Unemployment as the Macroeconomic Problem: the Case of Visegrad Group Countries

Michal Tvrdon

***Abstract*—** The paper studies unemployment in the Visegrad Group countries (Czech Republic, Hungary, Slovakia and Poland) during the time period 2000 - 2009. Unemployment is analyzed in terms of its duration as well as from a regional perspective. All Visegrad Group countries have been severely hit by the global economic and financial crisis at the end of the observed period. One of the most important impacts of the crisis was a reduction of the general economic activity. As a direct consequence of this development, the labor market suffered a strong imbalance. Moreover, there existed some imbalances even before the crisis. Long-term unemployment persistence and its high share in total unemployment constitutes serious problem in these countries. In addition, the long-term unemployment rates were among the highest within the EU Member States. Using Eurostat and OECD data, the paper analyses and discusses development and consequences of unemployment both at a national and a regional level. The main finding of this analysis is that both the level of absolute dispersion and long-term unemployment rate has not remained constant over time and that the absolute dispersion was positively correlated with the long-term unemployment rate.

***Keywords*—**Labor market, Long-term unemployment, NUTS 2, Visegrad group, Economic crisis.

I. Introduction

Long-term unemployment represents a serious problem in most EU Member States. However, particular countries or groups of countries differ in principle, namely the difference concerns duration of unemployment or a share of long-term unemployment in total unemployment. Another difference consists in an overall approach of particular governments to solutions of this serious social-economic problem. In recent years an active approach of government institutions has become a significant instrument in fighting with unemployment and with lengthening of its duration in the developed countries. Meager and Evans [25] mention, why there is a need for coordinated response by agencies and a government - certain groups of the labor force are more inclinable to stay unemployed longer and it can lead to social exclusion. These "vulnerable" groups of the labor force are women, older labor force (usually over 55 years) and youth [16]. Katrnak and Mares [17] propose an idea that long-term unemployment is influenced by low education or completely absent qualification, insufficient work experience, poor health, low age or an ethnic origin. Furthermore, a purpose of being long-term unemployed usually combines several factors which were mentioned above.

Long-term unemployment, analogous to total unemployment, fluctuates consistent with a phases of the business cycle in the most countries. In addition Abraham and Shimer [1] mention that at the most of proceeded economic cycles it was proved rather strong correlation between the unemployment level and average duration of unemployment. Besides, there is an interesting fact that the persistence of unemployment did not decrease after the economic recession in such intensity as in the case of a decrease of the unemployment rate. OECD study [31] even declares that long-term unemployment tends to grow for a year or two since the beginning of decreasing of unemployment and afterwards it starts to decline slowly. The fundamental question than is, which factors cause a delayed reaction of long-term unemployment (in the sense of its decreasing) after subsiding of a shock. The study explains this phenomenon through the dynamics of the labor market, which is a function of speed recovery of the market, a degree of structural changes taking place in the economy. In addition it could be the setting of various government programmes assisting unemployed people and finally it is also the amount of previous short-term unemployed finding a new job. These measures are very important because if job applicants stay unemployed too long, they could have either stop to look for a job or they can lose their qualification and skills (see [4] or [41]). Moreover, employers may consider such candidates as risky and may be reluctant to hire them. It can cause an unwillingness of the long-term unemployed persons to actively search for a job. As long-term unemployed people stop to look for a job actively, they become irrelevant for forming wages. Companies do not take them into account and they do not include them into the labor supply. We also have to add the fact that even the employed labor force does not consider them as a competition - they become so-called outsiders. This is supported by [23] by the statement, that long-term unemployment has "devastating" impacts on unemployed in two levels – partly in the level of their potential opportunities in the labor market and partly it generates serious physical and mental difficulties. Beleva [4] argues that during the struggle for survival they often seek to participate in the shadow economy (see [2]), in extreme cases in a criminal activity.

Except the above mentioned correlation of the unemployment level and the persistence of the unemployment.

There also exists even a relationship between unemployment and jobs: "*if there grows a share of a long-term unemployment in an aggregate unemployment and if the employees hesitate to hire long-term unemployed people (who are simultaneously less active during job search), than at a given level of unemployment the jobs stay void for a longer period.*" [6]

As stated by [5] growth of a number of unemployed was reflected in longer duration of unemployment rather than in higher flows from a category of employed to a category of unemployed and vice versa.

One of the most serious consequences of long-term unemployment could be social exclusion. Socially excluded individuals are considered "as individuals of a given society, who for reasons that they themselves do not have under control, can not participate in usual activities to which would their citizenship entitled them and to which they aspirate" [36].

According to [18] social exclusion arises by interaction of six types of exclusion:

Exclusion from a labor market: economic forces meet arisen barriers to employment of the labor force, which is embodied by relatively lower qualification. Preventing of their entry of re-entry into a labor market causes feelings of disaffection or also very small contribution for society.

Economic exclusion: poverty induced or maintained by the exclusion from the labor market leads to the financial dependency on a social state and a loss of ability of financial self securing or securing of family members as a basic standard of a modern society.

Institutional exclusion: poor and at the same time unemployed people do not have access to private institutions like banks, insurance companies etc. to which in order to decrease a risk of uncertainty can appeal other members of a society. Instead, the unemployed people have to appeal to state institutions, which attend even to these neglected people. This fact can lead to feelings of dependency, in the extreme even a shame, what could cause a passivity of these people in the final result.

Social isolation: the above mentioned circumstances lead to the loss or estranging of the network of social services and also to a reduction of social relationship.

Cultural exclusion: a disability to live in compliance with generally accepted social standards and values leads to "stigmatising" and sanctions of environmental society.

Territorial exclusion: all the above mentioned factors lead to a geographical concentration and segregation of persons with limited financial possibilities. They live very often in areas with insufficient or absent infrastructure.

