

**Intermediate Quality report
Relating to the
EU-SILC 2005 Operation**

Austria



Vienna, 30th November 2006 (rev.)

Table of Content

Preface	3
1 Common cross-sectional indicators	4
2 Accuracy	7
2.1. Sampling design.....	7
2.2. Sampling Errors	27
2.3. Non-sampling errors.....	33
2.4. Mode of data collection	41
2.5. Interview duration.....	41
2.6. Imputation procedure	41
3 Comparability	45
3.1. Basic concepts and definitions.....	45
3.2. Components of income	46
4 Coherence	48
4.1. Comparison of income target variables and number of persons who receive income from income component with external source	48

Index of Tables and Figures

Table 1: Common cross-sectional indicators	4
Table 2: Number of addresses	8
Figure 1: Enhancement of the second wave	8
Table 3: Original and substitute addresses	9
Table 4: Sample size, addresses and household interviews	9
Table 5: Sample distribution over time	10
Figure 2: Interviews and cumulated percentage of completed interviews per week	11
Table 6: Rotational groups (without split households)	12
Figure 3: Longitudinal Weighting Scheme EU-SILC	13
Table 7: Variable for non-response analysis of second wave households	13
Table 8: Logistic regression estimates to predict participation in the second wave of EU-SILC	14
Table 9: Weighting procedure: range of weights in each step	15
Table 10: SSU1 – Household size per region: comparison of original units and substitute units	17
Table 11: SSU1 - Distribution of units by number of household member	18
Table 12: SSU2 – Household size per region: comparison of original units and substitute units	18
Table 13: SSU2 – Distribution of units by number of household members	19
Table 14: SSU1 – Age group and sex of the household reference person per region: comparison of original units and substitute units	19
Table 15: SSU1 – Distribution of units by age group and gender	23
Table 16: SSU2 – Age group and sex of the household reference person per region: comparison of original units and substitute units	23
Table 17: SSU2 – Distribution of units by age group and gender	26
Table 18: Distribution of DB120, DB130 and DB135 of substituted units	27
Table 19: Distribution of Proxy Interviews by Basic Activity Status	35
Table 20: Proxy information and equivalised household income in EU-SILC 2004 and EU-SILC 2005	35
Table 21: Sample Size and accepted interviews	35
Table 22: Household non-response rate without substitute sample	36
Table 23: Household non-response rate with substitute sample	36
Table 24: Individual non-response rate without substitute sample	36
Table 25: Individual non-response rate with substitute sample	36
Table 26: Contacted Addresses (DB120) without substitute sample	36
Table 27: Contacted Addresses (DB120) with substitute sample	37
Table 28: Household questionnaire results and household interview acceptance (DB130 & DB135) without substitute sample	37
Table 29: Household questionnaire results and household interview acceptance (DB130 & DB135) with substitute sample	37
Table 30: Substitute sample - Contacted addresses (DB120)	38
Table 31: Substitute sample - Household questionnaire results and household interview acceptance (DB130 & DB135)	38
Table 32: Item non-response on household level	39
Table 33: Item non-response on individual level	40
Table 34: Distribution of RB250 for all respondents	41
Table 35: Distribution of RB260 for all respondents	41
Table 36: Mean interview duration	41
Table 37: Variables used for the distance function with longitudinal information	42
Table 38: Variables used for the distance function for cross-sectional imputations of personal interviews	43
Figure 4: Editing procedure for income data	44
Table 39: Comparison of the median of the income target variables – EU-SILC 2004 and EU-SILC 2005 (weighted)	52
Table 40: Comparison of the number of cases of the income target variables – EU-SILC 2004 and EU-SILC 2005 (weighted)	53
Table 41: Comparison of sums of the income target variables – EU-SILC 2004 and EU-SILC 2005 (weighted)	54
Table 42: Comparison of gross annual income of employees 2004: wage tax statistics 2004 and EU-SILC 2005	55
Table 43: Comparison of National accounts 2004 and EU-SILC 2005 (in million Euro)	56

Preface

The present quality report is the intermediate quality report of EU-SILC 2005 in Austria and follows the structure outlined in the Commission Regulation No. 28/2004. The regulation defines four chapters. The first chapter presents the common cross-sectional European indicators and other indicators. The second chapter reports on accuracy meaning that all factors that affect the closeness of estimates and results to the exact or true value should be described (sample design, sampling errors, non-sampling errors, mode of data collection and interview duration). The third chapter deals with comparability and describes all differences between the standard EU definitions and the definitions applied in Austria. The fourth chapter, which is on coherence, presents comparisons of the EU-SILC 2005 data with external sources.

1 Common cross-sectional indicators

Table 1: Common cross-sectional indicators

		2005		
Indicator		Value	Achieved sample size	Total item non response
1	At-risk-of-poverty rate after social transfers - total	12.3	13043	0
2	At-risk-of-poverty rate after social transfers - men total	11.5	6318	0
3	At-risk-of-poverty rate after social transfers - women total	13.1	6725	0
4	At-risk-of-poverty rate after social transfers - 0-15 years	15.2	2562	0
5	At-risk-of-poverty rate after social transfers - 16-24 years	12.9	1437	0
6	At-risk-of-poverty rate after social transfers - 25-49 years	11.2	4690	0
7	At-risk-of-poverty rate after social transfers - 50-64 years	9.8	2533	0
8	At-risk-of-poverty rate after social transfers - 65+ years	14.2	1759	0
9	At-risk-of-poverty rate after social transfers - 16+ years	11.7	10419	0
10	At-risk-of-poverty rate after social transfers - 16-64 years	11.1	8660	0
11	At-risk-of-poverty rate after social transfers - 0-64 years	11.9	11222	0
12	At-risk-of-poverty rate after social transfers - men 16-24 years	11.0	725	0
13	At-risk-of-poverty rate after social transfers - men 25-49 years	10.9	2285	0
14	At-risk-of-poverty rate after social transfers - men 50-64 years	9.6	1192	0
15	At-risk-of-poverty rate after social transfers - men 65+ years	9.6	771	0
16	At-risk-of-poverty rate after social transfers - men 16+ years	10.4	4973	0
17	At-risk-of-poverty rate after social transfers - men 16-64 years	10.6	4202	0
18	At-risk-of-poverty rate after social transfers - men 0-64 years	11.7	5516	0
19	At-risk-of-poverty rate after social transfers - women 16-24 years	14.8	712	0
20	At-risk-of-poverty rate after social transfers - women 25-49 years	11.4	2405	0
21	At-risk-of-poverty rate after social transfers - women 50-64 years	10.0	1341	0
22	At-risk-of-poverty rate after social transfers - women 65+ years	17.3	988	0
23	At-risk-of-poverty rate after social transfers - women 16+ years	12.8	5446	0
24	At-risk-of-poverty rate after social transfers - women 16-64 years	11.6	4458	0
25	At-risk-of-poverty rate after social transfers - women 0-64 years	12.2	5706	0
26	At-risk-of-poverty rate after social transfers - employed	6.7	5620	82
27	At-risk-of-poverty rate after social transfers - unemployed	46.9	225	82
28	At-risk-of-poverty rate after social transfers - retired	12.1	2572	82
29	At-risk-of-poverty rate after social transfers - other inactive	21.7	1920	82
30	At-risk-of-poverty rate after social transfers - men, employed	7.2	3199	36
31	At-risk-of-poverty rate after social transfers - men, unemployed	51.3	110	36
32	At-risk-of-poverty rate after social transfers - men, retired	10.3	1201	36
33	At-risk-of-poverty rate after social transfers - men, other inactive	23.2	427	36
34	At-risk-of-poverty rate after social transfers - women, employed	6.0	2421	46
35	At-risk-of-poverty rate after social transfers - women, unemployed	42.2	115	46
36	At-risk-of-poverty rate after social transfers - women, retired	13.5	1371	46
37	At-risk-of-poverty rate after social transfers - women, other inactive	21.2	1493	46
38	At-risk-of-poverty rate after social transfers - single, < 65 years	17.3	897	0
39	At-risk-of-poverty rate after social transfers - single, 65+ years	22.8	478	0
40	At-risk-of-poverty rate after social transfers - single, male	14.4	507	0
41	At-risk-of-poverty rate after social transfers - single, female	22.5	868	0
42	At-risk-of-poverty rate after social transfers - single, total	19.3	1375	0
43	At-risk-of-poverty rate after social transfers - 2 adults, no children, both < 65	9.1	1738	0
44	At-risk-of-poverty rate after social transfers - 2 adults, no children, at least one 65+	11.0	1180	0
45	At-risk-of-poverty rate after social transfers - other households without children	5.9	1674	0
46	At-risk-of-poverty rate after social transfers - single parent, at least one child	27.9	535	0
47	At-risk-of-poverty rate after social transfers - 2 adults, 1 child	9.5	1473	0
48	At-risk-of-poverty rate after social transfers - 2 adults, 2 children	11.8	2144	0
49	At-risk-of-poverty rate after social transfers - 2 adults, 3+ children	19.8	1156	0
50	At-risk-of-poverty rate after social transfers - other households with children	9.8	1768	0
51	At-risk-of-poverty rate after social transfers - households without children	11.5	5967	0

52	At-risk-of-poverty rate after social transfers - households with children	13.2	7076	0
53	At-risk-of-poverty rate after social transfers - owner or rent-free	9.8	9109	0
54	At-risk-of-poverty rate after social transfers - tenant	17.0	3934	0
55	At-risk-of-poverty rate after social transfers - households without children, $w = 0^1$	21.1	1061	1161*
56	At-risk-of-poverty rate after social transfers - households without children, $0 < w < 1$	10.2	1754	1161
57	At-risk-of-poverty rate after social transfers - households without children, $w = 1$	4.2	1996	1161
58	At-risk-of-poverty rate after social transfers - households with children, $w = 0$	53.7	266	1161
59	At-risk-of-poverty rate after social transfers - households with children, $0 < w < 0.5$	33.6	451	1161
60	At-risk-of-poverty rate after social transfers - households with children, $0.5 < w < 1$	14.6	3206	1161
61	At-risk-of-poverty rate after social transfers - households with children, $w = 1$	5.7	3148	1161
62	Median of the equivalised disposable household income	17992.64	13043	0
63	At-risk-of-poverty threshold - single	10795.58	13043	0
64	At-risk-of-poverty threshold - 2 adults, 2 children	22670.73	13043	0
65	Inequality of income distribution S80/S20 income quintile share ratio	3.77	13043	0
66	Relative median at-risk-of-poverty gap - total	15.3	1597	0
67	Relative median at-risk-of-poverty gap - men total	15.3	722	0
68	Relative median at-risk-of-poverty gap - women total	15.3	875	0
69	Relative median at-risk-of-poverty gap - 0-15 years	13.9	393	0
70	Relative median at-risk-of-poverty gap - 16-64 years	17.7	956	0
71	Relative median at-risk-of-poverty gap - 65+ years	13.7	238	0
72	Relative median at-risk-of-poverty gap - 16+ years	15.3	1194	0
73	Relative median at-risk-of-poverty gap - men, 16-64 years	19.2	432	0
74	Relative median at-risk-of-poverty gap - men, 65+ years	12.2	73	0
75	Relative median at-risk-of-poverty gap - men, 16+ years	16.6	505	0
76	Relative median at-risk-of-poverty gap - women, 16-64 years	17.4	524	0
77	Relative median at-risk-of-poverty gap - women, 65+ years	15.3	165	0
78	Relative median at-risk-of-poverty gap - women, 16+ years	15.3	689	0
79	Median income below the at-risk-of-poverty threshold - total	9145.00	1597	0
80	Median income below the at-risk-of-poverty threshold - men total	9145.00	722	0
81	Median income below the at-risk-of-poverty threshold - women total	9145.00	875	0
82	Median income below the at-risk-of-poverty threshold - 0-15 years	9291.67	393	0
83	Median income below the at-risk-of-poverty threshold - 16-64 years	8880.00	956	0
84	Median income below the at-risk-of-poverty threshold - 65+ years	9315.33	238	0
85	Median income below the at-risk-of-poverty threshold - 16+ years	9145.00	1194	0
86	Median income below the at-risk-of-poverty threshold - men, 16-64 years	8723.38	432	0
87	Median income below the at-risk-of-poverty threshold - men, 65+ years	9473.33	73	0
88	Median income below the at-risk-of-poverty threshold - men, 16+ years	9000.00	505	0
89	Median income below the at-risk-of-poverty threshold - women, 16-64 years	8916.00	524	0
90	Median income below the at-risk-of-poverty threshold - women, 65+ years	9145.00	165	0
91	Median income below the at-risk-of-poverty threshold - women, 16+ years	9145.00	689	0
92	Dispersion around the risk-of-poverty threshold - 40%	3.2	13043	0
93	Dispersion around the risk-of-poverty threshold - 50%	5.6	13043	0
94	Dispersion around the risk-of-poverty threshold - 70%	19.9	13043	0
Before social transfers except old-age and survivors' benefits				
95	At-risk-of-poverty rate before social transfers - total	24.3	13043	0
96	At-risk-of-poverty rate before social transfers - men total	23.6	6318	0
97	At-risk-of-poverty rate before social transfers - women total	25.1	6725	0
98	At-risk-of-poverty rate before social transfers - 0-15 years	36.8	2562	0
99	At-risk-of-poverty rate before social transfers - 16-64 years	23.0	8660	0
100	At-risk-of-poverty rate before social transfers - 65+ years	16.3	1759	0
101	At-risk-of-poverty rate before social transfers - 16+ years	21.7	10419	0
102	At-risk-of-poverty rate before social transfers - men, 16-64 years	22.4	4202	0
103	At-risk-of-poverty rate before social transfers - men, 65+ years	11.1	771	0
104	At-risk-of-poverty rate before social transfers - men, 16+ years	20.6	4973	0
105	At-risk-of-poverty rate before social transfers - women, 16-64 years	23.6	4458	0
106	At-risk-of-poverty rate before social transfers - women, 65+ years	19.9	988	0
107	At-risk-of-poverty rate before social transfers - women, 16+ years	22.8	5446	0
Before social including old-age and survivors' benefits				
108	At-risk-of-poverty rate before social transfers - total	42.7	13043	0

109	At-risk-of-poverty rate before social transfers - men total	39.4	6318	0
110	At-risk-of-poverty rate before social transfers - women total	45.8	6725	0
111	At-risk-of-poverty rate before social transfers - 0-15 years	39.4	2562	0
112	At-risk-of-poverty rate before social transfers - 16-64 years	33.2	8660	0
113	At-risk-of-poverty rate before social transfers - 65+ years	87.0	1759	0
114	At-risk-of-poverty rate before social transfers - 16+ years	43.4	10419	0
115	At-risk-of-poverty rate before social transfers - men, 16-64 years	30.5	4202	0
116	At-risk-of-poverty rate before social transfers - men, 65+ years	86.4	771	0
117	At-risk-of-poverty rate before social transfers - men, 16+ years	39.5	4973	0
118	At-risk-of-poverty rate before social transfers - women, 16-64 years	35.9	4458	0
119	At-risk-of-poverty rate before social transfers - women, 65+ years	87.5	988	0
120	At-risk-of-poverty rate before social transfers - women, 16+ years	47.1	5446	0
121	Gini coefficient	26.13	13043	0
122	Mean equivalised disposable income	20079.87	13043	0
123	Gender pay gap	17.94	2679 men, 2056 women	68 men, 55 women

*20 Student households, 1141 with total workable months=0

2 Accuracy

Accuracy refers to the closeness of computations or estimates to the exact or true value.

2.1. Sampling design

2.1.1. Type of sampling

EU-SILC in Austria uses an integrated (rotational) design, meaning that annually about one fourth of the sample is replaced by a new quarter. 2004 was the first year of the panel survey; accordingly in 2005 a new fourth entered the total sample of EU-SILC.

Like the sample of 2004, this first wave subsample was drawn from the central residence register ZMR (*Zentrales Melderegister*), a constantly updated population register based on the registration of residence. For this new quarter of the sample 2,126 addresses were selected with a simple random sampling procedure.

Additionally, in 2005 it was necessary to complement the sample with substitutes. The sampling of the substitute sample will be described in chapter 2.1.9.

Due date for the sample selection from the ZMR was the 31st of December 2004.

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. The following units were excluded: institutional housing facilities, dwelling units, in which all persons with their main residence in this unit were younger than 16 years and units which have been selected for the sample of EU-SILC 2003 and EU-SILC 2004.

2.1.3. Stratification

Not applicable, since Statistics Austria used a simple random sample.

2.1.4. Sample size and allocation criteria

Necessary sample size for Austria was calculated according to the Commission regulation to guarantee 4,500 Households cross-sectionally and 3,250 household longitudinally under simple random sampling ($deff=1$). Under this requirement a longitudinal response rate of 93% per rotation and a 60% response rate for first wave households were requested.

Due to public tender a new institute was commissioned to conduct the fieldwork in 2005. The institute initially received 5,624 addresses at the beginning of the fieldwork period. 2,126 of these 5,624 addresses were first wave households, newly drawn from the population register. The remaining 3,498 addresses were the retaining sample of 2004.

By the end of summer 2005 (the expected end of the fieldwork) it was clear that the fieldwork institute was not able to deliver a sufficient number of interviews and would not achieve the required response rate, neither longitudinally nor cross-sectionally. Statistics Austria had to draw an additional sample with a total of 2,227 addresses. Statistics Austria provided on the basis of a revised prognosis of the response rate 361 addresses to substitute the expected failure to achieve a response rate of 60%, and additionally provided 1,697 supplement addresses to ensure sufficient panel households in the following years. This supplement was provided in October to increase the number of addresses for the first wave of the sample, thus the rotational group 1 in 2005. For these supplement addresses a small sample of substitutes was foreseen as a response rate of 60% was not expected. This substitute sample was distributed in November (Table 2).

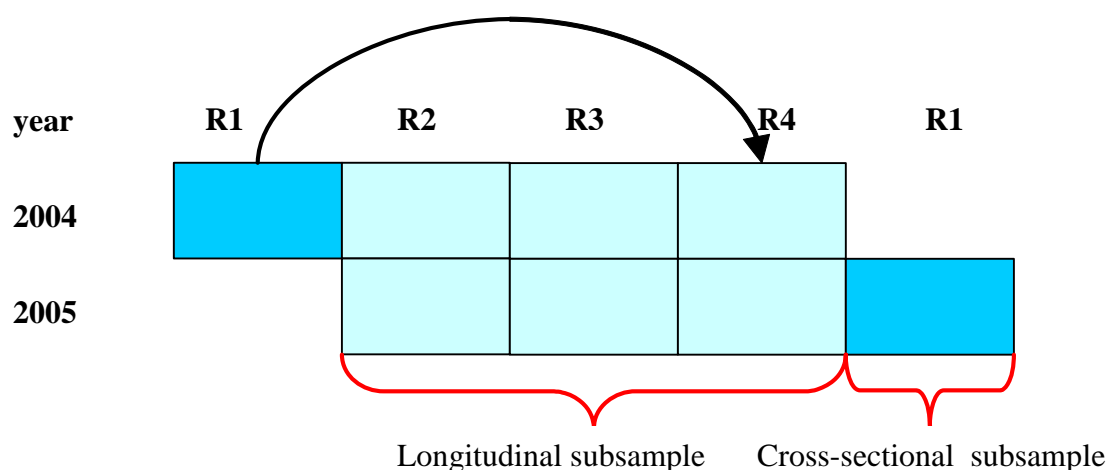
Table 2: Number of addresses

	first wave sample (rotation R1)	second wave sample (rotation R2, R3 and R4)	Total number of issued addresses
Original Sample	2,126	3,498	5,624
Additional addresses	1,697	1,023	2,720
Substitutes	527	0	527
Total	4,350	4,521	8,871

Source: EU-SILC 2005

For the second wave component of the sample 2005 3,498 addresses were initially provided. Additionally, the addresses of the rotational group 1 of 2004 (N = 1,023) were used to extend the second wave component of the sample. These addresses were added to the rotational group 4 of the sample of 2005. The second wave sample then consisted of 4,521 addresses, the rotational groups 1, 2, 3 and 4 of the survey 2004. The addresses of the rotational groups 2, 3 and 4 were provided at the beginning of the fieldwork period, the addresses of the rotational group 1 of 2004 (N = 1,023) were provided in October and were added to rotational group 4 in 2005. Figure 1 presents this enhancement of the second wave sample.

