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The dynamics of income inequality in Poland in a comparative perspective – major conclusions from research and statistical data

Introduction

Discussions concerning income inequalities frequently surface in the public debate in Poland. However, such discussions are guided by a silent assumption that: 1) the current inequality level largely results from significant inequality growth caused by the systemic transition, 2) as a rule income inequalities are something wrong (undesirable). Those two assumptions should be further analysed. However, if the first assumption is a positive economy theorem and a falsifiable one, then the second assumption belongs rather to theorems of normative economy and relates also to choices of axiological nature; therefore it cannot be unambiguously evaluated as true or false. This paper aims to verify the thesis contained in the former

of the presented assumptions. Additionally, the paper presents the results of research concerning the impact of redistribution system (taxes and social transfers) on the inequality level and the ensuing conclusions for Poland

1. Methodological comments for the assessment of the inequality level in the distribution of incomes and its changes across time.

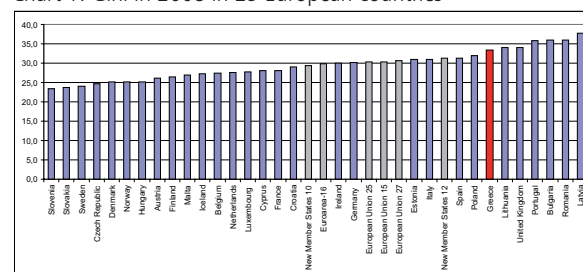
The research and literature in the field apply different coefficients of income disparities. The one most frequently quoted and applied is the Gini coefficient (Gini) and the ratio of the incomes of households belonging to 80th centile to the incomes of house-

holds belonging to 20th income centile (P80/P20). To assess whether the inequality level indicated by the given measure is low, medium or high, we need to relate this level to: 1) a certain predetermined scale on which we will assign one of those three levels to a specified value range, and/or 2) compare the coefficient value for Poland against values obtained for other countries (relative assessment) and/or historical coefficient values. In the former case, determination of value ranges and assignation of significance to them is not an obvious (automatic) process – and must not be treated as an „objective” one. As T. Sozański, states: *For the parameter assuming values from the range [0; 1], practitioners usually expect the theoreticians to divide the range of its values into intervals described by such expressions as „low”, „medium” or „high values”. However, the decision in that matter is up to statistics users, rather than theoreticians* (Sozański 2005). In the case of the Gini coefficient it is known that the more its value approaches 0, the greater income distribution equality there is; the more it approaches 1, the more unequal this distribution becomes. By dividing the range [0;1] technically into three parts, we can assign to them the meanings of „low”, „medium” and „high” level, similarly as it is for classic coefficient of variability (see e.g. Maksimowicz-Ajchel 2008). Such approach, however, fails to take into account the real scale of fluctuations, i.e. the range of values assumed by Gini coefficient for incomes in various countries of the world. If Gini values in reality do not exceed the range of 0.2-0.6, then we should acknowledge that income inequalities are not high in any country. Therefore, when determining the inequality level in Poland it would be advisable to relate to levels of this coefficient in other countries. The same approach should be applied to evaluation of the changes taking place in the income inequality level across time. To assess whether inequality level rise/reduction in Poland in recent 20 years has been large or small, we should relate the directions and volume of those changes to the volume and directions of the changes that have taken place in this respect in other countries.

2. Does the present inequality level in Poland result from particularly high inequality growth in the transition period¹ compared to other countries of the region?

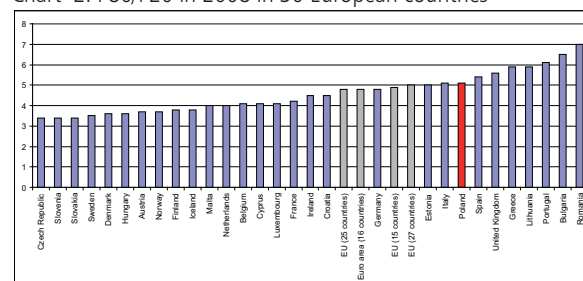
Compared to 39 European countries, Poland presently has slightly above average income inequality level (Gini – chart 1; P80/P20 – chart 2). OECD statistics also suggest that compared to highly developed countries of the world, Poland had above average income inequality level in 2008².

