ACTA UNIVERSITATIS AGRICULTURAE ET SILVICULTURAE MENDELIANAE BRUNENSIS

Volume 64 147 Number 4, 2016
http://dx.doi.org/10.11118/actaun201664041311

DEMOGEOGRAPHIC ANALYSIS TO SUPPORT THE OPTIMUM REALIZATION OF THE STRATEGY OF REGIONAL DEVELOPMENT IN THE ADMINISTRATIVE DISTRICT OF MUNICIPALITY OF VALAŠSKÉ MEZIŘÍČÍ

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Abstract

DRÁPELOVÁ VENDULA, VERTER NAHANGA, HÜBELOVÁ DANA. 2016. Demogeographic Analysis To Support the Optimum Realization of the Strategy of Regional Development in the Administrative District of Municipality of Valašské Meziříčí. *Acta Universitatis Agriculturae et Silviculturae Mendelianae Brunensis,* 64(4): 1311–1323.

Regional development represents the society efforts geared towards reducing regional disparities, optimizing the development and mitigating any social problems. People play a highly significant role that triggers certain demographic development and spatial specifics of demographic indicators, in particular, and regional development, in general. Against this backdrop, this article assesses some demographic indicators in the municipality of Valašské Meziříčí. The results from the statistical analysis of spatial and temporal series show that the administrative district of the municipality of Valašské Meziříčí demonstrated (micro) regional differences and outlined the future population change. The identified adverse effects include: the declining of the population in the administrative headquarters; distinctive dynamics of aging and the low level of economic activity in certain municipalities; underdevelopment of community services; and distribution of the age structure of the disproportion between the peripheral facilities and administrative headquarters. There is an urgent need for policy decisions that could avert the unfavorable development of some demographic indicators (economic and social) in the future.

Keywords: regional development, administrative district of the municipality, demographic indicator, time series

INTRODUCTION

Regional development and policy represent a distinct society's effort to reduce regional disparities to a level that does not impede progress or cause social problems (Blažek, Uhlíř, 2002). Explaining the causes of different socio-economic and demographic development of regions are interested not only geographers but also economists, governments, and other stakeholders. The answer to the question, which are the primary reasons conditioning in the historical context of existing regional disparities, it is not easy. The main emphasis is on the importance of cultural dispositions (i.e. cultural determinism), as opined by scholars such Lorimer (2005) and Zarycki (2010). On the contrary, the decisive influence of natural conditions (i.e. environmental determinism) is strongly considered (Diamond, 1997). The pursuit of comprehensive explanations cannot be without generalization because the development of regions is mostly complete. In connection with the text, the article is not intended to present a comprehensive tool for implementing regional development policy, but present a possible approach to the assessment of one of its major components – population. The text aimed at identifying the (micro) regional differences in demographic and socio-economic indicators and try to explain differences in the context of regional studies.

The distribution of the activities of regional policy has undergone and passed several stages since the creation of regions and integration of the Czech Republic into the European Union in May 2004. Before the creation of regions, the central government was the principal actors of the important activities related to subsidy policies, and solving the problems of regional, micro-regions and municipalities. After the establishment of regions in the country, the central government only plays the role of coordinating cities, while the power of solving the problems of both micro-regional and municipal levels has been delegated to the regions. Administrative division NUTS 2, NUTS 3, NUTS 4 that it is often inappropriate because the organization does not respect geographical areas (cf. Ženka *et al*., 2012). Also presented in the demo-geographical analysis showed differences in the level of micro-regions or municipalities remain and they need to be identified.

THEORETICAL AND METHODOLOGICAL BASIS

Meaning demo-geography and demography in regional development and competitiveness

Demogeography investigates the study of population and its development, dynamics, structure, and deployment, focusing on understanding the causality of demographic phenomena and processes with relevant natural and socioeconomic elements of space-time (Bačík, 2009, p. 5). It is evident that the study of long-term population development, current status and its changes over time, take on the considerable importance (Woods, 1982). Features of the population in the future will play an increasingly important role in social and economic processes. Consequently, demographers engaged in comprehensive analyzes (Koschin *et al*., 2007; Fiala, Langhamrová, 2013), the dynamic changes in certain demographic indicators (Rabušic, 2004) or a change in the overall population, which depends on the size of the natural increase and migration (Woods, Rees, 1986). Similarly, Šotkovský (2011) evaluates the dynamic spatial typology based on a series of values of demographic indicators such as the net migration in the European Union member countries for the period between 1990 and 2009. The results show that the immigration has substantially accounted for population growth in the EU member states, and it is likely to have adverse effects on countries in the long run. In the same vein, Kotowska *et al.* (2008) determine the cause of the decrease in birth rate in Poland. They argue that labour market, social policy, and economic change account for the decline in birth rate in the country. There are options for evaluating aging populations at the micro-region level in long-term (Długosz, Kurek, 2009) or as a comparative analysis of the Czech and Slovak Republics (Káčerová *et al*., 2012). Positive net migration could balance population change in the regions. Most inbound migrants are younger and are likely to have a positive impact on the birth rate, labor market and net economic contribution in the municipalities. Conversely, and notably, economic problem of international migration is destabilizing migration and integration of the domestic threat to public policy (Šotkovský, 2011; EC, 2015).

Given that human resources are closely connected with education and training, many authors have devoted their attention to writing about human capital development (Vltavská, Fischer 2009; Drucker, 2003; Fukuyama, 1999, 2002) and the quality of life in the regions (Pacione, 2003; Fayers, Machin, 2007). Human resources constitute one of the factors of socioeconomic level and maturity and competitiveness of regions (Rutten, Boekema, 2007; Viturka, 2010). Experts emphasize the issue of regional competitiveness (Enyedi, 2009), but are still waiting for the acceptance of a theoretical framework to the topic of local competitiveness of regions and locations. Possibilities for increasing the competitive position of the region in the context of the emergence of new structural knowledge-based economies knowledge-based economies (KBE) are engaged Klamut, Passella (1999). Zarycki (2010) in the context of cultural determinism reveals the causes of social (economic and social) backwardness of Eastern Poland. Enyedi (2009) even notes that the term competitiveness is not just an economic concept, but has a strong socio-cultural dimension. It is important in the context of support for regional development to analyze demographic indicators. Also, Krugman (1994, 1996) posits that it is not possible to apply the concept of competitiveness on the corporate level. Similarly, other authors (Turok, 2003; Enyedi, 2009; Affuso *et al*., 2011; Cudny *et al*., 2012) argue that regions are competing in areas such as attractiveness for tourism, an environment favorable for the realization of cultural events and other "qualities". Research on regional competitiveness is increasingly shifting to innovation, new technologies, investment, scientific-research base, the creative sector of the economy, etc.

