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The Impact of Global Recession on Earnings and Income Inequality in Visegrad Countries

Abstract

This paper analyses the consequences of the economic downturn for employment, earnings and income inequality in Visegrad countries. It draws on both theoretical and practical evidence of the impact of the recession on earnings and income inequality, as presented in its second part. The third part gives an overview of the development of income inequality in Visegrad countries in the period prior to the global recession. The paper proceeds in its fourth part to a comparative analysis of the empirical data on employment, unemployment, income and income inequality in the Visegrad countries. In its sixth part, the paper summarizes key findings.

1. Introduction

The main objective of the present paper is to provide a complex comparative analysis of the effects of the economic downturn on the distribution of work and labour market earnings in Visegrad countries. As the labour market is the main source of income for individuals and households, the base of our analysis consists of examining the consequences of the economic downturn on employment, unemployment, real wages and number of hours worked. The changes in employment result in a loss of earnings, as the decline in the demand for labour affects the number of employed persons and number of hours worked

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by those who have jobs. On the other hand, the rise in unemployment leads to unemployment benefits, which can cushion the impact of the recession on incomes. As far as income inequality is concerned, it is necessary to answer the question: which groups were hit particularly hard in terms of loss of employment and in terms of income? All figures are based on the latest EU-SILC Survey (Statistics on Income and Living Conditions) and on data from the Eurostat database. Since most data are available just since 2005, we decided on the survey period 2005 – 2011 (or 2012 if possible).

As will be mentioned in the theoretical overview (second section), the impact of the economic downturn on income inequality is not clear cut and depends on who is affected by the economic downturn and where these people are located in the income distribution schemat. This makes it difficult to make any clear conclusions or predictions about the general trend in income inequality in Visegrad countries.

2. The theoretical impact of a recession on earnings and income inequality

The impact of recession on income inequality is not clear cut and depends on several variables. In the first place, it is necessary to review the impact of the recession on wages. As wages constitute the largest portion of income, their contraction might be considered as the main determinant of rising income inequality. From a theoretical point of view, the impact of the recession on wage levels seems to be ambiguous. The Keynesian economics states that insufficient aggregate demand is the main cause of an economic recession. As nominal wages are sticky and prices fall during the economic downturn, the real wages are rising and thus moving counter-cyclically. On the other hand, neoclassical economics states that an economic recession is caused by a suppression of the aggregate supply, which leads to a decline in labour productivity and hence to a decline in real wages. So, during economic downturns the real wages are moving pro-cyclically.

The impact of the economic downturn on income distribution and income inequlity is ambigious as well. It is assumed that economic recession tends to increase income inequality. However, decomposition approaches (whether by population subgroup or income source) show that the impact of the economic downturn on income inequality is not so clear cut (Jenkins, Brandolini, Micklewight, Nolan 2011, pp. 1-13). A macroeconomic downturn can lead to either a decrease or an increase in overall income inequality, as it depends on several variables.

Firstly, it is necessary to study the development of employment and earnings of low-skilled and high-skilled workers. If earnings of low-skilled employees decline more strongly during a downturn than those of high-skilled workers, earnings disparities will increase. On the other hand, if the employment of low-skilled workers contracts more strongly than the employment of high-skilled workers, this may result in a decline in earnings disparities due to a decrease in the number of low-earning employees. Thus, the more an economic downturn affects employment rather than the earnings of these two groups of employees, the more likely it is that earnings inequality will decrease (De Beer 2012, p. 9).

A rise in unemployment during an economic downturn generally leads to an increase of income inequality. However, the distributional impact depends crucially on which income groups are hit hardest by higher unemployment rates. If the incidence is among those in the lowest income groups, inequality increases; if it is more universally experienced, then the impact on inequality is more ambiguous (Dolls, Fuest, and Peichl 2010, p. 12).

The negative impact of the rise in unemployment on income inequality might be mitigated by social benefits granted to unemployed people. The analysis of Kruger et al., which reviews the association between inequality among working-age households and the business cycle for a number of countries, shows that in all countries earnings inequality at the bottom increases during recessions. However, the general pattern is that, in all countries and in all recessions, including the current one, inequality in disposable income during the recession rises less than inequality in earnings (Krueger, Perri, Pistaferi and Violante 2009, p. 16). This reflects the significant role played by automatic stabilizers in influencing the level of income inequality. The same conclusion was made by Dolls, Fuest, and Peichl. According to their analysis, social protection and taxation systems play an crucial role in protecting incomes in the face of major shocks. With respect to the unemployment shock, automatic stabilisation absorbs nearly one half of the shock in Eurozone countries. Benefits alone account for 21 per cent of the shock in Europe (Dolls, Fuest and Peichl 2009, p. 9).

What also has to be taken into accout when assessing the impact of recession on income inequality is the composition of households, i.e. whether all members are unemployed or there are members who maintain their earnings. Figari, Salvatori and Sutherland, by the use of ratio of post-shock income to pre-shock income, found out that the factor that plays the major protective role in shielding against a drop in relative income is whether there are other people in the household with earnings (Figari, Salvatori, and Sutherland 2011, p. 281).

