The Factors of Changes of Relative Location in Central and Eastern Europe

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Abstract

In the course of describing regional aspects of social and economic state of development, and exploring its disparities we can look for dimensions which form spatial characteristics of these phenomena. Relative location as a factor of development can be defined by the potential model, which doesn't value spatial phenomena themselves, but it takes them into a system, whose elements have their influence on one another; in this way the model has an important role in the investigation of spatial interactions.

Changes of relative location in Europe at the late nineties and at the beginning of the new millennium show that the locational benefits of European core regions have decreased, while geographical and economic peripheries, like Central and Eastern Europe have reached a moderate improvement in their locational position.

As the new member EU states of Central and Eastern Europe (and the candidate countries) constitute in many respects a common group – their way through the changes of the levels of development and of relative location is very similar – they can become the subject of an aimed examination which tests the role of operating factors in regional scale in the formation of spatial interactions. Were the unique features of these countries themselves the main factor of shaping trends of the changes of relative location? Or does it rather relate to other regions of Central and Eastern Europe outside the certain country? Or regions of the western European economic core – who otherwise dominate the European potential space – also have key position in forming interaction tendencies of the eastern periphery? Answering these questions helps us orientate ourselves about the main characteristics of the framework of the changing locational positions in Europe, especially in the case of the new member EU states of Central and Eastern Europe.

Key words: relative location, potential model, spatial interactions, economic space, Central and Eastern Europe

JEL Classification: C21, O18

1 Introduction

In the course of spatial analyses, and for learning disparity relations or for judging the question of social and economic development, that is not always sufficient to investigate these phenomena in themselves like local qualities. It helps to grab these complex, multi-dimensional notions in a more well-founded way, if we place them in concrete space by assuming that – beside local factors – spatial interactions and regional interrelations have an important role in evolving and forming their structures. The interpretation of the well-known framework of spatial disparities in economic development in Europe (which has been described in many ways) can be shaded and

enriched with additional information, if we try to see through the trends of spatial processes of the latest years by emphasizing the interaction factor with the representation of relative location.

2 Interpretation of relative location from the point of view of regional studies

Relative location as a determinant factor of the state of spatial development can be approached from many sides of spatial thinking. On the one hand, that notion covers those local factors which are essential in evolving the individual characteristics of an area, and what helps the given region to be distinguishable from the others in the domain of economic, social, environmental etc. conditions.

Besides, spatial position within a given system also has an important role in determining relative location. On the one part, this position can be absolute, while on the other part it can be relative as well. For defining the first mentioned case, we can talk about geographical localization. In other words, how a given area is situated within the whole system, compared with all other elements of the system. For example, a given region is situated in the centre of a country (continent)? Or is it rather peripherally located? That can determine from many aspects the character of its linkage in relation to the other areas, which can act upon its developmental possibilities. For instance, an absolutely or relatively (compared with all other element) distant, hardly accessible (or closed – in a given point of view) area is bad-lying in many respects, while many others can gain profit from their manifold spatial connections.

Since the actors and characters of economic and social life aren't located in space uniformly, instead they cover its certain parts, not only absolute spatial position has a prominent role in determining relative location, but especially the accessibility of designated places The role of economic and social centres of a given system is great, as the dominant part of population raise and spend here its earnings: these are the places of the concentration of economic activity. Accessibility of capital cities or metropolises is especially important as they have numerous functions which can't be accessible elsewhere. And therefore frequency and cost factor of availability of the facilities given for the population (if they are effectively accessible) is determined by the distance from these centres.

Therewith, factor of relative location can also include neighbourhood effect, inasmuch as neighbourhood relations aren't negligible elements of localization interpreted with respect of social and economic state of development within a given system: the closest or the most easily accessible places have prominent effects on their neighbourhood. This approach is very closely related to the notable idea of 'First Law of Geography' (named by Waldo Tobler), which states that everything is related to everything else, but near things are more related than distant things [1].

3 Potential model as a possible indicator of relative location

While dimensions of the complex notion of relative location (counted above) describe complex characteristics too, they are still measurable. And not just in a few ways. The different core-periphery models, accessibility indexes, methods for the analysis of formations and networks or spatial autocorrelation (which is a probable measure of neighbourhood effect) can catch comparatively one or other factor of relative location [2]. But relative location can be described

comprehensively enough in its complexity by potential model. The basis of usability of the model in the actual task is that through the variable of economic potential, spatial phenomena can be represented not just in themselves, but also as a part of a system, whose parts have an effect on one another.

The most general formula of potential model illustrates itself well, how the mechanism of this method works in catching and quantifying relative location as a numerical variable:

$$V_j = \sum_i \frac{m_i}{d_{ij}},$$

where V_j shows the aggregated value of potentials in region j, m_i denotes the weight of active (economic or social) masses within a system, and d_{ij} is the distance between a given area and other regions which include these economic or social masses.

As its mechanism shows, the model can represent the individual characteristics of the given regions through catching self-potential values (the effect of a given area on itself), but in the same way it denotes geographical localization as well, as the distance (sum of distances) shows the position of a given region within a certain system, compared with other parts of the system. Besides, the role of designated places, social and economic centres in forming spatial interactions can be built in the model, because the 'bigger' social masses of these centres have a more significant effect within a given distance, and it elevates the probability of intervening interactions, which establishes a more advantageous situation in the regard of accessibility. Imaging neighbourhood effects can be carried out by the evaluation of distance function, as near elements (situated closely to each other) can be identified and strained out easily. And they can have a more significant effect on the others thanks to their advantageous accessibility relations, while they are possibly smaller social or economic masses. By the review all of these factors, relative location and the favourable or disadvantageous spatial condition of a given area within the economic space can be estimated sensibly.