Most of the concepts of regional development and competitiveness emphasize that innovations and creativity are between the main drivers of regional transformation in advanced economies. Some EU countries (e.g. Visegrad Group or Visegrad Four – V4) that are recently undergoing structural transformation have specific factors that are impeding regional competitiveness and development (cf. Ženka, Novotny, Csank, 2012):

- a low density of population,
- administrative breakdowns NUTS 2, NUTS 3, NUTS 4 is inappropriate in it "artificial elements" that do not respect geographical organization of space,
- for the most export-based economy, dependent on foreign direct investment (FDI), characterized by

the underdeveloped sector of knowledge-oriented "business people" services,

- of the V4 countries are between manufacturing (industrial) and innovative stage.

Justification for the selection of demographic indicators

Demography is among the most dynamic components of human geographical sphere and population that is very sensitive to changes in various parts of the community. It plays an essential role in regional development priorities. Selected indicators of the *demographic structure* are the result of processes occurring in the population over the past decade while predetermining population change in subsequent decades. The *age structure* of people in a particular area is created by the long-term development of the two basic demographic processes – the natural movement and human migration. It is a crucial characteristic, which speaks of the nature of life (micro) regions, the lifestyle of the population and in particular on the needs and possibilities of the population. In the context of aging (*aging index*) takes this issue important (Rabušic, 2004). The proportion of elderly people shows the extent of the burden on the economically active population and pressure on social infrastructure such as healthcare, housing and homes for the elderly.

The selected indicators of the *natural population movement* belong to the *crude mortality rate*, which shows that the level of reproduction of the population closely linked to *the crude death rate*, as it forms the basis of demographic reproduction. Mortality is one of the main indicators of the health status of the population and is influenced by many factors. *Mechanical population movement* such as migration (in this case the *value of the balance daily commuting*), can be expressed as an important part of regional processes, which form one of the geographic organizations of society. The impact of migration on the Czech Republic is not only marginal, but also it is a crucial factor in the administrative district of the some municipalities. Because it significantly affects regional differences in the age composition of the population. The complex conditionality is an important indicator of regional development and at the same time is a process that has some the sub, especially socioeconomic processes. Migration has an impact on the labor market and social stability at the local and regional levels (Hübelová, 2014). The indicator of daily commuting/rides from the villages to work also suggests a promising working and living conditions in a district that motivate migration. The highest (labor) mobility shows people with higher education and young people aged 20–35 years, which in aggregate are less at risk of losing their jobs.

In its complexity, there is a mutual symbiotic connection of the above selected demographic characteristics and socioeconomic characteristics and state of the labor market pet ORP. An important part of the regional analysis is the evaluation of sectoral specialization, both in terms of the importance of the spatial concentration of individual activities, and in terms of assessing economic stability. An important structural feature of the economically active population is its affiliation to the sectors of the national economy. *Employment by industry* and *the national economy is often used in international comparisons* as an indicator of the overall level of economic development (Toušek *et al.*, 2008). The position of regions in the Czech Republic can be evaluated based on the *structure of employment by sectors*, which vary depending on the structural changes in the economy and society or *specialization index*. It gives an idea of the level of importance of each sector in the study area compared with the position in the Czech Republic. Specialization index is calculated as the ratio of employment in the sector in a given territorial unit, and the share of employed in the same industry in the whole country:

$$Is = \frac{\frac{X_{ou}}{X_{cu}}}{\frac{X_o}{X_c}}$$

when X_{ou} means the number of employees in selected industries and surveyed territory, X_{cu} the total number of people employed in the monitored area, X_o represents the number of employed in the sub-sector throughout the Czech Republic and X_c indicates the total number of employees in the country. If the specialization index is greater than 1, that means in smaller territorial unit, the sector has higher relative representation than in the whole country, it is possible to say that this territorial unit specializes in that type of industry.

Time series analysis

An appropriate methodological tool to record demographic changes appears to be *a time-series analysis* because it relatively reflects the development of transformations in the future. Time series means a sequence materially and spatially comparable observation, clearly structured in terms of time away from the past to the present (Hindls *et al.*, 2007).

Description of the *trend component* of rated series is one of the fundamental tasks of time series analysis. Among the broad range of trend function for a range of processed data proved suitable choice of the linear and parabolic trend. The *linear trend* is most commonly used a type of trendy features. Among other things can serve for a limited period as an *approximation* of other trend functions (Hindls *et al.*, 2007).

The *linear trend* is expressed in shape:

$$T_t = \beta_0 + \beta_1 t,$$

where β_0 and β_1 are unknown parameters and $t = 1, 2, \ldots, n$ is the time variable.

To estimate the parameters β_0 a β_1 is used the least squares method. It follows from this equation with two unknowns, which looks as follows:

$$\Sigma y_t = nb_0 + b_1 \ \Sigma t \ ,$$
$$\Sigma t y_t = b_0 \Sigma t + b_1 \Sigma t^2,$$

where Σ means the sum over t from 1 to n, i.e. Σ_{t+1}^{n} .

Solving the system of normal equations are the parameters:

$$b_0 = \bar{y} - b_1 \bar{t} \, ,$$

$$b_1 = \frac{\overline{yt} - \bar{y}\bar{t}}{\overline{t^2} - \bar{t}^2} \ ,$$

Parabolic trend is frequently used type of trend function, which takes the form:

$$T_t = \beta_0 + \beta_1 t + \beta_2 t^2,$$

where β_0, β_1, and β_2 are the unknown parameters and $t = 1, 2,\ldots n$ is the time. This is a linear function in terms of parameters and is therefore used to estimate the parameters of the least squares method again. Therefore, three normal equations are presented here as follows:

$$\Sigma y_t = nb_0 + b_1 \Sigma t' + b_2 \Sigma t'^2$$

$$\Sigma y_t t' = b_0 \Sigma t' + b_1 \Sigma t'^2 + b_2 \Sigma t'^3$$

$$\Sigma y_t t'^2 = b_0 \Sigma t'^2 + b_1 \Sigma t'^3 + b_2 \Sigma t'^4,$$

if conditions $\Sigma t'^k = 0, k = 1,3,5\ldots$ we find simple parameter estimation β_1 in the form:

$$b_1 = \frac{\Sigma y_t t'}{\Sigma t^2} \, .$$

The remaining parameters can be obtained by solving normal equations:

$$\Sigma y_t = nb_0 + b_0 \Sigma t'^2,$$
$$\Sigma y_t t'^2 = b_0 \Sigma t'^2 + b_0 \Sigma t'^4, \text{where:}$$
$$b_0 = \frac{\Sigma y_t \Sigma t'^4 - \Sigma t'^2 \Sigma y_t t'^2}{n \Sigma t'^4 - (\Sigma t'^2)^2},$$
$$b_2 = \frac{n \Sigma y_t t'^2 - \Sigma y_t \Sigma t'^2}{n \Sigma t'^4 - (\Sigma t'^2)^2}.$$

RESULTS OF ANALYZES OF DEMOGRAPHIC AND SOCIOECONOMIC INDICATORS

Natural and mechanical population movement

Mortality and natality rates

The mortality rate of the population is affected by all the fundamental determinants of health, especially the lifestyle of people, standards of medical care, the quality of the environment and the hereditary predisposition. It is evident that mortality among men has long been higher than in women, which corresponds with the fact that women live longer than men.