Chart 1. Gini in 2008 in 29 European countries



Source: own elaboration with Eurostat data

Chart 2. P80/P20 in 2008 in 30 European countries

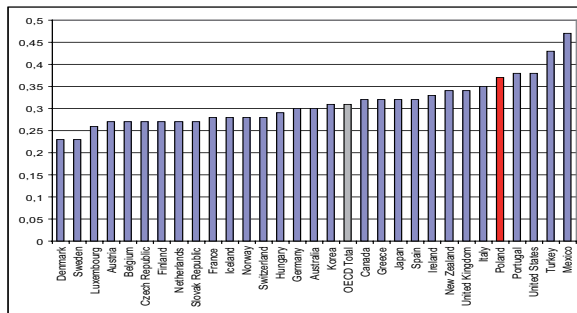


Source: own elaboration with Eurostat data

¹ Let us point out that an answer to the question whether particular inequality growth took place “in the transition period” (correlation) is not equivalent with an answer to the question whether it “results” from transition (causal chain). However, comparisons of the inequality levels in the countries that underwent systemic transition in the same period and in the countries that did not go through such transition, as well as comparisons of the inequality levels before commencement of transition processes (which is of limited scope, however, owing to lack of proper data) and after their commencement, constitute a good basis for lending credence or not to the thesis about causal relationship between the analysed variables.

² When evaluating inequality levels between countries of our region, it must be borne in mind that relatively low inequality level in the Czech Republic and Slovakia largely results from the fact that in contrast to Poland or Hungary the share of occupationally active persons amounts, respectively, to 45.42% and 46.5% (whereas it amounts to 38.03% in Poland and to 38.46% in Hungary).

Chart 3. Gini in the middle of the present decade in 26 OECD countries



Source: own elaboration with OECD data

However, there are differences between results of dynamic research regarding whether inequality growth in Poland in the last two decades has been relatively low/lowest compared to other countries of the region. What is important, those differences are particularly relevant if we analyse the changes that have taken place in the inequality level separately from the perspective of (adjusted) household incomes and of individual employee incomes.

As regards changes in the inequality of household incomes distribution in the countries of our region, Zaidi (Zaidi 2009) suggests that already in 1987-1990 the level of Gini for household incomes in Poland was higher than in the Czech Republic, Slovenia, Estonia, Lithuania, Latvia and Hungary and percentage coefficient growth that took place until 2006 was the lowest for Poland (see: table 1). Vacernik research (Luxembourg Income Study - LIS) suggests that in the period 1991-2005 Hungary experienced inequality reduction (Gini: from 0.32 to 0.29), while the remaining countries, including Poland, experienced a rise, with our country having the lowest percentage growth. Comparing the data from ILO analyses (World of Work Report 2008) for the countries of the former communist block (see: chart 4), the inequality growth that took place in Poland in the years 1990-2000 seems moderate compared to other countries of the region. Owing to higher estimates of the amount of Gini coefficient for Poland, slightly different conclusions follow from the analysis of the data coming from TransMONEE (UNICEF; chart 5). They suggest that the percentage inequality growth in Poland was not lower than for other countries. However, those calculations have been challenged (as ones overes-

timated for Poland and Hungary) by P. Mitra and R. Yemstova (2005). **Therefore the quoted research suggests that the percentage rise in household income inequalities in Poland that took place in the transition period was certainly not greater than growths experienced by other countries in the region, which also underwent systemic transition. Some research even shows that it was the lowest.**

