

# **Attempt of reconciliation between ESSPROS social protection statistics and EU-SILC**

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Abstract:

Two Eurostat data collection, ESSPROS and EU-SILC provide information about social protection benefits received in the European countries, with two different tools: an accounting compilation and a household survey.

This paper presents first the characteristics of the two data collection. In a second step it reports on the differences between ESSPROS definitions and EU-SILC in terms of data comparability. The last part concerns the data comparison: establishment of the methodological differences, examination of the gap between the data in the two data collection and proposed corrections in the way of reconciliation. As country examples, detailed data comparisons are made for Denmark and Luxembourg.

## **1. Introduction**

Two Eurostat data collection, ESSPROS and EU-SILC provide information about social protection benefits received in the European countries. The sources are based on two different tools: an accounting compilation and a household survey. It seemed interesting to study the data providing two different approaches of household income, to compare the data and to attempt to explain the eventual differences. This exercise is definitively at the core of the qualitative assessment of EU-SILC. This paper aims to provide general framework to compare both sources. The detailed analysis is likely to take place at national level where the details of implementation of both sources are best known.

## **2. Characteristics of the two data collections**

### **2.1 ESSPROS data collection**

The first compilation on social spending at community level was made in 1963. In the 70s' years, the European System of integrated Social PROtection Statistics (ESSPROS) was developed in response to the need for a specific instrument of statistical observation of social protection in the European Member States. A revision of the methodology was made in 1996 and the definitions, conventions and accounting were to a large extent harmonised with the national accounts (ESA 1995 Manual).

### 2.1.1 Collection unit

ESSPROS data are collected at the level of elementary units called "schemes". A social protection scheme is a distinct body of rules, supported by one or more institutional units (defined in the same terms as in the national accounts Manual), governing the provision of social protection benefits and their financing. In addition, social protection schemes should meet the condition that it must be possible to draw up a separate account or receipts and expenditure. Social protection schemes are concerned exclusively with redistribution and not with production. They are supported by national institutional units and are not themselves institutional unit. However, some institutional units support social protection schemes as their main activity (for example social security funds). On the other hand, some institutional units run social protection schemes only as a subsidiary activity (for example employers or insurance companies).

### 2.1.2 Data sources

As data are collected as scheme level, the use of administrative sources is preponderant in most countries, with the aim of a "theoretical" exhaustive coverage (in terms of schemes and in terms of data). The administrative sources used can be registers or financial accounts. In some cases, results of surveys are used: for example the survey "structure of earnings and labour cost" for the calculation of employers' schemes benefits or specific surveys on benefits provided by non profit organisations.

### 2.1.3 Collected data

Two types of data are now collected: quantitative data, i.e. receipts and expenditure (with a very detailed breakdown of social protection benefits) and the number of pension beneficiaries.

#### 2.1.3.1 Receipts and expenditure by schemes

The ESSPROS system classifies receipts of social protection schemes by type and origin. The type indicates the nature of, or reason for, a payment; the origin specifies the institutional sector from which the payment is received.

The expenditure of social protection schemes is classified by type, which indicate the nature of, or reason for, the expenditure. The ESSPROS distinguishes four main categories of expenditure. The first is expenditure on social benefits, that is, resources which are transferred to beneficiaries in the form of cash or goods and services. The second category of expenditure relates to administration costs charged to the scheme. The third and fourth categories deal with transfers to other schemes and miscellaneous expenditure.

#### 2.1.3.2 Detailed benefits classified by functions

In addition, social benefits are broken down by type: cash benefits (periodic versus lump sum) and benefits in kind. Social benefits are also broken between means-tested and non means-tested benefits.

Social benefits are classified by function, which refers to the primary purpose for which social protection is provided. Eight functions of social protection are distinguished in the ESSPROS:

1. Sickness/Health care
2. Disability
3. Old age
4. Survivors
5. Family/children
6. Unemployment
7. Housing
8. Social exclusion not elsewhere classified (n.e.c.)

Each function includes a list of detailed benefits that are the level for providing elementary data.

#### 2.1.3.3 Collection of pension beneficiaries

Recently, a data collection of the number of pension beneficiaries was launched. It covers the schemes providing pension benefits (disability, old age and survivors' pensions as well as early retirement benefits).

## 2.2 EU-SILC data collection

EU-SILC, on the other hand, is an instrument aiming at collecting information on income and living conditions for a sample of household and individuals. In most cases, the income information is collected through interview with household members. In some occasions, namely Denmark, Finland, Netherlands, Norway, Slovenia, Sweden and partly Ireland, the income information is gathered from administrative data about individuals.

The income concept used in EU-SILC follows closely the Canberra recommendation which aimed among others to ensure minimum coherence with National accounts (household sector). For the transfer part of income, EU-SILC has used mainly the definition of ESSPROS benefits.

The main objective of EU-SILC is to obtain through income collected at micro level a proxy for standard of living which can be used to derive indicator of poverty and inequality.

## 3. Comparability

This chapter reports on the differences between ESSPROS definitions and EU-SILC definitions for social protection benefits. It is in fact at this level that comparison can be made into both sources: ESSPROS benefits grouped by functions and EU-SILC variables.

### 3.1 Reference population

#### 3.1.1 EU-SILC

In EU-SILC the reference population is constituted by the private resident **households** (with the exclusion of persons living in institutions).

### 3.1.2 ESSPROS

In ESSPROS, the reference population is constituted by **individuals**: contributors or beneficiaries of national (or resident) social protection schemes (including beneficiaries of benefits living abroad).

## 3.2 Components of income

### 3.2.1 Definition of benefits/variables

There is a general coherence in the definitions between detailed ESSPROS social benefits and the corresponding income components (or variables) in EU-SILC. The reason is that the EU-SILC applied for social benefits variables the definitions of the corresponding ESSPROS benefits.

### 3.2.2 Accounting rules

There is a difference in the accounting rules between the two data collection;

In ESSPROS, all transactions are recorded on an accrual basis that is at the time the events which create the related claims and liabilities occur: for example, social benefits in cash are recorded at the time the beneficiaries obtain the right to receive them. In addition the transactions recorded in ESSPROS must refer to the calendar year (financial year for United Kingdom).