The author also confronts Kronauer [20] who supposes that the social exclusion is always related to unemployment and occurs only in the situation when an individual gets temporarily into a marginal economic position and a social isolation. Kieselbach [18] rather mitigates this statement in the sense, that the unemployment is a key determinant of increasing social exclusion, but it is necessary to take into account all other possible factors (see below).

In addition Kieselbach and Traiser [19] point out possible simplification of the whole problem only to a concurrence of the state of social exclusion versus social inclusion. According to the authors it is necessary to perceive the whole problem in a wider spectrum of interactions and various factors, which can broaden or reduce the vulnerability of an individual, and in an extreme case to evoke a social exclusion.

The aim of this paper is to point out problems associated with long-term unemployment in the Visegrád Group countries. Generally, its high share in total unemployment is often marginalized, and we want to draw an attention to possible consequences on the economy. The paper is structured as follows. The first section presents literature dealing with problems associated with long-term unemployment. The next section focuses on definition of long-term unemployment and main approaches to measuring this phenomenon. The third section continues with results of the analysis and last section contains main conclusions.

II. DECOMPOSITON AND MEASUREMENT

According to methodology of OECD or International Labor Organization (ILO) long-term unemployment is usually defined as unemployment persisting more than a year. However, some authors consider unemployment as long-term one, "harmful" one, when such unemployment persists more than six months. For example Slany [38] supposes that unemployment up to six months is beneficial in principle as a certain delay between losing and finding a job is essential - an applicant for a job would find a job corresponding to his qualification. Abraham and Shimer [1] consider unemployment as long-term one if its duration is between 15 and 26 weeks. On the other hand, we can encounter the concept of very long unemployment which is characterized by duration of more than two years (e. g. in the definition of Eurostat); however, according to Abraham and Shimer [1] very long-term unemployment persists more than 26 weeks. From the above mentioned definitions is thus evident that opinions on classification of unemployment by its duration are diametrically different. For the most part they are based on a subjective opinion of authors or institutions carrying out a research. Within this paper we use the ILO definition: as long-term unemployed we consider those, whose are unemployed more than 12 months.

OECD identifies five basic categories of unemployment – (i) unemployment shorter than one month; (ii) unemployment longer than one month but shorter than three months; (iii) unemployment longer than three months but shorter than six months; (iv) unemployment longer than six months but shorter than 12 months and the last category is represented by (v) unemployment longer than 12 months (so-called long-term unemployment). For outlining the situation in the labor market in these countries distribution of the unemployment rate according to its duration into two groups will be sufficient, when we merge all the shorter forms of unemployment (a+b+c+d) into unemployment, which duration does not

exceed 12 months and we mark it, generally, as short-term unemployment. Other category is long-term unemployment. In general, it is valid that the longer is the period of persistence of unemployment the more serious problem it represents, namely from the viewpoint of unemployed as well as from the viewpoint of potential employers and after all even from a viewpoint of the government.

We analyse unemployment from two viewpoints – (i) first of all, we analyse it according to its structure - namely according to the duration of the unemployment; and further (ii) we analyse unemployment in relation to qualification. We also focus on an analysis of unemployment, or its long-term component from a regional perspective (NUTS 2 regions). We chose these regions because they are also the key statistical-territorial units for financial support from EU Structural Funds. We use statistical data of the Organisation for Economic Co-operation and Development (OECD) and Eurostat. We use a data range from 2000 to 2009 at the national level and 2000 to 2008 at the regional level so there are not recognized effects of the financial crisis and the ensuing economic crisis at this level.

The most marked disparities across regions are in unemployment in V-4 countries. The coefficient of variation represents the ratio between the weighted standard deviation of regional unemployment rates (statistical level NUTS 2), compared to the national unemployment rate, and the national unemployment rate. Then the standard deviation (σ) is defined:

$$\sigma = \sqrt{\frac{\sum_{r=1}^{N}(u_r - u_n)^2}{N}} \quad (1)$$

Where u_r is the unemployment rate in r region, u_n is the national unemployment rate and N is a number of regions in the country. Then we obtain the coefficient of variation (CV) as:

$$CV = \frac{\sigma}{u_n} \quad (2)$$

This coefficient is multiplied by 100 for expression as a percentage. If all regional unemployment rates of a country are equal, the dispersion is zero. Large differences between regional unemployment rates within a country imply fully wide dispersion of unemployment rates. We can use the same formula for computing dispersion of long-term unemployment rates within the country.

An alternative way how to measure dispersion is using the weighted average (e.g. the national unemployment rate) as the reference point. Hence, the appropriate measure of absolute dispersion (*AD*) in each period would be the measure suggested by Martin [24]. The regional and national long-term unemployment rates are defined by:

$$lu_r = \frac{LU_r}{L_r},$$

$$lu_n = \frac{LU_n}{L_n} = \sum_{r=1}^{N}\left(\frac{L_r}{L_n}\right)\cdot lu_r \quad (3)$$

where lu_r is the long-term unemployment rate in the region r, and; lu_n is the long-term unemployment rate in all regions taken together (the national level); L_r is the size of the labor force in the region *r*; L_n is the size of the labor force in all regions taken together; LU_r is the number of long-term unemployed; and LU_n is number of long-term unemployed in all regions taken together.

