

**Eurostat and Statistics Finland International Conference on
Comparative EU Statistics on Income and Living Conditions:
issues and challenges**

**EU-SILC (COMMUNITY STATISTICS ON
INCOME AND LIVING CONDITIONS)
Issues and challenges**

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EU-SILC - Issues and challenges

- Follow-up of the EU Luxembourg Presidency Conference on “Taking forward the EU Social Inclusion Process” (Luxembourg, 13-14 June 2005):
 - Scientific Report presented recommended in-depth methodological studies around EU-SILC
 - Emphasised the need for effective and wide use of EU-SILC micro-data by the scientific community

- EU-SILC is about to become the EU reference source for the level and composition of income, poverty and social exclusion, and hence for a large number of EU indicators on social protection and social inclusion: data for all 25 EU Member States plus Norway and Iceland available at the end of the year

EU-SILC - Issues and challenges

- At this still early stage of implementation of EU-SILC, it is time to:
 - Take stock of the achievements of almost 5 years of intense activity both at EU and national levels
 - Draw a first evaluation of the project
 - To come up with a set of concrete recommendations for the use and future developments of this instrument, on the basis of a systematic empirical and conceptual assessment of all its dimensions: content, quality, methodology, definitions, implementation, etc.

- THESE ARE THE OBJECTIVES OF THIS CONFERENCE

EU-SILC - Issues and challenges

- **This first paper of the Conference reviews the project as it stands**
- **Today's presentation is structured in two parts:**
 - **EU background of the project and Overview of the actual implementation of EU-SILC**
 - **Challenges for Member States**

1. EU-SILC: EU background of the project

- A statistical instrument designed to fulfill the need for data in the context of the Open Method of Coordination (OMC) in the field of social protection and inclusion

1. EU-SILC: EU background of the project

- OMC in the field of social protection and inclusion has been streamlined in respect of the revised Lisbon process of growth and job
- Current common objectives with regard to social protection and inclusion policies (endorsed by the Council of the EU 2006) consist of overarching objectives and of objectives that apply to different strand of work:
 - Making a decisive impact on the eradication of poverty and social exclusion
 - Providing adequate and sustainable pensions
 - Providing accessible, high-quality and sustainable health care and long term care

1. EU-SILC: EU background of the project

- For monitoring these objectives, the EU Social Protection Committee (SPC) has developed a portfolio of overarching indicators and three strand indicators portfolios (primary/secondary/context indicators; EU and national indicators)
 - These portfolios include indicators such as At-risk-of poverty rate, at-persistent-risk-of poverty rate, income inequality (S80/S20), pensions adequacy
 - EU-SILC is the data source to be used to construct most of these indicators

1. EU-SILC: EU background of the project

- EU-SILC is the successor of the ECHP (European Community Household Panel) which was used to fulfil these political demands over the 1994-2001 period
- ECHP, although a success, was stopped because of:
 - Quality problems
 - Incomplete geographical coverage
 - Problems of timeliness
 - Reliability partially questioned: initial response rates and attrition
 - Not fully integrated in national statistical system
 - The need to conform internationally agreed income definitions (gross income components – Canberra recommendations)
 - The extension to the enlarged EU

1. EU-SILC: EU background of the project

- EU-SILC is the successor of the ECHP but is following a completely different logic:
 - The ECHP was a common input harmonized survey based on common concepts and definitions, common survey structure and procedures, common sampling requirements and above all a common blue print questionnaire
 - The EU-SILC is a common framework defined on the basis of target variables, common guidelines and procedures, common concepts and classifications, recommended design for implementation.
The common framework is mainly defined in the legal basis

1. EU-SILC: EU background of the project

- The main characteristics of EU-SILC stem from:
 - The political needs for data in the context of the Open Method of Coordination (OMC) in the field of social protection and inclusion AND
 - The common framework structure of EU-SILC
 - Main characteristics:
 - Timeliness is a priority
 - Integration into National Statistical System
 - A cross-sectional and a longitudinal component
 - Flexibility of implementation at national level
 - Coupled with a concern for quality

1. EU-SILC: EU background of the project

■ **Timeliness is a priority**

- Move from three (two) years to issue the ECHP data to:
 - 12 months for SILC cross-sectional tables
 - 18 months for SILC longitudinal tables
 - 15 months for SILC anonymised EU cross-sectional micro data files (data of year N are available from March N+2)
 - 20 months for the SILC longitudinal micro-data (data collected before N are available in August N+2).

1. EU-SILC: EU background of the project

- **Consequence: integration into National Statistical System**
- **A cross-sectional and a longitudinal component**
 - a cross-sectional component on income, poverty, social exclusion and other living conditions: first priority
 - a longitudinal component more limited in content and sample size, with micro-data changes followed over a minimum of four years (to fulfill the needs of the at persistent risk-of-poverty rate)

1. EU-SILC: EU background of the project

■ **Flexibility of implementation at national level**

- Use of register and/or survey information
- Sample design flexible (cross-sectional and longitudinal component separated or integrated; new operation or integration into existing national instrument; rotational/long-term panel)
- A common design recommended by Eurostat (the rotational design)

1. EU-SILC: EU background of the project

- **Coupled with a concern for quality** including:
 - Development of common guidelines and procedures aimed at maximising comparability
 - Production by MS of annual intermediate and final quality reports with an EU synthesis drafted by Eurostat
 - Launching of methodological studies (impact of household definition, comparability of administrative and survey data, mode of data collection, different treatment of negative income, sampling issues)
 - Methodological Task Force set up (imputation techniques, treatment of lump sum, the imputed rent, the status of private pensions plans in income)
 - Systematic calculation of standard errors for the income-based indicators.

1. EU-SILC: EU background of the project

- **What is in the common framework?: the legal basis**
 - A Council and EP regulation (N° 1177/2003 modified by regulation N°1553/2005) defining the scope, definitions, time reference, characteristics of the data, data required, sampling, sample sizes, transmission of data, publication, access for scientific purposes, financing, reports and studies
 - Complemented by five Commission regulations on:
 - Sampling;
 - Fieldwork and imputation;
 - List of target primary variables
 - Definitions
 - Content of quality reports
 - Plus one annual Commission regulation on the list of target secondary variables (yearly module)

1. EU-SILC: EU background of the project

- **What is in the common framework?: sampling/design**
- Minimum requirement
 - Probabilistic sampling design
 - Nationally representative sample of the population residing in private households
- Allocation between MS
 - Minimum effective sample size given (achieved sample size in 2005: 200.000 households)
 - Minimum precision requirement for the at risk poverty rate (absolute precision of 1%)
 - Allocation of EU sample between countries: compromise between production of results at individual country level and results for EU as a whole
- Flexibility
 - MS are allowed to supplement their sample to achieve national target (regional estimates, ...)
 - Sample of household/dwelling – sample of “selected” respondents

1. EU-SILC: EU background of the project

Household minimum sample size for 27 countries: 127.000

2250	Iceland	4750	Belgium Greece Czech Rep Hungary
3000	Malta	5000	Netherlands
3250	Cyprus Luxembourg	6000	Poland
3500	Estonia	6500	Spain
3750	Ireland Latvia Norway Slovenia	7250	France Italy
4000	Finland Lithuania	7500	United Kingdom
4250	Denmark Slovakia	8250	Germany
4500	Austria Portugal Sweden		