In the reporting period, an average of 422 persons die in a year, and an average gross rate of mortality rate was 10.0 %. The lowest value of the crude

I: *Number of live births, deaths, and natural population growth and their general rate (%) in the administrative district of municipality of Valašské Meziříčí for the period 2002- 2012, predictions gross birth rate and mortality in 2017 (CSO,2014; own work)*

Year	Mid-year	Live births	Deaths	Natural population growth	General natality rate (‰)	General death rate (‰)	General natural population growth rate (‰)	Year	Prediction general natality rate (‰)	Prediction general death rate (‰)
2002	42 040	409	424	-15	9.7	10.1	-0.4	2013	9.2	10.6
2003	41 995	385	434	-49	9.2	10.3	-1.2	2014	8.5	11.0
2004	42 021	380	421	-41	9.0	10.0	-1.0	2015	7.7	11.3
2005	41 956	446	461	-15	10.6	11.0	-0.4	2016	6.9	11.8
2006	41 956	417	404	13	9.9	9.6	0.3	2017	5.9	12.2
2007	41 998	483	375	108	11.5	8.9	2.6			
2008	42 116	461	408	53	10.9	9.7	1.3			
2009	42 234	463	431	32	11.0	10.2	0.8			
2010	42 146	449	414	35	10.7	9.8	0.8			
2011	42 027	412	426	-14	9.8	10.1	-0.3			
2012	41 866	402	440	-38	9.6	10.5	-0.9			
Total	-	4707	4638	69	-	-	-			
Average	-	428	422	6	10.2	10.0	0.9			

II: *Number of emigrants, immigrants, net migration and its general rate (‰) in the administrative district of municipality of Valašské Meziříčí in the years 2002–2012 (CSO, 2014; own work)*

Year	Immigrants	Emigrants	Net migration	General rate of net migration (‰)
2002	479	460	19	0.5
2003	540	512	28	0.7
2004	521	502	19	0.5
2005	460	472	-12	-0.3
2006	402	418	-16	-0.4
2007	502	517	-15	-0.4
2008	501	381	120	2.8
2009	389	395	-6	-0.1
2010	466	558	-92	-2.2
2011	408	448	-40	-1.0
2012	423	477	-54	-1.3
Total	5 091	5 140	-49	-
Average	463	467	-4	-0.1

mortality rate was observed in 2007 (8.9 %). The trend of the crude mortality rate is most appropriately describes a parabolic trend function in the form

$$T_t = 9{,}7795 - 0{,}0070t - 0{,}0252t^2$$

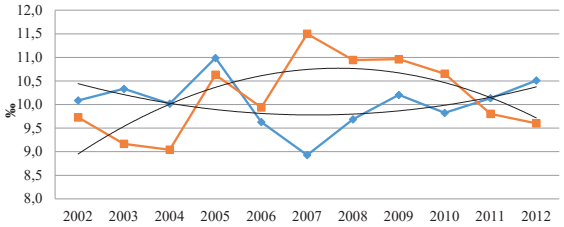
has been increasing in the period under review. Maintaining the current development trend will take place in 2017 to increase the crude mortality rate to 12.2 % in 2017 is 1.7 % higher than in 2012 (Fig 2). Current data (CSO, 2016) show a stagnation of general death rate (in 2013 value of 10.5; 2014 value of 10.0).

Development of general death rate was higher than the general natality rate, except between 2006 and 2010 when the number of births exceeded the number of deaths. The general increase of natality rate was also observed at the national level. After 13 years of natural decrease in the birth rate was above the level of mortality. An increase in the number of children was expected because at the age of the highest natality occurred in the 70s in the last century. In the period 2002–2012, the gross birth rate was on average 10.2 ‰ with a total natural population growth of 69 persons during the reporting period (Tab. I).

The trend of general birth rate most appropriately captures the downward trend of the parabolic function of the form

$$T_t = 10{,}7442 + 0{,}0765t - 0{,}0565t^2.$$

The immutability of the existing character of the trend in the years to come could lead to a steady decline in these values (Fig 1). In 2017, the general birth rate could theoretically reach a value of 5.9 ‰ is 3.7 ‰ less than the value in 2012. The changes in the reproductive behavior of young people, as well as cultural and structural changes, have significantly affected the number of births in the area. Current data (CSO, 2016) show stagnation general birth rate (in 2013 value of 9.6, the 2014 value of 9.8).



1: *General birth rate (red) and general mortality rate (blue) (%) of the administrative district of municipality of Valašské Meziříčí for the period 2002-2012, accompanied by a trend function.*
Source: CSO; own work

In the period 2002–2012, the average general natural population growth rate was 0.9 ‰. From the beginning of the period up to 2005, the indicator moved into negative territory in 2006 and then began to show positive values. Once again, in the last two years, they prevailed over the dead-born, leading to a natural decrease. The largest increase in natural growth in favor of births was recorded in 2007 in relative terms; this meant an increase of 2.3 ‰.

Indicators of migration

Tab. II presents the number of emigrants which exceeds the number of immigrants in the administrative district of the municipality of Valašské Meziříčí. This implies that the number of people that are moving from the area to other administrative boundaries is more than those that are moving to other places to settle in the district of Valašské Meziříčí.

