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## The rise in inequality following the transition from the centrally planned to market economy in the Central and Eastern European Countries : is it persistent?

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*PhD studies*

## **The rise in inequality following the transition from the centrally planned to market economy in the Central and Eastern European Countries: is it persistent?**

### **Introduction**

The transition to the open market economy in the early 1990s caused major changes in the societies of the former centrally planned economies. Among the most visible ones there has been a significant increase of income inequalities, measured by the Gini coefficient. The aim of this paper is to present the evolution of the income inequalities in twelve Central and Eastern European Countries (CEECs), which are Belarus, Bulgaria, Czech Republic, Estonia, Hungary, Latvia, Lithuania, Poland, Romania, Russian Federation, Slovakia and Ukraine. The analysis covers the period from the early 1990s, which mark the transition point, to the years 2005–2007 depending on the data availability.

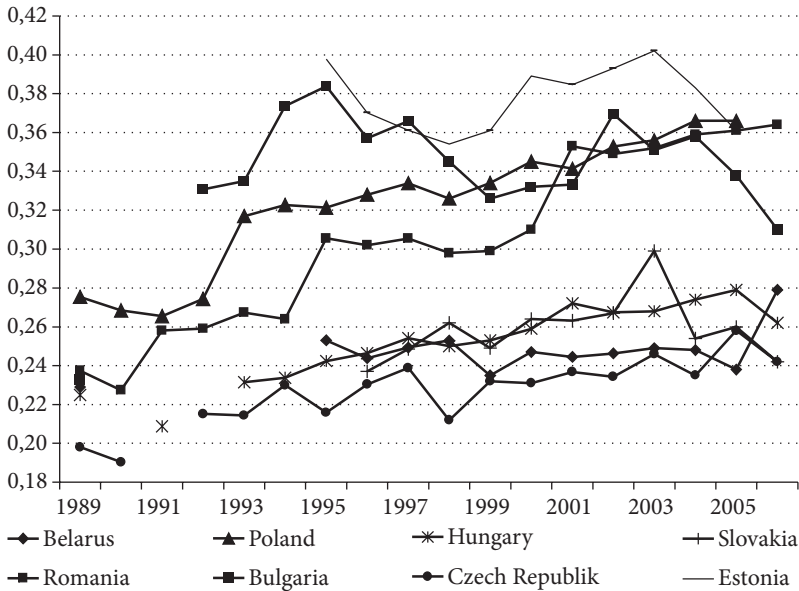
The paper is divided into three sections. The first one examines changes in income inequality levels in the CEECs, including the possible reasons and differences among the countries under scrutiny as well as various measures of inequality. In the following section we discuss the persistence of this development. Further, we check, whether there is a discrepancy between the CEECs and UE15 income inequality developments over the last two decades and look for possible reasons of this situation. Our conclusions are presented in the final part of the paper.

### **Changes in inequality levels following the transition in the CEECs**

Data<sup>1</sup> show an increase in the inequality measures in countries, which underwent transition in the early 1990s. Yet, the strength of this rise varies across the region (see Chart 1 below). We will discuss the possible reasons for the growth of income dispersion and then present alternative income inequality measures, also trying to explain the differences between countries.

According to the UNICEF data<sup>2</sup>, the CEECs started the transition at different levels of income inequality (measured by Gini coefficients). Most of the countries showed low levels of dispersion (ca. 0.2–0.23), except for the Baltic countries and Poland, which started at a relatively high level of 0.26–0.28. Unfortunately, the data for immediate post-transition years are only available for few countries (therefore most of the studies

concern Poland, Czech Republic and Hungary only). In 2004 the Gini index was **significantly higher (by 6–7 Gini points<sup>3</sup>) in almost all** countries (except for the Czech Republic and Slovakia) in comparison to the levels of the early 1990s. The evolution of this measure of inequality (if available) is shown on the chart below.



**Figure 1. Gini coefficients in some CEEC countries in 1989–2006**

Source: own calculations based on UNICEF data

Figure 1 shows that the Gini index increased in all of these countries, with the highest gain in Romania (from 0.267 in 1993 to 0.361 in 2005). In the remaining countries the coefficient grew as well, yet less significantly.

**Post-transition changes in the CEECs.** To understand the reasons behind the inequality rise in transition economies, some of the changes that had happened during the transition have to be described. In the communist countries most people were employed in the state sector, where salaries and wages were quite equally distributed (Milanovic, 1998). Relatively small inequalities existed only due to self-employment (which was present to a limited extent), and to differences between the state- and self-employed parts of the society. Milanovic (1998) decomposed the Gini coefficient for the centrally planned economies and estimated that 16 Gini points of inequality were due to the existence of the private sector and to the differences in average wages of self-employed, state-workers and pensioners, 9 points due to disparities in income in the public sector, 2 points due to the disparities between self-employed and pensioners, which altogether

should account to a Gini coefficient of about 0.28 (including also other less important causes of inequality) for economies before transition.

