

INCOME DISTRIBUTION DATA REVIEW – POLAND

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

1.1. OECD reporting:

OECD income distribution and poverty indicators for Poland are based on the Eurostat Survey of Income and Living Conditions (EU – SILC) since income year 2004 and currently going up to 2009. Earlier data for 2000 are also included in the database and are based on the Household Budget Survey. The results from these two data series are considered not comparable and, hence, no trend comparison between 2000 and later years are published by OECD.

1.2. National reporting and reporting in other international agencies:

The Household Budget Survey (HBS) from the *CSO, Poland* provides information for the analysis of the living condition of the population. This survey has been the source for several studies on income inequality. A comparison of different results obtained from the HBS is proposed in Brzezinski and Kostro (2010). This paper proposes in particular a comparison of the evolution of the Gini coefficient for Poland according to various sources, which are actually various ways of using the HBS data as the main data set: some studies use individual data while others use grouped data or a mix of both; and different equivalence scales are used across the study. In summary:

- Keane and Prasad (2002) use individual data and apply food-share based equivalence scale
- Milanovic (1999) uses both grouped and individual data and applies simple per capita scale
- UNICEF (2009) uses grouped data and per capita scale.
- Daras et al. (2006) uses individual data and OECD equivalence scale.
- Szulc (2000; 2003) uses individual data and an empirically estimated scale

Furthermore, the Luxembourg Income Study (LIS) also uses HBS as the basis of their standardised income micro database (currently available for 1986, 1992, 1995, 1999 and 2004).

The key characteristics of the two main surveys used for reporting on household incomes in Poland, HBS and EU-SILC are shown in the table below:

Table 28. Characteristics of datasets, Poland

	Household Budget Survey (HBS)	Eurostat Survey of Income and Living Conditions (EU – SILC)
Name	Household Budget Survey (HBS) (<i>Badania Budżetów Gospodarstw Domowych</i>)	EU-SILC
Name of the responsible agency	Household budget survey is conducted by statistical offices. However, the responsibility for the survey content and coordination lies with the Central Statistical Office, Social Surveys and Living Conditions Statistics Department in cooperation with Statistic Office in Łódź which specializes in living condition statistic.	Eurostat
Year (survey and income/wage)	Since 1986 (at least)	Survey years: 2005-2011, referring to incomes in 2004-2010.
Period over which income is assessed	All through the year. Every month of the year, a different group of households participates in the survey.	May-June
Covered population	HBS covers 5 socio-economic groups of the population: employees' households, farmers' households, households of the self-employed, households of retirees and pensioners, households living on unearned sources. The households of foreign citizens with permanent or long-lasting residence in Poland and using Polish language participate in the survey. Households living in collective homes, like students' hostels, social welfare homes as well as households of the diplomatic corps of foreign countries are not covered.	The reference population of EU-SILC is all private households and their current members residing in the territory at the time of data collection. Persons living in collective households and in institutions are generally excluded from the target population.
Sample size	In 2011 there were 3132 dwellings surveyed every month and thus it was planned to achieve the results for the whole year from households inhabiting 37 584 dwellings. Actually number of surveyed households was 37 375	16250
Sample procedure	Two-stage stratified sampling scheme. The sampling units for the first stage is the area survey points (as designed for the National Census) and those for the second stage are dwellings.	Stratified multi-stage sampling. The primary sample units are the enumeration census areas. The secondary sample units are dwellings. All the households from the selected dwellings are supposed to enter the survey. Households are clusters of individuals and all members aged 16 and over at the end of the income reference period of a selected household are eligible for inclusion in the sample. The source of the sampling frame is the Domestic Territorial Division Register (TERYT system). 4-year rotational integrated design.
Response rate	About 55% in 2011	Household response rate: 63.5% Individual response rate: 62.28 %
Imputation of missing values	Selected households not participating in the survey are replaced by randomly selected other households.	
Unit for data collection	Households	Households and households' members.