4 Applications of potential model in analysing changes of relative location

Beside cross-sectional surveys, several applications of potential model serve to follow up the changes of relative location in economic space [3] [4]. These comparisons don't always mean temporal dynamics. Often it is the modification of impedence conditions – namely, the distance factors of the model –, what is advanced in the analyses. According to all of this, those model types, what serve to analyse the transformation of the conditions in relative location, can be classified in various ways through their different approaches. Those calculations, what compare two different stated point of time, count naturally always the actual mass factors. It is not uniform in the case of these analyses, if a certain calculation is supported by the consideration of the modification of distance function, or following up the alteration of relative location within an economic space focuses emphatically on the changes of economic performance – it depends on the actual goal of investigation [5] [6].

Those applications, what aim directly the survey of the development of physical elements of accessibility conditions, handle vigorously the role of impedence factor (distance) [7] [8] [9]. In these examples, dynamics of the modification of relative location is resulted by the comparison of the starting (intercurrent) and ending points of a possible infrastructural project, e.g. process of a continental level network planning action (namely, development of high-speed rail or highway

network). And this is what illustrates the expectably decreasing impact of impedence factor. Decrease of a distance (temporal accessibility, cost) plotted against certain social masses serve not only to show the general changes of relative location conditions. With the help of those surveys it is possible to confirm or estimate the planned and realized social and economic benefits of a given infrastructural project on the elements of the analysed system [10] [11].
Favourable relative location on regional level isn't attached only to the decrease of the impedence role of direct physical distance. Negotiation of distance demands always time and cost expenditure. But different currency, existence of tolls and borders can also be in the role of impedence factor. Building these elements in the potential model, certain favourable or disadvantageous effects of an integration process on relative location become measurable [12] [13] [14]. The results of the similar analyses based on this question show that only the fact of being the part of a given integration entity can revalue the spatial position of those regions whose relative location is otherwise worse.

5 The model-building

Present application, which tries to illustrate certain characteristics of the alteration of European economic space, doesn't cover the whole European continent, however it isn't limited only to the 27 members of European Union. The spatial field of the analysis is the 31 members of the so-called ESPON-space (EU27 plus Switzerland, Iceland, Norway and Liechtenstein) amplified with the candidates, Croatia and Macedonia – all appearing in Eurostat Region database. The basic spatial units of the model are composed of the mentioned group of countries' (simplified as Europe in the followings) approximately 280 NUTS2 regions in the general analysis, and 1360 NUTS3 regions in the deeper investigation of the components of economic potential as factors of modification focusing on the case of Central and Eastern European countries. The length of the analysed period, from 1995 to 2006 is acceptable to look back for summing up the spatial processes in Europe and for testing this type of application, while it is hardly suitable to draw the conclusion concerning the future with the knowledge of present economic circumstances affected by the global crisis.
Mass factor of the model is built in it by the use of Gross Domestic Product volumes, which is still the fittest index of economic performance, as it is general and accessible in a wide range [15]. GDP volumes of the NUTS regions were recorded in current prices and not in Purchasing Power Parities standard, because in respect of present analysis concerning the effects of continental level and cross-state interactions that isn't the strength of the local markets what is important, but the inter-regional characteristics within the system [16] [17].
Choosing of impedence factors was worked out by the calculation of air distances based on the centroids of the polygons of NUTS units for aiming simplicity and for searching wide range data accessibility [18]. The use of air distances can be acceptable in the spatial level of the analysis, road network or travel-time based distance data has its real utility by its more precise approach in micro and mezo level [19]. Exponent of distance was denominated as 1 owing to the lack of empirical data, and because that is usual and accepted in the applications with the similar subject and spatial level [20] [21]. Otherwise, this can also be determined and specified as a result of different iterative calibration processes [22] [23]. Defining distance values serving to the calculation of self-potentials also belongs to the determination of distance factor in the process model building. This can't be calculated with the application of the basic potential model formula

– to avoid division with zero –, but a fictive distance value can be attached to every spatial units, which can be produced by calculating the radius of a circle whose area is equal with the area of the given spatial unit. That's how self-distances were defined in this paper.

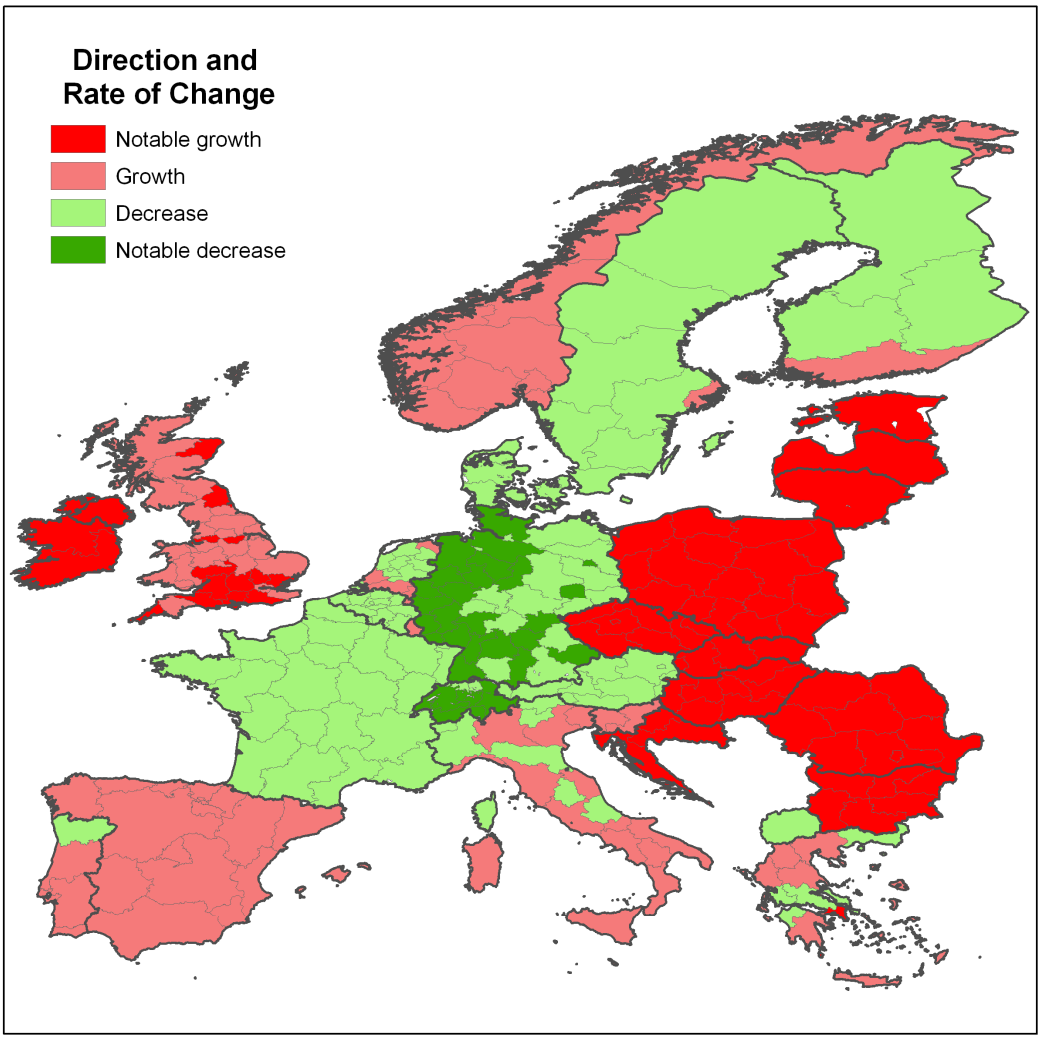
6 Changes in the European economic space