1. EU-SILC: EU background of the project

Minimum Sample size of persons aged 16+ for 27 countries: 260.150

3750	Iceland	9000	Lithuania Slovenia
62500	Norway	10000	Czech Rep Greece
6500	Luxembourg	10250	Hungary
6750	Finland	10500	Portugal
7000	Malta	11000	Slovakia
7250	Denmark	13500	France
7500	Cyprus Sweden	13750	United Kingdom
7650	Latvia	14500	Germany
7750	Estonia	15000	Poland
8000	Ireland	15500	Italy
8750	Belgium Netherlands Austria	16000	Spain

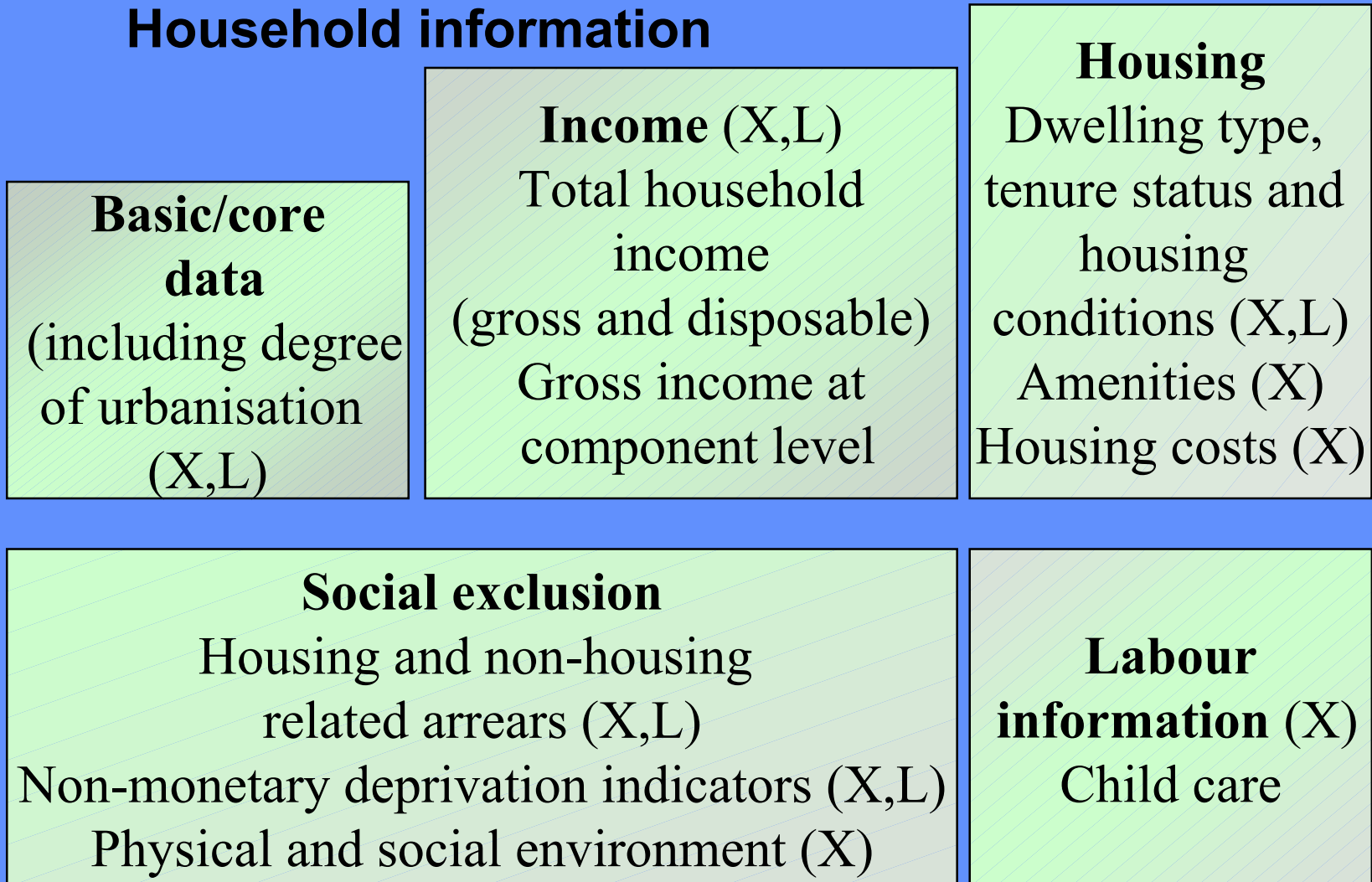
1. EU-SILC: EU background of the project

- **What is in the common framework?: list of target variables**
- Primary annual variables
 - At household and individual level in cross sectional (X) and/or longitudinal component (L)
- Secondary target variables (modules)
 - Introduced every four years or less frequently
 - One module per year only in the cross-sectional component only

1. EU-SILC: EU background of the project

Primary annual component: domains covered

Household information



1. EU-SILC: EU background of the project

Primary annual component: Personal information

Basic/core data
(X,L)

Income (X,L)
(gross personal income, total and components)

Health
Health status and chronic illness and condition (X,L)
Access to health care (X)

Labour
Basic information on current activity and current main job, incl on last main job for unemployed (X,L)
Basic information on activity status during income reference period (X) Total number of hours worked on current second/third jobs (X) Detailed labour information (X,L)
Activity history (L) calendar of activities (L)

Demographic data
(for persons aged under 16 (X,L), for persons aged 16+ (X,L) and for former household members (L))

Education (X,L)
(including highest ISCED level attained)

1. EU-SILC: EU background of the project

- Secondary target variables (modules)
 - 2005: Inter-generational transmission of poverty
 - 2006: Social participation
 - 2007: Housing conditions
 - 2008: Over-indebtedness/Financial exclusion
 - 2009: Deprivation

1. EU-SILC: EU background of the project

- What is in the common framework?: Implementing and tracing rules
 - Implementing: rules in terms of proxy rates, substitutions, fieldwork duration, intervals between interview and end of income reference period
 - Tracing:
 - Initial sample followed for at least 4 years
 - Only people remaining or moving within private households in the national territory are followed.

1. EU-SILC: EU background of the project

- **What is in the common framework?:**

Concepts - mainly income which is the central part of EU-SILC

- EU-SILC follows as closely as possible Canberra recommendations
- Four main aggregates computed (total disposable household income, total disposable income before transfers (with and without old-age and survivors' benefits), total gross income)
- Collection of gross income components
 - Transition period 2004-2006 where some countries can only deliver net income components and a limited number of components are only to be gross for all countries from 2007

1. EU-SILC: EU background of the project

■ **Main gross income components:**

- Employee income (cash and non-cash income, employers' social insurance contributions)
- Income from self employment (cash profit/loss, goods produced for own consumption)
- Imputed rent
- Property income (rental and interest/dividend from capital)

1. EU-SILC: EU background of the project

■ **Main gross income components (con't):**

- Current transfers received

Social benefits (family/children, housing, unemployment, old age, survivor, sickness, disability, education, social exclusion)

Inter household transfers

- Income received by people aged under 16
- Interests paid on mortgage
- Current transfers paid (tax on income and social insurance contributions, regular taxes on wealth, employers' social contributions, regular inter-household cash transfers paid)