Barlevy and Tsiddon (2006) claim that cyclicality in earnings inequality is not uniform (rising income inequality during economic downturn), and instead depends on the direction of the inequality trend. Thus, if a long-term trend is toward decreasing income inequality, recession will accelerate this trend even if unemployment is rising. On the other hand, if the long-term trend is toward increasing income inequality, the economic downturn will reinforce this trend. The reason for such a correlation between an economic downturn and income inequality is the number of major technological changes. Those who are first to use the technologies have higher income, thus income inequality is increasing. As technology becomes more widely spread and used, income inequality decreases as a result of the narrowing wage dispersion. Wage gains by unskilled workers during an economic downturn is possible due to technological improvements that enabled employers to pay unskilled workers relatively high wages.

3. Income inequality in Visegrad countries before the global recession

In the period before transition, Visegrad countries were characterised by relatively low levels of inequality, approximately at the level of Scandinavian societies (Flemming and Micklewright 1999, p. 66). However, the transformation process has led to significant increases in income inequality. Due to profound changes in their economies, the countries have experienced deep recession, during which employment decreased dramatically while unemployment continuously rose. The income situation of households which lost employment deteriorated tremendously, which gave rise to a form of inequality previously unknown, i.e. to inequality between those employed and those of working age who became unemployed. Moreover, inequalities between those in employment were also rising during the first phase of transition (Rutkowski 2001, p. 33).

In 1987-1988, income inequality measued by Gini coefficient in Visegrad countries was around 21.5[1]. In 1993-1995, income inequality increased in all countries except the Slovak Republic. The increase in Gini coefficient was sharp only in the Czech Republic, where over a period of six years, Gini coefficient rose by 8 points. In Hungary and Poland, the increase in Gini coefficeint was modest, just 2 points. In Slovakia, the Gini coefficient fell by 1 point (Milanovic 1998, p. 41).

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[1] The closer to zero the Gini coefficient is, the more equal the distribution is. The closer to 100, the more unequal is the distribution.

Examining changes in quintile shares, we found out that the shape of the change of income inequality differs among countries. In case of Hungary and Slovakia, there was little change in income shares received by the five quintiles. No quintile gained or lost more than 1 percentage point of total income (Milanovic 1998, p. 44). On the other hand, the Czech Republic and Poland registered moderate regressive transfers of income. While the bottom three quintiles experienced a decline in their pre-transition share, the forth quintile experienced either a very small loss or retained its pre-transition share, and the top quintile gained the most. The gain of the top quintile ranged from less than 2 percentage points in Poland to about 6 percentage points in the Czech Republic (Milanovic 1998, p. 45).

During the second half of the decade, earnings inequality has continued to rise due to an increasing wage premium for educated labourers (Rutkowski 2001, p. 19-22). Moreover, the emergence of a new private sector and the privatisation of formerly state-owned firms has resulted in the formation of a group of corporate business owners. As a result, a rising share of entrepreneurial and capital income in household revenues has led to increasing income inequality.

Income inequality started to decline in Visegrad countries in 2006 (Eurostat data for all countries are available only since 2005). The average Gini coefficient fell from 28.85 points in 2005 to 26.4 points in 2008. Over this period of time, income inequality was the highest in Poland, oscillating between 32 and 35.6. In 2008, the lowest income inequality was registered in Slovakia (23.7).

4. The impact of the global recession on income inequality in the Visegrad countries

The recession that followed the financial crisis of 2007-2008 was the first contraction in the global economy since the Second World War and the worst macroeconomic downturn of the global economy since the 1930s. In 2009, the economic crisis hit all Visegrad countries, as real GDP fell in each country (Figure 1). However, Poland was the only economy of the European union that did not fall into recession. The highest decline of real GDP was registered in Hungary (-6.8 %). In 2010, all economies recovered as their GDP rose respectively by 1.3 % (Hungary), 2.5 % (Czech Republic), 3.9 % (Poland) and 4.4 % (Slovakia). However, none of the countries has experienced a pre-crisis level of real GDP growth.

As we are concerned with individual and household income, it is more appropriate to look at the development of real gross household disposable income. This provides information for the household sector alone, as separate from business and government bodies. Gross househol disposable income increases over the whole period in all countries, except for Hungary, where gross household disposable income declined in 2009 (Figure 2). Comparing the data from Figure 1 and Figure 2 we can see a general trend toward increasing gross disposable income per capita (except in Hungary) despite the almost universal declines in output in 2009. In 2010, gross disposable income rose in each country, and gross domestic product rose as well.

