	two-stage	20420	8
38	2	two-stage	20520	9
39	2	two-stage	20620	12
40	2	two-stage	20720	11
41	2	two-stage	20820	12
42	2	two-stage	20920	15
43	2	two-stage	21020	12

Stratum Number	Main-Stratum	Sampling Stages	Stratum ID	Number of selected addresses
44	2	two-stage	21120	9
45	2	two-stage	21220	9
46	2	two-stage	21320	9
47	2	two-stage	21420	18
48	2	two-stage	21520	15
49	2	two-stage	21720	12
50	2	two-stage	21820	9
51	2	two-stage	22020	9
52	2	two-stage	30120	15
53	2	two-stage	30220	24
54	2	two-stage	30320	24
55	2	two-stage	30420	24
56	2	two-stage	30520	24
57	2	two-stage	30620	18
58	2	two-stage	30720	21
59	2	two-stage	30820	15
60	2	two-stage	30920	12
61	2	two-stage	31020	15
62	2	two-stage	31120	12
63	2	two-stage	31220	24
64	2	two-stage	31320	18
65	2	two-stage	31420	18
66	2	two-stage	31520	18
67	2	two-stage	31620	18
68	2	two-stage	31720	18
69	2	two-stage	31820	23
70	2	two-stage	31920	20
71	2	two-stage	32020	24
72	2	two-stage	32120	24
73	2	two-stage	32220	15
74	2	two-stage	32320	14
75	2	two-stage	32420	15
76	2	two-stage	32520	9
77	2	two-stage	32620	12
78	2	two-stage	32720	12
79	2	two-stage	33020	21
80	2	two-stage	40120	24
81	2	two-stage	40220	24
82	2	two-stage	40320	24
83	2	two-stage	40420	12
84	2	two-stage	40520	24
85	2	two-stage	40620	24
86	2	two-stage	40720	15
87	2	two-stage	40820	18
88	2	two-stage	40920	21

Stratum Number	Main-Stratum	Sampling Stages	Stratum ID	Number of selected addresses
89	2	two-stage	41020	15
90	2	two-stage	41120	18
91	2	two-stage	41220	9
92	2	two-stage	41320	21
93	2	two-stage	41420	21
94	2	two-stage	41520	24
95	2	two-stage	41620	11
96	2	two-stage	41720	24
97	2	two-stage	41820	15
98	2	two-stage	41920	23
99	2	two-stage	42220	18
100	2	two-stage	42620	21
101	2	two-stage	50120	9
102	2	two-stage	50220	11
103	2	two-stage	50320	9
104	2	two-stage	50420	9
105	2	two-stage	50520	9
106	2	two-stage	50620	9
107	2	two-stage	50720	11
108	2	two-stage	50820	12
109	2	two-stage	50920	9
110	2	two-stage	51120	9
111	2	two-stage	51220	12
112	2	two-stage	51320	12
113	2	two-stage	51520	12
114	2	two-stage	60120	18
115	2	two-stage	60220	24
116	2	two-stage	60320	12
117	2	two-stage	60420	15
118	2	two-stage	60520	15
119	2	two-stage	60620	15
120	2	two-stage	60720	15
121	2	two-stage	60820	24
122	2	two-stage	60920	21
123	2	two-stage	61020	24
124	2	two-stage	61120	24
125	2	two-stage	61220	24
126	2	two-stage	61320	24
127	2	two-stage	61420	18
128	2	two-stage	61520	21
129	2	two-stage	61620	24
130	2	two-stage	61720	24
131	2	two-stage	61820	21
132	2	two-stage	70120	12
133	2	two-stage	70220	9