Figure 1: Enhancement of the second wave



The sample of EU-SILC 2005, thus, consists of 6 different subsamples. Table 3 presents an overview.

The first wave sample (rotational group one) consists of four subsamples:

(1) First, the original first wave households which consisted of 2,126 addresses, of which all 2,126 addresses were used. This sample was a simple random sample and was provided at the beginning of the fieldwork.

(2) However, 342 addresses were replaced during the fieldwork. 361 addresses were provided as substitutes; only 342 of these addresses were used, because for 19 of the original addresses finally a successful interview was achieved¹. This sample was designed to be similar to the original sample in some key variables. The sampling for the substitutes is described in chapter 2.1.9. Statistics Austria delivered the sample in October to the fieldwork institute.

(3) The third sample was added to supplement the first wave sample, and consisted of 1,697 addresses which were provided and used. The supplement sample was a simple random sample. This supplement sample was also provided in October.

(4) The fourth subsample of the first wave sample was designated to be the substitute for the supplement sample. This sample was drawn like the other substitute subsample, meaning the sample should resemble the supplement sample. This substitute sample comprised 166 addresses and was issued in the 31st week of the fieldwork in November 2005.

¹ The contract with the field work institute had foreseen penalty payments for not reaching the demanded response rates. Thus it was an incentive to still reach the original households.

The second wave sample consists of two subsamples:

(5) The rotational groups 2, 3 and 4 of 2004, which constitute the same rotational groups in EU-SILC 2005. This second wave sample was issued at the beginning of the fieldwork.

(6) The rotational group 1 in 2004 was added to rotational group 4 in 2005. This sample was added to ensure a sufficient number of households in the following years. It was issued in the 26th week of the fieldwork in October 2005.

Table 3: Original and substitute addresses

	Addresses provided	Addresses used	addresses replaced
1 First wave households 2005 (R1)	2,126	2,126	342
2 Substitutes for first wave households 2005 (R1)	361	342	
3 Supplement for first wave households 2005 (R1)	1,697	1,697	166
4 Substitutes for supplement for first wave households 2005 (R1)	166	166	
5 Second wave households 2005 (R2,R3;R4)	3,498	3,498	
6 Second wave households 2005 (R4; R1 in 2004)	1,023	1,023	
Total	8,871	8,852	508

Source: EU-SILC 2005

8,871 addresses entered the survey; thereof 19 substitute addresses were not used by the fieldwork institute (because the original address was successfully interviewed instead). So, 8,852 addresses were used by the fieldwork institute. 508 addresses of the original first wave households were replaced by substitutes, and are therefore not included in the data set. The household questionnaire results of these replaced households are presented in chapter 2.1.9.3.

This leads to a gross sample of 8,494 addresses, including 150 addresses of split households. 111 of the addresses turned out to be non-existent so that the gross sample of EU-SILC in Austria consists of 8,383 valid addresses. 147 of these addresses were not successfully contacted.

For 5,164 of the remaining 8,236 successfully contacted addresses a household questionnaire was completed; 3,072 households were not successfully interviewed. 16 of the completed interviews had to be rejected because of insufficient quality, so that finally 5,148 household interviews were accepted for the database. An overview is provided in the following table.

Table 4: Sample size, addresses and household interviews

	Total		Original sample		substitutes	split households
	n	%	1st wave	2nd wave		
<i>Valid addresses</i>	8,494	100.0	3,315	4,521	508	150
Address existent	8,383	98.7	3,248	4,487	499	149
Address not existent	111	1.3	67	34	9	1
<i>Gross sample</i>	8,383	100.0	3,248	4,487	499	149
Address successfully contacted	8,236	98.2	3,168	4,443	490	135
Address not successfully contacted	147	1.8	80	44	9	14
<i>Successfully contacted addresses</i>	8,236	100.0	3,168	4,443	490	135
Household questionnaire completed	5,164	62.7	1,822	3,095	174	73
Entire household entirely away for the duration of fieldwork	980	11.9	431	394	120	35
Refusal to co-operate	1,769	21.5	772	826	149	22
Household unable to respond	17	0.2	8	8	0	1
Other reasons	306	3.7	135	120	47	4
<i>Successful household questionnaire</i>	5,164	100.0	1,822	3,095	174	73
Interview accepted for the data base	5,148	99.7	1,813	3,089	173	73
Interview rejected	16	0.3	9	6	1	0

Source: EU-SILC 2005

The achieved sample of EU-SILC 2005 in Austria then consists of 5,148 households consisting of 13,043 persons. From these 13,043 individuals, 10,419 persons are aged 16 or older and 2,624 persons are younger than 16.

2.1.5. Sample selection schemes

Not applicable, since Statistics Austria employed a simple random sample.

2.1.6. Sample distribution over time

As in the last year, the fieldwork institute was requested to provide Statistics Austria with field reports every two weeks. These field reports reported on the development of the sample and enabled Statistics Austria to monitor the fieldwork and to counteract possible erroneous trends. The following table provides an overview of the cumulative sample development during the fieldwork period from 21st April to 30th November. Compared to the recommendations given in the document EU-SILC 065, the interval between the income reference period and the date of the interview, Austria extended this interval by 3 months due to difficulties in gathering the sufficient number of interviews in time.

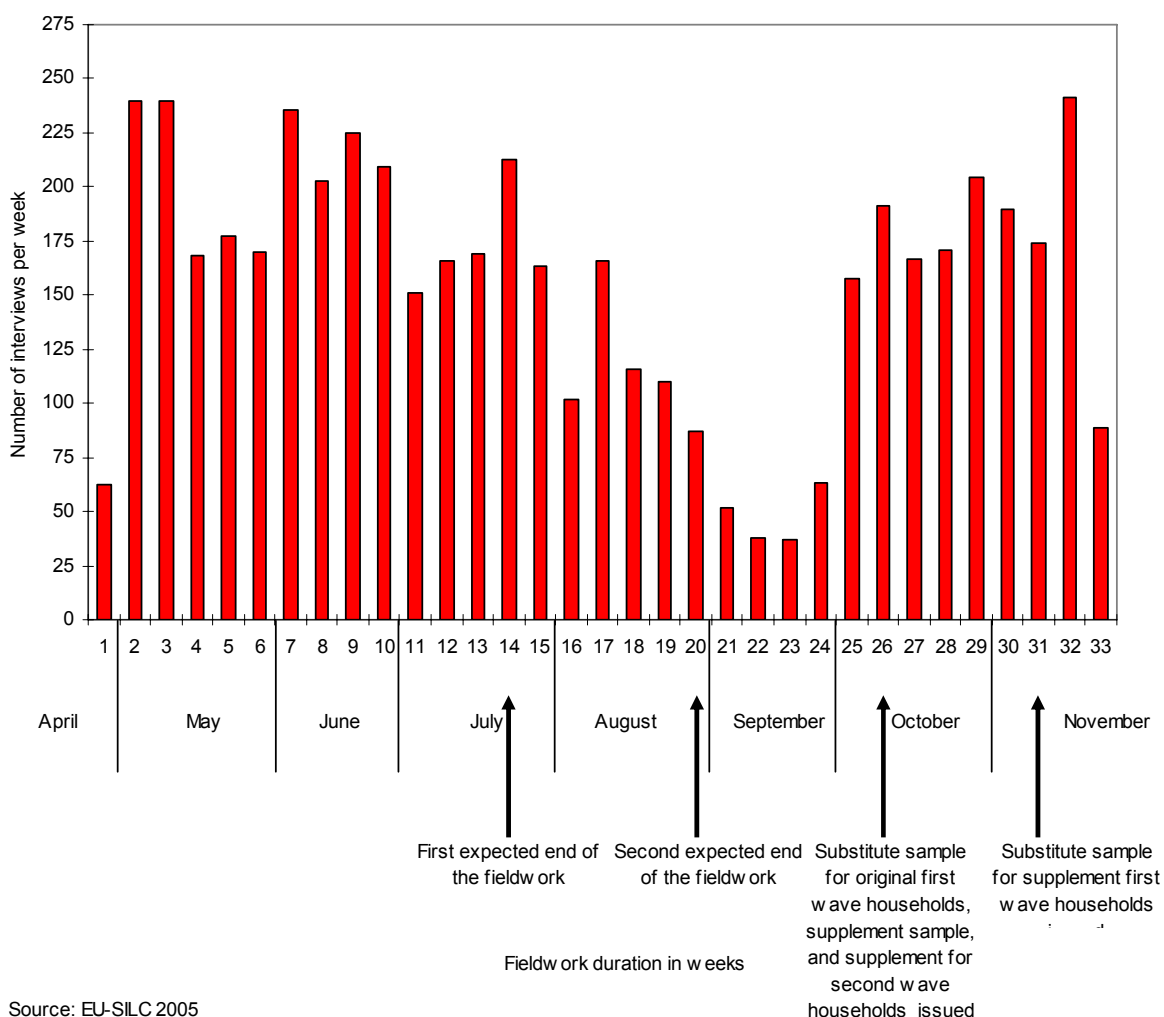
Table 5: Sample distribution over time

	Interviews completed	cumulated	%
April	302	302	5.9
May	863	1,165	16.8
June	877	2,042	17.0
July	753	2,795	14.6
August	542	3,337	10.5
September	225	3,562	4.4
October	729	4,291	14.2
November	857	5,148	16.6

Source: EU-SILC 2005

The fieldwork period was initially expected to take 14 weeks, thus the fieldwork period would have been terminated in the third week of July. By this time the fieldwork institute gathered only about 2,600 interviews and was far from achieving the required response rate (neither for the first wave households nor the second wave households). It was then agreed with the fieldwork institute that the fieldwork period should end by the end of August, thus expanding the fieldwork period to 20 weeks. But again the results were not satisfying, the weekly number of provided interviews actually dropped during this first extension of the fieldwork period, partly due to the summer holidays. Hence the fieldwork period was extended for a second time till the end of November, resulting in a fieldwork period of 33 weeks. Statistics Austria provided the substitute addresses (increasing the number of addresses in rotational group 1) and additional second wave households, which have been in rotational group 1 in 2004 (increasing the number of addresses in rotational group 4) in October (week 26). The following figure displays the course of the fieldwork.

Figure 2: Interviews and cumulated percentage of completed interviews per week



2.1.7. Renewal of sample: rotational groups

2005 was the second year of EU-SILC in Austria. The rotational groups R2, R3 and R4 were interviewed for the second time, and rotational group R1 was surveyed for the first time. Table 6 gives an overview (numbers without split households). Used addresses here refer to the addresses included in the data set, therefore excluding the first wave addresses which have been replaced by substitute addresses (n = 508).

For the first wave sample a total of 3,658 addresses were successfully contacted, including 490 addresses from the substitute sample. These first wave households constitute rotational group 1. For the second wave sample, constituting rotational group 2, 3 and 4, a total of 4,443 were successfully interviewed.

From these successfully contacted addresses a total of 5,075 household interviews have been gathered and accepted, whereas 3,089 were interviewed for the second time (without split households) and 1,986 for the first time.

Table 6: Rotational groups (without split households)

		Total	R1	R2	R3	R4
original sample	Used addresses	7,836	3,315	1,082	1,163	2,276
	Successfully contacted addresses	7,611	3,168	1,060	1,149	2,234
	Accepted household interviews	4,902	1,813	773	804	1,512
Substitutes	Used addresses	508	508			
	Successfully contacted addresses	490	490			
	Accepted household interviews	173	173			
Total	Used addresses	8,344	3,823	1,082	1,163	2,276
	Successfully contacted addresses	8,101	3,658	1,060	1,149	2,234
	Accepted household interviews	5,075	1,986	773	804	1,512

Source: EU-SILC 2005

2.1.8. Weightings

This chapter describes the computation of the cross-sectional weights of the Austrian sample of EU-SILC 2005. The calculations comply in general with the EUROSTAT recommendations on the calculation of weights. Main document of reference was EU-SILC Doc. 157/07. The document provided by Prof. Verma, was only available after the main weighting process was finished, so some of the recommendations could not be included.

2005 was the second year of the integrated cross-sectional and longitudinal survey. The Austrian sample design follows the EUROSTAT recommendation of rotational design with four subsamples. Each subsample has to be weighted separately. From the sample design the 4 rotational groups do not have exactly the same size as this would assume no attrition. Due to higher attrition as expected between the two waves it was decided to keep subsample 1 of 2004 and not let rotate it out. It was added to subsample 4, which almost doubled the size of subsample 4 (see chapter 2.1.4). Thus the 4 rotational groups have a skewed distribution. As 2005 is the second year of the survey the sample was actually divided (proportionally to size) in two subgroups: a cross-sectional sample and a longitudinal sample.

2.1.8.1 Design factor

The design weight is calculated with reference to the design of the sample to take into account the inclusion probability of the selection unit. The idea is that if the inclusion probability of an element is low, it should be assigned a higher weight. The design weight then is calculated as the inverse of the inclusion probability of the selection unit.

In case of the Austrian sample of the EU-SILC 2004 survey, the selection units are households which are selected by a simple random selection mechanism. In this case, each person had the same inclusion probability and the design weight is the fraction of the total number of households within the sampling frame divided by the number of households within the sample. For 2005 the design factor is the same for each unit in the cross-sectional sample, which was selected in a simple random sample procedure.

2.1.8.2 Non-response adjustment for the first wave

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 on the response probability of each of the responding households. The households can then be re-weighted by the inverse of this probability. The estimation strategy applied for the first wave households by Statistics Austria divides the sample into classes and computes the empirical response rate for each of these classes. This empirical response rate then serves as an estimate for the response probability of all households of the respective class. This estimation strategy assumes that the response probability is the same for all households of the class.

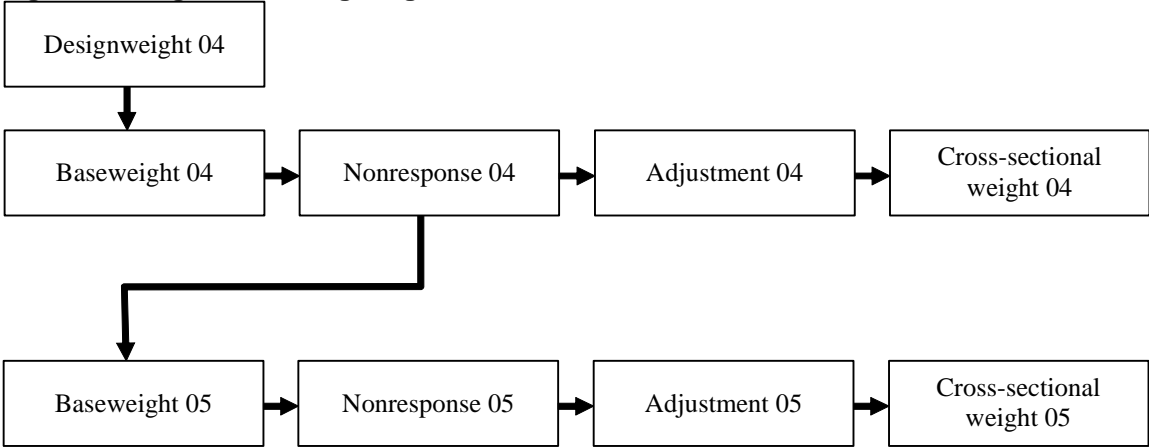
The classes were defined by cross-tabulating the variables DB040 (region, Nuts II level) and DB100 (degree of urbanisation). The first variable has 9 categories, according to Austria's nine federal

provinces (*Bundesländer*), and the second variable has 3 categories, so finally 24² classes are built. A detailed non-response analysis between survey and frame has not been conducted yet. This is due to the fact that personal information in the survey data and in the register are quite difficult to be linked (technically due to different spelling, composition and changes in the household, conceptionally as living reality and register reality may differ). Therefore non-response adjustment is restricted to information on household level. The population register has only been set up in 2003 as a sampling frame. It is under current work to be constantly improved, so we do expect a major improvement for dwelling linkage in the next years. Further it is foreseen to compare register with survey results to better assess potential coverage and non-response bias in the survey.

2.1.8.3 Non-response adjustment for the second wave

For the second wave households the base weights correspond to the design weights in 2004 adjusted for non-response.

Figure 3: Longitudinal Weighting Scheme EU-SILC



For the non-response adjustment for the second wave household much more information is available, as the household has successfully completed an interview in the first wave. Therefore the response probability of each household was estimated on the basis of a logistic regression. In the first step a set of significant variables between participation and non-participation in the second wave was selected. Panel attrition was obviously non-random. Significance was tested with t-test and Chi-Square. Also only variables with a correlation with income (main variable of interest) were selected.

Table 7: Variable for non-response analysis of second wave households

Individual characteristics:	Household characteristics	Methodological characteristics
age	Household size	Proxy
sex	Tenure status	Duration of the interview
education	Region (NUTS 2)	Individual non-response
Economic status	Urban density	
occupation	Household type	
citizenship	Number of children	
health	income	
	Risk of poverty	
	deprivation	

Sex, education and the question whether a proxy interview was conducted in the household showed no correlation with the response probability at all. In a stepwise procedure only significant variables and categories were chosen. Finally six dichotomous variables were used for the logit model to estimate the response probabilities. Important variables like income or activity status were excluded in the stepwise model, due to high multicollinearity (e.g. low income and unemployment shows a strong

² For *Vienna*, the capital of Austria, there is no intermediate or thinly populated areas and for *Burgenland* there are no densely populated areas.

correlation with urban density, migrant status and tenants) or small sample sizes (e.g. in very bad health).

Table 8: Logistic regression estimates to predict participation in the second wave of EU-SILC

	B	SE	Wald	df	Sig.	Exp(B)
All persons in the hh age >65, <20	-0.55	0.12	21.51	1	0.00	0.58
Vienna	-0.73	0.08	77.80	1	0.00	0.48
Hh with Non A/EU/EFTA citizen	-0.53	0.12	17.95	1	0.00	0.59
Hh with children	0.38	0.08	21.88	1	0.00	1.46
Hh with main income from pension	0.31	0.11	8.47	1	0.00	1.37
Tenant	-0.31	0.08	16.99	1	0.00	0.73
Constant	1.01	0.06	276.01	1	0.00	2.74

hh.....Household

For model specification the Hosmer&Lemeshow Pseudo R^2 was calculated with ~ 0.049 . It was estimated if a household participated in the second wave survey. Neutral drop-outs were not excluded.³

The predicted response probabilities had a range from 0.25 to 0.799. At this step the lower extreme values were trimmed to a minimum value of .36, which concerned 8 households. The recommendation to weight “immigrants” - i.e. newborns as well as people who move from a institutional household or from abroad into the sample - to take into account the change in the sampling frame was not followed. Particularly the latter group of “immigrants” cannot be identified. We can see the necessity of this weighting step but would need further recommendations on the practical implementation for this particular approach.

At this step of the weighting procedure still 247 persons were assigned a weight of zero – the non-sample persons like new-borns or new cohabitants.

