### QUALITY REPORT FINAL LONGITUDINAL SURVEY 2004-2005-2006-2007

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

For the first time the longitudinal dataset 2004-2007 of the EU-SILC operation comprises a four-years panel, making it possible the calculation of the at-persistent-risk-of-poverty rate. It is defined as the percentage of persons with an equivalised disposable income below the respective at-risk-of-poverty threshold for the last wave and at least two times in the preceding three years.

The reference population comprises all persons who were in the panel for all four waves. The share of persons is weighted using the base weight of the last wave; for each year the median and two thresholds (respectively 60% or 50% of the median) are estimated, over the same population, always using the base weight of the last wave.

Table 1. Types of at-persistent-risk-of-poverty

					Threshold		
Duration of at-risk-of-poverty	T = 2007	T-1 = 2006	T-2 = 2005	T-3 = 2004	60% median	50% median	
T & 3 times in preceding							
waves	At risk	At risk	At risk	At risk	9.41	4.49	
T & 2 times in preceding				Not at			
waves	At risk	At risk	At risk	risk	2.43	1.57	
T & 2 times in preceding			Not at				
waves	At risk	At risk	risk	At risk	1.37	0.72	
T & 2 times in preceding		Not at					
waves	At risk	risk	At risk	At risk	1.26	1.08	
					14.47	7.86	

Table 2. At-persistent-risk-of-poverty by age and sex

	-				
		Thres	shold		
		60% median	50% median		
Age	Sex	%	%		
	Т	14.47	7.86		
	М	13.42	7.34		
0+	F	15.46	8.35		
0-17	Т	20.67	11.46		
	Т	12.11	7.32		
	М	11.42	6.8		
18-64	F	12.8	7.84		
	Т	16.95	6.88		
	М	13.33	5.32		
65+	F	19.52	7.98		

#### 2. ACCURACY

#### 2.1. Sampling design for the first wave of the longitudinal component

### 2.1.1 Type of sampling (stratified, multi-stage, clustered

Two stage sampling design: The first stage units (or primary sampling units PSU) are the municipalities, the second stage units (SSU) are the households.

The PSU are stratified according to their size in terms of number of residents. Stratification is carried out inside each administrative region. Four municipalities are selected in each strata. Use of clustering:

Municipalities are clusters of households, households are clusters of individuals.

### 2.1.2 Sampling units (one stage, two stages)

Primary sampling units are the municipalities.

Secondary sampling units are the households selected from municipalities' registers with systematic sampling and not selected with PPS.

Extracted sample

Extracted sample	1			
DB075	Sample size (number of SSU)	Number of PSU	Number of SSU (Total)	Avarage number of SSU for each PSU
1	<=25	95	1346	14.2
1	26-50	183	5281	28.9
1	51-75	3	185	61.7
1	76-100	2	175	87.5
1	101-250	4	589	147.3
1	>=250	1	432	432.0
1	Total	288	8008	27.8
2	<=25	95	1346	14.2
2	26-50	183	5294	28.9
2	51-75	3	185	61.7
2	76-100	2	175	87.5
2	101-250	4	589	147.3
2	>=250	1	432	432.0
2	Total	288	8021	27.9
4	<=25	97	1420	14.6
4	26-50	181	5243	29.0
4	51-75	3	186	62.0
4	76-100	2	175	87.5
4	101-250	4	590	147.5
4	>=250	1	433	433.0
4	Total	288	8047	27.9

### 2.1.3 Stratification and sub-stratification criteria

Stratification of primary sampling units by the number of inhabitants so that the total number of inhabitants in each stratum is approximately constant (this guarantees self-weighting design in each region).

Municipalities which sizes are higher than a threshold are self-representing units i.e. are strata themselves and included with certainty in the sample of PSU.

Secondary sampling units are not stratified.

### 2.1.4 Sample size and allocation criteria

Sample size have been determined on the basis of expected deft reported in table 1 for macroregions (North, Centre, South). Data of ECHP for years 1995-1999, have been the basis for the evaluation of deff, results on income and poverty have been averaged over the 5 available years. National intraclasses correlation coefficient inside households,  $\rho_{SR}$ , and inside municipality,  $\rho_{NSR}$ , have been estimated on the basis of the above averages; then following formula to evaluate *deff* has been applied:

$$deff_{r} = \frac{n_{r}}{N_{r}^{2}} \left\{ \frac{N_{rSR}^{2}}{n_{rSR}} \left( 1 + \rho_{SR} \left( \overline{b}_{rSR} - 1 \right) \right) + \frac{N_{rNSR}^{2}}{n_{rNSR}} \left( 1 + \rho_{NSR} \left( \overline{b}_{rNSR} - 1 \right) \right) \right\}$$

where  $n_r$  and  $N_r$  are sample and population dimension of administrative regions,  $\overline{b}_{rSR}$  is the average household dimension and  $\overline{b}_{rNSR}$  is the average number of individuals selected in each municipalities.

On the basis of survey on income of year 2003, the following response rates have been estimated:

- T(reg) for regions by municipality type (municipality type: metropolitan, over 50.000 residents and others);
- T(mr) for macro-regions by municipality type.

Then to smooth the estimates, T(c)=0.25\*T(reg)+0.75\*T(mr), has been applied to inflate the achieved sample size so that

n(sel)=n(ach)/T(c).

The sample inside macro-regions has been allocated by means of a generalized version (Falorsi et al, 1998 and Falorsi e Russo, 2003.) of Bethel methods (Bethel 1989), with iterative procedure that recalculate at each step deff and sampling dimensions to satisfy given requirements.

Allocation inside regions averaging proportional and uniform allocation.

Table 1

Magraragions	Deft	Deft	Deff	Deff
Macroregions	income	poverty	income	poverty
1	2.64	1.59	6.97	2.54
2	2.26	1.43	5.09	2.05
3	2.69	1.61	7.24	2.61
Italy	2.61	1.58	6.84	2.50

The sampling size of each rotational group is one/fourth of the above size.

#### 2.1.5 Sample selection schemes

PSU are selected with probability proportional to their size (number of residents) by means of systematic sampling method by Madow (1949) inside each stratum.

Households are selected with equal probability by systematic sampling in each selected municipality from municipality-registers.

### 2.1.6 Sample distribution over the time

The sample is not distributed over time.

#### 2.1.7 Renewal of sample: Rotational groups

Rotational design is used for households; the whole sample is composed of four rotational groups. Each group is included in the sample for four waves of the survey. Each year one fourth of the sample is renewed, replacing the group entered in the sample four years before.

	A	В	С	D	Е	F	G	Н	I
T	A4	В3	C2	D1					
T+1		B4	C3	D2	E1		_		
T+2			C4	D3	E2	F1			
T+3			,	D4	E3	F2	G1		
T+3 T+4					E4	F3	G2	H1	
T+5						F4	G3	H2	I1

Each group is associated to one municipality of the strata. The self-representative municipalities are enclosed in each of the rotational groups: in such case the households referring to these municipalities are divided in 4 independent samples.

### 2.1.8. Weightings

#### FOR THE FIRST WAVE OF THE EU-SILC LONGITUDINAL COMPONENT

### 2.1.8.1 Design factor

In case of the individuals at the first wave, the base weight is equal to the household cross-sectional weight, and is the same for all the household components. The design weight of each household was given by the inverse of its inclusion probability and was calculated taking into account the population of the stratum, the population and the number of households in the extracted municipalities and the number of extracted households in the municipality. In every stratum it is extracted one municipality.

Let  $p_{ii}$  be the design weight of the generic household j in the municipality i:

$$p_{ji} = \frac{1}{\pi_{hi}} = \frac{P_h}{P_{hi}} \frac{M_{hi}}{m_{hi}}$$

where:

h is the stratum index;

*i* is the municipality index;

 $\pi_{hi}$  is the inclusion probability of the households resident in the municipality i of the stratum h;

 $P_h$  is the population resident in the stratum h;

 $P_{hi}$  is the population in the municipality *i* of the stratum *h*;

 $M_{hi}$  is the number of households resident in the municipality i of the stratum h;

 $m_{hi}$  is the number of sample households in the municipality i of the stratum h.

#### 2.1.8.2 Non-response adjustments

For the first wave of the longitudinal sample, we observe two different non-response level: individual-level and household-level.

Concerning with the individual-level non-response, the records of the non-respondent individual belonging to respondent households were totally imputed.

Concerning with the non-response adjustment at the household level, the base weights were adjusted by a correction factor for total non-response worked out as the reciprocal of the response ratio for subgroups of households identified by the information we had on the extracted sample (for the households at wave 1). The groups are identified by segmentation obtained with a chi-squared decision tree.

The re-calculated weight  $\hat{p}_{j,k}$  for the generic household j in the sub-group k is:

$$\hat{p}_{jk} = p_{jk} \frac{N_{Ek}}{N_{Ok}}$$
, where  $p_{jk}$  is the design weight,  $N_{Ek}$  is the number of households extracted in the

sub-group k, and  $N_{Ok}$  is the number of respondent households.

The information used are:

territorial domain (NUTS II level), demographic size of the municipalities, number of household components and nationality of the householder (gathered from demographic registers), type of income sources (gathered from fiscal registers).

A first stage of calibration procedure was adopted to assure the same structure as the population of the Labour Force Survey with regard to the education and professional position of the population. This is due to the fact that in Italy the non-response in an income survey is correlated with the position in the labour market (especially for self-employed) and with the education level of the respondents.

