

(Revised version: 8<sup>th</sup> February 2013)

## INCOME DISTRIBUTION DATA REVIEW – LUXEMBOURG<sup>1</sup>

### 1. Available data sources used for reporting on income inequality and poverty

#### 1.1. OECD reporting:

OECD income distribution and poverty indicators for Luxembourg are computed by Statec (Statistical Office of Luxembourg) and are based on two surveys, for the following years available in the OECD database:

- The Panel Socio Economic "Liewen Zu Letzebuerg" (PSELL), for the years 1986, 1996, 2001 and 2004
- The EU-Statistics on Income and Living Conditions (EU-SILC), for the years 2008, 2009

EU-SILC having been developed on the basis of the Panel Socio Economic, there is no break between the series.

#### 1.2. National reporting and reporting in other international agencies:

- Eurostat's EU-SILC annual survey since 2003. Previously Eurostat used the European Community Household Panel (ECHP)
- LIS database, using PSELL (1985, 1991), ECHP (1994, 1997, 2000) and SILC (2004)
- The Statistical Office of the Grand-Duchée of Luxembourg (edited by STATEC) refers to the national EU-SILC series realized by PSELL. Annual surveys are available from 2003 to 2011. There is no difference between the national and European SILC series.

The below table presents the main characteristics of those four datasets:

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<sup>1</sup> This review benefited from valuable comments from Guillaume Osier from STATEC (Institut national de la statistique et des études économiques du Grand-Duché du Luxembourg).

**Table 22. Characteristics of datasets used for income reporting, Luxembourg**

	OECD reference series income distribution database	National survey	Eurostat	LIS database
Name	EU-SILC	EU-SILC	EU-SILC	PSELL (1985, 1991), ECHP (1994, 1997, 2000) Panel Socio Economic "Liewen Zu Letzebuerg" PSELL 3 / EU SILC 2005
Name of the responsible agency	Eurostat	STATEC (in collaboration with CEPS/INSTEAD)	Eurostat	Luxembourg Income Study (LIS)
Year (survey and income/wage)	1995, 2000-2009.	2003-2011 survey representing 2002-2010 income years	2000-2001 and 2003-2011 survey representing 1999-2000 and 2002-2010 income years.	1985, 1991 (PSELL), 1994, 1997, 2000 (ECHP), 2004 (SILC) income years.
Period over which income is assessed	Annual income in the previous year, also in case of transfers from public sources	Annual income for the all year N-1	Annual income for the all year N-1	Annual income for the all year
Covered population	Persons living in private households. The stratification is done by household size, status of activity (active, retired) and sector of activity (public, private, self-employed) into 18 strata.	Persons living in private households. The stratification is done by household size, status of activity (active, retired) and sector of activity (public, private, self-employed) into 18 strata.	Persons living in private households. The stratification is done by household size, status of activity (active, retired) and sector of activity (public, private, self-employed) into 18 strata.	Persons living in private households
Sample size	Actual sample size: 8983 households. Achieved sample size: 4876 households (2010 survey)	Actual sample size: 8983 households. Achieved sample size: 4876 households (2010 survey)	Actual sample size: 8983 households. Achieved sample size: 4876 households (2010 survey)	3622 households containing 9661 individuals (2005).
Sample procedure	Stratified simple random sampling	Stratified simple random sampling	Stratified simple random sampling	Stratified simple random sampling
Response rate	56%	56%	56%	57%
Imputation of missing values	No missing values, negative values treated as suggested in the terms of references.	Imputation of item non-response has been carried out. Four generic models based on the « Imputation and Variance Estimation » developed by the University of Michigan. Next to these models, specific procedures (simulation, regressions, deductions) have been used for certain income components.	Imputation of item non-response has been carried out. Four generic models based on the « Imputation and Variance Estimation » developed by the University of Michigan. Next to these models, specific procedures (simulation, regressions, deductions) have been used for certain income components.	Imputation of item non-response has been carried out. Four generic models based on the « Imputation and Variance Estimation » developed by the University of Michigan. Next to these models, specific procedures (simulation, regressions, deductions) have been used for certain income components.
Unit for data collection	Household and individual level information	Household and individual level information	Household and individual level information	Household and individual level information
Break in series	No	No	No	No
Web source:	<a href="http://stats.oecd.org/Ind ex.aspx?QueryId=26068">http://stats.oecd.org/Ind ex.aspx?QueryId=26068</a>	<a href="http://www.statistiques.p ublic.lu/fr/index.html">http://www.statistiques.p ublic.lu/fr/index.html</a> >Conditions sociales / Conditions de vie / Revenus et pauvreté	<a href="http://epp.eurostat.ec.europ a.eu/portal/page/portal/in come_social_inclusion_livi ng_conditions/quality/nati onal_quality_reports">http://epp.eurostat.ec.europ a.eu/portal/page/portal/in come_social_inclusion_livi ng_conditions/quality/nati onal_quality_reports</a>	<a href="http://www.lisdatacenter.org /our-data/lis-database/by- country/luxembourg-2/">http://www.lisdatacenter.org /our-data/lis-database/by- country/luxembourg-2/</a>