2.1.8.4 Weight share method for non-sample persons

With this method non-sample persons receive the average weight of the household. If a person moves into the household, the base weight of the household is divided by the new number of household’s members, and then equally assigned to each household member. As a result this procedure scattered the weights substantially. A final solution was not discussed with EUROSTAT in time, in a pragmatic approach the base weights were divided by the maximum factor 2. A possible revision 2005 applying the full weight share method and then trim it will depend on the timeliness for data and indicators, but will be fully applied for 2006.

2.1.8.5 Final cross-sectional weight

Adjustments in general are done to improve the accuracy of the data, meaning the closeness of estimations or computations on the basis of the survey to the ‘true’ value. At this stage the two subsamples are added up again (proportionally to size) and finally adjusted to external marginal distributions.

The data source for these adjustments is the microcensus, a quarterly household survey with a sample of more than 22,000 randomly selected households. The period of the EU-SILC fieldwork was extended in 2005, from March to end of November. As a reference data base the average of the four quarters of the microcensus 2005 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. The adjustments were carried out on household level and on individual level and were done with reference to the following variables:

³ Due to high attrition the group of neutral drop-outs (moved abroad, etc.) remained a very small group in the model. Nevertheless we think they should and will be excluded in future estimates.

- 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 and age (younger than 15 yrs., 15 to 19 years, 5 year age groups between 20 and 74 and 75 and older)

The variables for calibration were the same as in EU-SILC 2004. 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 characteristics⁴.

The adjustment process was carried out in an iterative raking procedure meaning that the weights were first adjusted to the first raking dimension (the first variable), then the second, third etc. Then this process was repeated until the totals of the sample and the data source converged.

Convergence was given if the deviance between given totals and the weighted estimators were at most 0.5%. To avoid a large dispersion within the weights the interval of allowed correction factors was set to (0.5;4.0). Additionally the intervals for the absolute values of the weights were restricted to (180;2,200). If a value higher than 2,200 occurred it was set to 2,200 minus ϵ with ϵ uniformly distributed in the interval (0;10) and in accordance if a value was too low it was set to 180 plus ϵ with ϵ uniformly distributed in the interval (0;3)

Children weights were simply adjusted to the population of 1-year age bands also originating from the microcensus. The personal intergenerational cross-sectional weight from the module 2005 for persons at the age of 25-65, was adjusted in the same way.

2.1.8.6 Final cross-sectional weight

A final correction of individual non-response within a household was not necessary because after imputing the missing cases there was no individual non-response. The following table gives an overview of the distribution of weights and applied maximal factors on each step of the weighting procedure.

Table 9: Weighting procedure: range of weights in each step

	N (persons)	Minimum	Maximum	Factor*
Initial weights				
design weight 2005 (R1)		906.16	906.16	1
base weight 2004 (R2,3,4)		644.56	923.55	1.4
Non-response factor				
R1	4,818	1.46	2.63	1.8
R2,3,4	8,225	1.25	2.78	2.22
Base weights including Non-Response and Weight Share Method				
R1	4,818	1,324	2,386	1.8
R2,3,4	8,225	405	2,388	5.9
Final cross-sectional weight				
R1	4,818	245	1,799	7.4
R2,3,4	8,225	181	2,199	12.1

*Factor is the proportion between maximum and minimum value at each step

Despite of the trimming procedures applied, the calibration had a strong impact on the variance of the weights.

The final cross-sectional weight shows a factor of 12 between lowest and highest weight, which is presumably an effect of high panel attrition between wave 1 and wave 2 as well as the low response rate for wave 1 in 2005.

⁴ In 2003 the adjustments for individual totals were made subsequently after the household adjustments in every iteration step. Finally, the average of the household was assigned to every member of the household.

2.1.9. Substitutions

During the course of the survey it became obvious that neither the required response rate for the first wave and second wave households nor the required number of interviews could be achieved. Thus, Statistics Austria decided that it was necessary to substitute those addresses of the sample for which the required information could not be gathered.

2.1.9.1 Method of selection of substitutes

Substitutions are foreseen when the response rate falls clearly below 60%. This was the case in Austria. Further, the revised assumptions on the longitudinal response rates demanded a supplement sample to guarantee the required number of households over the four years in the sample.

The substitute sample consists of two parts. The first part replaced those addresses of the first wave sample of 2005, for those households that refused to give an interview after three contacts. When it became clear that the demanded response rate for the first wave sample could not be achieved, the households fulfilling this criterion were identified and the addresses of this first part of the substitute sample were selected. The fieldwork institute provided us with a list of a total of 997 successfully contacted addresses, which could not be interviewed after three approaches. For the substitute sample 361 addresses were randomly selected from the 997 addresses. The size of this substitute sample was calculated as the difference between expected response rate and the necessary response rate of 60%; the fieldwork institute then used 342 of these 361 addresses. These addresses were issued in October 2005 in the 26th week of the fieldwork.

As far as the sampling of the substitute addresses is concerned, the requirement was that substitute addresses ought to be similar to those addresses that should be replaced. The similarity was defined according to the variables municipality, the number of persons in the household and the age group of the head of the household⁵. In a first step those addresses were selected for which all three criteria were fulfilled (same municipality, same household size and same age group of the head of the household). Within this group the addresses were selected in a random procedure. When no address could be selected the criterion 'same age group of the head of the household' was skipped; and the addresses were randomly chosen from the remaining pool.

The second part was intended to replace failures of the supplement sample. Since the supplement sample was delivered in October, the request for substitutes for the supplement sample was delivered not until November. Again, the fieldwork institute provided a list with 202 households of the supplement sample, which did not provide an interview after at least three attempts. Here, 166 were selected and used. The addresses of this sample were selected in a process similar to the selection procedure of the first part of the substitute sample. This sample was provided to the fieldwork institute in November in the 31st week of the fieldwork.

2.1.9.2 Main characteristics of substituted units compared to original units

In the following we describe the substitute units in comparison with the original units. These units consist of two parts: the units intended to substitute the first wave original sample of 2005 (N = 342) and the units intended to substitute the supplement first wave sample that was drawn to increase the number of first wave units (N = 166). In the following, the first units are named SSU1 and the second units are named SSU2.

According to the document EU-SILC 132/04 the main characteristics to be described are the household size, the age group and the sex of the reference person, the highest level of education and activity status of the reference person, and the tenure status of the household. The latter three characteristics cannot be provided since we do not know these characteristics for the units that could not be interviewed. For these units we only have the information registered in the sample frame, the ZMR. Thus, we will provide the information that can be taken from the ZMR: the household size and the age group and the sex of the household reference person.

⁵ The head of the households is defined as the oldest person between 16 and 64 years. If all persons of the household are older than 64, the youngest persons was designated as head of the household. The variable age was divided into three groups: persons below 40, persons between 40 and 64, and persons older than 64.

However, since the information given below is based on the registered information in the ZMR the results in the survey may differ with regard to the survey reality.

For all units a corresponding unit with the same household size was found.

Table 10: SSU1 – Household size per region: comparison of original units and substitute units

Burgenland						Kärnten (Carinthia)								
		household size - substitute units							household size - substitute units					
		Total	1	2	3	4+			Total	1	2	3	4+	
original units - household size	1	7	7				1	8	8					
	2	1		1			2	4		4				
	3	2			2		3	2			2			
	4+	1				1	4+	7					7	
	Total	11	7	1	2	1	Total	21	8	4	2	7		

Source: ZMR (31/12/2004)

Source: ZMR (31/12/2004)

Niederösterreich (Lower Austria)						Oberösterreich (Upper Austria)								
		household size - substitute units							household size - substitute units					
		Total	1	2	3	4+			Total	1	2	3	4+	
original units - household size	1	25	25				1	15	15					
	2	17		17			2	8		8				
	3	12			12		3	7			7			
	4+	6				6	4+	10					10	
	Total	60	25	17	12	6	Total	40	15	8	7	10		

Source: ZMR (31/12/2004)

Source: ZMR (31/12/2004)

Salzburg						Steiermark (Styria)								
		household size - substitute units							household size - substitute units					
		Total	1	2	3	4+			Total	1	2	3	4+	
original units - household size	1	7	7				1	16	16					
	2	2		2			2	11		11				
	3	2			2		3	11			11			
	4+	6				6	4+	5					5	
	Total	17	7	2	2	6	Total	43	16	11	11	5		

Source: ZMR (31/12/2004)

Source: ZMR (31/12/2004)

Tirol (Tyrol)						Vorarlberg								
		household size - substitute units							household size - substitute units					
		Total	1	2	3	4+			Total	1	2	3	4+	
original units - household size	1	8	8				1	4	4					
	2	11		11			2	2		2				
	3						3	1			1			
	4+	5				5	4+	3					3	
	Total	24	8	11		5	Total	10	4	2	1	3		

Source: ZMR (31/12/2004)

Source: ZMR (31/12/2004)

Wien (Vienna)

		household size - substitute units				
		Total	1	2	3	4+
original units - household size	1	47	47			
	2	39		39		
	3	14			14	
	4+	16				16
	Total	116	47	39	14	16

Source: ZMR (31/12/2004)

Austria

		household size - substitute units				
		Total	1	2	3	4+
original units - household size	1	137	137			
	2	95		95		
	3	51			51	
	4+	59				59
	Total	342	137	95	51	59

Source: ZMR (31/12/2004)

Table 11: SSU1 - Distribution of units by number of household member

		Original units replaced		Substitute units		Total units in the sample		share of replaced units
		Total	%	Total	%	Total	%	
household size	1	137	40.1	137	40.1	723	34.0	18.9
	2	95	27.8	95	27.8	605	0.3	15.7
	3	51	14.9	51	14.9	355	0.2	14.4
	4+	59	17.3	59	17.3	443	0.2	13.3
	Total	342	100.0	342	100.0	2,126	34.7	16.1

Source: ZMR (31/12/2004)

Table 12: SSU2 – Household size per region: comparison of original units and substitute units

Burgenland

		household size - substitute units				
		Total	1	2	3	4+
original units - household size	1					
	2	2		2		
	3	1			1	
	4+	3				3
	Total	6		2	1	3

Source: ZMR (31/12/2004)

Kärnten (Carinthia)

		household size - substitute units				
		Total	1	2	3	4+
original units - household size	1	3	3			
	2	1		1		
	3	2			2	
	4+	3				3
	Total	9	3	1	2	3

Source: ZMR (31/12/2004)

Niederösterreich (Lower Austria)

		household size - substitute units				
		Total	1	2	3	4+
original units - household size	1	20	20			
	2	16		16		
	3	8			8	
	4+	12				12
	Total	56	20	16	8	12

Source: ZMR (31/12/2004)

Oberösterreich (Upper Austria)

		household size - substitute units				
		Total	1	2	3	4+
original units - household size	1	3	3			
	2	6		6		
	3	2			2	
	4+	1				1
	Total	12	3	6	2	1

Source: ZMR (31/12/2004)

Salzburg

		household size - substitute units				
		Total	1	2	3	4+
original units - household size	1	1	1			
	2					
	3	1			1	
	4+	1				1
	Total	3	1		1	1

Source: ZMR (31/12/2004)

Steiermark (Styria)

		household size - substitute units				
		Total	1	2	3	4+
original units - household size	1	9	9			
	2	5		5		
	3	13			13	
	4+	8				8
	Total	35	9	5	13	8

Source: ZMR (31/12/2004)

Tirol (Tyrol)

		household size - substitute units				
		Total	1	2	3	4+
original units - household size	1	1	1			
	2	2		2		
	3					
	4+	1				1
	Total	4	1	2		1

Source: ZMR (31/12/2004)

Vorarlberg

		household size - substitute units				
		Total	1	2	3	4+
original units - household size	1	1	1			
	2	1		1		
	3	3			3	
	4+	3				3
	Total	8	1	1	3	3

Source: ZMR (31/12/2004)

Wien (Vienna)

		household size - substitute units				
		Total	1	2	3	4+
original units - household size	1	16	16			
	2	8		8		
	3	4			4	
	4+	5				5
	Total	33	16	8	4	5

Source: ZMR (31/12/2004)

Austria

		household size - substitute units				
		Total	1	2	3	4+
original units - household size	1	54	54			
	2	41		41		
	3	34			34	
	4+	37				37
	Total	166	54	41	34	37

Source: ZMR (31/12/2004)

Table 13: SSU2 – Distribution of units by number of household members

		Original units replaced		Substitute units		Total units in the sample		share of replaced units
		Total	%	Total	%	Total	%	
household size	1	54	32.5	54	32.5	620	36.5	8.7
	2	41	24.7	41	24.7	466	27.4	8.8
	3	34	20.5	34	20.5	253	14.9	13.4
	4+	37	22.3	37	22.3	361	21.2	10.2
	Total	166	100.0	166	100.0	1,700	100.0	9.8

Source: ZMR (31/12/2004)

Table 14: SSU1 – Age group and sex of the household reference person per region: comparison of original units and substitute units

Burgenland

			substitute units - age group and sex														
			Total		< 25		25-34		35-44		45-54		55-64		65 +		
			m	f	m	f	m	f	m	f	m	f	m	f	m	f	
original units - age group and sex	< 25	m	0	0													
		f	0	0													
	25-34	m	0	0													
		f	0	0													
	35-44	m	0	1						1							
		f	0	1					1								
	45-54	m	1	0						1							
		f	0	0													
	55-64	m	0	0													
		f	1	3							2	1	1				
	65 +	m	0	0													
		f	1	3												1	3
	Total	m	1	1	0	0	0	0	0	0	1	1	0	0	0	0	0
		f	2	7	0	0	0	0	0	1	0	2	1	1	1	1	3

Source: ZMR (31/12/2004)

Kärnten (Carinthia)

			substitute units - age group and sex														
			Total		< 25		25-34		35-44		45-54		55-64		65 +		
			m	f	m	f	m	f	m	f	m	f	m	f	m	f	
original units - age group and sex	< 25	m	0	1						1							
		f	0	0													
	25-34	m	0	0													
		f	1	0			1										
	35-44	m	4	0	1		1				1		1				
		f	1	0	1												
	45-54	m	1	1							1	1					
		f	3	0					2		1						
	55-64	m	0	3							1		2				
		f	1	2							1	2					
	65 +	m	0	1													1
		f	0	2													2
	Total	m	5	6	1	0	1	0	0	2	2	3	1	0	0	0	1
		f	6	4	1	0	1	0	2	0	2	2	0	0	0	0	2

Source: ZMR (31/12/2004)

Niederösterreich (Lower Austria)

			substitute units - age group and sex														
			Total		< 25		25-34		35-44		45-54		55-64		65 +		
			m	f	m	f	m	f	m	f	m	f	m	f	m	f	
original units - age group and sex	< 25	m	1	0						1							
		f	1	0			1										
	25-34	m	0	1							1						
		f	2	3		1		1	2	1							
	35-44	m	4	2			2				1		1	2			
		f	4	1					1		2	1	1				
	45-54	m	6	2					1		2	1	3	1			
		f	1	0							1						
	55-64	m	2	1						1	1		1				
		f	2	2							1	1	1	1			
	65 +	m	1	7												1	7
		f	3	14											1	3	13
	Total	m	14	13	0	0	2	0	2	2	4	1	5	3	1	7	
		f	13	20	0	1	1	1	3	1	4	2	2	2	3	13	

Source: ZMR (31/12/2004)

Oberösterreich (Upper Austria)

			substitute units - age group and sex														
			Total		< 25		25-34		35-44		45-54		55-64		65 +		
			m	f	m	f	m	f	m	f	m	f	m	f	m	f	
original units - age group and sex	< 25	m	0	0													
		f	0	1				1									
	25-34	m	2	0			2										
		f	1	0					1								
	35-44	m	4	1			1		2	1	1						
		f	0	2						1				1			
	45-54	m	7	4					4	1			3	3			
		f	2	1					1				1	1			
	55-64	m	2	0					1		1						
		f	0	1									1				
	65 +	m	2	2									2				2
		f	2	6												2	6
	Total	m	17	7	0	0	3	0	7	2	2	0	5	3	0	2	
		f	5	11	0	0	0	1	2	1	0	1	1	2	2	6	

Source: ZMR (31/12/2004)

Salzburg

			substitute units - age group and sex															
			Total		< 25		25-34		35-44		45-54		55-64		65 +			
			m	f	m	f	m	f	m	f	m	f	m	f	m	f		
original units - age group and sex	< 25	m	0	0														
		f	0	0														
	25-34	m	0	0														
		f	0	2		1				1								
	35-44	m	3	0					2					1				
		f	0	0														
	45-54	m	2	1					1	1	1							
		f	1	2					1			1		1				
	55-64	m	1	2						1	1				1			
		f	1	0							1							
	65 +	m	0	0														
		f	0	2														2
	Total	m	6	3	0	0	0	0	3	2	2	0	1	1	0	0		
		f	2	6	0	1	0	0	1	1	1	1	0	1	0	1	0	2

Source: ZMR (31/12/2004)

Steiermark (Styria)

			substitute units - age group and sex															
			Total		< 25		25-34		35-44		45-54		55-64		65 +			
			m	f	m	f	m	f	m	f	m	f	m	f	m	f		
original units - age group and sex	< 25	m	1	0					1									
		f	0	0														
	25-34	m	2	2			2	2										
		f	1	1			1	1										
	35-44	m	5	2			1	1	1		3			1				
		f	2	1			1		1	1								
	45-54	m	6	1					2		4	1						
		f	2	1					1	1				1				
	55-64	m	3	0										3				
		f	1	2					1						2			
	65 +	m	0	5						1		1						3
		f	2	3							1						1	3
	Total	m	17	10	0	0	3	3	4	1	7	2	3	1	0	3		
		f	8	8	0	0	2	1	3	2	1	0	1	2	1	3		

Source: ZMR (31/12/2004)

Tirol (Tyrol)

			substitute units - age group and sex															
			Total		< 25		25-34		35-44		45-54		55-64		65 +			
			m	f	m	f	m	f	m	f	m	f	m	f	m	f		
original units - age group and sex	< 25	m	0	0														
		f	0	0														
	25-34	m	1	0					1									
		f	1	0	1													
	35-44	m	0	0														
		f	4	4					3	2		1	1	1				
	45-54	m	3	0										3				
		f	2	1							1	1	1					
	55-64	m	1	0							1							
		f	1	1						1	1							
	65 +	m	1	1							1							1
		f	1	2													1	2
	Total	m	6	1	0	0	0	0	1	0	2	0	3	0	0	1		
		f	9	8	1	0	0	0	3	3	2	2	2	1	1	2		

Source: ZMR (31/12/2004)

Vorarlberg

			substitute units - age group and sex															
			Total		< 25		25-34		35-44		45-54		55-64		65 +			
			m	f	m	f	m	f	m	f	m	f	m	f	m	f		
original units - age group and sex	< 25	m	0	0														
		f	0	0														
	25-34	m	1	1			1	1										
		f	2	0			1		1									
	35-44	m	0	1				1										
		f	0	2				1		1								
	45-54	m	2	0					1		1							
		f	0	0														
	55-64	m	0	1							1							
		f	0	0														
	65 +	m	0	0														
		f	0	0														
	Total	m	3	3	0	0	0	2	2	1	1	0	0	0	0	0	0	0
		f	2	2	0	0	1	1	1	1	0	0	0	0	0	0	0	0

Source: ZMR (31/12/2004)