Within the frames of present paper following the changes of impedence factor isn't included as a part in the analysis of modifications of relative location conditions, as it has been described at the presentation of model building. Whereas mass factor of the model plays the role of an emphatic element, and it becomes the fundamental part of the dynamical analysis of economic potential field in Europe, through the interpretation of economic development viewed in a system of spatial interactions. Accordingly, introducing the results of the model, it is worth to sketch the trends what describe the changes of relative state of development in the discussed regions, as they can serve preliminary information about economic positions establishing relative location.

As a counterpart of the mass index of the volume of economic performance, the (extremely) simplified indicator of economic development is represented by gross domestic product (GDP) per capita values. That's what establishes the following of the average annual changes compared with the actual annual levels of economic development as it is necessary to the evaluation of the trends concerning with position changes of the analysed regions.

Generally, we can say that disparities between the most and the least developed areas have slightly decreased as regards their ranges in the analysed period (Figure 1). Notwithstanding, considerable equalization can't be observed, and absolute positions in the levels of development have hardly changed either: there's no re-arrangement in the rankings of economic development. The greatest regression, position-loosing compared with average development level has primarily afflicted the regions of central and western European countries (from Austria, through France to Netherlands), similarly to the Scandinavian states (except Norway).

Eminently they were the German and Swiss regions, who have lost a part of their developmental advantages: relative level of development compared with the average European value decreased considerably year by year almost in the whole country. Conversely, the Mediterranean area of the continent seems to be revalued: the whole Spain and (almost the whole) Portugal, the main part of Italian and Greek regions follows that trend. Changes in relative level of development show considerable increase in Ireland and the United Kingdom (geographical peripheries too) between 1995 and 2006 – due to the 'economic soaring' of the first half of the analysed period as it was observed in these country. Besides, post-socialist states of Central and Eastern Europe – pheripheral in the sense of geographical location and economic performance as well – have greatly counterbalanced their disadvantages owing to the favourable economic processes in the area and to the capability of the expansion (except Macedonia).

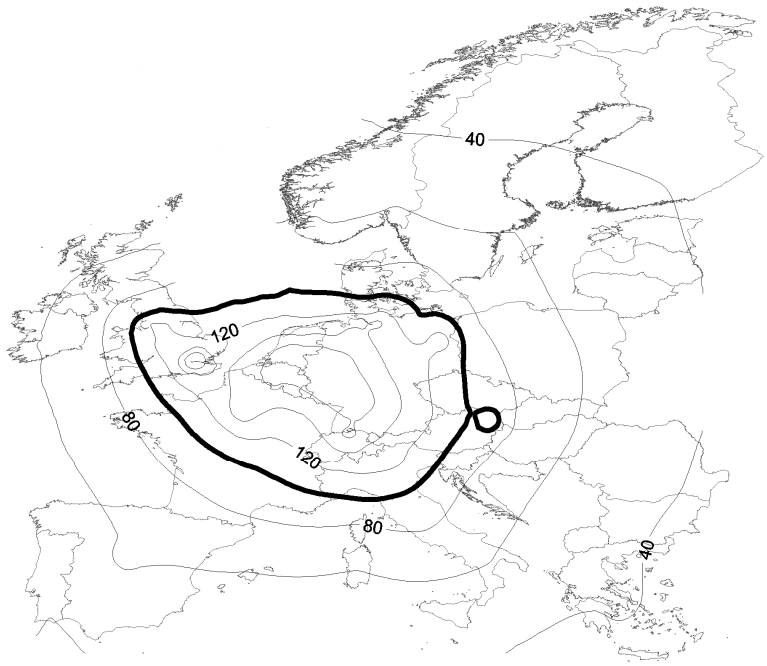


*Notable growth or decrease denote 2,5 % annual average change with respect to actual continental average; Iceland an Cyprus aren't represented on maps to keep the compact form of the figures.