	Household Budget Survey (HBS)	Eurostat Survey of Income and Living Conditions (EU – SILC)
Break in series	<p>- 1993: HBS became fully representative for all main socio-economic types of households and a new method of rotating households was applied: monthly rotation replaced previously used quarterly rotation.</p> <p>- 1997 (experimentally) and 1998 (definitively): New definitions of some core concepts (i.e. disposable income) were implemented in order to adjust HBS to Eurostat recommendations.</p> <p>[Source: Brzezinski, M. and K. Kostro, <i>Income and consumption inequality in Poland, 1998-2008</i>, University of Warsaw, Faculty of Economic Sciences, Bank i Kredyt 41 (4), 2010, 45-72]</p>	
Web source:	http://www.stat.gov.pl/cps/rde/xbcr/gus/LC_household_budget_survey_in_2011.pdf	http://epp.eurostat.ec.europa.eu/portal/page/portal/income_social_inclusion_living_conditions/quality/national_quality_reports

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

Figure 1.1 compares series of Gini coefficients based on EU-SILC with a selection of series based on the HBS. The two series based on EU-SILC (OECD and Eurostat) are quasi identical despite the use of slightly different equivalence scales (square root scale for OECD series, and modified OECD-scale for Eurostat series).

As mentioned in the first section, the literature proposes several alternative Gini coefficient series based on the HBS. For various reasons, however, none of them can be considered as fully comparable for comparison with EU-SILC figures, because of different data source patterns (e.g. the period over which income is assessed) but also because of differences in methodology (e.g. adjustment via different equivalence scales).

Because of their rather long-period availability, UNICEF data (based on HBS) have been included in the chart below, but the comparison should be conducted with caution. Furthermore, data prior to 1997 are not comparable with more recent data because of changes in HBS concepts. UNICEF data rely on per-capita incomes.

Gini coefficients from Daras et al. And from Brzenski and Kostro (both drawn from HBS) are based on the OECD equivalence scale, which is closer to the square root scale used by OECD than the simple *per capita* scale. Further, Gini coefficients from LIS are based on the square root scale. These coefficients would, thus, have been better candidates for a comparison exercise. However, if we exclude data prior to the HBS methodological break, they are available in the paper only for a few data points and, with the exception of Brzenski and Kostro only up to 2004 and do not allow to capture accurately the movements in the income distribution.

All these four HBS-based series suggest a significant increase in income inequality between the late 1990s and 2004. Nevertheless, the level of the Gini coefficient from UNICEF is significantly higher than those from the other three series.

From 2003, also HBS-based series published by the Polish CSO are available. This series uses the same equivalent scale as Eurostat (modified OECD-scale). In 2004, which is the only year for which almost all the series are available, EU-SILC data are roughly in the middle of the gap between the HBS-based series from UNICEF and those from LIS and Daras et al, and are very close to the level suggested by official CSO figures.

After 2004, EU-SILC based data show a steep decline in Gini, lasting until 2008 at least. This is somewhat in contrast to all HBS-based series which show a much more modest fall or stability during this period. The official CSO series and that published by Brzezinski and Kostro show a slight decrease which remains below 0.01 point and is basically concentrated in 2006. Only the UNICEF series suggest a larger decrease (about 0.02 points), again predominantly taking place in 2006. Given that EU-SILC series suggest the main bulk of the decrease in 2005 but similar trends for after that year, the picture below suggests that there may be an issue with the EU-SILC data in the first year of implementation, 2004, resulting in some overestimation of the level of inequality.

Two other inequality indicators are charted below, the S80/S20 and P90/P10 ratios, respectively in Figures 1.2 and 1.3. They both confirm the picture drawn above.