1. EU-SILC: EU background of the project

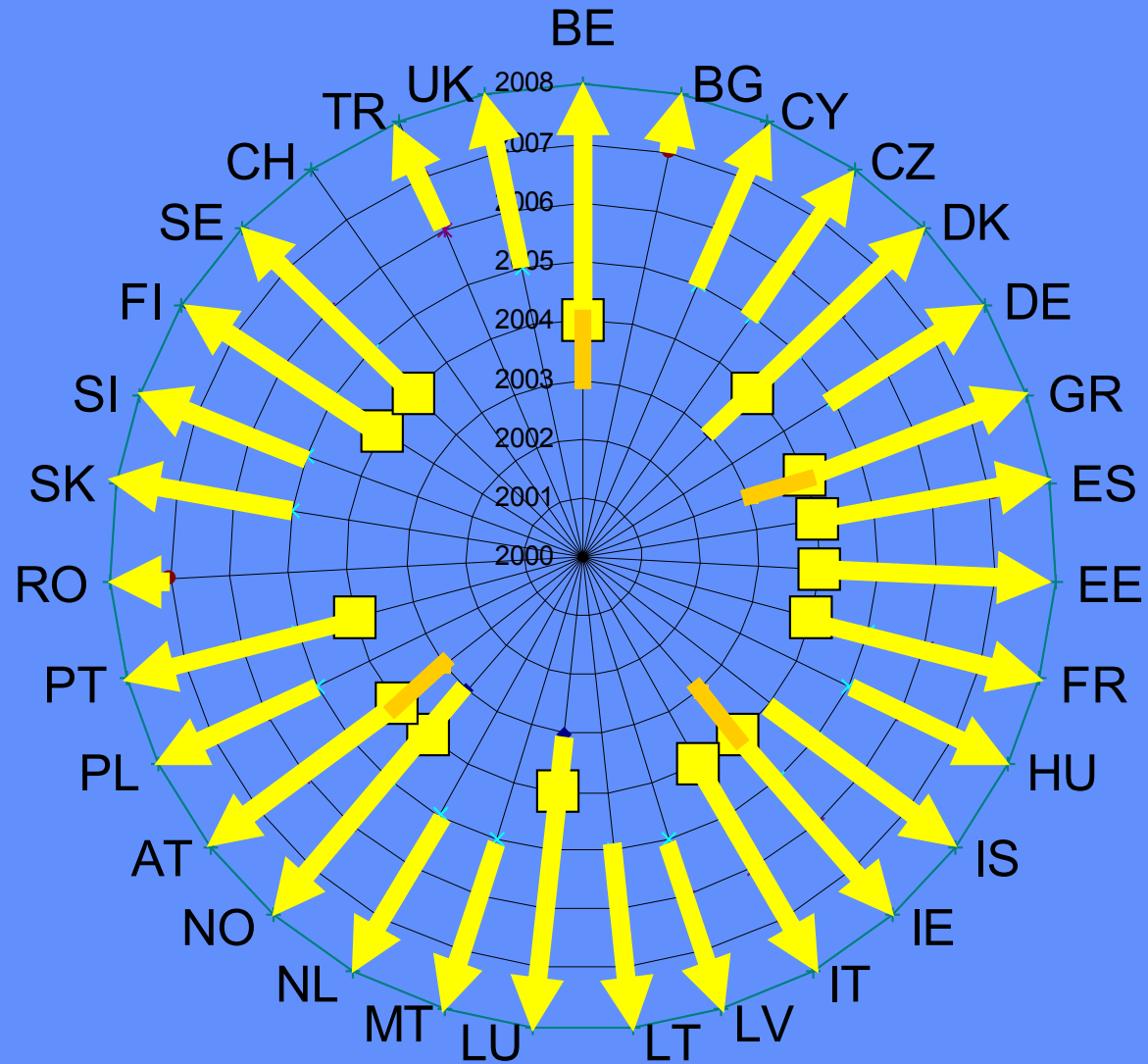
- **What is in the common framework?: Access to micro-data**
- EU-SILC framework Regulation n°1177/2003 makes provision for the release of anonymised micro data to researchers (encrypted CD with documentation)
- Micro data access is a key aspect of Eurostat strategy for EU-SILC improvement
- Different types of release:
 - A cross-sectional UDB containing the 2 most recent waves of SILC
 - A longitudinal UDB containing all the trajectories ending with most recent wave of SILC
- Price policy for cross-sectional and longitudinal files sold separately:
 - 1st purchase: 500 €
 - subsequent wave: 250 €

2. Panorama of EU-SILC implementation

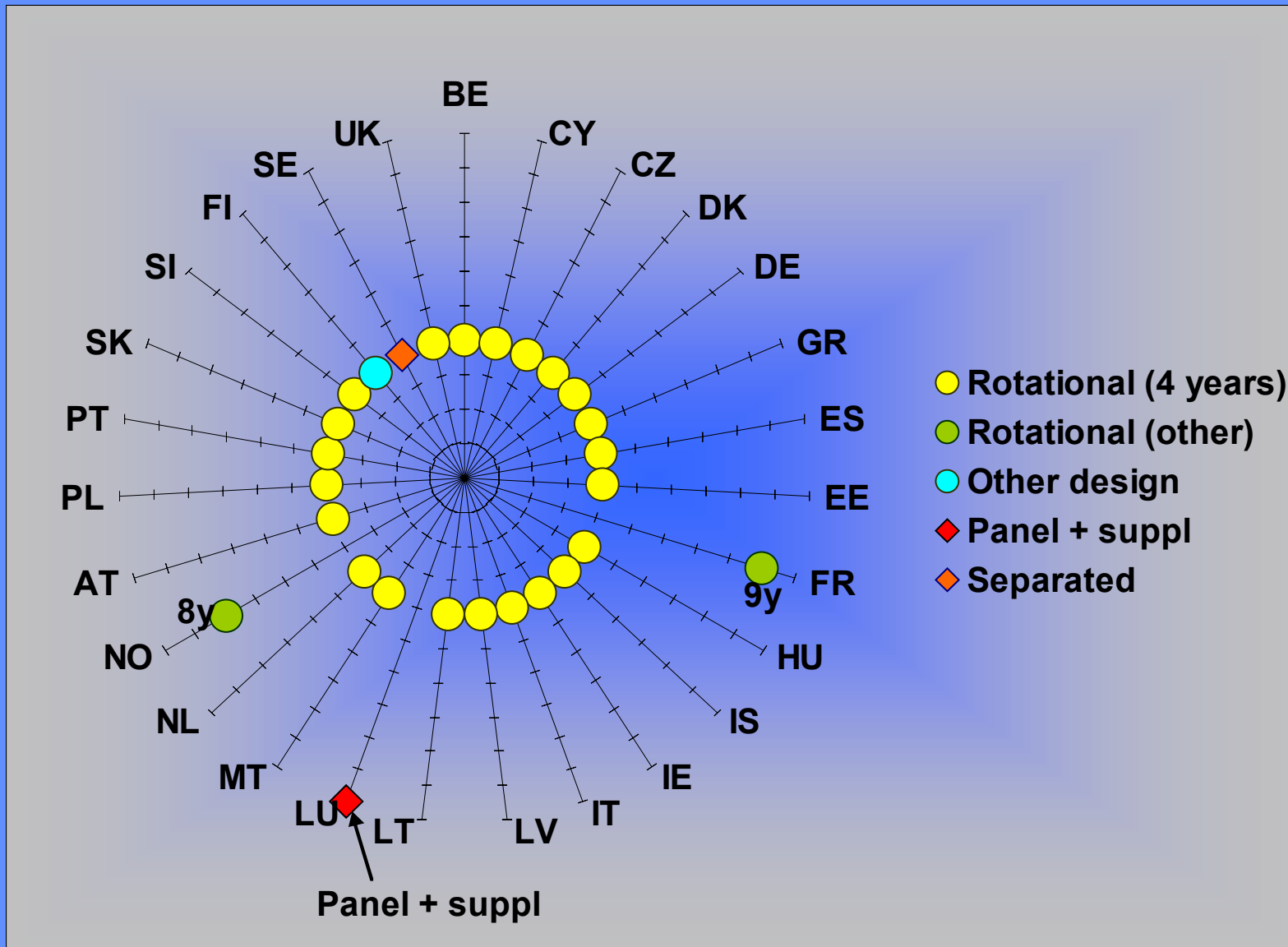
■ Objectives

- Sketch of the actual implementation and main achievements
- To point out conditions fostering quality of the instrument
- To spot weaknesses for future improvement