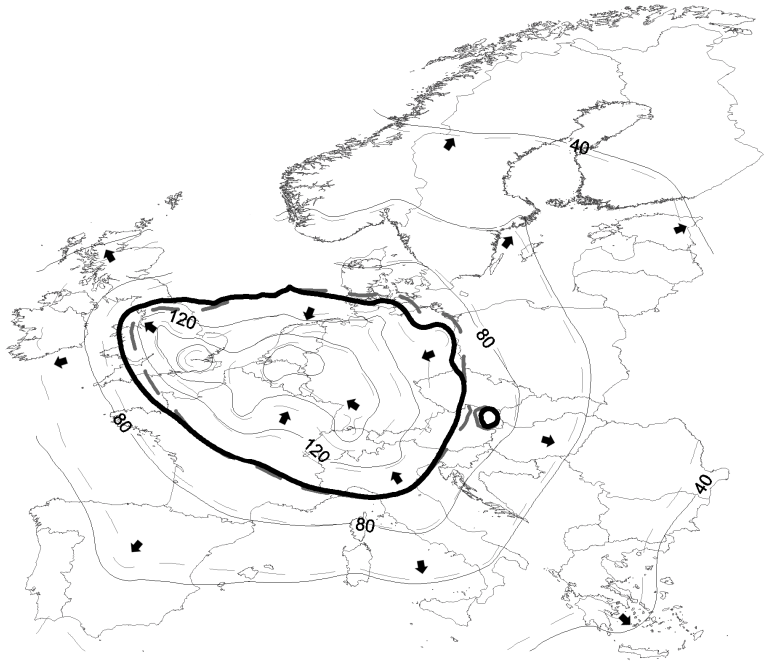
Figure 1. Changing Levels of Economic Development of European NUTS2 Regions 1995-2006*

By turning attention to the concrete model application, it can be said – as it is resulted from the mechanism of potential model and the comparison of the above-mentioned elements of relative location – that favourable relative location in economic space come from the existence of big social and economic masses, the existence of geographical centrality, the closeness of economic centres, and advantageous neighbourhood conditions. In the example of European economic space this can be interpreted as the (geographically) centrally located economic centres (not far from each other) have the most favourable relative location conditions. From these areas to the peripheries, potential values decrease steadily as the distances grow. And only major local centres are able to interfere with the potential field (in the form of small loops, as it is shown on the maps – Figure 2).

1995



2006



*On the figures thick curves represent European average with the value of 100; beside the values of 2006, broken lines show the situation of 1995, while arrows denote the trends of change.

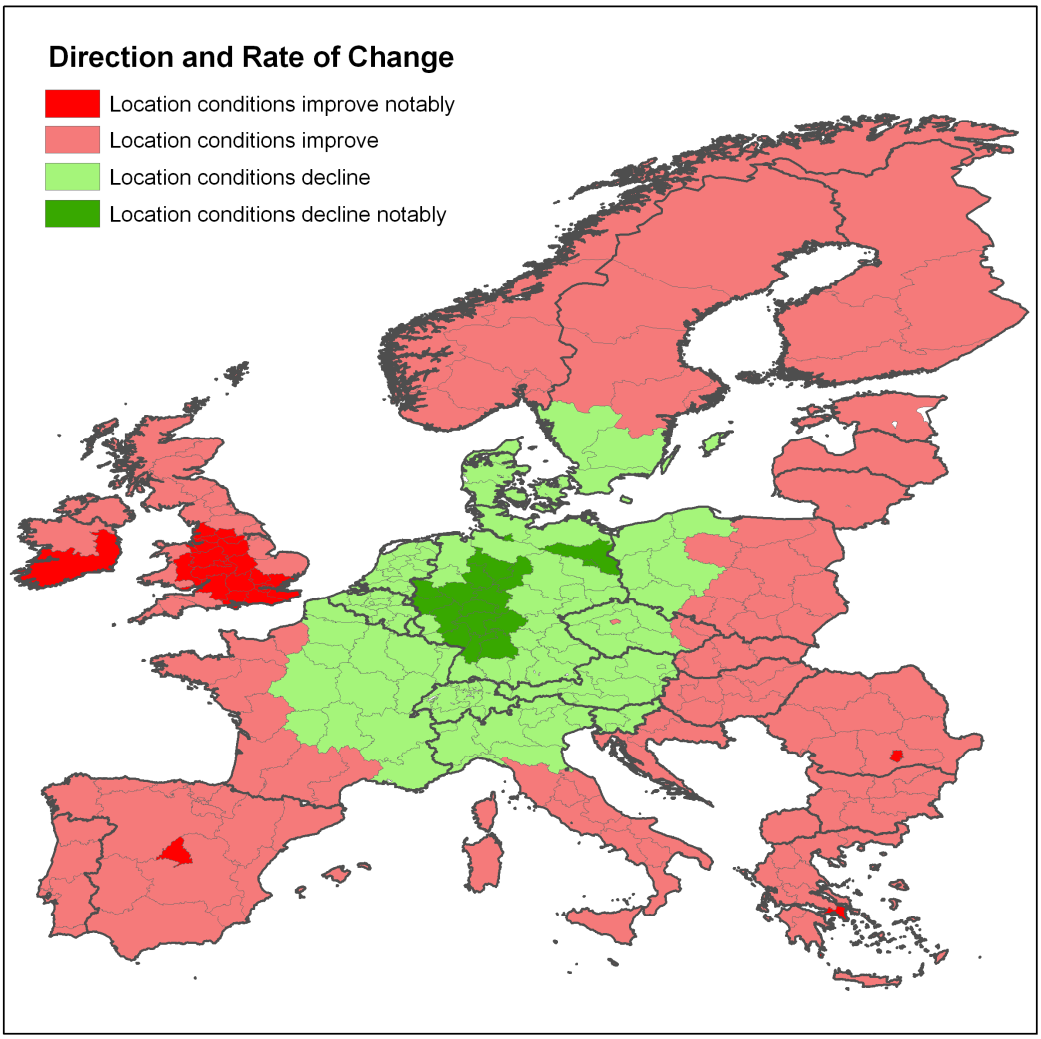
Figure 2 Changes of European Economic Potentials between 1995 and 2006*

From 1995 until 2006 just a little modification can be observed in relative location conditions, the image of economic potential field has hardly changed, centrally located economic centres still have the most advantageous positions – this can be confirmed by other surveys [24]. Considering impedence factors (distances) as constants, this little alteration comes only from the different run of economic processes and spatial interactions. Beside the similarity of the two states, it's worth to emphasize a highly important trend. On the core areas (according to their economic position), where the potential values are above average, we can witness the shrink of potential curves, while on the peripheries some improvement can be observed (arrows drawn on figure 2/B denote this trend).