#### 2.1.8.3 Adjustments to external data (level, variables used and sources)

After the non-response adjustments, the final weights were obtained applying a calibration of the household weights to external data sources (registers). Let X1, X2...Xp denote the external (known) variables

The calibration procedure consists of calculating the household weights  $\psi_i$ , such as:

- The calibrated weights are "not very different" from the weights  $\hat{p}_i$
- The totals Xr of the calibration variables are exactly estimated by the same totals in the sample obtained with the weights  $\psi$ .

The external known totals regarding the households at the first participation are the following: For the entering rotational sub-group:

- 1) Distribution of the population by sex and five age-groups at NUTS I level. The age groups are: 0-15, 16-25, 26-45, 46-65, 65+ at the end of the income reference period (year t-1);
- 2) Amount of non-national population at NUTS I level (year t-1).
- 3) Distribution of the population by demographic size of the municipality at Nuts I level (year t-1) (three classes).
- 4) Number of households at NUTS I level at the time of the survey (year t).

#### For the entire sample:

- 1) Distribution of the population by sex and fourteen 5-yars age-groups at NUTS I level (year t-1). The age groups are: 0-15, 16-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, 60-64, 65-69, 70-74, 75+ at the end of the income reference period (year t-1);
- 2) Distribution of the population by sex and five age-groups at NUTS II level (year t-1). The age groups are: 0-15, 16-25, 26-45, 46-65, 65+ at the end of the income reference period (year t-1);
- 3) Distribution of non-national population by sex and by UE and non UE distribution at NUTS I level (year t-1).
- 4) Distribution of the population by demographic size of the municipality at Nuts I level (year t-1) (six classes).
- 5) Number of households at NUTS II level at the time of the survey (year t)

#### 2.1.8.4 Final longitudinal weights

For the first wave of each panel, the base weight is equal to the cross-sectional weight. We applied an integrative calibration, that means that we used both household and personal variables in the procedure. The calibration is performed at household level using the household variables and the individual variables in their aggregate form as calibration variables. This technique ensures that members in the same household all receive the same weight. A trimming procedure was applied to avoid extreme values of weights.

### FOR THE SECOND WAVE OF THE EU-SILC LONGITUDINAL COMPONENT

#### 2.1.8.5 Non-response adjustments

In the longitudinal component of the survey we observe non-response at individual-level.

Concerning with the non-response adjustment at the individual level, the base weights were adjusted by a correction factor for total non-response worked out as the reciprocal of the response ratio for subgroups of individuals identified by the information gathered from the previous year of survey. The groups are identified by segmentation obtained with a chi-squared decision tree.

The re-calculated weight  $\hat{p}_{i,k}$  for the generic individual j in the sub-group k is:

$$\hat{p}_{jk} = p_{jk} \frac{N_{Ek}}{N_{Ok}}$$
 , where  $p_{jk}$  is the base weight of the previous year,  $N_{Ek}$  is the number of

individuals interviewed in the sub-group k, and  $N_{Ok}$  is the number of respondent individuals.

The information used to identify the sub-groups are:

territorial domain (NUTS II), demographic size of the municipalities, number of household components, type of income sources, level of household income, nationality, sex, age, education and professional condition of the household components.

### 2.1.8.6 Adjustments to external data

No adjustment to external data was applied for the individuals participating not for the first time.

### 2.1.8.7 Final longitudinal weights

The longitudinal weight is only at individual level and is equal to the base weight at the first year of participation corrected for non-response.

#### 2.1.8.8 Final household cross-sectional weights

In case of the households at the second, third or fourth wave, an indirect sampling of households is done through the panel of persons aged 14+ at the time of the panel selection. In this case, the inclusion probabilities cannot be calculated. Then, the solution consists of applying the Weight Share Method. Within a household, each member has been assigned a weight coming from the final cross-sectional weight of the precedent year of survey corrected for unit non-response, except for coresidents form whom the weight is =0. Average of these weights over all the household members (including co-residents) is assigned to each member (including co-residents).

After the non-response adjustments, the final weights were obtained applying a calibration of the household weights to external data sources (registers). Let X1, X2...Xp denote the external (known) variables

The calibration procedure consists of calculating the household weights  $\psi_i$ , such as:

- The calibrated weights are "not very different" from the weights  $\hat{p}_i$
- The totals Xr of the calibration variables are exactly estimated by the same totals in the sample obtained with the weights  $\psi$  .

The external known totals are the following:

For the entire sample:

- 1) Distribution of the population by sex and fourteen 5-yars age-groups at NUTS I level (year t-1). The age groups are: 0-15, 16-19, 20-24, 25-29, 30-34, 35-39, 40-44, 45-49, 50-54, 55-59, 60-64, 65-69, 70-74, 75+ at the end of the income reference period (year t-1);
- 2) Distribution of the population by sex and five age-groups at NUTS II level (year t-1). The age groups are: 0-15, 16-25, 26-45, 46-65, 65+ at the end of the income reference period (year t-1);
- 3) Distribution of non-national population by sex and by UE and non UE distribution at NUTS I level (year t-1).
- 4) Distribution of the population by demographic size of the municipality at Nuts I level (year t-1) (six classes).
- 5) Number of households at NUTS II level at the time of the survey (year t).

For the entering rotational sub-group (at first wave):

- 1) Distribution of the population by sex and five age-groups at NUTS I level. The age groups are: 0-15, 16-25, 26-45, 46-65, 65+ at the end of the income reference period (year t-1);
- 2) Amount of non-national population at NUTS I level (year t-1).
- 3) Distribution of the population by demographic size of the municipality at Nuts I level (year t-1) (three classes).
- 4) Number of households at NUTS I level at the time of the survey (year t)

For the other sub-groups:

- 1) Population at NUTS I level (year t-1)
- 2) Number of households at NUTS I level (year t);

### 2.1.9. Substitutions

In Italy no substitution of unit non-response has been applied.

### 2.2. Sampling errors

With reference to the cross-sectional component of the survey - year 2007-, standard errors were calculated for the mean of the Income components (listed in Table 1) and for the mean of the Equivalised disposable income by household size, population age groups, population by sex (see Table 1).

Table 1. Mean, number of observations and standard errors (cross-sectional component 2007)

Income components	Mean	Number of c	Standard	
		Before imputation	After imputation	Error
Total household gross income	37319.49	20772	20982	265.49
Total disposable household income	07010.40		20002	200.40
	28528.64	20799	20982	173.03
Total disposable household income before social transfers other than oldage survivors' benefits				
	27255.02	20706	20982	174.84
Total disposable household including old-age survivors' benefits				
	19797.40	19653	20982	161.29
Net income components at household level				
Income from rentals of properties or lands	6127.96	1329	1474	389.13
Family/children related allowances	996.75	5380	5855	20.98
Social exclusion	6314.03	92	119	1226.13
Housing allowances	1268.48	283	334	126.09
Transfers received	5211.12	916	1020	282.17
Interest, dividends, profits	1078.94	8247	9692	32.86
Interest repayments on mortgage	3167.47	0	2448	95.31
Income of people aged less than 16	2243.03	129	148	809.90
Regular taxes on wealth	350.87	13558	14195	5.05
Transfers paid	4293.43	878	933	273.68
Repayments/receipts for tax adjustment Gross income components at household level	-293.96	13165	13328	-16.46
Income from rentals of properties or lands	8202 00	1220	1/7/	502 AF
Idilus	8282.89	1329	1474	583.45
Family/children related allowances	996.75	5380	5855	20.98
Social exclusion	6314.03	92	119	1226.13
Housing allowances	1268.48	283	334	126.09

(Follows) Table 1. Mean, number of observations and standard errors (cross-sectional component 2007)

2007)				
Transfers received	5211.12	916	1020	282.17
Interest, dividends, profits	1371.61	8247	9692	40.84
Interest repayments on mortgage	3167.47	0	2448	95.31
Income of people aged less than 16	2243.03	129	148	809.90
Regular taxes on wealth	350.87	13558	14195	5.05
Transfers paid	4293.43	878	933	273.68
Net income components at personal level				
Employee cash or near-cash income	15882.00	17873	18072	132.87
Non cash employee income	1319.74	744	4195	44.91
Contributions to individual private pension plan	1691.75	2394	2745	57.38
Cash benefit or losses from self- employment	16516.73	5818	7419	385.15
Pension from individual private plans	8091.12	80	85	3025.64
Unemployment benefits	3036.18	3909	4029	103.04
Old-age benefits	12268.97	12759	13327	101.93
Survivor' benefits	6943.98	737	756	375.79
Disability benefits	5428.12	1374	1443	218.24
Education related allowances	3701.81	198	227	541.13
Gross income components at personal level				
Employee cash or near-cash income	21441.96	18053	18072	198.45
Non cash employee income	1319.73	744	4195	44.91
Contributions to individual private pension plan	1691.75	2394	2745	57.38
Cash benefit or losses from self- employment	23051.98	7158	7419	570.67
Pension from individual private plans	11378.08	84	85	4781.39
Unemployment benefits	3531.43	3894	4029	121.44
Old-age benefits	14443.02	13026	13327	138.83
Survivor' benefits	8064.24	753	756	448.23
Disability benefits	5658.02	1402	1443	225.13
Education related allowances	3701.81	198	227	541.13
Gross monthly earnings of employees	1727.68	13584	14926	15.17

(Follows) Table 1. Mean, number of observations and standard errors (cross-sectional component 2007)

Income components	Mean	Number of o	Standard	
		Before imputation	After imputation	Error
Subclasses by household size		<u> </u>		
,				
1 household member	15939.88	5421	5528	246.35
2 household members	18120.71	5839	5866	264.44
3 household members	18690.62	4480	4505	279.93
4 and more	16333.52	5059	5083	214.05
Population by age group				
<25	15513.95	12913	13033	128.89
25-34	17893.97	6745	6814	175.47
35-44	17791.32	8139	8201	167.91
45-54	18694.15	7305	7359	199.43
55-64	19983.97	6788	6814	257.49
65+	15706.91	10536	10551	157.71
Population by sex				
Male	17783.62	25270	25436	119.17
Female	16672.49	27156	27336	97.97

With reference to the component of the survey - year 2004-2005-2006-2007, **DB075=4** -, standard errors were calculated for the mean of the Income components (listed in Table A) and for the mean of the Equivalised disposable income by household size, population age groups, population by sex (see Table A).