Wien (Vienna)

			substitute units - age group and sex															
			Total		< 25		25-34		35-44		45-54		55-64		65 +			
			m	f	m	f	m	f	m	f	m	f	m	f	m	f		
original units - age group and sex	< 25	m	1	0			1											
		f	3	1			3	1										
	25-34	m	2	8		2	1	4	1	2								
		f	4	2			2	2	2									
	35-44	m	6	7			1	2	2	3	2		1	2				
		f	4	8				3	2	3	1	2	1					
	45-54	m	5	5					2		2	2	1	3				
		f	4	2					1	1	3	1						
	55-64	m	7	14						5	3	3	4	6				
		f	6	5					1	2	1	1	4	2				
	65 +	m	3	5													3	5
		f	1	13													1	13
	Total	m	24	39	0	2	3	6	5	10	7	5	6	11	3	5		
		f	22	31	0	0	5	6	6	6	5	4	5	2	1	13		

Source: ZMR (31/12/2004)

Austria

			substitute units - age group and sex															
			Total		< 25		25-34		35-44		45-54		55-64		65 +			
			m	f	m	f	m	f	m	f	m	f	m	f	m	f		
original units - age group and sex	< 25	m	3	0			1		2									
		f	4	2			4	2										
	25-34	m	8	14		3	5	7	3	4								
		f	12	7	1	1	5	4	6	2								
	35-44	m	26	14	1		6	4	7	4	8	1	4	5				
		f	15	19	1		1	4	7	9	3	4	3	2				
	45-54	m	33	14					11	2	12	5	10	7				
		f	15	7					6	2	6	3	3	2				
	55-64	m	16	21					1	9	7	5	8	7				
		f	13	16					2	3	5	7	6	6				
	65 +	m	7	21						1	1	1	2			4	19	
		f	10	45							1			1	9	44		
	Total	m	93	84	1	3	12	11	24	20	28	12	24	19	4	19		
		f	69	96	2	1	10	10	21	16	15	14	12	11	9	44		

Source: ZMR (31/12/2004)

Table 15: SSU1 – Distribution of units by age group and gender

			Original units replaced		Substitute units		Total units in the sample		share of replaced units
			Total	%	Total	%	Total	%	
			Total	%	Total	%	Total	%	%
original units - age group and sex	< 25	m	3	1.7	3	1.9	28	2.3	10.7
		f	6	3.6	4	2.2	38	4.1	15.8
	25-34	m	22	12.4	22	13.6	151	12.5	14.6
		f	19	11.5	21	11.7	109	11.9	17.4
	35-44	m	40	22.6	45	27.8	300	24.8	13.3
		f	34	20.6	36	20.0	184	20.1	18.5
	45-54	m	47	26.6	43	26.5	284	23.5	16.5
		f	22	13.3	26	14.4	156	17.0	14.1
	55-64	m	37	20.9	36	22.2	272	22.5	13.6
		f	29	17.6	30	16.7	179	19.5	16.2
	65 +	m	28	15.8	13	8.0	175	14.5	16.0
		f	55	33.3	63	35.0	250	27.3	22.0
	Total	m	177	100.0	162	100.0	1,210	100.0	14.6
		f	165	100.0	180	100.0	916	100.0	18.0
	Total		342	100.0	342	100.0	2,126	100.0	

Table 16: SSU2 – Age group and sex of the household reference person per region: comparison of original units and substitute units

Burgenland

			substitute units - age group and sex													
			Total		< 25		25-34		35-44		45-54		55-64		65 +	
			m	f	m	f	m	f	m	f	m	f	m	f	m	f
original units - age group and sex	< 25	m	0	0												
		f	0	0												
	25-34	m	0	0												
		f	1	0			1									
	35-44	m	2	0			1			1						
		f	0	0												
	45-54	m	1	1						1	1					
		f	0	0												
	55-64	m	0	0												
		f	1	0								1				
	65 +	m	0	0												
		f	0	0												
	Total	m	3	1	0	0	1	0	0	0	1	1	1	0	0	0
		f	2	0	0	0	0	0	1	0	0	0	1	0	0	0

Source: ZMR (31/12/2004)

Kärnten (Carinthia)

			substitute units - age group and sex													
			Total		< 25		25-34		35-44		45-54		55-64		65 +	
			m	f	m	f	m	f	m	f	m	f	m	f	m	f
original units - age group and sex	< 25	m	0	0												
		f	1	0			1									
	25-34	m	0	0												
		f	0	1					1							
	35-44	m	3	0			1		2							
		f	0	0												
	45-54	m	1	1					1		1					
		f	0	0												
	55-64	m	2	0						1		1				
		f	0	0												
	65 +	m	0	0												
		f	0	0												
	Total	m	6	1	0	0	1	0	3	0	1	1	1	0	0	0
		f	1	1	0	0	1	0	0	1	0	0	0	0	0	0

Source: ZMR (31/12/2004)

Niederösterreich (Lower Austria)

			substitute units - age group and sex														
			Total		< 25		25-34		35-44		45-54		55-64		65 +		
			m	f	m	f	m	f	m	f	m	f	m	f	m	f	
original units - age group and sex	< 25	m	0	0													
		f	0	1						1							
	25-34	m	4	1	1		2	1	1								
		f	2	1			1	1	1								
	35-44	m	7	4			1	1	3	2	1	1	2				
		f	2	1					1	1	1						
	45-54	m	1	1										1	1		
		f	3	2					1		1	1	1	1			
	55-64	m	10	2					2		4		4	2			
		f	1	3							1	1		2			
	65 +	m	1	0												1	
		f	0	9													9
	Total	m	23	8	1	0	3	2	6	2	5	1	7	3	1	0	
		f	8	17	0	0	1	1	3	2	3	2	1	3	0	9	

Source: ZMR (31/12/2004)

Oberösterreich (Upper Austria)

			substitute units - age group and sex														
			Total		< 25		25-34		35-44		45-54		55-64		65 +		
			m	f	m	f	m	f	m	f	m	f	m	f	m	f	
original units - age group and sex	< 25	m	0	0													
		f	0	0													
	25-34	m	2	0			2										
		f	0	1				1									
	35-44	m	1	0					1								
		f	0	1										1			
	45-54	m	0	1										1			
		f	1	0							1						
	55-64	m	0	0													
		f	0	1										1			
	65 +	m	0	0													
		f	1	3												1	3
	Total	m	3	1	0	0	2	0	1	0	0	0	0	1	0	0	0
		f	2	6	0	0	0	1	0	0	1	0	0	2	1	3	3

Source: ZMR (31/12/2004)

Salzburg

			substitute units - age group and sex														
			Total		< 25		25-34		35-44		45-54		55-64		65 +		
			m	f	m	f	m	f	m	f	m	f	m	f	m	f	
original units - age group and sex	< 25	m	0	0													
		f	0	0													
	25-34	m	0	0													
		f	0	0													
	35-44	m	0	0													
		f	0	0													
	45-54	m	1	0					1								
		f	1	0							1						
	55-64	m	0	0													
		f	1	0							1						
	65 +	m	0	0													
		f	0	0													
	Total	m	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0
		f	2	0	0	0	0	0	0	0	2	0	0	0	0	0	0

Source: ZMR (31/12/2004)

Steiermark (Styria)

			substitute units - age group and sex														
			Total		< 25		25-34		35-44		45-54		55-64		65 +		
			m	f	m	f	m	f	m	f	m	f	m	f	m	f	
original units - age group and sex	< 25	m	0	0													
		f	0	0													
	25-34	m	2	1			1		1	1							
		f	2	0			2										
	35-44	m	5	5			1	2	3	1	1	2					
		f	1	1										1	1		
	45-54	m	3	2							2	1	1	1			
		f	2	1					1	1	1						
	55-64	m	1	1					1			1					
		f	2	2							1	1	1	1			
	65 +	m	0	0													
		f	0	4													4
	Total	m	11	9	0	0	2	2	5	2	3	4	1	1	0	0	
		f	7	8	0	0	2	0	1	1	2	1	2	2	0	4	

Source: ZMR (31/12/2004)

Tirol (Tyrol)

			substitute units - age group and sex														
			Total		< 25		25-34		35-44		45-54		55-64		65 +		
			m	f	m	f	m	f	m	f	m	f	m	f	m	f	
original units - age group and sex	< 25	m	0	0													
		f	0	0													
	25-34	m	0	0													
		f	0	0													
	35-44	m	0	1						1							
		f	1	0					1								
	45-54	m	0	1						1							
		f	0	0													
	55-64	m	0	0													
		f	0	0													
	65 +	m	0	1													1
		f	0	0													
	Total	m	0	3	0	0	0	0	0	2	0	0	0	0	0	0	1
		f	1	0	0	0	0	0	1	0	0	0	0	0	0	0	0

Source: ZMR (31/12/2004)

Vorarlberg

			substitute units - age group and sex														
			Total		< 25		25-34		35-44		45-54		55-64		65 +		
			m	f	m	f	m	f	m	f	m	f	m	f	m	f	
original units - age group and sex	< 25	m	0	0													
		f	0	0													
	25-34	m	0	0													
		f	0	0													
	35-44	m	1	1						1				1			
		f	1	1						1				1			
	45-54	m	0	2							1			1			
		f	1	0						1							
	55-64	m	0	0													
		f	0	1							1						
	65 +	m	0	0													
		f	0	0													
	Total	m	1	3	0	0	0	0	0	0	1	1	0	2	0	0	
		f	2	2	0	0	0	0	0	1	1	1	1	0	0	0	

Source: ZMR (31/12/2004)

Wien (Vienna)

			substitute units - age group and sex															
			Total		< 25		25-34		35-44		45-54		55-64		65 +			
			m	f	m	f	m	f	m	f	m	f	m	f	m	f		
original units - age group and sex	< 25	m	0	0														
		f	0	0														
	25-34	m	2	1			1	1	1									
		f	1	1			1			1								
	35-44	m	2	2					1		1	1		1				
		f	0	2				1							1			
	45-54	m	2	3					1	1	1	1	1		1			
		f	3	0					1		1			1				
	55-64	m	3	1							1		2	1				
		f	2	1						1	1		1					
	65 +	m	0	3														3
		f	2	2													2	2
	Total	m	9	10	0	0	1	1	3	1	3	2	2	3	0	3		
		f	8	6	0	0	1	1	1	2	2	0	2	1	2	2		

Source: ZMR (31/12/2004)

Austria

			substitute units - age group and sex															
			Total		< 25		25-34		35-44		45-54		55-64		65 +			
			m	f	m	f	m	f	m	f	m	f	m	f	m	f		
original units - age group and sex	< 25	m	0	0														
		f	1	1			1			1								
	25-34	m	10	3	1		6	2	3	1								
		f	6	4			4	2	2	2								
	35-44	m	21	13			4	3	10	4	5	4	2	2				
		f	5	6				1	2	2	1		2	3				
	45-54	m	9	12					3	2	3	5	3	5				
		f	11	3					3	1	6	1	2	1				
	55-64	m	16	4					3		6	1	7	3				
		f	7	8						1	4	3	3	4				
	65 +	m	1	4													1	4
		f	3	18													3	18
	Total	m	57	36	1	0	10	5	19	7	14	10	12	10	1	4		
		f	33	40	0	0	5	3	7	7	11	4	7	8	3	18		

Source: ZMR (31/12/2004)

Table 17: SSU2 – Distribution of units by age group and gender

			Original units replaced		Substitute units		Total units in the sample		share of replaced units	
			Total	%	Total	%	Total	%	%	
			Total	%	Total	%	Total	%	%	
original units - age group and sex	< 25	m	0	0.0	1	1.1	35	3.9	0.0	
		f	2	2.7	0	0.0	35	4.4	5.7	
	25-34	m	13	14.0	15	16.7	120	13.3	10.8	
		f	10	13.7	8	10.5	86	10.8	11.6	
	35-44	m	34	36.6	26	28.9	260	28.8	13.1	
		f	11	15.1	14	18.4	137	17.2	8.0	
	45-54	m	21	22.6	25	27.8	241	26.7	8.7	
		f	14	19.2	14	18.4	133	16.7	10.5	
	55-64	m	20	21.5	19	21.1	187	20.7	10.7	
		f	15	20.5	18	23.7	168	21.1	8.9	
	65 +	m	5	5.4	4	4.4	59	6.5	8.5	
		f	21	28.8	22	28.9	239	29.9	8.8	
	Total	m	93	100.0	90	100.0	902	100.0	10.3	
		f	73	100.0	76	100.0	798	100.0	9.1	
	Total			166	100.0	166	100.0	1,700	100.0	

Source: ZMR (31/12/2004)

2.1.9.3 Distribution of substituted units (by DB120, DB130, DB135)

The response rates of the substitute samples are considerably lower than those of the original units mainly due to the shorter fieldwork.

Table 18: Distribution of DB120, DB130 and DB135 of substituted units

	Original first wave addresses		Additional first wave addresses		SSU1		SSU2	
	Total	%	Total	%	Total	%	Total	%
<i>DB120 - Contact at address</i>	342	100.0	166	100.0	342	100.0	166	100.0
Address contacted (11)	342	100.0	166	100.0	326	95.3	164	98.8
Address cannot be located (21)	0	0.0		0.0	9	2.6	0	0.0
Address unable to access (22)	0	0.0		0.0	0	0.0	0	0.0
Address does not exist (23)	0	0.0		0.0	7	2.0	2	1.2
<i>DB130 - Household questionnaire result</i>	342	100.0	166	100.0	326	100.0	164	100.0
Household questionnaire completed (11)	0	0.0	0	0.0	111	34.0	62	37.8
Refusal to co-operate (21)	218	63.7	120	72.3	111	34.0	39	23.8
Household temporarily away (22)	77	22.5	27	16.3	67	20.6	53	32.3
Household unable to respond (23)	10	2.9	5	3.0	4	1.2	2	1.2
Other reasons (24)	37	10.8	14	8.4	33	10.1	8	4.9
<i>DB135 - Household interview acceptance</i>	0	0	0	0	111	100.0	62	100.0
Interview accepted for database (1)	0	0	0	0	111	100.0	62	100.0
Interview rejected (2)	0	0	0	0	0	0.0	0	0.0

Source: EU-SILC 2005, D-File of 19/09/05 and 11/11/05

2.2. Sampling Errors

Sampling errors refer to the variability that occurs at random because of the use of a sample rather than a census. The guidelines for the quality reports require presenting the effective sample size and the standards errors for the common cross-sectional indicators.

2.2.1 Bootstrapping and Linearization

Both, the results for linearization and the bootstrapping method are first attempts for variance estimations on this complex topic and were implemented in relatively short time for EU-SILC 2005. Further investigations need to be done on the particular strengths and weaknesses of each method.

Generally speaking, bootstrapping is more straight-forward and easier to understand, but is technically demanding. Therefore, also no design effect was calculated with bootstrapping method as it would require simulating unweighted random samples. Linearization is not intuitively understood and a lot of assumptions are made but the final implementation is comparatively easy.

Bootstrapping

In addition to the linearization techniques for estimating the standard errors of the indicators, alternative estimates were produced by a nonparametric bootstrap procedure. As usual, new samples were drawn from the EU-SILC sample randomly with replacement, each of them having the same size as the original one. We chose to re-sample 5,000 times. Every indicator was calculated for every sample, and the estimated standard error of an indicator was the standard deviation of the sample estimates across the 5,000 random samples.

According to the EU-SILC sampling procedure, re-sampling took place by choosing households with weights taking the different estimated attrition probabilities into account. Household weight of a chosen household was the same as in the original sample but multiplied by a normalizing factor guaranteeing that the weights sum up to one. The calibration which is done for the original sample is also applied to the bootstrap samples: the weights of the bootstrap samples were modified by the raking procedure to

produce the same marginal sums as the original samples with respect to sex and age at individual level and to Bundesland, household size and accommodation tenure status.

Before we can give a final conclusion about the quality of the bootstrap estimates, especially compared to the estimates won by linearization techniques, some more methodological research is needed.

Linearization

The indicators estimated by EU-SILC data are of highly complicated non-linear nature. One possible solution is to linearize the target variable in a way that the estimated statistics is interpreted as a functional over a measurable space. For each survey person we computed the linearized contributions z_j – also called influence function- to the target estimators. The exact way the linearizations were performed is described in the paper by Deville⁶ see [1]. After the computation of the z_j those values were aggregated to the household level. So we received aggregated values y_i by calculating

$$y_i = \sum_{i \in j} z_i$$

With y the variance of an estimator \hat{Y} can be obtained by:

$$\widehat{V}(\hat{Y}) = N^2 \frac{1-f}{n} \hat{S}^2 + \sum_i \frac{y_i^2}{\pi_i^2} * \frac{1-p_i}{p_i^2}$$

With $f = \frac{n}{N}$ the sampling fraction, p_i the estimated response probability (the inverse of non response weighting factors) and π_i the inclusion probability.

The dispersion S^2 is estimated by

$$\hat{S}^2 = \left(\frac{1}{n} - \frac{1}{nN} \right) * \sum_i \frac{y_i^2}{p_i} - \frac{(N-1)}{N * n * (n-1)} * \left[\left(\sum_i \frac{y_i}{p_i} \right)^2 - \sum_i \frac{y_i^2}{p_i^2} \right]$$

The linearized variables were also used to estimate the design effect which using the formula

$$def = \frac{\sum_i w_i^2 z_i^2}{\sum_i w_i z_i^2} * \frac{n}{\sum_i w_i}$$

With n given as the real sample size the effective sample size n_{eff} is calculated by

$$n_{eff} = \frac{n}{def}$$

The linearization and the estimation formulas for the variance were implemented in SAS- programs which allowed the computation of standard errors and design effects for totals and sub-domains.