In EU-SILC, data to record are the income components received by households during the calendar year (mid-year for Ireland).

## 3.3 Correspondence table between ESSPROS benefits and EU-SILC variables

### 3.3.1 Scope of the common benefits/variables

For the comparison between the two data collection, common benefits were kept (see 3.3.2 for the detail):

- in EU-SILC, variables HY50G, HY70G, HY90G, PY100G, PY110G, PY120G, PY130G and PY160G;
- in ESSPROS, all cash benefits of the eight functions, plus one unemployment benefit in kind (mobility and resettlement).

In conclusion the scope for the comparison included all EU-SILC social benefits, except Education-related benefits-PY140G (see explanation in paragraph 4.2 below).

### 3.3.2 Summarised correspondence table

For each function/variable, the correspondence was made at the level of detailed ESSPROS benefits.

**Table 1: Correspondence table between ESSPROS benefits and EU-SILC variables**

ESSPROS		EU-SILC	
function	name of benefits	name	target variable and content
SICKNESS	- paid sick leave (including paid leave in case of sickness or injury of a dependent child) - other cash benefits (periodic and lump-sum)	PY120G	<b>Sickness benefits</b> - paid sick leave - paid leave in case of sickness or injury of a dependent child - other cash benefits
DISABILITY	- disability pension - early retirement benefit due to reduced capacity of work - care allowance (periodic and lump-sum) - economic integration of the handicapped (periodic and lump-sum) - other cash benefits including disability benefits to disabled children (periodic and lump sum)	PY130G	<b>Disability benefits</b> - disability pension - early retirement in the event of reduced ability to work - care allowance - economic integration of the handicapped - other cash benefits (periodic and lump-sum) - disability benefits to disabled children
OLD AGE	- old-age pension (including survivors' and disability benefits paid after the standard retirement age) - anticipated old-age pension - partial pension - care allowance - other cash benefits (periodic and lump-sum) <i>(included severance and termination payment)</i>	PY100G	<b>Old-age benefits</b> - old-age pension - survivors' benefits paid after the standard retirement age - disability cash benefits paid after the standard retirement age - anticipated old-age pension - partial retirement pension - care allowance - other cash benefits (periodic and lump-sum) <i>(not included severance and termination payment - see PY090G)</i>
SURVIVORS	- survivors' pension - death grants (lump-sum) - other cash benefits (periodic and lump-sum)	PY110G	<b>Survivors' benefits</b> - survivors' pension - death grants (lump-sum) - other cash benefits (periodic and lump-sum)
FAMILY CHILDREN	- income maintenance in the event of childbirth - birth grant (lump-sum) - parental leave benefit (periodic and lump-sum) - family or child allowance (periodic) - other cash benefits (periodic and lump-sum)	HY050G	<b>Family/children related allowance</b> - income maintenance benefit in the event of childbirth - birth grant (lump-sum) - parental leave benefit - family or child allowance (periodic) - other cash benefits (periodic and lump-sum)
UNEMPLOYMENT	- full unemployment benefits - partial unemployment benefits - early retirement benefit for labour market reasons - vocational training allowance (periodic and lump-sum) - redundancy compensation (lump-sum) - other cash benefits (periodic and lump-sum) - mobility and resettlement (benefit in kind) <i>(not included severance and termination payment - see old age)</i>	PY090G	<b>Unemployment benefits</b> - full unemployment benefits - partial unemployment benefits - early retirement benefit for labour market reasons - vocational training allowance - redundancy compensation (lump-sum) - other cash benefits - mobility and resettlement - severance and termination payments
HOUSING	- social housing - other rent benefits - benefit to owner-occupiers	HY070G	<b>Housing allowances</b> - rent benefits - benefit to owner-occupiers
SOCIAL EXCLUSION	- income support - other cash benefits (periodic and lump-sum)	HY060G	<b>Social exclusion</b> - income support - other cash benefits

## 4. Data comparison

### 4.1 Scope of the study

#### 4.1.1 Geographical scope

Only countries providing gross data in EU-SILC datasets for all social benefits, i.e. Belgium, Denmark, Estonia, Ireland, Luxembourg, Austria, Finland, Sweden and Norway have been examined.

#### 4.1.2 Reference period

The comparison was made for the 2003 ESSPROS data, i.e. the EU-SILC 2004 data. As EU-SILC data for Ireland were related to mid-2003, a calculation was made for ESSPROS using 2003 and 2004 data.

### 4.2 Main differences between ESSPROS and EU-SILC

In this section, we review and discuss systematically the source of difference between the two approaches.

#### 4.2.1 Differences due to the reference population

##### a) Households living in institutions

Conversely to ESSPROS, EU-SILC data do not include benefits provided to people living in institutions. The table 2 below shows the concerned population (Sweden data are missing): the percentage of people living in institutions is around 1% of the total population.

**Table 2: Population living in institutions**

COUNTRIES	Total population	Institutional people		% of institutional people in the total of population
		Total	including people after 65 years	
Belgium	10296350	140070	106333	1.36%
Denmark	5349212	71168	25741	1.33%
Estonia	1370052	12625	3508	0.92%
Ireland	3851905	60589	30386	1.57%
Luxembourg	439539	7502	3840	1.71%
Austria	8032926	89221	52384	1.11%
Finland	5181115	37116	24002	0.72%
Sweden	:	:	:	:
Norway	4520947	35002	27781	0.77%

Source: EUROSTAT - Census 2001

## b) Benefits paid and received by the "rest of the world"

In some countries, benefits paid to non-residents or, conversely, benefits received from abroad ("rest of world") by residents may be significant. The social benefits received and paid by the "rest of world" institutional sector are available in the national accounts (transaction D62 in the ESA 95 classification), but not for all countries of this study (see table 3 below).

