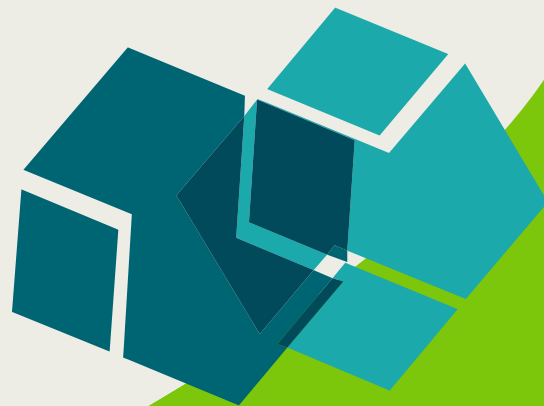




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Paper No. 6

Synthesis Report: WP6. Territorial Dimension of EU Integration as Challenges for Cohesion Policy

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Synthesis Report: WP6. Territorial Dimension of EU Integration as Challenges for Cohesion Policy¹

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¹ Contributions (reports, papers, case studies): Jiří Blazek, Daniela Constantin, Martin Ferry, Zizi Goschin, Andrzej Kassenberg, Tomasz Komornicki, Marek Kozak, Maciej Smętkowski, James Scott, Boglárka Szallai

Executive summary

1 Objectives and methodology

The objectives of the workpackage 'Territorial Dimension of EU Integration as Challenges for Cohesion Policy' were the following:

- To assess the territorial dimensions of socio-economic restructuring, from both regional and spatial perspectives, during the transformation period and after EU accession;
- To assess the socio-economic development level and potential in the CEE regions;
- To identify regional strengths and weaknesses in different types of regions with different reactions to transformation, crisis and EU membership;
- To assess the importance of different development factors for various types of CEE regions;
- To assess the role of accessibility and development of transport networks;
- To assess the role of environmental infrastructure in regional development;
- To assess the changes in the natural environment of the CEE regions, policies of environmental protection and economies of regional sustainable development;
- To assess the possibilities of and measures for diffusion of growth from the metropolitan centres to their regional hinterlands.

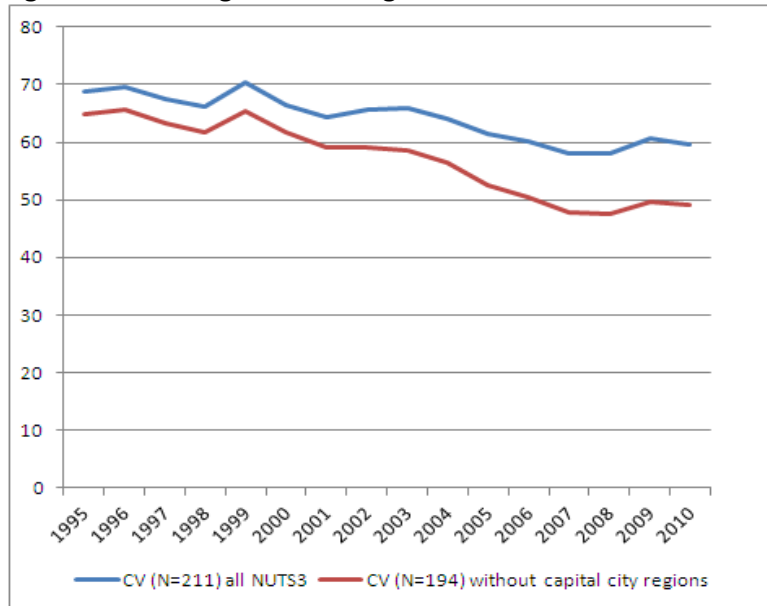
The WP used both quantitative and qualitative methods. For quantitative analyses, methods of multivariate statistical analysis were applied. Qualitative studies were conducted through case studies performed in selected types of regions, to exemplify the factors and barriers characterising development in an open, competitive economy.

2 Evidence of analysis – synthesis

2.1 Regional disparities and development dynamics, diffusion of development, sources and factors of regional growth : Regional disparities and regional development dynamics (Task 2a)

In the researched period (1995-2010/2011), a weak regional convergence in GDP per capita could be observed across the macroregion. This was a consequence of dissimilar rates of growth in the specific groups of countries, and particularly of faster economic growth in the less-developed countries (the Baltic states, Bulgaria and Romania) which tried to close the gap caused by their delayed commencement of the transformation and restructuring processes. Secondly, the convergence of regional GDP per capita measured in EUR was enhanced by appreciation of some national currencies. The scale of convergence was even greater after the 10 capital city regions were excluded from the analyses (**Figure 1**). This means that the disparities between non-capital regions of particular countries were narrowing at a quite fast rate, which could suggest club convergence, a process whereby the income levels of regions with similar structural characteristics tend to become equalised. It should also be noted that the regional convergence process came to an abrupt halt during the recent financial crisis which began in 2008.