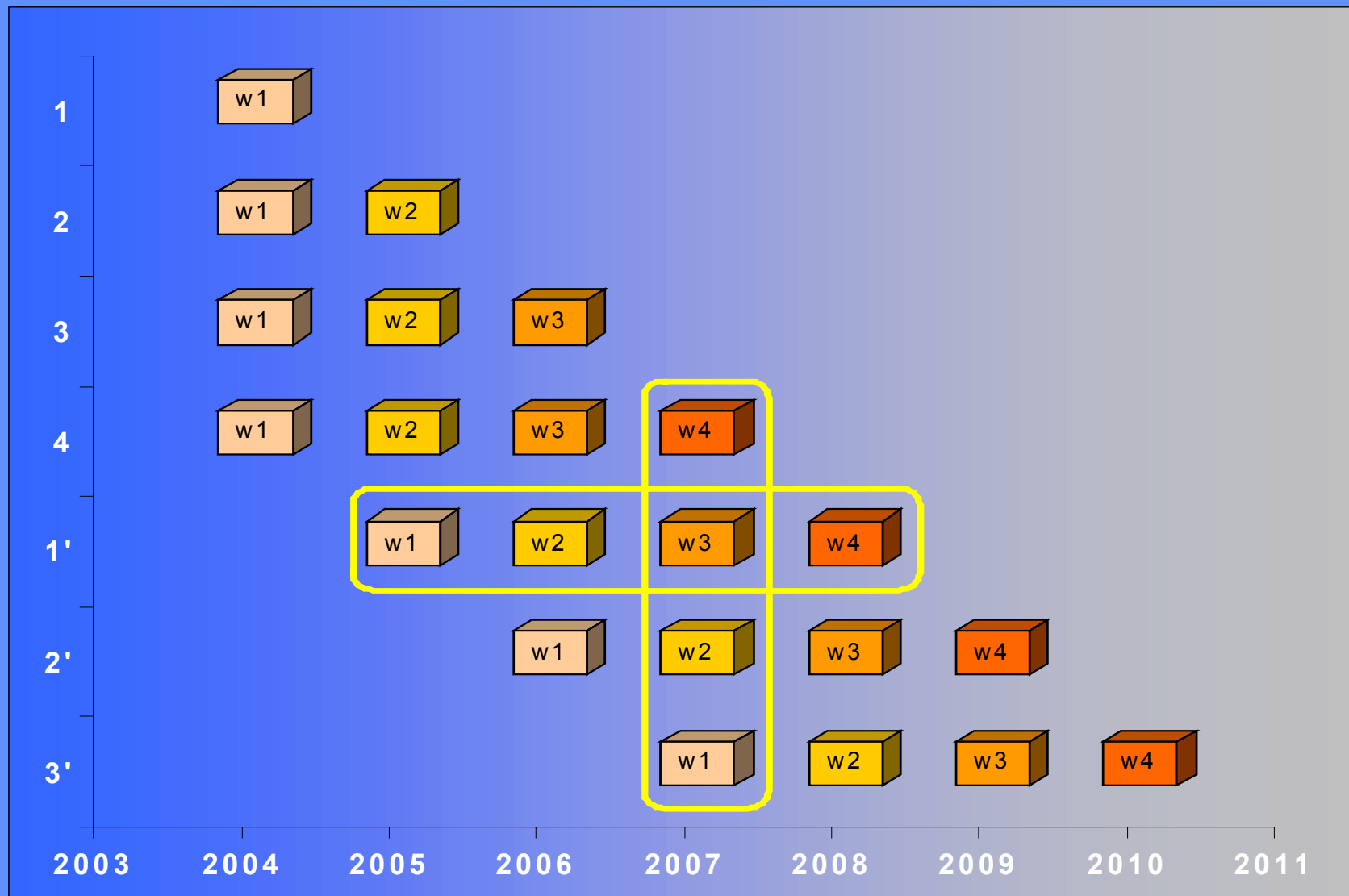
Launching of EU-SILC



Survey designs



Eurostat 4 years rotational design



Sample design

- Probabilistic sample
 - Various designs : SRS, 2-stages, 2 phases

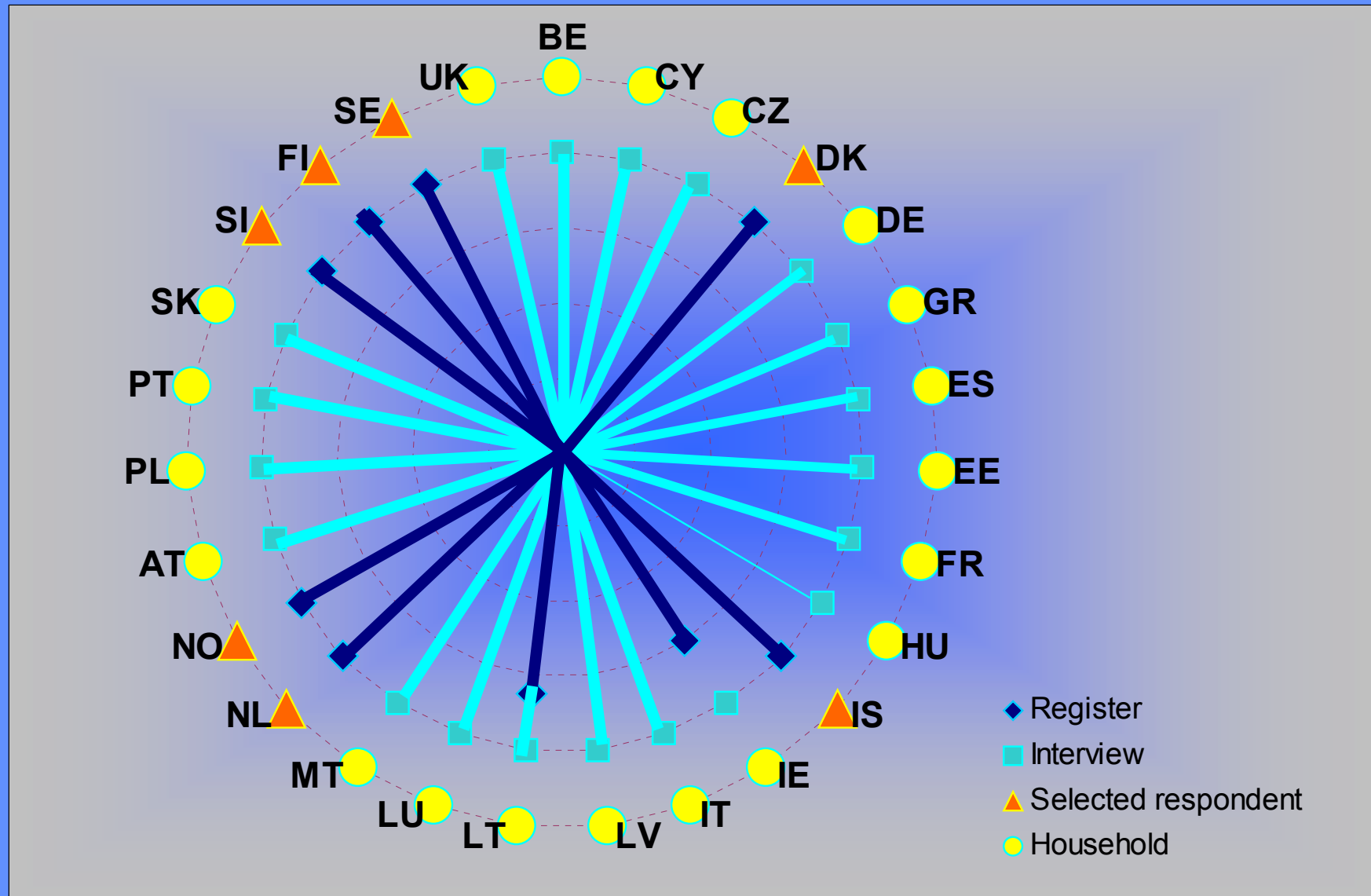
- Freshly updated sample frame
 - Population register:
BE, DK, EE, FI, IS, LT, LU, LV, NL, NO, PT, SE, SI, SK
 - Dwelling Register :
AT, CY, FR, HU, MT, PL
 - Second Sampling Units enumeration :
EL, IE, IT, ES