**Table 3: Benefits received from, paid to Rest of the world in 2003**

(Millions of national currency)

<b>COUNTRIES</b>	<b>Received benefits</b>	<b>Paid benefits</b>	<b>Balance :paid minus received</b>
Belgium	371	587	216
Denmark	850	941	91
Estonia	273	:	:
Ireland	8	172	164
Luxembourg *	:	943	:
Austria	206	255	49
Finland	149	205	56
Sweden	:	:	:
Norway	191	18	-173

Source: EUROSTAT - National accounts

\* Source: EUROSTAT - ESSPROS

EU-SILC data include the benefits received from the rest of the world, but not the benefits paid to the rest of the World, and conversely for ESSPROS data. For that reason, the balance indicates the gap into the two databases due to the transactions with abroad. This information will be used in the paragraph 4.4 below.

### 4.2.2- Borderline problems

For two EU-SILC variables which were not retained in the comparison work, borderline problems with ESSPROS benefits can be occur.

#### a) variable PY140: education-related allowances

In EU-SILC, this variable is defined as following: "*Education allowances refer to grants, scholarships and other education help received by student*".

IN ESSPROS, although the function "education" was not covered, some education benefits can be recorded "*where they are provided solely to indigent family, after a means-test*" (in this case it can be argued that the object of the measure is to redistribute income in favour of those who have insufficient resources rather than provide free access to education). That's why

some countries recorded education benefits in the family function (student grants are excluded anyway).

Although a part of the EU-SILC variable PY140 can be recorded in the ESSPROS family benefits, the amounts of this variable are generally too small for explaining all the differences in the two database for the family function (see table 4 below).

**Table 4: family benefits (Millions of national currency)**

COUNTRIES	Belgium	Denmark	Estonia	Ireland	Luxembourg	Austria *	Finland	Sweden	Norway
<b>Gap between ESSPROS data and SILC data</b>	688.9	7823	374.1	334.8	416.6	81.1	-8	-2853	5994.5
<b>PY140 amount</b>	152	10866.7	107.1	163.6	14.1	5.3	598.8	23950	5702.5

\* In Austria, education related allowances are included in HY50 when the amount of the income depends on the recipients personal and/or family income

In four countries (Denmark, Finland, Norway and Sweden), the amount of the education-related benefit is higher than the gap between ESSPROS data and EU-SILC data. However, these countries do not include education benefits in ESSPROS data and the PY140 amount can not explain the gap.

a) variable: PY080: pensions from individual private plans

Although EU-SILC define explicitly these pensions as "*regular pensions from private plans (other than those cover under ESSPROS)*", it is possible that this variable contains some pensions covered by ESSPROS, because the border between individual private plans (out of ESSPROS) and collective private plans (in ESSPROS) is not always easy to establish.

#### 4.2.3 Problems of data coverage in EU-SILC

a) Coverage of paid sick leave benefits

For all countries of the study, paid sick leave data are higher in ESSPROS than in EU-SILC and it is the function/variable for which the gap is maximum.

In terms of definition, EU-SILC retains the ESSPROS definition, except the last sentence "*Paid leave in case of sickness or injury of a dependent child is also reported under this heading*".

It can be a first cause of discrepancy. The other most probable cause is that it is difficult for the household to identify the paid sick leave benefits provided by their employer separately of the wages and salaries.

b) Coverage of lump-sum benefits in EU-SILC

EU-SILC definitions include sometimes explicitly lump-sum benefits and sometimes not (see table 1 above): it is for example the case for the other cash benefits (lump-sum benefits included in the variables PY100, PY110, PY130 and HY50 but no precision for the variables PY90, PY120 and HY60). Conversely, ESSPROS recorded always lump-sum benefits. For

this reason it is not sure that all lump-sum ESSPROS benefits are also recorded to the same extent in EU-SILC.

In addition, since the beginning of SILC the treatment of lump sum has been extensively discussed. Several proposals have been made to adapt lump sum to the concept of standard of living. This discussion might have lead to some confusion in their treatment.

### 4.3 Countries specific differences

#### a) ESSPROS: overlapping between benefits categories for some countries

The main overlapping problem in ESSPROS concerns the pensions. Following the definition, disability pensions and survivors pensions paid to people over the standard retirement age are to be recorded as old age pensions. The definitions are similar in EU-SILC.

Unfortunately, several countries are not able to follow this rule. This problem can explain differences at level of EU-SILC variables and ESSPROS functions. For this reason, the gap between the two data base will be also analysed at the level of the sum of the three variables PY100, PY110 and PY130.

#### b) ESSPROS data coverage

Some countries are not able to provide a full ESSPROS data set. For example data on occupational pension schemes for private sector are missing in Ireland. It is the same for some funded occupational pensions schemes in Luxembourg. In an other hand, employers' schemes benefits are difficult to collect.

### 4.5 General comparison on total of social benefits

#### 4.4.1 Global differences in raw data

**Table 5: Summarized table of countries' data comparison**

COUNTRIES	ESSPROS gross data	EU-SILC gross data	Gap between ESSPROS data and SILC data	
			in national currency	in % of ESSPROS data
Belgium	55698	38582	17116	30.73%
Denmark	267787	244903	22883	8.55%
Estonia	11798	10309	1489	12.62%
Ireland	12939	12852	87	0.68%
Luxembourg	4046	2974	1072	26.49%
Austria	46528	39924	6604	14.19%
Finland	24706	22880	1827	7.39%
Sweden	480803	438636	42167	8.77%
Norway	262061	213423	48638	18.56%

In a first examination the total gap in percentage is very different among countries. However, the very small gap for Ireland is mean unless, due to the lack of ESSPROS old age benefits (see 4.3 above). Three Nordic countries show shorter gaps, probably because of a better coverage of paid sick leave benefits (for Denmark and Sweden) and of a matching of majority of functions/variables for Finland. This higher coherence can be probably explained because Nordic countries use administrative data in SILC.

#### 4.4.2 Further reconciliation

Independently of national reasons of differences that will be developed in the paragraph 4.5, it is required to make some general corrections linked to the differences due to the reference population and also linked to the coverage of lump-sum benefits.

a) correction for transaction with the rest of the world

**Table 6: Correction for transactions with the rest of the world**

COUNTRIES	Gap before correction (in national currency)	Correction = balance (see table 3)	Gap after correction (in national currency)	Gap after correction (in % of ESSPROS data)
Belgium	17116	216	16900	30.34%
Denmark	22883	91	22792	8.51%
Estonia	1489	:	1489	12.62%
Ireland	87	164	-77	-0.60%
Luxembourg *	1072	682	390	9.63%
Austria	6604	49	6555	14.09%
Finland	1827	56	1771	7.17%
Sweden	42167	:	42167	8.77%
Norway	48638	-173	48811	18.63%

\* As Luxembourg households generally do not receive social benefits from the rest of the world, the correction was made only with the benefits paid abroad for the benefits of the study (except sickness reimbursements).