⁶ Jean Claude Deville : *Variance Estimation for Complex Statistics and Estimators: Linearization and Residual Techniques*, In: Survey Methodology, December 1999 Vol. 25, No. 2 pp. 193-203, Statistics Canada

2.2.2 Variance estimation

2005 Austria		Estimates			Variance Estimation Linearization					Variance Estimation Bootstrap		
					95% CI					95% CI		
Indicator		Value	Achieved sample size	Total item non response	Std.error	lower bound	upper bound	effective sample size	deff	Std.error	lower bound	upper bound
1	At-risk-of-poverty rate after social transfers – total	12.3	13043	0	0.54	11.23	13.35	11388	1.15	0.51	11.30	13.30
2	At-risk-of-poverty rate after social transfers - men total	11.5	6318	0	0.57	10.35	12.57	5473	1.15	0.77	9.99	13.01
3	At-risk-of-poverty rate after social transfers - women total	13.1	6725	0	0.57	11.96	14.21	5906	1.14	0.84	11.45	14.75
4	At-risk-of-poverty rate after social transfers - 0-15 years	15.2	2562	0	1.07	13.12	17.32	2273	1.13	1.45	12.36	18.04
5	At-risk-of-poverty rate after social transfers - 16-24 years	12.9	1437	0	1.08	10.78	15.00	1245	1.15	1.34	10.27	15.53
6	At-risk-of-poverty rate after social transfers - 25-49 years	11.2	4690	0	0.60	9.99	12.35	4027	1.16	0.88	9.48	12.92
7	At-risk-of-poverty rate after social transfers - 50-64 years	9.8	2533	0	0.72	8.37	11.21	2329	1.09	0.86	8.11	11.49
8	At-risk-of-poverty rate after social transfers - 65+ years	14.2	1759	0	1.06	12.08	16.25	1572	1.12	1.58	11.10	17.30
9	At-risk-of-poverty rate after social transfers - 16+ years	11.7	10419	0	0.48	10.74	12.61	9037	1.15	0.66	10.41	12.99
10	At-risk-of-poverty rate after social transfers - 16-64 years	11.1	8660	0	0.51	10.09	12.08	7517	1.15	0.66	9.81	12.39
11	At-risk-of-poverty rate after social transfers - 0-64 years	11.9	11222	0	0.58	10.80	13.09	9834	1.14	0.73	10.47	13.33
12	At-risk-of-poverty rate after social transfers - men 16-24 years	11.0	725	0	1.32	8.43	13.61	618	1.17	1.43	8.20	13.80
13	At-risk-of-poverty rate after social transfers - men 25-49 years	10.9	2285	0	0.68	9.62	12.27	1900	1.20	1.19	8.57	13.23
14	At-risk-of-poverty rate after social transfers - men 50-64 years	9.6	1192	0	0.81	7.98	11.15	1060	1.12	1.17	7.31	11.89
15	At-risk-of-poverty rate after social transfers - men 65+ years	9.6	771	0	1.06	7.54	11.68	696	1.11	1.59	6.48	12.72
16	At-risk-of-poverty rate after social transfers - men 16+ years	10.4	4973	0	0.50	9.47	11.41	4238	1.17	0.74	8.95	11.85
17	At-risk-of-poverty rate after social transfers - men 16-64 years	10.6	4202	0	0.55	9.53	11.67	3541	1.19	0.79	9.05	12.15
18	At-risk-of-poverty rate after social transfers - men 0-64 years	11.7	5516	0	0.62	10.52	12.96	4750	1.16	0.81	10.11	13.29
19	At-risk-of-poverty rate after social transfers - women 16-24 years	14.8	712	0	1.41	12.06	17.59	623	1.14	2.05	10.78	18.82
20	At-risk-of-poverty rate after social transfers - women 25-49 years	11.4	2405	0	0.65	10.11	12.68	2136	1.13	0.97	9.50	13.30
21	At-risk-of-poverty rate after social transfers - women 50-64 years	10.0	1341	0	0.82	8.39	11.62	1268	1.06	0.98	8.08	11.92
22	At-risk-of-poverty rate after social transfers - women 65+ years	17.3	988	0	1.36	14.60	19.95	894	1.10	1.99	13.40	21.20
23	At-risk-of-poverty rate after social transfers - women 16+ years	12.8	5446	0	0.52	11.80	13.84	4777	1.14	0.82	11.19	14.41
24	At-risk-of-poverty rate after social transfers - women 16-64 years	11.6	4458	0	0.55	10.50	12.65	3975	1.12	1.67	8.33	14.87
25	At-risk-of-poverty rate after social transfers - women 0-64 years	12.2	5706	0	0.61	10.95	13.36	5091	1.12	0.85	10.53	13.87
26	At-risk-of-poverty rate after social transfers - employed	6.7	5620	82	0.41	5.86	7.45	4852	1.16	0.55	5.62	7.78
27	At-risk-of-poverty rate after social transfers - unemployed	46.9	225	82	4.09	38.88	54.92	199	1.13	7.05	33.08	60.72
28	At-risk-of-poverty rate after social transfers - retired	12.1	2572	82	0.79	10.53	13.61	2230	1.15	1.18	9.79	14.41
29	At-risk-of-poverty rate after social transfers - other inactive	21.7	1920	82	1.22	19.27	24.05	1728	1.11	1.67	18.43	24.97
30	At-risk-of-poverty rate after social transfers - men, employed	7.2	3199	36	0.47	6.22	8.08	2734	1.17	0.68	5.87	8.53
31	At-risk-of-poverty rate after social transfers - men, unemployed	51.3	110	36	6.52	38.52	64.08	95	1.16	7.92	35.78	66.82
32	At-risk-of-poverty rate after social transfers - men,retired	10.3	1201	36	0.90	8.59	12.11	1084	1.11	1.24	7.87	12.73

2005 Austria		Estimates			Variance Estimation Linearization					Variance Estimation Bootstrap		
					95% CI					95% CI		
Indicator		Value	Achieved sample size	Total item non response	Std.error	lower bound	upper bound	effective sample size	deff	Std.error	lower bound	upper bound
33	At-risk-of-poverty rate after social transfers - men, other inactive	23.2	427	36	2.19	18.95	27.52	357	1.19	3.64	16.07	30.33
34	At-risk-of-poverty rate after social transfers - women, employed	6.0	2421	46	0.51	4.99	6.99	2136	1.13	0.64	4.75	7.25
35	At-risk-of-poverty rate after social transfers - women, unemployed	42.2	115	46	4.69	33.04	51.42	107	1.07	10.39	21.84	62.56
36	At-risk-of-poverty rate after social transfers - women, retired	13.5	1371	46	0.96	11.62	15.39	1166	1.18	1.64	10.29	16.71
37	At-risk-of-poverty rate after social transfers - women, other inactive	21.2	1493	46	1.33	18.57	23.79	1358	1.10	1.81	17.65	24.75
38	At-risk-of-poverty rate after social transfers - single, < 65 years	17.3	897	0	1.26	14.80	19.72	831	1.08	2.16	13.07	21.53
39	At-risk-of-poverty rate after social transfers - single, 65+ years	22.8	478	0	3.11	16.71	28.90	444	1.08	2.79	17.33	28.27
40	At-risk-of-poverty rate after social transfers - single, male	14.4	507	0	1.49	11.50	17.34	477	1.06	2.35	9.79	19.01
41	At-risk-of-poverty rate after social transfers - single, female	22.5	868	0	2.10	18.39	26.61	799	1.09	2.42	17.76	27.24
42	At-risk-of-poverty rate after social transfers - single, total	19.3	1375	0	1.22	16.86	21.66	1277	1.08	1.65	16.07	22.53
43	At-risk-of-poverty rate after social transfers - 2 adults, no children, both < 65	9.1	1738	0	0.93	7.31	10.97	1489	1.17	0.94	7.26	10.94
44	At-risk-of-poverty rate after social transfers - 2 adults, no children, at least one 65+	11.0	1180	0	1.27	8.50	13.46	1045	1.13	1.97	7.14	14.86
45	At-risk-of-poverty rate after social transfers - other households without children	5.9	1674	0	1.01	3.89	7.85	1412	1.19	1.43	3.10	8.70
46	At-risk-of-poverty rate after social transfers - single parent, at least one child	27.9	535	0	3.49	21.08	34.77	487	1.10	5.88	16.38	39.42
47	At-risk-of-poverty rate after social transfers - 2 adults, 1 child	9.5	1473	0	1.30	6.92	12.02	1360	1.08	1.8	5.97	13.03
48	At-risk-of-poverty rate after social transfers - 2 adults, 2 children	11.8	2144	0	1.43	9.04	14.65	1844	1.16	2.12	7.64	15.96
49	At-risk-of-poverty rate after social transfers - 2 adults, 3+ children	19.8	1156	0	2.99	13.98	25.69	1031	1.12	3.32	13.29	26.31
50	At-risk-of-poverty rate after social transfers - other households with children	9.8	1768	0	1.69	6.46	13.07	1676	1.05	1.73	6.41	13.19
51	At-risk-of-poverty rate after social transfers - households without children	11.5	5967	0	0.56	10.38	12.57	5114	1.17	1.16	9.23	13.77
52	At-risk-of-poverty rate after social transfers - households with children	13.2	7076	0	0.84	11.51	14.81	6321	1.12	0.74	11.75	14.65
53	At-risk-of-poverty rate after social transfers - owner or rent-free	9.8	9109	0	0.61	8.56	10.95	8505	1.07	0.72	8.39	11.21
54	At-risk-of-poverty rate after social transfers - tenant	17.0	3934	0	1.06	14.89	19.06	3444	1.14	0.97	15.10	18.90
55	At-risk-of-poverty rate after social transfers - households without children, w = 0 ¹	21.1	1061	1161*	1.66	17.84	24.33	917	1.16	2.03	17.12	25.08
56	At-risk-of-poverty rate after social transfers - households without children, 0 < w < 1	10.2	1754	1161	1.07	8.07	12.28	1369	1.28	1.59	7.08	13.32
57	At-risk-of-poverty rate after social transfers - households without children, w = 1	4.2	1996	1161	0.57	3.06	5.31	1713	1.16	0.78	2.67	5.73
58	At-risk-of-poverty rate after social transfers - households with children, w = 0	53.7	266	1161	33.78	-12.50	119.94	237	1.12	9.15	35.77	71.63
59	At-risk-of-poverty rate after social transfers - households with children, 0 < w < 0.5	33.6	451	1161	11.40	11.24	55.91	405	1.11	7.22	19.45	47.75
60	At-risk-of-poverty rate after social transfers - households with children, 0.5 < w < 1	14.6	3206	1161	1.42	11.80	17.38	2845	1.13	1.63	11.41	17.79
61	At-risk-of-poverty rate after social transfers - households with children, w = 1	5.7	3148	1161	0.82	4.04	7.27	3065	1.03	1.29	3.17	8.23
62	Median of the equivalised disposable household income	17992.64	13043	0	150.55	17697.57	18287.71	11482	1.14	206.05	17588.78	18396.50
63	At-risk-of-poverty threshold - single	10795.58	13043	0	90.33	10618.54	10972.63	11482	1.14	123.63	10553.27	11037.89
64	At-risk-of-poverty threshold - 2 adults, 2 children	22670.73	13043	0	189.69	22298.94	23042.51	11482	1.14	259.62	22161.87	23179.59
65	Inequality of income distribution S80/S20 income quintile share ratio	3.77	13043	0	0.21	3.36	4.18	11294	1.15	0.12	3.53	4.01
66	Relative median at-risk-of-poverty gap - total	15.3	1597	0	0.15	15.01	15.59	1406	1.14	0.72	13.89	16.71

2005 Austria		Estimates			Variance Estimation Linearization				Variance Estimation Bootstrap			
					95% CI				95% CI			
Indicator		Value	Achieved sample size	Total item non response	Std.error	lower bound	upper bound	effective sample size	deff	Std.error	lower bound	upper bound
67	Relative median at-risk-of-poverty gap - men total	15.3	722	0	0.21	14.90	15.70	634	1.14	1.28	12.79	17.81
68	Relative median at-risk-of-poverty gap - women total	15.3	875	0	0.15	15.00	15.60	772	1.13	0.67	13.99	16.61
69	Relative median at-risk-of-poverty gap - 0-15 years	13.9	393	0	0.30	13.30	14.50	352	1.12	1.6	10.76	17.04
70	Relative median at-risk-of-poverty gap - 16-64 years	17.7	956	0	0.38	16.96	18.44	843	1.13	2.33	13.13	22.27
71	Relative median at-risk-of-poverty gap - 65+ years	13.7	238	0	0.23	13.25	14.15	214	1.11	1.09	11.56	15.84
72	Relative median at-risk-of-poverty gap - 16+ years	15.3	1194	0	0.18	14.94	15.66	1053	1.13	0.74	13.85	16.75
73	Relative median at-risk-of-poverty gap - men, 16-64 years	19.2	432	0	1.06	17.12	21.28	379	1.14	2.44	14.42	23.98
74	Relative median at-risk-of-poverty gap - men, 65+ years	12.2	73	0	0.19	11.83	12.57	65	1.12	1.06	10.12	14.28
75	Relative median at-risk-of-poverty gap - men, 16+ years	16.6	505	0	0.34	15.94	17.26	444	1.14	1.82	13.03	20.17
76	Relative median at-risk-of-poverty gap - women, 16-64 years	17.4	524	0	0.49	16.44	18.36	466	1.13	1.47	14.52	20.28
77	Relative median at-risk-of-poverty gap - women, 65+ years	15.3	165	0	0.11	15.09	15.51	149	1.10	0.59	14.14	16.46
78	Relative median at-risk-of-poverty gap - women, 16+ years	15.3	689	0	0.14	15.02	15.58	610	1.13	0.65	14.03	16.57
79	Median income below the at-risk-of-poverty threshold - total	9145.00	1597	0	83.24	8981.86	9308.14	1363	1.17	58.22	9030.89	9259.11
80	Median income below the at-risk-of-poverty threshold - men total	9145.00	722	0	119.07	8911.62	9378.38	608	1.19	129.41	8891.36	9398.64
81	Median income below the at-risk-of-poverty threshold - women total	9145.00	875	0	72.80	9002.30	9287.70	755	1.16	40.6	9065.42	9224.58
82	Median income below the at-risk-of-poverty threshold - 0-15 years	9291.67	393	0	156.74	8957.98	9572.39	336	1.17	180.17	8938.54	9644.80
83	Median income below the at-risk-of-poverty threshold - 16-64 years	8880.00	956	0	159.42	8567.53	9192.47	813	1.18	251.88	8386.32	9373.68
84	Median income below the at-risk-of-poverty threshold - 65+ years	9315.33	238	0	98.63	9122.02	9508.65	217	1.10	102.36	9114.70	9515.96
85	Median income below the at-risk-of-poverty threshold - 16+ years	9145.00	1194	0	73.81	9000.34	9289.66	1027	1.16	64.72	9018.15	9271.85
86	Median income below the at-risk-of-poverty threshold - men, 16-64 years	8723.38	432	0	234.78	8263.22	9183.55	363	1.19	269.28	8195.59	9251.17
87	Median income below the at-risk-of-poverty threshold - men, 65+ years	9473.33	73	0	73.50	9329.27	9617.40	66	1.10	91.72	9293.56	9653.10
88	Median income below the at-risk-of-poverty threshold - men, 16+ years	9000.00	505	0	154.26	8697.65	9302.35	429	1.18	191.36	8624.93	9375.07
89	Median income below the at-risk-of-poverty threshold - women, 16-64 years	8916.00	524	0	140.52	8640.57	9191.43	453	1.16	289.05	8349.46	9482.54
90	Median income below the at-risk-of-poverty threshold - women, 65+ years	9145.00	165	0	27.24	9091.60	9198.40	151	1.09	24.24	9097.49	9192.51
91	Median income below the at-risk-of-poverty threshold - women, 16+ years	9145.00	689	0	61.05	9025.34	9264.66	598	1.15	75.77	8996.49	9293.51
92	Dispersion around the risk-of-poverty threshold - 40%	3.2	13043	0	0.29	2.66	3.79	10031	1.30	0.28	2.65	3.75
93	Dispersion around the risk-of-poverty threshold - 50%	5.6	13043	0	0.39	4.85	6.39	10981	1.19	0.35	4.91	6.29
94	Dispersion around the risk-of-poverty threshold - 70%	19.9	13043	0	0.62	18.69	21.12	11612	1.12	0.55	18.82	20.98
Before social transfers except old-age and survivors' benefits												
95	At-risk-of-poverty rate before social transfers - total	24.3	13043	0	0.68	22.98	25.67	11725	1.11	0.61	23.10	25.50
96	At-risk-of-poverty rate before social transfers - men total	23.6	6318	0	0.72	22.15	24.96	5696	1.11	0.69	22.25	24.95
97	At-risk-of-poverty rate before social transfers - women total	25.1	6725	0	0.71	23.67	26.45	6023	1.12	0.69	23.75	26.45
98	At-risk-of-poverty rate before social transfers - 0-15 years	36.8	2562	0	1.53	33.66	39.66	2282	1.12	1.46	33.94	39.66
99	At-risk-of-poverty rate before social transfers - 16-64 years	23.0	8660	0	0.65	21.72	24.25	7802	1.11	0.72	21.59	24.41

2005 Austria	Estimates			Variance Estimation Linearization 95% CI					Variance Estimation Bootstrap 95% CI			
	Indicator	Value	Achieved sample size	Total item non response	Std.error	lower bound	upper bound	effective sample size	deff	Std.error	lower bound	upper bound
100	At-risk-of-poverty rate before social transfers - 65+ years	16.3	1759	0	1.08	14.19	18.41	1582	1.11	0.96	14.42	18.18
101	At-risk-of-poverty rate before social transfers - 16+ years	21.7	10419	0	0.59	20.56	22.88	9354	1.11	0.53	20.66	22.74
102	At-risk-of-poverty rate before social transfers - men, 16-64 years	22.4	4202	0	0.69	21.03	23.74	3742	1.12	0.7	21.03	23.77
103	At-risk-of-poverty rate before social transfers - men, 65+ years	11.1	771	0	1.10	8.91	13.21	703	1.10	1.04	9.06	13.14
104	At-risk-of-poverty rate before social transfers - men, 16+ years	20.6	4973	0	0.62	19.36	21.79	4447	1.12	0.61	19.40	21.80
105	At-risk-of-poverty rate before social transfers - women, 16-64 years	23.6	4458	0	0.68	22.25	24.92	4064	1.10	0.68	22.27	24.93
106	At-risk-of-poverty rate before social transfers - women, 65+ years	19.9	988	0	1.36	17.20	22.55	899	1.10	1.24	17.47	22.33
107	At-risk-of-poverty rate before social transfers - women, 16+ years	22.8	5446	0	0.63	21.55	24.00	4894	1.11	0.6	21.62	23.98
Before social including old-age and survivors' benefits												
108	At-risk-of-poverty rate before social transfers - total	42.7	13043	0	0.78	41.17	44.24	11825	1.10	0.71	41.31	44.09
109	At-risk-of-poverty rate before social transfers - men total	39.4	6318	0	0.81	37.85	41.04	5665	1.12	0.79	37.85	40.95
110	At-risk-of-poverty rate before social transfers - women total	45.8	6725	0	0.81	44.22	47.39	6185	1.09	0.81	44.21	47.39
111	At-risk-of-poverty rate before social transfers - 0-15 years	39.4	2562	0	1.59	36.12	42.35	2267	1.13	1.57	36.32	42.48
112	At-risk-of-poverty rate before social transfers - 16-64 years	33.2	8660	0	0.71	31.81	34.59	7745	1.12	0.80	31.63	34.77
113	At-risk-of-poverty rate before social transfers - 65+ years	87.0	1759	0	4.75	77.73	96.37	1590	1.11	0.84	85.35	88.65
114	At-risk-of-poverty rate before social transfers - 16+ years	43.4	10419	0	0.69	42.09	44.79	9419	1.11	0.68	42.07	44.73
115	At-risk-of-poverty rate before social transfers - men, 16-64 years	30.5	4202	0	0.75	29.07	32.00	3745	1.12	0.87	28.79	32.21
116	At-risk-of-poverty rate before social transfers - men, 65+ years	86.4	771	0	3.15	80.22	92.55	696	1.11	1.28	83.89	88.91
117	At-risk-of-poverty rate before social transfers - men, 16+ years	39.5	4973	0	0.71	38.07	40.88	4427	1.12	0.77	37.99	41.01
118	At-risk-of-poverty rate before social transfers - women, 16-64 years	35.9	4458	0	0.75	34.40	37.34	4001	1.11	0.84	34.25	37.55
119	At-risk-of-poverty rate before social transfers - women, 65+ years	87.5	988	0	205.20	-314.69	489.69	894	1.10	0.92	85.70	89.30
120	At-risk-of-poverty rate before social transfers - women, 16+ years	47.1	5446	0	0.70	45.75	48.51	5034	1.08	0.75	45.63	48.57
121	Gini coefficient	26.13	13043	0	0.44	25.27	26.99	10589	1.23	-	-	-
122	Mean equivalised disposable income	20079.87	13043	0	107.94	19868.30	20291.44	12238	1.07	203.85	19680.32	20479.42
123	Gender pay gap ²	17.94	2679 men, 2056 women	68 men, 55 women					1.14*	1.21	15.57	20.31

1 w=work intensity, *20 Student households, 1141 with total workable months=0

2 *No deff was calculated, it was assumed to be similar to the poverty gap

Comparing the results for linearization and bootstrapping we found it surprising that in most cases standard errors were larger for the latter. Also, for the linearization approach it seems notable that there is not always a correlation between sample size and standard errors, sometimes in subsamples the standard errors were even lower than in the total sample. For two indicators we do not trust the linearization method, we highlighted them in red: at-risk-of-poverty rate for household without children and work intensity 0 and at-risk-of-poverty rate before social transfers and old age/survivors' benefits – there seems to be a problem with small subsamples and high rates. In these cases we consider the standard errors of the linearization approach as not reliable. For the Gender Pay Gap we are not able to provide a variance estimate with the linearization method as we are not aware of the correct formula for this indicator. For the calculation of the Gini coefficient negative incomes are included. From the definition it makes no sense to include negative incomes in the calculation of the Gini Coefficient. Therefore we regard coefficient as well as linearization to be less comparable.