Table A. Mean, number of observations and standard errors (DB075 = 4)

Income components	Mean		bservations	Standard
		Before imputation	After imputation	Error
Total household gross income	37301.06	4580	4598	662.09
Total disposable household income	28406.45	4607	4586	420.13
Total disposable household income before social transfers other than oldage survivors' benefits	27336.40	4570	4596	425.08
Total disposable household including				
old-age survivors' benefits	20289.31	4346	4400	418.57
Net income components at household level				
Income from rentals of properties or lands	5317.38	277	301	604.59
Family/children related allowances	971.24	1159	1257	39.83
Social exclusion	5884.12	14	20	1986.83
Housing allowances	1197.04	55	65	175.02
Transfers received	4724.29	172	200	648.79
Interest, dividends, profits	1017.13	1825	2141	62.50
Interest repayments on mortgage	2800.41	0	527	182.84
Income of people aged less than 16	1701.99	22	27	699.01
Regular taxes on wealth	358.50	3059	3194	11.39
Transfers paid	4208.25	161	173	699.83
Repayments/receipts for tax adjustment Gross income components at household level	-287.94	2949	2987	4.13
Income from rentals of properties or lands	6972.25	277	301	833.88
Family/children related allowances	971.24	1159	1257	39.83
Social exclusion	5884.12	14	20	1986.83
Housing allowances	1197.04	55	65	175.02
Transfers received	4724.29	172	200	648.79
Interest, dividends, profits	1293.43	1825	2141	77.75
Interest repayments on mortgage	2800.41	0	527	182.84
Income of people aged less than 16	1701.99	22	27	699.01
Regular taxes on wealth	358.50	3059	3194	11.39
Transfers paid	4208.25	161	173	699.83

(Follows) Table A. Mean, number of observations and standard errors (DB075 = 4)

Income components	Mean	Number of c	Standard	
		Before imputation	After imputation	Error
Net income components at personal level				
Employee cash or near-cash income	15716.69	3979	4022	429.85
Non cash employee income	1356.15	154	905	108.44
Contributions to individual private pension plan	1771.15	494	587	115.05
Cash benefit or losses from self- employment	17077.70	1330	1670	1003.14
Pension from individual private plans	6581.95	13	14	7989.96
Unemployment benefits	2940.88	835	857	174.66
Old-age benefits	12455.90	2860	2976	401.08
Survivor' benefits	6466.46	159	161	831.97
Disability benefits	5165.75	293	305	448.59
Education related allowances	2792.75	37	42	733.18
Gross income components at personal level				
Employee cash or near-cash income	21233.04	4018	4022	633.59
Non cash employee income	1356.14	154	905	108.44
Contributions to individual private pension plan	1771.15	494	587	115.05
Cash benefit or losses from self- employment	23935.39	1613	1670	1523.97
Pension from individual private plans	8513.01	14	14	10727.33
Unemployment benefits	3443.28	828	857	208.18
Old-age benefits	14673.05	2915	2976	494.63
Survivor' benefits	7484.27	161	161	971.31
Disability benefits	5424.25	298	305	460.68
Education related allowances	2792.75	37	42	733.18

(Follows) Table A. Mean, number of observations and standard errors (DB075 = 4)

Equivalised disposable income	Mean	Number of o	Standard	
		Before imputation	After imputation	Error
Subclasses by household size				
1 household member	15717.30	1189	1213	480.79
2 household members	17639.95	1288	1292	739.82
3 household members	19128.17	961	966	993.90
4 and more	16684.98	1148	1152	562.12
Population by age group				
<25	15587.72	2840	2859	293.67
25-34	18364.02	1538	1549	532.19
35-44	17469.68	1755	1764	321.97
45-54	19221.43	1602	1615	582.99
55-64	19153.16	1493	1501	477.87
65+	15864.99	2334	2338	412.81
Population by sex				
Male	17758.74	5560	5591	284.14
Female	16788.61	6002	6035	239.07

With reference to the component of the survey - year 2005-2006-2007, **DB075=1** -, standard errors were calculated for the mean of the Income components (listed in Table B) and for the mean of the Equivalised disposable income by household size, population age groups, population by sex (see Table B).

Table B. Mean, number of observations and standard errors (DB075 = 1)

Income components	Mean	Number of c	Standard	
		Before imputation	After imputation	Error
Total household gross income	38265.65	4871	4888	492.90
Total disposable household income	29187.14	4881	4902	322.90
Total disposable household income before social transfers other than oldage survivors' benefits				
	27971.31	4868	4893	327.32
Total disposable household including old-age survivors' benefits	20875.52	4619	4672	325.41
Net income components at household level				
Income from rentals of properties or lands	7211.26	312	361	1017.61
Family/children related allowances	897.15	1305	1425	35.43
Social exclusion	7607.65	18	24	3112.21
Housing allowances	1305.90	46	64	235.18
Transfers received	4805.96	210	226	451.85
Interest, dividends, profits	1132.88	1883	2164	68.27
Interest repayments on mortgage	3165.25	0	612	168.89
Income of people aged less than 16	1641.62	30	34	470.96
Regular taxes on wealth	357.34	3222	3364	10.07
Transfers paid	3986.39	201	214	492.68
Repayments/receipts for tax adjustment	-297.41	3114	3151	3.77
Gross income components at household level				
Income from rentals of properties or lands	10100.23	312	361	1584.76
Family/children related allowances	897.15	1305	1425	35.43
Social exclusion	7607.65	18	24	3112.21
Housing allowances	1305.90	46	64	235.18
Transfers received	4805.96	210	226	451.85
Interest, dividends, profits	1429.83	1883	2164	82.50
Interest repayments on mortgage	3165.25	0	612	168.89
Income of people aged less than 16	1641.62	30	34	470.96
Regular taxes on wealth	357.34	3222	3364	10.07
Transfers paid	3986.39	201	214	492.68

(Follows) Table B. Mean, number of observations and standard errors (DB075 = 1)

Income components	Mean	Number of o	Standard	
		Before imputation	After imputation	Error
Net income components at personal level				
Employee cash or near-cash income	15739.4	4189	4235	293.95
Non cash employee income	1282.53	162	952	62.86
Contributions to individual private pension plan	1779.8	546	633	116.04
Cash benefit or losses from self- employment	16699.60	1368	1746	742.55
Pension from individual private plans	4096.96	15	16	1098.16
Unemployment benefits	3180.93	928	953	235.01
Old-age benefits	12662.52	3000	3139	192.70
Survivor' benefits	7585.78	160	162	792.86
Disability benefits	5141.19	337	349	366.38
Education related allowances	5324.88	35	43	1823.55
Gross income components at personal level				
Employee cash or near-cash income	21217.45	4230	4235	434.05
Non cash employee income	1282.52	162	952	62.86
Contributions to individual private pension plan	1779.8	546	633	116.04
Cash benefit or losses from self- employment	23216.99	1686	1746	1056.37
Pension from individual private plans	5248.41	16	16	1469.99
Unemployment benefits	3631.82	919	953	260.15
Old-age benefits	14937.72	3069	3139	259.30
Survivor' benefits	8744.69	162	162	931.96
Disability benefits	5328.62	341	349	378.04
Education related allowances	5324.88	35	43	1823.55

(Follows) Table B. Mean, number of observations and standard errors (DB075 = 1)

Equivalised disposable income	Mean	Number of o	Standard	
		Before imputation	After imputation	Error
Subclasses by household size				
1 household member	16127.8	1197	1220	397.92
2 household members	18378.66	1416	1424	594.46
3 household members	19276.73	1057	1064	749.31
4 and more	16919.32	1211	1219	490.37
Population by age group				
<25	15879.32	3099	3137	271.23
25-34	18177.25	1551	1569	365.60
35-44	18205.81	1982	1999	339.61
45-54	18115.85	1699	1712	339.65
55-64	20842.16	1600	1610	470.64
65+	16214.83	2508	2509	281.72
Population by sex				
Male	18018.51	6044	6091	231.21
Female	17149.39	6395	6445	195.37

With reference to the component of the survey - year 2006-2007, DB075=2 -, standard errors were calculated for the mean of the Income components (listed in Table C) and for the mean of the Equivalised disposable income by household size, population age groups, population by sex (see Table C).