After this correction the gap decreases slightly for most countries, except Norway. The impact on Luxembourg is significant.

b) correction for households living in institution

In the table 2 above we calculate the percentage of the population living in institutions. A rough correction involves applying this percentage to ESSPROS data (after corrections for transactions with the rest of the world). However the transfer received for person in institutions (old age persons at least) is likely to be higher than the bulk population and therefore the correction might be underestimated.

The results are presented in the table 7 below. The gap generally slightly decreased.

**Table 7: Correction for people living in institutions**

<b>COUNTRIES</b>	<b>Gap after correction for transactions</b>	<b>Correction for institutional people</b>	<b>Gap after correction for institutional people</b>	<b>Gap after correction (in % of ESSPROS data)</b>
Belgium	16900	755	16145	28.99%
Denmark	22792	3562	19231	7.18%
Estonia	1489	109	1380	11.70%
Ireland	-77	201	-278	-2.15%
Luxembourg	390	53	337	8.33%
Austria	6555	516	6038	12.98%
Finland	1771	177	1650	6.68%
Sweden	42167	:	42167	8.77%
Norway	48811	2029	46610	17.79%

c) correction for missing lump-sum benefits in EU-SILC

A last general correction can be made for taking the less extent of lump-sum benefits in EU-SILC into account (see table 1 for the concerned ESSPROS benefits).

The result of this correction (see table 8 below) is an additional decrease of the gap between ESSPROS and EU-SILC data, except for Finland and Sweden, where these specific lump-sum benefits do not exist in ESSPROS.

From this preliminary study, we can conclude that:

- in all the countries, paid sick leave benefits are higher in ESSPROS than in EU-SILC: it might be both for methodological reasons (paid leave in case of sickness of a dependent child are not in EU-SILC definition for this variable) and because the difficulty for household to identify the paid sick leave benefits provided by their employer separately of the wages and salaries;
- in almost the countries (except Belgium), social exclusion benefits in EU-SILC are lower than income support (part of ESSPROS social exclusion benefits): the explanation can be a partial recording under the unemployment variable in EU-SILC;
- the successive corrections allowed to shorten the gap between the data of the two data sources, but not to eliminate it.

**Table 8: Correction for missing lump-sum benefits in EU-SILC data**

<b>COUNTRIES</b>	<b>Gap after correction for institutional people</b>	<b>Correction for missing lump-sum benefits</b>	<b>Gap after correction for missing lump-sum benefits</b>	<b>Gap after correction (in % of ESSPROS data)</b>
Belgium	16145	845	15300	27.47%
Denmark	19231	3785	15446	5.77%
Estonia	1380	233	1147	9.72%
Ireland	-278	186	-464	-3.58%
Luxembourg	337	17	320	7.91%
Austria	6038	511	5527	11.88%
Finland	1650	0	1650	6.68%
Sweden	42167	0	42167	8.77%
Norway	46610	982	45628	17.41%

#### 4.4.3 Gap ESSPROS/EU-SILC and EU-SILC confidence interval

At this stage of data comparison, it can be interesting to compare the residual gap (in table 8) and the confidence interval calculations in EU-SILC for the total of variables retained in the study (see table 9 above).

**Table 9: gap between ESSPROS and EU-SILC data and EU-SILC confidence interval (in millions of national currency)**

<b>COUNTRIES</b>	Belgium	Denmark	Estonia	Ireland	Luxembourg	Austria	Finland	Sweden	Norway
<b>Gap between ESSPROS data and SILC data</b>	15300	15446	1147	-464	320	5527	1650	42167	45628
<b>EU-SILC confidence interval</b>	1233	5975	211	364	:	1302	152	9246	4901

The table 9 shows that the gap between ESSPROS and EU-SILC data is never under the EU-SILC confidence interval (the Irish case must be excluded because partial coverage in ESSPROS) and thus sampling variations cannot explain the observed differences.

## 4.5 Country examples of detailed data comparison:

### 4.5.1 Denmark

The detailed comparison was made at the level of ESSPROS functions, i.e. EU-SILC variables (see table 10 below). The same table with the detailed ESSPROS benefits by function in accordance with the table of correspondence (see table 1 in paragraph 3.3) is presented in Annex 1.

Table 10: detailed comparison by function between ESSPROS and EU-SILC data

ESSPROS: 2003 data		EU-SILC 2004		gap between ESSPROS data and SILC data		
function	gross data	variable	gross data	gap between ESSPROS data and SILC data		
		name	target variable	in national currency	in % of ESSPROS data	
SICKNESS	14130.75	PY120G	sickness benefits	11681.70	2449.05	17.3%
DISABILITY	38990.55	PY130G	disability benefits	43792.37	-4801.82	-12.3%
OLD AGE	130479.82	PY100G	old-age benefits	94800.13	35679.69	27.3%
SURVIVORS	1.01	PY110G	survivors' benefits	2183.52	-2182.51	-215098.5%
<b>OLD AGE and SURVIVORS</b>	<b>130480.83</b>			<b>96983.65</b>	<b>33497.18</b>	<b>25.7%</b>
<b>DISABILITY, OLD AGE and SURVIVORS</b>	<b>169471.38</b>			<b>140776.02</b>	<b>28695.36</b>	<b>16.9%</b>
FAMILY CHILDREN	22794.37	HY050G	family/children related allowance	14971.36	7823.01	34.3%
UNEMPLOYMENT	39858.19	PY090G	unemployment benefits	69663.43	-29805.24	-74.8%
HOUSING	9747.14	HY070G	housing allowances	7810.90	1936.24	19.9%
SOCIAL EXCLUSION	11784.90	HY060G	social exclusion	.	11784.90	100.0%
<b>UNEMPLOYMENT and SOCIAL EXCLUSION</b>	<b>51643.09</b>			<b>69663.43</b>	<b>-18020.34</b>	<b>-34.9%</b>
<b>TOTAL FUNCTIONS</b>	<b>267786.73</b>	<b>TOTAL VARIABLES</b>		<b>244903.41</b>	<b>22883.32</b>	<b>8.5%</b>

The total initial gap between the two databases was 8.5%. After the general corrections (see paragraph 4.4.2) it was 5.8%. The detailed comparison by function allows identifying the components of this gap.