## 2. Comparison of main results derived from sources used for OECD indicators with alternative sources

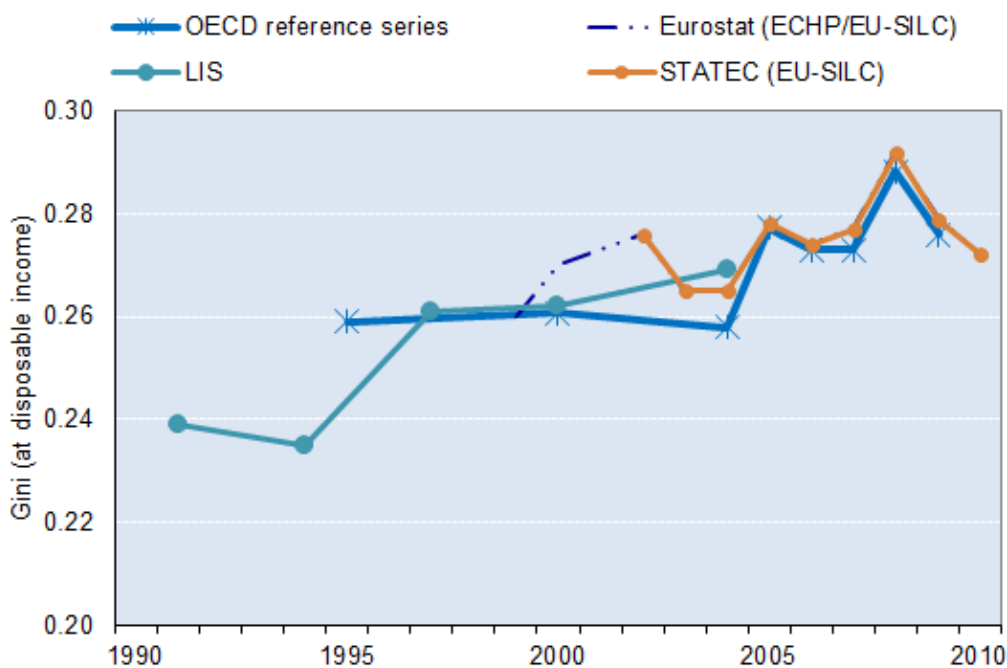
### 2.1 Income

#### 2.1.1 Time series of Gini coefficients and other inequality indicators

According to the OECD income distribution database, income inequality in Luxembourg is lower than the OECD average (0.288 in the late 2000s against 0.314 for the OECD average). However, while income inequality in Luxembourg remained largely steady at 0.259 up until 1995, it has since then seen an increase reaching 0.29 in 2008, followed by a decline in 2009.