Table C. Mean, number of observations and standard errors (DB075 = 2)

Income components	Mean	Number of c	bservations	Standard	
		Before imputation	After imputation	Error	
Total household gross income	38382.56	5263	5275	506.92	
Total disposable household income	29238.38	5265	5285	326.45	
Total disposable household income before social transfers other than oldage survivors' benefits	28171.93	5239	5263	332.20	
Total disposable household including					
old-age survivors' benefits	21166.60	4969	5026	323.57	
Net income components at household level					
Income from rentals of properties or lands	6727.80	316	350	840.95	
Family/children related allowances	986.19	1363	1479	37.35	
Social exclusion	4823.67	25	26	1314.67	
Housing allowances	1503.10	69	81	337.23	
Transfers received	5674.86	230	257	620.53	
Interest, dividends, profits	1063.25	2188	2529	54.03	
Interest repayments on mortgage	3257.75	0	585	173.62	
Income of people aged less than 16	1216.64	35	41	219.88	
Regular taxes on wealth	365.67	3364	3554	10.82	
Transfers paid	4494.14	246	263	437.55	
Repayments/receipts for tax adjustment Gross income components at household level	-306.76	3326	3367	3.54	
Income from rentals of properties or lands	9088.86	316	350	1285.47	
Family/children related allowances	986.19	1363	1479	37.35	
Social exclusion	4823.67	25	26	1314.67	
Housing allowances	1503.10	69	81	337.23	
Transfers received	5674.86	230	257	620.53	
Interest, dividends, profits	1356.75	2188	2529	68.00	
Interest repayments on mortgage	3257.75	0	585	173.62	
Income of people aged less than 16	1216.64	35	41	219.88	
Regular taxes on wealth	365.67	3364	3554	10.82	
Transfers paid	4494.14	246	263	437.55	

(Follows) Table C. Mean, number of observations and standard errors (DB075 = 2)

Income components	Mean	Number of o	Number of observations			
		Before imputation	After imputation	Error		
Net income components at personal level						
Employee cash or near-cash income	15946.37	4449	4499	255.92		
Non cash employee income	1267.83	1031	188	66.21		
Contributions to individual private pension plan	1698.30	643	730	97.72		
Cash benefit or losses from self- employment	16641.19	1463	1835	704.85		
Pension from individual private plans	10877.61	29	29	3321.03		
Unemployment benefits	2935.66	979	1003	167.61		
Old-age benefits	12598.94	3296	3425	202.73		
Survivor' benefits	6571.73	203	213	581.65		
Disability benefits	5615.03	314	334	364.38		
Education related allowances	3273.75	48	55	670.23		
Gross income components at personal level						
Employee cash or near-cash income	21509.78	4495	4499	384.27		
Non cash employee income	1267.83	188	1031	66.21		
Contributions to individual private pension plan	1698.30	643	730	97.72		
Cash benefit or losses from self- employment	23043.81	1785	1835	1040.91		
Pension from individual private plans	15632.80	29	29	4949.31		
Unemployment benefits	3402.93	964	1003	198.01		
Old-age benefits	14949.29	3349	3425	287.71		
Survivor' benefits	7594.39	211	213	714.40		
Disability benefits	5851.07	324	334	380.59		
Education related allowances	3273.75	48	55	670.23		

(Follows) Table C. Mean, number of observations and standard errors (DB075 = 2)

Equivalised disposable	Mean	Mean Number of observations				
incombe		Before imputation	After imputation	Standard Error		
Subclasses by household size						
1 household member	15962.97	1384	1420	448.08		
2 household members	18401.52	1501	1505	640.45		
3 household members	19356.82	1113	1115	641.87		
4 and more	16597.27	1267	1274	397.97		
Population by age group						
<25	15785.61	3241	3270	241.93		
25-34	17639.26	1620	1637	275.26		
35-44	17884.34	2063	2080	357.44		
45-54	18516.79	1850	1863	326.71		
55-64	20318.81	1723	1726	482.29		
65+	16174.87	2718	2721	321.82		
Population by sex						
Male	17977.84	6301	6341	219.80		
Female	16776.85	6914	6956	180.89		

### 2.3 Non sampling errors

#### 2.3.1. Sampling frame and coverage errors

The sampling frame is composed by the registers of the municipalities.

The sample of the households belonging to the first rotational group was extracted in July 2005 and validated within September 2005; while the others households were extracted in June 2004.

The sampling frame is updated in continuous way by the municipalities in interactive modality.

#### 2.3.2. Measurement and processing errors

#### 2.3.2.1. Measurement errors

We consider that the following sources of measurement errors are likely to affect the collected data:

- 1. respondents: (i) memory effect, because information is collected according to respondents memories (official documentation about income is not required; external sources of information, as administrative registers, are used when available); (ii) omission, because respondents might not be willing to provide correct information about income or other living conditions; (iii) proxy effect, because in a few cases some individuals are allowed to provide information about other household members:
- 2. *interviewers*, who might provide the respondents with an incorrect interpretation of the questions, or might mistake when filling the questionnaire. Istat territorial offices are firstly trained and provided with training tools (e.g. instruction manuals, or presentations). Then, they are responsible for the interviewers training: they establish the timing and the duration of the training meetings, as well as provide support during the field work and control for the quality of the interviewers' work. Training strategies have been outlined also on the experience of pilot surveys;
- 3. *data entry* personnel, who might enter incorrect information, although some automatic controls are implemented in the registration software;
- 4. *questionnaire*. The final version of the questionnaire, as used in the survey 2006, is based on (i) the first two waves of SILC surveys; (ii) the support of experts working in other research institutes; and (iii) a cognitive laboratory on self-employment. Information is collected through three main questionnaires: the first one collects information about each household member's demographic characteristics, and child care; the second one collects information at household level; the third one collects information at individual level (about individual aged 16 and over).

#### 2.3.2.2. Processing errors

Description of data entry procedure

Data entry procedure is realised through a software application implemented using Blaise. The procedure contains automatic controls about: range of variable, main routes of questionnaire and any logical controls referred to internal inconsistence of collected information. Every control is set-up like "soft" in order to reduce typing errors.

Furthermore, the procedure provides for "hard" control in order to compare register and questionnaire information about household's composition.

#### Coding controls

Coding controls are implemented in post-data-collection-process based on donor method.

Main errors detected in the post data collection process

Main errors detected are:

- Missing value.
- Value outside acceptance range.
- Incoherence value compared to other information in the same record.

### 2.3.3 Non-response errors

### 2.3.3.1. Achieved sample size

Table 1. Number of Households for which an interview is accepted for the database (DB135 = 1).

Longitudinal component by wave.

	2004	2005	2006	2007
DB075=1 & DB135 = 1	1	6194	5426	4927
DB075=2 & DB135 = 1	-	-	6167	5314
DB075=4 & DB135 = 1	6259	5377	5003	4623
Total	6259	11571	16596	14864

Table 2. Number of persons 16 years or older, number of sample persons (RB100 = 1) and number of co-residents (RB100 = 2), who are members of the households for which the interview is accepted for the database (D135 = 1), and who completed a personal interview (RB250 = 11 to 13). Longitudinal component by wave.

		DB135 = 1 & RB250 = 11 to 13					
		2004	2005	2006	2007		
DD075_1	RB100 = 1	-	13289	11502	10296		
DB075=1	RB100 = 2	-	-	181	288		
DD075 0	RB100 = 1	-	-	12956	11085		
DB075=2 RB100	RB100 = 2	-	-	-	153		
DB075=4	RB100 = 1	13335	11274	10384	9355		
DB075=4	RB100 = 2	-	206	313	486		
Total	RB100 = 1	13335	24563	34842	30736		
Total	RB100 = 2	-	. 206	494	927		
Total		13335	24769	35336	31663		

### 2.3.3.2 Unit non-response

Table 1.1 Unit non-response, Rotational Group 1, first wave 2005

Rotational Group 1	, 1 <sup>st</sup> Wave 2005
TYPE OF RATE	VALUE
RA	0.989
RH	0.826
NRH	18.339
RP	1
NRP	0
NRP_OVERALL	18.339

Table 1.2 Unit non-response, Rotational Group 3, first wave 2004

Rotational Group 2, 1<sup>st</sup> Wave 2006
TYPE OF RATE VALUE

RA 0.984
RH 0.819
NRH 19.417
RP 1
NRP 0

NRP\_OVERALL

Table 1.3 Unit non-response, Rotational Group 4, first wave 2004

19.417

Rotational Group 4	, 1 <sup>st</sup> Wave 2004
TYPE OF RATE	VALUE
RA	0.988
RH	0.827
NRH	18.247
RP	1
NRP	0
NRP_OVERALL	18.247

Table 2. Household response rates by rotational group and wave

	Rotational		Rotational	Rotational		
	Gro	up 1	Group 2		Group 4	
	Waves	Waves	Waves	Waves	Waves	Waves
	2005-2006	2006-2007	2006-2007	2004-2005	2005-2006	2006-2007
WAVE RESPONSE RATE	87.31	85.63	86.35	85.58	87.37	88.34
REFUSAL RATE	6.76	6.65	6.50	7.66	6.24	5.79
NO-CONTACTED AND OTHERS RATE	5.11	6.68	6.68	5.95	5.49	5.13
LONGITUDINAL FOLLOW-UP RATE	92.29	90.82	92.28	90.99	91.06	92.15
FOLLOW-UP RATIO	94.53	92.23	93.83	93.26	92.86	93.65
ACHIEVED SAMPLE SIZE RATIO	87.31	90.46	86.35	85.58	92.69	91.90