- ? Controlled inference towards target population

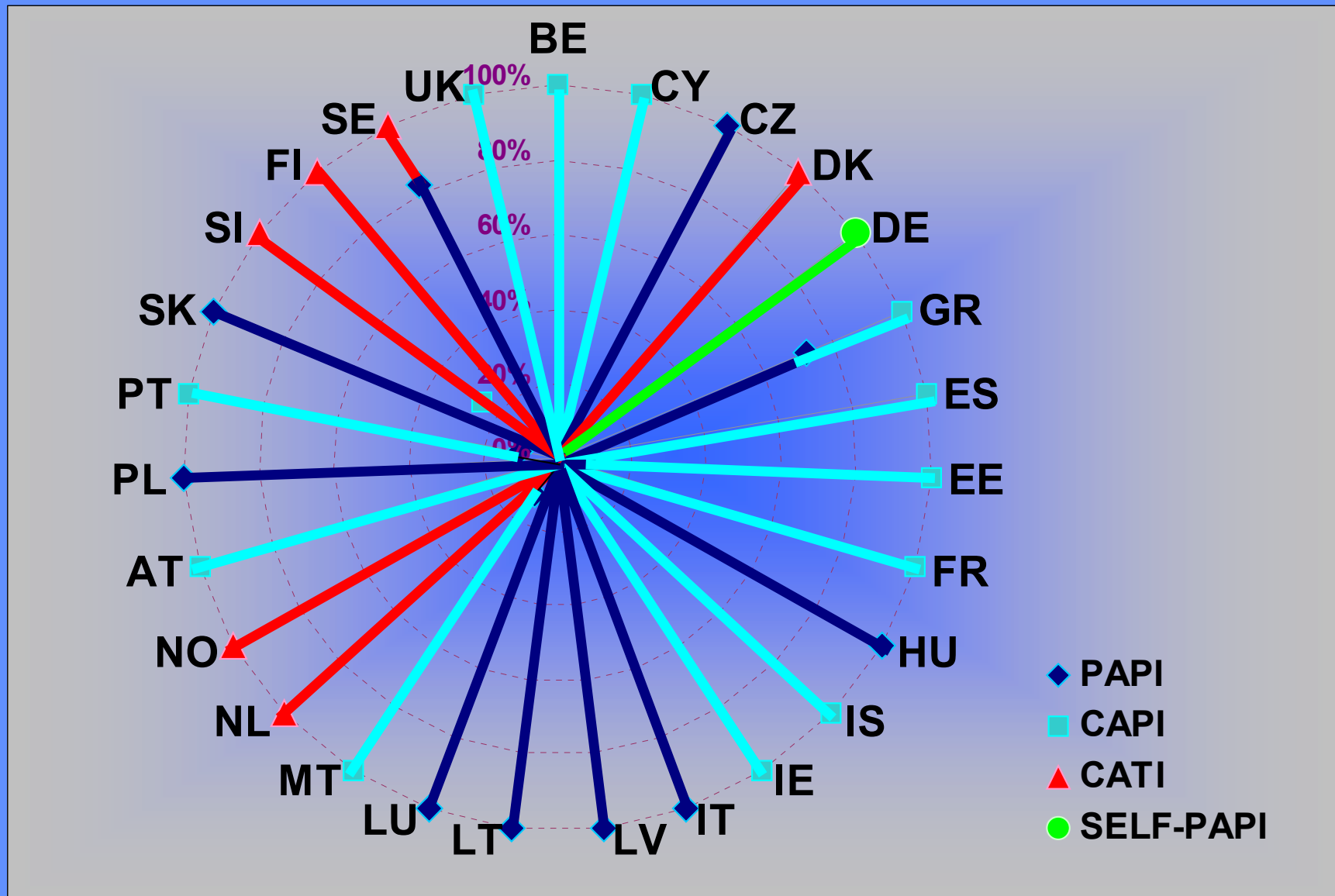
Sample sizes (2004 operation - households)

		<i>Actual minimum sample size</i>	<i>Design effect</i>	<i>Achieved sample size</i>
<i>Belgique/Belgie</i>	BE	4940	1.04	5275
<i>Danmark</i>	DK	3570	0.84	6866
<i>Ellada</i>	GR	5452	1.15	6252
<i>España</i>	ES	9295	1.43	15355
<i>Estonia</i>	EE	3850	1.10	3993
<i>France</i>	FR	8193	1.13	10273
<i>Ireland</i>	IE	4875	1.30	5477
<i>Italia</i>	IT	10223	1.41	24204
<i>Luxembourg</i>	LU			3572
<i>Norway</i>	NO	3750	1.00	6046
<i>Österreich</i>	AT	4500	1.00	4521
<i>Portugal</i>	PT	5490	1.22	4989
<i>Suomi</i>	FI	5614	1.40	11200
<i>Sverige</i>	SE	4320	0.96	5478
Total 2004		77642	1.05	113501