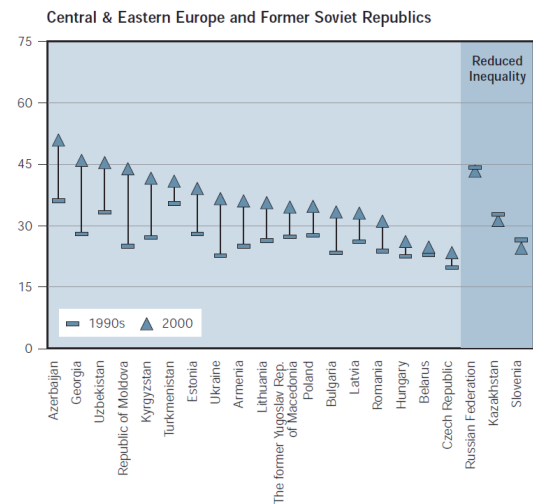
Table 1: Values of Gini coefficient in selected countries in the years 1987 – 2006.

Country	Long-term Trends in Income Inequality			
	Gini coefficient for income per capita			
	1987-90	1993-94	1996-99	2006
Slovakia	-	-	-	0.30
Slovenia	0.22	0.29	0.25	0.26
Poland	0.28	0.28	0.33	0.33
Czech Republic	0.19	0.23	0.25	0.27
Estonia	0.24	0.35	0.37	0.35
Lithuania	0.23	0.33	0.34	0.37
Hungary	0.21	0.23	0.25	0.34
Latvia	0.24	0.31	0.32	0.40

Source: 2006: World Bank staff calculations based on data from the 2006 EU-SILC (based on per capita income, hence slightly different from Table 2). Earlier years: *Making Transition Work for Everyone*, World Bank, Washington DC, 2000.

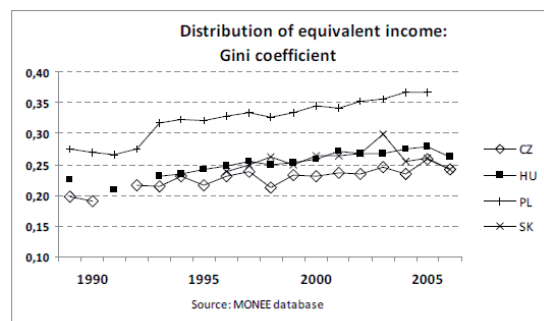
Source: Zaidi 2009, p. 7, table 1.

Chart 4. Changes in Gini coefficient in the countries of the former Soviet block 1990-2000.



Source: World of Work Report 2008, p. 11

Chart 5. Gini coefficient of adjusted household incomes in the years 1990-2005 in Poland, the Czech Republic, Hungary and Slovakia



Source: Vacernik 2010, chart 2, p. 27

As regards the levels and changes in the disparities of *personal income/employee income* in the countries of our region, Vacernik's analyses (based on the following statistics: LIS and UNICEF database: Trans-MONEE – chart 6) suggest that their values differed from inequalities examined from the perspective of households. In 1989 the level of those inequalities for Poland was relatively low (Gini: Poland and Slovakia – 0.18, Hungary 0.29, the Czech Republic 0.19) while in the years 1989-2008 our country experienced one of the greatest percentage inequality rises in this respect.

Comparison of the research results presented above suggests that despite relatively high rise in employee income inequality in Poland in the transition period, the rise in household income inequality was not particularly high. Relatively high level of household income inequality was present in Poland in 1980ties, i.e. still before the launch of the systemic transition processes.

