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Regional Differentiation of the New Member States of the European Union



This paper was developed within the project "The Impact of EU Enlargement on European Integration and the Global Political Economy" that the C·A·P jointly conducts with the Centre for European Studies at the Renmin University of China. The project is supported by the European Commission in the framework of the EU-China European Studies Centres Programme.

Abstract:

The transformation of the economies of the Central and Eastern European states on a regional level was characterized by different tendencies. In all the new EU Member States there has been from the beginning of the 1990s to today a continuous deepening of regional disparities on the economic level, which are the result of a number of economic, social and geographical factors. This article is a contribution to regional differentiation studies of the new EU Member States. The goal of this article is to explore the trends in and key causes of regional differentiation at the economic level of the new EU Member States. The article is structured in three parts. In the first part the main trends in regional disparities in the territory of the new EU Member States will be charted; in the second part, on the basis of empirical findings, the development of the regional disparities in selected states during the period of 1995 to 2003 will be described, and in the final part the most important factors that lead to the increase in regional disparities will be analysed. The examined sample consists of eight new EU Member States: the Czech Republic, Estonia, Hungary, Lithuania, Latvia, Poland, Slovakia and Slovenia (the analysis leaves out two states: Malta and Cyprus).

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1. Introduction

Regionalism has become an increasingly significant phenomenon in the economic development of the new EU Member States. It was caused by a substantial increase of regional disparities, which developed during the transformation period, primarily due to the instant EU integration process of the new Member States. Due to its EU membership a new Member State gained considerable financial means coming from the Structural and Cohesion Fund, however, there was considerable pressure from the EU to create a modern and efficient system of regional policy and planning.

This article is a contribution to the studies of regional differentiation among the new EU Member States. The goal of this article is to explore and explain the main trends and causes of regional differentiation at the economic level of the new EU Member States. In order to answer this research question, the article is structured in three parts. In the first part the major trends in regional disparities in the territory of the new EU Member States will be charted, in the second part, based on statistical figures, the development of these regional disparities in selected states during the period of 1995-2003 will be evaluated and in the final part an analysis of the main factors that cause the increase in regional disparities will be presented.

When analysing individual problems we draw from published studies (see attached bibliography) and foremost from the analysis of statistical regional figures. Eurostat was used as the main database for comparing the whole data sample of the examined states was ensured (the latest available data from Eurostat sources are from 2003, so we did not include the period after the EU enlargement in our analysis). Only when evaluating the indicators, which were not available from the Eurostat database, we used national statistics (e.g. labour capital data, entrepreneurial activity data etc.).

The examined sample consists of eight new EU Member states: the Czech Republic, Estonia, Hungary, Lithuania, Latvia, Poland, Slovakia and Slovenia (the analysis does not include two states: Malta and Cyprus). The evaluated regional levels are the NUTS 2 and NUTS 3 units (the NUTS level is researched only in the case where the whole country represents just one NUTS 2 Region) according to EU classification. (NUTS = Nomenclature of Territorial Units for Statistics). In the second part we deal in particular with a select sample of states, due to the availability of comparable data for NUTS 2 regions.

2. Regional disparities in economic performance: current situation and trends

The new EU Member states are characterized by both ongoing regional disparities within individual states as well as by a backwardness of those regions compared to the EU average of the EU 25. Just two regions of the analyzed states achieve a higher GDP per capita rate than the EU average (Prague in the Czech Republic and Bratislava in Slovakia). Moreover, only four regions exceed the level of 75% of the EU's average GDP per capita rate (aside from the regions of Prague and Bratislava, also Slovenia and the Kozep-Magyarország region in Hungary), which is crucial for the classification among the most undeveloped regions within the framework of the economic and social coherence policy of the EU. The GDP per capita rate of the other regions fluctuates between 33% and 64% of the enlarged EU average. The ranking of the ten most and least developed regions of the new EU Member States is shown in Table 1.