During transition, the privatization process started and state-owned companies laid off people in order to reduce overstaffing, which resulted in growing numbers of self-employed, unemployed and pensioners. This, in turn, led to increased inequality (there was also a shift in sources of income). Consequently, people from the 'middle class' very often moved to the rich or the poor ones ('hollowing out' hypothesis<sup>4</sup>). Milanovic (1998) delivered the decomposition of the Gini coefficient after transition, as well. According to his calculations, about 21 Gini points resulted from differences between incomes in the private and public sector (an increase compared to the pre-transition period), 9 points from disparities in the private sector (the private and public sector changed places). Altogether, the average post-transition Gini coefficient was estimated to be around 0.35–0.36. It is important to point out that the change in the composition of income did not influence the level of inequality – it was only significant in Russia, where it lowered the Gini coefficient (because of social transfers, which were quite equal). This means that the shift from state-employment to unemployment or retirement pension did not have any impact on inequality. More important was the growing dispersion of wages.

**Drivers of the inequality rise after the transition.** Mitra and Yemtsov (2006) indicate six main drivers of the inequality growth during the transition, which appear in the relevant literature. They are as follows:

1. Wage decompression and growth of the private sector

As we have mentioned before, the private sector emerged. Returns to education grew (for example the university/primary education differential doubled in Poland by 1993<sup>5</sup>). Wage differences between sectors, regions and occupations increased, reflecting to a higher degree the productivity levels. The minimum wage that was set at around only 40 per cent of the average wage contributed to the greater inequality, as well.

2. Restructuring and unemployment, reverting to subsistence economy

The development of the private sector was followed by the reallocation of resources into more productive uses. Many new firms appeared in the market. What is more, open unemployment, lower labour participation and low productivity employment (e.g. subsistence agriculture, informal activity) appeared.

3. Fiscal adjustment affecting government expenditure, taxation and corruption

CEECs expanded social expenditures, but the impact of higher transfers on the rise in inequality varies across countries (yet it is present, in Hungary in particular, where these expenditures grew significantly in real terms). On the other hand, the introduction of value added tax and other changes in tax systems led to decreases in inequality (but only in some CEE countries).

4. Price liberalization, inflation and arrears

After the price liberalization, inflation started to increase due to money overhang. Previous experience from Latin America showed that this has a redistributive effect

(the inflation tax translated into losses in households' financial assets, worth of even twelve per cent of GDP in Russia). Arrears appeared in payments of social benefits, particularly in low-paid groups, which also had an unequalising effect resulting from high inflation.

#### 5. Asset transfer, growth of property income

Assets, which were previously mostly state-owned, were moved to private owners. The increase in the share of entrepreneurial income led to higher inequalities (Milanovic 1998). Also households gained another source of income – from apartment rentals. However, some of the assets were transferred in an equitable way, since the housing privatization was partly conducted below market prices to allow poorer tenants to afford it.

#### 6. Technological change, increased mobility and globalisation

These factors are not connected to the transition itself and they appeared in all countries, leading to an increase in inequality not only in the CEECs but also in many other OECD and EU countries. The importance of these trends for the CEE countries will be discussed in the following part of this paper.

To sum up, Mitra and Yemtsov provided a list of possible inequality growth causes for the CEECs, yet their influence on the changes of inequality levels is sometimes ambiguous and varies from country to country. This was briefly summarized in Table 1 that provides two decompositions of inequality levels in the CEECs: the first one by sources of income, and the other one by groups of people affected.

**Table 1. Identifying the role of inequality drivers with decomposition results**

Drivers	Decomposition by source	Decomposition by groups
1. Wage decompression and the private sector growth	– Own wage inequality increase ↑ – Fall in the share of wages in incomes ↓	– Increase in private sector and in unemployment ↑
2. Restructuring, unemployment or reverting to subsistence economy	– Coefficient of concentration for wages ↑ – Increase in share of informal incomes ↑	– Increase in the number of subsistence farmers ↑ – Increase in the number of unemployed ↑
3. Fiscal adjustments affecting government expenditure and taxation	– Changes in the real value of transfers ↑↓ – Changes in targeting ↑↓	– Inequality among transfer recipients ↑
4. Price liberalization, inflation and arrears	– Excess inequality in wages	– Excess inequality among fixed income recipients (transfer and state sector workers) ↑↓

Drivers	Decomposition by source	Decomposition by groups
5. Asset transfer and property incomes	<ul style="list-style-type: none"> <li>- Property incomes increase ↑</li> <li>- Entrepreneurial income increase ↑</li> <li>- Imputed rents ↓</li> </ul>	<ul style="list-style-type: none"> <li>- Increase in the number of self-employed ↑</li> </ul>
6. Technological change and expansion of knowledge economy, migration	<ul style="list-style-type: none"> <li>- Returns to education ↑</li> <li>- Increase in variation of returns ↑</li> </ul>	<ul style="list-style-type: none"> <li>- Migration to urban areas ↓</li> <li>- Education expansion ↓</li> <li>- Premium for highly skilled ↑</li> <li>- Inequality among the skilled ↑</li> </ul>