If the long-term unemployment rate is the same in each region, which is identical to the national rate, than each region´s share of total long-term unemployment would be equal to its region´s share of the total labor force for all regions. Hence, a region´s share of total long-term unemployment can be expressed as:

$$\frac{LU_r}{LU_n} = \frac{lu_r}{lu_n}\cdot\frac{L_r}{L_n} \quad (4)$$

Thus a region´s long-term unemployment disparity can be written as:

$$\frac{LU_r}{LU_n} - \frac{L_r}{L_n} = \left[\frac{lu_r}{lu_n}\cdot\frac{L_r}{L_n}\right] - \frac{L_r}{L_n}$$
$$= \frac{L_r}{L_n}\cdot\left[\frac{lu_r}{lu_n} - 1\right] \quad (5)$$
$$= \frac{L_r}{L_n}\cdot\left[\frac{lu_r}{-lu_n}\cdot\frac{1}{lu_n}\right]$$

If these differences between a region´s share of total long-term unemployment and its share of the total labor force are summed over regions without regard to sign, we obtain:

$$\sum_{r=1}^{N}\left|\frac{LU_r}{LU_n} - \frac{L_r}{L_n}\right| = \sum_{r=1}^{N}\left|\frac{L_r}{L_n}\cdot\left[\frac{lu_r}{-lu_n}\cdot\frac{1}{lu_n}\right]\right|$$
$$= \frac{1}{lu_n}\sum_{r=1}^{N}\left|\frac{L_r}{L_n}\cdot\frac{lu_r}{lu_n}\right|$$
$$= \frac{AD_{lu}}{lu_n} = RD_{lu} \quad (6)$$

Where AD_{lu} is the absolute dispersion around the national long-term unemployment rate, and RD_{lu} is the relative dispersion, relative to the national rate. According to [10] the *AD* measure has a very straightforward and intuitive policy-related interpretation. It measures the number of persons in all regions taken together who would have to change their labor market status in order for every region to have the (same) percentage long-term unemployed as currently prevails in 'the nation', where that number (the total number whose labor market status would have to change) is expressed as a proportion of the total labor force in the nation. But, according to [24], which measure (absolute percentage point differentials or relativities) provides the correct indicator of regional

unemployment disparities is not, therefore, a trivial issue since they can lead to quite different conclusions as to the scale and evolution of the regional unemployment problem.

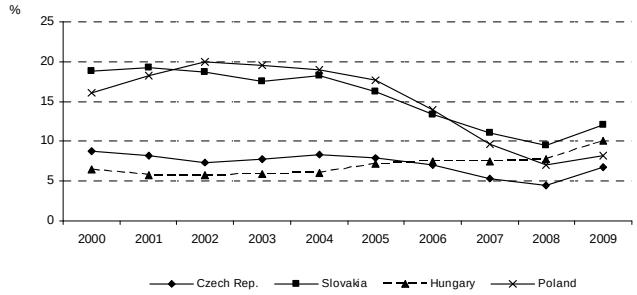
III. EMPIRICAL RESULTS

After 1989 all transition economies had to cope with a new phenomenon – unemployment. The situation is described best in [39]: *"the most important change that occurred in the labor market after 1989 was the change of conditions, when from the long-term persisting "lack" of labor force we almost immediately meet a phenomenon, by that time non-registered, latently existing, however extraneous into the vocabulary of a centrally planned economy, with unemployment."* With a certain exaggeration we could state that it has started to express itself a long-term "over-supply" of those, who do not want to work or an insufficient labor force demand makes it not possible to work from many reasons since this year. Generally, these are aspects like high taxation of labor or strict employment protection legislation, when employees are more cautious in hiring new workers or the economic crisis. Under the influence of a major economic breakdown, when the volume of occupational activity is drastically reduced, the easiest way to attain rapid cost reduction for an employer is letting go of a percentage of the employees [42].

We can also assume that the transitive economies started to be confronted with a number of resulting tasks: i) how to take care of those who lose a job and simultaneously ii) do not create inadequate fiscal costs and iii) to minimize a reluctance to work related with this protection [34]. The labor markets in the V-4 countries recorded several alike and several different experience in the period of transition. Whilst in Slovakia, Poland and Hungary had been recorded a sharp increase of the unemployment rate (up to double figure numbers), in the Czech Republic the low level of the unemployment rate persisted in comparison with other V-4 countries in the early 90s. The high unemployment rate in these countries is explained generally as a result of (i) macroeconomic policies or main external shocks; (ii) problems associated with an economic structure in these countries or (iii) unfinished transition from a centrally planned economy to the market one [26]. The phenomenon of the low unemployment rate during the initial phase of transition in the Czechoslovakia was caused (i) by a transfer of a large amount of employees from shrinking industry to an expanding sector of services, when the Czechoslovakia ranked among the group of countries of the socialistic block, which did not carry on socialistic market oriented reforms; (ii) by rapid progress of private ownership; (iii) by leaving of a significant part of working pensioners to retirement pension which meant a significant decrease of level of economic activity (it also contributed to lower tensions in the labor market and to temporary maintenance of the low unemployment rate) [12].

The first figure shows year on year changes in unemployment rates between the years 2000 and 2009 (according to OECD Labor Force Statistics database). 90s of the 20th century have already been described above. Therefore we will deal with the last years of the monitored period in more detail. All the V-4 countries, except Hungary, recorded positive development of this indicator in the last three years before the economic crisis - a decrease of the unemployment rate. The main factor, which caused better labor market performance, was remarkable economic growth during these years. Increased pace of growth had a significant impact on the labor market. Other factors of labor market performance improvement were a massive inflow of foreign direct investment, increased household consumption as well as overall economic growth in Western Europe, especially Germany. A trend of unemployment rate decrase was significant namely in the case of countries with the high initiative unemployment rate (Poland and Slovakia), where it decreased from 19.9% or 18.7% in 2002 to 7.1% or 9.5% in 2008. In the case of Slovakia, labor market performance improvement was caused by increased cooperation jobseekers with authorities and new legislation in the field of services employment, as well as tighten up the provision of unemployment benefits or some measures on demand side like corporate income tax cut. A decreasing trend of the unemployment rate was also recorder in the Czech Republic where the unemployment rate fell to 4.4 % and the Czech economy was among the economies with the lowest unemployment rate before the crisis. In this period, Hungary was the only economy for which an increasing trend was characteristic (the unemployment rate increased from 2004 from 6.4% to 7.4% in 2007). A previous unemployment rate decrease (between the years 1994-2001) was partly due to modification of the unemployment benefit system, shortening of the unemployment benefit period and tightening of the eligibility criteria in Hungary [15]. Subsequent development of the Hungarian unemployment rate (since 2003) was influenced by insufficient economic situation in the country which was caused by unstable finances, large fiscal imbalances and high government debt. Given the size of fiscal imbalances, government had to raise state budget´s revenues, e.g. hikes in employee social contributions, value-added tax and business taxation. The resulting squeeze on households' disposable incomes and businesses was damping demand [30].

