



STATISTIKOS DEPARTAMENTAS  
STATISTICS LITHUANIA

**FINAL QUALITY REPORT  
EU-SILC 2006 OPERATION**

**Vilnius 2008**

# **1. Common longitudinal European Union Indicators based on the longitudinal component of EU-SILC**

The year 2006 was the second year of EU-SILC survey in Lithuania. For the two year panel EU-SILC 2005 – 2006 no longitudinal indicators are specified.

## **2. Accuracy**

### **2.1. Sample design**

#### ***2.1.1. Type of sampling design***

The longitudinal data of EU-SILC 2005 and 2006 were the data of the first and second waves of EU-SILC in Lithuania. The longitudinal data consisted of the 3 rotational groups: second, third and fourth of year 2005 and year 2006.

Households that were selected for the survey for the first wave in 2005 divided into 4 rotational groups. First group was dropped out after 2005 operation and not included into the survey of year 2006 according to the original integrated design. A new sub-sample of households was selected to the sample of year 2006. For new sample stratified sample design was used. Residents' register was used as a sampling frame. Simple random sample of persons was used in each stratum.

#### ***2.1.2. Sampling units***

The sampling units are private households.

#### ***2.1.3. Stratification criteria***

The sample was divided into 7 strata: 5 largest cities, other cities and rural area. Simple random sample of non-institutional persons aged 16 and over was selected from the Residents' Register in each stratum. Household which lives in the selected person's address was surveyed.

#### ***2.1.4. Sample size and allocation criteria***

The minimum effective sample size of households for Lithuania was fixed to 4000 households. To compensate the non-response there were 6450 households selected in 2005. Non-response rate was estimated using the results of EU-SILC pilot survey and Household Budget Survey.

First rotational group was dropped from 2006 sample, 2<sup>nd</sup>, 3<sup>d</sup>, and 4<sup>th</sup> rotational groups were included in 2006 year sample. In 2006 the sample consisted of 5982 households. This number includes 3342 households, which responded to the survey in 2005 and were followed up during 2006 operation (3 rotational groups), 75 split-off households and newly selected rotational group – 2565 households.

*Table 1. Sample size and household interviews*

Longitudinal component	2005		2006			
			follow-up households		split households	
	number	%	number	%	number	%
used address	4837	100.0	3342	100.0	75	100.0
address existed	4709	97.4	3342	100.0	75	100.0
address not existed	128	2.6	0	0.0	0	0.0
gross sample	4709	100.0	3342	100.0	75	100.0
addresses successfully contacted	4656	98.9	3263	97.6	73	97.3
addresses not successfully contacted	53	1.1	79	2.4	2	2.7
successfully contacted address	4656	100.0	3263	100.0	73	100.0
household questionnaire completed	3342	71.8	2932	89.9	39	53.4
refusal to co-operate	988	21.2	256	7.8	28	38.4
entire household away for the duration of the fieldwork	296	6.4	72	2.2	6	8.2
household unable to respond	25	0.5	3	0.1	0	0.0
other reason	5	0.1	0	0.0	0	0.0
successful household questionnaire	3342	100.0	2932	100.0	39	100.0
interview accepted for the database	3342	100.0	2932	100.0	39	100.0
interview rejected	0	0.0	0	0.0	0	0.0

*Table 2. Households and persons in the longitudinal component*

	2005	2006	Total
Used address	4837	3417	8254
Successfully contacted address	4656	3336	7992
Successful and accepted interview	3342	2971	6313
Persons	9100	8261	17361
Personal interview	7430	6599	14029

### **2.1.5. Sample selection scheme**

Within each of 7 strata simple random sample was used to select the person's address.

### 2.1.6. Sample distribution over time

Table3. Number of successful interview by date of interview, longitudinal component

Month	2005	2006	Total
May	1316	1476	2792
June	1691	1192	2883
July	335	297	632
August	0	6	6

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

The year 2005 was the first year of the survey in Lithuania. Households that were selected for the survey for the first wave divided into 4 rotational groups. First group was dropped out after 2005 operation and not included into the survey of year 2006 according to the original integrated design. A new sub-sample of households was selected to the sample of year 2006. For new sample stratified sample design was used. Population register was used as a sampling frame. Simple random sample of persons was used in each stratum.

Table4. Sample of rotational selected groups

Rotational group	2005	2006
1	1613	–
2	1612	1155
3	1613	1146
4	1612	1116
1	–	2565
Total sample	6450	5982

### 2.1.8. Weighting

The chapter describes the computations of weights of longitudinal EU-SILC LT 2005-2006.

#### 2.1.8.1. Design factor

Inclusion probability of a household in each stratum of sample of first year survey in 2005 is equal:

$$\pi_{hk} = \frac{n_h m_{hk}}{N_h},$$

here  $m_{hk}$  – the number of persons in  $k$ th household aged 16 and over in  $h$ th stratum in Population Register;  $n_h$  – the number of households in  $h$ th stratum;  $N_h$  – the number of persons aged 16 and older in  $h$ th stratum.

Sample design weights are:

$$d_{hk} = \frac{1}{\pi_{hk}}.$$

#### 2.1.8.2. Non-response adjustments at household level – first wave

To estimate household response probability logistic regression model are used. Response propensities are estimated for responding and non-responding households. Then for the each household  $k$  define variable:

$$R_k = \begin{cases} 1, & \text{if the household } k \text{ responds;} \\ 0, & \text{otherwise.} \end{cases}$$

Let define the response propensity of each household  $k$ :

$$p_k = \Pr(R_k = 1 | V_k)$$

where  $V_j$  – auxiliary variables (county group, urbanization status, age of person belonging to address),  $R_k$  is defined above.

Then the modified design weights are defined:

$$d_{hk}^{(N)} = \frac{d_{hk}}{p_k}.$$

### 2.1.8.3. Adjustment to external sources (calibration) – first wave

Modified design weights are calibrated, seeking for the weights, which would remain as close as possible to sample design weights and allow obtaining some exact demographic estimates – auxiliary variables:

- number of persons aged 0 and older (including newborn children) by different strata;
- number of persons by different age groups;
- number of males by different age groups.