Stratum Number	Main-Stratum	Sampling Stages	Stratum ID	Number of selected addresses
134	2	two-stage	70320	12
135	2	two-stage	70420	12
136	2	two-stage	70520	12
137	2	two-stage	70620	9
138	2	two-stage	70720	9
139	2	two-stage	70820	9
140	2	two-stage	70920	15
141	2	two-stage	71020	15
142	2	two-stage	71120	12
143	2	two-stage	71220	12
144	2	two-stage	71320	12
145	2	two-stage	71420	12
146	2	two-stage	71520	9
147	2	two-stage	71620	12
148	2	two-stage	80120	9
149	2	two-stage	80420	9
150	2	two-stage	80520	9
151	2	two-stage	80620	9
152	3	two-stage	10030	12
153	3	two-stage	20030	15
154	3	two-stage	30030	63
155	3	two-stage	40030	51
156	3	two-stage	50030	12
157	3	two-stage	60030	60
158	3	two-stage	70030	30
159	3	two-stage	80030	6
				3630

Source: Statistics Austria, EU-SILC 2009

**Table 30: Common cross-sectional indicators EU-SILC 2009**

		Indicator	Value	Standard error	Lower bound	Upper bound
<b>OV-1a</b>	<b>SI-P1</b>	<b>At-risk-of-poverty rate after social transfers by age and sex, in %</b>				
		Total	12.0	0.5	11.1	12.9
	All (>= 0 years)	Men	10.7	0.5	9.8	11.7
		Women	13.2	0.5	12.2	14.3
	<=17 years	Total	13.4	1.0	11.4	15.4
		Total	11.9	1.2	9.5	14.3
	18-24 years	Men	11.3	1.7	8.1	14.6
		Women	12.6	1.6	9.5	15.6
		Total	10.3	0.5	9.3	11.4
	25-49 years	Men	9.8	0.6	8.7	11.0
		Women	10.9	0.6	9.7	12.1
		Total	11.0	0.7	9.6	12.4
	50-64 years	Men	10.0	0.8	8.4	11.6
		Women	12.0	0.9	10.3	13.7
		Total	15.1	0.9	13.3	17.0
	65+ years	Men	10.7	1.0	8.7	12.6
		Women	18.4	1.1	16.1	20.6
		Total	11.7	0.4	10.9	12.5
	>=18 years	Men	10.2	0.5	9.3	11.1
		Women	13.1	0.5	12.1	14.0
		Total	10.8	0.4	9.9	11.7
	18-64 years	Men	10.1	0.5	9.1	11.1
		Women	11.4	0.5	10.5	12.4
		Total	11.4	0.5	10.4	12.4
	<=64 years	Men	10.8	0.6	9.6	11.9
		Women	12.0	0.6	10.9	13.2
	<b>SI-S1a</b>	<b>At-risk-of-poverty rate after social transfers by household type, in %</b>				
		Single total	20.4	0.9	18.5	22.2
		Single <65 years	18.3	1.1	16.2	20.5
		Single 65+ years	23.8	1.7	20.5	27.1
		Single male	15.7	1.3	13.3	18.2
		Single female	23.8	1.3	21.2	26.5
		2 adults, no children, at least one 65+	12.0	1.2	9.8	14.3
		2 adults, no children, both < 65	11.8	0.9	10.0	13.6
		Other households without children	3.6	1.1	1.5	5.7
		Single parent, at least one child	29.2	3.2	23.0	35.4
		2 adults, 1 child	9.1	1.2	6.8	11.4
		2 adults, 2 children	6.9	1.0	4.9	8.9
		2 adults, 3+ children	19.2	3.5	12.3	26.0
		Other households with children	8.6	1.9	4.9	12.2
		Households without children total	12.7	0.5	11.7	13.7
		Household with children total	11.4	0.8	9.8	12.9
	<b>SI-S1b</b>	<b>At-risk-of-poverty rate after social transfers by work intensity (w) of the household, in %</b>				
		Housholds without children w=0	25.4	1.8	21.8	29.0
		children 0 < w < 1	10.1	1.0	8.0	12.1