Source: Mitra, Yemtsov (2006), p.33

**Differences between the CEECs.** As it was mentioned before, inequalities increased in all CEECs, but the extent of changes varies across countries. Ivanova (2007) looks for the reasons of this development in the policies introduced by governments during the transition time. She examines the cases of Poland, Bulgaria and Hungary. These three countries were selected to show that changes in inequalities cannot be linked to economic performance (measured by GDP growth), as Poland and Bulgaria show similar levels of Gini coefficient and Hungary – a significantly lower level, while in terms of GDP growth Hungary and Poland are comparable, and Bulgaria developed at much slower pace.

Bulgaria and Poland both decided to follow the 'big bang' scheme and introduced several economic and social reforms at the same time, whereas Hungary chose a different pattern of gradual changes. Ivanova (2007) argues that the first transition pattern results in neglecting of some social aspects and leads to a stronger increase in inequality. She criticizes the fact that governments privatised companies (which then laid off people) without providing alternative jobs for those who became unemployed. The Polish shock therapy seemed to be very successful in terms of GDP growth rate, but it also led to a rise in regional differences and higher unemployment (e.g. because of costly farming loans, which affected the yet worse situation in rural areas). The economic reforms (price liberalization, new taxes, freeing of the Zloty, privatization) were costly in social terms. Bulgaria introduced a similar program of reforms as Poland, but they went bad and another package was prepared with help of the IMF in 1997–1998, followed by a decrease in the Gini coefficient (the decreasing trend changed again at the beginning of the 21<sup>st</sup> century). Contrary, Hungary chose a different path – the gradualism. Ivanova (2007) suggested that gradualism, combined with three other factors, makes this path superior to the shock therapy. These factors are: economic policies putting significant weight on raising the living standard ('goulash communism' followed by 'goulash post-communism'), a paternalistic welfare state developed over several decades, and the culture of 'political calm'<sup>6</sup>.

Yet there is some similarity among these three countries, namely the evolution of the GDP growth. All countries developed faster in the mid-90s but the fruit of this growth were not distributed equally: in case of Poland the upper forty per cent of income distri-

bution benefited mostly from the economic improvements (new possibilities of higher incomes, non-existent in communism, emerged<sup>7</sup>). The situation of the rest of the society worsened, and poverty increased<sup>8</sup>. Why did poverty not respond to the better economic performance? Bourguignon (2003) explains it (under the assumption that the distribution of income is lognormal) by the initial levels of inequality and income, which result in opposite reaction of poverty changes on growth. He claims that the higher initial level of inequality decreases the partial elasticity of poverty to growth, whereas high initial level of income increases it. This would explain the Polish case that started from a relatively high dispersion of income.

In this part of the paper we focused exclusively on the CEECs, presenting the development of income inequalities, the possible reasons behind related to transition paths as well as causes of disparities among countries. In the next section, we present a comparison with other countries and we make an effort to answer the question, whether the increase in income dispersion is persistent.

## Persistence of the inequalities rise in the CEECs after the transition

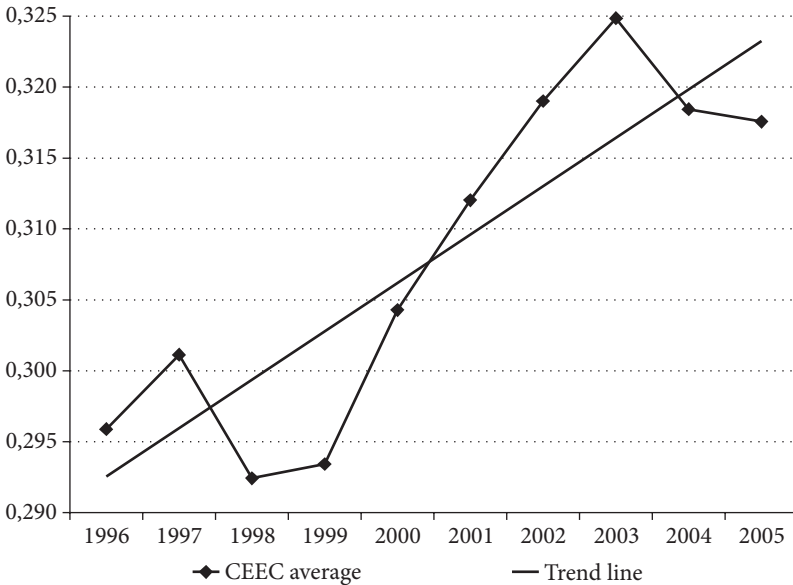
In this section we would like to examine the persistence of the rise in inequalities in the CEE countries and find answers to the following questions: Is the trend in CEE countries only a temporary development resulting mainly from reforms held in the 1990s? Will this trend reverse or stop just after the transformation finally ends? Or is it a permanent, or at least a long-lasting change in the income distribution? Which of the factors mentioned before could possibly cause such permanent changes?