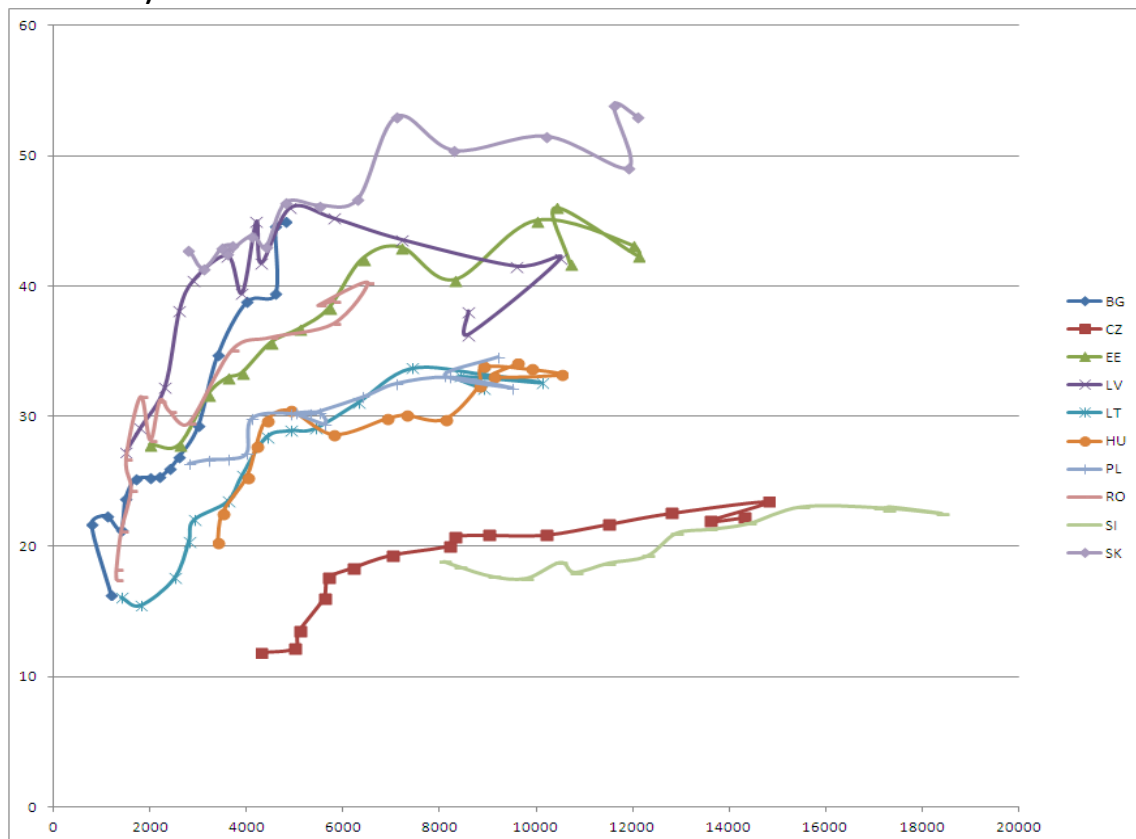
Figure 1. Macroregional convergence at NUTS3 level measured in EUR in 1995-2010



Source: prepared by the author based on Eurostat data.

In terms of the development trajectories showing regional GDP per inhabitant disparities it can be concluded that the CEE countries corroborated Williamson's hypothesis in the phase of divergence and stabilisation (**Figure 2**).

Figure 2. National income level (GDP per capita in EUR) and scale of regional disparities (coefficient of variation) in 1995-2010