	Indicator	Value	Standard error	Lower bound	Upper bound
	w=1	3.9	0.5	2.9	4.9
	w=0	48.1	5.9	36.5	59.8
Households with children	0 < w < 0,5	39.2	6.1	27.2	51.2
	0,5 <= w < 1	12.1	1.3	9.4	14.7
	w=1	3.3	0.6	2.1	4.5
<b>SI-S1c</b>	<b>At-risk-of-poverty rate after social transfers by main activity and sex, in %</b>				
	>= 18 years				
	Total	6.0	0.4	5.3	6.7
Employed	Men	6.0	0.4	5.2	6.9
	Women	5.9	0.5	5.0	6.8
Inactive total	Total	18.7	0.7	17.3	20.1
	Men	17.1	0.9	15.3	18.9
	Women	19.7	0.8	18.1	21.2
Unemployed	Total	38.0	2.6	32.9	43.0
	Men	42.8	3.9	35.2	50.5
	Women	34.0	3.0	28.2	39.9
Pension	Total	14.2	0.8	12.7	15.7
	Men	11.3	0.9	9.6	13.0
	Women	16.6	1.0	14.7	18.5
Other inactive	Total	21.0	1.3	18.5	23.5
	Men	22.5	2.8	16.9	28.0
	Women	20.6	1.4	17.8	23.3
	18-64 years				
	Total	6.0	0.4	5.3	6.7
Employed	Men	6.0	0.4	5.2	6.9
	Women	5.9	0.5	5.0	6.8
Inactive total	Total	21.7	1.0	19.8	23.6
	Men	23.5	1.5	20.5	26.5
	Women	20.6	1.1	18.6	22.7
Unemployed	Total	38.1	2.6	33.0	43.2
	Men	42.7	4.0	34.9	50.6
	Women	34.4	3.0	28.5	40.3
Pension	Total	13.0	1.2	10.6	15.3
	Men	12.7	1.7	9.3	16.0
	Women	13.2	1.6	10.1	16.3
Other inactive	Total	20.7	1.3	18.1	23.4
	Men	22.6	2.8	17.0	28.1
	Women	20.1	1.5	17.2	23.1
	65+ years				
	Total	15.3	1.0	13.4	17.1
Inactive total	Men	10.8	1.0	8.8	12.8
	Women	18.5	1.1	16.2	20.7
Pension	Total	14.7	0.9	12.9	16.6
	Men	10.7	1.0	8.7	12.7
	Women	18.0	1.2	15.6	20.3
Other inactive	Total	23.1	4.1	15.1	31.1
	Men	-	-	-	-

	Indicator	Value	Standard error	Lower bound	Upper bound
	Women	23.3	4.1	15.3	31.3
<b>SI-S1d</b>	<b>At-risk-of-poverty rate after social transfers by tenure status, in %</b>				
	Total	8.5	0.5	7.5	9.4
	Owner or rent-free				
	Men	7.1	0.5	6.1	8.1
	Women	9.7	0.5	8.7	10.8
	Total	18.1	1.1	16.0	20.2
	Tenant				
	Men	17.0	1.1	14.8	19.3
	Women	19.1	1.2	16.8	21.4
<b>OV-1a</b>	<b>SI-P1</b>	<b>At-risk-of-poverty threshold, in euro</b>			
	Single	11931.5	103.4	11,729	12,134
	2 adults, 2 children	25056.1	217.2	24,630	25,482
<b>OV-2</b>	<b>SI-C1</b>	<b>Inequality of income distribution, income quintile share ratio</b>			
	S80/S20	3.66	0.2	3.3	4.0
	<b>SI-C2</b>	<b>Inequality of income distribution, income quintile share ratio</b>			
	Gini-coefficient	0.26	0.004	0.249	0.263
<b>OV-1b</b>	<b>SI-P3</b>	<b>Relative median at-risk-of-poverty gap by age and sex, in %</b>			
	Total	17.2	0.9	15.5	18.9
	All (>= 0 years)				
	Men	18.7	1.1	16.5	20.9
	Women	16.1	0.8	14.6	17.7
	<=17 years				
	Total	18.6	2.1	14.5	22.7
	18-64 years				
	Total	20.1	1.2	17.9	22.4
	Men	20.7	1.6	17.6	23.8
	Women	19.1	1.2	16.6	21.5
	65+ years				
	Total	12.6	0.7	11.1	14.0
	Men	13.9	1.6	10.8	17.0
	Women	12.5	0.7	11.1	13.9
<b>SI-S1e</b>	<b>Dispersion around the risk-of-poverty threshold, in %</b>				
	<b>40%</b>				
	Total	3.0	0.3	2.5	3.5
	All (>= 0 years)				
	Men	3.0	0.3	2.5	3.5
	Women	3.1	0.3	2.5	3.7
	<=17 years				
	Total	3.3	0.5	2.3	4.4
	18-64 years				
	Total	3.2	0.3	2.7	3.8
	Men	3.4	0.3	2.8	4.0
	Women	3.1	0.3	2.5	3.7
	65+ years				
	Total	1.9	0.4	1.2	2.6
	Men	1.3	0.4	0.5	2.0
	Women	2.4	0.5	1.5	3.3
	<b>50%</b>				
	Total	6.1	0.4	5.4	6.8
	All (>= 0 years)				
	Men	5.8	0.4	5.0	6.5
	Women	6.4	0.4	5.6	7.3
	<=17 years				
	Total	7.4	0.8	5.8	9.0
	18-64 years				
	Total	6.0	0.4	5.3	6.7
	Men	5.9	0.4	5.1	6.6
	Women	6.1	0.4	5.3	6.9

