

PERFORMANCE DEVELOPMENT TRENDS OF VISEGRAD FOUR REGIONS

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Abstract

For national economy to thrive, sustainable regional development is vital. Many theories in scientific publications are focused on assessing the growth of particular regions and their mutual comparisons. Many authors are dealing with the issues such as economic growth and development of regions. Regional development is conditioned by the level of appreciation of available resources and the usage of regional and economic policy tools. In the course of time, regions experienced economic developments leading to their current stage of social and economic development. The aim of this article is to determine performance trend of the Visegrad Four regions at NUTS 2 level. We have compared years 2000 and 2016. We have monitored indicators such as employment rate, unemployment rate, long-term unemployment rate, income, tertiary education rate and fertility rate. In order to evaluate regions performance level, we have used multi-criteria evaluation method.

Keywords: region, performance, indicators, Visegrad Four, regional policy

1 Introduction

Over time, social, economic, historical and political events in countries have established conditions for uneven regional development. Uneven regional development is conditioned by resources of the region, such as physical characteristics, human resources, technical, economic and social conditions. With regard to the accessibility, quality and extent of utilization of these resources, there may be minor or major disparities in the development and economic level of each region.

Dubois et al. [1] regard regional disparities as the result of polarization process caused by rapid growth in the performance of some regions with a negative impact on the accumulation of wealth and production factors in these regions, as well as on unemployment and social security.

Regional disparities can be caused by physical characteristics, settlement structure, location attractiveness, demographic structure, transport infrastructure, regional accessibility or regional economic specialization, and last but not least by the territorial and administrative arrangement. Thus, uneven regional development makes a number of economic and social disparities arise, such as for instance regional gross domestic product per capita, unemployment rate, average monthly wage, etc. [2]

In order to monitor regional disparities, levels achieved in particular areas by regions as well as their dynamics are monitored. [3] The identification of causes and effects of disparities as well as the search for ways to mitigate them is an inseparable part of the analysis.

As regional disparities are widening, a policy aimed at regional development and mitigation of regional disparities is becoming a priority in ensuring the competitiveness of regions. Regional policy is a set of objectives, tools and activities to improve the spatial organization of economic activities, reduce regional disparities, and ensure economic, social and territorial development of regions. [4] Ivanová [5] notes that regional policy is implemented by national and regional bodies with regard to sectoral, structural and urban policies.

Habánik and Koišová [6] note that regional policy is to eliminate significant differences in living conditions at regional and local level, limit the negative effects of structural changes, especially unemployment, and to promote the development of backward local areas.

The analysis of relevant development factors, i.e. the identification of key factors having a significant and stimulating impact on regional development must be made in terms of effective regional policy. Regional development factors change over time. On the one hand, it is related to the level of knowledge of socio-economic processes. On the other hand, regional development factors are subject to changes due to evolving structures and their interactions.

The aim of this article is to determine performance trend of the Visegrad Four regions at NUTS 2 level. We have compared years 2000 and 2016. We have monitored indicators such as employment rate, unemployment rate, long-term unemployment rate, income, tertiary education rate and fertility rate.

2 Description of the approach, work methodology, materials for research

As we have already mentioned, in the article, we aimed to compare the performance of the Visegrad Four countries at NUTS2 level in years 2000 and 2016. On a NUTS 2 level Slovakia is divided into 4 units, the Czech Republic into 8, Poland 16, Hungary 7 units. The names and locations of the various regions are shown on the Figure 1. [7]