Table 3. Personal interview response rates by rotational group and wave

Table 5. 1 ersonal litter view response rates by rotational group and wave									
	Rotational		Rotational	Rotational					
	Gro	up 1	Group 2	Group 4					
	Waves	Waves	Waves	Waves	Waves	Waves			
	2005-2006	2006-2007	2006-2007	2004-2005	2005-2006	2006-2007			
WAVE RESPONSE									
RATE OF SAMPLE									
PERSONS	88.50	88.28	87.35	86.90	91.16	90.60			
WAVE RESPONSE									
RATE OF CO-									
RESIDENTS	NA	NA	NA	NA	NA	100.0			
LONGITUDINAL									
FOLLOW-UP RATE	85.80	86.27	85.07	84.46	88.83	88.69			
RATE (RB205=21, 22,									
23, 31, 32, 33)	0	0	0	0	0	0			
ACHIEVED SAMPLE									
SIZE RATIO FOR									
SAMPLE PERSONS	85.80	86.23	85.01	83.84	88.91	87.86			
ACHIEVED SAMPLE									
SIZE RATIO FOR									
SAMPLE PERSONS									
& CO-RESIDENTS	87.15	87.34	86.19	85.37	90.02	89.83			
ACHIEVED SAMPLE									
SIZE RATIO FOR CO-									
RESIDENTS									
SELECTED IN THE									
FIRST WAVE	NA	NA	NA	NA	NA	NA			
WAVE RESPONSE									
RATE FOR NON-									
SAMPLE PERSONS	100.0	100.0	100.0	100.0	100.0	100.0			

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

Table 1.1 Distribution of households by DB110, DB120, DB130 and DB135, Rotational Group 1,  $2^{\rm nd}$  wave 2006

Household Status - Rotational Group 1, Wave=2006

	DB110	TOTAL								
	=1	=2	=3	=4	=5	=6	=7	=8	=11	
N	5831	194	11	11	36	0	158	111	0	6352
%	91.8	3.1	0.2	0.2	0.6	0	2.5	1.7	0	100

Record of Contact at Address - Rotational Group 1, Wave=2006

	DB120	DB120	DB120	DB120	TOTAL
	=11	=21	=22	=23	
N	343	1	0	8	352
%	97.4	0.3	0	2.3	100

Household Questionnaire Result - Rotational Group 1, Wave=2006

	DB130	DB130	DB130	DB130	DB130	TOTAL
	=11	=21	=22	=23	=24	
N	5426	424	221	50	53	6174
%	87.9	6.9	3.6	0.8	0.9	100

Household Interview Acceptance - Rotational Group 1, Wave=2006

	DB135	DB135	TOTAL
	=1	=2	
N	5426	0	5426
%	100	0	100

# Table 1.2 Distribution of households by DB110, DB120, DB130 and DB135, Rotational Group 1, $3^{\rm rd}$ wave 2007

Household Status - Rotational Group 1, Wave=2007

	DB110	TOTAL								
	=1	=2	=3	=4	=5	=6	=7	=8	=11	
N	5481	127	18	4	38	0	5	104	75	5852
%	93.7	2.2	0.3	0.1	0.6	0	0.1	1.8	1.3	100

#### Record of Contact at Address - Rotational Group 1, Wave=2007

	DB120	DB120	DB120	DB120	TOTAL
	=11	=21	=22	=23	
N	224	1	3	3	231
%	97	0.4	1.3	1.3	100

### Household Questionnaire Result - Rotational Group 1, Wave=2007

	DB130	DB130	DB130	DB130	DB130	TOTAL
	=11	=21	=22	=23	=24	
N	4929	397	230	59	90	5705
%	86.4	7	4	1	1.6	100

### Household Interview Acceptance - Rotational Group 1, Wave=2007

	DB135	DB135	TOTAL
	=1	=2	
N	4927	2	4929
%	100	0	100

# Table 1.3 Distribution of households by DB110, DB120, DB130 and DB135, Rotational Group 2, $2^{nd}$ wave 2007

Household Status - Rotational Group 2, Wave=2007

		DB110	TOTAL								
		=1	=2	=3	=4	=5	=6	=7	=8	=11	
	Ν	5855	136	19	6	32	0	17	111	102	6278
-	%	93.3	2.2	0.3	0.1	0.5	0	0.3	1.8	1.6	100

### Record of Contact at Address - Rotational Group 2, Wave=2007

	DB120 =11	DB120 =21	DB120 =22	DB120 =23	TOTAL
N	245	1	0	1	247
%	99.2	0.4	0	0.4	100

### Household Questionnaire Result - Rotational Group 2, Wave=2007

	DB130	DB130	DB130	DB130	DB130	TOTAL
	=11	=21	=22	=23	=24	
N	5314	409	281	29	67	6100
%	87.1	6.7	4.6	0.5	1.1	100

### Household Interview Acceptance - Rotational Group 2, Wave=2007

	DB135	DB135	TOTAL
	=1	=2	
N	5314	0	5314
%	100	0	100

# Table 1.4 Distribution of households by DB110, DB120, DB130 and DB135, Rotational Group 4, $2^{nd}$ wave 2005

Household Status - Rotational Group 4, Wave=2005

	DB110	TOTAL								
	=1	=2	=3	=4	=5	=6	=7	=8	=11	
N	5945	123	26	16	41	0	0	157	108	6416
%	92.7	1.9	0.4	0.2	0.6	0	0	2.4	1.7	100

### Record of Contact at Address - Rotational Group 4, Wave=2005

	DB120	DB120	DB120	DB120	TOTAL
	=11	=21	=22	=23	
N	271	2	1	6	280
%	96.8	0.7	0.4	2.1	100

#### Household Questionnaire Result - Rotational Group 4, Wave=2005

	DB130 =11	DB130 =21	DB130 =22	DB130 =23	DB130 =24	TOTAL
N	5379	479	230	51	77	6216
%	86.5	7.7	3.7	0.8	1.2	100

### Household Interview Acceptance - Rotational Group 4, Wave=2005

	DB135	DB135	TOTAL	
	=1	=2		
N	5377	2	5379	
%	100	0	100	

# Table 1.5 Distribution of households by DB110, DB120, DB130 and DB135, Rotational Group 4, $3^{\rm rd}$ wave 2006

Household Status - Rotational Group 4, Wave=2006

	DB110	TOTAL								
	=1	=2	=3	=4	=5	=6	=7	=8	=11	
N	5337	227	14	6	43	0	2	118	100	5847
%	91.3	3.9	0.2	0.1	0.7	0	0	2	1.7	100

### Record of Contact at Address - Rotational Group 4, Wave=2006

	DB120	DB120	DB120	DB120	TOTAL
	=11	=21	=22	=23	
N	341	0	0	4	345
%	98.8	0	0	1.2	100

### Household Questionnaire Result - Rotational Group 4, Wave=2006

	DB130	DB130	DB130	DB130	DB130	TOTAL
	=11	=21	=22	=23	=24	
N	5003	364	189	51	71	5678
%	88.1	6.4	3.3	0.9	1.3	100

### Household Interview Acceptance - Rotational Group 4, Wave=2006

	DB135	DB135	TOTAL
	=1	=2	
N	5003	0	5003
%	100	0	100

# Table 1.6 Distribution of households by DB110, DB120, DB130 and DB135, Rotational Group 4, $4^{\rm th}$ wave 2007

Household Status - Rotational Group 4, Wave=2007

	DB110	TOTAL								
	=1	=2	=3	=4	=5	=6	=7	=8	=11	
N	4999	115	9	4	27	0	8	89	60	5311
%	94.1	2.2	0.2	0.1	0.5	0	0.2	1.7	1.1	100

### Record of Contact at Address - Rotational Group 4, Wave=2007

	DB120 =11	DB120 =21	DB120 =22	DB120 =23	TOTAL
		-21	-22	123	
N	200	1	0	3	204
%	98	0.5	0	1.5	100

### Household Questionnaire Result - Rotational Group 4, Wave=2007

	DB130	DB130	DB130	DB130	DB130	TOTAL
	=11	=21	=22	=23	=24	
N	4630	307	170	39	53	5199
%	89.1	5.9	3.3	0.8	1	100

### Household Interview Acceptance - Rotational Group 4, Wave=2007

	DB135 =1	DB135 =2	TOTAL	
N	4623	7	4630	
%	99.8	0.2	100	

### 2.3.3.4 Distribution of persons for membership status

# Table 1.1 Distribution of persons for membership status (RB110), Rotational Group 1, $2^{nd}$ wave 2006

Distribution of Persons for Membership Status - Rotational Group 1, Wave=2006

	Current Household Member				No Current	TOTAL		
	RB110=1	RB110=2	RB110=3	RB110=4	RB120=2-4	RB110=6	RB110=7	
N	13432	134	246	79	16	70	0	13977
%	96.10	0.96	1.76	0.57	0.11	0.50	0.00	100