#### a) sickness

The gap for this function is 17.2%. As indicated in the paragraph 4.2.3, all the countries show a high gap for paid sick leave benefits both for methodological reasons (paid leave in case of sickness of a dependent child are not in EU-SILC definition) and for reason of collection difficulties in EU-SILC. However, Denmark is the country (among the nine countries of the study) where the gap for this benefit is the lowest. The gap for this function accounted for 1% of the 5.8% of the total gap.

#### b) disability, old age, survivors

The situation is very confusing for these three functions: no data in ESSPROS for survivors, higher data in EU-SILC for disability and survivors and higher data in ESSPROS for old age. Given ESSPROS survivors' pensions are recorded as old age pensions, old age and survivors benefits have to be studied together.

#### - disability

Disability benefits are smaller in ESSPROS than in EU-SILC (-12%). This situation is consistent with the number of beneficiaries in the two data base: 191 318 for ESSPROS and 351 191 for EU-SILC (i.e. a gap of 159 873). A possible explanation can be an overlapping problem in EU-SILC with old age beneficiaries, that will be consistent with the opposite gap in old age and survivors' beneficiaries (see below).

#### - old age and survivors

Old age and survivors' benefits are higher in ESSPROS than in EU-SILC (+25.6%). This situation is consistent with the number of beneficiaries in the two data base: 977 275 for ESSPROS and 708 455 for EU-SILC (i.e. a gap of 268 455). If we subtract in ESSPROS data people above 65 years living in institution (25 741), the difference is 242 714, i.e. 25% of ESSPROS beneficiaries. The gaps between quantitative data and between the numbers of beneficiaries are the same. As indicated above, a possible explanation can be an overlapping with disability pensions. However, even if we consider together disability, old age and survivors' functions, a big gap remains for quantitative data (see table 10).

#### c) family/children

The gap for this function is 34.2% in favour of ESSPROS data. If we exclude lump-sum benefits (parental leave) the gap decreases only to 32.2% and accounted for 4.7 % of the 5.8% of the total gap.

#### d) housing

For this function ESSPROS data are higher as EU-SILC data, with a gap of 19.9%.

#### e) unemployment, social exclusion

The first point is that there are no data for the variable Y060 (social exclusion) in EU-SILC; the second point is that ESSPROS unemployment benefits are very lower than EU-SILC benefits. These two phenomena probably follow that social exclusion benefits (and more precisely income support) would recorded as unemployment benefits in EU-SIL. For this reason the two functions "unemployment" and "social exclusion" were studied together.

If we consider the two functions together the gap is 35%, in favour of EU-SILC. This difference increases if we exclude the lump-sum benefits in ESSPROS data. Methodological speaking, it should not exist problems of overlapping with other benefits. Although an opposite gap exists for old age benefits, it is not possible to link the two situations, because a lack of complementary information.

## 4.5.2 Luxembourg

Like for Denmark, the detailed comparison was made at the level of ESSPROS functions, i.e. EU-SILC variables (see table 11 below). The same table with the detailed ESSPROS benefits by function in accordance with the table of correspondence (see table 1 in paragraph 3.3) is presented in Annex 2.

Table 11: detailed comparison by function between ESSPROS and EU-SILC data

ESSPROS: 2003 data		EU-SILC 2004		gap between ESSPROS data and SILC data	
function	gross data	variable	gross data	in national currency	in % of ESSPROS data
		name	target variable		
SICKNESS	221.63	PY120G	sickness benefits	3.31	218.32 98.5%
DISABILITY	535.67	PY130G	disability benefits	244.42	291.25 54.4%
OLD AGE	1464.91	PY100G	old-age benefits	1922.04	-457.13 -31.2%
SURVIVORS	608.97	PY110G	survivors' benefits	137.98	470.99 77.3%
<b>OLD AGE and SURVIVORS</b>	<b>2073.88</b>			<b>2073.88</b>	<b>13.86 0.7%</b>
<b>DISABILITY, OLD AGE and SURVIVORS</b>	<b>2609.55</b>			<b>2304.44</b>	<b>305.11 11.7%</b>
FAMILY CHILDREN	848.18	HY050G	family/children related allowance	431.61	416.57 49.1%
UNEMPLOYMENT	241.66	PY090G	unemployment benefits	138.01	103.65 42.9%
HOUSING	30.76	HY070G	housing allowances	34.82	-4.06 -13.2%
SOCIAL EXCLUSION	94.16	HY060G	social exclusion	62.14	32.02 34.0%
<b>TOTAL FUNCTIONS</b>	<b>4045.94</b>	<b>TOTAL VARIABLES</b>		<b>2974.33</b>	<b>1071.61 26.5%</b>

The total initial gap between the two databases was 26.5%. After the general corrections (see paragraph 4.4.2) it was 8.5%. The detailed comparison by function allows identifying the components of this gap.

### a) sickness

The gap for this function is very high and illustrates the general low coverage for this variable in EU-SILC, both for methodological reasons (paid leave in case of sickness of a dependent child not in EU-SILC definition) and for reason of collection difficulties. The gap for this function accounted for 5.4% of the 26.5% of the total gap.

### b) disability, old age, survivors

Like for Denmark, the situation is very confusing for these three functions: higher data in EU-SILC for old age and higher data in ESSPROS for disability and survivors. For this reason old age and survivors benefits will be studied together. It has to be precise that in ESSPROS disability and survivors' pensions for people after 60 years are automatically recorded as old age pensions in Luxembourg data. Because EU-SILC uses rather the real age of retirement for recording pensions in old age function, some differences can occur at the function level.