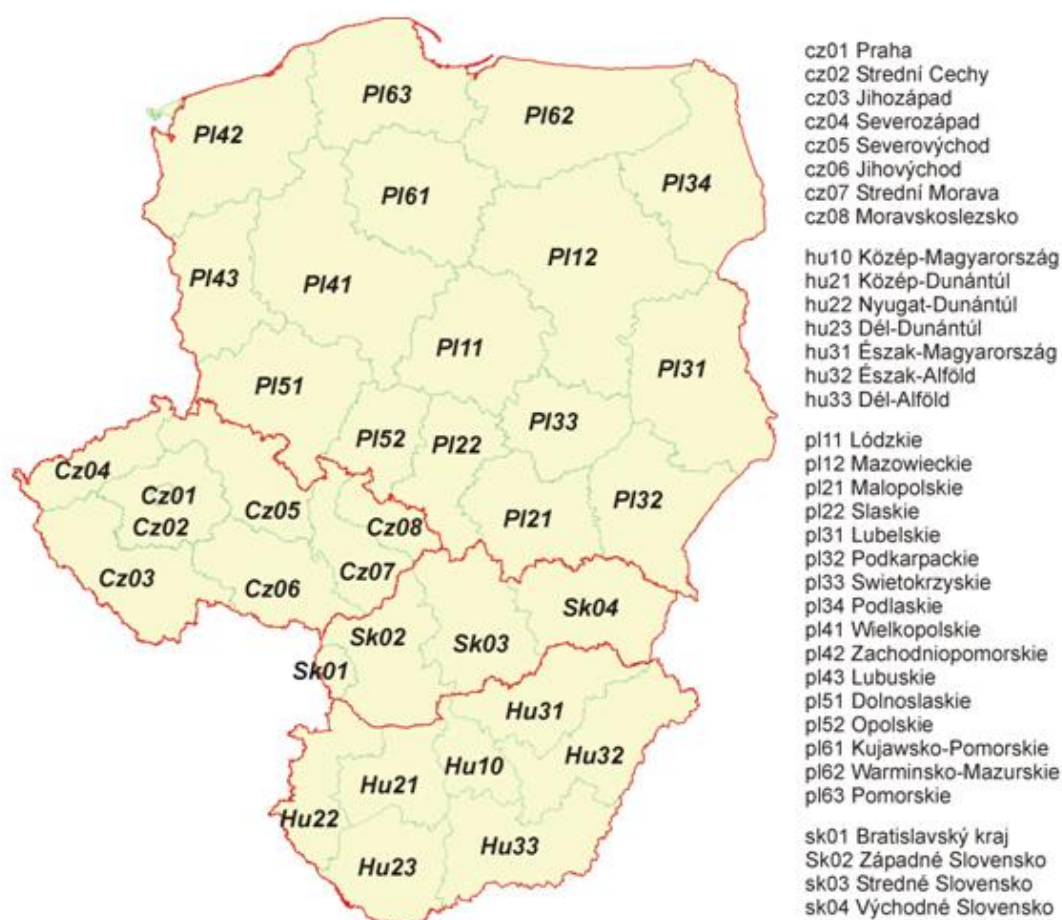


Fig. 1 Map of Visegrad Group regions. Source: [7]

Analyses were made from data available in the Eurostat database [8]. When selecting appropriate indicators, the limited availability of appropriate data appears to be a limiting factor. Many data are not systematically monitored, and another problem is the changing methodology structure of some indicators. This complicates the performance of comparative analyses in a longer time frame. However, we assume that our limited selection of indicators will provide an overview of regional disparities development in Visegrad Four.

The following labour market, education, health and health care-related indicators were chosen:

- employment rate (the share of the number of working people aged 15-64 on the total population aged 15-64, expressed as a percentage),
- unemployment rate (the percentage of unemployed workers in the total labour force),
- long-term unemployment rate (the percentage of the number of long-term unemployed in the total number of economically active population),
- income (year income of households in Euro per inhabitant),
- tertiary education rate (share of population with tertiary education),
- fertility rate (the mean number of children that would be born alive to a woman during her lifetime if she were to pass through her childbearing years conforming to the fertility rates by age of a given year),
- infant mortality rate (the ratio of the total number of deaths of children under one year of age during the year to the number of live births in that year; the value is expressed per 1000 live births),
- life expectancy (the mean number of years still to be lived by a person who has reached a certain exact age, if subjected throughout the rest of his or her life to the current mortality conditions).

The indicators in the V4 regions were compared in two years: 2000 and 2016.