# Table 1.2 Distribution of persons for membership status (RB110), Rotational Group 3, $3^{\rm rd}$ wave 2007

Distribution of Persons for Membership Status - Rotational Group 1, Wave=2007

	Cu	rrent House	ehold Memb	oer	No Current	TOTAL		
	RB110=1	10=1 RB110=2 RB110=3 RB110=4		RB120=2-4	RB110=6	RB110=7		
N	12179	84	209	64	14	71	11	12632
%	96.41	0.66	1.65	0.51	0.11	0.56	0.09	100

# Table 1.3 Distribution of persons for membership status (RB110), Rotational Group 2, $2^{nd}$ wave 2007

Distribution of Persons for Membership Status - Rotational Group 2, Wave=2007

	Cu	rrent House	ehold Memb	oer	No Current	TOTAL		
	RB110=1	RB110=2	RB110=3	RB110=4	RB120=2-4	RB110=6	RB110=7	
N	12925	92	203	77	14	54	1	13366
%	96.70	0.69	1.52	0.58	0.10	0.40	0.01	100

# Table 1.4 Distribution of persons for membership status (RB110), Rotational Group 4, $2^{nd}$ wave 2005

Distribution of Persons for Membership Status - Rotational Group 4, Wave=2005

	Cu	rrent House	ehold Memi	oer	No Current	TOTAL		
	RB110=1	RB110=2	RB110=3	RB110=4	RB120=2-4	RB110=6	RB110=7	
N	13130	136	268	72	56	76		13738
%	95.57	0.99	1.95	0.52	0.41	0.55	0.00	100

# Table 1.5 Distribution of persons for membership status (RB110), Rotational Group 4, $3^{\rm rd}$ wave 2006

Distribution of Persons for Membership Status - Rotational Group 4, Wave=2006

	Cu	rrent House	ehold Memb	oer	No Current	TOTAL		
	RB110=1 RB110=2 RB110=3 RB110=4 F			RB120=2-4	RB110=6	RB110=7		
N	12257	102	236	75	21	59	12	12762
%	96.04	0.80	1.85	0.59	0.16	0.46	0.09	100

### Table 1.6 Distribution of persons for membership status (RB110), Rotational Group 4, $4^{th}$ wave 2007

Distribution of Persons for Membership Status - Rotational Group 4, Wave=2007

	Cu	rrent House	ehold Memb	oer	No Current	TOTAL		
	RB110=1	RB110=2 RB110=3 RB		RB110=4	RB120=2-4	RB120=2-4 RB110=6		
N	11321	77	163	65	14	43	10	11693
%	96.82	0.66	1.39	0.56	0.12	0.37	0.09	100

# Table 2.1 Distribution of persons moving out by variable RB120, Rotational Group 1, $2^{nd}$ wave 2006

Distribution of Persons moving out by RB120 - Rotational Group 1, Wave=2006

		TOTAL			
	RB120=1	RB120=2	RB120=3	RB120=4	
N	232	3	13	0	248
%	93.5	1.2	5.2	0	100

# Table 2.2 Distribution of persons moving out by variable RB120, Rotational Group 1, $3^{rd}$ wave 2007

Distribution of Persons moving out by RB120 - Rotational Group 1, Wave=2007

		RB110=5												
	RB120=1	RB120=2	RB120=3	RB120=4										
N	188	3	11	0	202									
%	93.1	1.5	5.4	0	100									

# Table 2.3 Distribution of persons moving out by variable RB120, Rotational Group 2, $2^{nd}$ wave 2007

Distribution of Persons moving out by RB120 - Rotational Group 2, Wave=2007

		TOTAL			
	RB120=1	RB120=2	RB120=3	RB120=4	
N	179	9	5	0	193
%	92.7	4.7	2.6	0	100

# Table 2.4 Distribution of persons moving out by variable RB120, Rotational Group 4, $2^{\rm nd}$ wave 2005

Distribution of Persons moving out by RB120 - Rotational Group 4, Wave=2005

		TOTAL			
	RB120=1	RB120=2	RB120=3	RB120=4	
N	208	5	51	0	264
%	78.8	1.9	19.3	0	100

# Table 2.5 Distribution of persons moving out by variable RB120, Rotational Group 4, $3^{\rm rd}$ wave 2006

Distribution of Persons moving out by RB120 - Rotational Group 4, Wave=2006

		TOTAL			
	RB120=1	RB120=2	RB120=3	RB120=4	
N	194	5	16	0	215
%	90.2	2.3	7.4	0	100

Table 2.6 Distribution of persons moving out by variable RB120, Rotational Group 4, 4<sup>th</sup> wave 2007

Distribution of Persons moving out by RB120 - Rotational Group 4, Wave=2007

		TOTAL			
	RB120=1	RB120=2	RB120=3	RB120=4	
N	167	4	10	0	181
%	92.3	2.2	5.5	0	100

2.3.3.5 Item Non-response
Table 1. Item non-response for income variables at household level. Every available wave of the longitudinal component

longitudinal component		2004			2005	;		2006	;		2007	7
Item Non-response	(A)	(B)	(C)	(A)	(B)	(C)	(A)	(B)	(C)	(A)	(B)	(C)
Total household gross income	NA	NA	NA	NA	NA	NA	NA	NA	NA	99.5	0.3	81.49
Total disposable household income	99.6	0	0	99.6	0.8	50.05	99.6	0.32	38.91	99.5	0.4	22.38
Total disposable household income before social transfers other than old-age and survivors' benefits	99.3	0	0	99.3	0.9	46.75	99.3	0.48	36.92	99.3	0.5	22.89
Total disposable household income including old-age and survivors' benefits	93.9	0	0	93.8	1.87	43.83	93.8	1.31	36.01	94.9	1.1	19.69
Net income components at hous	sehold	level										
Imputed rent	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA	NA
Income from rentals of properties or lands Family/children related	7.25	1.58	0.4	7.41	0.59	0.09	7.07	0.64	0.13	6.81	0.7	0.12
allowances	27	2.54	0.9	27	1.49	0.6	28.2	2.32	0.7	28	2.3	0.44
Social exclusion	1.17	1.17	0	0.85	0.11	0	0.59	0.17	0	0.47	0.1	0
Housing allowances	1.65	1.65	0	1.88	0.49	0.01	1.69	0.46	0.01	1.41	0.3	0.01
Transfers received	4.9	1.01	0.1	4.46	0.49	0.03	4.63	0.42	0.05	4.59	0.5	0.03
Interest. dividends. Profits	50.6	12.2	2.1	49.1	11.1	2.1	45.1	5.94	1.82	46	6.3	2.56
Interest repayments on mortgage	11.1	11.1	0	11.5	11	0	11	11	0	11.6	12	0
Income of people aged less than 16	0.66	0.26	0.1	0.8	0.12	0.09	0.67	0.16	0.01	0.69	0.1	0.26
Regular taxes on wealth	66.5	4.04	2.9	67.5	2.57	1.29	67.4	2.64	1.12	68	3.1	1.76
Transfers paid	4.68	0.56	0	4.4	0.35	0.02	4.58	0.33	0.01	4.37	0.3	0.03
Repayments/receipts for tax adjustment	41.2	4.03	1.6	42.4	3.94	1.59	39.3	3.13	1.22	64	0.8	0.61
Gross income components at he	ouseho	old lev	el									
Imputed rent	NA	NA	NA	NA	NA	NA	NA	NA	NA	10.8	100	0
Income from rentals of properties or lands	NA	NA	NA	NA	NA	NA	NA	NA	NA	6.81	0.7	5.76
Family/children related allowances	NA	NA	NA	NA	NA	NA	NA	NA	NA	28	2.3	0.44
Social exclusion	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.47	0.1	0
Housing allowances	NA	NA	NA	NA	NA	NA	NA	NA	NA	1.41	0.3	0.01
Transfers received	NA	NA	NA	NA	NA	NA	NA	NA	NA	4.59	0.5	0.03
Interest. dividends. Profits	NA	NA	NA	NA	NA	NA	NA	NA	NA	46	6.3	39.67
Interest repayments on mortgage	NA	NA	NA	NA	NA	NA	NA	NA	NA	11.6	12	0
Income of people aged less than 16	NA	NA	NA	NA	NA	NA	NA	NA	NA	0.69	0.1	0.26
Regular taxes on wealth	NA	NA	NA	NA	NA	NA	NA	NA	NA	68	3.1	1.76

| Transfers paid                         | NA | 4.37 | 0.3 | 0.03  |
|--|----|----|----|----|----|----|----|----|----|------|-----|-------|
| Tax on income and social contributions | NA | 94.5 | 9.3 | 71.21 |

- (A) % of households having received an amount
- (B) % of households with missing values (before imp.)
- (C) % of households with partial information (before imp.)