#### - disability

Disability benefits are higher in ESSPROS than in EU-SILC (48%). If we exclude the benefits paid abroad in ESSPROS data, the gap decreases to 44%. This situation is partly consistent with the number of beneficiaries in the two data base: 19 901 for ESSPROS and 12 455 for EU-SILC (i.e. a gap of 7 456 or 37% of ESSPROS beneficiaries). The gap for this function accounted for 5.4% of the 26.5% of the total gap.

- old age and survivors

The total of old age and survivors' benefits is practically the same in ESSPROS and in EU-SILC. This statement results of two opposite situations: higher data in EU-SILC for old age and higher data in ESSPROS for survivors (for times higher). For survivors', this fact is consistent with the number of beneficiaries in the two data base: 38 092 beneficiaries of survivors' benefits for ESSPROS against 13 156 for EU-SILC (i.e. three times higher). But there is no parallel consistence for old age between quantitative data and number of beneficiaries, who are just slightly higher in ESSPROS (+3223). It is in fact more or less the number of people after 65 years living in institutions (3804).

As in Luxembourg the number of pensions paid abroad is very high, it could be a lower number of beneficiaries in EU-SILC than in ESSPROS for this two functions (35% of the total number of pensions were paid abroad in 2003) and in parallel a lower total amount of benefits and not the same as recorded (326 millions of euros were paid abroad in 2003).

c) family/children

The gap for this function is 49% in favour of ESSPROS data. There are no lump-sum benefits (parental leave) to exclude.

d) unemployment

ESSPROS unemployment benefits are higher than EU-SILC benefits (+43%).The missing lump-sum benefits (in EU-SILC) are only 6 millions of euros and did not explain the gap (104 millions).

e) housing

For this function ESSPROS data are approximately the same in ESSPROS and in EU-SILC.

f) social exclusion

The gap for this function is 34%. As usually for the studied countries, social exclusion benefits in EU-SILC are lower than the amount of the single income support benefit in ESSPROS. However, if we exclude lump-sum benefits, the gap fall to 22%.

## **5. Conclusion**

This paper does not aim to cover exhaustively the coherence between ESSPROS and SILC data. It rather aims to draw the attention to some methodological issues when comparing these data. In general, the coherence SILC and ESSPROS data is far from perfect. Some reasons are to be found in national specificities but the theoretical advantage of register country is not significant. The detailed comparison of both sources, country by country, is a rich source of learning of the weakness of the different sources. For SILC it should shed light on implementation difficulties. The systematic comparison is worth to be part of quality reports where detailed reason for discrepancies can be discussed.

## ANNEX 1: detailed comparison by benefits and by function between ESSPROS and EU-SILC data for Denmark

ESSPROS: 2003 data

EU-SILC 2004

function	benefit		gross data	variable		gross data	gap between ESSPROS data and SILC data		
	code	name		name	target variable		in national currency	in % of ESSPROS data	
SICKNESS	1 111 111	paid sick leave (NMT)	13731.18	PY120G	sickness benefits				
	1 111 112	other cash periodic benefits (NMT)	208.11						
	1 111 121	other cash lump sum benefits (NMT)	191.46						
	1 112 111	paid sick leave (MT)	0.00						
	1 112 112	other cash periodic benefits (MT)	0.00						
	1 112 121	other cash lump sum benefits (MT)	0.00						
	<b>TOTAL</b>			14130.75			11681.70	2449.05	17.33%
DISABILITY		<b>Periodic benefits</b>		PY130G	disability benefits				
	1 121 111	disability pension (NMT)	25545.66						
	1 121 112	Early retirement benefit due to reduced capacity of work (NMT)	16.78						
	1 121 113	care allowance (NMT)	0.00						
	1 121 114	Economic integration of the handicapped (NMT)	7669.93						
	1 121 115	other cash periodic benefits (NMT)	1493.47						
	1 122 111	disability pension (MT)	0.00						
	1 122 112	Early retirement benefit due to reduced capacity of work (MT)	0.00						
	1 122 113	care allowance (MT)	0.00						
	1 122 114	Economic integration of the handicapped (MT)	0.00						
	1 122 115	other cash periodic benefits (MT)	0.00						
		<b>Lump sum benefits</b>							
	1 121 121	care allowance (NMT)	0.00						
	1 121 122	Economic integration of the handicapped (NMT)	0.00						
	1 121 123	other cash lump sum benefits (NMT)	4264.72						
	1 122 121	care allowance (MT)	0.00						
	1 122 122	Economic integration of the handicapped (MT)	0.00						
	1 122 123	other cash lump sum benefits (MT)	0.00						
	<b>TOTAL</b>			38990.55			43792.37	-4801.82	-12.32%
OLD AGE		<b>Periodic benefits</b>		PY100G	old-age benefits				
	1 131 111	old-age pension (NMT)	98550.91						
	1 131 112	anticipated old-age pension (NMT)	31770.91						
	1 131 113	partial pension (NMT)	130.38						
	1 131 114	care allowance (NMT)	0.00						
	1 131 115	other cash periodic benefits (NMT)	0.00						
	1 132 111	old-age pension (MT)	0.00						
	1 132 112	anticipated old-age pension (MT)	0.00						
	1 132 113	partial pension (MT)	0.00						
	1 132 114	care allowance (MT)	0.00						
	1 132 115	other cash periodic benefits (MT)	0.00						
		<b>Lump sum benefits</b>							
	1 131 121	other cash lump sum benefits (NMT)	27.63						
	1 132 121	other cash lump sum benefits (MT)	0.00						
	<b>TOTAL</b>			130479.82			94800.13	35679.69	27.34%
SURVIVORS		<b>Periodic benefits</b>		PY110G	survivors' benefits				
	1 141 111	survivors' pension (NMT)	0.16						
	1 141 112	other cash periodic benefits (NMT)	0.00						
	1 142 111	survivors' pension (MT)	0.00						
	1 142 112	other cash periodic benefits (MT)	0.00						
		<b>Lump sum benefits</b>							
	1 141 121	death grants (NMT)	0.00						
1 141 122	other cash lump sum benefits (NMT)	0.00							
1 142 121	death grants (MT)	0.00							
1 142 122	other cash lump sum benefits (MT)	0.85							
<b>TOTAL</b>			1.01			2183.52	-2182.51	-215098.48%	
<b>OLD AGE and SURVIVORS</b>			<b>130480.83</b>			<b>96983.65</b>	<b>33497.18</b>	<b>25.67%</b>	
<b>DISABILITY, OLD AGE and SURVIVORS</b>			<b>169471.38</b>			<b>140776.02</b>	<b>28695.36</b>	<b>16.93%</b>	