The deep recession in all EU Member States has led to a marked deterioration of labor market performance. Unemployment generally fluctuates depending on a phase of the economic cycle - it tends to increase during the economic crisis and tends to decline during economic growth. In the context of the global recession, thank to labor and product market reforms, in the majority of countries, the impact of the crisis on long-term and structural unemployment is likely to be more moderate than in past severe downturns.



Source: Eurostat
Fig. 1 Unemployment development in V-4 countries

The global recession resulted in a severe shock to the Visegrad Group countries. Moreover, both Czech and Slovakia economy got even beyond its potential in the first half of 2008, which in conjunction with a public finance reform caused inter alia by a rise of the inflation rate. The recession´s consequences are: the number of unemployed rose, employment declined and many employees are working fewer hours than before the crisis [33].

Unemployment in general, but especially long-term unemployment tends to significantly adverse consequences for those with relatively low levels of education, just as in the EU and in V-4 countries with increasing levels of education, both overall and long-term unemployment declining [22]. Unemployment is heavily concentrated among less educated workers in the V-4 countries. Generally, the unemployment rate is the higher the lower is the educational level (see Table 1). Unemployment rates among workers with primary and lower secondary education tend to be extremely high, usually well close to or even above 20 %. For example, in the case of Slovakia the unemployment rate reached its maximum (53.4 %) for a group of low educated workers (with primary education) in 2005. Such level of unemployment was more than double compared with other V-4 countries. Moreover, we have also reported large variations in the unemployment rates in this group and data confirm generally known correlation between educational attainment and a position of this group in the labor market. The rate of unemployment was much more sensitive to cyclical fluctuations in the economy than other groups in the labor market, especially when it declined. We discuss causes of these relations in individual V-4 countries later in the article.

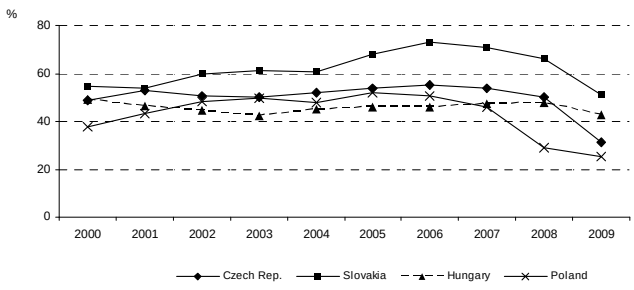
Table 1 Unemployment rates by highest level education attained (%)

		2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Czech Rep.	P	22.8	21.7	20.6	22.1	26.2	27.0	24.8	20.4	19.4	24.4
	S	7.9	7.1	6.4	6.9	7.5	7.2	6.4	4.7	3.7	6.2
	T	3.0	2.5	1.8	2.1	2.1	2.3	2.5	1.7	1.7	2.5
Hungary	P	11.6	11.2	11.4	12.4	12.5	14.4	16.7	17.5	18.9	23.4
	S	6.5	5.3	5.1	5.4	5.4	6.9	6.9	6.6	7.2	9.4
	T	1.4	1.2	1.8	1.4	2.2	2.7	2.8	2.9	2.8	4.0
Poland	P	23.4	25.9	28.1	28.0	30.3	29.0	23.7	16.5	12.8	15.4
	S	17.1	19.5	21.2	20.9	20.4	19.2	15.0	10.3	7.6	8.8
	T	5.4	5.7	6.6	7.1	7.3	7.2	6.0	4.7	3.8	4.4
Slovakia	P	40.5	42.5	46.1	47.1	52.1	53.4	48.6	45.1	39.6	41.7
	S	18.4	18.8	17.8	15.9	17.0	14.4	11.8	9.4	8.1	11.5
	T	5.2	5.2	3.9	4.4	5.9	5.0	3.3	4.1	3.6	4.3

Source: Eurostat

However, if we look at some other indicators, moreover in a longer time period, than we find out that labor market performance in these countries was not so good (even before economic crisis) as it could seem at the first sight. Development of some indicators as a number of job applicants or available jobs was insufficient; they even lead to doubts concerning optimal development of unemployment in comparison with the most used indicators (e.g. the unemployment rate). As an alternative viewpoint it can be used more detailed analysis of total unemployment, if we split unemployed into groups by duration. OECD uses five basic categories – a) unemployment shorter than one month; b) unemployment longer than one month but shorter than three months; c) unemployment longer than three months but shorter than six months; d) unemployment longer than six months but shorter than 12 months and the last category is represented by e) unemployment longer than 12 months (so-called long-term unemployment). For outlining situation in the labor market in these countries division of unemployment based on its duration into two groups is sufficient, when we merge all the shorter forms of unemployment (a+b+c+d) into unemployment, which duration does not exceed 12 months and we mark it generally as short term unemployment. The other category is long-term unemployment, thus unemployment longer than 12 months. In general, it is valid that the longer is duration of unemployment the more serious problem it represents, namely from the viewpoint of unemployed as well as from the viewpoint of potential employers and after all even from a viewpoint of a government.