 $\label{thm:constraint} \textbf{Table 2. Item non-response for income variables at personal level. Every available wave of the longitudinal component } \\$ 

Item Non-response         (A)         (B)         (C)         (A)         (B)         (D)         (D)	0.07 0.78 NA NA
Net income components at personal level  Employee cash or near- cash income 40.5 21.2 0 39.7 11.8 0.02 40.4 1 10.89 40.3 0.4  Non cash employee	0.07 0.78 NA
Employee cash or near-cash income         40.5         21.2         0         39.7         11.8         0.02         40.4         1         10.89         40.3         0.4           Non cash employee         0	0.78 NA
Non cash employee	0.78 NA
	NA
Company car NA	NA
Employer's social	NA
insurance contribution NA	
Contributions to	
individual private	0
Cash benefit or losses	0.25
from self-employment 17.7 3.69 0 18.3 4.13 0.06 16.8 2.46 0.4 16.6 3.4	0.35
Value of goods produces	
by own-consumption NA NA NA NA NA NA NA NA NA 25.4 0	0
Pension from individual	0
Unemployment benefits 8.63 0.37 2.3 8.81 0.31 2.58 8.71 0.14 0.03 8.88 0.2	0.04
Old-age benefits 28.2 0.1 0.3 28.5 1.18 0.31 28.9 0.03 0.03 30.1 1.2	1.49
Survivor' benefits 1.7 0.01 0 1.7 0.06 0 1.65 0 0 1.69 0	0
Disability benefits 3.4 0 0 3.25 0.27 0 3.2 0.01 0 3.12 0.1	0
Education related	
allowances 0.74 0.11 0.1 0.68 0.06 0 0.67 0.07 0 0.44 0.1	0
Gross income components at personal level	I
Employee cash or near-	3.04
Non cash employee	0.04
income NA NA NA NA NA NA NA NA NA 9.12 7.5	0.78
Company car NA NA NA NA NA NA NA NA NA O.69 0	0.05
Employer's social	
insurance contribution NA	NA
Contributions to	
individual private	0
	0
Cash benefit or losses	4 00
from self-employment NA NA NA NA NA NA NA NA 16.6 0.5	4.02
Value of goods produces	
by own-consumption NA NA NA NA NA NA NA NA NA 25.4 2.6	0
Pension from individual NA	0.02
Unemployment benefits NA 8.88 0.3	8.47
Old-age benefits NA 30.1 0.7	2.54
Survivor' benefits NA NA NA NA NA NA NA NA NA 1.69 0	0.04
Disability benefits NA 3.12 0.1	0.07

Education related												
allowances	NA	0.44	0.1	0								

- (A) % of households having received an amount
- (B) % of households with missing values (before imp.)
- (C) % of households with partial information (before imp.)

### 2.4. Mode of data collection

Table 1.1 The distribution of household member by RB250 and Rotational Group (DB075), Wave 2004

Household Members 16+ (RB245= 1 to 3), Wave 2004

		RB250=11	Total
	N	13335	13335
DB075=4	%	100	100
	N	13335	13335
Total	%	100	100

Note: in 2004 all Household Members 16+ are defined as Sample Persons

Table 1.2 The distribution of household member by RB250 and Rotational Group (DB075), Wave 2005

Household Members 16+ (RB245= 1 to 3), Wave 2005

	•	RB250=11	Total
	N	13289	13289
DB075=1	%	100	100
	N	11480	11480
DB075=4	%	100	100
	N	24769	24769
Total	%	100	100

Sample Persons 16+ (RB245= 1 to 3 and RB100=1), Wave 2005

Cample 1 classification (NBZ+3= 1 to 3 and NB 100=1), wave 2003						
	•	RB250=11	Total			
	N	13289	13289			
DB075=1	%	100	100			
	N	11274	11274			
DB075=4	%	100	100			
	N	24563	24563			
Total	%	100	100			

Co-residents 16+ (RB245= 1 to 3 and RB100=2), Wave 2005

Co-residents for (NB243= 1 to 3 and NB100=2), wave 2003						
		RB250=11	Total			
	N	0	0			
DB075=1	%	ı	ı			
	N	206	206			
DB075=4	%	100	100			
	N	206	206			
Total	%	100	100			

Table 1.3 The distribution of household member by RB250 and Rotational Group (DB075), Wave 2006

Household Members 16+ (RB245= 1 to 3), Wave 2006

Treaddinia Weinberg	,	RB250=11	Total
	N	11683	11683
DB075=1	%	100	100
	N	12956	12956
DB075=2	%	100	100
	N	10697	10697
DB075=4	%	100	100
	N	35336	35336
Total	%	100	100

Sample Persons 16+ (RB245= 1 to 3 and RB100=1), Wave 2006

Carrier Creens 10.			· • • · /, · · · · · = • • •
		RB250=11	Total
	N	11502	11502
DB075=1	%	100	100
	N	12956	12956
DB075=2	%	100	100
	N	10384	10384
DB075=4	%	100	100
	N	34842	34842
Total	%	100	100

Co-residents 16+ (RB245= 1 to 3 and RB100=2), Wave 2006

CO TOOLGOTILO TO T (TE		5 0 ana 112 100	,
		RB250=11	Total
	N	181	181
DB075=1	%	100	100
	N	0	0
DB075=2	%	-	•
	N	313	313
DB075=4	%	100	100
	N	494	494
Total	%	100	100

Table 1.4 The distribution of household member by RB250 and Rotational Group (DB075), Wave 2007

Household Members 16+ (RB245= 1 to 3), Wave 2007

Trouserrold Members 101 (NB2+3= 1 to 3), Wave 2007							
		RB250=11	Total				
	N	10584	10584				
DB075=1	%	100	100				
	N	11238	11238				
DB075=2	%	100	100				
	N	9841	9841				
DB075=4	%	100	100				

	N	31663	31663
Total	%	100	100

Sample Persons 16+ (RB245= 1 to 3 and RB100=1), Wave 2007

	(: :== :0		· • • · /, · · · · · = • · ·
	·	RB250=11	Total
	N	10296	10296
DB075=1	%	100	100
	N	11085	11085
DB075=2	%	100	100
	N	9355	9355
DB075=4	%	100	100
	N	30736	30736
Total	%	100	100

Co-residents 16+ (RB245= 1 to 3 and RB100=2), Wave 2007

		RB250=11	Total
	N	288	288
DB075=1	%	100	100
	N	153	153
DB075=2	%	100	100
	N	486	486
DB075=4	%	100	100
	N	927	927
Total	%	100	100

Table 2.1 The distribution of household member by RB260 and Rotational Group (DB075), Wave 2004

Household Members 16+ (RB245=1 to 3) and RB250 in 11 or 13, Wave 2004

		RB260=.	RB260=1	RB260=5	
		Missing	Face to face interview-PAPI	Proxy interview	Total
	Ν	572	10671	2092	13335
DB075=4	%	4.29	80.02	15.69	100
	Ν	572	10671	2092	13335
Total	%	4.29	80.02	15.69	100

Note: in 2004 all Household Members 16+ are defined as Sample Persons

Table 2.2 The distribution of household member by RB260 and Rotational Group (DB075), Wave 2005

Household Members 16+ (RB245=1 to 3) and RB250 in 11 or 13, Wave 2005

		RB260=.	RB260=1	RB260=5	
		Missing	Face to face interview-PAPI	Proxy interview	Total
	N	239	11103	1947	13289
DB075=1	%	1.8	83.55	14.65	100
DB075=4	N	119	9444	1917	11480

	%	1.04	82.26	16.7	100
	N	358	20547	3864	24769
Total	%	1.45	82.95	15.60	100

### Sample Persons 16+ (RB245=1 to 3 and RB100=1) and RB250 in 11 or 13, Wave 2005

		RB260=.	RB260=1	RB260=5	
		Missing	Face to face interview-PAPI	Proxy interview	Total
	Ν	239	11103	1947	13289
DB075=1	%	1.8	83.55	14.65	100
	N	106	9303	1865	11274
DB075=4	%	0.94	82.52	16.54	100
	N	345	20406	3812	24563
Total	%	1.40	83.08	15.52	100

### Co-residents 16+ (RB245=1 to 3 and RB100=2) and RB250 in 11 or 13, Wave 2005

		RB260=.	RB260=1	RB260=5	
		Missing	Face to face interview-PAPI	Proxy interview	Total
	Ν	0	0	0	0
DB075=1	%	-	-	-	-
	Ν	13	141	52	206
DB075=4	%	6.31	68.45	25.24	100
	N	13	141	52	206
Total	%	6.31	68.45	25.24	100

# Table 2.3 The distribution of household member by RB260 and Rotational Group (DB075), Wave 2006

Household Members 16+ (RB245=1 to 3) and RB250 in 11 or 13, Wave 2006

		RB260=.	RB260=1	RB260=5	
		Missing	Face to face interview-PAPI	Proxy interview	Total
	N	152	9707	1824	11683
DB075=1	%	1.3	83.09	15.61	100
	N	219	10843	1894	12956
DB075=2	%	1.69	83.69	14.62	100
	N	115	8856	1726	10697
DB075=4	%	1.08	82.79	16.14	100
	N	486	29406	5444	35336
Total	%	1.38	83.22	15.41	100

### Sample Persons 16+ (RB245=1 to 3 and RB100=1) and RB250 in 11 or 13, Wave 2006

		RB260=.	RB260=1	RB260=5	
		Missing	Face to face interview-PAPI	Proxy interview	Total
	N	148	9563	1791	11502
DB075=1	%	1.29	83.14	15.57	100
DB075=2	N	219	10843	1894	12956

	%	1.69	83.69	14.62	100
	N	103	8644	1637	10384
DB075=4	%	0.99	83.24	15.76	100
	N	470	29050	5322	34842
Total	%	1.35	83.38	15.27	100

### Co-residents 16+ (RB245=1 to 3 and RB100=2) and RB250 in 11 or 13, Wave 2006

		RB260=.	RB260=1	RB260=5	
		Missing	Face to face interview-PAPI	Proxy interview	Total
	N	4	144	33	181
DB075=1	%	2.21	79.56	18.23	100
	N	0	0	0	0
DB075=2	%	-	-	-	-
	N	12	212	89	313
DB075=4	%	3.83	67.73	28.43	100
	N	16	356	122	494
Total	%	3.24	72.06	24.70	100