Figure 1. Real GDP growth rate in Visegrad countries (%), 2006 – 2012
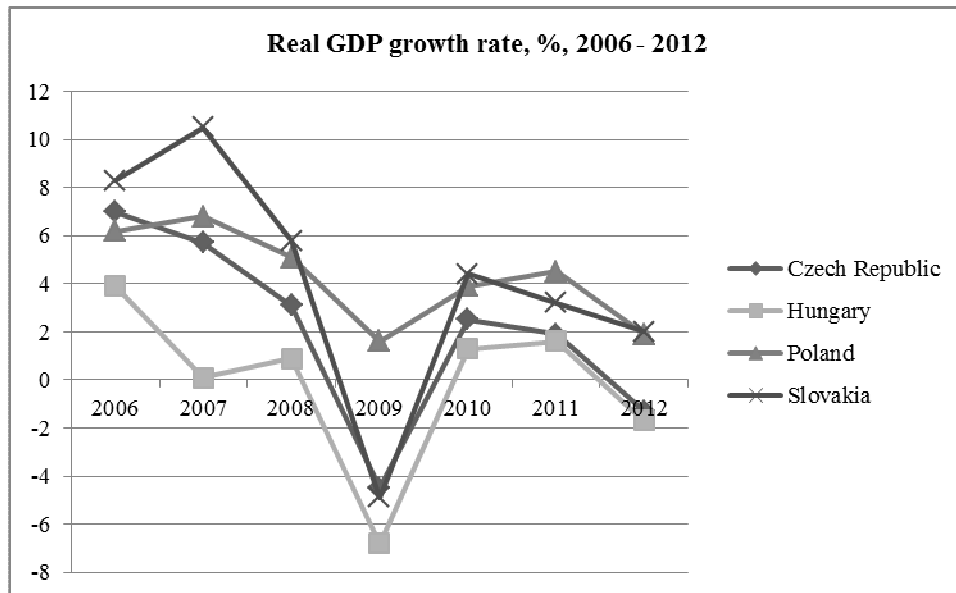
Source: Based on Eurostat data.

Figure 2. Real adjusted gross disposable income of households per capita in Visegrad countries, 2006 – 2011
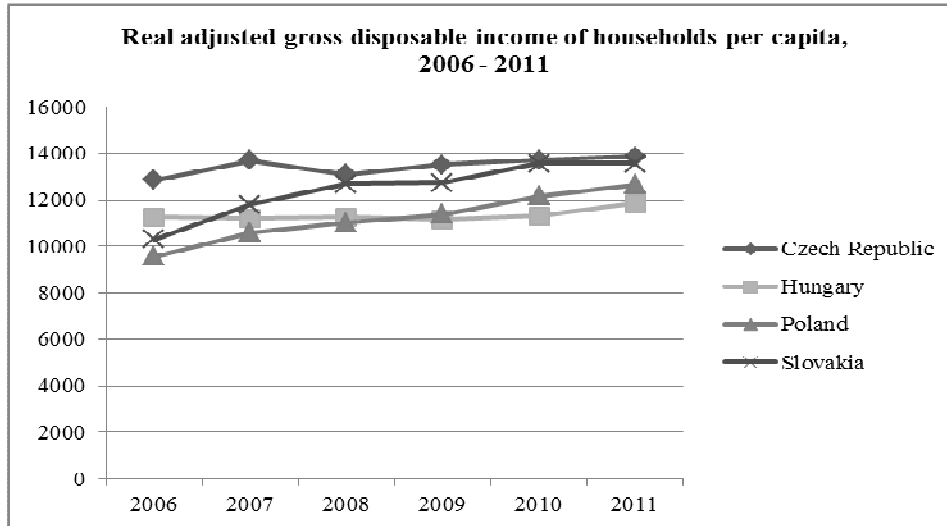
Source: Based on OECD data.

4.1. Changes in the labour market

In this section we provide a comparative analysis of the effects of the economic downturn on the distribution of work and labour market earnings in the Visegrad countries. The labour market is the main source of income for individuals and households, and its contraction might be the main determinant of rising income inequality.

Changes in individual employment

The economic downturn in the Visegrad countries (recession in the Czech Republic, Hungary, Slovakia) has led to a loss of employment in each country ranging from 0.1 percentage points in Poland to 2.4 percentage points in Slovakia. The correlation between the change in the employment rate and the change in GDP for period 2008-2009 varies from -0.062 (Poland), 0.206 (Hungary), 0.333 (Czech Republic) to 0.489 (Slovakia), which implies that job losses were largest compared with the decline in output in Slovakia.

In 2010, there was no upswing in employment as all economies recovered. This refers to the jobless recovery – the economic recovery without sufficient job creation, as only working hours increased. Again, the largest job losses were registered in Slovakia (-1.8 percentage points) despite the fact that its economy recorded the highest GDP growth among the Visegrad countries (4.4 %). As shown in Figure 3, the employment started to rise only in 2011.

Figure 3. Change in employment rate (%), 2006 - 2011
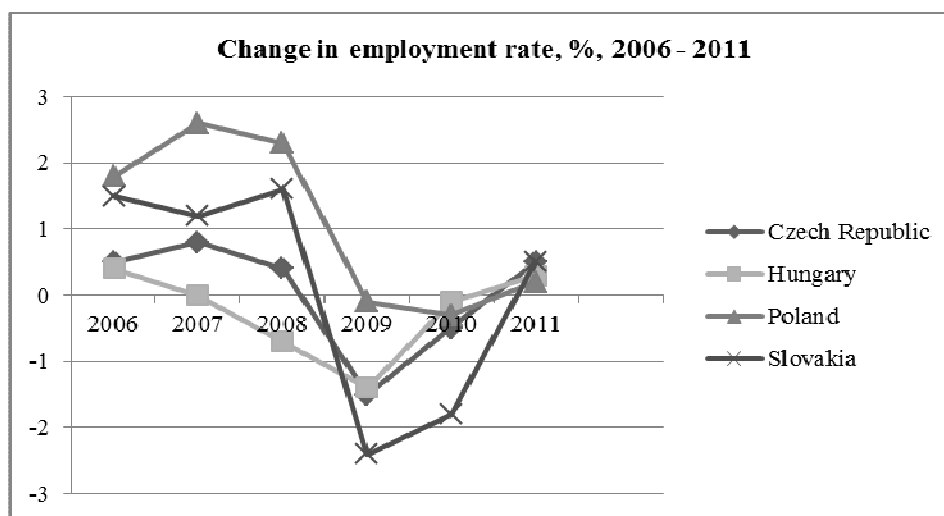
Source: Based on Eurostat data.