The product of calibration procedure is the calibrated household weight sample  $w_k$  (DB090).

Household weight is assigned to each of its members: (RB050)  $w_i = w_k$ ,  $i \in k$ . The DB090 weights are calculated in each rotational group separately.

The SAS macro program CLAN is used to calculate calibrated weights.

### 2.1.8.4. Final longitudinal weight

For the second wave of longitudinal components the following below description will be provided.

### 2.1.8.5. Non-response adjustments – second wave

The personal base weight at first wave  $w_1^{(RB)}$  (2005) is defined:

$$w_{1i}^{(RB)} = RB060 = 4 * RB050.$$

To determine base weight  $w_{2i}^{(RB)}$  of year 2006 from base weight  $w_{1i}^{(RB)}$  of year 2005, we use following step:

for the each person  $i$ , who are enumerated at year 2005 and still in-scope at year 2006 define variable:

$$R_i = \begin{cases} 1, & \text{if the person successfully enumerated at year 2006} \\ 0, & \text{otherwise.} \end{cases}$$

Using logit model, define the response propensity of each person  $i$ :

$$p_i = \Pr(R_i = 1 | V_i)$$

where  $V_i$  – auxiliary variables (like strata, total disposable household income, capacity to face unexpected financial expenses, lowest monthly income to make ends meet),  $R_i$  is defined above.

Then the personal base weight of year 2006 is defined:

$$w_{2i}^{(RB)} = \frac{w_{1i}^{(RB)}}{p_i}.$$

Additionally assign the weights for new members of households:

- a) children born to sample women receive the weight of the mother.

- b) persons, moving into sample households from outside the survey population, receive the average of base weights of existing household members.
- c) persons, moving into sample households from other non-sample households in the population, receive zero base weight.

The longitudinal weights for 2006 (individuals in scope in 2005 and 2006) for rotational group 2, 3, 4 should be:

$$RB062^j = w_{2i} \frac{n_j}{\sum_{j=1}^J n_j}; J=2,3,4.$$

here  $n_j$  – the sample size of rotational group  $j$ ,  $j=2,3,4$ . The longitudinal weights for 2005 are missing (flag=-2).

#### **2.1.8.6. Adjustments to external data**

Adjustment to external data was not applied.

#### **2.1.8.7. Final longitudinal weight – see chapter 2.1.8.5**

#### **2.1.8.8. Final household cross-sectional weights**

Each rotational group base weights represent the whole population. The 4 sub-samples are combined. Averages of person base weights are calculated for each household. Average household weights are calibrated. As a result we have final cross-sectional household weights.

#### **2.1.9. Substitutions**

No substitution was used.

## 2.2. Sampling errors

The calculations of the all standard errors were done using Jackknife method by SAS program.

Table 5. Mean, total number of observations (before and after imputation) and Standard error for income components 2005 (household & persons, weighted), longitudinal component

	Mean	Number of observations (unweighted)		Standard error
		Before imputation	After imputation	
Total household gross income (HY010)	18011	3309	3320	335.67
Total disposable household income (HY020)	14796	3310	3320	245.91
Total disposable household income before social transfers other than old-age and survivors' benefits (HY022)	13895	3236	3245	245.40
Total disposable household income including old-age and survivors' benefits (HY023)	11282	2672	2688	257.63
<b><i>Net income components at household level</i></b>				
Income from rental of a property or land (HY040N)	41	100	100	21.84
Interest, dividends, profit from capital investments in unincorporated business (HY090N)	23	65	66	5.46
Family/Children related allowances (HY050N)	272	480	480	20.43
Income received by people aged under 16 (HY110N)	0.3	6	6	0.18
Repayments/receipts for tax adjustment (HY145N)	-58	336	336	5.10
<b><i>Gross income components at household level</i></b>				
Income from rental of a property or land (HY040G)	45	100	100	14.24
Interest, dividends, profit from capital investments in unincorporated business (HY090G)	25	65	66	6.13
Family/Children related allowances (HY050G)	286	480	480	22.52
Social exclusion not elsewhere classified (HY060G)	39	90	90	6.80
Housing allowances (HY070G)	21	173	173	2.80
Regular inter-household cash transfer received (HY080G)	255	275	275	32.04
Interest repayment on mortgage (HY100G)	67	75	75	15.10
Income received by people aged under 16 (HY110G)	0.3	6	6	0.18

	Mean	Number of observations (unweighted)		Standard error
		Before imputation	After imputation	
Regular taxes on wealth (HY120G)	13	803	803	0.90
Regular inter-household cash transfer paid (HY130G)	209	339	339	20.41
Tax on income and social contributions (HY140G)	2993	2119	2119	97.50
<i>Net income components at personal level</i>				
Employee cash or near cash income (PY010N)	4728	3366	3376	117.48
Cash benefits or losses from self-employment (PY050N)	529	592	600	57.73
Unemployment benefits (PY090N)	23	140	140	3.53
<i>Gross income components at personal level</i>				
Employee cash or near cash income (PY010G)	6157	3366	3376	159.57
Non-cash employee income (PY020G)	17	75	75	3.30
Contributions to individual private pension plans (PY035G)	11	92	92	1.48
Cash benefits or losses from self-employment (PY050G)	559	592	600	61.18
Unemployment benefits (PY090G)	27	140	140	3.64
Old-age benefits (PY100G)	1231	1954	1954	35.55
Survivor' benefits (PY110G)	32	138	138	5.27
Disability benefits (PY130G)	214	468	469	15.06
Education-related allowances (PY140G)	37	240	240	5.53

Source: EU-SILC longitudinal sample 2005, 2006

Table 6. Mean, total number of observations (before and after imputation) and Standard error for income components 2006 (household & persons, weighted), longitudinal component