Table 2.4 The distribution of household member by RB260 and Rotational Group (DB075), Wave 2007

Household Members 16+ (RB245=1 to 3) and RB250 in 11 or 13, Wave 2007

		RB260=.	RB260=1	RB260=5	
		Missing	Face to face interview-PAPI	Proxy interview	Total
	N	156	8657	1771	10584
DB075=1	%	1.47	81.79	16.73	100
	N	168	9230	1840	11238
DB075=2	%	1.49	82.13	16.37	100
	N	105	8090	1646	9841
DB075=4	%	1.07	82.21	16.73	100
	N	429	25977	5257	31663
Total	%	1.35	82.04	16.60	100

### Sample Persons 16+ (RB245=1 to 3 and RB100=1) and RB250 in 11 or 13, Wave 2007

		RB260=.	RB260=1	RB260=5	
		Missing	Face to face interview-PAPI	Proxy interview	Total
	N	139	8449	1708	10296
DB075=1	%	1.35	82.06	16.59	100
	N	164	9123	1798	11085
DB075=2	%	1.48	82.3	16.22	100
	N	83	7779	1493	9355
DB075=4	%	0.89	83.15	15.96	100
	N	386	25351	4999	30736
Total	%	1.26	82.48	16.26	100

Co-residents 16+ (RB245=1 to 3 and RB100=2) and RB250 in 11 or 13, Wave 2007

	-	RB260=.	RB260=1	RB260=5	
		Missing	Face to face interview-PAPI	Proxy interview	Total
	N	17	208	63	288
DB075=1	%	5.9	72.22	21.88	100
	N	4	107	42	153
DB075=2	%	2.61	69.93	27.45	100
	N	22	311	153	486
DB075=4	%	4.53	63.99	31.48	100
	N	43	626	258	927
Total	%	4.64	67.53	27.83	100

### 2.5. Imputation procedure

The imputation procedure for each quantitative variable is implemented by using the IMPUTE module of the software Iveware, as recommended by EUROSTAT.

The imputation procedure for the qualitative variables is based on a 'hot deck' stochastic technique that imputes each missing or inconsistent answer by replacing it with a correct value, taken from the 'nearest donor' (i.e. from a record randomly selected within a group of statistical units similar to the one that presents missing or erroneous answers). In a preliminary step, a set of explicit consistency rules is used to check for logical inconsistencies between the reported answers. The set is then expanded by using the Fellegy-Holt algorithm, in order to account for all the implicit rules (i.e. those logically implied by the explicit ones).

### 2.6. Imputed rent

It is estimated through a semilogarithmic regression (log of the rent, avoiding the re-trasformation bias) with self-selection correction à la heckman. In the first stage, we run distinct probit models for owners/renters at a below-the-mkt price/free tenants vs tenants at a mkt price. Seniority is included between regressors, but its effect is depurated (parameter from regression equal to 0) in estimating predicted values for sub-populations other than tenants at a mkt rate.

### 2.7. Company cars

The monetary value of company cars is taken from the tables published in the Italian Automobile Club (ACI) for tax purposes. The ACI values are econometric estimates of the user cost.

### 3. COMPARABILITY

### 3.1. Basic concepts and definitions

The national concepts use **the differences between the national concepts and standard EU-SILC concepts**, and an assessment, if available, of the consequences of the differences mentioned.

- The reference population: same definition as standard EU-SILC;
- the private household definition: in accordance with the Commission Regulation (EC) N° 1980/2003 (Annex I. paragraph 1.1), that allow to the Member States for using the common household definition defined in their own national statistical system in EU-SILC Italy uses the following Italian household definition: "cohabitants related through marriage, kinship, affinity, adoption, patronage and affection";
- the household membership: the Italian EU-SILC does not include live-in domestic personnel au pairs. Concerning these persons, only some socio-demographic information are collected (date of birth, sex, marital status, duration of stay in the household). The number of these persons included in the sample was 51 (0.19% with respect to the total number of households and 0.08% with respect to interviewed individuals).
- the income reference period(s) used: same definition as standard EU-SILC;
- the period for taxes on income and social insurance contributions: same definition as standard EU-SILC;
- the reference period for taxes on wealth: same definition as standard EU-SILC;
- the lag between the income reference period and current variables: in the Italian EU-SILC
   2007 current variables are referred to the moment of interview that is about 10 months after the end of the income reference period;
- the total duration of the data collection of the sample: 2 months. starting from the transmission of questionnaires to interviewers until their return back.
- basic information on activity status during the income reference period: same to the standard EU-SILC concept;

### 3.2. Components of income

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

- total household gross income: same definition as standard EU-SILC;
- total disposable household income: same definition as standard EU-SILC;
- total disposable household income. before social transfers other than old-age and survivors' benefits: same definition as standard EU-SILC;

— total disposable household income. before social transfers including old-age and survivors' benefits: same definition as standard EU-SILC;
— imputed rent: estimated by a semilogarithmic regression (log of the rent, avoiding the retrasformation bias) with self-selection correction à la heckman. In the first stage, we run distinct probit models for owners/renters at a below-the-mkt price/free tenants vs tenants at a mkt price. Seniority is included between regressors, but its effect is depurated (parameter from regression equal to 0) in estimating predicted values for sub-populations other than tenants at a mkt rate;
— income from rental of property or land: same definition as standard EU-SILC;
— family/children-related allowances: same definition as standard EU-SILC;
- social exclusion payments not elsewhere classified: same definition as standard EU-SILC;
— housing allowances: same definition as standard EU-SILC;
— regular inter-household cash transfers received: same definition as standard EU-SILC;
— interest. dividends. profit from capital investments in unincorporated businesses: same definition as standard EU-SILC;
— interest paid on mortgages: same definition as standard EU-SILC;
— income received by people aged under 16: same definition as standard EU-SILC;
— regular taxes on wealth: same definition as standard EU-SILC;
— regular inter-household transfers paid: same definition as standard EU-SILC;
— tax on income and social insurance contributions: same definition as standard EU-SILC;
— repayments/receipts for tax adjustments: repayments/receipts for tax adjustments are those paid in the n+1 year, where n is the income reference period. This is consistent with the (optional) definition of taxes as 'taxes due on the incomes of the reference period'. An accurate assessment of the differences between the two tax concepts will be feasible after 2009, when it is possible to compare the total taxes due on the incomes of the reference period with the total taxes paid during the same period for the individuals included in the first two-year panel with gross incomes.
— cash or near-cash employee income: same definition as standard EU-SILC;
— non-cash employee income: the value of the company car for personal use is the user's cost estimated by the ACI (Automobile Club Italiano);
— employers' social insurance contributions: includes also contribution for Cococo "coordinated and continuative collaborators", a special category of status in employment;

— cash profits or losses from self-employment (including royalties): the standard procedure requires to collect the amount of money drawn out of self-employment activity only when the profit/loss resulting from accounting books or the taxable self-employment income (net of corresponding taxes) are not available. For the Italian EU-SILC, both administrative and survey micro-data are available, through an exact matching of tax and sample records. The income from self-employment is set equal to the maximum value between: (i) the (net) self-employment income resulting from the Tax Report and (ii) the (net) self-employment income reported by the interviewee. In the questionnaire, the self-employment income question is preceded by a 'reminder question' that provides a YES/NO list of the possible personal uses of earnings (consumption and saving). The departure from the standard definition (using both sampling and administrative data) is adopted in order to minimise either tax avoidance in the administrative data or under-reporting in the survey data, depending on which of the two is greater. With respect to the standard one, the procedure adopted for the Italian EU-SILC leads to more comparable data, under the assumption that other countries' self-employment incomes are not underestimated;

- value of goods produced for own consumption: same definition as standard EU-SILC;
- unemployment benefits: same definition as standard EU-SILC;
- old-age benefits: same definition as standard EU-SILC;
- survivors' benefits: same definition as standard EU-SILC;
- sickness benefits. paid sickness leaves of employees are included in the dependent employment incomes;
- disability benefits: same definition as standard EU-SILC;
- education-related allowances: same definition as standard EU-SILC;
- gross monthly earnings for employees: same definition as standard EU-SILC;

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

The sources or procedures used for the collection of income variables are Paper and pencil interviews (PAPI) for all income variable, including the money drawn out of business by the self-employed and administrative data. Administrative data have been linked to sample data and used for estimating data on employee income, pensions and self-employment incomes.

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

All income variables at component level are both net and gross of taxes and social security contribution at source.

# 3.2.4. The method used for obtaining income target variables in the required form

Gross values are estimated by a new methodology using in conjunction an exact record linkage between survey and fiscal data at micro level and a microsimulation model (Siena

Microsimulation Model SM2-EU-SILC). The integration of microsimulation with register data has the advantage of using administrative data for the validation of microsimulation results. On the other hand, SM2-EU-SILC estimates those tax and social insurance contributions not covered by register data. Four main register data are used: 730 tax returns used by employees and pensioners, UNICO tax returns used primarily by self employed workers, CUD employers' tax statements which include also data on social security contributions, and Pension Register Data. Both the use of administrative data and microsimulation estimates improves the quality and the amount of information on gross income variables.

### 3.3. Tracing rules

They were adopted the standard EUSILC tracing rules.