**Table 1 – Regional GDP per capita in the new member states
(highest and lowest GDP per capita)**

Most developed NUTS 2 regions	As percent of EU_25 average	Most backward NUTS 2 regions	As percent of EU_25 average
Praha (CZ)	138.2	Del-Alfold (HU)	40.3

Bratislavsky (SK)	115.9	Eszak-Alfold (HU)	39.0
Kozep-Magyarország (HU)	94.9	Vychodne Slovensko	38.8
Slovenia (SI)	76.0	Eszak-Magyarország (HU)	38.1
Mazowieckie (PL)	72.8	Opolskie	37.3
Moravskoslezsko (CZ)	64.9	Warminsko-Mazurskie	37.0
Nyugat-Dunantul (HU)	64.5	Swietokrzyskie	36.7
Stredni Cechy (CZ)	64.2	Podlaskie	35.7
Jihozapad (CZ)	62.0	Lubelskie	33.2
Jihovýchod (CZ)	61.5	Podkarpackie	33.2

Source: EUROSTAT: Regional GDP per inhabitant in EU 25. News release 63/2006.

Luxembourg, 2006, p. 1-7.

When we consider the regional differentiation within individual states, we can find some common features which are characteristic for all the countries researched. This is a so-called double dichotomy:

- Central and peripheral polarization of the central region compared to the rest of the country
- Differentiation between the Western and Eastern regions of the researched states

The dichotomy “centre and periphery” is characterized by the unique dominant position of the capital and its surroundings compared to the rest of the country. Capitals are the centres of modern sectors, they have high levels of above-average research and development and educational potential. Additionally, foreign investors are very much attracted to them. The economic activity of the central regions reaches in extreme cases more than 200% of the average national level (e.g. in the Czech Republic or Slovakia.)

In the evaluation of the regional structure on the level of NUTS 2, this finding of a dominance of the center, is most significantly the case in the central regions of Slovakia and the Czech Republic. In the case of Slovakia, the economic level of Bratislava is three times higher (measured on the basis of GDP/per capita in PPP) than the value of the least

developed Region (Vychodne Slovensko) and 2.4-times higher than the value of the second most developed Region (Zapadne Slovensko). The level of Prague is more than 2.5-times higher than the level of the least developed Region of the Czech Republic.¹ The lower degree of differentiation of the central regions of Poland and Hungary can mainly be explained by the greater dimensions of the NUTS 2 region compared to the CR or Slovakia. A higher region includes other areas besides the capital which makes it more heterogeneous from an economic level point of view. A typical example of such a NUTS 2 region is the Polish region Mazowieckie, which includes a number of areas with a considerable concentration of agriculture.²

Estonia, Lithuania, Latvia and Slovenia represent separate regions of NUTS 2, but if we consider the regional level NUTS 3, we can claim that even here the central regions considerably exceed the national average in terms of economic development. A less significant polarization of the central region on a NUTS 3 level is represented by Slovenia (central Slovenia achieves about 130% of the national average) and Lithuania (the GDP per capita of Vilnius comes to approximately 140% of the national average) compared to Estonia and Latvia.³

Another common feature of the regional differentiation of the new Member States is the higher level of development of Western areas, which are situated near the markets of the developed EU Member States. Due to this proximity they can profit from the higher inflow of Foreign Direct Investment (FDI), and from Western markets being easier available compared to the peripheral Eastern regions. The extreme form of this dichotomy is e.g. the northwest area of Hungary, where the inflow of FDI is a lot higher compared to the rest of the country. Both the western regions (Nyugat-Dunántúl and Közép- Dunántúl) represent the areas with above-average potential of growth. In the last decade the major economic stimulus was FDI, which contributed to a reform of the industrial structure and to the development of innovation and export oriented branches.⁴

Another example of the West-East dichotomy is Slovakia, where this phenomenon is highlighted by the concentration of capital in the Western part of the country near one of the most developed centres of the EU, namely Vienna. The crossing of two dichotomies causes a multiplication effect. The substantial differences in economic level between the Western and Eastern parts can be seen also in Poland and on the level of NUTS 3, also in Slovenia, Estonia and Latvia.