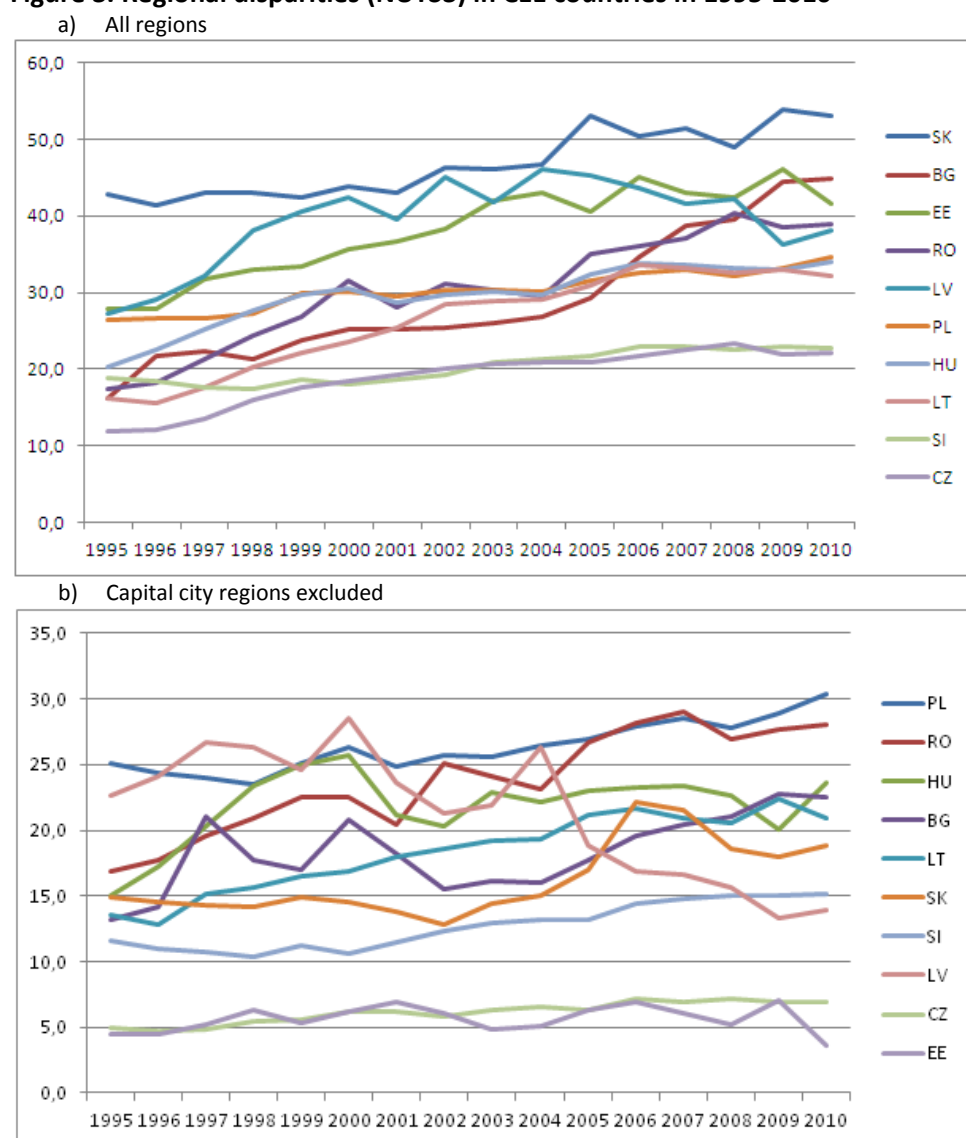


Source: prepared by the author.

In the period when their nominal GDP per capita did not exceed EUR 5,000-7,000, a fast increase in regional disparities could be observed. After this level had been reached, the growth of regional disparities was considerably slower. At the same time, no decrease in the values of the variation coefficient of regional GDP, as could have been anticipated by this hypothesis, was observed, even though the years following the 2008 phase of the economic crisis were quite volatile both in terms of GDP per capita and changes in disparities of the regional GDP per inhabitant. Furthermore, the additional panel analysis did not find any correlations between the rates of economic growth and changes in the coefficient of variation of the regional incomes. In other words, regional convergence or divergence processes did not depend on the business cycle at national levels in short term, while tend to corroborate Williamson curve in long term.

Most countries demonstrated some tendency for regional polarisation of development processes, although the situation in that regard in the smaller countries was rather stable (**Figure 3**).

Figure 3. Regional disparities (NUTS3) in CEE countries in 1995-2010

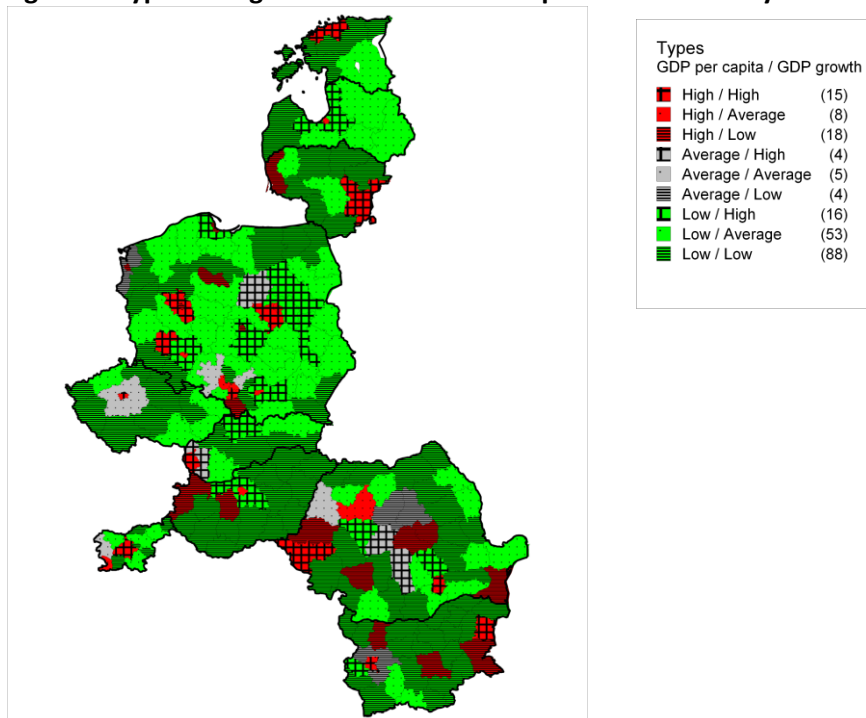


Source: prepared by the author based on Eurostat data.

In addition to the capital city regions, the regions of other large cities represented a robustly developing group of regions, a feature that was particularly well visible in the countries with

polycentric settlement systems such as Poland and Romania, which can point to the considerable role of metropolisation processes in regional development. There were also some problem areas, typified by low paces of growth or even economic stagnation in some cases. As a rule, these were rural regions, most of them located near the outer, eastern external border of the macroregion as well as internal borders which were difficult to penetrate owing to the existing physiographic barriers (e.g. the areas at the Romanian-Bulgarian border along the Danube). The significance of metropolisation processes is clearly visible, and most easily observable in the capital city regions and regions with other large urban centres (especially in Poland and Romania), driving their fast development (**Figure 4**). With such regions excluded from the analysis, we can observe a strong petrification of the spatial structures, that is a rather uniform development of the remaining regions. On the other hand, the process of the emergence of poorer macroregions was noticed, especially in Romania (Moldova), Hungary (eastern and southern parts) and Bulgaria (the regions forming a belt adjacent to the coastal regions).