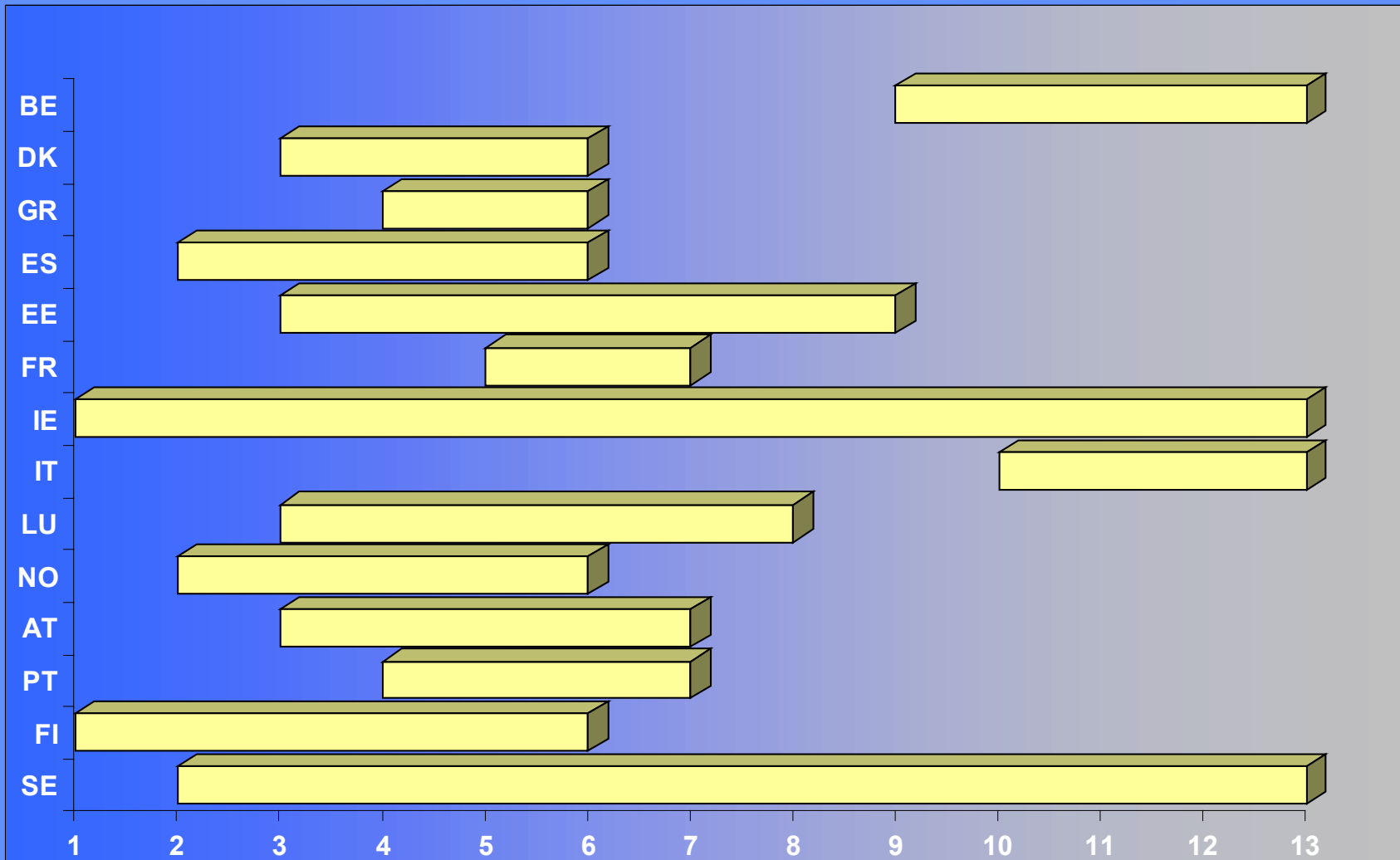
Data source – Data collection model



Data collection mode



Fieldwork



Comparability

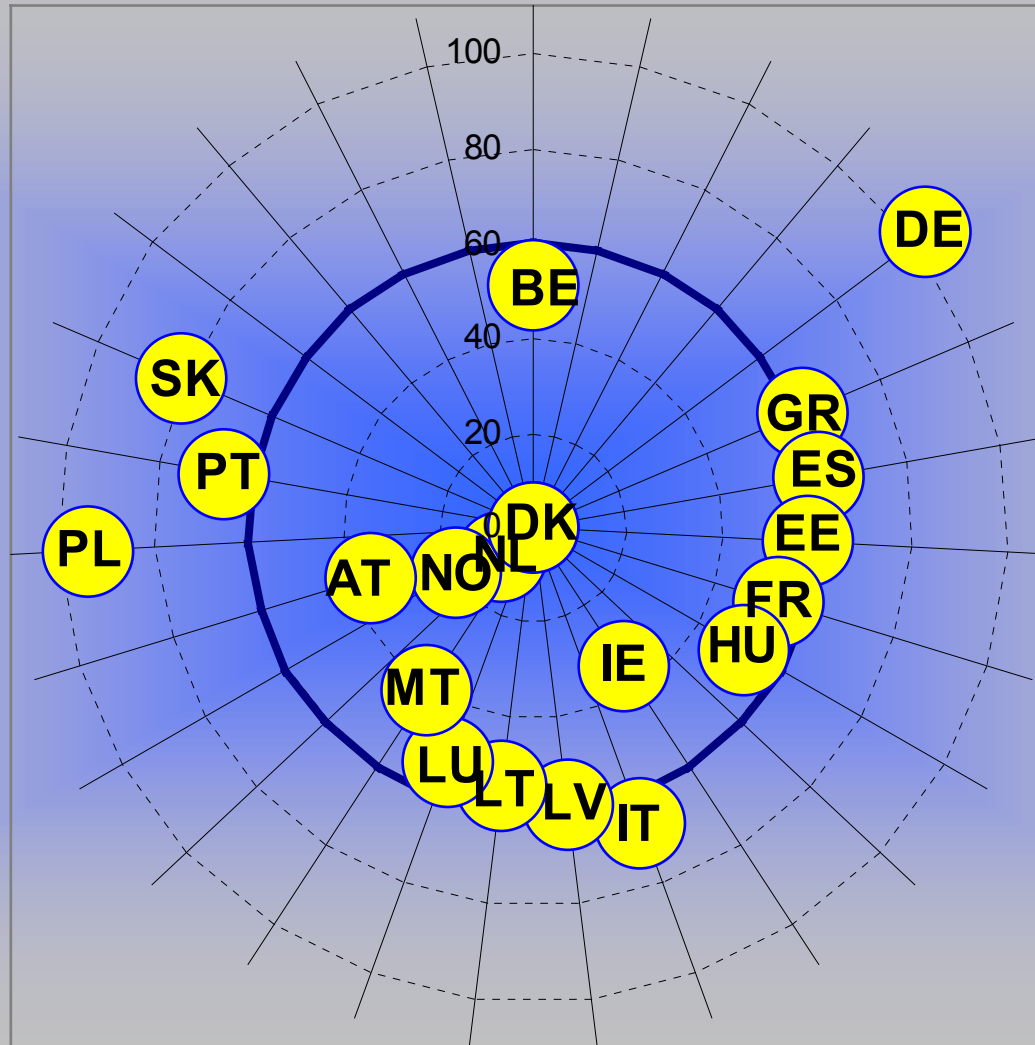
- No explicit derogation to Regulation standards
- Flexibility used for
 - Continuous survey / one shot survey
 - Register / interview
 - Gross/ Net collection
 - Self employment measure
 - Implementation of imputation of income components
 - Implementation of imputed rent

Data processing

- Anchored in NSI processes
 - Pool of professional interviewers and training process
 - Data entry process (CAPI, CATI)
 - Data checking and error tracing close to fieldwork