It is also worthwhile stressing that while employee earnings disparity rose dynamically since the very beginning of transition, the **household income inequality initially (in the years 1989-1992) declined, only to rise later (see: charts 5 and 6 and tables 2 and 3).**

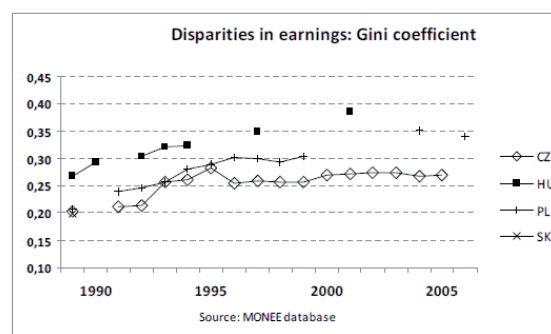
The data contained in table 3 show that between 1989 and 1992, in contrast to distribution of the total of employee incomes, the share of two lowest quintile household income groups in the sum of total household incomes in Poland rose, while shares of other groups declined. **This means that reduction of the inequality level in the very beginning of the transition was related to a (relative) rise in the incomes of the poorest families.**

It is worthwhile adding that, as suggested by analyses of Keane Prasad (1999), inequality rise in the transition period concerned employee households, while inequalities among farmholds were reduced. **Hence the systemic transition in Poland most likely reduced income inequalities among farmholds.**

In the last two decades both in Poland, in the Czech Republic and Slovakia (Hungary being an exception

here) there has been a rise in positive correlation between personal income and the income available in a household (also *per capita*), with this correlation being currently the highest in Poland. This correlation for Poland amounted to 0.33 (*Pearson*) in 1986, and to as much as 0.62 in 2007. For other countries those values amounted respectively to: the Czech Republic – 0.18 in 1988 and 0.49 in 2007, Slovakia – 0.49 in 1992 and 0.56 in 2007, and for Hungary – 0.61 in 1991 and 0.49 in 2007. **Therefore, compared to the situation in place in the late 1980s, the present household income disparities are to a greater extent related to differences in employee incomes.**

Chart 6. Gini coefficient for incomes in the years 1990-2005 in Poland, the Czech Republic, Hungary and Slovakia



Source: Vacernik 2010, chart 1, p. 27

Table 2: Values of Gini coefficient in Poland in the years 1985 – 1996.

Comparisons with per Capita Ginis Based on CSO Methodology												
	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994	1995	1996
HBS micro data – full distribution	0.274	0.291	0.292	0.294	0.293	0.281	0.271	0.267	--	--	--	--
CSO-OECD Ginis	--	--	--	--	0.249	0.230	0.260	0.270	0.250	0.300	0.290	0.300

Notes: The first row shows per capita ginis calculated using the HBS micro data. The second row shows gini coefficients calculated by the CSO for the OECD. Documentation from the CSO suggests that for 1989-93 ginis were computed using income decile groups based on per capita income. For 1994-96, it appears that centile income distributions were used to calculate ginis after adjusting household income by OECD equivalence scales. These gini coefficients for 1989-95 were obtained from the OECD and, for 1996, directly from the CSO.

Source: Keane, Prasad 1999, p. 41. Comments from the authors: according to CSO (GUS)-OECD data, the Gini coefficient rise at the turn of 1992-1993 partly resulted from changes in the selection of the research sample (including an increase in the share of self-employed persons in the sample) that took place in 1993.

Table 3: Comparison of the changes in the share of particular income quintiles in the total earnings and values of Gini coefficient for employee incomes and adjusted household incomes

Distribution of earnings and household income between 1989 and 1992 (%)								
Quintile shares and coefficients	Czech Republic		Hungary		Poland		Slovakia	
	1989	1992	1989	1992	1989	1992	1988	1992
<i>Earnings of employees:</i>								
1	11.9	11.1	8.9	8.4	12.7	11.2	12.0	12.6
2	15.7	14.6	13.4	12.7	16.1	14.6	15.8	15.6
3	19.2	17.9	17.2	16.4	18.5	17.2	19.0	18.5
4	22.9	22.1	22.0	21.6	21.5	21.0	22.8	22.1
5	30.3	34.3	38.5	40.9	31.2	36.0	30.4	31.2
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Gini coefficients	0.19	0.23	0.29	0.32	0.18	0.25	0.18	0.18
<i>Adjusted household income:</i>								
1	11.1	11.9	11.2	10.3	9.3	9.7	11.9	12.6
2	15.7	15.0	15.1	14.2	14.2	14.4	16.5	16.3
3	19.3	17.7	18.1	17.3	18.4	18.1	19.2	19.0
4	23.0	21.4	22.0	22.0	23.1	23.0	22.7	21.9
5	30.9	34.0	33.6	36.2	35.0	34.8	29.7	30.3
Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Gini coefficients	0.20	0.22	0.22	0.26	0.26	0.25	0.18	0.18