Figure 4. Types of regions in terms of development level and dynamics 2000-2008



Source: prepared by the author based on Eurostat data.

The impact of the financial crisis on regional development in CEECs still remains difficult to evaluate owing to the dynamics of crisis phenomena and short series of statistical data. On the basis of available statistics, it can be concluded that the capital city regions were the least severely affected, whereas other types of regions were characterised by a patchy nature of this phenomenon.

2.2 Regional disparities and development dynamics, diffusion of development, sources and factors of regional growth : Diffusion of development processes (Task 2b)

The regional GDP growth measured in EUR is correlated very strongly with the national growth rate (**Table1**). In terms of real GDP growth in the national currencies, this correlation is much less visible and varies, depending on the period in question. In some periods (e.g. 1995-2000), the domestic economic performance had a very strong impact on the rates of growth of all the regions (which

could be viewed as proof of both the diffusion of development and efficient mechanisms for regional income distribution), but in other periods (e.g. 2004-2008), there were visible differences in the rates of growth of the regional incomes and an observably weak correlation with the domestic economic trends of the time.

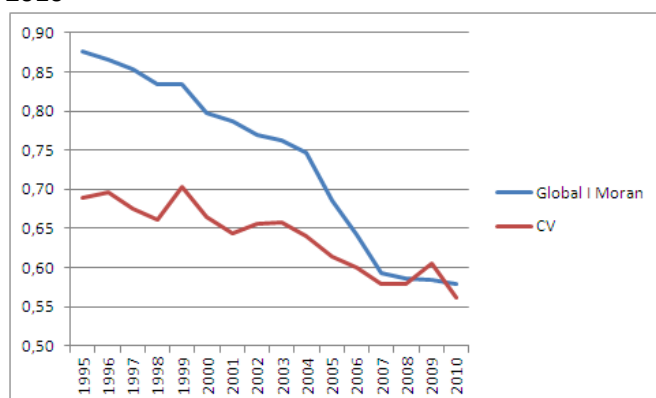
In macroregional dimension, gradual convergence of the poorer countries could be observed, a process which is invariably followed by convergence at regional (NUTS3) level (**Figure5**). However, it should be pointed out that the scale of regional disparities in relation to GDP per capita still remains huge. In consequence, the better-developed regions situated in the western part of the macroregion and the less-developed subregions situated in the eastern part, can still be viewed as quite clearly separated opposites. The observable diffusion processes assumed a hierarchical form, encompassing the major urban centres situated in the less-developed countries and areas on the one hand, but on the other, some role of contact diffusion could be observed, also in connection with the existing transport system (the role of the main transport corridors).

Table 1. Correlation between change of regional incomes (NUTS3) and domestic economic growth rate

Subperiods	(A) Change of GDP per capita in EUR (%)		(B) Real change of GDP in national currency (%)	
	R	corr. R ²	R	R ²
1995-2000	0.82	68.1	0.79	62.4
2000-2004	0.85	72.2	0.54	29.5
2004-2008	0.85	71.8	0.29	8.3
2008-2009	0.69	48.3	0.70	48.6
1995-2009	0.74	54.4	0.61	37.8

Source: prepared by the author based on Eurostat data.

Figure 5. Global spatial autocorrelation and convergence of regional GDP per capita in EUR 1995-2010*