	Mean	Number of observations (unweighted)		Standard error
		Before imputation	After imputation	
Total household gross income (HY010)	21749	2953	2960	451.58
Total disposable household income (HY020)	17838	2953	2960	338.25
Total disposable household income before social transfers other than old-age and survivors' benefits (HY022)	16730	2894	2901	334.51
Total disposable household income including old-age and survivors' benefits (HY023)	13798	2376	2382	351.45
<i>Net income components at household level</i>				
Income from rental of a property or land (HY040N)	98	154	154	20.62
Interest, dividends, profit from capital investments in unincorporated business (HY090N)	82	98	98	28.74
Family/Children related allowances (HY050N)	364	414	419	31.51
Income received by people aged under 16 (HY110N)	0.5	4	4	0.37
Repayments/receipts for tax adjustment (HY145N)	-99	424	424	8.02
<i>Gross income components at household level</i>				
Income from rental of a property or land (HY040G)	110	154	154	23.58
Interest, dividends, profit from capital investments in unincorporated business (HY090G)	94	98	98	33.68
Family/Children related allowances (HY050G)	392	414	419	36.89
Social exclusion not elsewhere classified (HY060G)	34	96	96	6.25
Housing allowances (HY070G)	17	130	130	1.96
Regular inter-household cash transfer received (HY080G)	199	215	215	25.95
Interest repayment on mortgage (HY100G)	94	71	71	19.91
Income received by people aged under 16 (HY110G)	0.5	4	4	0.37
Regular taxes on wealth (HY120G)	11	582	582	0.82
Regular inter-household cash transfer paid (HY130G)	180	248	248	20.49

	Mean	Number of observations (unweighted)		Standard error
		Before imputation	After imputation	
Tax on income and social contributions (HY140G)	3708	1941	1941	125.07
<i>Net income components at personal level</i>				
Employee cash or near cash income (PY010N)	5715	3113	3119	128.22
Cash benefits or losses from self-employment (PY050N)	730	598	615	59.95
Unemployment benefits (PY090N)	26	98	101	3.70
<i>Gross income components at personal level</i>				
Employee cash or near cash income (PY010G)	7471	3113	3119	174.80
Non-cash employee income (PY020G)	21	66	66	3.68
Contributions to individual private pension plans (PY035G)	10	92	92	1.78
Cash benefits or losses from self-employment (PY050G)	768	598	615	63.97
Unemployment benefits (PY090G)	27	98	101	3.86
Old-age benefits (PY100G)	1354	1785	1789	34.28
Survivor' benefits (PY110G)	42	160	160	4.90
Disability benefits (PY130G)	261	446	446	15.42
Education-related allowances (PY140G)	44	225	225	6.59

Source: EU-SILC longitudinal sample 2005, 2006

*Table 7. Mean, total number of observations (before and after imputation) and Standard error for income components 2005 (household & persons, weighted), cross-sectional component*

	Mean	Number of observations (unweighted)		Standard error
		Before imputation	After imputation	
Total household gross income (HY010)	17752	4393	4411	294.40
Total disposable household income (HY020)	14595	4395	4411	222.16
Total disposable household income before social transfers other than old-age and survivors' benefits (HY022)	13707	4306	4320	222.03
Total disposable household income including old-age and survivors' benefits (HY023)	11139	3566	3584	233.27
<i>Net income components at household level</i>				
Income from rental of a property or land (HY040N)	34	123	123	9.33
Interest, dividends, profit from capital investments in unincorporated business (HY090N)	30	86	87	6.99
Family/Children related allowances (HY050N)	271	634	634	17.20
Income received by people aged under 16 (HY110N)	1	11	11	0.21
Repayments/receipts for tax adjustment (HY145N)	-61	451	451	4.71
<i>Gross income components at household level</i>				
Income from rental of a property or land (HY040G)	37	123	123	10.41
Interest, dividends, profit from capital investments in unincorporated business (HY090G)	32	86	87	7.74
Family/Children related allowances (HY050G)	284	634	634	18.69
Social exclusion not elsewhere classified (HY060G)	40	118	118	6.20
Housing allowances (HY070G)	21	216	216	2.10
Regular inter-household cash transfer received (HY080G)	266	361	361	28.71
Interest repayment on mortgage (HY100G)	69	103	103	11.66
Income received by people aged under 16 (HY110G)	1	11	11	0.21
Regular taxes on wealth (HY120G)	12	1069	1069	0.69
Regular inter-household cash transfer paid (HY130G)	204	461	461	17.01
Tax on income and social contributions (HY140G)	2940	2819	2819	82.87

	Mean	Number of observations (unweighted)		Standard error
		Before imputation	After imputation	
<i>Net income components at personal level</i>				
Employee cash or near cash income (PY010N)	4760	4491	4511	89.91
Cash benefits or losses from self-employment (PY050N)	589	790	805	44.10
Unemployment benefits (PY090N)	21	172	172	2.50
<i>Gross income components at personal level</i>				
Employee cash or near cash income (PY010G)	6187	4491	4511	121.02
Non-cash employee income (PY020)	19	102	102	2.72
Contributions to individual private pension plans (PY035G)	9	123	123	1.48
Cash benefits or losses from self-employment (PY050G)	618	790	805	45.83
Unemployment benefits (PY090G)	25	172	172	3.37
Old-age benefits (PY100G)	1225	2627	2627	25.58
Survivor' benefits (PY110G)	34	187	187	3.46
Disability benefits (PY130G)	223	630	631	11.75
Education-related allowances (PY140G)	39	321	321	4.00

Source: EU-SILC cross-sectional sample 2005

*Table 8.* Mean, total number of observations (before and after imputation) and Standard error for income components 2006 (household & persons, weighted), cross-sectional component