	Indicator	Value	Standard error	Lower bound	Upper bound
	Total	5.1	0.8	3.6	6.7
65+ years	Men	4.2	0.7	2.8	5.7
	Women	5.8	1.0	3.7	7.8
<b>70%</b>					
	Total	20.0	0.6	18.8	21.2
All (>= 0 years)	Men	18.3	0.6	17.0	19.5
	Women	21.6	0.7	20.3	22.9
<=17 years	Total	24.2	1.3	21.7	26.8
	Total	17.5	0.6	16.4	18.6
18-64 years	Men	16.7	0.6	15.4	17.9
	Women	18.4	0.6	17.2	19.6
	Total	24.4	1.2	22.1	26.8
65+ years	Men	18.3	1.3	15.8	20.8
	Women	28.9	1.4	26.2	31.7
<b>OV-9 SI-C5</b>	<b>At-risk-of-poverty-rate anchored at a fixed moment in time, in %</b>				
	Total	10.9	0.3	10.3	11.5
All (>= 0 years)	Men	9.7	0.3	9.1	10.4
	Women	12.1	0.3	11.4	12.7
<=17 years	Total	11.9	0.6	10.7	13.0
	Total	9.8	0.3	9.2	10.4
18-64 years	Men	9.3	0.4	8.6	10.0
	Women	10.3	0.3	9.7	10.9
	Total	14.0	0.5	13.1	15.0
65+ years	Men	9.8	0.6	8.7	10.9
	Women	17.2	0.5	16.2	18.1
<b>OV-C11 SI-C6</b>	<b>At-risk-of-poverty rate before social transfers by age and sex, in %</b>				
	<b>Before social transfers except old-age and survivors' benefits</b>				
	Total	24.1	0.6	22.9	25.2
All (>= 0 years)	Men	23.1	0.6	21.9	24.4
	Women	25.0	0.6	23.7	26.2
<=17 years	Total	36.1	1.4	33.5	38.8
	Total	22.1	0.6	21.0	23.2
18-64 years	Men	21.5	0.6	20.2	22.7
	Women	22.7	0.6	21.5	23.9
	Total	17.9	1.0	16.0	19.7
65+ years	Men	12.8	1.0	10.7	14.8
	Women	21.6	1.2	19.3	23.8
	<b>Before social transfers including old-age and survivors' benefits</b>				
	Total	42.9	0.7	41.6	44.3
All (>= 0 years)	Men	39.7	0.7	38.3	41.2
	Women	45.9	0.7	44.5	47.3
<=17 years	Total	39.1	1.5	36.2	42.0
	Total	31.8	0.6	30.5	33.0
18-64 years	Men	29.1	0.7	27.7	30.4
	Women	34.4	0.7	33.1	35.8
		89.2	0.9	87.5	90.9