The scoring method was employed to compare the regions. A scoring method is one of the methods of multi-criteria evaluation. When using the scoring method, each parameter is assigned the region, which scored the best value, 100 points, and other regions are assigned indicator points as follows:

- if the maximum value is the best value (employment rate, income, tertiary education, fertility rate, life expectancy):

$$b_{ij} = x_{ij}/x_{jmax} \times 100 \quad (1)$$

- if the minimum value is the best value (unemployment rate, long-term unemployment rate, infant mortality rate):

$$b_{ij} = x_{jmin}/x_{ij} \times 100 \quad (2)$$

where:

x_{ij} = the value of j-th variable in the i-th region

x_{jmax} = highest value of the j-th variable

x_{jmin} = lowest value of the j-th variable

b_{ij} = the scores of the i-th region for the j-th variable.

Next, the integral variable d_i , as the sum of the points for the indicators set for each region is calculated. The best results of observed variable reaches the region in which the integral indicator d_i reaches the maximum value.

Through the number of points obtained, the scoring method shows the relative differences in the indicators examined among countries whereas territorial units are being compared with the best territorial unit in the given indicator. The scoring method can aggregate the indicators measured by different units of measurement into one synthetic characteristic, which represents a dimensionless number. Assessment of countries' performance by scoring method provides a comprehensive insight into their performance. However, the results of such an assessment depend on the choice of indicators and countries to be included in the assessment.

3 Description of achieved results

According to Neradný and Lalinský [9], positive economic development of the country not always means improvement of the economic situation of the regions. In the regional policy, it is still important whether the poorest regions are able to catch up more rich respectively more developed countries. In Europe, it is much more visible because of significant regional disparities and economic and social solidarity by means of decreasing of these disparities is one of the main goals of EU. [10] These goals are the subject of the interest also in the particular V4 countries. In the following analyses, we examine and compare the performance development of the particular regions of V4 countries in 2000 and 2016.

3.1 Performance assessment of the V4 regions in 2000

In 2000, V4 countries experienced economic growth (with the exception of the SR). In the Slovak Republic and Poland, there was still high unemployment and high inflation (with the exception of the Czech Republic).

In the Slovak Republic the best-performing region was the region of Bratislava, except for the fertility rate indicator. The highest fertility rates were recorded in the region of Východné Slovensko in the Slovak Republic and all V4 countries. The region of Bratislava reached the best value in the tertiary education indicator from within the V4 regions.

Among the Czech regions, the region of Praha recorded the best values in seven indicators in the Czech Republic and in six indicators within V4 countries. The region of Praha was followed by the regions of Jihozápad, Jihovýchod, Severovýchod and Střední Čechy. The lowest point assessment was scored by the regions of Moravskoslezsko and Severozápad.

The Hungarian regions were rated best among the V4 regions in life expectancy and fertility rate. The worst rated were infant mortality rate and long-term unemployment rate. The highest value of integral indicator was recorded by the region of Közép-Magyarország. The gap among other regions is not wide; the least number of points were scored by the regions of Észak-Magyarország and Észak-Alföld.

A fairly balanced assessment in almost all indicators was recorded in the Polish regions. The best rated were life expectancy, fertility rate and employment rate. The worst rated was long-term unemployment. The highest value of integral indicator was recorded by the region of Mazowieckie and Malopolskie. The lowest point assessment was scored by the regions of Dolnoslaskie and Slaskie.

The Figure 2 illustrates the resulting value of the d_i integral indicator in the V4 regions in 2000.