According to decomposition analysis, the economic crisis has hit more men, young people, and persons with only a primary education.

Male employment declined in each country in 2009 as follows: in the Czech republic (-1.8 percentage points), in Hungary (-2 percentage points), in Poland (-0.4 percentage points) and in Slovakia (-2.8 percentage points). Employment of females declined only in the Czech republic (-0.5 percentage points) and in Slovakia (-0.8 percentage points). According to the OECD, the greater contraction of employment among men compared to women probably reflects the sectoral composition of the negative shock to aggregate demand (OECD Employment Outlook 2010, p. 21–22), notably the impact of the trade shock on manufacturing and on construction. However, the cuts in public-sector employment are likely to change this balance, since female employment is concentrated mainly in the public sector (OECD Ministerial Meeting on Social Policy 2011, p. 16).

The greatest impact of recession was on the employment of less skilled workers. In 2009, employment of people with primary and lower secondary

education contracted the mostly (-1.825 percentage points), followed by employment of those with upper secondary and post secondary education (-1.725 percentage points) and by employment of people with tertiary education (-1.525 percentage points). As employment overall fell greatly in Slovakia, the employment loss of each education category in Slovakia was above the average. In 2010, employment again fell for each education category. However, trend has changed as employment of people with primary and lower secondary education contracted less (-0.65 percentage points), followed by employment of people with upper secondary and post secondary education (- 1.025 percentage points) and by employment of people with tertiary education (-1.15 percentage points). In 2011, employment of people with primary and tertiary education fell by 0.225 percentage points, while employment of people with secondary education rose in each country. As people with primary education earn less compared to highly-skilled workers, and as employment of workers with primary education contracted less during the period 2008 – 2011 compared to employment of people with secondary and tertiary education, this might have a positive effect on the development of income inequality in the Visegrad countries.

The age structure of employed persons shows that the recession hit mostly young people. In 2009, employment of people aged 15-24 years fell by 1.87 percentage points. The fall of employment of this age group continued in 2010 (-0.95 percentage points) and in 2011 as well, when it was the only age group that recorded an overall loss of employment (-0.57 percentage points). In Slovakia, the cumulative change of employment of people aged 15-24 years was the gratest, 6.06 percentage points (2008-2011). The smallest cumulative change of youth employment was recorded in Hungary (-1.72 percentage points). For the age group 25-34, once again the greatest cumulative loss of employment was in Slovakia (-5.83 percentage points), and the lowest in the Czech Republic (-1.51 percentage points). On the other hand, during the period 2008-2011 the employment of people aged more than 55 years rose in each country. The recession's greater impact on employment of young people, while employment increases among older people, may reflect a labour supply response to losses in retirement savings and/or lower availability of retirement options (OECD Employment Outlook 2010, Figure 1.3).

Changes in household employment

An individual perspective on changes in labour market gives an incomplete picture of the implications of the recession on employment. It is important to examine the impact of the economic downturn on employment of

households as well. Co-residence can have an income insurance role[2]. Consequently, the higher the unemployment rate of a household, the more dependent all household members are on any employed members keeping their jobs or receiving social benefits (Grandin, Canto and del Rio 2012, p. 4). When all household members lose their jobs, there is also an increased risk of poverty[3]. As in a recession low-wage workers generally suffer more from employment loss, a growing number of households with no earnings results in a decline in labour market incomes at the low end of distribution, thus leading to growing income inequality.

To assess the impact of the economic downturn on household employment, we examined what has been happening to the proportion of households without job. Jobless household rates show the share of persons aged 18-59 who are living in households where no-one works. In general, the changes in jobless household rates between 2008 and 2009 were modest in Visegrad countries. The number of jobless households rose by 0.1 percentage points in Poland, by 0.6 percentage points in Hungary, and by 0.7 percentage points in the Czech Republic and Slovakia. Plotting the changes in household employment against changes in individual employment, we can see that individual employment contracted more strongly during the economic downturn (Table 1).

Table 1. Trends in individual and household employment, changes (%)

	2008		2009		2010	
	employment rate	jobless households	employment rate	jobless households	employment rate	jobless households
Czech Republic	0.4	-0.5	-1.5	0.7	-0.5	0
Hungary	-0.7	0.6	-1.4	0.6	-0.1	-0.2
Poland	2.3	-1.5	-0.1	0.1	-0.3	0.1
Slovakia	1.6	-1.4	-2.4	0.7	-1.8	1

Source: Based on Eurostat data.

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[2] It is not only vertical support between generations, but also horizontal support between spouses or cohabiting partners that play a significant role. The latter plays a bigger role in stabilising household incomes, as women's existing earnings have a straightforward income-stabilizing effect for families.

[3] According to OECD Employment Outlook 2009, the poverty rate among jobless households is more than double the rate observed among working households.