	Mean	Number of observations (unweighted)		Standard error
		Before imputation	After imputation	
Total household gross income (HY010)	21547	4634	4642	399.44
Total disposable household income (HY020)	17702	4634	4642	299.82
Total disposable household income before social transfers other than old-age and survivors' benefits (HY022)	16582	4546	4554	295.79
Total disposable household income including old-age and survivors' benefits (HY023)	13671	3688	3695	312.52
<b><i>Net income components at household level</i></b>				
Income from rental of a property or land (HY040N)	100	249	249	18.54
Interest, dividends, profit from capital investments in unincorporated business (HY090N)	80	174	174	24.33
Family/Children related allowances (HY050N)	365	569	577	29.03
Income received by people aged under 16 (HY110N)	0.45	4	4	0.26
Repayments/receipts for tax adjustment (HY145N)	-99	645	645	7.41
<b><i>Gross income components at household level</i></b>				
Income from rental of a property or land (HY040G)	113	249	249	21.21
Interest, dividends, profit from capital investments in unincorporated business (HY090G)	92	174	174	28.53
Family/Children related allowances (HY050G)	395	569	577	34.61
Social exclusion not elsewhere classified (HY060G)	33	124	124	6.24
Housing allowances (HY070G)	17	192	192	1.77
Regular inter-household cash transfer received (HY080G)	209	332	332	25.82
Interest repayment on mortgage (HY100G)	9	113	113	16.20
Income received by people aged under 16 (HY110G)	0.45	4	4	0.26
Regular taxes on wealth (HY120G)	11	902	902	0.67
Regular inter-household cash transfer paid (HY130G)	182	413	413	17.23
Tax on income and social contributions (HY140G)	3644	2977	2977	111.46

	Mean	Number of observations (unweighted)		Standard error
		Before imputation	After imputation	
<i>Net income components at personal level</i>				
Employee cash or near cash income (PY010N)	5603	4720	4731	113.81
Cash benefits or losses from self-employment (PY050N)	731	896	923	55.87
Unemployment benefits (PY090N)	25	142	145	3.04
<i>Gross income components at personal level</i>				
Employee cash or near cash income (PY010G)	7324	4720	4731	155.75
Non-cash employee income (PY020)	21	96	96	3.50
Contributions to individual private pension plans (PY035G)	9	134	134	1.56
Cash benefits or losses from self-employment (PY050G)	769	896	923	59.03
Unemployment benefits (PY090G)	26	142	145	3.17
Old-age benefits (PY100G)	1348	3059	3066	29.83
Survivor' benefits (PY110G)	42	196	196	4.70
Disability benefits (PY130G)	273	689	689	14.26
Education-related allowances (PY140G)	48	313	313	6.92

Source: EU-SILC cross-sectional sample 2006

*Table 9.* Mean, total number of observations (before and after imputation) and Standard error for the equalized disposable income breakdown by sex, age groups and household size ( weighted), longitudinal component 2005

	Mean	Number of observations (unweighted)		Standard error
		Before imputation	After imputation	
<b><i>By household size</i></b>				
1 household member	6250	650	653	215.98
2 household member	9428	1010	1011	280.33
3 household member	9923	733	736	315.24
4 and more household member	9499	917	920	201.92
<b><i>Population by age groups</i></b>				
<25	8362	2890	2893	129.69
25 to 34	10172	891	892	290.53
35 to 44	8424	1352	1357	176.54
45 to 54	9998	1410	1416	213.93
55 to 64	9322	1090	1090	252.92
65+	6979	1416	1416	123.16
<b><i>Population by sex</i></b>				
Male	8913	4188	4195	113.23
Female	8571	4861	4869	107.47

Source: EU-SILC longitudinal sample 2005, 2006

*Table 10.* Mean, total number of observations (before and after imputation) and Standard error for the equalized disposable income breakdown by sex, age groups and household size ( weighted), longitudinal component 2006

	Mean	Number of observations (unweighted)		Standard error
		Before imputation	After imputation	
<b><i>By household size</i></b>				
1 household member	7276	621	621	304.37
2 household member	11039	914	915	365.66
3 household member	11600	632	635	419.54
4 and more household member	10321	786	789	293.75
<b><i>Population by age groups</i></b>				
<25	10097	2483	2491	183.74
25 to 34	12268	729	730	399.01
35 to 44	10437	1133	1140	267.21
45 to 54	11578	1259	1262	260.91
55 to 64	10691	991	991	296.73
65+	8053	1318	1320	147.94
<b><i>Population by sex</i></b>				
Male	10634	3660	3671	155.26
Female	10181	4253	4263	143.52

Source: EU-SILC longitudinal sample 2005, 2006

*Table 11.* Mean, total number of observations (before and after imputation) and Standard error for the equalized disposable income breakdown by sex, age groups and household size (weighted), cross-sectional component 2005

	Mean	Number of observations (unweighted)		Standard error
		Before imputation	After imputation	
<b><i>By household size</i></b>				
1 household member	6643	838	842	197.93
2 household member	9407	1355	1358	256.62
3 household member	11012	977	982	285.50
4 and more household member	8430	1225	1229	192.33
<b><i>Population by age groups</i></b>				
<25	8389	3845	3849	124.82
25 to 34	10584	1174	1175	283.62
35 to 44	8422	1782	1791	166.52
45 to 54	9791	1897	1904	186.14
55 to 64	9017	1452	1453	208.27
65+	6948	1892	1893	99.86
<b><i>Population by sex</i></b>				
Male	8948	5578	5589	109.72
Female	8541	6464	6476	96.59

Source: EU-SILC cross-sectional sample 2005

*Table 12.* Mean, total number of observations (before and after imputation) and Standard error for the equalized disposable income breakdown by sex, age groups and household size (weighted), cross-sectional component 2006

	Mean	Number of observations (unweighted)		Standard error
		Before imputation	After imputation	
<b><i>By household size</i></b>				
1 household member	7560	1006	1006	275.44
2 household member	11172	1545	1546	324.77
3 household member	11754	941	945	366.20
4 and more household member	10476	1142	1145	280.63
<b><i>Population by age groups</i></b>				
<25	10276	3507	3516	169.54
25 to 34	12676	1023	1024	375.72
35 to 44	10575	1712	1718	244.23
45 to 54	11692	1908	1913	236.67
55 to 64	10743	1632	1632	248.64
65+	8063	2302	2304	122.44
<b><i>Population by sex</i></b>				
Male	10805	5594	5607	142.42
Female	10323	6490	6500	131.50

Source: EU-SILC cross-sectional sample 2006

## **2.3. Non-sampling errors**

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

The sampling frame of EU-SILC survey in Lithuania was the Residents' Register. Residents' Register is updated regularly. However, not all movements of population within country are reflected, whereas not all population report about changing of address to the migration office. Consequently, the households, living in selected person's address, were surveyed. The sample was extracted 2 weeks before the fieldwork.