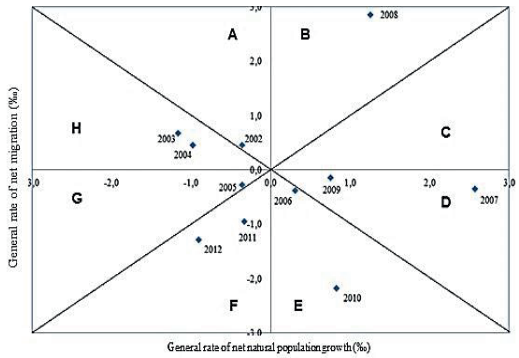
The rate of net migration in the period was negative, except for the period 2002–2004 and 2008, which reached a maximum percentage of net migration (2.8 %). Conversely, the biggest drop recorded in 2010, with the gross net migration of -2.2 %. This decrease was primarily caused by an increase in the number of emigrants from the

administrative district from 395 in 2009 to 558 in 2010. Reasons for this reduction were attributed to the effects of the recent global economic crisis that hit the labor markets. Arguably, the redundancies of some major companies led to a stagnant demand for labor, which drastically resulted in the increase of number job seekers or over supply of labor. This issue occurred mainly in companies that concentrate their production in the automotive industry. For example, Deza (110 jobs), Schott CR, Inc. (60 jobs), and CIE Automotive (70 jobs). Production based on exports depends on the FDI and the decision of the headquarters of multinational companies (MNCs), which are not so much encouraged to develop the local Research and Development (R&D). As consequence, the level of competitiveness in the region is below expectations (Czyż, 2010; Ženka *et al*., 2012).

Lack of jobs and low level of economic development have been identified as the factors that pushed people to migrate beyond administrative boundaries of Hranice na Moravě, Vsetín, and Rožnov pod Radhoštěm, for work and other economic benefits. A similar decline in population was recorded in 2012. The reason for the termination of production of solar panels from Schott Solar, Inc. in the period between 2002 and 2012, in the Valašské Meziříčí area, led to the loss of 35 workers to migration, and the general average rate of net migration amounted to – 0.8 %.

Total increase

The administrative district lost 20 persons within the period between 2002 and 2012, and the average gross rate of overall growth was virtually zero. In addition to the 2002 and 2007–2009, the value of the total increase ranged negative numbers, both due to natural change and migration. In a comparison of the characteristics of natural population growth and migration behavior of populations in different years offered Webb diagram, which is used for the analysis of population movement. Plotting natural population growth shows a loss and net migration in the area. The roasting chart is the uneven development of the two components of the total increase. Followed years are fairly distributed evenly among the various quadrants. Numerically, the largest group of the indicator is found in sectors E and F, where the predominant loss of natural change is recorded. Followed by G and H sectors, where population loss was predominantly due to net migration (Fig 2).



2: *Diagram of Webb - the administrative district of municipality of Valašské Meziříčí in the years 2002-2012 (CSO, 2014; own work)*

Structure of population by age and age index

There was an annual decline in the share of the pre-reproductive period (0-14 years) composition of the age structure of the basic economic generation in *the administrative district of the municipality of* Valašske Meziříčí. The study shows a decrease by 1 % at the end of the reporting period in 2012, as compared to the year 2003. In the post-working age, people are in the same time frame to increase their share in the total population of roughly 3.8 %. The main cause is the declining birth rate intensity not only in the administrative district and increasing life expectancy. For the first time in 2009, the proportion of elderly (retired population) surpassed those aged 0-14 years. This signifies that the population is gradually aging in the study areas. The fact is also consistent with the prediction until 2017 when it may reach the age index values of about 130 (Tab. III). The *administrative district of the municipality of* Valašské Meziříčí has been steadily recording the growing number of senior citizens (65+ years), albeit slowly. The prediction of aging index further indicates that the number is likely to increase steadily over a long period. This suggests that the age group (elderly) and their families may need a broad range of social and health services. Nonetheless, it is necessary to support the activities and programs that would help not only senior inhabitants but also other age groups. The active and adequate care of their health could improve their lifestyle and increase their life expectancy (longevity).

The development of aging index in the period 2002-2012 was based on the ratio of pre-reproductive and post-reproductive components, which are the result of both long-term and the current development of natality and mortality in the administrative district. Since the beginning of the period analyzed, the aging index values that were below the limit of 100 %, constantly grew up to 110.8 % in 2012. There was an increase in this index by 38 % in the period under study.

The trend of the aging index best reflects the growing trend of linear function:

$$T_t = 94{,}5455 + 3{,}47182t \quad \text{(Fig 3).}$$

Assuming that the current development trend of the aging index change in 2017 accounted for approximately 130 persons aged 65 and over per 100 children aged 0-14 years. Current data (CSO, 2016) presented confirm the calculation of prediction (in 2013 115.5 index of age; in 2014 it was 118.3).

Aging index in the different municipalities in the administrative district of the municipality of Valašské Meziříčí in 2011 ranged from 71.1 % to

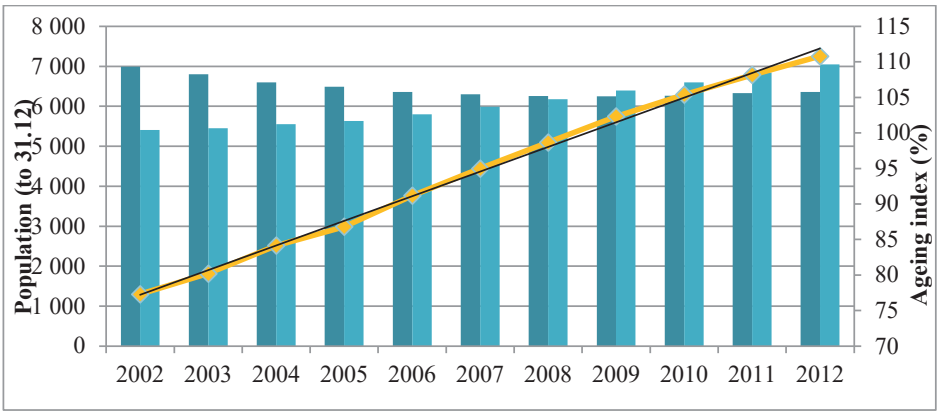
III: *Age structure of the population of the administrative district of municipality of Valašské Meziříčí in the period 2002-2012 – shares of major age groups in the total population (%), ageing index (in %) including a prediction of its future development until 2017 (CSO; 2014, own work)*

Year	Proportion of persons aged 0 - 14 years (%)	Proportion of persons aged 15 - 64 years (%)	Proportion of persons aged 65+ (%)	Ageing index (%)	Year	Prediction ageing index (%)
2002	15.9	71.9	12.3	77.3	2013	115.4
2003	16.2	70.8	13.0	80.2	2014	118.8
2004	15.7	71.1	13.2	84.1	2015	122.3
2005	15.5	71.1	13.4	86.8	2016	125.8
2006	15.2	71.0	13.8	91.2	2017	129.3
2007	15.0	70.8	14.2	95.0		
2008	14.8	70.5	14.6	98.7		
2009	14.8	70.1	15.1	102.3		
2010	14.8	69.5	15.7	105.4		
2011	15.1	68.6	16.3	108.2		
2012	15.2	67.9	16.8	110.8		