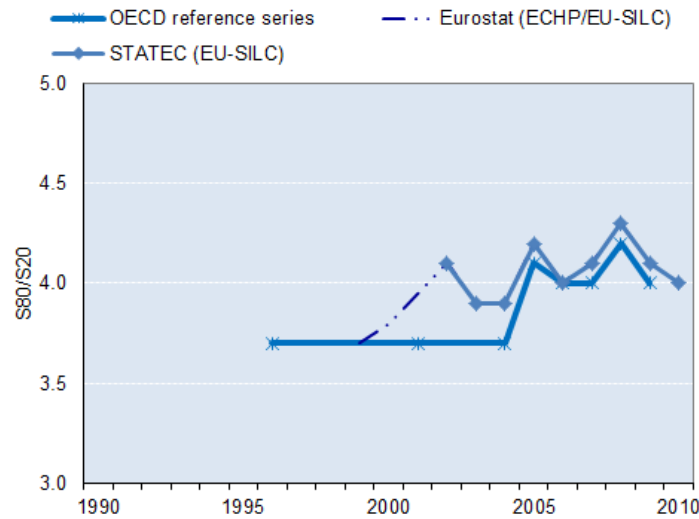
The other three series of Gini coefficients on disposable income in Luxembourg reveal similar levels and trends as the OECD series. The EU-SILC series and the STATEC series are identical (STATEC uses same methodology and data as EU-SILC).

**Figure 1.1 Trends in Gini coefficient (disposable income)**



Also, when comparing the income quintile share ratio (S80/S20) from the OECD reference series, the EU-SILC series, and the STATEC series, trends between EU-SILC and STATEC are identical and show fluctuations since 2003. The OECD reference series, while constant until 2004, shows an increase thereafter reaching similar levels in 2009 as the EU-SILC and STATEC series (4.0 for the OECD series and 4.1 for the EU-SILC/STATEC series).

**Figure 1.2 S80/S20**

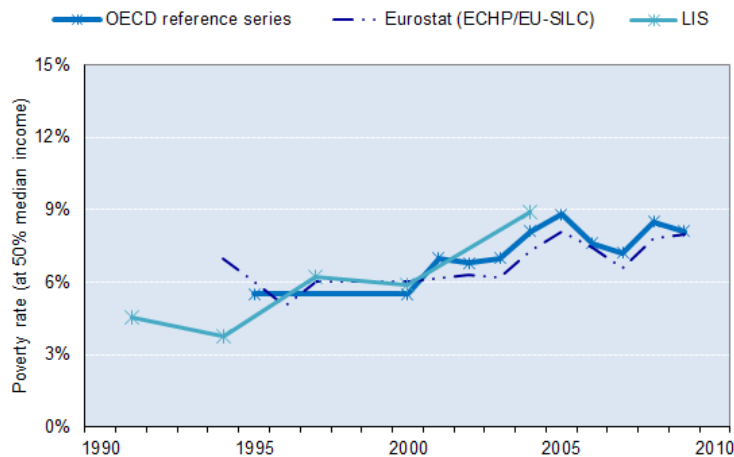


*2.1.2 Time series of poverty rates*

According to the OECD income distribution database, the share of the Luxembourg population living with less than 50% of the median equivalised income (20027 Euros per year) has increased from 5.5% in 1995 to 8.1% in 2009.

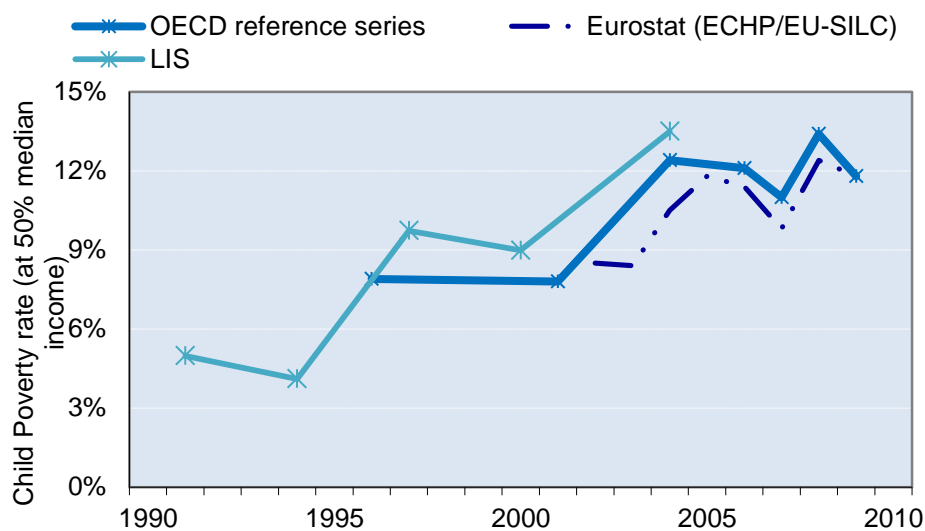
The EU-SILC series and LIS series show similar and consistent trends as they both show increasing levels of poverty rates since 2000, although the LIS series shows slightly higher levels than the OECD series, while the EU-SILC series shows slightly lower levels than the OECD series.