Percentage of non-contacted addresses by the reasons: address does not exist or is non-residential address or is unoccupied (DB120=23) out of total selected addresses – 2.6.

### ***2.3.2. Measurement and processing errors***

#### ***2.3.2.1. Measurement errors***

The measurement errors originate from the questionnaire (its wording, design), the data collection method, the interviewers and the respondents. While it is impossible to avoid this type of errors completely, procedures were taken to reduce them as much as possible.

The questionnaires for EU-SILC 2005 and 2006 were developed according to the EU-SILC regulations and EU-SILC doc 65/04. The questionnaires were tested during the first wave of pilot survey conducted in 2004. Designing questionnaires for main operation errors and interviewers feedbacks from the pilot survey were considered. Also the experience from the first wave (2005) of the survey was used to improve the questionnaire for the operation 2006.

The interviewers' training was organized in each territorial statistical office in 2005 in the period between April 28 and May 6, in 2006 between April 20 and May 4. Interviewers' manual, in which presented instructions on filling in the questionnaires and detailed explanation for all income components, particularly benefits, were prepared. Special emphasis was placed on tracing rules and specifics of assigning household and person numbers in the longitudinal survey. Methodical explanations were combined with practical tests. Interviewers filled in questionnaires, our specialists checked and then mistakes were discussed. Fieldwork has started immediately after interviewers training.

Fieldwork was carried out by Households' interviewers who usually work for the other household surveys carried out by Statistics Lithuania with additionally hired temporary interviewers. Temporary staff was selected from current or former employees in regional statistical offices, or persons, formerly employed as enumerators in the Population Census or Agricultural Census. In total 158 interviewers were involved into 2005 year operation, one interviewer had an average 40 selected addresses. In total 161 interviewers were involved into 2006 year operation, one interviewer had an average 37 selected addresses.

#### ***2.3.2.2. Processing errors***

Completed questionnaires were checked by specialists of the Living Standard Statistics Division of Statistics Lithuania. Necessary call-backs were made. Data were entered centrally by data entry operators in Statistics Lithuania. Blaise software was used for data entry. The computer program included the possible logical checks between questions and questionnaires, also a package of alerts (warning and error ones) related to ranges of admissible values and logical connections between questions. Coding controls were implemented in post-data-collection. After the data entry was finished the data were checked for consistency.

### 2.3.3. Non-response errors

#### 2.3.3.1. Achieved sample size

Table 13. Sample size and accepted interviews by rotational groups, longitudinal component

	Rotational group 2 (R2)	Rotational group 3 (R3)	Rotational group 4 (R4)	Total
<b>2005</b>				
Accepted household interviews	1130	1122	1090	3342
Accepted personal interviews				
Number of persons aged 16 years and older	2520	2527	2383	7430
Sample persons	2520	2527	2383	7430
Co-resident	0	0	0	0
<b>2006</b>				
Accepted household interviews	1011	1004	956	2971
Accepted personal interviews				
Number of persons aged 16 years and older	2250	2269	2080	6599
Sample persons	2220	2234	2058	6512
Co-resident	30	35	22	87

#### 2.3.3.2. Unit non-response

Address contact rate:

$$Ra = \frac{7992}{8254 - 25} \approx 0.97$$

The proportion of completed household interviews accepted for the database:

$$Rh = \frac{6313}{7992} \approx 0.79$$

Household non-response rates:

$$NRh = (1 - (Ra * Rh)) * 100 = (1 - (0.97 * 0.79)) * 100 = 23.37$$

The proportion of completed personal interviews within the households accepted for the database:

$$Rp = \frac{14029}{14111} \approx 0.99$$

Individual non-response rate:

$$NRp = (1 - (Rp)) * 100 = (1 - 0.99) * 100 = 1$$

Overall individual non-response rate:

$$* NRp = (1 - (Ra * Rh * Rp)) * 100 = (1 - (0.97 * 0.79 * 0.99)) * 100 \approx 24.14$$

**2.3.3.3. Distribution of households by household status (DB110), by record of contract at address (DB120), by household questionnaire result (DB130) and by household interview acceptance (DB135)**

*Table14. Distribution of households by DB110*

		<b>DB110=</b>									
	<b>Total</b>	<b>1</b>	<b>2</b>	<b>3</b>	<b>4</b>	<b>5</b>	<b>6</b>	<b>7</b>	<b>8</b>	<b>9</b>	<b>10</b>
<b>2005</b>											
Total	4837	0	0	0	0	0	0	0	0	4837	0
%	100.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	100.0	0.0
<b>2006</b>											
Total	3417	3214	52	3	20	21	0	32	75	0	0
%	100.0	94.1	1.5	0.1	0.6	0.6	0.0	0.9	2.2	0.0	0.0

Source: EU-SILC longitudinal sample 2005, 2006

*Table15. Distribution of households by DB120*

		<b>DB120=</b>						
	<b>Total</b>	<b>11</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>Missing</b>	
<b>2005</b>								
Total	4837	4656	53	128	0	0	0	
%	100.0	96.3	1.1	2.6	0.0	0.0	0.0	
<b>2006</b>								
Total	3417	122	5	0	0	0	3290	
%	100.0	3.6	0.1	0.0	0.0	0.0	96.3	