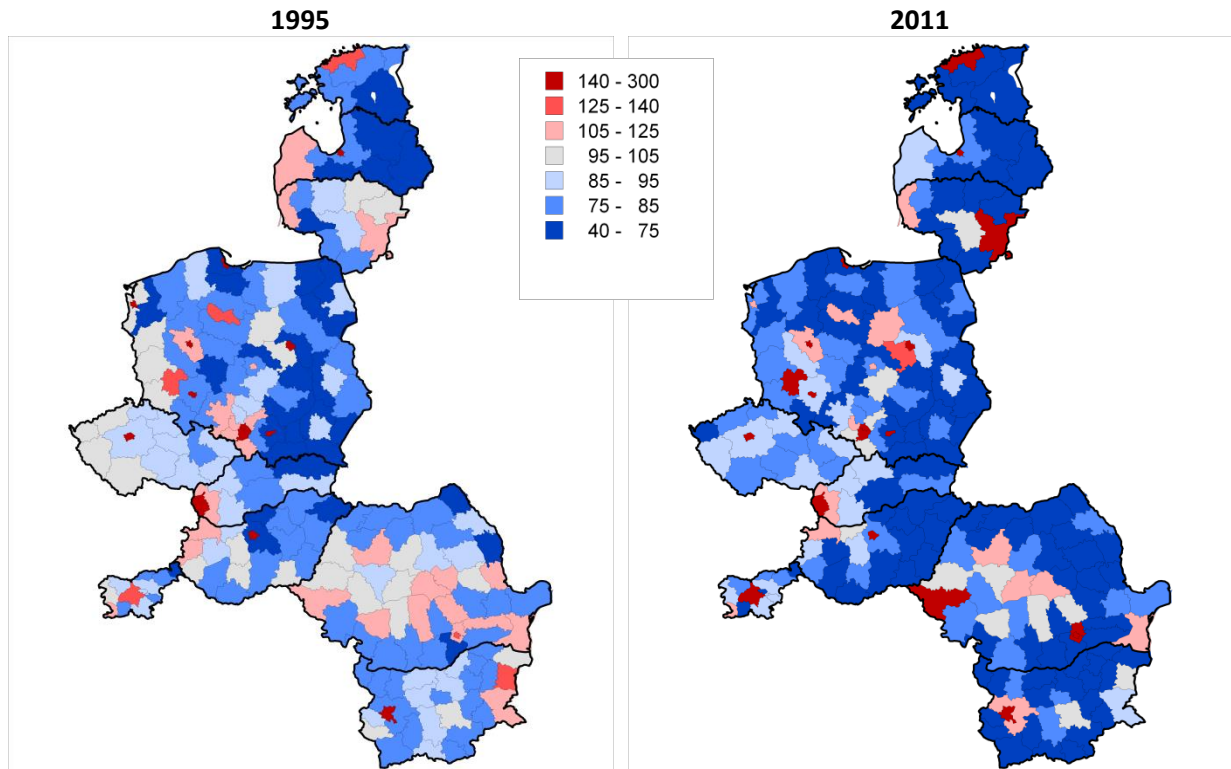


* the higher the value of a) the stronger the spatial dependency (b) the greater disparities in regional incomes

Source: prepared by the author based on Eurostat data.

Diffusion processes are manifested by the growth rates of the neighbouring regions becoming similar. This, however, could, paradoxically, further deepen the scale of regional divergence (separate macroregions of affluence and poverty) (**Figure 6**). The GDP rates of growth relativised to the national average values do not suggest such a spatial impact, which in turn could point to the highly 'patchy' nature of the growth processes, accompanied by no visible influence of the development centres on their direct surroundings. However, examples of both the existence and the lack of such contact diffusion can be found.

Figure 6. GDP per capita [country average = 100]

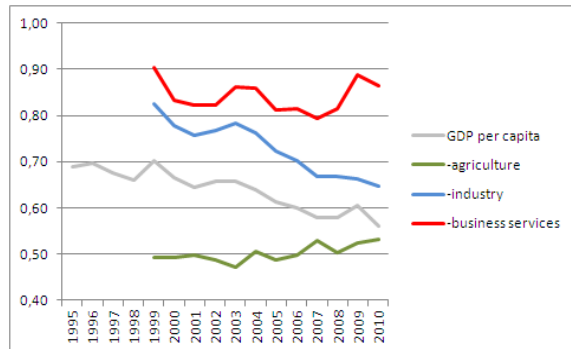


Source: prepared by the author.

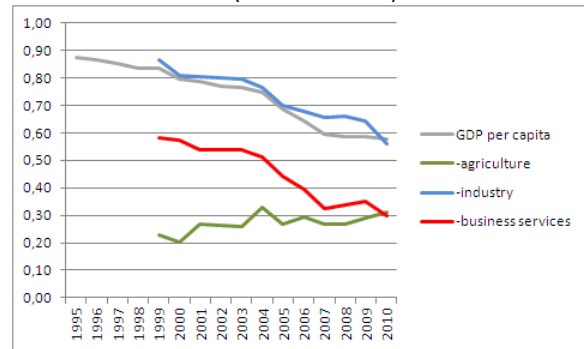
The types of diffusion were quite strongly dependent on a given sector of the economy (**Figure7**). In case of business services, hierarchical diffusion was clearly the prevalent type (metropolisation), while the industrial sector manifested a mixed (both hierarchical and contact) model, whereas in the agricultural sector a significant role of contact diffusion could be observed (peripheralisation).

Figure 7. *Sigma* convergence (a) and global spatial dependency of regional GDP per capita in EUR in 1995-2010 by sectors of the economy*

Coefficient of variation



Global autocorrelation (Moran's I value)



Source: prepared by the author.

2.3 Regional disparities and development dynamics, diffusion of development, sources and factors of regional growth : Sources of regional economic growth (Task 2c)

When analysing the sources of economic growth regions of the CEE countries in three different perspectives (A) international, national (B) absolute and (C) relative, firstly, it should be concluded that regional economic growth was strongly correlated with improved productivity, with the exception of the model that relativised the regional growth rate to the national average, where an

increase in the number of new jobs proved to be more important. This means that the flows of workforce from poorer to more affluent regions had a greater impact on the dissimilarities within individual countries than the differences in improving external competitiveness of regions based on increased productivity.