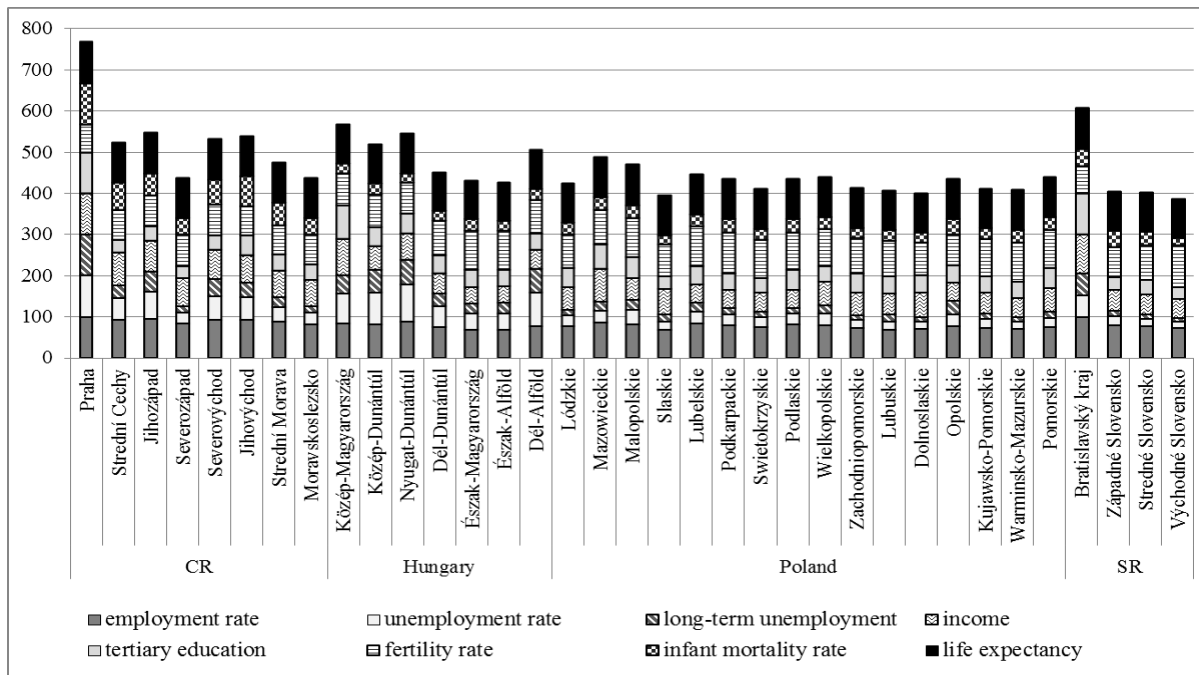


Fig. 2 Comparison of the performance of the V4 regions in 2000

The Figure 2 shows, that the highest scoring obtained the capital regions of Praha (766.5 points), Bratislava (605.5 points) and Közép-Magyarország (566.4 points). Following are the Czech and Hungarian regions. The Polish capital region of Mazowieckie (487.7 points) was ranked 11th. The region of Mazowieckie was followed by Polish and Slovak regions. The lowest point assessment was reached by the region of Východné Slovensko (385.6 points). Less than 400 points also scored the regions of Slaskie and Dolnoslaskie.

3.2 Performance assessment of the V4 regions in 2016

The year of 2016 was the last year in the time series for which the data were available for all the indicators under examination. In 2016, V4 countries faced moderate economic growth, favourable labour market trends, very low price increases, i.e. deflation. Favourable development had a positive impact on the regional indicator values under examination.

In the Slovak Republic, the region of Bratislava performed best in 7 out of 8 indicators. Even in the value of fertility rate, the region of Bratislava was gradually catching up with the region of Východné Slovensko. The region of Bratislava reached the best values in income and infant mortality from within the V4 regions. The Slovak regions scored worst in unemployment rate and long-term unemployment rate. All in all the best results were achieved in life expectancy. The worst region is the region of Východné Slovensko.

In the Czech Republic, the region of Praha was the best performing region in five indicators from within the V4 regions. The region of Praha scored best in 7 indicators among the remaining Czech regions. Overall, the Czech regions are best performing in life expectancy, employment rate and fertility rate. Concerning these indicators, there were the slightest inter-regional differences. Pronounced interregional differences were in unemployment rate, long-term unemployment rate and tertiary education. The lowest point assessments received the regions of Severozápad and Moravskoslezsko.

In Hungary, the region of Nyugat-Dunántúl was ranked first in the overall ranking of selected indicators. The region of Közép-Magyarország was ranked second and the region of Közép-Dunántúl was ranked third. The lowest-performing was the region of Észak-Alföld. The region of Észak-Magyarország scored best among the V4 regions in the fertility rate.