Source: EU-SILC longitudinal sample 2005, 2006

*Table16. Distribution of households by DB130 (DB120=11 or DB110=1)*

		<b>DB130=</b>					
	<b>Total</b>	<b>11</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>	<b>Missing</b>
<b>2005</b>							
Total	4656	3342	988	296	25	5	0
%	100.0	71.8	21.2	6.4	0.5	0.1	0.0
<b>2006</b>							
Total	3336	2971	284	78	3	0	0
%	100.0	89.1	8.5	2.3	0.1	0.0	0.0

Source: EU-SILC longitudinal sample 2005, 2006

Table16. Distribution of households by DB135 (DB130=1)

	DB135=		
	Total	1	2
<b>2005</b>			
Total	3342	3342	0
%	100.0	100.0	0.0
<b>2006</b>			
Total	2971	2971	0
%	100.0	100.0	0.0

Source: EU-SILC longitudinal sample 2005, 2006

#### 2.3.3.4. Distribution of persons for membership status (RB110)

Table17. Distribution of persons by RB110

	Current household members					Not current household members		
	Total	RB110=				RB110=		
		1	2	3	4	5	6	7
<b>2005</b>								
Total	9100	9100	0	0	0	0	0	0
%	100.0	100.0	0.0	0.0	0.0	0.0	0.0	0.0
<b>2006</b>								
Total	8261	7729	56	119	43	229	78	7
%	100.0	93.6	0.7	1.4	0.5	2.8	0.9	0.1

Source: EU-SILC longitudinal sample 2005, 2006

#### 2.3.3.5. Item non-response

Table 18. Information on item non-response on household level – households 2005

Income variable	% of households having received an amount	of them		
		% of households with full values	% of households with missing values (before imputation)	% of households with partial* information (before imputation)
Total household gross income (HY010)	99.3	99.7	0.0	0.3
Total disposable household income (HY020)	99.3	99.7	0.0	0.3
Total disposable household income before social transfers except old-age and survivor's benefits (HY022)	97.1	99.7	0.0	0.3
Total disposable household income before social transfers including old-age and survivor's benefits (HY023)	80.4	99.4	0.0	0.6
<b><i>Gross income components at household level</i></b>				
Income from rental of a property or land (HY040G)	3.0	100.0	0.0	0.0
Family/child related allowances (HY050G)	14.4	100.0	0.0	0.0
Social exclusion not elsewhere classified (HY060G)	2.7	100.0	0.0	0.0
Housing allowances (HY070G)	5.2	100.0	0.0	0.0
Regular inter-household cash transfer received (HY080G)	8.2	100.0	0.0	0.0
Interest, dividends, etc. (HY090G)	2.0	98.5	1.5	0.0
Income received by people aged under 16 (HY110G)	0.2	100.0	0.0	0.0
Regular taxes on wealth (HY120G)	24.0	100.0	0.0	0.0
Regular inter-household cash transfer paid (HY130G)	10.1	100.0	0.0	0.0

Source: EU-SILC longitudinal sample 2005, 2006

Table 19. Information on item non-response on household level – households 2006

Income variable	% of households having received an amount	of them		
		% of households with full values	% of households with missing values (before imputation)	% of households with partial* information (before imputation)
Total household gross income (HY010)	99.6	99.8	0.2	0.0
Total disposable household income (HY020)	99.6	99.8	0.2	0.0
Total disposable household income before social transfers except old-age and survivor's benefits (HY022)	97.6	99.8	0.2	0.0
Total disposable household income before social transfers including old-age and survivor's benefits (HY023)	80.2	99.7	0.3	0.0
<b><i>Gross income components at household level</i></b>				
Income from rental of a property or land (HY040G)	5.2	100.0	0.0	0.0
Family/child related allowances (HY050G)	12.4	98.8	1.2	0.0
Social exclusion not elsewhere classified (HY060G)	3.2	100.0	0.0	0.0
Housing allowances (HY070G)	4.4	100.0	0.0	0.0
Regular inter-household cash transfer received (HY080G)	7.2	100.0	0.0	0.0
Interest, dividends, etc. (HY090G)	3.3	100.0	0.0	0.0
Income received by people aged under 16 (HY110G)	0.1	100.0	0.0	0.0
Regular taxes on wealth (HY120G)	19.6	100.0	0.0	0.0
Regular inter-household cash transfer paid (HY130G)	8.3	100.0	0.0	0.0

Source: EU-SILC longitudinal sample 2005, 2006

Table 20. Information on item non-response on personal level – persons 2005

Income variable	% of persons 16+ having received an amount	of them		
		% of persons with full values	% of persons with missing values (before imputation)	% of persons with partial* information (before imputation)
<i>Gross income components at personal level</i>				
Employee cash or near cash income (PY010G)	45.4	99.7	0.3	0.0
Non-cash employee income (PY020G)	1.0	100.0	0.0	0.0
Contributions to individual private pension plans (PY035G)	1.2	100.0	0.0	0.0
Cash benefits or losses from self-employment (PY050G)	8.1	98.7	1.3	0.0
Unemployment benefits (PY090G)	1.9	100.0	0.0	0.0
Old-age benefits (PY100G)	26.3	100.0	0.0	0.0
Survivor's benefits (PY110G)	1.9	100.0	0.0	0.0
Disability benefits (PY130G)	6.3	99.8	0.2	0.0
Education-related allowances (PY140G)	3.2	100.0	0.0	0.0

Source: EU-SILC longitudinal sample 2005, 2006

Table 21. Information on item non-response on personal level – persons 2006

Income variable	% of persons 16+ having received an amount	of them		
		% of persons with full values	% of persons with missing values (before imputation)	% of persons with partial* information (before imputation)
<i>Gross income components at personal level</i>				
Employee cash or near cash income (PY010G)	47.3	99.8	0.2	0.0
Non-cash employee income (PY020G)	1.0	100.0	0.0	0.0
Contributions to individual private pension plans (PY035G)	1.4	100.0	0.0	0.0
Cash benefits or losses from self-employment (PY050G)	9.3	97.2	2.8	0.0
Unemployment benefits (PY090G)	1.5	97.0	3.0	0.0
Old-age benefits (PY100G)	27.1	99.8	0.2	0.0
Survivor's benefits (PY110G)	2.4	100.0	0.0	0.0
Disability benefits (PY130G)	6.8	100.0	0.0	0.0
Education-related allowances (PY140G)	3.4	100.0	0.0	0.0

Source: EU-SILC longitudinal sample 2005, 2006

## 2.4. Mode of data collection

The method for data collection was paper assisted personal interview (PAPI). If necessary, telephone interviews were allowed. Proxy interview was allowed for persons temporarily away or in incapacity. To avoid non-response within household proxy interview as an exception was allowed when it was no possibility to make personal interview and another member of household could provide the information. Some data collected by proxy interview were amended by telephone, but method of data collection was not changed in the microdata.