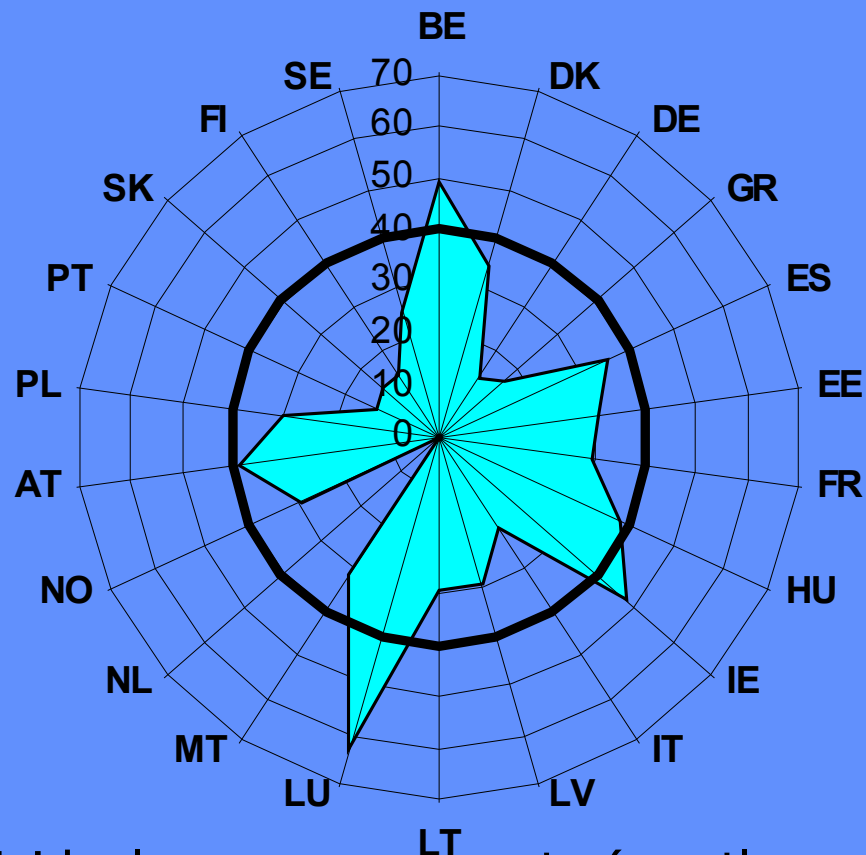
- Eurostat checking process of micro data
 - Syntax and logical checks
 - Weighting (-> variance calculation)
 - Outliers checking
 - Statistical validation (Laeken indicators and basic coherence)

Non sampling error: interview length



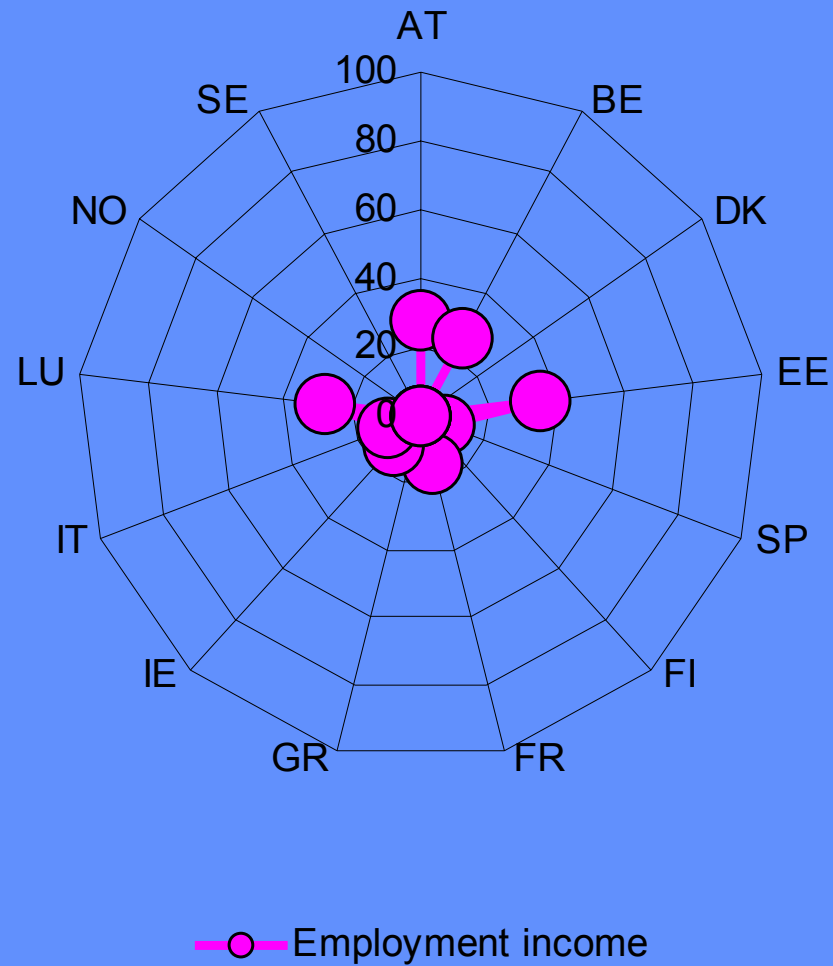
Non sampling errors: Non response rates

- Household non response rate (first year)

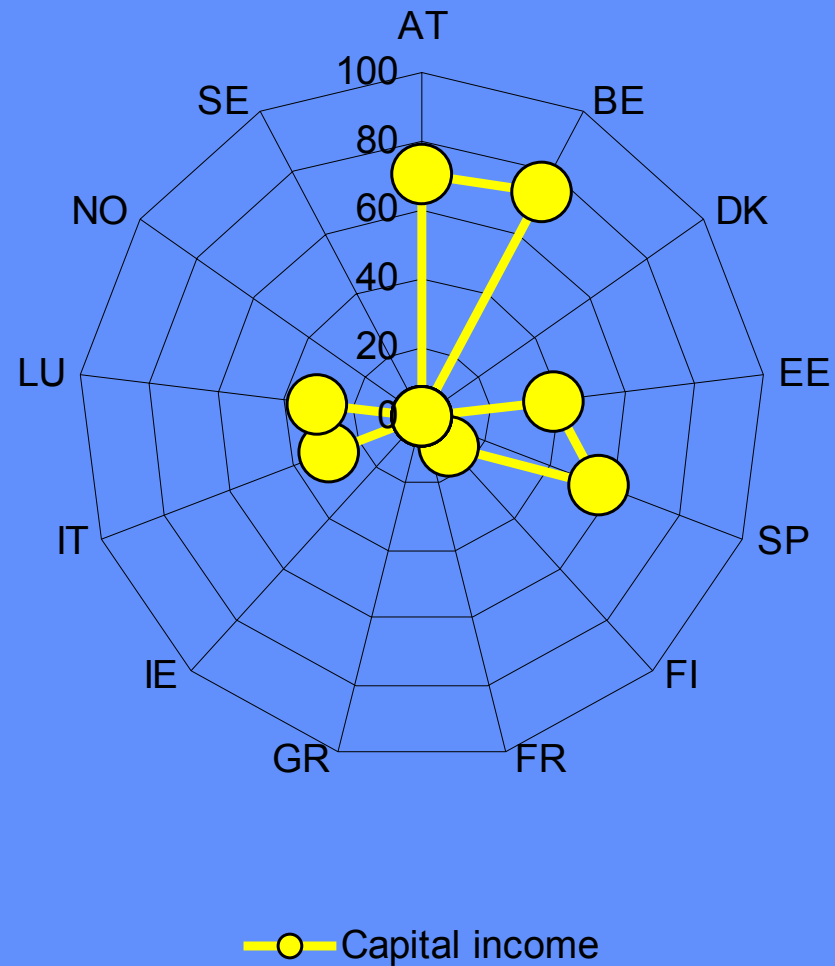


- Individual non response rate (mostly under 5%)
- Item non response rate (mostly under 5%)