Source: SOCO database (see Večerník 1996, Tables 4.1 and 4.5). In this table, household income is adjusted according to 1.0, 0.7, 0.5 principle.

Source: Vacernik 2010, table 1, p. 19.

3. Was the inequality rise in those countries of our region that performed systemic transition after 1989 a worldwide exception?

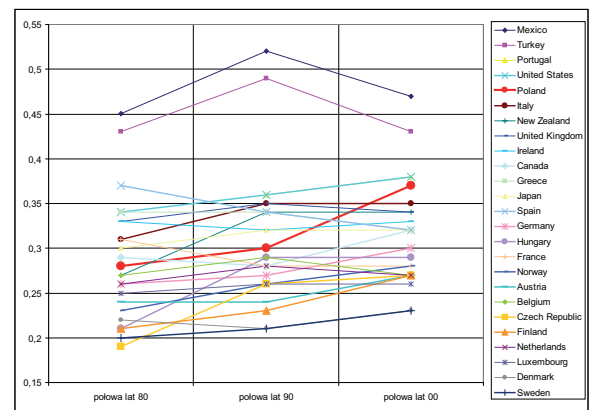
When assessing the inequality growth in those countries of our region that underwent the period of systemic transition after 1989, we should relate them also to changes occurring at the same time in other countries of the world. In 1990-2000 more than two thirds of 85 countries worldwide experienced income inequality rise; much fewer inequality reductions took place, in particular in Sub-Saharan Africa and in the Middle East (where inequality level is nevertheless still high). The dynamics of the inequality changes in OECD countries is shown in chart 4 (absolute changes of inequality levels) and 5 (relative changes). Throughout the entire two decades (1985-2005) rose significantly in such countries as: Finland, Norway, the USA or Germany. In the years 1985-1995 income inequality rose dynamically also in New Zealand and Italy (as well as Mexico and Turkey – although in those countries inequalities were significantly reduced in the following decade). In the following decade, income inequality rose also in: Canada, Denmark and Sweden.

Therefore the inequality growth in those countries of our region that underwent systemic transition after 1989 was consistent with the global trend.

By comparing the statistics presented in this and previous sub chapters (table 1 and charts: 4, 5 and 9) it becomes obvious that:

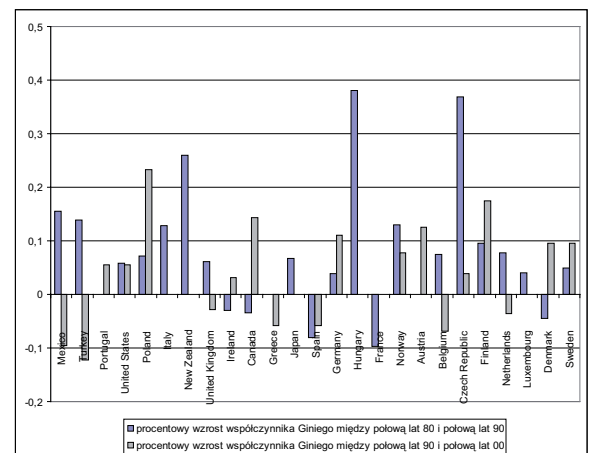
- 1) Percentage of inequality growth (in household incomes) in Poland in the years 1990-2006 against other countries of the region that also underwent systemic transition was relatively low; but:
- 2) initially in 1989 Poland had much higher inequality levels, so absolute inequality growth was so great that it significantly changed Poland's position in the ranking of countries worldwide (see: chart 7).