**Changes in the income inequality over time.** In the previous section we presented data that indicate a rising trend in income inequalities in the CEECs. Figure 1 summarizes the analysis by presenting the trend line of the Gini coefficient development for the group of 7 CEE countries. At this point, it is important to highlight that Bulgaria is an outcast in terms of this index, probably due to unsuccessful social policies during transition (Ivanova 2007). Therefore we will not consider this country while drawing conclusions.

As one can see, there is an increasing trend in all countries, for which data are available, although there are countries where the onward trend is much steeper (e.g. in Romania) than in others (as in Slovakia or Czech Republic), what can be seen on Figure 1. The rise was also more modest in Hungary due to the reasons mentioned above and the fact that the decentralized wage setting was introduced there earlier than in other countries (Rutkowski 2001). What is more, the Gini coefficient in the CEE countries has not been growing steadily – sometimes it has been decreasing when compared to previous years (for example in 1998 in Poland).

Is income inequality going to continue to grow in the CEE countries? There is no consensus in the literature. From our point of view, the time series are too short to draw

any conclusions. Yet, when considering the evolution of the average Gini coefficient in seven CEE countries, for which most data are available, we can conclude that an increasing trend has reversed in 2003 (Figure 2). At this moment we cannot however say whether this is persistent or not Investigation of trends in income distribution in other groups of countries is needed for comparison purposes. We can only presume that inequality will remain at a higher level than before transition, since some of the changes, which followed the introduction of the market economy affected the levels of inequality permanently (e.g. the emergence of the private sector).



**Figure 2. Average Gini coefficient in 7 CEE countries in 1996–2005**

Source: own calculations based on UNICEF data (for Bulgaria, Romania, Poland, Hungary, Czech Republic, Estonia and Slovakia)

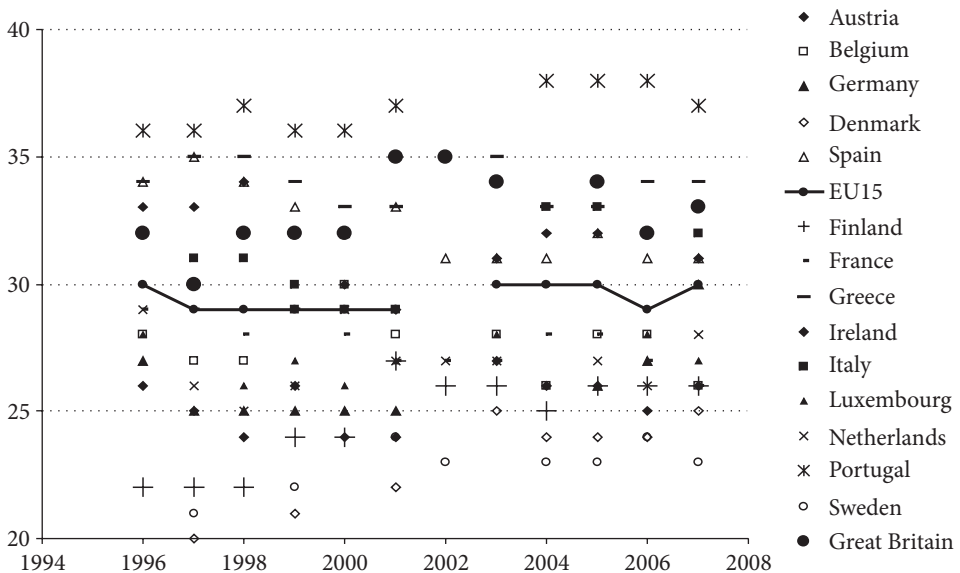
**CEE countries in comparison to other countries.** In order to examine the character of changes in income distribution in the CEE countries we compare them to changes in Gini coefficients for other European countries (former EU15). This set of countries has been selected due to geographical neighbourhood, increasing similarities and cooperation between the former EU15 and CEECs. In such case, analogous changes in income inequalities in these two groups would suggest that there is a more general trend in income distribution and that the changes in CEE may turn out to be persistent due to factors different than transition changes.

However, we had a serious problem with finding a dataset with Gini coefficients for all EU15 countries that covers the time period longer than last 10–12 years. Eurostat



data selected for the comparison purposes show many missing values. What is more, at least the available ones should have been measured by means of similar methods. Many economists, who focus on income inequalities, point at significant differences between methods implemented in different studies to measure Gini coefficient (Grün&Klase 2001, Mitra&Yemtsov 2006). A more detailed description of databases used in this paper is presented in the Appendix.