The peripheral regions of the new EU Member States are represented by the areas on the Eastern boundaries of Russia, Belarus, Ukraine, Romania, Serbia, and Croatia, which are significantly less attractive from the point of view of foreign investors. The typical examples of underdeveloped Eastern regions are the regions of Eastern Slovakia (Vychodne Slovensko) and Hungary (Eszak-Magyarország) as well as the areas of Eastern Poland (Podkarpatskie, Podlaskie, Lubelskie and Warminko-Mazurskie). Here the proportion of employment in agriculture exceeds 30% and, moreover, there is only a low development of economic activity in industry and services, which leads to a concentration of employment in the agricultural sector and adds to the low productivity rate which can be found here. The added value of an employee in the mentioned Polish regions is approximately 1.500 EUR.⁵

The exceptions to this East-West differentiation are represented only by two of the researched states the Czech Republic and Lithuania. The Czech Republic is characterized by the polarization of the central region and by a relatively homogenous structure of the economic level of development. The regions Moravskoslezsko and Severozapad were affected by the change of structure in the productive base which led to an increase in unemployment. Despite the relative homogeneity of the economic level of development of the Czech regions, with the exception of Prague, it can be maintained that better development opportunities exist for regions located in proximity to the developed regions of Germany and Austria (e.g. Jihozápad or Jihovýchod) rather than for the peripheral areas

(e.g. Moravskoslezsko). The regional structure of Lithuania is characterized by a greater balance than in the case of Estonia and Latvia, thus one can distinguish the more developed (the outskirts of the capital or the Klaipeda region) from the peripheral areas (e.g. the Altyus region bordering Belarus). The economic differentiation, however, does not correspond to the spatial distribution of the Eastern and Western parts of the state.⁶

3. Development of regional disparities of selected states between 1995 and 2003

In this part of the paper, the content of the previous part will be revisited and on the basis of empirical findings the development of regional disparities in economic performance (GDP per capita) in selected new EU Member States will be evaluated. According to Eurostat classification the territory of the other new Member States constitutes the Region NUTS 2 and therefore it is not possible to evaluate regional disparities on that level.

The development of the regional differences in GDP per capita during the period 1995-2003 will be assessed. The Eurostat database serves as the basis for the analysis in order to ensure comparability of the time-period and the states. The GDP figure is evaluated in Purchasing Power Parity (PPP), which is more suitable because the influence of the exchange rate is eliminated.

For methodology the basic statistical indices of variability were used—variation coefficient and variation span. The variation coefficient represents the proportion of standard deviation (numerator) to arithmetic average (denominator); for the percentage formulation, the figure is multiplied by 100 (in our evaluation we use percentage formulation see, Table 2). The standard deviation can be simply interpreted as the average deviation from the arithmetic average, for the analysis it is derived from the arithmetic average of GDP per capita. The variation coefficient thus represents the average deviation from the average in relative (percentage)

formulation to the mean. The reason for the choice of a more complicated variation coefficient rather than using standard deviation was the fact that by using the average deviation in relative formulation deformations caused by a significant change of the surveyed variable throughout the evaluated period are eliminated. The variation span represents the difference between the highest and the lowest value in the surveyed sample of states. In our case the variation span was indicated as a proportion so that we could eliminate possible distortions arising from the increase in the value of the figures during that period.

To make some findings more precise, both indices were applied either to all regions or only to the regions without a central one, so that the impact of a capital on regional differentiation would be discovered. In the case of the variation span, the span was then calculated as the proportion between the region with the second highest and lowest value of GDP per capita. When interpreting the results, a choice was made based on the nature of particular indices (the higher the value that they reached, the greater were the disparities that occurred within the surveyed assemblage.)