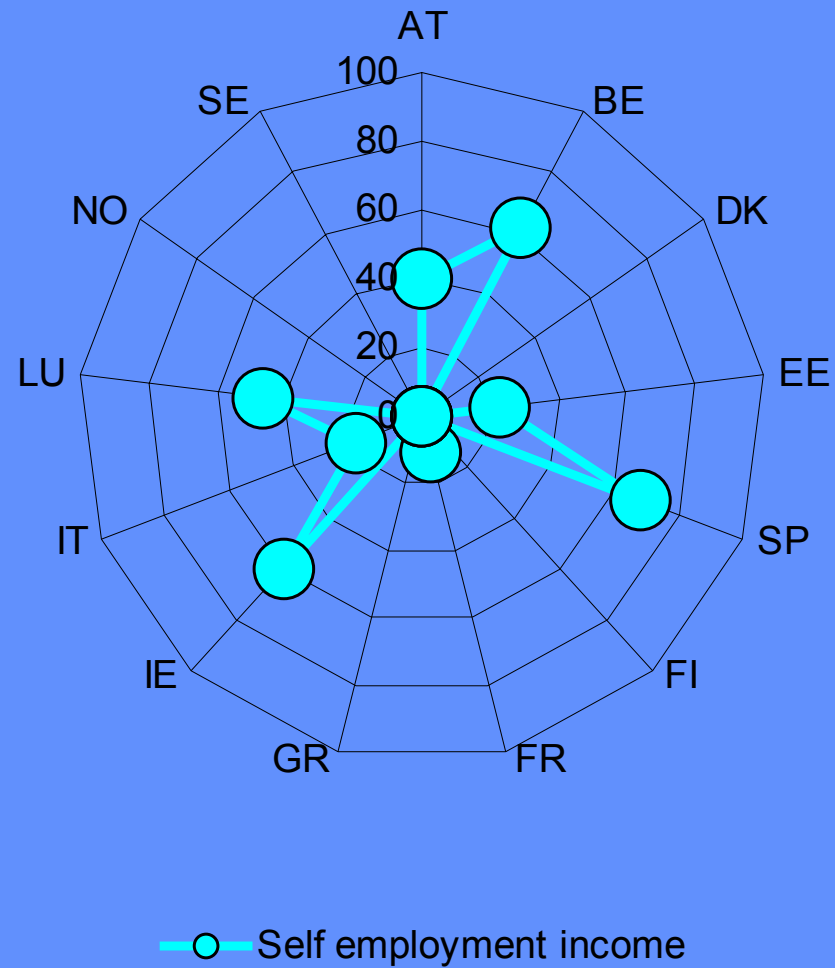
Imputation/modelling of income components



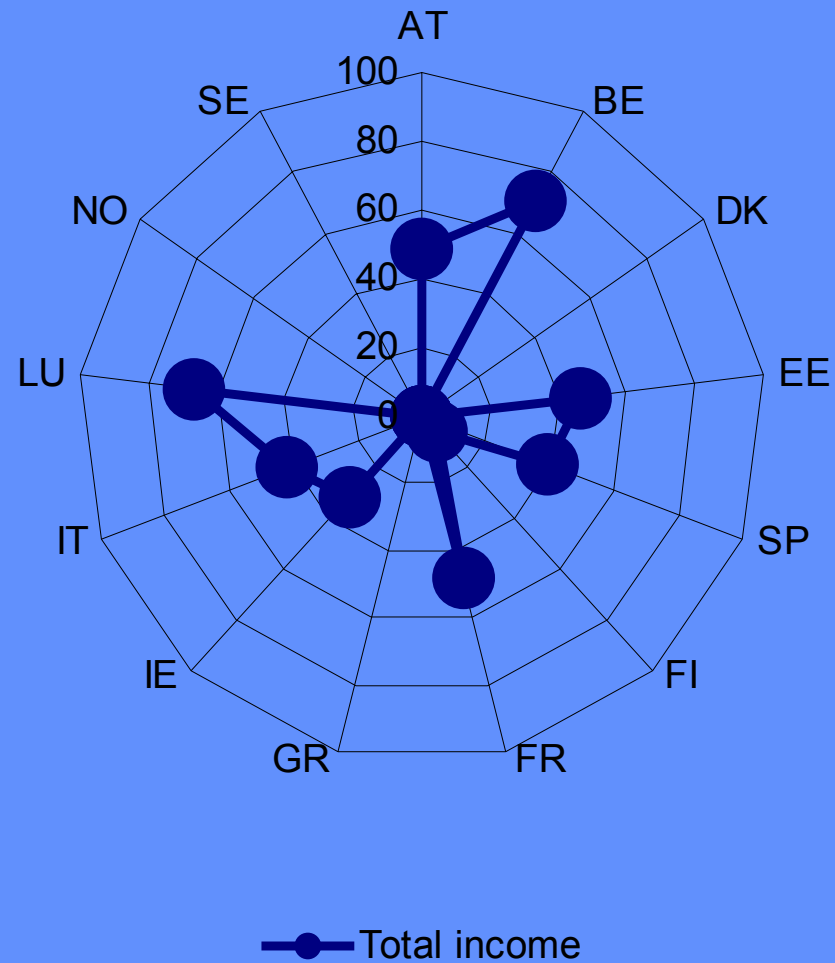
Imputation/modelling of income components



Imputation/modelling of income components



Imputation/modelling of income components



Sampling errors

Indicator	Average CV	median δ	min δ	max δ
At-risk-of-poverty rate after social transfers - total	2.9	0.8	0.1	1.3
At-risk-of-poverty rate after social transfers - men total	3.4	0.9	0.1	1.4
At-risk-of-poverty rate after social transfers - women total	3.2	1.1	0.1	1.6
At-risk-of-poverty rate after social transfers - unemployed	6.2	3.9	1.7	6.4
At-risk-of-poverty rate after social transfers - men, unemployed	7.4	5.4	2.5	8.9
At-risk-of-poverty rate after social transfers - women, unemployed	10.1	5.1	2.3	8.7
At-risk-of-poverty threshold - single	0.8	-	-	-
Inequality of income distribution S80/S20 income quintile share ratio	2.4	0.2	0.1	0.5
Relative median at-risk-of-poverty gap - total	4.7	1.7	1.3	2.8
Gini coefficient	1.6	0.9	0.4	2.0
Mean equivalised disposable income	0.9	-	-	-

$\delta = 1.96 \times \text{Standard Error}$
 $= \text{half length of the CI (0.95)}$

CV = Standard Error / Estimate

Coherence

- Demographic data: calibration techniques
- EU-LFS: common definition (set of core variables) and calibration
- NA/ESSPROSS : challenging
- HBS: methodological differences: expenditure/income

Timeliness

- Timeliness challenges have been met in 2004
 - National processes delivered data for year T according to EU regulation
 - 1st October T+1 for cross-sectional data in survey countries
 - 30th November T+1 for cross-sectional data in register or late fieldwork country
 - First set of Laeken indicators from SILC 2004 were released on 22/12/2005
 - 2004 anonymised micro data for research purpose were ready by April 2005
- Laeken indicators from SILC 2005 are planned for 22/12/2006

Timeliness

- Further timeliness challenges
 - Synchronisation with Commission reporting process
 - Process streamlined
 - Revision policy

Conclusions I

- SILC is to become the EU reference source for income distribution and social exclusion and the second pillar of household social survey statistics at EU level
- SILC is not yet stabilised, mainly for the longitudinal component
- Technical, methodological and implementing improvements still needed in future to improve comparability and better answer to users' demands