Table 2. Sources of regional growth in different types of regions – multiply regression*

GDP growth rate:	Structural change pp**	Change in the number of employees (%)	Productivity increase (EUR in %)**
Model A (external – GDP growth EUR)	0.46		0.84
Model B (internal - real GDP growth in national currency %)	0.19		0.57
Model C (internal – GDP growth in relation to national average=100)	-0.20	0.36	0.22

* only Pearson's r correlation coefficients at a significance level of 0.05 (values over 0.40 are marked in bold)

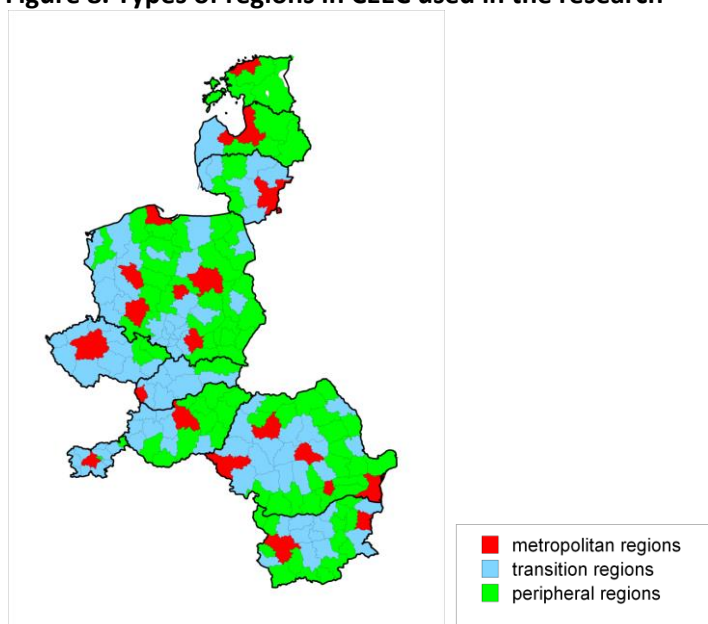
** structural change was calculated as a sum of absolute changes of analysed sectors share in GVA pp

*** productivity was calculated as GDP per employee

Source: prepared by the author.

Secondly, dissimilar sources of economic growth could be observed in different types of regions (**Figure8; Table3**).

Figure 8. Types of regions in CEEC used in the research



Source: prepared by the author.

Metropolisation processes which, as the research found, incorporated many interrelated processes, proved to be of greatest importance in large city regions. The key such processes include: development of a modern business services sector (presumably, mostly knowledge-based) and high-tech industry (including branches tapping the existing R&D potential). However, based on these analyses, it was impossible to determine whether such a situation was caused by exogenous (e.g. influx of capital, technology transfer) or endogenous factors (e.g. human capital, SMEs, R&D). It should be assumed nevertheless that it was at least partly due to the inclusion of these areas into

globalisation processes, a development that acted as a magnet that attracted new, highly-qualified employees from other regions.

Table 3. Potential sources of economic growth in selected types of regions

a) Metropolitan regions				
GDP growth:	Change in share of public services (pp)	Change in number of employees in business services (%)	Change in labour productivity in industry in EUR (%)	Corrected R ²
Model A	0.25	0.25	0.78*	0.62
Model B	-0.42*	0.11	0.44*	0.52
Model C	-0.79*	-0.16	0.22	0.55
b) Transition regions				
GDP growth:	Change in share of industry (pp)	Change in number of employees in simple services (%)	Change in labour productivity in industry in EUR (%)	Corrected R ²
Model A	-0.31*	0.18*	0.86*	0.63
Model B	0.05	0.40*	0.51*	0.36
Model C	0.33*	0.23*	0.13	0.18
c) Peripheral regions				
	Change in economic structure (pp)	Change in number of employed in industry (%)	Change in labour productivity in agriculture in EUR (%)	Corrected R ²
Model A	0.38*	-0.25*	0.39*	0.41
Model B	0.19	0.12	0.47*	0.26
Model C	-0.27*	0.29*	0.25*	0.21

* explanatory variables statistically significant at a level of 0.05

Source: own elaboration

In the transition regions, which also include old industrial regions, restructuring processes in industry played a key part; as a result, the traditional industries lost in significance (which simultaneously was coupled with the outsourcing of some simple services) in favour of modern manufacturing branches. It should also be noted that reindustrialisation, which brought a relative improvement to the regions' situation on the domestic arena, did not necessarily boost their success supranationally. In this approach, increased productivity in industry proved much more important; its share in the creation of GVA diminished while the significance of accompanying services was increased.

Accelerated modernisation processes in the agricultural sector, manifested especially by decreased employment, were found to be the key ones required to achieve a relative success. This was fostered by industrialisation processes which on their own, however, did not guarantee success supranationally. The location of large urban centres in those regions was a significant factor as cities supported the development of business services, which in turn could be viewed as proof of hierarchical diffusion as part of the national settlement systems.

2.4 Regional disparities and development dynamics, diffusion of development, sources and factors of regional growth : Regional development factors (Task 2d)

Our analyses showed that the development processes taking place in the two broad types of regions in the CEE countries, i.e. metropolitan and non-metropolitan, were characterised by a high level of complexity. Nevertheless, based on the studies and surveys certain generalisations were made concerning the development trajectories of these regions and the role of the analysed groups of regional development factors, together with the course of development processes depending on a given economic situation. Therefore, the summary discusses, firstly, the similarities and differences

of development processes in these two types of regions; secondly, the role of individual groups of factors in economic development processes and, thirdly, the role of the economic context in the development of CEE regions.