To evaluate variance estimations for EU-SILC indicators and take a final decision which method to adopt in the future some more methodological research is needed. We propose the following points for further discussion:

- How can the influence of the final calibration procedure for the variance estimation using linearization methods be assessed?
- There seem to be some instabilities of the linearization estimates under certain boundary conditions (high poverty rates – small subgroups). It should be investigated under which numerical conditions these instabilities occur.
- What is the effect of imputed values for the variance estimations (for linearization and bootstrapping)?
- Linearization is an approximation. So the question is if it is possible to give a general threshold for the possible error made by this approximation.
- Can we define general decision rules when to use the bootstrapping or the linearization approach?

2.3. Non-sampling errors

2.3.1 Sampling frame and coverage errors

The sampling frame of the first wave households in 2004 was the ZMR. 2126 addresses were originally selected at the beginning of the fieldwork, 2,227 addresses were additionally selected during the course of the fieldwork.

The ZMR is a continuously updated population register based on the registration of the main residence. The ZMR is administrated by the federal ministry of the interior (BMI). Data of the ZMR are delivered quarterly to Statistics Austria. For the sampling procedure of EU-SILC 2005 the reference date for the ZMR was the 31st December 2004 and the original sample for the first wave was drawn in mid-March 2005. The sample for the substitute sample was drawn on the 20th September 2005 (with the same reference data as the original sample). Addresses from EU-SILC 2003 and EU-SILC 2004 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 during the duration of the fieldwork. These changes are for example persons who emigrated or died since the drawing of the sample or persons who did not report changes of their main residence in time. Other units, for example accommodations newly built since the drawing of the sample, were not included in the sampling frame.

One problem connected with the sampling frame is the construction of the connection of dwelling units. 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 accommodations constructed in this way are not always correct, mainly because of spelling errors or differences of the spelling of the addresses.

2.3.2 Measurement and processing errors

2.3.2.1 Measurement errors

Measurement errors are defined as the difference between the value of a variable (provided by the respondent) and the true but unknown value of a variable. These errors originate from four basic sources:

- the questionnaire (effects of the design, content and wording)
- the data collection method (effects of the modes of interviewing)
- the interviewer (effects of the interviewer on the response to a question including errors of the interviewer)
- the respondents (effects of the respondent on the interpretation of items)

The occurrence of these errors and their effects is almost unavoidable. However, Statistics Austria implemented various methods and procedures to reduce such effects and errors.

The questionnaire for EU-SILC 2005 was developed on the basis of the EU-SILC regulations and the EU-SILC doc 65/04 (*Description of Target variables: Cross-sectional and Longitudinal*). Some changes and adaptations to the prior questionnaire were made according to the changes of EUROSTATs requirements and experiences with last year's survey, like feedback by the interviewers or data checking procedures which indicated misinterpretations of particular items.

Like EU-SILC 2003 and EU-SILC 2004, the data collection was conducted using the CAPI technique (Computer Assisted Personal Interviewing). Informed by the experience from these prior surveys it was possible to expand the range of checks on the surface of the input devices (laptop or handheld computer), so that errors, inconsistencies and incompatibilities within a household or within an interview could be clarified and fixed already during the interview.

To reduce interviewer effects it was necessary to provide the interviewers with sufficient trainings and support measures. These trainings and measures helped to ensure that all respondents were interviewed under similar conditions as far as the interviewer behaviour is concerned. The responsible fieldwork institute conducted the interviewer training in cooperation with the EU-SILC project team of Statistics Austria. The fieldwork institute organised 8 training sessions for interviewer groups. These group-training sessions were organised mainly before the fieldwork. After the start of the fieldwork period, the fieldwork institute also organised additional trainings if necessary. Overall, 90 interviewers participated at these interviewer trainings. However, 2 of these trained interviewers were not successful in providing interviews.

Assuming that experience with the survey helps to avoid errors on the side of the interviewers, the attention should be drawn on those interviewers that repeatedly conducted the survey. Since in 2005 another institute carried out the fieldwork, only 8 of the 88 successful interviewers in 2005 also interviewed for EU-SILC 2004. In 2006, when the same institute was conducting the fieldwork, the rate of "recurring interviewers" was much higher.

Since proxy interviews are more likely to be biased than personal interviews, Statistics Austria and the fieldwork institute aimed at keeping the rate of proxy interviews low. However, the overall rate of proxy interviews is slightly higher than 24% and therewith about 10 percentage points higher than in EU-SILC 2004. To control for the prevalence of proxy interviews the fieldwork institute is regularly provided with proxy rates per interviewer.

Table 19: Distribution of Proxy Interviews by Basic Activity Status

	All Interviews	Personal interviews	Ratio personal interviews (%)	Proxy interviews	Ratio of proxy interviews (%)
At Work	5,647	4,064	72.0	1,583	28.0
Unemployed	309	261	84.5	48	15.5
Retirement/Early retirement	2,771	2,369	85.5	402	14.5
Other Inactive	1,692	1,174	69.4	518	30.6
Total	10,419	7,868	75.5	2,551	24.5

Source: EU-SILC 2005

The increasing rate of proxy interviews raised the question of reliability of the data gained by proxy interviews. Thus, we compared the equivalised household incomes from households with proxy interviews with households without proxy interviews. The comparison suggests that the incomes of households with proxy interviews are not significantly biased. The effect of proxy interviews, however, has to be considered and further methodological research is desirable. But most notably, the fieldwork organisation should aim on keeping the proxy rate low.

Table 20: Proxy information and equivalised household income in EU-SILC 2004 and EU-SILC 2005

		2004		2005	
		Mean	Count	Mean	Count
All households	Households without proxy interviews	18,759	3,142,119	20,022	2,955,844
	Households with proxy interviews	19,457	278,749	21,150	526,272
Total		18,815	3,420,868	20,192	3,482,116
Households without single-person households	Households without proxy interviews	19,248	1,975,290	20,631	1,755,547
	Households with proxy interviews	19,457	278,749	21,150	526,272
Total		19,274	2,254,039	20,751	2,281,819

Source: EU SILC 2004, EU-SILC 2005

In 2005 the fieldwork institute and Statistics Austria again observed respondent effects mainly in connection with the correct terminology of public benefits. A considerable share of these errors could be identified and corrected by post-hoc checks and call-backs.

These checks and controls in general allowed for an identification of various measurement and procession errors. During the fieldwork period, the fieldwork institute delivered the so far processed interview data to Statistics Austria. Statistics Austria controlled and checked these data so that eventual errors and misunderstandings were directly reported back to the interviewers. This feedback process allowed the fieldwork institute to make necessary call-backs as soon as possible.

2.3.3 Non-response errors

2.3.3.1 Achieved sample size

Table 21: Sample Size and accepted interviews

	Total	R1	R2	R3	R4
Accepted household interviews	5,148	1,986	796	825	1,541
Number of persons 16 years or older	10,419	3,904	1,650	1,656	3,209
Accepted personal interviews	10,419	3,904	1,650	1,656	3,209

Source: EU-SILC 2005

2.3.3.2 Unit non-response

Household non-response

Table 22: Household non-response rate without substitute sample

	Total	R1	R2	R3	R4
Ra - Address contact rate	0.984	0.976	0.986	0.994	0.985
Rh - proportion of accepted household interviews	0.678	0.642	0.723	0.696	0.672
NRh - Household non-response rate	33.307	37.321	28.738	30.789	33.777

Source: EU-SILC 2005

Table 23: Household non-response rate with substitute sample

	Total	R1	R2	R3	R4
Ra - Address contact rate	0.982	0.976	0.986	0.994	0.985
Rh - proportion of accepted household interviews	0.625	0.543	0.723	0.696	0.672
NRh - Household non-response rate	38.590	46.998	28.738	30.789	33.777

Source: EU-SILC 2005

Individual non response

55 personal interviews were missing but fully imputed (see description in chapter 2.6). These interviews are coded 12 in RB250, in accordance with an agreement with EUROSTAT.

Table 24: Individual non-response rate without substitute sample

	Total	R1	R2	R3	R4
RB250 = 11 + 12 + 13	8,667	2,152	1,650	1,656	3,209
RB245 = 1 + 2 + 3	8,667	2,152	1,650	1,656	3,209
Rp	1.000	1.000	1.000	1.000	1.000
NRp - Individual non response rate	0.000	0.000	0.000	0.000	0.000

Source: EU-SILC 2005

Table 25: Individual non-response rate with substitute sample

	Total	R1	R2	R3	R4
RB250 = 11 + 12 + 13	10,419	3,904	1,650	1,656	3,209
RB245 = 1 + 2 + 3	10,419	3,904	1,650	1,656	3,209
Rp	1.000	1.000	1.000	1.000	1.000
NRp - Individual non response rate	0.000	0.000	0.000	0.000	0.000

Source: EU-SILC 2005

2.3.3.3 Distribution of households by record of contact at address, by household questionnaire result and by household interview acceptance

Table 26: Contacted Addresses (DB120) without substitute sample

	Total		R1		R2		R3		R4	
	N	%	N	%	N	%	N	%	N	%
Total	7,986	100.0	3,315	100.0	1,129	100.0	1,200	100.0	2,342	100.0
Address contacted (11)	7,746	97.4	3,168	95.6	1,101	97.5	1,185	98.8	2,292	97.9
Address non-contacted (21 - 24)	240	3	147	4	28	2	15	1	50	2
Total address non-contacted (21-24)	240	100	147	100	28	100	15	100	50	100
Address can not be located (21)	113	47.1	65	44.2	16	57.1	7	46.7	25	50.0
Address unable to access (22)	25	10.4	15	10.2	0	0.0	0	0.0	10	20.0
Address does not exist or etc. (23)	102	42.5	67	45.6	12	42.9	8	53.3	15	30.0
non-contacted address (24)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

Source: EU-SILC 2005

Table 27: Contacted Addresses (DB120) with substitute sample

	Total		R1		R2		R3		R4	
	N	%	N	%	N	%	N	%	N	%
Total	8,494	100.0	3,823	100.0	1,129	100.0	1,200	100.0	2,342	100.0
Address contacted (11)	8,236	97.0	3,658	95.7	1,101	97.5	1,185	98.8	2,292	97.9
Address non-contacted (21 - 24)	258	3.0	165	4.3	28	2.5	15	1.3	50	2.1
Total address non-contacted (21-24)	258	100.0	165	100.0	28	100.0	15	100.0	50	100.0
Address can not be located (21)	122	47.3	74	44.8	16	57.1	7	46.7	25	50.0
Address unable to access (22)	25	9.7	15	9.1	0	0.0	0	0.0	10	20.0
Address does not exist or etc. (23)	111	43.0	76	46.1	12	42.9	8	53.3	15	30.0
non-contacted address (24)	0	0.0	0	0.0	0	0.0	0	0.0	0	0.0

Source: EU-SILC 2005

Table 28: Household questionnaire results and household interview acceptance (DB130 & DB135) without substitute sample

	Total		R1		R2		R3		R4	
	N	%	N	%	N	%	N	%	N	%
<i>DB130 – Household questionnaire result</i>										
Total	7,746	100.0	3,168	100.0	1,101	100.0	1,185	100.0	2,292	100.0
Household questionnaire completed (11)	4,990	67.8	1,822	64.2	798	72.3	827	69.6	1,543	67.2
Interview not completed (21-24)	2,756	32.2	1,346	36	303	28	358	30	749	33
Total interview not completed	2,756	100.0	1,346	100	303	100	358	100	749	100
Refusal to co-operate (21)	1,636	59.4	782	58.1	191	63.0	225	62.8	438	58.5
Entire household temporarily away (22)	860	31.2	431	32.0	76	25.1	108	30.2	245	32.7
Household unable to respond (23)	122	4.4	42	3.1	23	7.6	10	2.8	47	6.3
Other reasons (24)	138	5.0	91	6.8	13	4.3	15	4.2	19	2.5
<i>DB135 – Household interview acceptance</i>										
Interview accepted for database (1)	4,975	99.7	1,813	99.5	796	99.7	825	99.8	1,541	99.9
Interview rejected (2)	15	0.3	9	0.5	2	0.3	2	0.2	2	0.1
Total	4,990	100.0	1,822	100.0	798	100.0	827	100.0	1,543	100.0

Source: EU-SILC 2005

Table 29: Household questionnaire results and household interview acceptance (DB130 & DB135) with substitute sample

	Total		R1		R2		R3		R4	
	N	%	N	%	N	%	N	%	N	%
<i>DB130 – Household questionnaire result</i>										
Total	8,236	100.0	3,658	100.0	1,101	100.0	1,185	100.0	2,292	100.0
Household questionnaire completed (11)	5,164	62.5	1,996	54.3	798	72.3	827	69.6	1,543	67.2
Interview not completed (21-24)	3,072	37	1,662	46	303	28	358	30	749	33
Total interview not completed	3,072	100	1,662	100	303	100	358	100	749	100
Refusal to co-operate (21)	1,786	58.1	932	56.1	191	63.0	225	62.8	438	58.5
Entire household temporarily away (22)	980	31.9	551	33.2	76	25.1	108	30.2	245	32.7
Household unable to respond (23)	128	4.2	48	2.9	23	7.6	10	2.8	47	6.3
Other reasons (24)	178	5.8	131	7.9	13	4.3	15	4.2	19	2.5
<i>DB135 – Household interview acceptance</i>										
Interview accepted for database (1)	5,148	99.7	1,986	99.5	796	99.7	825	99.8	1,541	99.9
Interview rejected (2)	16	0.3	10	0.5	2	0.3	2	0.2	2	0.1
Total	5,164	100.0	1,996	100.0	798	100.0	827	100.0	1,543	100.0

Source: EU-SILC 2005

2.3.3.4 Distribution of substituted units by record of contact at address, by household questionnaire result and by household interview acceptance

The substituted units are the substitutes for original units and the substitutes of the supplement sample of the first wave sample.

Table 30: Substitute sample - Contacted addresses (DB120)

	N	%
Total	508	100.0
Address contacted (11)	490	95.7
Address non-contacted (21 - 24)	18	4.3
Total address non-contacted (21-24)	18	100.0
Address can not be located (21)	9	50.0
Address unable to access (22)	0	0.0
Address does not exist or etc. (23)	9	50.0
non-contacted address (24)	0	0.0

Source: EU-SILC 2005

As mentioned above, the response rates of the substitute samples are considerably lower than those of the original units mainly due to the shorter fieldwork.

Table 31: Substitute sample - Household questionnaire results and household interview acceptance (DB130 & DB135)

	N	%
<i>DB130 – Household questionnaire result</i>		
Total	490	100.0
Household questionnaire completed (11)	174	35.5
Interview not completed (21-24)	317	64.7
Total interview not completed	317	100.0
Refusal to co-operate (21)	150	47.3
Entire household temporarily away (22)	120	37.9
Household unable to respond (23)	6	1.9
Other reasons (24)	40	12.6
<i>DB135 – Household interview acceptance</i>		
Interview accepted for database (1)	173	100.0
Interview rejected (2)	1	0.0
Total	174	100.0

Source: EU-SILC 2005

2.3.3.5 Item non-response

The following tables provide an overview of non-response on household and individual level. For every income component the total number of households/persons having received the component is given, and a breakdown with regard to the completeness of the information.

Table 32: Item non-response on household level

	Households having received an amount		Full Information		Partial Information		Missing Value		
	N	%	N	%	N	%	N	%	
hy010	Total household gross income	5,148	100.0	1974	38.3	2823	54.8	351	6.8
hy020	Total disposable household income	5,148	100.0	3083	59.9	2023	39.3	42	0.8
hy022	Total disposable household income before social transfers other than old-age and survivors' benefits	5,091	98.9	3095	60.8	1924	37.8	72	1.4
hy023	Total disposable household income including old-age and survivors' benefits	4,869	94.6	3021	62.0	1586	32.6	262	5.4
<i>Net income components at household level</i>									
hy040n	Income from rental of a property or land	228	4.4	163	71.5	49	21.5	16	7.0
hy050n	Family/child related allowances	1,939	37.7	1928	99.4	10	0.5	1	0.1
hy060n	Social exclusion not elsewhere classified	109	2.1	97	89.0	2	1.8	10	9.2
hy070n	Housing allowances	191	3.7	179	93.7	5	2.6	7	3.7
hy080n	Regular inter-household cash transfer received	351	6.8	332	94.6	1	0.3	18	5.1
hy090n	Interest, profits from capital investments	4,037	78.4	2743	67.9	337	8.3	957	23.7
hy110n	Income received by people aged under 16	33	0.6	28	84.8	0	0.0	5	15.2
hy130n	Regular inter-household cash transfer paid	408	7.9	389	95.3	5	1.2	14	3.4
hy145n	Repayments/receipts for tax adjustment	2,229	43.3	2167	97.2	23	1.0	39	1.7
<i>Gross income components at household level</i>									
hy040g	Income from rental of a property or land	228	4.4	94	41.2	46	20.2	88	38.6
hy050g	Family/child related allowances	1,939	37.7	1928	99.4	10	0.5	1	0.1
hy060g	Social exclusion not elsewhere classified	109	2.1	97	89.0	2	1.8	10	9.2
hy070g	Housing allowances	191	3.7	179	93.7	5	2.6	7	3.7
hy080g	Regular inter-household cash transfer received	351	6.8	332	94.6	1	0.3	18	5.1
hy090g	Interest, profits from capital investments	4,037	78.4	2743	67.9	337	8.3	957	23.7
hy110g	Income received by people aged under 16	33	0.6	25	75.8	0	0.0	8	24.2
hy130g	Regular inter-household cash transfer paid	408	7.9	389	95.3	5	1.2	14	3.4
hy140g	Tax on Income and Social Contributions	5,084	98.8	1953	38.4	2995	58.9	136	2.7

Source: EU-SILC 2005

Table 33: Item non-response on individual level

	Persons having received an amount		Full Information		Partial Information		Missing Value		
	N	%	N	%	N	%	N	%	
<i>Net income components at personal level</i>									
py010n	Employee cash or near cash income	5,564	53.4	4,914	88.3	380	6.8	270	4.9
py035n	Contributions to individual private pension plans	2,391	22.9	2,211	92.5	1	0.0	179	7.5
py050n	Cash benefits or losses from self-employment	998	9.6	655	65.6	191	19.1	152	15.2
py070n	Value of goods produced by own-consumption	190	1.8	188	98.9	0	0.0	2	1.1
py080n	Pension from individual private plans	41	0.4	38	92.7	0	0.0	3	7.3
py090n	Unemployment benefits	661	6.3	589	89.1	29	4.4	43	6.5
py100n	Old-age benefits	2,453	23.5	2,191	89.3	150	6.1	112	4.6
py110n	Survivor's benefits	99	1.0	91	91.9	0	0.0	8	8.1
py120n	Sickness benefits	178	1.7	141	79.2	6	3.4	31	17.4
py130n	Disability benefits	322	3.1	306	95.0	2	0.6	14	4.3
py140n	Education-related allowances	174	1.7	163	93.7	0	0.0	11	6.3
<i>Gross income components at personal level</i>									
py010g	Employee cash or near cash income	5,564	53.4	3,604	64.8	344	6.2	1,616	29.0
py035g	Contributions to individual private pension plans	2,391	22.9	2,211	92.5	1	0.0	179	7.5
py050g	Cash benefits or losses from self-employment	998	9.6	414	41.5	129	12.9	455	45.6
py070g	Value of goods produced by own-consumption	190	1.8	188	98.9	0	0.0	2	1.1
py080g	Pension from individual private plans	41	0.4	19	46.3	0	0.0	22	53.7
py090g	Unemployment benefits	661	6.3	576	87.1	33	5.0	52	7.9
py100g	Old-age benefits	2,453	23.5	1,113	45.4	479	19.5	861	35.1
py110g	Survivor's benefits	99	1.0	35	35.4	20	20.2	44	44.4
py120g	Sickness benefits	178	1.7	65	36.5	30	16.9	83	46.6
py130g	Disability benefits	322	3.1	173	53.7	42	13.0	107	33.2
py140g	Education-related allowances	174	1.7	163	93.7	0	0.0	11	6.3
py200g	Gross monthly earnings for employees	5,061	48.6	3,819	75.5	43	0.8	1,199	23.7

Source: EU-SILC 2005

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

For the total non-response and number of observations in the sample of the common cross-sectional European Union indicators, the equivalised disposable income and the unadjusted gender pay gap see chapter 1.