A general trend of rising unemployment was accompanied by rising percentage share of long-term unemployment (12 months or more) in total unemployment before the crisis. Growth of a long-term unemployment share was recorded in all countries in the period 2000 to 2006, whilst the most striking growth is characteristic for the Czech Republic (48.8% in 2000 in comparison with 55.2% in 2006) and Slovakia (54.6% in 2000 in comparison with 73.1% in 2000). Even though an increase of the share of the long-term unemployment rate occurred in Hungary and Poland, these changes were not so significant and ranges orderly in units of percentage points (see Figure 2).



Source: OECD
Fig. 2 Share of long-term unemployment in total unemployment

Whilst the share of long-term unemployment grew in the monitored period, short-term unemployment meant quite opposite development – its share in total unemployment decreased. Moreover, it is valid that with longer duration of unemployment grows even its share in total unemployment. Moderate differences were recorded in the case of the Hungarian labor market, where the unemployed were allocated into particular groups more equally in comparison with other countries. A decrease of a number of unemployed occurred in the Czech Republic as well as in Slovakia during the years 2005 until 2008 and these years represent turnover years in development of unemployment according to its duration. According to [7] we assume that reducing long-term unemployment was mainly due to the growing labor demand associated with rapid economy growth (cyclical factors). However, regarding to a high value base this decrease was insufficient in comparison with other forms of unemployment. It caused an increase of its share in total unemployment between the years 2005 and 2006, thereby further deteriorating whole structure of unemployment. A fundamental change occurred in all countries except Hungary in 2007 - after a long time the share of long-term unemployed decreased (not only an absolute number but even the percentage one). In principle, this finding validates conclusions of the literature concerning a time delay of decreasing of the long-term unemployment rate in comparison with the overall one. As we mentioned above consequences of the economic crisis occurred during the year 2008 – a number of unemployed started to rise dramatically. It means that a share of long-term unemployment in total unemployment fell significantly. However, this trend is not an expression of positive development in the labor market, but is only a question of bias. Possible factors of this movement are obvious: (i) an increased number of young people after leaving school who have not yet found their first job; (ii) firing of workers at the end of 2008 and during 2009; (iii) some long-term unemployed have moved to a group of economically inactive. But these changes, on the contrary, do not mean improvement in the of better labor market performance. In this context, it is clear that the share of long-term unemployment in total unemployment is itself a very misleading indicator and it needs to be viewed in a broader context.

If look at Hungary, absolutely inverse development was recorded here, where a steady increase in both the number of long-term unemployed and their share in total unemployment (we discuss causes of this development above). In Poland, an increase of the long-term unemployed occurred in 2005, than a significant decrease in 2006 and this trend continued afterward. In contrast to Czech or Slovakia, a turnover occurred in development of the share of the long-term unemployment rate (a decrease) already in 2006. According to Czamarski and Slay [8] the causes of a high share of long-term unemployment are: (i) demographic conditions (workers from the years of population boom entered the labor market); (iii) weakness in education; (iii) inappropriate social protection policies or (iv) structural changes; (v) still small service sector (vi) Poland´s relatively unfavourable business and investment climates; (vi) ineffective decentralization of labor market regulation; (vii) high taxes on labor.

In the previous part of the article we have mentioned a high share of long-term unemployment in total unemployment. However, long-term unemployment does not represent a threat for these countries from the viewpoint of its high share but also from the viewpoint of an age structure. OECD distinguishes four basic groups of the labor force: a) age group between 15 and 19 years; b) age group 20 – 24 years; c) age group 25 – 55 years and d) age group over 55 years. A youthful labor force represents the first two groups and we considered to merge these two groups into one as a suitable step, thus an age group 15 – 24 years. While focusing on long-term unemployment in absolute terms we will find out that the vast majority of this group recruited from the age group 22 – 55 years (e. g. in the Czech Republic it was 154 thousand from total 205 thousand of long-term unemployed in 2006).

If we look at empirical data concerning unemployment in particular regions of the V-4 countries (see Table 2), we could assume that the lowest share of long-term unemployment will be in metropolitan regions. This assumption has proved to be valid; however it is possible to reproach some other implications, which are by their nature rather surprising. If differences between the unemployment rate reached in the metropolitan areas and the regions with the highest unemployment rate were significant (sustained period of high regional disparities in unemployment indicates low labor market flexibility mobility of the population, especially low regional mobility – [7]), similar relation for long-term unemployment was not so remarkable. First, we focused on the situation in the Czech NUTS 2 regions. Although the remarkable decrease of the unemployment rate has been recorded in the problematic regions Severozápad and Moravskoslezsko since the year 2005, the number of unemployed has stayed higher in these regions in comparison with other regions and it means a longstanding problem of highly regionalized structural unemployment. This is partly because of wide geographic diversity in a level of structural reforms and dynamics of economic growth, but also because of weak labor mobility. Two parallel phenomena occurred simultaneously in all Czech NUTS 2 regions – (i) a decrease of the total unemployment rate in all regions in the period 2004-2008; (ii) a significant increase of the share of long-term unemployment in total unemployment with its peak in 2006; and (iii) deterioration of labor market performance during 2009. However, intensity of the unemployment rate decline was quite different during the observed period between 2004 and 2008. The unemployment rate did not decrease with the same intensity in Czech regions and we can state that its change ranged from –2.2 p.p. to -7.4 p.p. If we look at higher values of the unemployment rate in problematic regions Severozápad and Moravskoslezsko, we can assume persisting problems in these regions. Unsatisfactory labor market performance was confirmed by another indicator in these