Table 4. Regional development and growth of metropolitan regions vs. independent variables – multiply regression

Independent variables	GDP per capita EUR vs. Independent variables			Real GDP change (%) vs. Independent variable baseline year		Real GDP change (%) vs. Independent variable change	
	2002	2008	2010	2002-2008	2008-2010	2002-2008	2008-2010
R2 (adjusted)	0.92	0.72	0.66	-	-	0.84	0.90
GDP (per capita)	x	x	x	-1.35	-0.10	x	x
Unemployment rate (%)	-0.13	-0.13	0.07	-0.20	0.01	0.12	0.47
GVA agriculture (%)	0.11	-0.25	-0.57	0.44	0.59	-0.36	-0.29
GVA industry (%)	0.64	0.30	0.29	1.08	1.51	-0.21	0.04
GVA construction (%)	x	x	x	x	x	0.10	0.49*
GVA simple services (%)	0.79	0.50	0.60	1.16	0.42	-0.92**	-0.71
GVA business services (%)	0.67	0.49	0.10	0.88	1.04	-0.23	-0.74
GVA public services (%)	0.39	0.08	-0.14	0.54	0.02	-0.98***	-0.17
FDI stock (per capita)	0.74**	0.71*	1.01*	0.25	-0.11	0.68	0.40*
Migration balance (per capita)	0.15	0.01	0.26	-0.04	-0.48	0.69	0.40
Multimodal accessibility (index)	0.05	0.47	0.75	0.56	0.10	x	x
SME (per capita)	0.15	-0.12	-0.26	-0.52	0.30	0.73**	0.19
R&D outlays (per capita)	-0.19	-0.35	-0.72	0.44	0.41	0.11	0.03
Higher education attainment (%)	-0.44	-0.62	-0.54	0.09	0.35	0.30	-0.04

* statistically significant values marked in bold (***) 0.001; 0.01**; 0.05*)

Source: prepared by the author.

In the case of metropolitan regions, their attractiveness for inward capital was of crucial importance for reaching a high level of growth (**Table5**). This could suggest that the scale of internationalisation of a metropolitan economy and its inclusion into a global space of flows was the key development factor. Such a process was taking place in the conditions of good multimodal transport accessibility, the presence of an R&D potential and well-developed stock of human capital. As a matter of course, this was accompanied by a number of other phenomena, associated e.g. with structural transformation (deindustrialisation and tertiarisation of advanced business services). Using a dynamic approach, we can see that the role of foreign capital in development processes is largely a derivative of the first phase of the transformation period. Successes of regions in the period of economic prosperity were mainly visible in those metropolitan regions which had adequate human capital resources and where entrepreneurship was on the rise. It can be assumed that a new type of entrepreneurship was at play, associated with informational economy. In the period of the financial crisis, however, the role of foreign capital was better visible once more time in the metropolitan regions, together with – paradoxically perhaps - an increased role of the construction sector, possibly a consequence of the increased volume of public investment projects, including those co-financed from the EU, which created demand-side effects for the local economy.

Table5. Regional development and growth of non-metropolitan regions vs. independent variables – multiply regression

Independent variables	GDP per capita EUR vs. independent variables			Real GDP change (%) vs. independent variable baseline year		Real GDP change (%) vs. independent variable change	
	2002	2008	2010	2002- 2008	2008- 2010	2002- 2008	2008- 2010
R2 (adjusted)	0.94	0.83	0.80	0,35	0,33	0.82	0.60
GDP (per capita)	x	x	x	-0.02	0.48**	x	x
Unemployment rate (%)	-0.01	-0.07	0.01	-0.06	0.33***	-0.37***	-0.18**
GVA agriculture (%)	-0.39***	-0.31***	-0.22**	-0.74*	0.01	-0.22**	-0.12
GVA industry (%)	-0.26*	-0.05	-0.08	-0.50	-0.14	-0.29**	0.02
GVA construction (%)	x	x	x	x	x	-0.14	0.28***
GVA simple services (%)	-0.17	0.02	0.03	0.00	0.07	-0.19	0.26***
GVA business services (%)	-0.14**	-0.06	-0.16*	-0.29	0.00	-0.03	-0.06
GVA public services (%)	-0.23***	-0.16**	-0.20**	-0.23	-0.10	-0.49***	-0.44***
FDI stock (per capita)	0.67***	0.45***	0.44***	-0.18	-0.44***	0.08	0.18***
Migration balance (per capita)	-0.03	-0.01	0.04	0.03	0.36***	0.06	-0.06
Multimodal accessibility (index)	0.08**	0.22***	0.24***	0.16	0.07	x	x
SME (per capita)	0.43***	0.28***	0.19***	-0.57***	-0.07	0.21**	-0.10
R&D outlays (per capita)	0.05*	0.12**	0.18***	0.16*	-0.17*	0.01	0.02
Higher education attainment (%)	0.01	-0.03	0.01	-0.18*	-0.06	0.18**	-0.04

* statistically significant values marked in bold (***) 0.001; 0.01**; 0.05*)

Source: prepared by the author.