In Poland, the highest value of di integral indicator was recorded by the region of Mazowieckie. Among the Polish regions, the region of Mazowieckie recorded the best values in four indicators. The lowest scored was the region of Warmińsko-Mazurskie, Podkarpackie and Swietokrzyskie.

The Figure 3 illustrates the resulting value of the di integral indicator in the V4 regions in 2016.

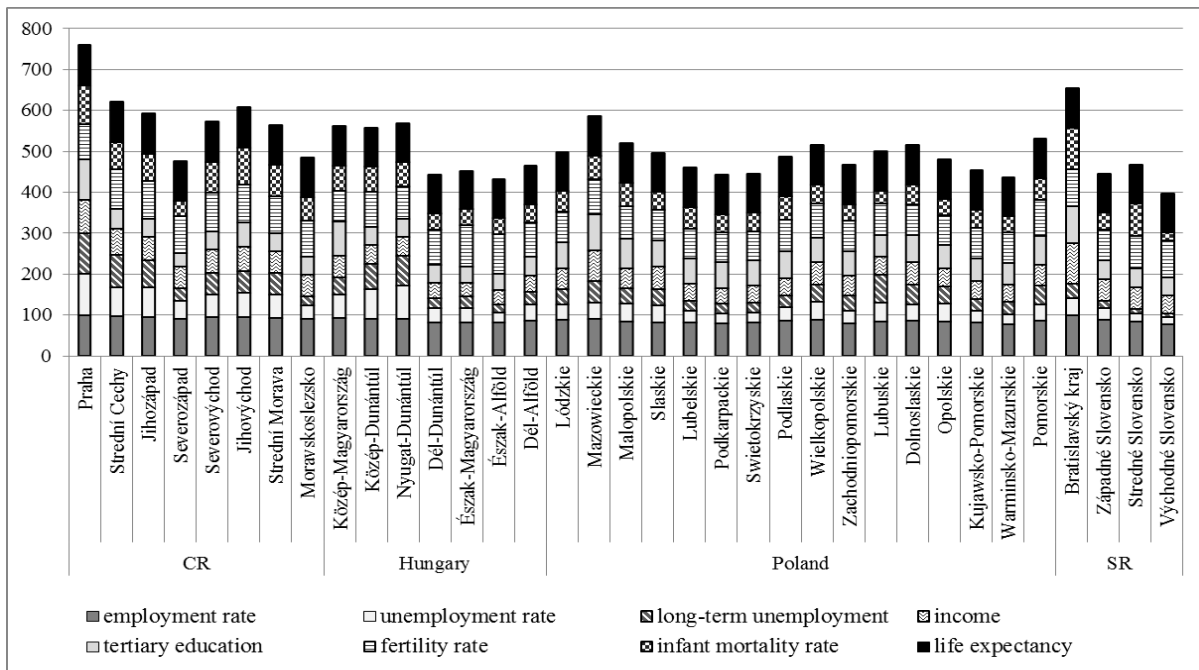


Fig. 3 Comparison of the performance of the V4 regions in 2016

In 2016, the region of Praha (760.4 points) was the best performing region in all the indicators under examination. Next follow the region of Bratislava (654.8 points). Generally, high ranked were the Czech regions. The region of Mazowieckie was ranked 6th (586.6 points) and the region of Közép-Magyarország (562.0 points) ranked 10th. The lowest ranked was the region of Východné Slovensko (397.9 points).

3.3 Comparison of performance of the V4 regions

From 2000 to 2016, there were a number of fluctuations in the V4 region assessments. Figure 4 shows the overall comparison of the V4 region integral indicator values in 2000 and 2016.