**Figure 2.1 Trends in poverty rates**



As for child poverty, the OECD reference series and EU-SILC series also show similar and consistent trends, although the EU-SILC shows slightly lower levels of child poverty rates. While the LIS series shows higher levels of child poverty rates, the increase it exhibits is similar to the other series, even if data is only available until 2004.

**Figure 2.2 Trends in Child poverty rates**



## 2.2 Wages

See Part II of the present Quality Review.

### 3. Consistency of income components shares with alternative data sources

#### 3.1. Comparison of main aggregates: earnings, self-employment income, capital income, transfers and direct taxes

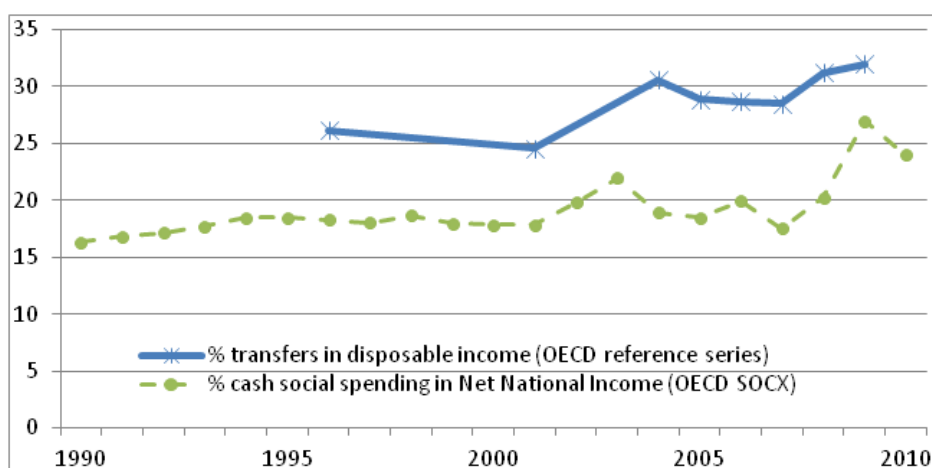
Table 23 shows shares of income components for the latest available year, according to the OECD benchmark series. Unfortunately, such information is not available for the other data sources described in table 1.

**Table 23. Shares of income components in total disposable income, OECD reference series**

Survey	Year	Unit	Wages	Capital	Self Employment	Transfers	Taxes	Disposable income
OECD reference survey	2008	natcur	34,574	1,569	2,950	12,490	-11,635	40,055
		% av HDI	86%	4%	7%	31%	-29%	

Figure 3 compares the trend in shares of public cash transfers in equivalised disposable income from the OECD reference series with the share of total cash social spending in net national income, reported from the OECD Social Expenditure database (OECD SOCX). OECD SOCX series include pensions, incapacity, family, unemployment, social assistance. Both series show similar trends throughout the period.

**Figure 3. Trends in shares of public social transfers**



### 4. Metadata of data sources which could explain differences and inconsistencies

#### *Definitions, methodology, data treatment*

Equivalence scale: The OECD reference series (as well as the LIS series) use the square root of household size, whereas the EU-SILC series and STATEC series use the OECD modified equivalence scale (1.0 to the first adult, 0.5 to the second and each subsequent person aged 14 and over, 0.3 to each child aged under 14).

### 5. Summary evaluation

The OECD benchmark series is consistent with different series available for Luxembourg overall. The light discrepancies may be explained by the different equivalence scales used (square foot of household size for the OECD series; OECD modified equivalence scale for EU-SILC series).