	Indicator	Value	Standard error	Lower bound	Upper bound	
	65+ years					
	Total*					
	Men	88.8	1.1	86.6	91.0	
	Women*	89.6	1.0	87.7	91.5	
<b>OV-11</b>	<b>SI-C8</b>	<b>At-risk-of-poverty rate of employed persons, in %</b>				
	Total	6.0	0.4	5.2	6.7	
	Male	6.0	0.4	5.2	6.9	
	Female	5.9	0.5	5.0	6.8	
	Full-time	4.7	0.4	3.9	5.4	
	Part-time	7.0	0.8	5.3	8.6	
	<b>SI-P2</b>	<b>At-persistent-risk-of-poverty*, in %</b>				
	2005-2008	5.6	0.6	4.4	6.8	
	<b>SI-P8</b>	<b>Material deprivation, in %</b>				
	Total	10.9	0.6	9.8	12.0	
	Not at-risk-of-poverty	7.4	0.5	6.4	8.4	
	At-risk-of-poverty	36.9	2.4	32.1	41.7	
	Male	total	10.3	0.6	9.1	11.5
	Not at-risk-of-poverty	7.1	0.6	6.0	8.2	
	At-risk-of-poverty	37.2	3.0	31.4	43.0	
	Female	total	11.5	0.6	10.3	12.8
	Not at-risk-of-poverty	7.7	0.5	6.6	8.8	
	At-risk-of-poverty	36.6	2.6	31.5	41.8	
	<b>SI-S4</b>	<b>Intensity of material deprivation, in %</b>				
	Total	3.6	0.0	3.5	3.7	
	Not at-risk-of-poverty	3.4	0.0	3.4	3.5	
	At-risk-of-poverty	3.8	0.1	3.7	4.0	
	Male	total	3.6	0.1	3.5	3.7
	Not at-risk-of-poverty	3.5	0.1	3.4	3.6	
	At-risk-of-poverty	3.9	0.1	3.7	4.1	
	Female	total	3.6	0.0	3.5	3.7
	Not at-risk-of-poverty	3.4	0.0	3.4	3.5	
	At-risk-of-poverty	3.8	0.1	3.7	3.9	
	<b>SI-S5</b>	<b>Housing cost overburden by poverty status, in %</b>				
	Total	5.1	0.3	4.4	5.8	
	Not at-risk-of-poverty	1.9	0.2	1.5	2.3	
	At-risk-of-poverty	29.5	2.3	25.0	34.0	
	<b>SI-S5</b>	<b>Housing cost overburden by degree of urbanisation, in %</b>				
	Densely populated area	8.8	0.8	7.3	10.5	
	Intermediate area	3.4	0.4	2.5	4.3	
	Thinly populated area	2.5	0.3	1.9	3.1	
	<b>SI-S5</b>	<b>Housing cost overburden by income quintiles, in %</b>				
	1. quintile	19.9	1.5	16.9	22.9	
	2. quintile	3.9	0.6	2.7	5.1	
	3. quintile	1.6	0.3	1.0	2.2	
	4. quintile	0.3	0.1	0.1	0.5	
	5. quintile	0.3	0.1	0.0	0.6	