regions – the share of long-term unemployment in total unemployment. This share exceeded 60 % in some years, which means that six out of ten were unemployed for more than 12 months. Another finding is that this share was increasing gradually during the observed period, until outbreak of the economic crisis. An increase of the number of unemployed was one among consequences of the crisis and thus increasing the denominator in the formula for calculating the share of long-term unemployment, which resulted in a reduction of the share. Higher unemployment rate in these regions means also lower competitiveness (for more detailed analysis see [27]). The same trend was noticed on a national level. What is interesting is the fact that this trend was associated with all regions with no exceptions, even region Praha which still stayed below the whole national average. However, the share of long-term unemployment in total unemployment, which was over 39.2 % in 2008, is too high for the region with the highest concentration of foreign capital, a strong tertiary sector and the highest GDP per capita in the country. We take the view that this finding validates considerations that many of the unemployed are in principle unemployable in the Czech Republic due to the lavish social system and even though they meet conditions for inclusion into the category of unemployed, they are not its part de facto.

Table 2 Regional unemployment rates in the Czech Republic (in %)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Czech Republic	8.8	8.2	7.3	7.8	8.3	7.9	7.1	5.3	4.4	6.7
Praha	4.2	3.9	3.6	4.2	3.9	3.5	2.8	2.4	1.9	3.1
Stredni Cechy	7.5	6.7	5.0	5.2	5.4	5.2	4.6	3.4	2.6	4.4
Jihozápad	6.1	5.7	4.9	5.3	5.8	5.1	4.9	3.5	3.1	5.2
Severozápad	14.0	11.8	11.4	11.2	13.1	13.5	12.8	9.5	7.8	10.3
Severovýchod	6.9	6.2	5.4	6.5	6.7	5.6	6.1	4.8	4.0	7.3
Jihovýchod	7.8	7.8	6.8	7.2	7.9	7.7	7.1	5.2	4.0	6.5
Strední Morava	10.6	9.5	8.8	8.7	9.8	9.7	7.6	5.9	4.9	7.5
Moravskoslezsko	14.5	14.4	13.4	14.8	14.6	13.9	12.0	8.5	7.4	9.7

Source: Eurostat

In principle, the same trend was characteristic for Slovak regions just with the difference that values or changes were considerably higher (see Table 3). Effects on regional disparities are similar as in the case of the Czech Republic - demographic characteristics of labor demand, sector specialization of some regions and a limited housing policy (due to rent regulation).

Table 3 Regional unemployment rates in Slovakia (in %)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Slovakia	18.8	19.3	18.7	17.6	18.2	16.3	13.4	11.1	9.5	12.0
Bratislavský kraj	7.3	8.3	8.7	7.1	8.3	5.3	4.6	4.3	3.4	4.6
Západné Slovensko	17.7	18.6	17.5	15.9	14.3	12.5	9.8	7.8	6.4	9.9
Stredné Slovensko	20.4	20.9	21.4	20.5	22.1	19.6	16.4	15.3	13.1	14.6
Východné Slovensko	24.0	23.9	22.2	21.8	24.2	23.1	19.1	14.9	13.2	15.9

Source: Eurostat

Likewise as in the case of the Czech Republic positive development of the unemployment rate was recorded in all regions, whilst the lowest unemployment rate kept the region of the Bratislava. On the contrary, the highest unemployment rate was typical for the problematic region Východné Slovensko and Stredné Slovensko. A change of this variable was similar in all regions until the economic crisis - a decrease. Growth of the long-term unemployment rate was significant in all four NUTS II regions in comparison with Czech as well as with other regions in the V-4 countries. Extent of regional imbalances has been, with the situation in the western part of the country, and in particular in Bratislava, consistently more favorable than elsewhere (GDP per capita in Bratislava region was over twice as high as the country average, whereas in Východné Slovensko was only about three-quarter of the country average). Moreover, significantly lower GDP per capita in the east regions in comparison with west regions is considered as the main problem in economic performance [3]. Bratislava had a similar initial position as Prague - the share of long-term unemployment under 30 % in total unemployment - but its growth was in the case of the Bratislava region twice and half in comparison with Prague and exceeded 50 % in 2006 and 2007. A similar trend was achieved in other regions. Greatest growth was reached in the region Východné Slovensko, where the share of long-term unemployment increased from 57.1 % in 2001 to 83.2 % in 2006 and decreased to 71.5 % in 2008. Such high proportion of long-term unemployed is more than alarming and one comment says: *"long-term unemployment is really enormous in the country"* [9]. If eight out of ten unemployed were without job longer than a year, it essentially has to have a number of undesirable consequences in the region as well as in the relation with other regions or government, which can have partly social, economic or national meaning. Possible reasons for this state were a relatively mild approach to providing social benefits, opportunities to secure income in another way (informal economy) and a low level of education of (mostly long-term) unemployed persons in the country, which substantially reduces the chances to find a job. In 2006, the unemployment rate of workers with tertiary education was relatively negligible – 3.2 %, while that of persons having completed only primary education reached as much as 48 % [9]. As in other V-4 regions, widespread social exclusion prevents the Roma population from accumulating labor market relevant skills and contributes significantly to very high unemployment and low income among this ethnic minority. If the share of Roma population is remarkably higher than in other regions we can assume that the data were affected by this group significantly. Region Východné Slovensko had also migration losses between regions, particularly among college-educated population.