Data obtained from Eurostat provide values of Gini coefficients since 1996 and do not show any trends in the income inequalities. There were countries with increasing, falling and stable income inequalities.



**Figure 3. Gini coefficients for EU15 countries 1996–2007**

Source: Own calculations based on Eurostat data.

Figure 3 shows that there is no trend in the movement of the Gini coefficient over the last decade. The line shows the average level of Gini for EU15, the value of which was rather stable over the last 10 years. Another measure of inequality is the income quintile share ratio<sup>9</sup>. Also this index (calculated by Eurostat) shows no special trends in income distribution over recent years (Table 2).

The survey on income inequalities in selected OECD countries published in 2005 (Weeks 2005) summarizes trends in income distribution in OECD countries over the past four decades. Its conclusion is that there are no special trends in income inequalities in the OECD countries. In case of the European OECD members the rising trend was

observed only in the United Kingdom. In other countries there was neither any falling trend nor any trend at all.

**Table 2. Income Quintile Share Ratio for EU15 countries**

	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
Belgium	4.2	4	4	4.2	4.3	4		4.3	4	4	4.2	
Denmark		2.9		3		3		3.6	3.4	3.5	3.4	
Germany	4	3.7	3.6	3.6	3.5	3.6				3.8	4.1	
Ireland	5.1	5	5.2	4.9	4.7	4.5		5	5	5	4.9	
Greece	6.3	6.6	6.5	6.2	5.8	5.7		6.4	5.9	5.8	6.1	
Spain	6	6.5	5.9	5.7	5.4	5.5	5.1	5.1	5.1	5.4	5.3	
France	4.3	4.4	4.2	4.4	4.2	3.9	3.9	3.8	4.2	4	4	
Italy	5.6	5.5	5.1	4.9	4.8	4.8			5.7	5.6	5.5	
Luxembourg	4	3.6	3.7	2.9	3.7	3.8		4	3.9	3.8	4.2	4
Netherlands	4.4	3.6	3.6	3.7	4.1	4	4	4		4	3.8	
Austria	3.8	3.6	3.5	3.7	3.4	3.5		4.1	3.8	3.8	3.7	3.8
Portugal	6.7	6.7	6.8	6.4	6.4	6.5	7.3	7.4	6.9	6.9	6.8	
Finland	3	3	3.1	3.4	3.3	3.7	3.7	3.6	3.5	3.6	3.6	
Sweden		3		3.1		3.4	3.3		3.3	3.3	3.5	3.4
United Kingdom	5	4.7	5.2	5.2	5.2	5.4	5.5	5.3		5.8	5.4	
EU15	4.8	4.7	4.6	4.6	4.5	4.5		4.6	4.8	4.8	4.7	

Source: own calculations based on Eurostat data.

Data presented above do not show any significant changes in income inequality levels in EU15. There are also no trends in the OECD countries. The conclusion is that while looking for possible reasons for persistence of the inequalities, we should rather focus on factors that caused increases in income inequality in CEECs during transformation.

### **Possible reasons for permanent increases in income inequalities resulting from the transition process**

As it was already pointed out in the first section, Mitra and Yemtsov (2006) describe six main factors that caused rises in income inequalities in the CEECs. Those are: wage decompression and growth in the private sector, restructuring process causing high unemployment, changes in government spending and taxation, price liberalization

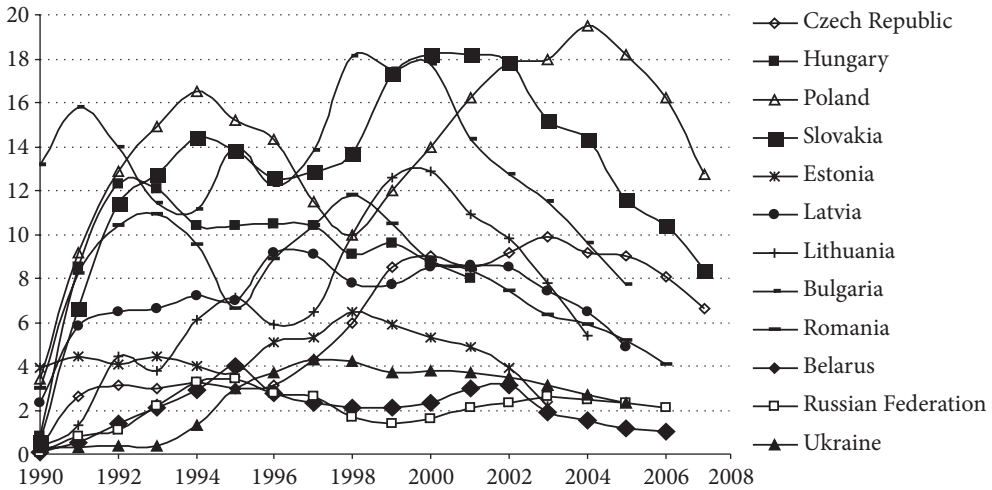
and inflation, asset transfer and growth of property income, and finally technological change and globalisation.