Chart 7. GINI in the 1980s, 1990s and mid 00s in OECD countries.



Source: Own elaboration from OECD data.

Chart 8. Percentage changes of Gini coefficient in OECD countries.



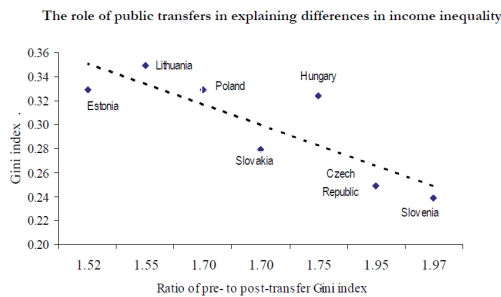
Source: Own elaboration from OECD data

4. What was the impact of social transfers on changes in household income inequalities in Poland and other countries in the transition period?

According to Keane and Prasad (IMF 2002, 1999) and other authors, **the limited growth of household income inequality, despite a significant rise in earnings disparities in Poland in the transition period, took place owing to significant redistribution (social transfers), including in particular the relatively high retirement benefits. As stated by Mitra and Yemstov (2006), if social transfers had not grown in the transition period, the Gini coefficient would have been 3 points (10%) higher. Nevertheless, according to Keane and Prasad (1999) social transfers could have been more focused on the poorest groups.**

As suggested by Zaidi analyses (2009), the role of redistribution system in those countries of our region where systemic transition took place, is central for explanation of present disparities in household income inequality levels (see: chart 9). **The greater the share of transfers/taxes in the reduction of the original household income inequality levels following from amounts of earnings (and other private income sources) becomes, the lower the final inequality of the total household incomes distribution is.**

Chart 9. Relationship between pre- to post-transfer Gini index ratio (the role of public transfers) and the Gini index value.



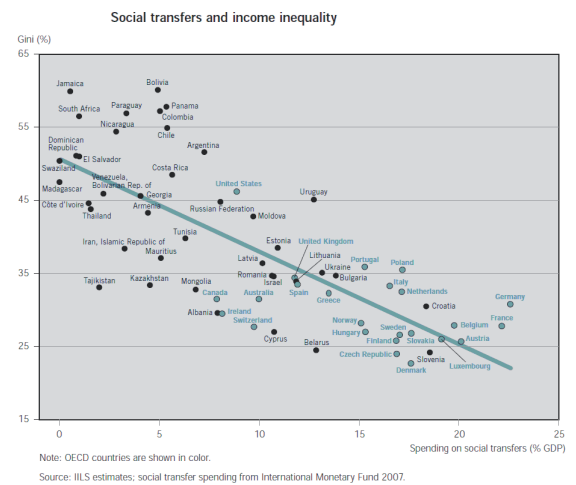
Source: World Bank staff calculations based on data from the 2006 EU Survey of Income and Living Conditions

Source: Zaidi 2009, p. 14, chart 7.

Generally speaking, research of the World Bank suggests that there is a strong, negative relation-

ship between spending on social transfers and the inequality level in OECD countries (see: chart 10). **This means that the greater the state spending (as a GDP percentage) on social transfers is, the lower the household income inequality level becomes.**

Chart 10. Relationship between social transfers (expressed as % of GDP) and the Gini coefficient values in OECD countries.



3. It is true that after 1989 there was a significant rise in the inequality of employee income. While in the period preceding the beginning of the transition the inequality level in this respect compared to other region's countries was low, presently it is relatively high.
4. When assessing the inequality growth in the countries of our region that underwent systemic transition, it must be borne in mind that in the same period a vast majority of countries worldwide also experienced inequality rise (including the USA, Germany, Norway and Finland).
5. A central role in the explanation of the disparities in the inequality levels worldwide is played by the amounts of social transfers (expressed as GDP percentage)/taxes – and hence the redistributive role of the state. The system of social transfers (including pensions) played an important role in Poland in the reduction of the growth in household income inequality.

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