From the analysis and calculations the following conclusions could be drawn: All the values of the calculated indices of variation indicate, on the NUTS 2 regions level, **a deepening of disparities on the economic level of all four analysed states**. The variation coefficient calculated for the GDP per capita for the Polish regions between 1995 and 2001 rose from 15% to 24 %, in the case of the Hungarian regions from 25% to 35 %, for the Czech Republic from 31% to 38 % and in the case of Slovakia from 42% to 51%. The similarity of the results can be explained easily when the proportion of the most developed and the least developed regions in a country are compared.

The greatest dominance of the region of the capital is in Slovakia, the value of the GDP per capita of the Bratislava region is 3 times higher than the value of the least developed region Vychodne Slovensko and 2.5 times

higher than the value of the second most developed region in Slovakia. **The lowest difference in the deviation of the central region is in Poland (see table 2).**

The calculation of the variation coefficient (the region with the highest GDP per capita (central region) is omitted) of the proportion of the region with the highest GDP per capita within the given sample to the region with the second highest GDP per capita and the proportion of the regions with the second highest and lowest GDP per capita indicate that **the growth of regional disparities for the Polish and Czech regions is caused by more significant growth of GDP per capital in the central region** compared to the other regions. The regional **differences of the Slovakian, and mainly, of the Hungarian regions** between 1995 and 2001 were caused **also by the more rapid growth of the Western regions** (Zapadne Slovensko in Slovakia and Közép-Dunantul and Nyugat-Dunantul in Hungary).

Table 2 – Regional disparities in GDP per capita (PPS)

Indicator	Year	Czech Republic	Hungary	Poland	Slovakia
Coefficient of variation v %	1995	31.6	25.3	15.4	42.8
	2003	38.5	35.9	22.4	51.1
Coefficient of variation v % (central region excluded)	1995	6.9	12.2	13.2	6.8
	2003	6.5	21.1	13.7	9.4
Proportion of the most developed and the least developed region	1995	2.4	2.0	1.6	2.5
	2003	2.6	2.5	2.2	3.0
Proportion of the most developed and the second most developed region	1995	1.9	1.4	1.1	2.1
	2003	2.2	1.7	1.4	2.4
Proportion of the second most developed and the least developed region	1995	1.2	1.4	1.6	1.2
	2003	1.2	1.7	1.5	1.3

Source: Eurostat and own calculations

4. Factors of Regional Differentiation

In the new EU Member States there has been, from the beginning of the 1990s to today, a continued deepening of regional disparities, which are caused by the combination of a number of economic, social and geographical factors. The significance of the single factors, however, varies for each of the states and regions (e.g. the factors of location and accessibility is of a much greater importance in Poland than in Slovenia); nevertheless, it is possible to identify the different factors that most researched states have in common. In sum, the main factors of regional disparities are: the geographical location and accessibility, the unbalanced distribution of foreign direct investment, structural characteristics of the economy of a region and the differentiation in the developing factors endowment (e.g. the quality of human capital, research and development potential, rate of entrepreneurial activity, global investment activity of entities, etc.). In what follows the influence of these factors will be described.

As mentioned before, one of the main differential factors is the accessibility of the region. This factor encompasses not only a prosperous geographical location but also the endowment of a transport infrastructure, linking potential markets. The “accessibility of the region” factor can be found to a greater or lesser extent in all the researched states and it underlines predominantly the difference between the Western and Eastern parts. Only the central regions and regions bordering on the EU states have an above-average level of accessibility (Nyugat-Dunántúl a Közép-Dunántúl in Hungary, Wielkopolskie, Pomorskie, Dolnoslaskie, Lubuskie and Slaskie in Poland). On the other hand, the least prosperous locations in terms of accessibility are the Eastern regions of the examined states (Podkarpackie, Podlaskie, Lubelskie, Warminsko-Mazurskie, Swietokrzyskie, Vychodne Slovensko, Észak-Magyarország, Észak-Alföld and Dél-Alföld). The low level of accessibility in the most peripheral regions can be explained by the lack of crucial transport infrastructure