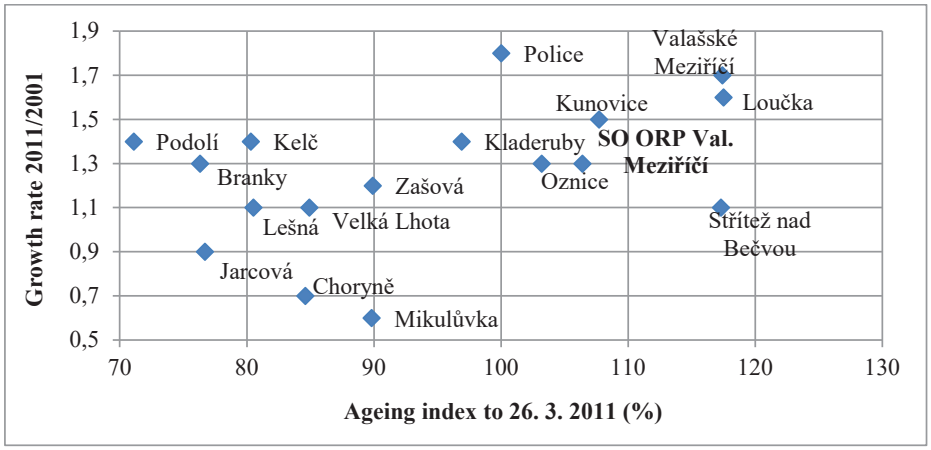
117.5 %. Less than two-thirds of municipalities, for example, only seven municipalities accounted for 100 children less than 100 population aged 65 and over. The lowest age index in 2011 was recorded in the village Podolí (77.1 %). Explanation of this fact could be due to immigration of people from where the land was supplied for the construction of houses in 2009 and 2010. A similar situation occurs even in the village Jarcová where age index reaches 76.7 %. In recent years, there has been reported interest of young people living where adequate facilities are provided near the Valašské Meziříčí. Lower values of aging index were also observed in the village Branky (76.3 %). It may be to some extent caused by the different demographic behavior of the Roma minority group that have lived in the village. Lower aging index in this community corresponds to the implementation of the influence of cultural predispositions (Lorimer, 2005; Zarycki, 2010).

Conversely, municipalities that show the adverse development of the population showed a higher index value of old age. These include Loučka village, where 100 children aged 0–14 years accounted for 117.5 of the population aged 65 and over. The reason for the higher value of the aging index could not only be due to an outflow of residents to the administrative headquarters but also the location of a home for the elderly in the village. Similarly, Střítež nad Bečvou village (117.3 %) and administrative Valašské Meziříčí (117.4 %), mainly due to the high proportion of persons aged over 65 years.

Besides the age level of the population, the rate of aging can also be assessed, based on the growth rate. Apart from the three municipalities in the administrative district of the municipality of Valašské Meziříčí that recorded in the majority of municipalities in 2011, the increase in the index of aging compared to 2001. The most favorable possible assessment shows Mikulůvka village, where there was a decrease coefficients increase to 0.6, followed by Choryně village (0.7) and Jarcová village (0.9). Lešná or Velká Lhota exhibits a low level of the index of aging and the low level of the rate of aging of the population. In contrast, the evaluation shows a negative result in the administrative town of Valašské Meziříčí. In the same vein, Loučka Village



3: *Aging index (yellow) in the administrative district of municipality of Valašské Meziříčí in the years 2002-2012 accompanied by a trend function (CSO, 2014; own work)*



4: *The level of old age and the aging rate in the administrative district of municipality of Valašské Meziříčí (CSO, 2014; own work)*

also recorded an above average level of the index, and above average age at the rate of aging (Fig. 4).

Population by economic activity

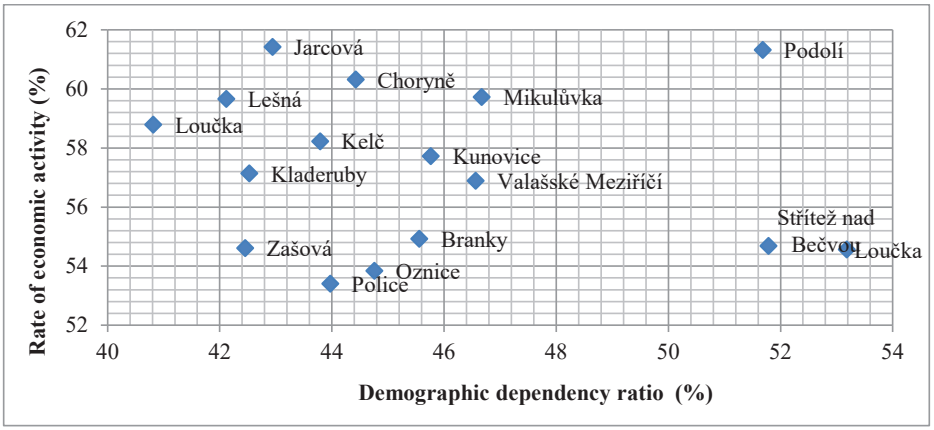
The largest concentration of firms is the administrative seat of the Valašské Meziříčí, and its industrial and commercial facilities. Part of the economically active population work in municipalities located outside of the defined administrative area, mainly due to either increased job opportunities or regarding a shorter driving distance to work. According to data from the last Census and housing (2011), Vsetín, Rožnov pod Radnoštěm, Nový Jičín and Hranice na Moravě can be included. The rate of economic activity, the share of economically active persons in the total population (aged 15+) in the administrative district decreased by 3.9 % to 57.0 % within the censuses period 2001 and 2011, respectively. Consequently, the finding is at per with the Czech Republic (in comparison Zlín Region, it shows a value of 56.7 %).

Out of the sixteen municipalities of the administrative district, Police and Oznice villages occupy the lowest level of economic activity in 2011. This was partly due to a higher proportion than post-productive population. Conversely, the highest rate of economic activity and a relatively low index of economic burden is recorded in the Jarcová and Choryně villages. These outcomes are mainly attributed to a greater proportion of the productive part of the population (Fig 5).

Employment structure by sectors of the economy

Jobs can be assessed through a variety of criteria. The most employment is monitored based on the resolution of employed persons by economic sectors or the proportion of the economically active population in the sub-sectors of the economy. This indicator to some extent represents the maturity of given regions.