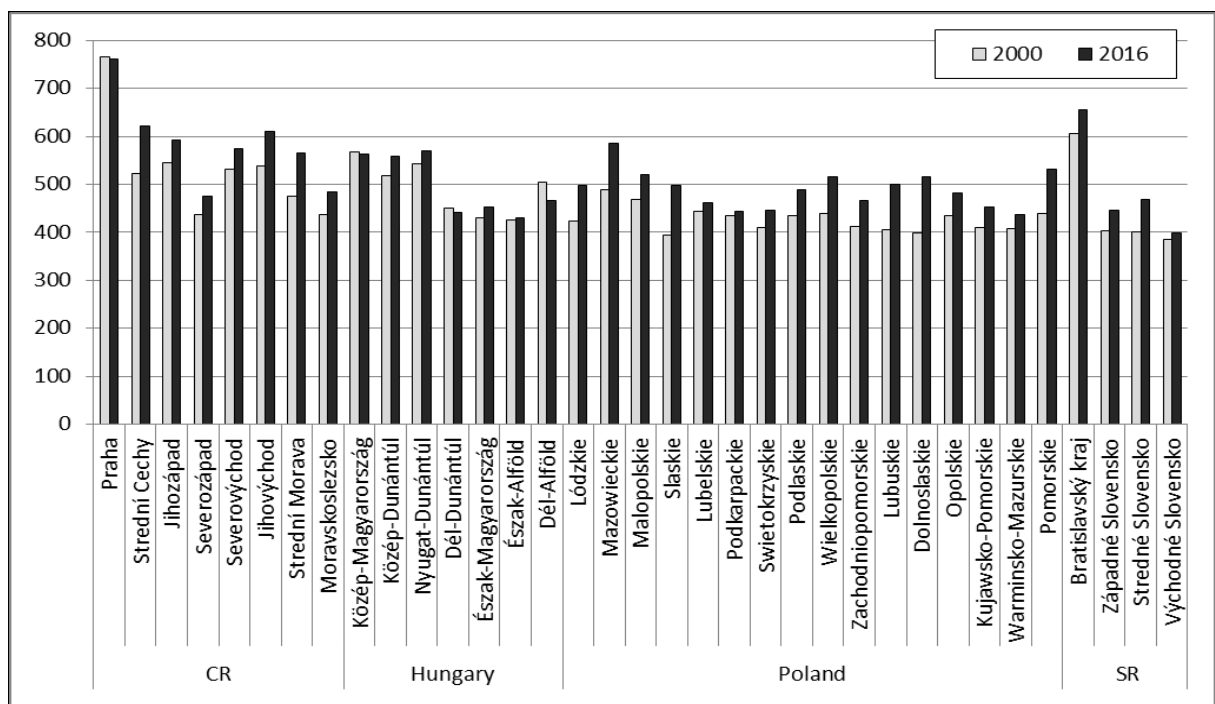


Fig. 4 Comparison of the performance of the V4 regions in 2000 and 2016

It follows that the best results were achieved by the regions of Praha and Bratislava. The worst assessed was the region of Východné Slovensko. The rating of most V4 regions reached was higher in 2016 than in 2000, with the exception of the regions: Praha, Közép-Magyarország and Dél-Alföld.

From 2000 to 2016, the region of Dolnoslaskie Slaskie, Mazowieckie and Střední Čechy achieved the greatest improvement. On the other hand, the worst deterioration was recorded in the region of Dél-Alföld.

The results of the above analyses show that the performance differences in the V4 region are slightly decreasing, as most regions are slowly reaching the level of the region of Praha. [11]

4 Conclusion

Based upon results of our research, we can conclude that the best results were achieved in Praha and Bratislava regions. The worst assessed was the region of Východné Slovensko. The rating of most V4 regions reached was higher in 2016 than in 2000. Taking into consideration character of economy in the particular countries, it is not possible to eliminate regional differences because they are natural phenomenon in every economy. The main reason is the character of economy of the main region in which companies with high added value are associated which is also confirmed in our research. Regions with capital cities are the most developed. However, it brings the risk of depletion not only of economic, social, natural and environmental capacities but also human resources.

In conclusion, it is necessary to mention that regions should learn how to utilize their own strengths and specific (not only as regards to examined indicators) opportunities for their economic development instead of trying to imitate other regions. Based upon strengths identification and competitive advantages of regional clusters it is possible to formulate successful cluster strategies and policies which are differentiated based upon particular characteristics and needs of the particular regions. [12]

Acknowledgements

Authors are grateful for the support of experimental works by project VEGA n. 1/0233/16.

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