Changes in unemployment

The economic downturn led to rise of unemployment in each Visegrad country. The smallest increase in the number of unemployed persons was recorded in Poland (1 percentage point). On the other hand, Slovakia recorded the largest increase in the number of unemployed persons among Visegrad countries (2.5 percentage points). Compared with levels of employment losses, the rise in unemployment was almost equal the loss of employment only in Slovakia. In other countries, unemployment rose more than employment fell. In 2010, the unemployment continued to rise in each country, even if economies recorded positive growth. Indeed, the growth of unemployment in 2010 was greater than a year earlier in Slovakia and in Poland. As employment started to rise in 2012, the same trend was recorded in unemployment, as the unemployment in each country declined only in 2012.

The greatest impact of economic downturn was on low-skilled workers. The unemployment of persons with primary education rose by 3.25 percentage points on average. The unemployment of persons with secondary education rose by almost 1.9 percentage points, whereas the unemployment of highly-skilled persons rose by only 0.7 percentage points. In 2010, the trend remained the same, as unemployment rose greatly in the case of workers with primary education. In addition, the unemployment of men rose greater than the unemployment of women, which is the same trend as observed in the case of employment.

4.2. Changes in income

Changes in hourly earnings

Even though the economies of Visegrad countries contracted strongly and employment in each country declined, real hourly wages (deflated by consumer prices) in the private sector have been moving counter-cyclically and rose around 1% (data for the Czech Republic are not available) in 2009. In 2010, real wages in the private sector declined only in Hungary (-1,6 %). As the decline in real hourly wages was greater than the increase registered a year earlier, workers in Hungary were worse off compared to the year 2008, when the economic downturn started (Table 2).

Table 2. Change in real hourly earnings, (%), 2008 - 2010

		Czech Republic	Hungary	Poland	Slovakia
Private sector	2008		2.1	5.8	2.9
	2009		0.1	0.6	1
	2010		-1.6	1	4.1
Manufacturing	2008	1.3	0.1	5.3	2.9
	2009	0	-0.2	-1.2	1
	2010	1.3	0.3	2.5	4.1

Source: OECD data.

The overall picture in the manufactoring sector is rather mixed. In 2009, real wages in the sector declined in Hungary (-0,2 %) and in Poland (-1,2 %). However, they remained at the same level in the Czech Republic, while increasing by 1% in Slovakia. In 2010, real wages increased in each country. Moreover, only in Hungary and Poland was the increase in real wages greater than the decline registered in 2009. Workers in manufacturing there were better off with regard to their hourly earnings compared with the year 2008.

But, even if real wages have been moving counter-cyclically, the number of low-wage earners has been increasing in all countries for which data are available[4]. In 2009, the share of workers earning less than two-thirds of median earnings in total dependent employment rose by almost 0.3 percentage points in the Czech Republic, and by almost 1 percentage point in Hungary and Slovakia. As real hourly wages increased, and at the same time number of low-wage earners increased, it is supposed that income inequality increased as well.

Changes in hours worked

An individual's income is determined not only by his/her wage but also by the number of hours worked. The lower the number of hours worked at the same hourly wage, the lower the income of a worker. As the strong contraction of production was not absorbed by real wages, we might expect that hours worked contracted greatly due to the economic downturn.

Average number of usual weekly hours of work declined by 0.3 hours and and by 0.6 % in Visegrad countries in 2009. The reduction of hours worked was greatest in Hungary and Poland where average number of hours worked declined by 0.3 hours and by 0.7 %. In 2010, the reduction in number of hours

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[4] Data for Poland are not available.

worked continued as the number of weekly hours worked declined by 0.1 hours and by 0.4 %. The cumulative change of weekly hours worked was 0.5 hours on average during period 2008-2012 (Table 3). The reduction of working hours was greater in the case of part-time employment. Employees working part-time worked 0.7 hours less in 2012 compared with 2008, while full-time employees worked only 0.3 hours less on average.

Table 3. Cumulative change in average number of weekly hours worked, 2005 - 2008, 2009 - 2012

	2005 - 2008	2009 - 2012
Czech Republic	-0.3	-0.8
Hungary	-0.4	-0.7
Poland	-0.1	-0.3
Slovakia	0.3	-0.2

Source: Based on Eurostat data.

Reduction of working hours was to a certain degree the result of the short-time work arrangements that were implemented in Visegrad countries just after the breakout of the economic crisis. The short-time work arrangements, which are publically sponsored, allowed employers to temporarily reduce the number of working hours while employees received income compensation that could offset the impact of the shorter working week on their salary[5]. Compared to countries where the short-time work arrangements have a long tradition, the arrangements in the Visegrad countries were less generous in terms of duration and benefits (Arpaia, Curci, Meyermans, Peschner, Pierini 2010, p. 6)[6].

Labour-market income is also determined by the type of the working contract. In the case of part-time employment, the number of hours worked is

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[5] This can involve either a partial reduction in the normal working week for a limited period of time or a temporary lay-off (zero hours' week). In both cases, the employment contract continues and is not broken.