Figure 1.1 Gini coefficients, Poland

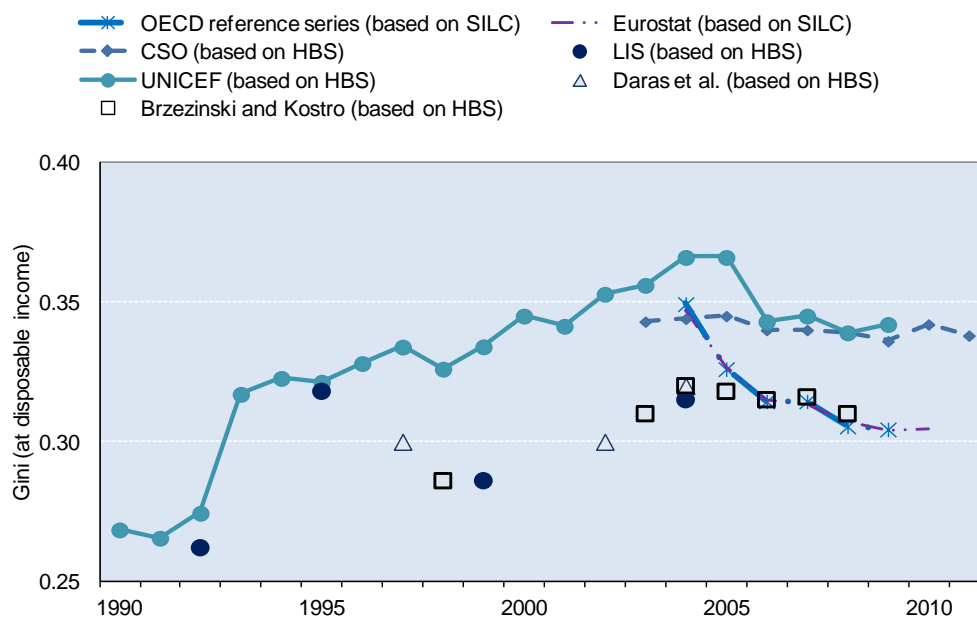
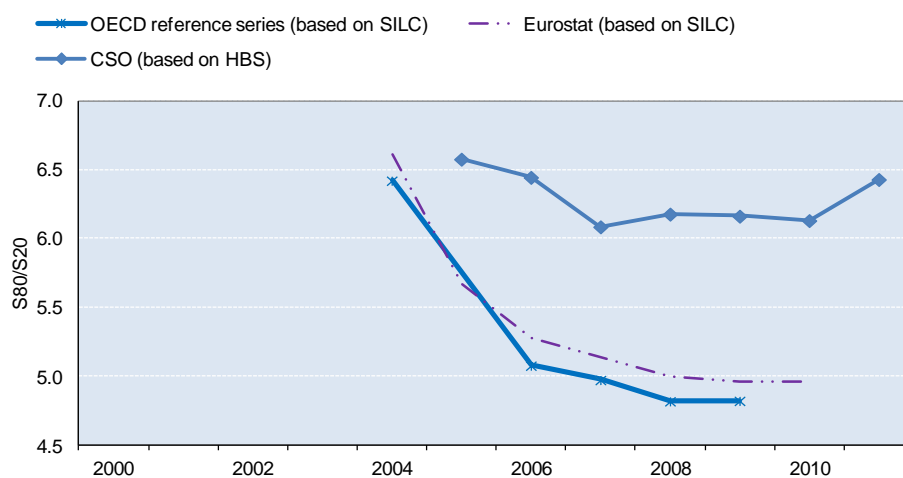
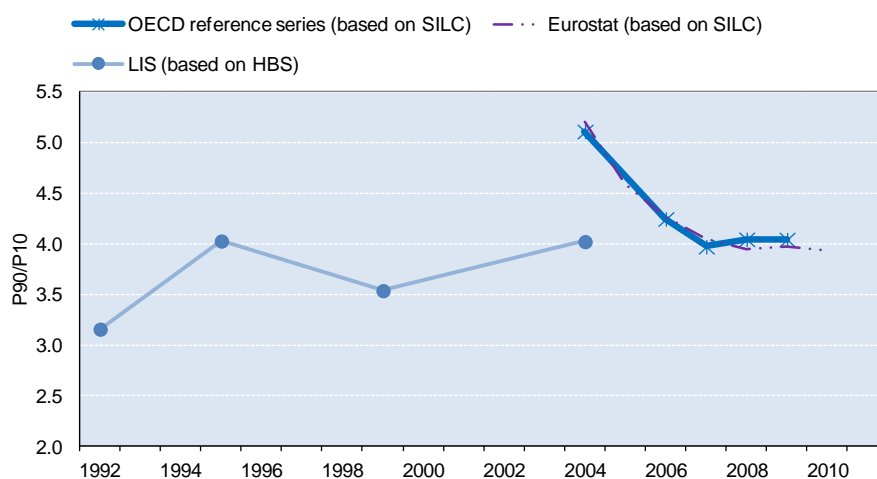


Figure 1.2 S80/S20, Poland**Figure 1.3 P90/P10, Poland**

2.1.2 Time series of poverty rates

Poverty rates measured by the CSO are based on several poverty lines, including:

- The relative poverty line which is equal to 50% of mean equivalised expenditure.
- The legal poverty line
- The extreme poverty line

From these three, the closest concept to what is commonly available from the OECD income distribution database and the EU-SILC is the relative poverty line. Only this series was kept for comparison with other sources although, for the CSO series, the threshold is proportionate to equivalised expenditure rather than equivalised disposable income (after social transfers).

Because of the difference in concept, the poverty rate compiled by the CSO cannot be compared to the EU-SILC indicator in terms of absolute level. Comparison in terms of annual changes is more relevant. Both poverty rates show a significant decrease between 2004 and 2007, more pronounced in EU-SILC data (-4.3%) than in HBS data (-3 %). For the 50%-median threshold, this decrease is followed by a period of relative stability and, in the case of the OECD series, a slight increase in 2008. For the 60%-median threshold, EU-SILC based series suggest a slight increase in 2008 and 2009.