2.4. Mode of data collection

Austria uses a sample of households, hence for variable RB245 only the codes 1 and 4 are eligible. All persons are coded '1' in RB245. According to an agreement with EUROSTAT code 12 (for RB250) in Austria means that total cases have been imputed.

Table 34: Distribution of RB250 for all respondents

		TOTAL	RB250 = 11	RB250 = 12
R1	Total	3,904	3,890	14
	%	100.0	99.6	0.4
R2	Total	1,650	1,643	7
	%	100.0	99.6	0.4
R3	Total	1,656	1,641	15
	%	100.0	99.1	0.9
R4	Total	3,209	3,190	19
	%	100.0	99.4	0.6
TOTAL	Total	10,419	10,364	55
	%	100.0	99.5	0.5

Source: EU-SILC 2005

Table 35: Distribution of RB260 for all respondents

		TOTAL	CAPI RB260=2	CATI RB260=3	PROXY RB260=5
R1	Total	3,890	2,889	101	900
	%	100.0	74.3	2.6	23.1
R2	Total	1,643	1,211	41	391
	%	100.0	73.7	2.5	23.8
R3	Total	1,641	1,201	51	389
	%	100.0	73.2	3.1	23.7
R4	Total	3,190	2,085	235	870
	%	100.0	65.4	7.4	27.3
TOTAL	Total	10,364	7,386	428	2,550
	%	100.0	71.3	4.1	24.6

Source: EU-SILC 2005

2.5. Interview duration

Table 36: Mean interview duration

	Total	R1	R2	R3	R4
Personal questionnaire	11.55	11.36	11.74	12.11	11.40
Household questionnaire	12.77	12.65	13.06	12.93	12.71
Total mean interview duration per household	36.02	34.89	37.28	37.02	36.30

Source: EU-SILC 2005

2.6. Imputation procedure

The following chapter describes the imputation procedures in EU-SILC 2005. Although this chapter is not foreseen in the intermediate report, we would like to outline our imputation approach to provide a comprehensive picture of the data production process.

General remarks

The following describes the imputation procedures applied in EU-SILC 2005, which are similar to the procedures in 2004 except for the extension of the longitudinal components. Imputation refers to all procedures to estimate and insert variable values that are missing due to item non-response. These procedures comprise

- deductive methods
- deterministic methods
- 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 child care 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 not to be reasonable. Stochastic methods were mainly used to estimate missing income variables.

In general the imputation procedures in EU-SILC 2005 refer to procedures intended to complete missing information because of unit-non response or because of item-non response.

Procedure to handle unit non-response

Statistics Austria replaces missing personal interviews of persons which 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 interview is not a proxy interview.
- The donor case should share the same employment status⁷

The imputation strategy allowed for two possibilities: the person has been interviewed in 2004 or the person was interviewed for the first time in 2005. When the person was interviewed in the preceding survey, the information of the last years' interview was used to calculate the distance function. The interviews of the previous year were ranked and the nearest neighbour was identified as the donor for the missing interview. The information of the donor in 2005 was then used to impute the required information. The variables that were used to compute the distance function is listed below.

Table 37: Variables used for the distance function with longitudinal information

No.	Variable
1	Sex
2	Age
3	Current employment situation
4	Household size
5	Number of children under 18 in the household
6	Number of persons over 60 in the household
7	Federal state / NUTS 2
8	Highest level of education attained
9	Suffer from any chronic illness or condition / limitation in activities because of health problems

⁷ This was done by determining the number of ranks up until this constraint must be fulfilled.

10	Household income
11	Number of months in employment / self-employment
12	Number of months in self-employment

When the person with the missing personal interview was not interviewed in the last year, thus no previous interview can be used to calculate the distance function, only the information from the household and personal registers can be used. Hence the number of variables for the distance function was shorter. The variables are listed below.

Table 38: Variables used for the distance function for cross-sectional imputations of personal interviews

No.	Variable
1	Density of population
2	Sex
3	Age
4	Household size
5	Employment status
6	Federal state / NUTS 2
7	Number of children under 18 in the household
8	Number of persons over 60 in the household
9	Household income

However, only 55 personal interviews were imputed. 30 interviews were imputed using information from the previous survey, 25 interview were imputed for persons entering the survey in 2005.

Procedures to handle item non-response

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

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

If the information about the number of months was missing, Statistics Austria again tried to derive the length of a period an income component has been received from other variables of the survey. If this was not possible, a random value was imputed.

The question of missing income values received special attention. Basically, the respondents had more than one possibility to provide information about their income: they could provide either the gross or the net income amount, or they could provide information about their income by declaring an income category. The latter possibility was foreseen to reduce the number of missing income values. The interviewer presented income category tables to support the respondent to remember the income amount, and in case of unwillingness to respond, to reduce the burden to give an answer. If an income variable was missing but either the gross or the net amount was declared, the corresponding missing value was computed according to a model based on Austrian tax data. If the respondent declared an income category to give the information about the income received, Statistics Austria then assigned an income value by selecting a random value from within this income category.

If the respondent refused to give any information about the income, Statistics Austria applied deductive, stochastic and deterministic methods of imputation. Deductive methods were applied when the 'correct' value could 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 example when the information about the childcare benefit was missing, the fixed amount according to the legal regulations was assigned, assuming that any exceptions do not apply.

For other missing income information Statistics Austria applied two approaches: longitudinal and cross-sectional imputation. The longitudinal method was used when the person with the missing information has declared a value in the last years' survey. For all other cases the cross-sectional imputation method was used.

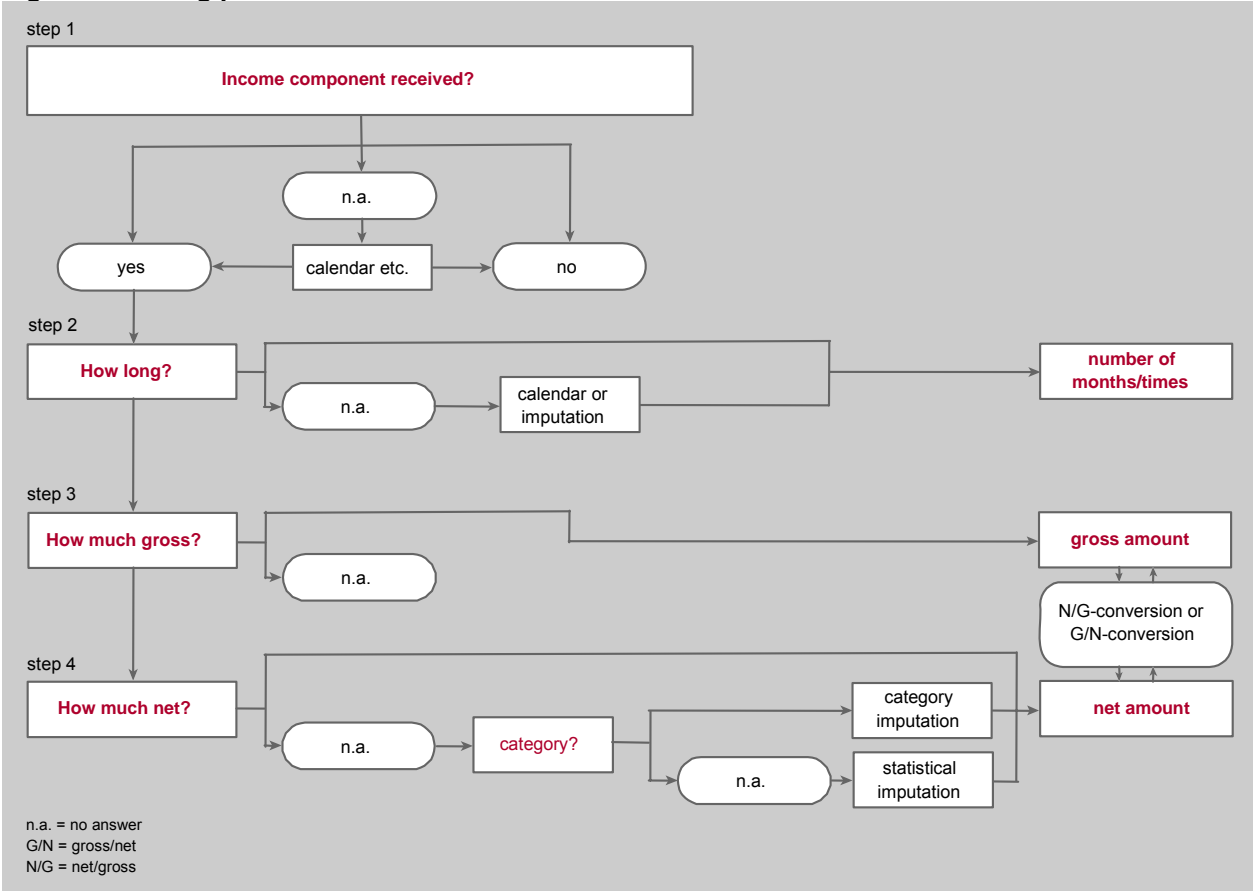
The longitudinal imputation procedure is based on the row-and-column-method of Little and Su⁸. As suggested by the name, the method uses the row effects and the column effects of the data to identify an appropriate donor case. The row effect, then, is the development of the variable between waves, and 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.

As cross-sectional imputation Statistics Austria used regression models as estimation procedures. The estimated values were then added with a residual term to prevent the attenuation of the variance. This estimation procedure required the specification of several regression models per income component to ensure that a value was estimated regardless of the case of missing values of predictor variables in the most sophisticated models.

The predictors were selected according to their predictive capability (variation of the R²) and / or according to theoretical assumptions about the response variable. In cases where no regression model could be specified the missing information was estimated by using the group mean or the group median of the distribution added with a residual term.

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

Figure 4: Editing procedure for income data



⁸ Little, Roderick J.A. / Su, Hong-Lin (1989) , *Item Non-response in Panel Surveys*. In: Kasprzyk/Duncan/Kalton/Singh (1989), *Panel Surveys*. New York, p. 400-425

3 Comparability

This chapter reports on the differences between EUROSTAT definitions and the definitions Austria applied in EU-SILC 2005. It also reports on the impact of these differences on the comparability.

3.1. Basic concepts and definitions

(a) Reference population

No difference to the common definition.

(b) Private household

Private households were defined as a dwelling unit with at least one person that has his/her principal residence in this dwelling (dwelling-unit concept). This definition is different from the recommended housekeeping-unit definition since the latter definitions demands that the persons living in an accommodation should have common housekeeping to be counted as household. The dwelling-unit concept was applied because of its accordance with the definitions used in the last census in 2001⁹ and with the sampling frame (the ZMR).

The difference between these concepts was estimated in the course of the census in 1991. According to the housekeeping-unit concept, the analysis identified 3,013,000 households and 2,981,000 households according to the dwelling-unit concept. Thus, the difference was smaller than 1.1%. Accordingly, the impact of the difference of definitions is expected to be small.

The main difference between the application of the dwelling-unit concept in EU-SILC and in the sampling frame is that in the ZMR (and the population census of 2001) persons were registered in their main residence. This leads to overestimations of single households in the ZMR and in the population census.

(c) Household membership

Given the difference of the definitions of private household, the definitions of household membership differ analogously.

(d) Income reference period(s) used

No difference to the common definition. The calendar year was 2004.

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

No difference to the common definition. Calendar year again was 2004, meaning that repayments and receipts of tax adjustments are measured if the money was paid or received in 2004.

(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 date when the household was interviewed. This fieldwork period started on the 21st April to 30th November. The gap between the income reference period and the current period exceeded the prescribed duration of the fieldwork of 8 month by 3 month.

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

The data collection period lasted 33 weeks. Additionally, until the end of December several call-backs were carried out, so that the final files were transmitted to Statistics Austria on the 19th of January 2006.

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

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

⁹ See Bauer, Adelheid (2002), Volkszählung 2001: Haushalte vorläufige Ergebnisse. In: Sttistische Nachrichten, No. 2/2001

3.2. Components of income

3.2.1 Differences between the national definitions and standard EU-SILC definitions

Income components where no difference between national and standard definitions can be found are not mentioned.

(a) Total household gross income (HY010)

The Austrian questionnaire comprised questions on two income components that are not target variables of EU-SILC. These components were, first, the income received by persons doing their military service or civilian service, and, second, "other income, not elsewhere classified". The latter question was integrated to avoid under-recording caused by misunderstandings. The total disposable household (gross) income contains these two income components. On individual level, the income from military / civilian service was integrated with the income for employees and the "other income" was merged either with the employee income, the income from self-employment or old-age benefits, depending on plausibility.

(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) Family related allowances (HY050)

In 2003 and 2004 education related allowances were included in HY050 when the amount of the income depended on the recipient's personal and/or family income. This was changed in 2005 and from now on all education related allowances are reported in variable PY140. The impact of this change on HY050 is however small, as education related allowances only made a very small share on the total family related allowances.

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

This variable additionally includes payments in kind for the private use of company cars, income from compulsory military or civilian service, other income not elsewhere classified (if plausible) and proportional lump-sum payments if the person is employed for more than 1 month.

(g) Non-cash employee income (PY020)

Payments in kind for the private use of a company car are included in PY010. Other payments in kind were recorded for the first time but according to the regulation they will only be included in PY020 (or PY010) from 2007 on: free lodging, free meals, fuel/electricity, other non-cash income.

(h) Cash profits or losses from self-employment (PY050)

This income component includes additionally other income not elsewhere classified, if plausible (see above (HY010)).

(i) Value of goods produced for own consumption (PY070)

This component will only be mandatory from 2007 on and we therefore have not included it in household income yet. However, we collect it from 2005 on. We think that it is only possible to ask this question in the household questionnaire, otherwise we are not sure to avoid double reporting. To report it as a personal variable as foreseen by the regulation we therefore have taken the decision to transfer the whole amount to the first person (adult person with the lowest personal ID in the household) – this can pose problems of comparability when other countries survey either on the personal level or adopt other methods to redistribute the household value to persons in the household.

(j) Unemployment benefits (PY090)

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

(k) Old-age benefits (PY100)

This component also includes other income not elsewhere stated, if plausible and proportional lump-sum payments if the person is retired (at least 2 monthly regular payments, up to the total lump-sum payments). 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 or over.

(l) Education related allowances (PY140)

See above HY050. As to the changes mentioned above PY140 from 2005 can not be directly compared to values from 2003 and 2004.

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

The EU-SILC income target variables were split into more differentiated sub-components. The sub-components were defined according to the Austrian regulations and benefit system. These components were surveyed in the questionnaire except those that were calculated on the basis of the information given in the questionnaire. 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).

The following major changes in the procedure of income collection compared to 2004 have to be reported (see also 4.1.1):

Cash profits or losses from self-employment (PY050) and income from rental of a property or land (HY040): We changed the question from yearly income in 2003 and 2004 to a question that corresponds to monthly drawing from business. This seems to be more reliable and valid, the reported income increases. Also, in 2005 negative incomes were registered.

Cash-or near-cash employee income (PY010): The questions were much extended to survey components in more detail and it was decided to survey monthly income instead of annual income as it was done in 2004 – however if the respondent chose to answer to the annual income question this was also possible in 2005. Besides the regular monthly income “13th and 14th month” salaries, holiday remunerations, tips, bonus payments, overtime pay, severance pay, commissions, family related payments of the employer, benefits for commuting expenses and other payments of the employer were surveyed. This is an improvement to 2004 where only “13th and 14th month” salaries, overtime pay, commissions and “other benefits” were named, but not separately surveyed. Plus, a new show-card was used to activate respondents to remember their receipts better.

Interest, dividends and profit from capital investment (HY090): As interviewers reported this to be an especially difficult question we eased the response burden by only asking one question on all of these income components in total, revising order of the appearance and adapting the wording of the question in SILC 2005.

2004 it was asked: Please tell me if you had any of the following incomes?

Income from interests yes/no

Income from dividends yes/no

Income from investments in business yes/no

Other income from capital yes/no

If yes each component was asked gross and net

2005 it was asked: Did you own one or several of the following assets in 2004: Saving book, saving contract, shares, options, licences, etc.

If yes: All in all what was your net profit in 2004?

4 Coherence

Coherence refers to the comparison of target variables with external sources. The target variables in EU-SILC are a set of compulsory variables, defined by EUROSTAT. The member states are liable to deliver these target variables and can decide how to obtain these target variables. In Austria, the structure of the questionnaire and the items were influenced by the structure of social security benefits, tax rules and other legal circumstances.

4.1. Comparison of income target variables and number of persons who receive income from income component with external source

4.1.1 Description of data sources

EU-SILC 2004 and EU-SILC 2005

EU-SILC 2004 was the first regular wave of EU-SILC in Austria with a rotational design (the previous survey in 2003 was conducted as a singular cross-sectional survey). The sample in 2004 comprised 7,514 from which finally 4,521 interviews were obtained.

EU-SILC 2004 is essentially the same survey as EU-SILC 2005. Since it was the first wave of EU-SILC with a rotational design the survey was based on a straight cross-sectional design with a simple random sample. Thus it is a unique source for comparisons with EU-SILC 2005. Precisely because of that it is of utmost importance to inform about any differences between these two waves of the survey. Modifications were made to the Austrian questionnaire to survey the relevant income components to fill the EUROSTAT target variables, and procedural changes can be reported regarding the data collection process.

- In 2005 another institute was assigned for the fieldwork of the survey. The institute underestimated the challenges of such a complex panel survey; the fieldwork phase was therefore longer and somewhat more difficult. The change of the institute implicated also – in most of the cases – a change of interviewer for the second wave household, a fact that lowered the response rate of these households. Nonetheless, the interviewers of the fieldwork institute in 2005 were more experienced with the CAPI technique. In general, the provided interviews had less missing values than in the previous year.
- In 2005 the recording of income from employment was revised to survey the various components of the employment income more comprehensive. The interviewees could give their annual income or the monthly income, and it was foreseen to give the income of more than one employment contract. The benefits in kind were asked in more detail (including free accommodation, free meals, etc.).
- There have been several changes in collecting the income from self-employment: In 2005 the respondents were asked to give the withdrawn profit instead of the book profit before and after taxes and social insurance payments. In 2004 the annual income was asked and in 2005 the monthly income and the number of months the income was gained. Also, in 2005 negative incomes were registered. Additionally, in 2005 profits from contracts for services (*Werkvertrag*) and profits from quasi-freelance contracts (*freier Dienstvertrag*) were asked in one question.
- In 2005 the list of possible sources of unearned income was extended.
- The unemployment benefits included the special unemployment assistance (*Sondernotstandsunterstützung*) in 2004. The question about this benefit was replaced by a question about the part-time benefit for older workers (*Altersteilzeitgeld*).
- In the last years' survey the question for alimonies were asked in the personal questionnaire, in 2005 these questions were included in the household questionnaire.
- In 2004 the exact amount of the long-term care benefit was asked. In 2005 this was changed because this benefit is available in ranks (*Pflegestufen*), which refer to a certain amount. Hence, in 2005 these ranks were asked,
- The collection of education related allowances was revised to cover the Austrian benefit structure better without increasing the burden for the interviewees.