[6] In the Czech Republic the short-time arrangements are accompanied by partial unemployment benefits to employees whose working hours and wages have been shortened by their employer due to the crisis. Eligibility for these benefits is conditioned on participation by the employees in training during the period without work assignments from the employer. In Hungary, a basic precondition for participation in short-time work schemes is that the applicant has to retain its employees for at least twice the period of the support, and company was obliged to sustain employment after the completion of the programme. In Poland, employers can apply for temporary state assistance covering part of the employees' remuneration when, because of their temporary financial problems, the working time of employees is reduced by up to 50% of normal working time for a period of up to 6 months. In Slovakia, the temporary measure "Contribution to support maintenance of employment" provides support to employers facing a temporary reduction in workload.

lower and thus labour income is lower compared to full-time working contracts. From 2009 to 2012, the part-time share of total employment rose mostly in Hungary (2.3 percentage points), Slovakia (1.5 percentage points) and in the Czech Republic (0.7 percentage points) while in Poland the part-time share of total employment fell by 0.5 percentage points. However, much of the increase of part-time working contracts was involuntary. Cumulative figures for all countries shows that involuntary part-time employment rose by 9.4 percentage points on average during 2008-2012. In Hungary, involuntary part-time employment rose the most (13.4 percentage points).

Social benefits

As mentioned in the theoretical overview, the rise of unemployment during the economic downturn generally leads to an increasing income inequality. Workers who lost their jobs during the economic crisis suffer a decline in their income. To estimate the loss of income incurred by employees who were laid off, we use the OECD measure of the net replacement rate of unemployment benefits. In the case of single person, the net replacement rate varies from 48 in Hungary to 58 in Poland, 63.3 in Slovakia and 64.3 in the Czech Republic[7]. This means that the income loss in the case of unemployment ranged from 35.7 % (Czech Republic) to 52 % (Hungary), as the rest was covered by unemployment benefits.

Calculation of the average net replacement rate for households[8] yielded slightly different figures (Table 4). The net replacement rate for households ranged from 57 in Poland to 73 in the Czech Republic and Slovakia in 2009. Thus, households lost their income mostly in Poland (43 %) and less so in Slovakia and Czech Republic (27 %), with the rest covered by unemployment benefits.

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[7] Average for unemployed persons with previous earnings of 67, 100 and 150 % of the average wage. Net income of individuals includes unemployment benefits, social assistance benefits, housing benefits, and family benefits.

[8] Average for unemployed persons with previous earnings of 67, 100 and 150 % of the average wage. Net income of individuals includes unemployment benefits, social assistance benefits, housing benefits and family benefits. Five family types are: one earner household (married couple) without child, two earner household without child, single parent of 2 children, one earner and two earner households couple with 2 children.

Table 4. Average net replacement rate of unemployment benefits, 2006 – 2011

	Czech Republic		Hungary		Poland		Slovakia	
	single person	Households	single person	households	single person	households	single person	households
2006	51.7	69.1	59.3	71.8	53.3	61.5	63.7	70.7
2007	53.7	71.3	60.3	72.6	49.3	57.7	63.7	70.9
2008	54.7	69.9	58.7	71.4	48.0	56.3	64.7	73.7
2009	64.3	72.9	58.0	70.5	48.0	57.4	63.3	72.7
2010	66.7	73.1	54.7	67.5	53.3	63.0	63.7	72.9
2011	67.3	72.5	54.3	65.9	53.3	62.4	64.7	73.9

Source: OECD data, author's calculations.

However, not all workers who became unemployed were entitled to unemployment benefits. According to Eurostat data, only 7.7 % of unemployed persons in Poland, 8.6 % of unemployed persons in Slovakia, but almost 42 % of unemployed in Hungary and 53 % of unemployed persons in the Czech Republic were benefiting from out-of-work income maintenance and support. Unemployment benefits can thus cushion the negative impact of unemployment on a person's income mostly in the Czech Republic and Hungary.

Even if not all unemployed persons are entitled to unemployment benefits, the number of persons benefiting from labour market support rapidly increased in all countries in 2009. However, in 2010, number of beneficiaries of labour market policy support stagnated (Slovakia, Czech Republic) or declined (Poland).

4.3. Changes in income distribution

Disposable income

Despite the economic downturn in 2009, disposable household incomes rose in each country. According to Table 5, real median household income, adjusted for inflation, rose remarkably strongly in Slovakia (17.45 %), in Poland (18.56 %) and in the Czech Republic (19.59 %). On the other hand, it increased

by just 3.67 % in Hungary. In 2010, real household net incomes rose only in Slovakia (7.16 %) while they declined in the Czech Republic (-4.41 %) and quite considerably in Hungary (-15.23 %) and in Poland (-16.18 %). However, the trend has changed in 2011, as Slovakia was the only country that registered a 1% decline in real household incomes. Real incomes rose in the Czech Republic and Hungary by around 3 % and in Poland by more than 10 %. As shown on Table 5, no uniform pattern of the changes in real household equivalised income emerges in Visegrad countries.

Table 5. Median equivalised net income, 2006-2011

	Czech Republic	Hungary	Poland	Slovakia
Median income 2006	4,802	3,849	3,111	3,313
Change in nom. terms	13.44	11.66	22.92	17.07
Change in real terms	11.34	7.63	21.62	12.81
Median income 2007	5,423	3,936	3,502	3,970
Change in nom. terms	12.93	2.26	12.57	19.83
Change in real terms	9.99	-5.67	10.00	17.94
Median income 2008	6,068	4,400	4,154	4,791
Change in nom. terms	11.89	11.79	18.62	20.68
Change in real terms	5.61	5.76	14.38	16.75
Median income 2009	7,295	4,739	5,090	5,671
Change in nom. terms	20.22	7.70	22.53	18.37
Change in real terms	19.59	3.67	18.56	17.44
Median income 2010	7,058	4,241	4,402	6,117
Change in nom. terms	-3.25	-10.51	-13.52	7.86
Change in real terms	-4.41	-15.23	-16.18	7.16
Median income 2011	7,451	4,535	5,032	6,306
Change in nom. terms	5.57	6.93	14.31	3.09
Change in real terms	3.37	3.01	10.42	-0.99

Source: Based on Eurostat data, author's calculations.