Consequently, it can be emphasized that generally core areas have lost a little of their advantages in relative location in the analysed period, while on the peripheries we can witness a progressive revaluing of positions in spatial interaction conditions. Comprehensive surveys from the 1960s and 1980s – even they calculate with the changes of impedence factor or not – show totally inverse processes in this continental level [25] [26]. This confirms the widening of regional disparities in that period, and denotes that the former spatial processes had strengthened the relative locational positions of the cores. However, the results of the latest experiments justify the statements of the model application in this paper, and tell about the relative advantage loss of core areas and the closing up of peripheries in their location conditions [27] [28].

Figure 3 illustrates plastically the processes sketched above, as the measure of the change of potential values of European NUTS2 regions can be caught numerically on it by the average rate of alteration. This representation assigns more explicitly the roles of core areas and peripheries within the spatial processes between 1995 and 2006, as the economic core (and mainly Germany) can be identified with the group of 'losers', who have lost a part of their advantages in relative location, and the periphery, identified with a closing up area.

Behind the image (seems to be uniform) there are various and sometimes inverse processes. To explore their characteristics it helps to divide the analysed period: it was logically desirable, but the trends also confirm this step. Between 1995 and 2000 relative change of potential values attracts the attention to two special processes beside the generally mentioned core-periphery tendencies about modification of relative location conditions in European regions and about their spatial interrelations. The 'winners' of this period are the British islands which are not wholly the part of the economic core of Europe (expect London and its environment), their geographic localization are rather peripheral with respect to other parts of the continent (Figure 4). Nevertheless, these years offered the period to Ireland and the United Kingdom of overcoming considerably their disadvantages in relative location. Their economic performance has enlarged so much, that it was easily able to counterbalance the negative effects generated by the position loss of the continental neighbours.

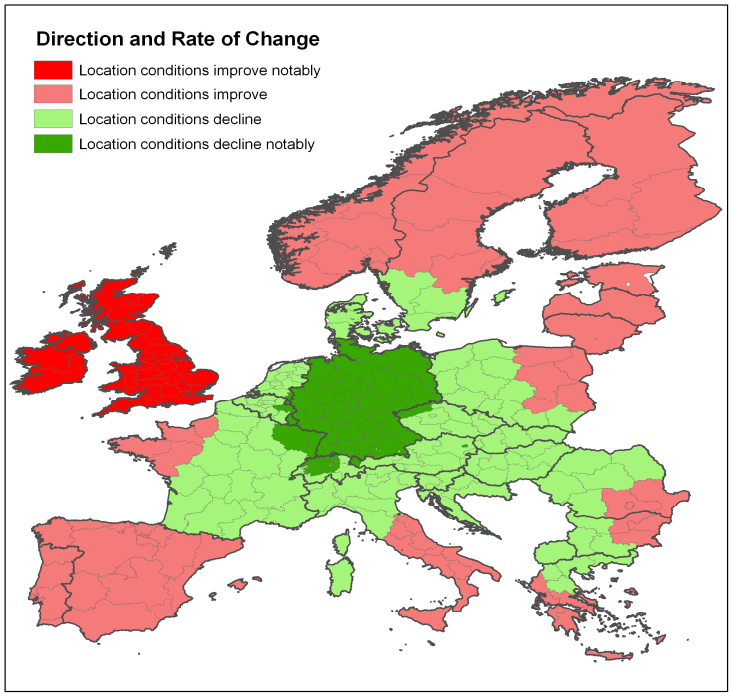


*Notable improvement or decline in relative location conditions denote 1 % annual average change with respect to the actual continental average

Figure 3 Changes of Relative Location of European NUTS2 Regions 1995-2006 I.*

German regions with favoured developmental position (former 'leaders') showed a break in this period and they had a great loss in their relative positions. This process had unfavourable effects on economic situation in the western European core, if we consider spatial interaction conditions. And it is also (and especially) true with respect the post socialist countries of Central and Eastern Europe. Close German regions –with the whole economic core – affected disadvantageously relative location conditions of those countries in Central and Eastern Europe, what lay in their neighbourhood, not far from them. Thus their locational handicap didn't decrease, while the expansion of their economic performance didn't stop, moreover their developmental level came slightly closer to the European average.

1995-2000



2000-2006

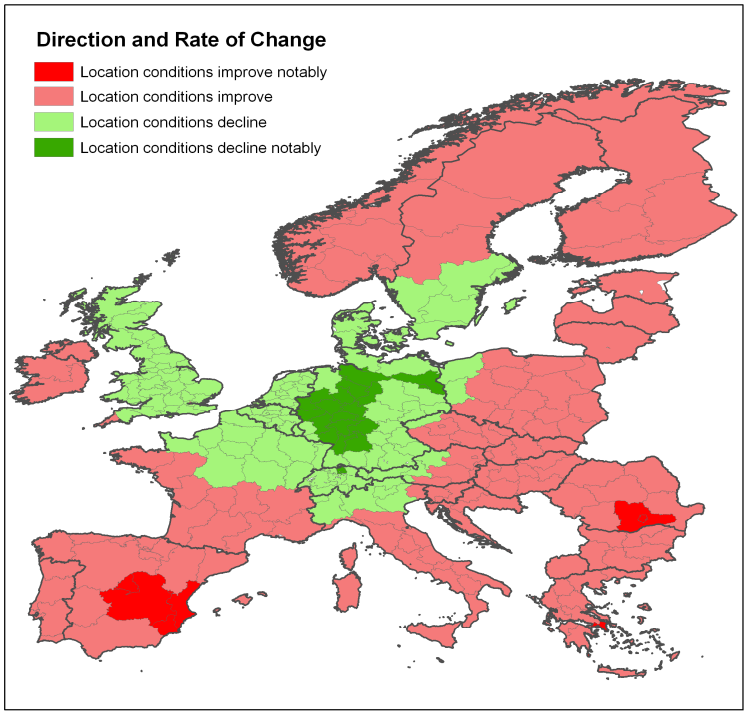


Figure 4 Changes of Relative Location of European NUTS2 Regions 1995-2006 II.