Wage Tax Statistics (WTS)

The Austrian Wage Tax Statistics (WTS) contains information on the incomes from employees and pensioners if the income is gained at source in Austria. This makes the WTS a valuable source for the

comparison of the most important income component at personal level, the income from employment. The comparison with pensions is more complex due to conceptual reasons: the WTS covers all pensions regardless of the age of the beneficiary and the type of pension but in EU-SILC the pension income is only accounted as such when the beneficiary has reached the normal retirement age (for men 65, for women 60). Due to that the comparison of pensions accounted in the WTS and pensions in EU-SILC 2005 is omitted.

But there are also conceptual differences regarding income from employment. An important share of these differences can be explained by the different coverage of EU-SILC and the WTS. The main differences of the coverage are:

- EU-SILC does not cover persons outside private households;
- EU-SILC cannot cover persons who have died or moved to another country between the tax reference period and the time of the survey;
- EU-SILC does not cover persons who do not live in private households or who are aged 15 years or younger;
- Some lump-sum payments are registered in the WTS but only partially in EU-SILC.

National accounts 2004

The Austrian national accounts provide data on the income approach of the GDP. The sector accounts can be restricted to households and non-profit organisations serving household (NPISHs). Given these restrictions, these income values can be used for comparison with the EU-SILC total income amounts.

For comparison the values of the national accounts have to be adjusted. This means that from the basic value provided from the national accounts, we have to deduct the following:

- The estimated income value of NPISHs (sector 15) in the case of disposable income. Separated figures for sector 14 (private households) and sector 15 are only calculated for gross income. The total amount of individual consumption of NPISHs is used as a proxy for disposable income of NPISHs and therefore deducted here.
- The estimated income value of persons not living in private households. The proportion of persons not living in private households is estimated 1.13 %.
- 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.
- The income relevant part of imputed rents. These data also come from the NAs.

However, some other relevant conceptual differences between the income concepts of the national accounts and EU-SILC cannot be quantified.

- For example, non-cash income and lump-sum payments are included in the national accounts but not to the same extent in EU-SILC 2004.
- The NA accounts 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 house keeping. The total of the estimates was 9,4% of the GDP in 2002 (~19,000 million euro). The proportion relevant for disposable income of private households was not estimated in this comparison but might explain some differences
- Self employed income in the NA is a residual category. There are some difficulties to differ between self employed income for private households and gains from enterprises.
- Charity donations and membership fees are deducted in the NA disposable income concept
- Transnational transfers are included in the NA.
- For the balance account for NPISHs no estimate was available and was assumed to be zero.

4.1.2 Comparisons

EU-SILC 2004 and EU-SILC 2005

Main indicators of interest for time comparison are the At-risk-of-poverty rate, the median equivalised income and in particular the risk-of-poverty threshold. While the At-risk-of-poverty rate is relative consistent between the two years, the latter two indicators have increased by 6 percentage points.

This is an over proportional rise and cannot be explained with real developments in the income situation of Austrian private households.

Extensive checks for weighting and imputation have been conducted so that impact of data processing can be excluded as source of error as far as possible. In a second step a comparison for the detailed income components for the cross-sectional and longitudinal sample have been made to find possible explanations for this rise in incomes.

The following tables present the comparison of net incomes recorded in EU-SILC 2004 and EU-SILC 2005. The two columns on the right side of the tables document the difference between the balanced panel (households that were interviewed in both years) and the total. Comparisons for median, number of recipients and the aggregate sum of income components are provided, as level of income as well as number of recipients have an impact on the income distribution. The change between the years for recipients and the sums of incomes only for balanced panel households provide only little information as it depends upon cross-sectional weighting and the real change is not always displayed. Therefore it is hardly considered in the following interpretation.

The panel analysis for the longitudinal weighting scheme gave first evidence that panel attrition is selective for low income groups. The low response rates achieved in 2005 might have intensified a possible bias in the income distribution.

Using the experience of 2004 some ameliorations in the questionnaire were implemented in the 2005 survey (see chapter 3.2.2). This resulted in an improved recording of (1) small extra incomes for employees (tips, bonus payments...), (2) self employment income (drawing from business) and (3) a remarkable better recording of income from interests, dividends and capital investments.

HY020

Both effects can be observed: The median of the total disposable income *hy020* rises from 103,348 Euro to 112,519 Euro (8.3%). A possible effect of panel attrition becomes obvious if comparison is made for the balanced panel: The difference is much smaller; however, it still shows an unexpected strong increase (3.7%). This increase is presumably due to the improved questionnaire and recording of incomes as described above.

The total increase (8.9%) of the sum of disposable household income has three main sources: approximately 48% are due to employee's income, 32% are due to pensions (increased number of recipients) and 14% due to self employment income.

PY010n

A selective panel attrition effect must be also assumed with employee income. Households participating in the survey 2004 but were not followed up in 2005 have a lower median employee income.

PY050n

In the recording of income from self-employment a different effect was observed. The remaining households in the panel reported a lower income than the households which were not followed up. In 2005 the questions on self-employed profits and losses were changed from annual to monthly amounts and from taxable income to drawings from business. Although the median raised significantly, the total sum decreased, probably due to the reporting of losses in 2005 (2004 losses were not reported in EU-SILC in Austria).

HY060n

Comparisons of social exclusion benefits display a very strong increase of the median between EU-SILC 2004 and 2005. Conceptionally both years the same questions were used to fill the variable: social assistance scheme: regular and irregular payments, other public benefits. Unweighted only 108 in 2004 and 109 households in 2005 reported incomes on these questions: And the majority (~70%) reported the incomes on "other benefits". The only possible explanation can be found in a minor change of the question: In 2004 the example for "other benefits" was "e.g. heating cost support", in 2005 it was extended to "e.g. heating cost support and other benefits from municipality or federal state". However, the impact of this change is marginal as overall low amounts from very few households are reported.

HY090

Notable changes for this income component result mainly from improved measurement as described in chapter 3.2.2. The revised order of appearance and adapted wording of the question had a remarkable effect. The number of persons reporting income from capital gains almost trebled. But in general very low amounts, presumably interests on saving accounts were reported which reduced the median by 21%. Overall the aggregated sum for HY090 was doubled from 450 million Euros to 1 billion Euros.

In an overall assessment we can conclude that two effects took place, better reporting of incomes due to improved measurement and an underestimation of low incomes due to selective panel attrition. In expectation of the problems which might arise due to low response rates Statistics Austria tried to reduce a possible bias by substituting and weighting for unit non-response. Still the bias cannot be outweighed sufficiently. As a matter of fact we suspect that information used to select substitutes is not sufficient and might have due to even lower response rates in the substitute samples even increased a middle class effect. Considerably efforts have been made to ensure higher response rates for the survey in 2006. The same field work institute conducted the field work in 2006 and was able to provide much higher response rates in the cross-sectional as well as in the longitudinal component. Substitutes were not necessary in 2006.

Table 39: Comparison of the median of the income target variables – EU-SILC 2004 and EU-SILC 2005 (weighted)

		EU-SILC 2004			EU-SILC 2005			changes of median 2004/2005	
		balanced panel households	households not traced in 2005	Total	balanced panel households	First wave households	Total	balanced panel %	total %
hy010	Total household gross income	35,911	30,800	34,382	36,258	36,536	36,425	1.0	5.9
hy020	Total disposable household income	26,964	23,740	25,784	27,953	27,737	27,915	3.7	8.3
<i>Net income components at household level</i>									
hy040n	Income from rental of a property or land	3,052	3,000	3,000	3,600	3,600	3,600	18.0	20.0
hy050n	Family/child related allowances	4,298	4,207	4,298	4,171	4,080	4,080	-3.0	-5.1
hy060n	Social exclusion not elsewhere classified	90	160	109	2,000	2,000	2,000	2122.2	1734.9
hy070n	Housing allowances	1,200	1,140	1,200	1,308	1,232	1,260	9.0	5.0
hy080n	Regular inter-household cash transfer received	2,800	3,000	3,000	3,600	3,000	3,600	28.6	20.0
hy090n	Interest, profits from capital investments	130	124	127	100	93	100	-23.1	-21.5
hy110n	Income received by people aged under 16	2,901	2,991	2,988	2,100	1,714	1,750	-27.6	-41.4
hy130n	Regular inter-household cash transfer paid	2,760	2,520	2,640	3,048	3,000	3,000	10.4	13.6
hy145n	Repayments/receipts for tax adjustment	-229	-160	-200	-250	-245	-250	9.2	25.0
<i>Net income components at personal level</i>									
py010n	Employee cash or near cash income	15,741	15,120	15,500	15,863	16,846	16,144	0.8	4.2
py035n	Contributions to individual private pension plans	792	800	800	777	840	800	-1.9	0.0
py050n	Cash benefits or losses from self-employment	10,000	12,450	10,774	10,944	12,000	11,856	9.4	10.0
py080n	Pension from individual private plans	3,197	3,639	3,415	3,000	1,800	2,400	-6.2	-29.7
py090n	Unemployment benefits	3,000	3,500	3,050	3,110	3,000	3,066	3.7	0.5
py100n	Old-age benefits	13,903	14,129	14,004	14,248	14,107	14,107	2.5	0.7
py110n	Survivor's benefits	7,235	5,462	6,582	7,392	8,092	7,392	2.2	12.3
py120n	Sickness benefits	1,200	1,407	1,260	1,396	1,800	1,500	16.3	19.0
py130n	Disability benefits	12,289	10,109	11,650	13,300	11,620	12,600	8.2	8.2
py140n*	Education-related allowances	1,400	726	726	1,200	2,163	1,575	-14.3	116.9
py200g	Gross monthly earnings for employees	1,694	1,600	1,650	1,700	1,800	1,700	0.3	3.0

Source: EU SILC 2004, EU-SILC 2005

*) Conceptual change in py140, not comparable

Table 40: Comparison of the number of cases of the income target variables – EU-SILC 2004 and EU-SILC 2005 (weighted)

		EU-SILC 2004			EU-SILC 2005		changes of cases 2004/2005		
		balanced panel households	households not traced in 2005	Total	balanced panel households	First wave households	Total	balanced panel %	total %
hy010	Total household gross income	2,287,250	1,133,618	3,420,868	2,184,613	1,297,503	3,482,116	-4.5	1.8
hy020	Total disposable household income	2,287,250	1,133,618	3,420,868	2,184,613	1,297,503	3,482,116	-4.5	1.8
<i>Net income components at household level</i>									
hy040n	Income from rental of a property or land	136,708	51,855	188,563	87,861	51,551	139,412	-35.7	-26.1
hy050n	Family/child related allowances	842,118	330,734	1,172,851	725,720	391,311	1,117,030	-13.8	-4.8
hy060n	Social exclusion not elsewhere classified	49,346	38,478	87,825	47,769	25,835	73,604	-3.2	-16.2
hy070n	Housing allowances	79,813	54,067	133,881	87,985	50,668	138,654	10.2	3.6
hy080n	Regular inter-household cash transfer received	165,164	80,330	245,495	140,932	77,290	218,222	-14.7	-11.1
hy090n	Interest, profits from capital investments	602,505	261,952	864,458	1,700,360	998,509	2,698,868	182.2	212.2
hy110n	Income received by people aged under 16	16,436	7,805	24,241	7,820	8,271	16,091	-52.4	-33.6
hy130n	Regular inter-household cash transfer paid	175,104	75,157	250,261	179,698	108,511	288,209	2.6	15.2
hy145n	Repayments/receipts for tax adjustment	825,161	288,735	1,113,896	905,574	534,926	1,440,500	9.7	29.3
<i>Net income components at personal level</i>									
py010n	Employee cash or near cash income	2,374,918	1,183,886	3,558,805	2,233,502	1,385,891	3,619,394	-6.0	1.7
py035n	Contributions to individual private pension plans	956,054	417,186	1,373,240	942,737	617,019	1,559,756	-1.4	13.6
py050n	Cash benefits or losses from self-employment	438,367	183,175	621,542	400,244	236,562	636,806	-8.7	2.5
py080n	Pension from individual private plans	35,949	14,432	50,381	16,815	12,634	29,449	-53.2	-41.5
py090n	Unemployment benefits	279,670	181,138	460,808	275,387	168,787	444,173	-1.5	-3.6
py100n	Old-age benefits	1,011,104	535,127	1,546,231	1,081,106	559,689	1,640,795	6.9	6.1
py110n	Survivor's benefits	44,870	23,742	68,613	36,259	24,668	60,927	-19.2	-11.2
py120n	Sickness benefits	85,053	34,744	119,797	69,316	46,396	115,712	-18.5	-3.4
py130n	Disability benefits	134,463	61,012	195,475	122,437	72,499	194,936	-8.9	-0.3
py140n*	Education-related allowances	1,516	4,836	6,352	74,760	36,725	111,485	4832.9	1655.2
py200g	Gross monthly earnings for employees	2,020,085	983,546	3,003,631	2,037,710	1,252,304	3,290,013	0.9	9.5

Source: EU SILC 2004, EU-SILC 2005

*) Conceptual change in py140, not comparable

Table 41: Comparison of sums of the income target variables – EU-SILC 2004 and EU-SILC 2005 (weighted)

		EU-SILC 2004			EU-SILC 2005		changes of sums 2004/2005		
		balanced panel households	households not traced in 2005	Total	balanced panel households	First wave households	Total	balanced panel %	total %
hy010	Total household gross income	97,598	43,821	141,419	95,720	56,100	151,821	-1.9	7.4
hy020	Total disposable household income	71,109	32,239	103,348	71,050	41,469	112,519	-0.1	8.9
<i>Net income components at household level</i>									
hy040n	Income from rental of a property or land	777	263	1,040	752	469	1,221	-3.2	17.4
hy050n	Family/child related allowances	4,198	1,565	5,763	3,439	1,831	5,270	-18.1	-8.6
hy060n	Social exclusion not elsewhere classified	58	40	98	127	75	202	118.3	104.9
hy070n	Housing allowances	114	78	192	128	71	199	12.9	4.0
hy080n	Regular inter-household cash transfer received	694	337	1,031	646	309	955	-6.9	-7.4
hy090n	Interest, profits from capital investments	327	121	449	668	355	1,023	104.1	128.0
hy110n	Income received by people aged under 16	55	26	81	23	19	43	-58.0	-47.1
hy130n	Regular inter-household cash transfer paid	639	295	934	699	415	1,114	9.4	19.3
hy145n	Repayments/receipts for tax adjustment	-186	-7	-193	-210	-120	-329	13.1	70.8
<i>Net income components at personal level</i>									
py010n	Employee cash or near cash income	39,093	18,957	58,050	38,130	24,368	62,498	-2.5	7.7
py035n	Contributions to individual private pension plans	939	416	1,355	975	677	1,653	3.9	22.0
py050n	Cash benefits or losses from self-employment	6,242	3,116	9,358	6,428	3,663	10,091	3.0	7.8
py080n	Pension from individual private plans	152	100	253	89	45	134	-41.4	-47.0
py090n	Unemployment benefits	1,044	729	1,773	1,194	706	1,900	14.3	7.1
py100n	Old-age benefits	15,162	8,014	23,176	17,785	8,544	26,330	17.3	13.6
py110n	Survivor's benefits	346	144	490	272	207	478	-21.5	-2.4
py120n	Sickness benefits	213	101	315	167	137	303	-22.0	-3.6
py130n	Disability benefits	1,634	634	2,269	1,599	880	2,478	-2.2	9.2
py140n*	Education-related allowances	2	3	5	183	131	314	9355.4	5799.5
py200g	Gross monthly earnings for employees	3,665	1,746	5,410	3,815	2,458	6,272	4.1	15.9

Source: EU SILC 2004, EU-SILC 2005

In Million Euros

*) Conceptual change in py140, not comparable

Wage Tax Statistics (WTS)

Overall a good representation of employee's income can be shown, with high coherence for the number of recipients. In the total EU-SILC provides 3.528 millions employee's versus 3.6 millions in the Wage Tax Statistics. This increase in coherence (in comparison to 2004) may be due to the introduction of show cards 2005 to activate the memory of employees.

Still there is an underestimate of 76,000 employees in EU-SILC which may be due to the coverage differences described above as well as a real underestimate due to very short employment periods. 73,000 persons were employed less than 22 days in 2004 as registered in the Wage Tax Statistics.

The comparison shows an overestimation of low incomes in EU-SILC below the median. Possible reasons are underreporting of very small amounts due to lack of memory, due to proxy information. Possible is also some artificial overreporting in the Tax Registers, due to 'fake' or wrong registration.

Above the median EU-SILC shows an underreporting of high incomes particular for men. Possible reason might be a gender bias in proxy information. Proxies are significantly higher for men than for women.

Table 42: Comparison of gross annual income of employees 2004: wage tax statistics 2004 and EU-SILC 2005

...earn less than ... Euro	Wage Tax Statistics 2004			EU-SILC 2005		
	Total	Female	Male	Total	Female	Male
10%.....	2,550	1,896	3,817	5,726	4,424	10,317
20%.....	7,570	4,994	12,111	11,760	8,352	17,151
25%.....	10,342	7,189	16,203	14,022	9,800	18,900
30%.....	12,916	9,170	19,346	16,131	11,480	21,000
40%.....	17,714	12,686	23,493	19,200	14,400	23,800
50%.....	21,965	15,977	26,894	22,850	17,500	26,600
60%.....	25,894	19,504	30,559	25,860	20,300	29,500
70%.....	30,253	23,382	35,293	29,400	23,760	33,600
75%.....	32,973	25,746	38,452	32,136	25,460	36,060
80%.....	36,428	28,508	42,561	34,841	28,000	39,600
90%.....	48,052	37,098	56,309	44,565	35,100	50,794
Mean	25,100	18,501	30,713	25,006	19,205	29,775
persons	3,604,361	1,656,780	1,947,581	3,528,043	1,591,792	1,936,250

Source: EU-SILC 2005, Wage Tax Statistics

National accounts 2004

Almost half of the difference between EU-SILC and NA accounts is due to property income. Although the differences are remarkable – EU-SILC in the aggregate estimates 18 billions euro less than the NA - the comparison is highly valuable to test for consistence and changes in the EU-SILC income aggregates. Further and more detailed comparisons are planned to be able to compare social transfers, employee income without and with black economy estimates.

It can be assumed that property income is likely to be underestimated in a survey. Therefore the comparison of the gross incomes below presents also the value of the gross income without property income.

Table 43: Comparison of National accounts 2004 and EU-SILC 2005 (in million Euro)

	Gross incomes of private households		Disposable income
	Total	Without property income	
Basic value from national accounts	188,943	168,831	144,957
Deduction for non-profit organisations ¹⁾			4,439
Deduction for persons not living in private households ²⁾	2,135	1,908	2,375
Deduction for value of goods self-consumption ³⁾	2,834	2,834	2,834
Deduction for imputed rents ⁴⁾	4,967	4,967	4,967
Estimate from national accounts	179,007	159,122	130,342
Estimate from EU-SILC 2004	151,821	149,880	112,519
Difference between NA and EU-SILC 2004	19.65%	11.23%	22.38%

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

2) estimated on the basis of the population prognosis, 1.13% in 2004

3) estimate for 1.3% of the total consumption expenditures, HBS 2004/05

4) NA 2004