<b>SI-S6 Overcrowding rate by poverty status, in %</b>					
Total		13.2	0.7	11.8	14.5
Not at-risk-of-poverty		11.0	0.7	9.6	12.3
At-risk-of-poverty		29.3	2.5	24.5	34.1
<b>SI-S6 Overcrowding rate by at-risk-of-poverty excluding single person households, in %</b>					
Total		13.5	0.8	12.0	15.1
Not at-risk-of-poverty		11.3	0.8	9.8	12.8
At-risk-of-poverty		32.5	3.2	26.2	38.7
<b>SI-S6 Overcrowding rate by degree of urbanisation, in %</b>					
Densely populated area		22.4	1.4	19.7	25.0
Intermediate area		9.6	1.2	7.2	12.0
Thinly populated area		7.0	0.8	5.4	8.6
<b>SI-S6 Overcrowding rate by household type, in %</b>					
Single total		11.4	0.8	9.8	13.0
Single <65 years		12.6	1.1	10.5	14.7
Single 65+ years		9.3	1.2	6.9	11.7
Single male		14.3	1.4	11.6	17.1
Single female		9.2	1.0	7.3	11.0
2 adults, no children, at least one 65+		2.8	0.7	1.4	4.2
2 adults, no children, both < 65		5.3	0.9	3.6	7.0
Other households without children		8.7	2.1	4.6	12.7
Single parent, at least one child		29.9	3.9	22.2	37.5
2 adults, 1 child		11.8	1.7	8.4	15.2
2 adults, 2 children		8.7	1.4	5.9	11.4
2 adults, 3+ children		34.1	3.7	26.9	41.3
Other households with children		25.9	3.3	19.5	32.4
Households without children total		7.4	0.6	6.3	8.6
Household with children total		18.9	1.2	16.5	21.2
<b>SI-C12 Housing deprivation, in %</b>					
Leaking roof		15.3	0.65	13.99	16.53
No shower/bath		0.7	0.1	0.5	0.9
No toilet		1.3	0.2	1.0	1.7
Problem with darkness		6.5	0.4	5.7	7.4
Neither shower/bath nor toilet		0.5	0.1	0.4	0.7
No deprivation: 0 items		80.2	0.7	78.8	81.5
Deprivation: 1 item		16.2	0.6	14.9	17.4
Deprivation: 2 items		3.3	0.3	2.7	4.0
Deprivation: 3 items		0.2	0.1	0.1	0.4
<b>SI-C13 Median share of housing cost by age and poverty status*, in %</b>					
All	total	13.8	0.2	13.5	14.1
(>= 0 years)	Not at-risk-of-poverty	12.7	0.2	12.4	13.1
	At-risk-of-poverty	29.0	1.3	26.5	31.4
<=17 years	total	14.5	0.4	13.8	15.2
	Not at-risk-of-poverty	13.5	0.3	12.9	14.0
18-64 years	At-risk-of-poverty	26.4	2.1	22.3	30.4
	total	13.6	0.2	13.3	14.0
65+ years	Not at-risk-of-poverty	12.5	0.2	12.1	12.9
	At-risk-of-poverty	32.4	1.3	29.9	34.8
	total	13.8	0.3	13.2	14.3

	Not at-risk-of-poverty	12.7	0.2	12.3	13.2
	At-risk-of-poverty	23.3	1.3	20.8	25.8
<b>SI- C13</b>	<b>Median share of housing cost by age and sex*, in %</b>				
	Total	13.8	0.2	13.5	14.1
All (>= 0 years)	Men	13.5	0.2	13.2	13.8
	Women	14.2	0.2	13.8	14.6
<=17 years	Total	14.5	0.4	13.8	15.2
	Total	13.6	0.2	13.2	14.1
18-64 years	Men	13.4	0.2	13.1	13.8
	Women	13.9	0.2	13.5	14.3
	Total	13.8	0.2	13.3	14.2
65+ years	Men	12.7	0.3	12.2	13.2
	Women	15.0	0.2	14.5	15.5
<b>SI- C13</b>	<b>Median share of housing cost by degree of urbanisation</b>				
	Densely populated area	17.0	0.4	16.3	17.7
	Intermediate area	13.5	0.3	12.8	14.1
	Thinly populated area	11.4	0.3	10.7	12.0

Source: Statistics Austria, EU-SILC 2009

OV = Overarching Indicator, SI = Social Inclusion, P = Primary, S = Secondary, C = Context

\*Variance estimation with bootstrapping instead of using linearization