According to Eurostat recommendations for dealing with the individual non-response problem full/partial imputation of missing personal interviews were used.

Table 22. Distribution of household members by RB250 – all household numbers (16+)

	Total	RB250=11	=12	=14	=21	=22	=23	=31	=32	=33
<b>2005</b>										
<b>Total</b>	7505	7430	0	0	1	0	31	40	3	0
<b>%</b>	100.0	99.0	0.0	0.0	0.01	0.0	0.41	0.53	0.05	0.0
<b>2006</b>										
<b>Total</b>	6606	6590	0	9	0	0	5	1	1	0
<b>%</b>	100.0	99.8	0.0	0.1	0.0	0.0	0.08	0.01	0.01	0.0

Table 23. Distribution of household members by RB250 – sample persons (16+)

	Total	RB250=11	=12	=14	=21	=22	=23	=31	=32	=33
<b>2005</b>										
<b>Total</b>	7505	7430	0	0	1	0	31	40	3	0
<b>%</b>	100.0	99.0	0.0	0.0	0.01	0.0	0.41	0.54	0.04	0.0
<b>2006</b>										
<b>Total</b>	6518	6503	0	9	0	0	5	1	0	0
<b>%</b>	100.0	99.8	0.0	0.1	0.0	0.0	0.08	0.02	0.0	0.0

Table 24. Distribution of household members by RB250 – co-residents (16+)

	Total	RB250=11	=12	=14	=21	=22	=23	=31	=32	=33
<b>2005</b>										
<b>Total</b>	-	-	-	-	-	-	-	-	-	-
<b>%</b>	100	-	-	-	-	-	-	-	-	-
<b>2006</b>										
<b>Total</b>	88	87	0	0	0	0	0	0	1	0
<b>%</b>	100	98.9	0.0	0.0	0.0	0.0	0.0	0.0	0.1	0.0

Table 25. Distribution of household members by RB260 – all household numbers (16+)

	<b>Total</b>	<b>RB260=1</b>	<b>RB260=2</b>	<b>RB260=3</b>	<b>RB260=4</b>	<b>RB260=5</b>	<b>Missing</b>
<b>2005</b>							
<b>Total*</b>	7430	6225	0	67	106	1032	0
<b>%</b>	100.0	83.8	0.0	0.9	1.4	13.9	0.0
<b>2006</b>							
<b>Total*</b>	6590	5206	0	162	94	1128	0
<b>%</b>	100.0	79.0	0.0	2.5	1.4	17.1	0.0

\*Full imputed not included

Table 26. Distribution of household members by RB260 – sample persons (16+)

	<b>Total</b>	<b>RB260=1</b>	<b>RB260=2</b>	<b>RB260=3</b>	<b>RB260=4</b>	<b>RB260=5</b>	<b>Missing</b>
<b>2005</b>							
<b>Total*</b>	7430	6225	0	67	106	1032	0
<b>%</b>	100.0	83.8	0.0	0.9	1.4	13.9	0.0
<b>2006</b>							
<b>Total*</b>	6503	5154	0	159	90	1100	0
<b>%</b>	100.0	79.3	0.0	2.4	1.4	16.9	0.0

\*Full imputed not included

Table 27. Distribution of household members by RB260 – co-residents (16+)

	<b>Total</b>	<b>RB260=1</b>	<b>RB260=2</b>	<b>RB260=3</b>	<b>RB260=4</b>	<b>RB260=5</b>	<b>Missing</b>
<b>2005</b>							
<b>Total*</b>	-	-	-	-	-	-	-
<b>%</b>	100	-	-	-	-	-	-
<b>2006</b>							
<b>Total*</b>	87	52	0	3	4	28	0
<b>%</b>	100.0	59.8	0.0	3.4	4.6	32.2	0.0

\*Full imputed not included

## **2.5. Imputation procedure**

Item non-response is mostly related employee cash or near cash income (PY010), cash benefits or losses from self-employment (PY050) and tax on Income and Social Contributions (HY140). Also few cases are related disability benefits (PY130), family/child related allowances (HY050) and interest, dividends, etc (HY090).

*Deterministic methods* were used for PY010G, PY050G (mean/median imputation); PY0130G, HY090G (distance matching).

*Deductive methods* were used for HY050G, HY140G (deductive imputation).

## **2.6. Imputed rent**

Imputed rent variable was not calculated for year 2005 and 2006.

## **2.7. Company cars**

The data on the private use of the company car is collected in the individual questionnaire. The questions about car mode, type, year and other are asked. The amount which person has gained is estimated using Straight Line Method.

# **3. Comparability**

## **3.1. Basic concepts and definitions**

### *The reference population*

No difference to the common definition. The target population of EU-SILC is all persons living in private households within the national territory of Lithuania.

### *The private household definition*

No difference to the common definition. The private household is defined as a person living alone or a group of people, who live together in the same private dwelling and share expenditures, including the joint provision of the essentials of living.

### *The household membership*

No difference to the common definition.

### *The income reference period used*

No difference to the common definition. The income reference period was a fixed twelve-month period, namely the last calendar year. In the year 2005 and 2006 operational income data were collected corresponding for the reference year 2004 and 2005.

### *The period for taxes on income and social insurance contributions*

No difference to the common definition. Taxes on income and social insurance contributions, as well as tax repayments and receipts refer to the income reference period (corresponding year 2004 and 2005).