NMT: non means-tested benefits

MT: means-tested benefits

function	benefit		gross data	variable		gross data	gap between ESSPROS data and SILC data		
	code	name		name	target variable		in national currency	in % of ESSPROS data	
FAMILY CHILDREN		<b>Periodic benefits</b>		HY050G	family/children related allowance				
	1 151 111	income maintenance in the event of childbirth (NMT)	7747.52	PY140G	education-related allowances				
	1 151 112	parental leave benefit (NMT)	0.00						
	1 151 113	family or child allowance (NMT)	14332.19						
	1 151 114	other cash periodic benefits (NMT)	225.57						
	1 152 111	income maintenance in the event of childbirth (MT)	0.00						
	1 152 112	parental leave benefit (MT)	0.00						
	1 152 113	family or child allowance (MT)	0.00						
	1 152 114	other cash periodic benefits (MT)	0.00						
		<b>Lump sum benefits</b>							
	1 151 121	birth grant (NMT)	0.00						
	1 151 122	parental leave benefit (NMT)	489.10						
	1 151 122	other cash lump sum benefits (NMT)	0.00						
	1 152 121	birth grant (MT)	0.00						
	1 152 122	parental leave benefit (MT)	0.00						
	1 152 122	other cash lump sum benefits (MT)	0.00						
	TOTAL			22794.37			14971.36	7823.01	34.32%
UNEMPLOYMENT		<b>Periodic benefits</b>		PY090G	unemployment benefits				
	1 161 111	full unemployment benefits (NMT)	22224.70						
	1 161 112	partial unemployment benefits (NMT)	0.00						
	1 161 113	early retirement benefit for labour market reasons (NMT)	0.00						
	1 161 114	vocational training allowance (NMT)	17633.31						
	1 161 115	other cash periodic benefits (NMT)	0.00						
	1 161 201	mobility and resettlement (NMT)	0.00						
	1 162 111	full unemployment benefits (MT)	0.00						
	1 162 112	partial unemployment benefits (MT)	0.00						
	1 162 113	early retirement benefit for labour market reasons (MT)	0.00						
	1 162 114	vocational training allowance (MT)	0.00						
	1 162 115	other cash periodic benefits (MT)	0.00						
	1 162 201	mobility and resettlement (MT)	0.00						
		<b>Lump sum benefits</b>							
	1 161 121	vocational training allowance (NMT)	0.19						
	1 161 122	Redundancy compensation (NMT)	0.00						
	1 161 123	other cash lump sum benefits (NMT)	0.00						
1 162 121	vocational training allowance (MT)	0.00							
1 162 122	Redundancy compensation (MT)	0.00							
1 162 123	other cash lump sum benefits (MT)	0.00							
TOTAL			39858.19			69663.43	-29805.24	-74.78%	
HOUSING	1 172 211	social housing (MT)	2.87	HY070G	housing allowances				
	1 172 212	other rent benefits (MT)	9744.27						
	1 172 220	benefit to owner-occupiers (MT)	0.00			7810.90	1936.24	19.86%	
	TOTAL		9747.14						
SOCIAL EXCLUSION		<b>Periodic benefits</b>		HY060G	social exclusion				
	1 181 111	income support (NMT)	8645.72						
	1 181 112	other cash periodic benefits (NMT)	35.10						
	1 182 111	income support (MT)	0.00						
	1 182 112	other cash periodic benefits (MT)	0.00						
		<b>Lump sum benefits</b>							
	1 181 121	other cash lump sum benefits (NMT)	3104.07						
1 182 121	other cash lump sum benefits (MT)	0.00							
TOTAL			11784.90				11784.90	100.00%	
<b>TOTAL BENEFITS</b>			<b>267786.73</b>	<b>TOTAL VARIABLES</b>		<b>244903.41</b>	<b>22883.32</b>	<b>8.55%</b>	