But from the millennium, all of these countries were already able to counterbalance the disadvantageous spatial interaction effects coming from the devaluation of the core – and not just the less effectuated and physically far Baltic states and the eastern regions of Poland, Romania and Bulgaria. Thus in continental level, Central and Eastern Europe could become the possible winner of the period from 2000 to 2006 – beside Scandinavian and Mediterranean peripheries (showing balanced progress in the whole analysed period) – as the countries of the area were able to reverse further growth of their considerable disadvantages in relative location conditions, and they showed the signs of closing up. Meanwhile the stage of negative change in spatial interaction conditions has growingly displaced to west. Position loss in Germany in this period wasn't as comprehensively considerable as it was before, whereas the United Kingdom, which seemed to come to a more and more favourable position, has become the member of that group.

7 Factors of relative location – focusing on Central and Eastern Europe

One of the main goals of this paper is to demonstrate, that economic processes are not independent from space, spatial interactions notably influence their run. As it was presented above, relative location conditions became worse in most of the regions of Central and Eastern Europe (namely new member states and the candidate countries of European Union) between 1995 and 2000, while their economic performance have increased significantly in the whole period of the analysis. Accordingly, values of economic potential in these countries are mainly formed by effects outside the country and not really by their own development. But how these effects can be caught numerically? How the dominant factors of forming relative location can be determined?

As potential model is based on addition (on the summation of separated effects on a given region), subtotals of the total values can be defined. These subtotals and elements can be marked, separated, and aggregated variously depending on the questions of analysis about the emphasized factors [29] [30]. Therefore we can distinguish for example, effects within or outside a given distance, or separated masses with a given level of economic performance as the different factors of relative location. Besides, spatial differentiation is also possible with the application of this method in order to filter the effects of diverse areas (different countries, or given regions within a country). These calculations can give special information in the case of new member states and the candidates of EU, as they are both geographical and economic peripheries of the continent, so the determinants of their relative location condition are more unclear, than in the case of Western Europe, the economic core.

We can ask the question, what is the role of unique features (self-potentials) in shaping potential fields? How distant and closer elements influence spatial interaction conditions in the continent and what role of the biggest economic masses have in the formation of relative location, especially in the western core, eastern periphery comparison? And what kind of spatial dominance operates on these areas, how the inland and neighbourhood factors can appear in the post socialist Central and Eastern Europe beside the impact of the western core? To evaluate these things it is necessary to see the mechanisms on continental level first, and answer these questions on the eastern periphery in this mirror.

Generally, ratio of self-potential values in total economic potentials is in relation with the weight of economic masses. So, that is much bigger in capital cities and economic centres, which can be found mainly in Western Europe. But self-potential is rarely an absolutely determinant factor of

relative location, only in the case of the biggest masses, for example London, Paris, Madrid, Berlin, Milan, Brussels and so on. As we can see, in new member states and candidate countries of EU self-potentials can also have dominant role within the country, for example in the case of Prague, Warsaw, Bucharest and Budapest, but its ratio compared to the total values of these areas is much smaller, than in the case of the western metropolises. For example Budapest's self-potential value is only the 15 % of its total potential.

Effect of these great masses is the biggest in their closer and farer neighbourhood, but their impact is observable in the whole continent – it decreases with the increase of distance. Where the distribution of the bigger social and economic centres is balanced, and where there are also real metropolises within a given distance, there this ratio is uniformly high, for example in the case of the region of Atlantic coast. In this regard Germany is in a special situation. With the exceptions of the neighbourhood of Berlin, Hamburg, Munich and the Ruhr region the ratio of great masses is relatively small in the country's economic potentials. The reason is the following: in this spatial level (NUTS3) Germany is 'infinitely' divided. There aren't only some great masses, but there are many medium one. They are close to each other, and they enact their roles in the formation of relative location conditions by strengthening each other, but they hardly appear in this level of investigation. The situation is similar in the case of the regions of Central and Eastern Europe, as the ratio of the effects of great economic centres in potential values is relatively small. In this region of the continent there aren't big economic masses at all with the exception of capital cities, so it is only the decreased impact of the masses of the western economic core.

As it was told in the previous example of Germany, many medium sized masses within a relatively small distance have advantageous effects on each other in shaping relative location conditions. When we investigate the economic impacts within a given distance (for example within 100, 250 or 500 kilometres), we find that this factor has much bigger role in Western Europe – in the economic core of the continent –, where the amount and the distribution of greater economic masses is favourable, than in the case of the peripheries of Europe (both in the sense of geographical localization and economic performance). In this comparison, as we focus on the eastern new member states and candidate countries of European Union, the more distant elements (parts of the western economic core) have much greater impact than the closer ones. This also shows the weaknesses of the region's local factors in forming their relative location.

By the synthesis of the knowledge about these elements mentioned above, we can determinate the concrete, localized spatial factors of the economic potential field in Europe, and evaluate the role of the parts of the continent in shaping relative location conditions. If we divide the analysed area to two parts – the eastern member states and candidate countries of EU and the rest with Western Europe, Scandinavia and the Mediterranean countries –, we find that the ratio of their share in economic potentials is much disproportioned. Central and Eastern Europe has a much less impact (even on itself) in forming relative location, than the western part of the continent. In this sense the eastern half of Europe is the periphery of the rest in many regards, but the periphery of which part exactly?

If we look for the dominant spatial factors of relative location in Europe, we can find a simple (but also simplified by the model) and actually clear image. By calculating the ratio of self-potentials and by making subtotals of the contributions of separate countries, the impact of the spatial components can be defined. As a result of that, we find that self-potential values have relative dominance only in some cases – the cities or the closer neighbourhood of Lisbon, Madrid, Athens, Bucharest, Wien, Brussels and Oslo (Figure 5).