### *The reference period for taxes on wealth*

No difference to the common definition. Taxes on wealth paid during the income reference period (corresponding year 2004 and 2005) were recorded.

*The lag between the income reference period and current variables*

For the year 2005 the lag between the end of the income reference period and current variables ranges from 4 to 7 months.

For the year 2006 the lag between the end of the income reference period and current variables ranges from 4 to 8 months.

*The total duration of the data collection of the sample*

For EU-SILC 2005 the fieldwork period started on 1<sup>st</sup> of May 2005 and ended on the 15<sup>th</sup> of July. Almost 90% of households were interviewed during the first 2 months and only 10.4% were interviewed in July.

For EU-SILC 2006 the fieldwork period started on 1<sup>st</sup> of May 2006 and ended on the 15<sup>th</sup> of August. 88.6% of households were interviewed during the first 2 months and only 11.4% were interviewed in July and August.

*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.

## **3.2. Components of income**

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

*Cash or near cash employee income*

Sickness benefits (PY120) could not be separated from cash or near cash employee income and recorded under this variable.

*No-cash employee income*

All components of this variable were collected, including components which will be mandatory from 2007. Only the value related to company car were recorded under variable PY020 and were added to the calculation variables HY010, HY020, HY022 and HY023.

*Cash benefits or losses from self-employment*

The self-employment income was collected as the amount of money drawn out of the business for household, personal use. Income from agriculture, included in this variable, was calculated as difference of total revenue from agriculture and total expenditure on it.

*Value of goods produced by own-consumption*

Variable was collected but not recorded to microdata file.

*Gross monthly earnings for employees*

Variable was not collected because EU-SILC is not used to calculate gender pay gap.

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

Where applicable the EU-SILC income target variables were split into sub-components. The sub-components were defined according to the Lithuanian regulations and benefit system. All data related to income variables were collected from interviews.

Administrative data were used for making the survey income data more accurate or for supplementing them. In year 2005 the State Social Insurance Fund Board data have been linked to sample data and used for checking cash or near-cash employee income (PY010) and social insurance contributions (component of HY140). In year 2006 the State Social Insurance Fund Board data and the State Tax Inspectorate under the Ministry of Finance of the Republic of Lithuania data have been linked to sample data and used for checking cash or near-cash employee income (PY010), maternity and maternity/paternity allowances (component of HY050), dividends from capital investments (component of HY090), social insurance contributions and taxes on income (components of HY140).

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

In year 2005 employee cash and near-cash income (PY010), self-employment income (PY050), unemployment benefits (PY090), family/children related allowances (HY050) were collected in gross and/or net. The remaining variables were collected only in gross.

In year 2006 employee cash and near-cash income (PY010), self-employment income (PY050), unemployment benefits (PY090), family/children related allowances (HY050), interest, dividends, profit from capital investments (HY090), income received by people aged under 16 (HY110) were collected in net and/or gross. The remaining variables were collected only in gross.

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

The gross-net/net-gross conversion was used for either gross or net was collected. Conversion algorithms were created on the bases of country tax system. All income variables that are subjected to taxation and/or social insurance contribution were recorded gross and net in to the microdata files (except for variable PY120 which included into variable PY010). Other income variables were recorded only gross.

## **3.3. Tracing rules**

The tracing rules were applied according the document EU-SILC 065.

## 4. Coherence

This section will compare the EU-SILC data to Household Budget Survey (HBS), wage statistics and administrative data.

The HBS is continuous survey. The survey conducted in line with the current methodology has been carried out since 1996. The HBS uses two data collection methods combined into one: the interview conducted by an interviewer and self-registration of particular household indicators. Social and economic information on household members, their living conditions and income are collected during the interview. HBS was the data source of Laeken indicators before starting EU-SILC survey.

### 4.1. Comparison with external sources of income target variables and number of persons who receive income from each “income component”

Table 28. Comparison of income target variables and number of persons/households who received income components, cross-sectional component, 2005

Income component	EU-SILC 2005 (cross-sectional)	HBS 2004	Other sources*
	Average annual number of people, thousand		
Cash or near cash employee income (PY010N)	1,323.2	1,243	1,159.7
Old-age benefits (PY100)	689.6	693.7	602.5
Survivors benefits (PY110)	54.9	41.3	
Average annual number of households, thousand			
Housing allowances (HY070)	86.2	69.8	

\* Wage statistics in the case of PY010 and administrative source in the case of PY100

Table 29. Comparison of income target variables and number of persons/households who received income components, longitudinal component, 2005

Income component	EU-SILC 2005 (longitudinal)	HBS 2004	Other sources*
	Average annual number of people, thousand		
Cash or near cash employee income (PY010N)	1,318.4	1,243	1,159.7
Old-age benefits (PY100)	684.1	693.7	602.5
Survivors benefits (PY110)	50.4	41.3	
Average annual number of households, thousand			
Housing allowances (HY070)	84.9	69.8	

\* Wage statistics in the case of PY010 and administrative source in the case of PY100

Table 30. Comparison of income target variables and number of persons/households who received income components, cross-sectional component, 2006

Income component	EU-SILC 2006 (cross-sectional)	HBS 2005	Other sources*
	Average annual number of people, thousand		
Cash or near cash employee income (PY010N)	1,390.7	1,282.0	1,195.8
Old-age benefits (PY100)	676.8	681.1	595.6
Survivors benefits (PY110)	66.1	40.1	
Average annual number of households, thousand			
Housing allowances (HY070)	75.6	42.7	

Table 31. Comparison of income target variables and number of persons/households who received income components, longitudinal component, 2006

Income component	EU-SILC 2006 (longitudinal)	HBS 2005	Other sources*
	Average annual number of people, thousand		
Cash or near cash employee income (PY010N)	1,383.3	1,282.0	1,195.8
Old-age benefits (PY100)	66.5	681.1	595.6
Survivors benefits (PY110)	62.7	40.1	
Average annual number of households, thousand			
Housing allowances (HY070)	71.7	42.7	

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