In the case of the labor market in the administrative district of the municipality of Valašské Meziříčí, can be considered to have major industries. Notably, manufacturing sector, which in 201, employed up to 10.1 % workers higher than the Czech Republic



5: *The economic activity rate and the demographic dependency ratio in individual communities in the administrative district of municipality of Valašské Meziříčí in 2011, source: SLDB; own work*

IV: *Economically active population by sectors in the administrative district of municipality of Valašské Meziříčí and the Czech Republic on 26.3.2011, index of specialization (CSO, 2013; own work)*

Sectors and industries (CZ-NACE)	Czech Republic		Adm. district of municipality Valašské Meziříčí		Index of specialization
	Absolutely	Relatively	Absolutely	Relatively	
I. sector	**124,284**	**3.2**	**396**	**2.6**	**0.81**
II. sector	**1,474,878**	**37.7**	**7,695**	**49.7**	**1.32**
Industry	1,161,216	29.7	6,160	39.8	1.34
Building	313,662	8.0	1,535	9.9	1.24
III. sector	**2,317,078**	**59.2**	**7,384**	**47.7**	**0.81**
Trade and repair of motor vehicles	466,324	11.9	1,623	10.5	0.88
Transportation and warehousing	257,645	6.6	902	5.8	0.89
Accommodation and food services	144,136	3.7	426	2.8	0.75
Information and communication	136,119	3.5	250	1.6	0.46
Finance and insurance	112,816	2.9	253	1.6	0.57
Real estate activities, professional, scientific and technical activities, and administrative and support activities	357,124	9.1	963	6.2	0.68
Public administration and defence; compulsory social security	269,797	6.9	689	4.5	0.65
Education	276,436	7.1	1,193	7.7	1.09
Health and Social Care	296,681	7.6	1,085	7.0	0.93
Not identified	510,987	13.0	1875	12.1	0.93
Total	**3,916,240**	**100.0**	**15,475**	**100.0**	**1.00**

average. This can be interpreted as a high index of specialization (1.34). The industrial base consists mainly of administrative Valašské Meziříčí, because of the high concentration of gigantic economic entities. Furthermore, the manufacturing industry is represented in the municipalities Lešná and Branky. The industry is represented mainly by traditional sectors with low innovation and medium-qualified workers with a small proportion of knowledge-based economy (KBE). Besides the industrial sector, the construction industry, where the values of the administrative district of the municipality of Valašské Meziříčí exceeded average values for the Czech Republic by 1.9 %. The specialization index for the construction sector reached the value of 1.24 (Tab. IV).

Tertiary sector (47.7 % of employees) employed in the administrative district of 2 % fewer employees than the secondary sector (49.7 % of employees). Among the areas in which the administrative district of the municipality of Valašské Meziříčí exceeded the value of the Czech Republic, belonged education by 0.6 %. There is no significant proportion of total employment (7.7 %), carries an important implication of this value in the requirements for a qualified labor force. Education is among the sectors that impose higher professional and technical demands on the workforce and at the same time belong to the sectors that have growth potential. Similar values of the Czech Republic also showed the health and social care, where the specialization index value reached 0.93.

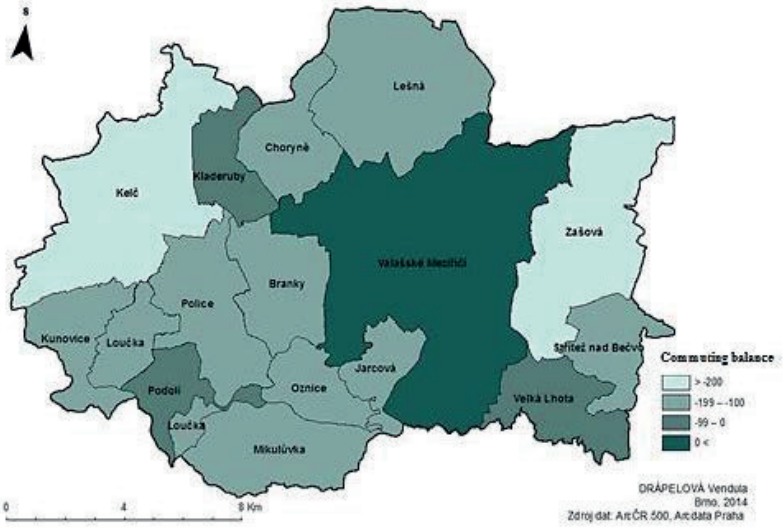
In contrast, the national average was shown in the sectors such as financial intermediaries (1.3 %), public administration and defense (2.4 %), real estate activities, professional, scientific and technical activities, and administrative and support activities (2.9 %). The lack of development of the sphere of service delivery in the administrative district also documented a relatively low specialization index. Information and communication sector in the administrative district of the municipality of Valašské Meziříčí is also compared with the Czech Republic as a whole. The available statistical data indicates that the circuit employed in this sector is twice less than in the Czech Republic (1.6 %). This fact also is also confirmed by the results as it shows the lowest index of specialization, 0.46 (Tab. IV).

Despite the relatively convenient and relatively favorable conditions for agricultural production in the administrative district slightly lagged behind the national average of 0.6 %. The primary sector (agriculture, forestry, fisheries) employed 396 employees accounted 2.6 % as a share of total employment. Nevertheless, one can find in the village, where there is a relatively high proportion of people presently employed in agriculture. The communities include Kelč, Kladeruby, and Lešná. The specialization index of the administrative district of the municipality of Valašske Meziříčí reaches of primer values of 0.81 (Tab. IV).

Commuting in and for employment

In the Zlín region dominated by the number of people commuting to work on a daily basis and it is similar in most of the administrative districts of the area. However, the opposite situation occurs in the monitored administrative district of the municipality of Valašské Meziříčí.

The Population and Housing Census in 2011 showed that only Valašské Meziříčí recorded in the balance of commuting in and works for positive values and daily receives over 3,000 employees. All other municipalities in the administrative



6: *Balance of daily commuting municipalities of the administrative district of municipality Valašské Meziříčí in 2011 (own work)*

district of the municipality daily lose workers who mostly live near Valašske Meziříčí (Fig. 6). Most economically active labor force commute from the surrounding villages into the city for work. Notably, these workers commute to work in the major sectors such as industry (2,030 persons), construction (388 persons), wholesale and retail trade and repair of motor vehicles (383 persons), and health and social care (316 persons).

The highest negative balances of commuting are major municipalities of the administrative district. For instance, Zašová and Kelč villages lose over 300 employees in a day. Notwithstanding, Kelč municipality reaches a positive balance in the primary sector (agricultural cooperative Kelčsko). More interestingly, Zašová village achieves a positive balance in two sectors of the economy, just like in Kelč, in the primary sector (Valašské ZOD, the team, engaged in crop and livestock production) and secondary sector, particularly in construction (i.e. Cobbler firm).