(roads and motorway network). Transport infrastructure is the most striking problem for Poland; though from 1998 to 2001 it was extended by nearly 50%, the total length, however, is considerably shorter compared to the transportation infrastructure in the EU states and the other new Member States. Throughout Poland, the total length of the motorway network adds up to a poor 400 km. The allocation of the motorway network is, in addition, very unbalanced. Most highways are concentrated in a small number of areas, either around capitals, or on transit routes to the West.⁷ The Eastern regions of the other researched states, Slovakia, Hungary, Lithuania etc., are also underdeveloped when it comes to transportation infrastructure.

One of the basic causes of regional differentiation of the new EU Member States is the distribution of foreign investment. The decisive flows of foreign investment go to the central regions of the observed states (e.g. in Hungary 65% of the total foreign investment in the 1990s went to the Kozep-Magyarország region, in Slovakia 60% of foreign investment went to the Bratislava region, 24% of the total number of foreign businesses in Poland are situated in the central region of Mazowieckie, etc.). Moreover, the regions bordering on the EU states reach the above-average figures in inflow of foreign investment (foremostly Közép-Dunántúl and Nyugat-Dunántúl in Hungary, Dolnoslaskie, Zachodniopomorskie and Pomorskie in Poland, etc.).

Similar to the distribution of FDI inflow is the distribution of total investment (the proportion of total investment in a region to the GDP) and in terms of entrepreneurial activity (the number of business entities per capita). Again, the regions which achieve an above-average economic level with simultaneously above-average endowment of the stated dynamism factors are primarily the central regions and the regions in the Western parts of the observed states (e.g. Jihozápad a Jihovýchod in the Czech Republic, Západní Podunají and Střední Podunají in Hungary, Pomořansko, Dolní Slezsko a Wielkopolsko in Poland, Zapadne Slovensko, etc.).

Further endogenous factors of importance are the quality of human capital and research and development. However, the potential for these factors is very difficult to realize for the above mentioned states because with the exception of the central regions, regions with an above-average level of those factors and at the same time with a superior economic level are hard to find.

An additional significant factor for regional disparities in the new EU Member States are the structural characteristics of the economy of a region. This factor is especially interesting because the restructuralization of the economies of the new EU Member States is making very slow progress and still has not been finalized. The employment rate in agriculture and industry is still substantially higher in the regions of the new EU Member States than in the regions of the old EU Member States (EU 15). These backward areas in the new EU Member states will be called the old industrial regions and the agricultural regions. Those old industrial regions, among others Slazskie in Poland, Eszak-Magyarország in Hungary, Moravskoslezsko in the Czech Republic and a Vychodne Slovensko in Slovakia, still have a great deal of mining and heavy industry which have dramatically dropped in production leading to a great reduction in job opportunities. Such other underdeveloped areas are the agricultural regions, among others Del-Alfold in Hungary and the Lubelskie, Podkarpackie, Podlaskie and Swietokrzyskie Regions in East Poland.

Generally, it can be maintained that the current distribution of developing factors predominantly supports the development of the central regions and areas situated in the Western parts of the observed states. Therefore, it is likely that also in future the differential tendencies will continue within the analyzed states.

5. Conclusion

The transformation of the economies of the Central and Eastern European states on the regional level was characterized by various tendencies. In all

the new EU Member States there has been from the beginning of the 1990s to today a continuous deepening of regional disparities on an economic level. There are two main findings: the central regions (regions surrounding capitals) developed to a much greater extent than the other areas. Secondly, a faster development took place in the regions in the Western parts of the new EU Member States which share a border with the old EU Member States.

Regional disparities in the new EU Member States result from a number of economic, social and geographical factors, among others, geographical position and accessibility, unbalanced distribution of FDI, structural characteristics of the economies of regions and differentiation in the endowment of the regions with endogenous growth factors (human capital, research and development potential, rate of entrepreneurial activity, global investment activity of businesses).