Despite some improvements, progress of the Polish labor market was extremely difficult over the observed period, with the unemployment rate over 10 % with chances of continuing to long term unemployment still exceeded 50 % in some

regions. Moreover, it should be stressed that interregional diversity is frequently higher than the intra-regional one [14]. Poland, in comparison with other V-4 countries, shows a significant geographical difference – the country is approximately four times larger than the Czech Republic or Hungary concerning its area as well as the number of inhabitants. Nevell [28] argues that the regional pattern of unemployment persisted. The unemployment rate in some regions was in 2000 as well as in 2008 higher compared with regions in the Czech Republic or Hungary (see Table 4). In general, all regions recorded a decrease of the unemployment rate before the crisis; however most of them recorded only moderate change between one and two percentage points. Unlike other V-4 regions Polish regions were not so affected by the economic crisis and the unemployment rate rose only slightly in most regions. The same trend was characteristic for changes in the long-term unemployment rate. A sharp increase of the share for 15 percentage points occurred in some regions during the period 2000 and 2007. On the other hand, there are regions, which recorded even the decrease of this share even before the crisis – Mazowieckie, Podkarpackie and Lubuskie regions. In some regions occurred only a moderate increase within several percentage points (Podlaskie, Dolnoslaskie and Pomorskie) before the crisis. The lower rural unemployment rate can be partially explained by the significant proportion of hidden unemployment in agriculture. Regions with the higher unemployment rate are those experiencing greater change in an industrial structure or northern regions of Poland which suffer from a collapse of national agriculture and have underdeveloped non-agricultural sectors. Moreover, these regions are characterized with higher inflows to unemployment rather than longer spell of unemployment.

Table 4 Regional unemployment rates in Poland (in %)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Poland	16.1	18.2	19.9	19.6	19.0	17.7	13.9	9.6	7.1	8.2
Lódzkie	16.6	19.8	20.3	19.7	18.8	17.4	13.4	9.3	6.7	7.6
Mazowieckie	13.1	14.6	17.0	16.3	14.6	14.8	12.3	9.1	6.0	6.0
Malopolskie	11.7	13.0	16.2	18.0	17.3	15.3	12.6	8.5	6.2	7.9
Slaskie	17.5	19.7	20.1	20.2	19.3	19.0	14.2	8.1	6.6	6.7
Lubelskie	14.2	14.7	16.6	16.0	16.7	14.3	12.8	9.5	8.8	9.7
Podkarpackie	15.9	18.0	18.2	17.7	16.6	16.7	13.7	9.6	8.2	10.1
Swietokrzyskie	15.7	18.0	18.8	19.1	20.6	19.0	15.5	12.1	8.8	10.8
Podlaskie	15.2	16.0	16.8	17.8	15.6	14.4	11.3	8.9	6.4	7.1
Wielkopolskie	13.7	17.7	18.2	17.1	18.2	17.2	12.7	8.3	6.1	7.5
Zachodniopomorskie	19.1	22.4	26.0	25.5	23.8	22.7	17.2	11.5	9.5	10.4
Lubuskie	20.7	24.3	26.3	24.5	23.2	19.1	14.0	9.8	6.5	9.6
Dolnoslaskie	21.3	23.7	26.1	26.0	24.9	22.8	17.3	12.7	9.1	10.1
Opolskie	15.5	18.1	19.7	18.3	17.8	16.9	13.5	9.4	6.5	9.9
Kujawsko-Pomorskie	17.8	20.0	21.5	21.8	22.1	19.8	16.2	11.3	9.1	10.4
Warminsko-Mazurskie	23.6	23.5	25.9	23.9	22.3	20.4	16.0	10.5	7.4	8.5
Pomorskie	16.7	18.5	21.5	20.5	20.2	18.9	13.8	9.5	5.5	6.4

Source: Eurostat

This finding suggests an idea that regional unemployment varies importantly with job destruction in Poland and thus region specific labor demand shocks. Secondly, the mismatch unemployment may be reinforced by labor immobility [28].

In the last monitored country, Hungary, the unemployment rate has undergone different development in comparison with other V-4 countries (see Table 5). From a regional level, a decline in economic performance and employment has been much more severe in the rural disadvantaged regions of the North East and the South West than in the more developed Central and Western regions of the country (in the nineties, most new jobs were created in these urbanized regions, where the populations was relatively highly educated and the infrastructure was developed). Less developed regions are disadvantaged from an employment aspects – it means that these regions are characterized by a high proportion of unskilled labor force with low levels of education and employment problems faced by people living far from job available in cities [15]. Additional specificity of Hungarian labor market is much higher initial share of long-term unemployment almost in total unemployment in all regions. Probably this was the reason why there the decrease of its share in the ones of percentage points occurred in most regions. From this viewpoint we can mark changes in long-term unemployment in these regions as the positive one. According to [15] unemployment has been much higher amongst the Roma than the national average and the gap between Roma and non-Roma unemployment has been growing over the years (same situation as in the case of Slovakia). Some empirical sociological research suggests that the unemployment rate of the Roma might be three to four times that of the non-Roma population.

Table 5 Regional unemployment rates in Hungary (in %)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Hungary	6.4	5.7	5.8	5.9	6.1	7.2	7.5	7.4	7.8	10.0
Közép-Magyarország	5.3	4.3	4.0	4.0	4.5	5.1	5.1	4.7	4.6	6.6
Közép-Dunántúl	4.9	4.3	5.0	4.6	5.6	6.3	6.0	5.0	5.8	9.3
Nyugat-Dunántúl	4.2	4.2	4.0	4.6	4.6	5.9	5.7	5.0	4.9	8.6
Dél-Dunántúl	7.8	7.8	7.9	7.9	7.3	8.8	9.0	10.0	10.3	11.0
Észak-Magyarország	10.2	8.5	8.9	9.7	9.7	10.6	11.0	12.3	13.4	15.2
Észak-Alföld	9.2	7.8	7.8	6.8	7.2	9.0	11.0	10.8	12.0	14.2
Dél-Alföld	5.1	5.4	6.2	6.5	6.3	8.1	7.8	7.9	8.8	10.6

It is clear from the above text that there is a general similarity in evolution of unemployment in the regions over time. There are marked (and persistent) differences in levels of the unemployment rate across the regions. According to [11] the wide dispersion in unemployment rates may serve as an early brake on economic recovery as inflation picks up first in low-unemployment areas. Equally important, the existence of high- and low-unemployment areas in the same country suggests poor labor market efficiency in matching people to jobs and, consequently, a wasteful resource utilization. Finally,

the chronically poor performance in some regions limits the degree to which national employment goals can be successful.