NMT: non means-tested benefits  
MT: means-tested benefits

## ANNEX2: detailed comparison by benefits and by function between ESSPROS and EU-SILC data for Luxembourg

ESSPROS: 2003 data

EU-SILC 2004

function	benefit		gross data	variable		gross data	gap between ESSPROS data and SILC data		
	code	name		name	target variable		in national currency	in % of ESSPROS data	
SICKNESS	1 111 111	paid sick leave (NMT)	221.48	PY120G	sickness benefits				
	1 111 112	other cash periodic benefits (NMT)	0.00						
	1 111 121	other cash lump sum benefits (NMT)	0.15						
	1 112 111	paid sick leave (MT)	0.00						
	1 112 112	other cash periodic benefits (MT)	0.00						
	1 112 121	other cash lump sum benefits (MT)	0.00						
	TOTAL			221.63			3.31	216.32	98.51%
DISABILITY		<b>Periodic benefits</b>		PY130G	disability benefits				
	1 121 111	disability pension (NMT)	487.78						
	1 121 112	Early retirement benefit due to reduced capacity of work (NMT)	0.00						
	1 121 113	care allowance (NMT)	0.00						
	1 121 114	Economic integration of the handicapped (NMT)	10.32						
	1 121 115	other cash periodic benefits (NMT)	7.73						
	1 122 111	disability pension (MT)	0.00						
	1 122 112	Early retirement benefit due to reduced capacity of work (MT)	0.00						
	1 122 113	care allowance (MT)	0.00						
	1 122 114	Economic integration of the handicapped (MT)	0.00						
	1 122 115	other cash periodic benefits (MT)	0.00						
		<b>Lump sum benefits</b>							
	1 121 121	care allowance (NMT)	0.00						
	1 121 122	Economic integration of the handicapped (NMT)	0.00						
	1 121 123	other cash lump sum benefits (NMT)	29.84						
	1 122 121	care allowance (MT)	0.00						
	1 122 122	Economic integration of the handicapped (MT)	0.00						
1 122 123	other cash lump sum benefits (MT)	0.00							
TOTAL			535.67			244.42	291.25	54.37%	
OLD AGE		<b>Periodic benefits</b>		PY100G	old-age benefits				
	1 131 111	old-age pension (NMT)	1095.13						
	1 131 112	anticipated old-age pension (NMT)	364.88						
	1 131 113	partial pension (NMT)	0.00						
	1 131 114	care allowance (NMT)	0.00						
	1 131 115	other cash periodic benefits (NMT)	0.00						
	1 132 111	old-age pension (MT)	0.00						
	1 132 112	anticipated old-age pension (MT)	0.00						
	1 132 113	partial pension (MT)	0.00						
	1 132 114	care allowance (MT)	0.00						
	1 132 115	other cash periodic benefits (MT)	0.00						
		<b>Lump sum benefits</b>							
	1 131 121	other cash lump sum benefits (NMT)	0.00						
	1 132 121	other cash lump sum benefits (MT)	4.90						
TOTAL			1464.91			1922.04	-457.13	-31.21%	
SURVIVORS		<b>Periodic benefits</b>		PY110G	survivors' benefits				
	1 141 111	survivors' pension (NMT)	608.97						
	1 141 112	other cash periodic benefits (NMT)	0.00						
	1 142 111	survivors' pension (MT)	0.00						
	1 142 112	other cash periodic benefits (MT)	0.00						
		<b>Lump sum benefits</b>							
	1 141 121	death grants (NMT)	0.00						
1 141 122	other cash lump sum benefits (NMT)	0.00							
1 142 121	death grants (MT)	0.00							
1 142 122	other cash lump sum benefits (MT)	0.00							
TOTAL			608.97			137.98	470.99	77.34%	
<b>OLD AGE and SURVIVORS</b>			<b>2073.88</b>			<b>2060.02</b>	<b>13.86</b>	<b>0.67%</b>	
<b>DISABILITY, OLD AGE and SURVIVORS</b>			<b>2609.55</b>			<b>2304.44</b>	<b>305.11</b>	<b>11.69%</b>	

NMT: non means-tested benefits  
MT: means-tested benefits

function	benefit		gross data	variable		gross data	gap between ESSPROS data and SILC data			
	code	name		name	target variable		in national currency	in % of ESSPROS data		
FAMILY CHILDREN		<b>Periodic benefits</b>		HY050G	family/children related allowance					
	1 151 111	income maintenance in the event of childbirth (NMT)	60.27							
	1 151 112	parental leave benefit (NMT)	44.96							
	1 151 113	family or child allowance (NMT)	545.60							
	1 151 114	other cash periodic benefits (NMT)	154.19							
	1 152 111	income maintenance in the event of childbirth (MT)	0.00							
	1 152 112	parental leave benefit (MT)	0.00							
	1 152 113	family or child allowance (MT)	0.00							
	1 152 114	other cash periodic benefits (MT)	0.00							
		<b>Lump sum benefits</b>								
	1 151 121	birth grant (NMT)	12.66							
	1 151 122	parental leave benefit (NMT)	0.00							
	1 151 122	other cash lump sum benefits (NMT)	30.50							
	1 152 121	birth grant (MT)	0.00							
	1 152 122	parental leave benefit (MT)	0.00							
	1 152 122	other cash lump sum benefits (MT)	0.00							
	TOTAL					848.18			431.61	416.57
UNEMPLOYMENT		<b>Periodic benefits</b>		PY090G	unemployment benefits					
	1 161 111	full unemployment benefits (NMT)	97.55							
	1 161 112	partial unemployment benefits (NMT)	12.99							
	1 161 113	early retirement benefit for labour market reasons (NMT)	53.89							
	1 161 114	vocational training allowance (NMT)	0.00							
	1 161 115	other cash periodic benefits (NMT)	71.52							
	1 161 201	mobility and resettlement (NMT)	0.00							
	1 162 111	full unemployment benefits (MT)	0.00							
	1 162 112	partial unemployment benefits (MT)	0.00							
	1 162 113	early retirement benefit for labour market reasons (MT)	0.00							
	1 162 114	vocational training allowance (MT)	0.00							
	1 162 115	other cash periodic benefits (MT)	0.00							
	1 162 201	mobility and resettlement (MT)	0.00							
		<b>Lump sum benefits</b>								
	1 161 121	vocational training allowance (NMT)	5.70							
	1 161 122	Redundancy compensation (NMT)	0.00							
	1 161 123	other cash lump sum benefits (NMT)	0.00							
1 162 121	vocational training allowance (MT)	0.00								
1 162 122	Redundancy compensation (MT)	0.00								
1 162 123	other cash lump sum benefits (MT)	0.00								
TOTAL			241.66			138.01	103.65	42.89%		
HOUSING				HY070G	housing allowances					
	1 172 211	social housing (MT)	8.41							
	1 172 212	other rent benefits (MT)	22.35							
	1 172 220	benefit to owner-occupiers (MT)	0.00							
TOTAL			30.76			34.82	-4.06	-13.18%		
SOCIAL EXCLUSION		<b>Periodic benefits</b>		HY060G	social exclusion					
	1 181 111	income support (NMT)	0.00							
	1 181 112	other cash periodic benefits (NMT)	0.00							
	1 182 111	income support (MT)	82.76							
	1 182 112	other cash periodic benefits (MT)	0.00							
		<b>Lump sum benefits</b>								
	1 181 121	other cash lump sum benefits (NMT)	0.00							
1 182 121	other cash lump sum benefits (MT)	11.40								
TOTAL			94.16			62.14	32.02	34.01%		
<b>TOTAL BENEFITS</b>			<b>4045.94</b>	<b>TOTAL VARIABLES</b>		<b>2974.33</b>	<b>1071.61</b>	<b>26.49%</b>		

NMT: non means-tested benefits  
MT: means-tested benefits