Figure 2.1 Poverty rate (50%) Poland

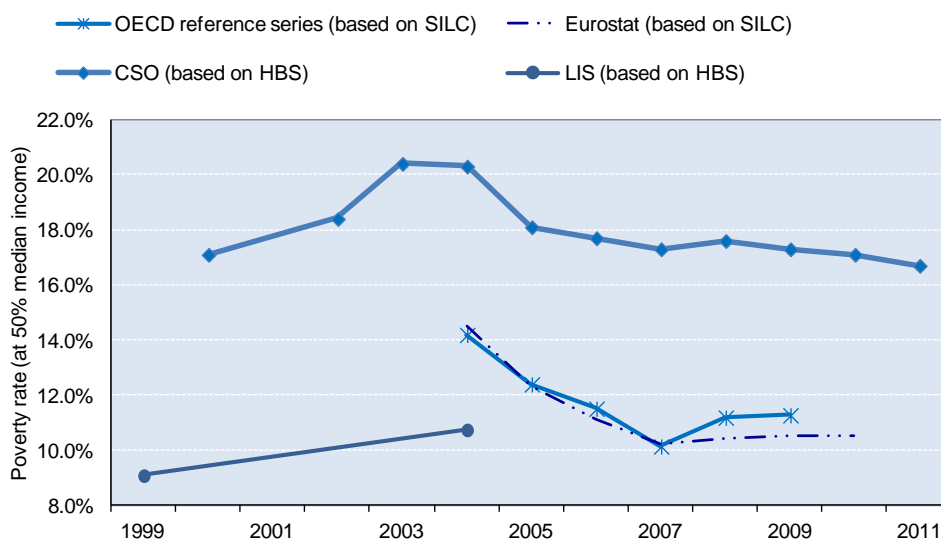
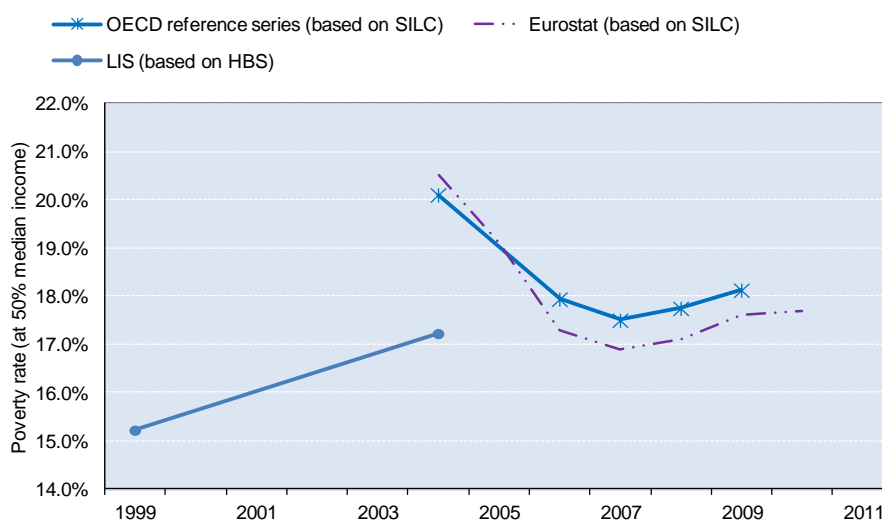


Figure 2.2 Poverty rate (60%) Poland



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

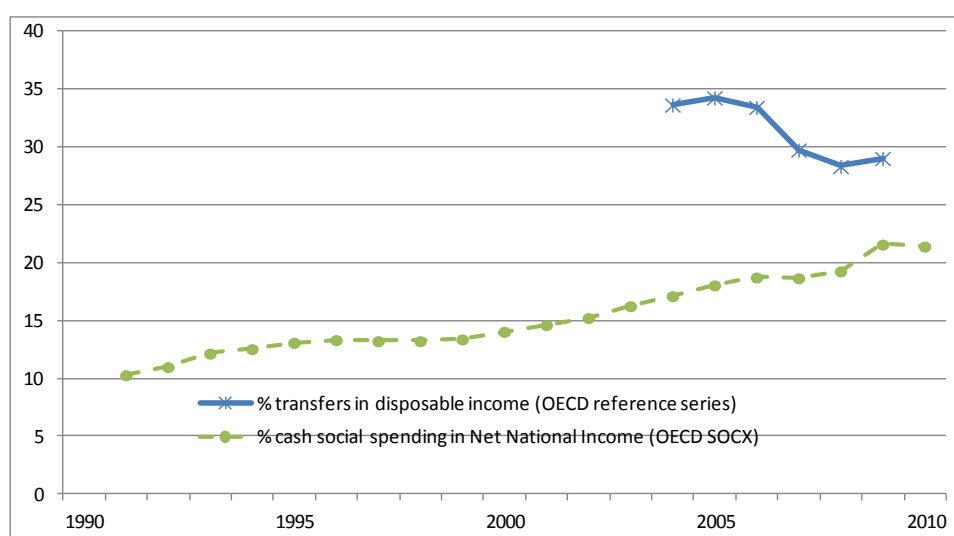
Table 2 shows shares of income components for the latest available year, according to the OECD benchmark series. Unfortunately, such information could not be found for the HBS data source described in table 1.