To answer the question on the persistence of income inequalities, we need to define factors that would cause such permanent changes. This should be reforms or transformations that cause permanent differences in the economy (like law, institutions, production structures), but not just temporary solutions or trends in the process of transition from the centrally planned to market economy, the effects of which would expire after the end of the transition process.

**Returns to schooling and wage decompression – not obvious effect on income inequality.** Can decompression in wages cause further income inequality growth? Mitra and Yemtsov (2006) claim that this is the major factor behind the increasing income inequalities in the CEE countries. According to their survey, after the transition had began, the CEECs experienced a significant growth in rates of return to schooling. In the socialism era, investments in education did not pay back much. Educated people could not count on higher earnings only due to the fact that they had a degree. Transition economies started reforms with low levels of education and human capital. Since then, the percentage of population with higher education has been constantly increasing, as it turned out that in the market economy the education level was of importance for employers, and that people with better education were better paid. The so called 'education premium', understood as the difference between wages of workers with higher education to those with primary or secondary education, started to increase. In Poland it almost doubled between 1989 and 1996, reaching the level of eighty percent<sup>10</sup>. According to the recent OECD Report on Education (2008)<sup>11</sup>, this premium has recently reached extremely high values in CEE countries, which are the OECD members: Poland, Hungary, and the Czech Republic. The average education premium between secondary and tertiary levels of education for the OECD amounted to 154 per cent in 2006, while in the three CEE countries mentioned above it reached 173, 219 and 183 percent respectively. The main reason might be a relatively low level of primary and secondary education in the CEECs in comparison to the remaining OECD countries and a lower share of highly-educated people in the overall labour force: the importance of higher education as a signal to employers is significantly bigger. Therefore, a decrease in the education premium should be expected in the CEE countries in the long run, if necessary education reforms are held. However, the effect of such potential reforms on the premium would be visible in more than two decades. On the other hand, increasing number of people with higher education will put pressure on lowering the premium. In conclusion, the final effect of these processes on the income inequalities is not obvious.

**Restructuring process and unemployment – not that important any more.** The transformation process led to significant changes in the structure of economy in most countries. Restructuring and privatization moved labour from unprofitable sectors and caused changes in the structure of production. Due to overstaffing in the centrally planned economies, many people lost their jobs just after the transition, as inefficient

factories were closed or restructured. On the other hand, these changes allowed creating new firms and companies with the goal of profit maximizing. Unemployment increased rapidly in 1990s in all CEECs. However, further changes in unemployment rates varied across countries. The situation in the labour market depended on many factors, such as employment protection, tax wedge, participation rate, active labour market policies, emigration. Different solutions undertaken from country to country may explain varying levels of unemployment. Figure 4 shows initial rise in the unemployment rate in the CEECs and the downward trend, which began about the year 2000. The registered unemployment rate is not the best indicator for the real unemployment rate and should not be used for comparison purposes. It is however sufficient to point at trends in the unemployment rate at the country level. According to Chart 4, over the recent years this rate has been declining in the whole region. Of course the level of unemployment varies from country to country. The recent results of most CEE economies look however relatively well in comparison to the EU results, where the average registered unemployment rate was 9.4 per cent in 2006. High unemployment is therefore not a typical characteristics of the transition economies any more.



**Figure 4. Annual registered unemployment rate (registered unemployed as a percentage of the labour force) in the CEEC**

Source: own calculations based on UNICEF data

Related to income inequalities, the initial rise of unemployment led to higher differences in income distribution and undoubtedly solely the fact that unemployment exists has a permanent effect on causing inequalities. However, the strength of this impact depends to a vital extent on the labour market institutions and economic performance. Therefore, the dole queue in the long run with its influence on income distribution will differ from

country to country. The recently decreasing trend in unemployment rates across CEECs points however to lower influence of unemployment on income inequalities.

**Price liberalization and inflation.** The same conclusion seems to be true for the price liberalization and inflation. Price liberalization during the transformation process resulted in significant price increases making many products unaffordable. However, before the transition, people could not buy many goods either: although they had money there were not enough goods to buy. On the other hand, the example of countries like Poland shows that effective inflation targeting is possible. That is why inflation should not have significant influence on income inequalities.