DISCUSSION AND CONCLUSION

Knowledge of the development of selected demographic and economic indicators allows outlining their future development. The analysis indicated that there are certain micro-regional differences and disparities within individual communities within the administrative district of municipality Valašské Meziříčí as reflected in the whole range of areas. Besides demographic trends, this includes the capacity and availability of public services or a lack of employment opportunities, which in the future could lead to an adverse effect on the society. Arguably, this may lead to a gradual increase in the social exclusion of particular groups of the population. One of the main objectives of the current Regional Development Strategy 2014-2020 is focused on mitigates the negative regional differences (Ministry of Regional Development CZ, 2013, p. 81). Disparities are reflected in a range of indicators in the administrative district Valašské Meziříčí. It is about:

- demographic indicators – eg. the administrative town of Valašské Meziříčí and Loučka Village recorded an above average level of the index age and above average age at the rate of aging),
- capacity and accessibility of public services – in contrast, the national average was shown in the sectors such as financial intermediaries (1.3 %), public administration and defense (2.4 %), real estate activities, professional, scientific and technical activities, and administrative and support activities (2.9 %). The lack of development of the sphere of service delivery in the administrative district also documented a relatively low specialization index.
- the lack of job opportunities especially in services,
- an increase in social exclusion and increasing the the risk of poverty.

Zarycki (2010) emphasis on "orientalism" (cultural backwardness, less safety, predictability of behavior), a concept that characterizes, for example, Eastern Poland. Considering the geographical factors and political developments, historical, economic and social backwardness, relatively unfavorable macro-geographical location of the administrative district Valašské Meziříči, our paper supports the study by Zarycki (2010), observe some elements "orientalism" in the region.

Specifically, the following adverse development of some demographic indicators and disproportion in the overall context of the administrative district are summarized as follows:

- Although the overall population density exceeds the average of the region and the Czech Republic, above average density of population is observed only in the administrative headquarters and vice versa in the peripheral rural areas is low (Ženka *et al.*, 2012);
- significant population decline in the administrative town of Valašské Meziříčí, which corresponds to the demographic transition in most EU countries (Šotkovský, 2011);
- above average level of the aging index of the above-average rate of aging in Valašské Meziříčí and the Loučka village, conversely, lower value of ageing index in the village of Branky with a large Roma minority, whose demographics beyond the current demographic transition in developed countries is completely in the context of cultural determinism (Lorimer, 2005; Zarycki, 2010);
- low level of economic activity of the Police, Oznice communities as compared to other municipalities (cf. Czyż, 2010);
- underdevelopment of community service offerings in the administrative district – supported by indices of specialization:
  - information and communication activities 0.46;
  - finance and insurance 0.57;
  - public administration and social security 0.65;
- II. sector employs (2011), almost half (49.7 %) of economically active population in the administrative district (in the Czech Republic it is 37.7 %). On the issue of increasing competitiveness, Czyż (2010) draws attention to the Wielkopolska region in employment in the industry for 30 %;
- Prevailing employment in the industry (II. sector), which is represented by traditional sectors with low innovation and medium-qualified workers, reflects a small proportion of knowledge-based economy (KBE). It also demonstrated the relatively low value of the index of specialization in the III. sector (cf. Tab. IX);
- As argued by Czyż (2010), the main driving sectors "manufactory" oriented firms - branches of multinational companies, depend on the decisions from the headquarters of these companies are not being encouraged to develop the local R & D and collaboration with universities;

- change in the age structure partly due to the decline in pre-productive and productive part of the population and significant disproportion distribution of the age structure between peripherals (Kunovice, Loučka) and facilities in the administrative town (cf. Šotkovský, 2011).

The prediction between 2013 and 2017 shows a declining population in the area over the years. It cannot be counted because migration to the current developments in the future compensates for the loss of population. It should be noted that positive net migration could balance population change in the region. Although aging population comes with challenges, most inbound migrants are younger and are likely to have a positive impact on the birth rate, labor market and net economic contribution in the municipalities. Conversely, and notably, economic problem of international migration is destabilizing migration and integration of the domestic threat to public policy (Šotkovský, 2011; EC, 2015).

In terms of estimating the future population development, age structure should be considered among the topmost factors. Because decrease of childbirth coupled with the increase post-productive age increases the proportion of people in retirement age that has so far threatened population development in the region. Kotowska *et al.* (2008) posit that the socio-economic crisis is connected with the transition from a centrally planned to a market economy, the spread of western norms, values and attitudes. Besides the decrease in fertility, there are also the situation of the labor market and unemployment, decline in social functions and services for children provided by the state, the rapid increase participation in higher education, the high cost of housing, and leisure activities (Kotowska *et al.*, 2008). The more significant proportion of the elderly is seen in the villages, which are located in more peripheral areas (i.e. Kunovice, Loučka; Waishar *et al.*, 2015). Conversely, the younger population lives in the hinterland of the administrative headquarters; this is primarily due to the migration of youth. The finding corresponds with works by Długosz, Kurek (2009) in the Małopolskie voivodship. The increasing number and proportion of older people in the population will bring a high probability of increased economic burden and pressure to enhance the productivity of the reproductive part of the population. In addition to these economic consequences, it may also lead to social consequences such as the unsustainability of the current pension system; increasing costs of social security and health care (cf. EC, 2006).

Looking at the overall territorial unit surveyed it is clear that regional development in the previous years, now and in the future will be significantly affected by demographic, legislative and economic changes. Those amendments are in line with general trends in the demographic situation in the Czech Republic. The projected demographic development of the administrative district of municipality of Valašské Meziříčí is in the context of the anticipated development in the Czech Republic in the coming years. For optimal regional development and competitiveness to be ensured, the interest administrative district of the municipality should be given to the key factors that are threatening demographic and economic growth (Palát, 2011). Efforts should be made to improve the childbirth rate, create better job opportunities in the villages, provide modern social amenities, and reduce outbound migration. Thus, stabilizing population and reducing the size of disparities in the villages that are lagging behind in all facets of sustainable development. Regional Development Strategy wants to to prevent enlarging disparities regions. Therefore it is important to diversify the economy of the administrative district of the municipality of Valašské Meziříčí specializing in II. sector of the national economy at present.

REFERENCES

AFFUSO, A., CAPELO, R. and FRATESI, U. 2012. Globalization and Competitive Strategies in European Vulnerable Regions. *Regional Studies*, 45(5): 657–675.

BAČÍK, M. 2009. *Demogeografická analýza Horehronia*. Banská Bystrica: UMB.

BLAŽEK, J. and UHLÍŘ, D. 2011. *Teorie regionálního rozvoje. Nástin, kritika, implikace*. Praha: Univerzita Karlova – Karolinum.

CUDNY, W., RETALEWSKA, M. and ROUBA, R. 2012. The role of the European capital of culture programmer in the development of cities and regions. *Economic Problems of Tourism*, 17(1): 119–132.