Table 2. Shares of income components in total disposable income, OECD reference series

Year	Unit	Wages	Capital	Self Employment	Transfers	Taxes	Disposable income (HDI)
2008	natcur	20,815	393	3,308	6,835	-7,176	24,114
	% av HDI	86%	2%	14%	28%	-30%	

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. There are significant trend differences between both series during the period 2005 through 2008: during those years macro estimates of transfer shares (SOCX) increased while micro estimates (EU-SILC) decreased considerably.

Figure 3 Trends in shares of public social transfers



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

Survey characteristics differ between HBS and EU-SILC. While response rates are rather similar (though slightly higher for EU-SILC), HBS has a larger sample size and, in particular, assesses household incomes on a monthly basis. In HBS, data are collected all through the year for different groups of households every month for a total of 37375 households surveyed in 2011, while 16250 households are surveyed in EU-SILC, with incomes assessed over a 2-month period (May-June) but for the total period of the preceding year.

Comparing the indicators compiled by various sources on the basis of these two surveys, differences between EU-SILC and various HBS-based sources can also be explained by significant differences in data treatment, especially in the equivalence scales, or the treatment of extreme income values (including negative incomes).

5. Summary evaluation

HBS and EU-SILC (since 2004) are the two main data sources for monitoring household incomes in Poland. Different series calculated from data from HBS show the same increasing trend of inequality for the period between the late 1990s and 2004. For the period between 2004 and 2008, EU-SILC data suggest a significant decline and different HBS data suggest a much more modest decline in inequality, including the official CSO series. For the latest years 2009 and 2010, all data sources indicate stability in the development of inequality. Given that EU-SILC series suggest a main inequality decline particularly from 2004 to 2005 but roughly similar trends for after that year, there may be an issue with the EU-SILC data in the first year of implementation, resulting in some overestimation of the level of inequality. Furthermore, the official CSO series suggests a significantly higher *level* of inequality (3-4 points higher Ginis, 1-1.5 point higher S80/S20 ratios – these are significant discrepancies)

HBS presents the advantage of being available over a relatively longer span of years but with methodological or conceptual breaks in 1993 and 1997, while the number of available year from EU-SILC (from 2004) is still limited. On the other hand, the response rate is higher for EU-SILC (more than 60%) than for HBS (about 55%) and it possesses a set of variables which is needed for detailed income analysis (e.g. standardised components of income).

Bibliography:

- Brzezinski, M. and Kostro (2010), “Income and consumption inequality in Poland, 1998-2008”, *Bank i Kredyt* 41 (4), 2010, 45-72.
http://www.bankikredyt.nbp.pl/content/2010/04/bik_04_2010_03_art.pdf
- Keane M.P., Prasad E.S. (2002), Inequality, Transfers and Growth: New Evidence from the Economic Transition in Poland, *Review of Economics and Statistics*, 84 (2), 324–341.
- Milanović B. (1999), Explaining the Increase in Inequality during Transition, *Economics of Transition*, 7 (2), 299–341.
- UNICEF (2009), TransMONEE 2009 Database, UNICEF Regional Office for CEE/CIS, Geneva.
- Daras T., Zienkowski L., Żółkiewski Z. (2006), Zróżnicowanie dochodów i sfera ubóstwa w Polsce w latach 1993–2004, *Bank i Kredyt*, 37 (11–12), 27–45.
- Szulc A. (2000), Economic Transition, Poverty, and Inequality: Poland in the 1990s, *Statistics in Transition*, 4 (6), 997–1017.
- Szulc A. (2003), Inequality During the Economic Transition in Poland: 1993–1999 Evidence, unpublished manuscript