In some other cases these are the inland elements what dominate the value of economic potentials. These areas are near to these previously mentioned regions with high self-potential values – composing the hinterland of them (par example next to Lisbon, Brussels, Athens, Bucharest and Wien), or in other cases, denotes the nearness of a bigger effective mass (like in Poland and Sweden). Inland dominance is quite strong in the Netherlands too, but outside the Randstadt the impact of an other country (Germany) is more determinant.

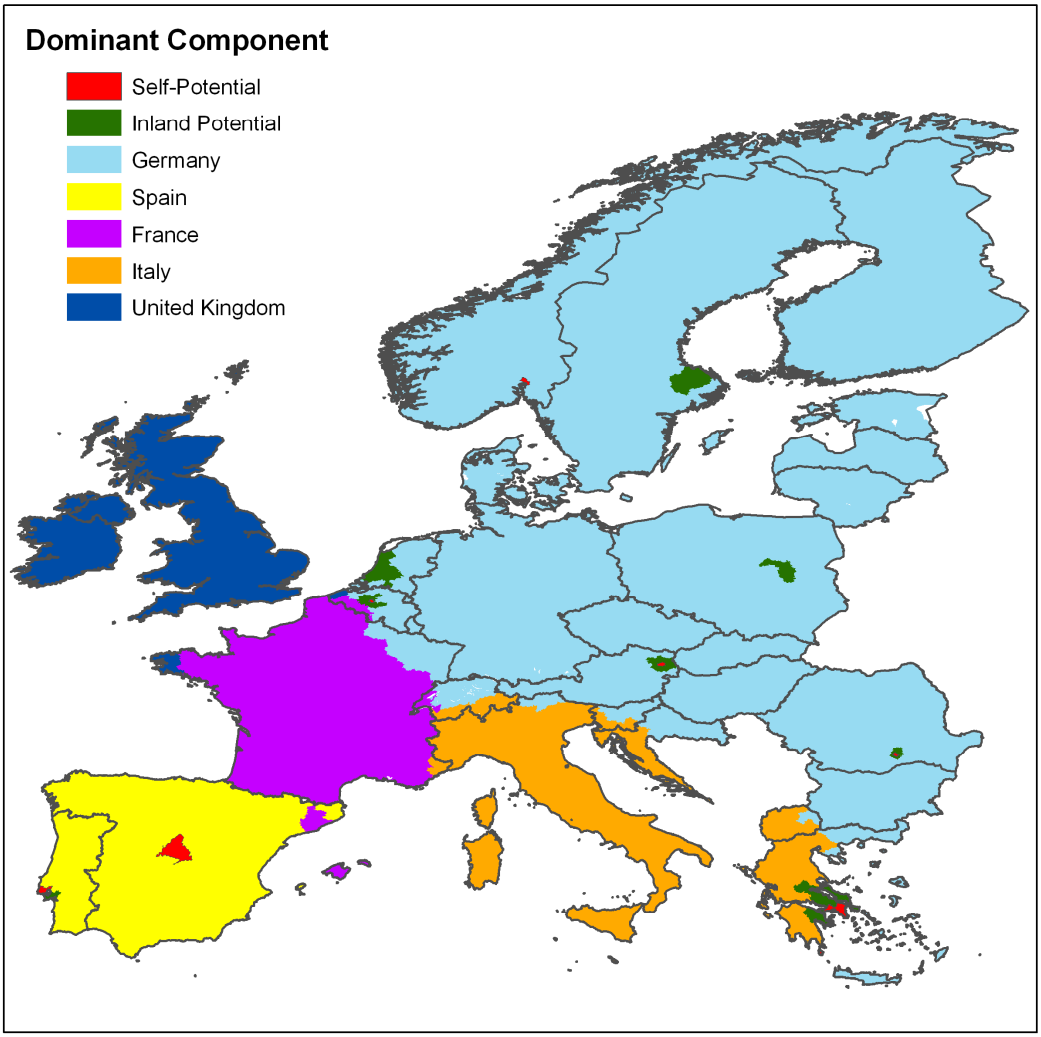


Figure 5 Dominant Components of Economic Potentials in the NUTS3 Regions of Europe in 2006

As we can see, there are five countries whose contribution to economic potentials – as well as their role in forming relative location conditions of any other region – is great. Beside the role of inland factors, they can reach relative dominance as the main components of total potential values in some other countries. Spain in Portugal, the United Kingdom in Ireland and in a little part of France and Belgium, France in Belgium, in Switzerland and in Spain, Italy in France, Switzerland and the Mediterranean part of South-Eastern Europe (and in Macedonia).

The effects of German regions can be dominant from Norway to Greece, and this emphasizes the role of Germany as the main actor of shaping relative location in Europe. German regions are centrally located within the continent, and they are generally (absolutely or relatively) big economic masses, which are located close to each other. From the aspect of the East European member states of EU, Germany is the most dominant element of the potential field. That explains many elements of their trends in the spatial processes of the analysed period, as they have followed the changes affecting German regions.

Beside these impacts there are just a few possibilities for the eastern regions of the continent to show their contribution to their relative locational positions. But it has changed in the course of the analysed period. From 1995 to 2006 many factors of relative location (reviewed above) have just slightly modified. But it is worth to emphasize one thing, that in the case of new member states and candidate countries of European Union, inland elements have enlarged observably their share in the economic potential values and their rank has notably improved, while in the case of other parts of the continent less change can be experienced.

This confirms the observed process that the eastern periphery has enlarged considerably its economic performance from 1995 to 2006, and its relative location conditions have also became better from the second half of the period, despite the negative impact of the trends of the western core and Germany. Ranks of inland components have improved mainly in the surroundings of the capital cities of these countries, slightly, as in Slovenia and Bulgaria, or largely as in Hungary, Romania and Poland (Figure 6). This also denotes that in the analysed period the capital cities (and economic centres) of the new member states and candidate countries of EU were the real (and only?) holder of the development of economic performance in the area. This indicates broadening spatial disparities in these countries, and that weights again in the balance the benefits of the observed spatial processes.