For the purposes of present paper, we examined in detail the development of median equivalised disposable income in real terms for employed and unemployed persons. This will give an idea of how income inequality might have changed in the Visegrad countries in the wake of the economic downturn.

Table 6. Change in medium disposable income by economic status, (%), 2006 - 2011

	Czech Republic		Hungary		Poland		Slovakia	
	Employed	Unemployed	Employed	Unemployed	Employed	Unemployed	Employed	Unemployed
2006	9.465	24.32	13.601	1.92	21.674	21.61	11.294	7.78
2007	11.090	2.23	-9.190	3.75	7.570	14.09	19.800	11.43
2008	2.92	6.39	2.17	2.08	15.17	21.85	15.97	20.05
2009	18.770	23.239	4.170	6.435	19.330	14.500	18.580	12.570
2010	-4.43	0.23	-14.09	-11.88	-16.18	-20.03	10.87	16.09
2011	4.649	0.450	6.103	0.430	9.962	12.010	-2.017	-2.490

Source: Based on Eurostat data, author's calculations.

According to Table 6, real incomes of employed persons display stronger increases compared to the incomes of unemployed persons in the Czech Republic, Poland, and in Slovakia in 2009 compared to 2008. In contrast, real incomes rose more for unemployed persons in Hungary. In 2010, real incomes of both groups decreased in all countries except Slovakia. Comparing the figures for employed and unemployed persons, the real incomes of employed persons display a stronger decrease than the incomes of unemployed persons in the Czech Republic and Hungary. As mentioned before, Slovakia was the only country that registered increase in real household incomes. However, the incomes of employed persons developed less favourably. In 2011, incomes of employed persons rose stronger compared to the incomes of unemployed persons in the Czech Republic and in Hungary, while they rose less favourably in Poland. Incomes of unemployed persons declined more strongly than those of employed in Slovakia as well. To conclude, as far as income disparities between employed and unemployed persons are concerned, no general pattern of a widening gap emerges.
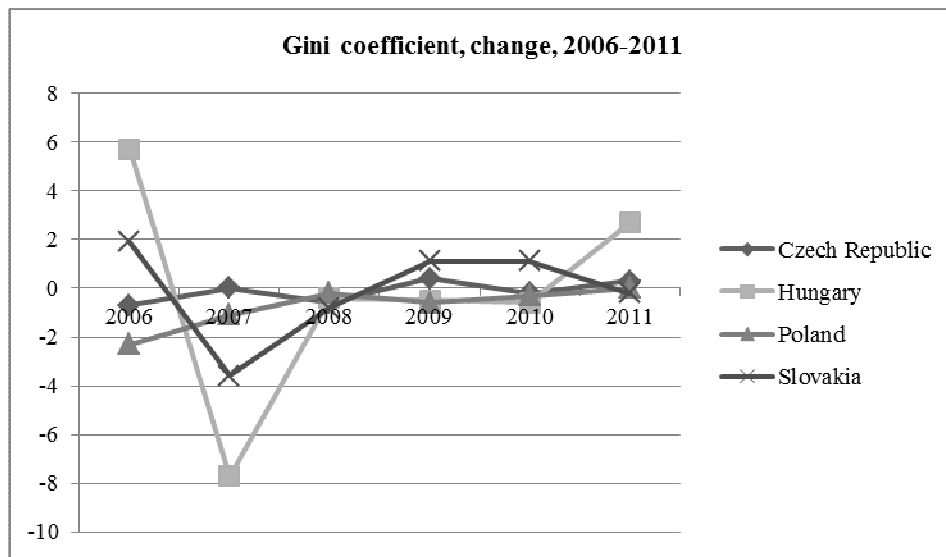
Changes in income inequality

There is no uniform trend in income inequality among the Visegrad countries over period 2008-2011. As shown on Figure 4, the highest increase in income inequality, measured by the Gini coefficient, occurred in Slovakia

(+1.1 point). In 2009, income inequality rose also in the Czech Republic (+0.4 point). In contrast, income inequality declined by around 0.5 point in Hungary and in Poland. In 2010, income inequality decreased in all countries except the Slovakia (+1.2 point). However, the trend changed in 2011 as Slovakia was the only country that registered a decline in income inequality (-0.2 point).

When comparing income quintile share ratio (Figure 5), income inequality rose in the Czech Republic and in Slovakia in 2009. In 2010, income inequality fell only in Hungary, while it remained at the same level in the Czech Republic and Poland and increased in Slovakia. However, in 2011 income inequality, measured by the income quintile share rate, stagnated in all countries except Hungary.

As we can see on both graphs (Figure 4 and Figure 5), the economic downturn in Visegrad countries has not so far led to a general widening of income inequality. Moreover, there are significant differences among countries regarding the development of income inequality.