Table 6 Dispersion of unemployment rates (in %)

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Czech Republic										
CV URD	38.5	38.9	43.6	41.9	41.6	45.8	44.6	41.9	44.2	34.0
CV LURD	55.2	52.0	61.5	59.6	61.4	63.6	61.0	58.3	67.7	57.4
Hungary										
CV URD	32.3	29.9	32.1	32.6	27.6	26.9	31.8	39.4	42.5	30.7
CV LURD	39.2	36.6	35.2	43.2	38.6	29.1	33.6	41.1	52.7	38.3
Poland										
CV URD	18.9	17.9	16.5	15.8	15.9	14.6	12.1	14.2	17.9	20.1
CV LURD	27.0	24.2	19.9	19.9	16.6	16.3	21.5	23.2	25.3	30.4
Slovakia										
CV URD	27.0	24.3	22.9	26.7	30.8	36.7	37.8	38.0	40.7	31.5
CV LURD	43.9	36.4	32.7	39.4	41.0	51.8	50.1	49.2	52.7	49.9

Source: Eurostat; own calculation

Table 6 indicates dispersion of regional unemployment rates around the national level of the unemployment rate between the years 2000 and 2009. It is based on the coefficient of variation of NUTS II level unemployment rates within each country. The coefficient was rising until 2008 in three countries (Czech Republic, Slovakia and Hungary) whereas the highest coefficient was reached in the Czech Republic (44.2 %). Poland was only the country with the decrease of this coefficient from 18.9 % in 2000 to 14.2 % in 2007. From this point of view lesser disparities existed in Poland, nevertheless the unemployment rate was in all regions remarkably high. We can also see a remarkable decrease of the coefficient in 2009 in the Czech Republic, Slovakia and Hungary. This is due to the economic crisis which had impact on all regional labor markets performance. Similar changes were recorded in the case of the coefficients of variation of the regional long-term unemployment rates. The only distinctness was the higher values of the coefficient.

In this section these two findings are evident. First, that both the level of absolute dispersion and the long-term unemployment rate has not remained constant over time and that the absolute dispersion was positively correlated with the long-term unemployment rate, in other words, absolute dispersion tented to vary directly with the movements in national long-term unemployment.

In contrast, the relative dispersion of regional long-term unemployment rates has tended to move inversely with the both long-term unemployment rate and absolute dispersion in last two years before the crisis (2006 and 2007) – except Hungary (see Table 7).

Table 7 Absolute and relative dispersion

	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
Czech Republic										
AD	0.02	0.02	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.008
RD	0.46	0.42	0.51	0.47	0.51	0.52	0.46	0.45	0.51	0.45
Hungary										
AD	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.01	0.02	0.01
RD	0.31	0.28	0.29	0.31	0.27	0.26	0.30	0.35	0.47	0.34
Poland										
AD	0.02	0.02	0.02	0.02	0.02	0.01	0.01	0.01	0.005	0.006
RD	0.21	0.23	0.18	0.15	0.16	0.13	0.15	0.16	0.21	0.25
Slovakia										
AD	0.02	0.02	0.02	0.03	0.03	0.05	0.04	0.04	0.03	0.02
RD	0.24	0.19	0.16	0.24	0.29	0.39	0.40	0.42	0.45	0.36

Source: Eurostat; own calculation

IV. CONCLUSION

In this article we have examined long-term unemployment at the regional level. We hold an idea that the unemployment rate itself can not exactly depicture labor market performance. It seems to be obvious that growing economies of the Visegrad countries recorded the significant decrease of the unemployment rate which is a logical resulting of the growing phase of the business cycle and validation of general conclusions of the economic theory. The analysis also proved a time delay of decreasing of the long-term unemployment (represented both in absolute as well as percentage numbers) – whilst the unemployment rate started to decrease immediately after the beginning of the economic growth (year 2005), a decrease of the share of the long-term unemployment approved itself as far as in 2007. The same trend was proved at the regional level so far. Henceforth, the biggest problem of these countries remains long-term unemployment or its share in total unemployment, which is the highest among EU Member States. From the regional viewpoint the problem of long-term unemployment is more serious as it does not concern only the "problematic regions" – if the difference between the unemployment rate that was reached in metropolitan areas and the one that was reached in regions with the highest unemployment rate is significant, a similar relation in the case of long-term unemployment is not so considerable. In addition, obtained data bring us to the idea, that long-term unemployment is not a structural problem but a system problem, when it does not pay off to unemployed to work, which is given namely by a setting of a system of social security benefits.

In the last section of the paper we computed dispersion of long-term unemployment within the V-4 countries. We find out that both the level of absolute dispersion and long-term unemployment rate has not remained constant over time and that the absolute dispersion was positively correlated with the long-term unemployment rate.

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Michal Tvrdon was born at Hranice in the Czech Republic on 24 August 1978. He received his BSc degree in Economics at the Silesian University in Opava, in 2000; MS in Economics at the same university, in 2003. After one year work experience, he registered at the Masaryk University in Brno in the Czech Republic for a Ph.D. in Economic policy. He completed the doctoral research and defended his doctoral thesis (Institutional framework of labor market performance: the case of the Czech Republic) in 2007.
Currently he works as a full-time Assistant Professor at the Silesian University, School of Business Administration, Czech Republic. His research interests are related to labor economics, European integration and regional disparities. He has published several research papers and appeared in international journals and ISI conference proceedings.