CZYŻ T. 2010. Competitiveness of the Wielkopolska region in terms of a knowledge-based economy. *Questioners Geographicae*, 29(2): 71–84.

CSO 2013. Krajská správa ČSÚ ve Zlíně. In: *Časové řady*. Also available at: http://www.czso.cz/xz/redakce.nsf/i/casove_rady_regionalni.

CSO 2014. *Veřejná databáze*. Available at: <http://vdb.czso.cz/vdb/>.

CSO 2016. *SO ORP Valašské Meziříčí*. Available at: <https://www.czso.cz/csu/xz/so_orp_valasske_mezirici>.

DIAMOND, J. 1997. *Guns, Germs, and Steel: The Fates of Human Societies*. New York: W.W. Norton & Co.

DŁUGOSZ, Z. and KUREK, S. 2009. Population ageing and its predictions for 2030 in the Małopolskie voivodship compared to Poland and Europe. *Moravian Geographical Reports*, 17(1): 2–18.

DRUCKER, P. 2003. *A Functioning Society: Selections from Sixty-Five Years of Writing on Community, Society and Policy*. New Brunswick, NJ and London: Transaction Publishers.

ENYEDI, G. 2009. Competitiveness of the Hungarian regions. *Hungarian Geographical Bulletin*, 58(1): 33–48

EC 2006. Adequate and sustainable pensions. In: *Synthesis Report*. Also available at: http://ec.europa.eu/employment_social/spsi/docs/social_protection/2006/rapport_pensions_final_en.pdf .

EC 2015. *Press release Managing the refugee crisis: Immediate operational, budgetary and legal measures under the European Agenda on Migration*. Available at: <http://europa.eu/
rapid/press-release_IP-15-5700_en.htm>.

FAYERS, P., M. and MACHIN, D. 2007. *Quality of life. The assessment, analysis and interpretation of patient-reported outcomes*. Chichester: Wiley.

FIALA, T. and LANGHAMROVÁ, J. 2013. Development of Economic and Social Dependency and Population Ageing. *Politická ekonomie*, 61(3): 338–355.

FUKUYAMA, F. 1999. *The Great Disruption: Human Nature and the Reconstitution of Social Order*. New York: Free Press.

FUKUYAMA, F. 2002. *Our Post human Future: Consequences of the Biotechnology Revolution*. New York: Farrar, Straus and Giroux.

HINDLS, R., HRONOVÁ, S., SEGER, J. et al. 2007. *Statistika pro ekonomy*. Praha: Professional Publishing.

HÜBELOVÁ, D. 2014. *Geodemografická analýza disparit kvality lidských zdrojů v České republice*. Brno: Mendelova univerzita.

KÁČEROVÁ, M., ONDAČKOVÁ, J., MLÁDEK, J. 2012. A comparison of population ageing in the Czech Republic and the Slovak Republic based on generation support and exchange. *Moravian Geographical Reports*, 20(4): 26–38.

KLAMUT, M., PASSELLA, E. 1999: Podnoszenie poziomu konkurencyjności regionów. In: M. Klamut (ed.): *Konkurencyjność regionów.* Wrocław: Wydawnictwo Akademii Ekonomicznej, 57–83.

KOSCHIN, F., FIALA, T., FISCHER, J. et al. 2007. *Prognóza lidského kapitálu obyvatelstva České republiky do roku 2050*. Praha: Oeconomica.

KOTOWSKA, I. JÓŹWIAK, J., MATYSIAK A. et al. 2008. Poland: Fertility decline as a response to profound societal and labor market changes? *Demographic Research*, 19(22): 795–854.

KRUGMAN, P. 1994. Competitiveness: A Dangerous Obsession. *Foreign Affairs*, 43(2): 28–44.

KRUGMAN, P. 1996. *Pop Internationalism*. Cambridge: MIT Press.

LORIMER, H. 2005. Cultural geography: the busyness of being 'more-than-representational'. *Progress in Human Geography*, 29(1): 83–94.

MINISTRY OF REGIONAL DEVELOPMENT CZ 2013. *Regional Development Strategy CZ 2014–2020*. Available at: http://www.mmr.cz/getmedia/08e2e8d8-4c18-4e15-a7e2-0fa481336016/SRR-2014-2020.pdf?ext=.pdf.

PACIONE, M. 2003. Urban environmental quality and human wellbeing – a geographical perspective. *Landscape and Urban Planning*, 65(1–2): 19–30.

PALÁT., M. 2011. Demographic development in selected microregions. *Acta Univ. Agric. Silvic. Mendelianae Brun*, 59(4): 203–218.

RABUŠIC, L. 2004. Will Tomorrow's Czechs Have the Fewest Children in Europe? In: *Society, Reproduction, and Contemporary Challenges*. Brno: Barrister & Principal, 41-60.

RUTTEN, R. and BOEKEMA, F. 2007 *The Learning Region: Foundations, State of the Art, Future*. Cheltenham: Edward Elgar Publishing Limited.

ŠOTKOVSKÝ, I. 2011. A typology of EU countries in terms of population growth in the period from 1990 to 2009. *Moravian Geographical Reports*, 19(3): 48-55.

TOUŠEK, V., KUNC, J., VYSTOUPIL, J. et. al. 2008. *Ekonomická a sociální geografie*. Plzeň: Vydavatelství a nakladatelství Aleš Čeněk.

VAISHAR, A., ŠŤASTNÁ, M., STONAWSKÁ K. 2015. Small Towns – Engines of Rural Development in the South-Moravian Region (Czechia): An Analysis of the Demographic Development. *Acta Univ. Agric. Silvic. Mendelianae Brun*, 63(4): 1395–1405.

TUROK, I. 2003. Cities, Regions and Competitiveness. *Regional Studies,* 38(9): 1069–1083.

VITURKA, M. 2010. Regional disparities and their evaluation in the context of regional policy. *Geografie*, 115(2): 131–143.

VLTAVSKÁ, K., FISCHER, J. 2009. *Možnosti měření vlivu lidského kapitálu na souhrnnou produktivitu faktorů: český a slovenský příklad*. Praha: VŠE.

WOODS, R. 1982. *Theoretical population geography*. London and New York: Longman.

WOODS, R. and REES, P. H. 1986. *Population Structures and Models*. London, Allen & Unwin 1986.

ZARYCKI, T. 2010. The Power of the Intelligentsia. The Rywin Affair and the Challenge of Applying the Concept of Cultural Capital to Analyse Poland's elites. *Theory and Society*, 38(6): 613–648.

ŽENKA, J., NOVOTNÝ, J., CSANK, P. 2012 Regional competitiveness in Central European countries: in search of a useful conceptual framework. *European Planning Studies*, 22(1): 164-183.

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