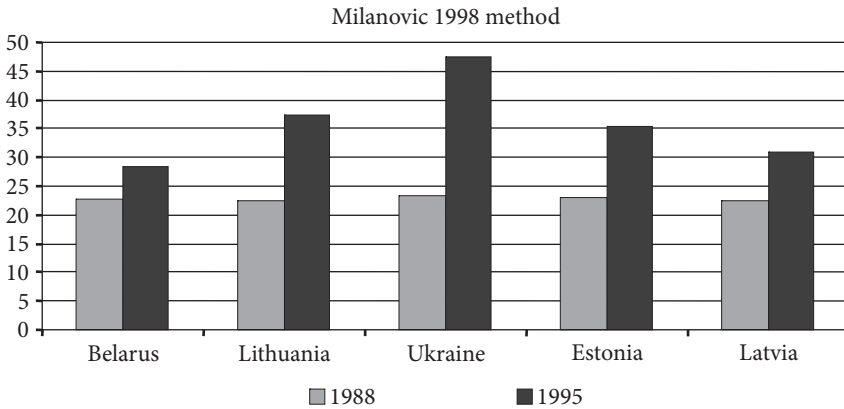
**Technological change and globalisation.** Rising inequalities are characteristic not only for the CEE countries, but appear nowadays also in many other countries around the world. Although increasing inequalities are not a typical pattern for all OECD countries, inequalities have risen in many of them, i.e. in the United States, Mexico, United Kingdom, Australia and many less developed countries (Atkinson 2003).

Technological changes and globalisation processes have been pointed to as the major drivers of this trend. However, due to high variation in changes in inequalities across countries (see Appendix) and no specific trend, it is hard to distinguish the influence of technological change and globalisation from transition-related factors on the income distribution in the CEECs. That is why, in lack of more global trends, it is hard to determine the long-run globalisation effects on the CEE economies, and consequently to predict further increases of income inequalities due to this factor.

**Government spending and taxation.** The volume and distribution of public transfers had a significant equalizing effect in the CEE countries during the transformation (Ivanova 2007). Without unemployment benefits, new pension plans and other social transfers the inequalities would be even higher. The example of Scandinavian model shows that the social policy can be an efficient tool in reducing inequalities provided it is fiscally sustainable. Of course, the CEE countries cannot afford such policies and will not be able to do so for a long time, but public policy can be a good way to decrease income inequalities in the long run.

**Socialism versus the open market economy.** It is also of key importance to point at basic differences between the centrally planned and the open market economies and their effects on income inequalities. Although it is hard to find data on income inequalities under the communist law (Grün and Klase 2000), the connection between low income inequalities and the socialistic regime seems intuitive. Before 1989 the vast majority of population in the CEECs had quite comparable living standards. Of course, income differences between groups and regions existed, but not on such large scale as in the open market system. Centrally planned economies were inefficient and grew slower than other ones, but central distribution of wealth resulted in smaller differences between citizens: people were poor, but equally poor. The wages did not depend on the qualities and education of workers but were results of the Party's decisions. Therefore, wages were not as differentiated as after the transition.

Chart 5 presents changes in Gini coefficients in selected CEE countries based on the Milanovic 1998 survey. Its main purpose was to present changes between levels of inequalities under the communist law and after the first period of transition by means of the same calculating method. Apart from that, a survey held by Atkinson and Micklewright in 1992 (data from WIID2c database) provides calculations of Gini coefficients in the CEEC countries in 1980s. The results oscillate around 20–25 per cent in most countries. These results confirm that income differences were significantly lower under the communist law. At present, the results of 20–25 per cent Gini coefficients are characteristic for the developed countries with high expenditures on social transfers, such as Denmark, Sweden, or Finland. As already stated, the CEECs cannot afford such policies.



**Figure 5. Changes in Gini coefficient in selected CEECs on the basis of the Milanovic 1998 survey**

Source: own calculations based on WIID2c – UNU WIDER database.

The conclusion is that the fact of switching from the centrally planned economy to open market economy itself caused permanent changes in income inequalities. Under new conditions and rules of the market economy, it is almost impossible that inequalities return to levels from 1980s, at least in coming decades.

### Summary

In this paper we tried to find answers for the following questions: how did income inequalities in the CEE countries evolve after transition? What were the reasons for changes in inequality? Is this a persistent adjustment, or did inequalities increase only temporarily?

We have presented two measures of inequality (Gini coefficient and income quintile ratio) to show that most Central and Eastern European countries became much less egalitarian after economic and social reforms in the early 1990s were introduced. We also provided a short study of inequality changes in the developed countries to check, whether there is a global trend in this aspect.

Our results confirm a significant increase in inequalities in the former communist countries after the transition. However, the rise was of a different magnitude from country to country due to many factors, such as policies implemented during the transition time. Countries with highest growth in inequalities are Russia, Poland and Romania, countries with the lowest differences: Czech Republic and Slovakia.