8 Conclusions

In the course of the analyses of spatial development and spatial disparities we can consider the dimension of relative location (building on spatial interaction conditions) as a factor of evolving these phenomena. Potential model, which is one of the basic methods of modelling spatial interactions, can catch the characteristics of relative location in their complexity by representing the local factors, geographical localization, core-periphery relations and neighbourhood effects too. As a variable of relative location, economic potential values report about the changes of spatial interaction conditions of European regions, and about the modification of economic space in the recent years.

The process of equalization of spatial development conditions (measured on continental level) is confirmed by the modelled advantage loss of the European economic core, and the closing up the both geographically and economically peripheral regions with the slight decrease of their disadvantages in relative location positions. The analysis shows that there are some dominant factors of determining relative location, as the eastern part of Europe depends notably on the spatial interaction processes of the western economic core, especially that of Germany. But due to the expansion of their economic performance, new member states and the candidate countries of the European Union have become more and more considerable actors of the area in the recent years.

1995 2006

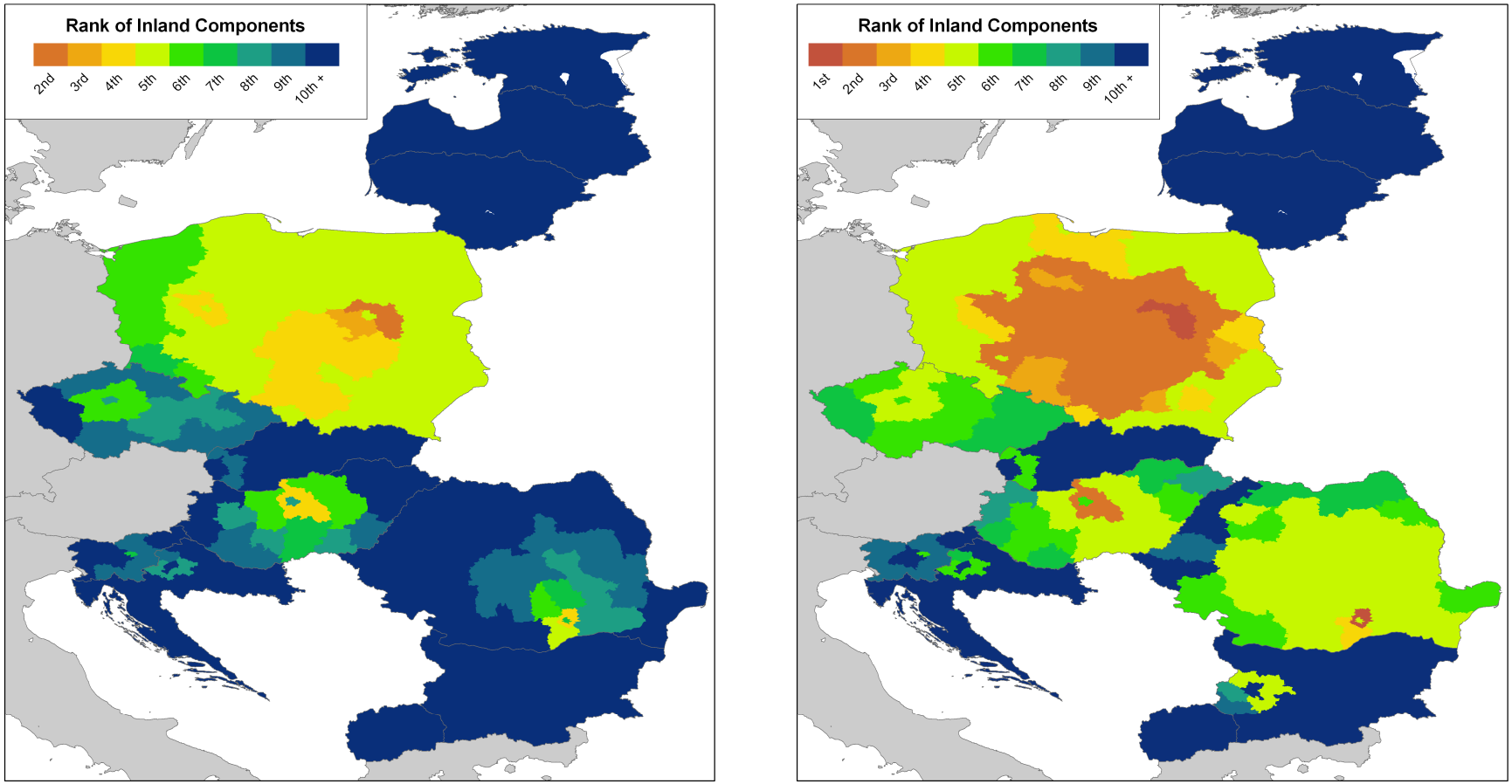


Figure 6 Changes of the Rank of Inland Components in Economic Potentials in the New Member States and Candidate Countries of EU from 1995 to 2006

However the run of the trends of the analysed period denotes definite tendencies, they are hardly applicable to model present situation or future processes: the stop of expansion and the regression of economic performance (observable since the last year), and the bad expectations foreshadow another changes. The economic crisis affects negatively the whole Europe, but the regions of the more vulnerable eastern periphery can lose their gains earned by the closing up in relative location conditions, and their disadvantages can grow again. For example in Hungary, Slovenia and the Baltic states the expected calculated recession is very serious, it is quite unfavourable in comparison with other countries from the area and with other parts of the continent.
It is possible that the observations and findings of present work on economic processes and trends are not enduring. But the paper also demonstrated the mechanism and a possible application of the potential model in analysing spatial interactions, which can be useful for the further investigations in the same topic, especially in the evaluation of recent and future changes followed by the crisis.

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