Figure 4. Change in Gini coefficient, 2006-2011

Source: Based on Eurostat data.

Figure 5. Change in S80/S20 income quintile share ratio, 2006-2011
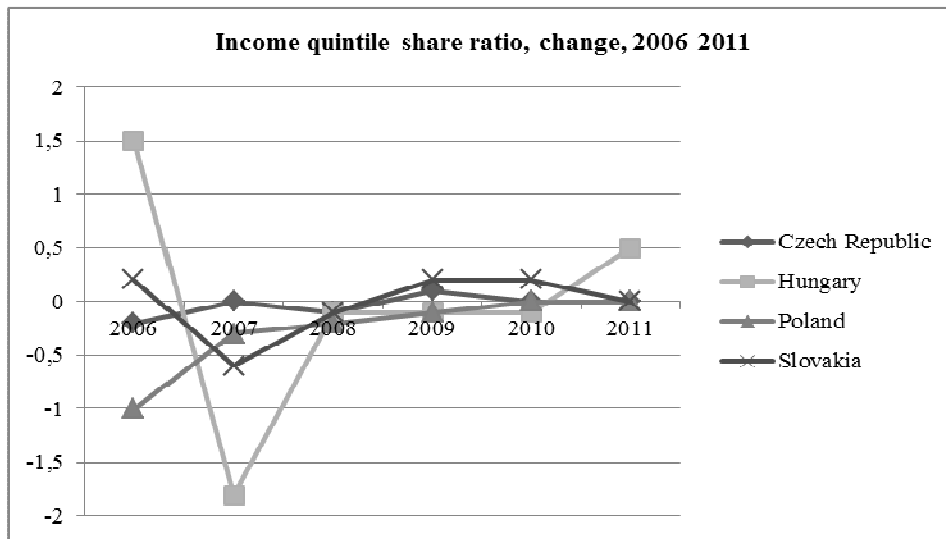
Source: Based on Eurostat data.

6. Conclusions

In the present paper we analysed the consequences of the economic downturn on income inequality in the Visegrad countries. Although, taking into account the official data on GDP growth, Poland did not register an economic recession, nonetheless employment contracted in each country. Job losses were large compared with the fall in output primarily in Slovakia. In 2010, there was no upswing in employment even though all economies recovered. The groups that were hit particularly hard in terms of loss of employment were men, young people, and workers with only a primary education. Plotting the changes in household employment against changes in the individual employment rate, we found that individual employment contracted more strongly.

During the economic downturn, real wages have been moving counter-cyclically. Therefore, the strong contraction of production was not absorbed by a decline in real wages, but rather by the changes in hours worked. Reduction of working hours was to a certain degree the result of the short-time work arrangements that were implemented in Visegrad countries just after the breakout of the economic crisis. The number of hours worked declined also, as

the part-time share of total employment rose. Much of the increase in part-time working contracts was involuntary.

Income loss in cases of unemployment was the lowest in the Czech Republic and the highest in Hungary. Comparing the net replacement rate for both individuals and for households, we found out that income of persons living alone contracted much more than that of households. The unemployment benefits cushioned the negative impact of unemployment on a person's income the most in the Czech Republic and Hungary, but the number of persons who were beneficiaries of unemployment benefits compared to the total number of unemployed persons was low in Slovakia and Poland.

Despite the economic downturn, disposable household incomes rose in each country in 2009. However, the trend changed a year later, as household incomes rose only in Slovakia. However, in 2011 Slovakia was the only country to register a decline in real household incomes. Thus, no uniform pattern of development of disposable household incomes in the Visegrad countries emerges from a comparison of the changes in real household equivalised income. The same conclusion was made when comparing the development of real median equivalised disposable income for employed and unemployed persons. As far as income disparities between employed and unemployed persons are concerned, no general pattern of a widening gap emerges in the Visegrad countries. Moreover, the same was registered in case of overall income inequality. Income inequality measured by Gini coefficient rose only in Slovakia and in the Czech Republic in 2009. Slovakia was the only country that registered an increase in income inequality in 2010, while in 2011 income inequality rose in the Czech Republic and in Hungary. To conclude, the economic downturn has not so far led to a general widening of income inequality in the Visegrad countries. Moreover, there are significant differences among the countries with respect to the development of income inequality.

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Streszczenie

WPŁYW ŚWIATOWEJ RECESJI NA DOCHODY I NIERÓWNOŚCI DOCHODÓW W KRAJACH GRUPY WYSZEHRADZKIEJ

Celem artykułu jest analiza wpływu spowolnienia gospodarczego na zatrudnienie, wynagrodzenia i nierówności dochodów w krajach Grupy Wyszehradzkiej. Analiza oparta jest na teoretycznych i praktycznych danych dotyczących wpływu recesji na zarobki i nierówności dochodów, przedstawionych w drugiej części opracowania. Część trzecia zawiera przegląd rozwoju nierówności dochodów w krajach Grupy Wyszehradzkiej w okresie poprzedzającym globalną recesję.Przedmiotem czwartej części jest analiza porównawcza danych empirycznych dotyczących zatrudnienia, bezrobocia, dochodów i nierówności dochodów w krajach Grupy Wyszehradzkiej. Część piąta podsumowuje najważniejsze ustalenia.

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