Due to short time series, it is hard to predict the further evolution of inequality levels in CEEC. However, the comparison with EU15 and OECD countries allowed concluding that factors, which may cause future rises in Gini coefficients, are factors resulting from the transition itself. Among these factors the wage decompression and rise in education premium seem to have the major influence on further trends. High education premium will keep inequalities at high level in the nearest future. However, the long-term effect on income distribution should be less and less significant, as more and more citizens attain higher education. Moreover, in our opinion, the transition economies will not be able to cut inequalities in the coming years as they are not wealthy enough to afford expensive social policies similar to those in Scandinavia. The conversion from the central planning to the open market economy led to a permanent or at least long-lasting increase in inequalities.

## Appendix

### UNU-WIDER Database

The WIID2 database is published by the World Institute for Development Economics Research (WIDER) and includes time series for Gini coefficients for most countries in the world, reported by various studies. The central sources of the WIID2 are Central Statistical Offices, the Luxembourg Income Study, Deininger & Squire 2004 and the Transmonee data by UNICEF/ICDC. In addition, the WIID2 Gini coefficients were calculated in two different ways. In our paper we report Gini calculated by means of the WIDER method, i.e. from decile data almost as accurately as if unit data were used. The second inequality measure included in the database is called 'reported Gini' and is the one reported by source or calculated by WIDER for old databases.

In both cases the calculations of coefficients are based either on disposable income or on consumption. We use the Gini coefficients based on consumption only if the coefficients calculated by means of the income method were not available. The WIID2 also ranks the quality of the source data. In our work we use Gini coefficients based on the studies with the highest quality rank possible.

### **Eurostat Data**

In our work we used two indicators from the Eurostat Database: the Gini coefficient and the income quintile share ratio. The second one is defined as the ratio of total income received by the 20 per cent of population with the highest income to that received by the 20 per cent with the lowest income. Income, for both indicators, is understood as equivalised disposable income. The data on Gini and quintile ratio are available since 1995. Up to year 2001 the calculations come from the European Community Household Panel – a questionnaire survey prepared in cooperation with Member States. Between 2001 and 2005 the data were provided by national statistic offices and since 2005 the data for all EU-25 countries have been extracted from the annual Survey on Income and Living Conditions (EU-SILC).

### **Unicef TransMONEE Database**

TransMONEE Database contains indicators of social and economic situation of children, young people and women in the countries of Central and Eastern Europe and the Commonwealth of Independent States (CEE/CIS) and is prepared and updated annually by the UNICEF Innocenti Research Centre. It was initiated in 1992 as a part of the project on Public Policies and Social Conditions: Monitoring the Transition in CEE/CIS (MONEE Project). In particular, the TransMONEE Database includes Gini coefficients for the countries mentioned. Gini calculations are based mostly on data from household budget surveys (HBS) reported to the MONEE project by national statistic offices. Because the concepts of measurements may differ across countries, the comparability of Gini coefficients for different countries is not recommended. When data from HBS are not available, the World Bank data or values from Milanovic (1998), Flemming and Micklewright (1999) surveys are used.

The registered unemployment rate is defined as the ratio of registered number of unemployed to the total size of labour force in a country. It is worth mentioning that registered data very often differ from rates extracted from labour force studies based on International Labour Organization's definitions. The rates in the TransMONEE database are estimated by the national statistic offices, whose definitions may differ from each other as well. Therefore any comparisons of registered unemployment rates between countries are not recommended.



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**Notes**

<sup>1</sup> WIID2c, Eurostat and UNICEF databases

<sup>2</sup> Detailed description of the data sources is presented in the Appendix.

<sup>3</sup> J.J. Rutkowski, Earnings inequality in transition economies of Central Europe: trends and patterns during the 1990s, SP Discussion Paper No. 0117, Social Protection, 2001, s. 5.

<sup>4</sup> 'hollowing out of the middle' is an expression used by Milanovic (1998) to describe the evolution of the middle class after transition. Before transition around 60 per cent of the population belonged to that class, but after the opening of the market many of them were pushed out from state employment and forced to work for the private sector or stayed unemployed: this was obviously followed by moving to another class of the society.

<sup>5</sup> Rutkowski (2001), this differential informs how much more tertiary educated people earn than primary educated ones on average. Rutkowski (2001) calculated that before transition tertiary educated people were earning around 35 per cent more on average than primary educated and after transition the difference grew to almost 75 per cent.

<sup>6</sup> J. Kornai, Paying the Bill for Goulash-Communism, Harvard Institute of Economic Research Working Paper No 1748, 1996, p. 6.

<sup>7</sup> Rutkowski (2001).

<sup>8</sup> World Bank Report 'Growth, Poverty, and Inequality: Eastern Europe and the Former Soviet Union', 2005.

<sup>9</sup> The definition of the income quintile share ratio is presented in the Appendix to this paper.

<sup>10</sup> P. Keane, E. Prasad, Poland: Inequality, Transfers, and Growth in Transition, Review of Economics and Statistics, March 2001, vol. 38, No 1.

<sup>11</sup> OECD Report, Education at a Glance: OECD Indicators, 2008.

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