A new stimulus for the regional development of the analysed states is their accession to the EU. This will influence the future regional development primarily through the realization of the regional policy of the European Union. One could predict that support from the structural funds and the Cohesion Fund will turn out to be beneficial for regional development, there probably will be a significant improvement in infrastructure, environment, better conditions for development of rural areas and improvement in administration and bureaucracy. On the other hand, it is necessary to take into account that the funds of the EU represent only one part that could contribute to the realization of the potential for development of the regions. Simultaneously, the above-mentioned differential factors will take effect after the accession to the EU.

Furthermore, it must be taken into consideration that the effects of the financial means from the EU funds will promote the global process of convergence of the new EU Member States (only three regions will be without access to financial support from 2007 to 2013 according to goal 1 of the policy of economic and social coherency of the EU). Thus, it will not

express itself in most states in term of modulation of regional differences on a national level. What is more, the benefits of the financial support will take effect with a certain off-set as the impacts of realized projects can be noted after their finalization. The source of a delayed reaction can also be the fact that a large amount of finance is earmarked for the support of endogenous pro-grow factors, such as transport infrastructure, human capital and infrastructure, the quality of which expresses itself in the economic environment.

Therefore, it is also likely that in the period after the accession to the EU there will be faster economic growth of the economic allies of the new Member States because developed and competitive regions with favourable development conditions, can better utilize the advantages of the single market. The development of the regional structure of the new EU Member States probably will be characterised by the changeover of convergent and divergent trends. We can expect the convergence of the economic level of the regions of the observed states to the standard of the developed EU Member States. This process, however, will be in the long run and especially unbalanced in terms of single regions. Furthermore, it can be predicted that the different trends on the regional level will continue. When using the financial means of the EU to support the development of the peripheral regions (e.g. infrastructure) the backwardness could be significantly reversed. These predictions and scenarios, which at the same time are in line with other research,⁸ are the author's estimate based on the analysis both of previous developments and regional development conditions.

Notes

- 1) EUROSTAT: Regional GDP in EU25. News release 63/2006. Luxembourg. 2006, p. 1-7.
- 2) A higher dimension of a Central Region can be seen in the case of Poland as a well chosen, as it ensures to the capital also in the following financial perspective (2007-2013) the opportunity to draw a larger volume of financial means from the structural funds of the EU
- 3) Vošta, M.: Estonsko, Litva, Lotyšsko: Regionální diferenciacie. Současná Evropy a Česká republika 1/2004. University of Economics, Prague. 2004, p. 96.
- 4) Kiss, J. P.: Industrial mass Production and Regional Differentiation in Hungary. European Urban and Regional Studiep. Volume 8. No 4. London : SAGE Publicationp. 2001, p. 16.
- 5) Römisch, R., Ward, T.: Regional employment patterns and prospective developments in the new Member statep. In: Economic restructuring and labour markets in the accession statep. The Vienna institute for economic studiep. Vienna 2004,p. 96.
- 6) Vošta, M.: Nové země EU: Jádno a periferie. Současná Evropa a Česká republika 1/2005. University of Economics, Prague. 2005, p. 122-124.
- 7) Commission of the European Communities: Third progress report on economic and social cohesion. Luxembourg. 2004, p.40.
- 8) The mentioned predictions are our estimation based on the analysis both of the previous development and Regional developing assumptionp. Also other research studies do incline to the similar scenarios (See for example: Römisch, R., Ward, T.: Regional employment patterns and prospective developments in the new Member statep. In: Economic restructuring and labour markets in the accession statep. The Vienna institute for economic studiep. Vienna 2004,p. 85-119. or Blažek, J.: Regionální důsledky vstupu České republiky do Evropské unie: pokus o první kvalitativní analýzu. In: Hampl, M. a kol.: Regionální vývoj: specifika české transformace, evropská integrace a obecná teorie. DemoArt Praha,.2001.,p. 98-122).

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