A much wider mix of factors fostering a high development level and fast growth rate could be observed in the remaining regions (**Table4**). Just as in the first group of regions, here foreign investment was of crucial importance, in addition to good multimodal accessibility, which facilitated the influx of inward capital and created favourable conditions for the export orientation of the regional economy. In structural terms, a low share of agriculture in gross value added was of primary importance in non-metropolitan regions, with a rather ambivalent/debatable impact of the share of industry. In the latter case, high labour productivity mattered even more, as proved by an increasing role of R&D expenditure in explaining the development level of these regions. Another endogenous development factor was the level of SME penetration, whereas the role of human capital stock measured by the number of people with higher education was not as important. These characteristics in the baseline year had little bearing on the development dynamics of these regions, which can be viewed as proof of their very different development trajectories. The structural factor in the form of a low share of agriculture in GVA proved to be of cardinal importance. In turn, during the financial crisis the region's migratory attractiveness was of greater importance, at least the smaller outflow of the population than in other regions of this group. In the dynamic approach, fast development of these regions was also fostered by a growth of entrepreneurship and increase in the human capital stock, in addition to falling unemployment and reduced share of public services in GVA, which suggests that the endogenous factors do play a role. However, the attractiveness of such regions for inward capital began to matter anew in the wake of the crisis, which was accompanied by a parallel increase of construction in GVA (most probably thanks to public investment projects).

The analyses found that the development processes of the investigated groups of regions were in many respects similar. Achieving a high level of development was possible mainly owing to exogenous factors such as the influx of foreign capital and multimodal transport accessibility (both

potential determinants of pro-export orientation of the regional economies). In the case of endogenous factors, penetration with SMEs was of cardinal importance, but it was no guarantee of fast development dynamics. In this approach, a rapid increase in the number of enterprises was more important, but this process was visible mainly in the metropolitan regions. It can also suggest the hypothesis that these were mainly business entities operating in the sphere of informational economy which were set up in response to emerging market opportunities and out of necessity, driven by an unfavourable situation on the labour market. Structural transformation also played a considerable albeit varying role in development processes. In particular, dissimilarities in the economic structures did not significantly affect the growth of metropolitan regions, although higher GDP per capita values could be found in those metropolises where deindustrialisation processes were more advanced. On the other hand, a higher degree of industrialisation could explain the development level of non-metropolitan regions, but less so than the role of agriculture in their economies. The latter was also of primary importance in explaining the development dynamics of regions, manifested by a slower development of agricultural regions. In addition, those non-metropolitan regions were performing better where the role of agriculture and industry, with its traditional sectors, was decreasing.

The main differences between the identified groups of regions included the role of human capital and interregional migrations. In this respect, metropolitan regions represented growth poles which trained highly-qualified specialists on the one hand, and on the other served as destinations for the migration of students and other well-educated individuals from non-metropolitan regions. Interestingly, the share of people with tertiary education played a more prominent role in the regions from the second group achieving a development success than the increase in the number of new SMEs, a factor which was of greater significance in metropolitan regions.

In terms of regional development, the fundamental difference between the period of economic boom and economic slump was the reduced role of endogenous growth factors (especially an increase in the number of small and medium-sized enterprises), and of structural factors, associated mostly with a decline of traditional industries and agriculture, which were superseded by exogenous factors such as the inflow of inward capital and expansion of the construction sector, accompanied by the supposedly leading role of public investment projects, including those co-financed from the EU funds.

2.5 Development paths of different types of regions based on case studies : Successful restructuring regions (Task 3a)

The first and foremost conclusion from the study of successful restructuring regions is that, in general terms, the scale of success in non-metropolitan regions is relatively small. Only some of these regions have been able to maintain or slightly improve their position relative to the national average. This is due to the burden of their industrial heritage, coming mostly in the form of traditional industries, and also due to the lack of any significant investments into high-tech industries. Furthermore, development is hampered by the fact that they have to incur considerable costs associated with the management or reclamation of post-industrial sites. At the same time, the labour markets are as a rule rather inflexible and require substantial outlays to be made on the retraining of the pool of labour, all this resulting in relatively high unemployment figures.

It is predominantly external factors, mostly in the form of high FDI volumes, that play a key role in the development of this particular group of regions. It should also be noted that the linkages of foreign companies with the local enterprises are usually weak, whereas large international corporations tend to build their own supplier networks on a scale going beyond a given NUTS3 region. Another significant type of public external intervention is the central-budget financing of various institutions, particularly universities and colleges, which on the one hand create new jobs, and on the other retain the local students 'on the spot' or attract students from other regions. Transfers from the central budget also play a role; these funds are typically intended to address various social problems accompanying the restructuring processes.

The role of endogenous factors in the development processes in those regions is relatively small. This is due, firstly, to the relatively modest R&D potential, especially when compared to the capital city regions. This is true both about the public and private sectors. In contrast, the scale of development of the local enterprise is quite varied, with a predominance of microbusinesses operating in traditional sectors, mainly in the field of simple services. The number of active and relatively successful SMEs is relatively small.

As regards public policies, well-developed cooperation between different groups of actors plays a significant role as it facilitates the success of the adopted strategic measures. On the other hand, a rather traditional approach to external intervention could be observed, with emphasis placed on the development of physical infrastructure (including transport and social infrastructure), and not on the economy-oriented thrust of these policies. This was reflected in the prevalently expressed opinions that large, centrally funded investments carried out as part of sectoral policies are of greater significance for regional development than strictly regional policies.

2.6 Development paths of different types of regions based on case studies : Border regions (Task 3b)

The main conclusion that can be drawn from the case studies of the border regions is that their peripherality, viewed not only in the spatial but primarily in the economic terms, has increased even further. This peripherality combines structural backwardness (typically involving a high share of agriculture in the labour market), resulting in the prevalence of lowly-paid jobs for people with low qualifications, accompanied by the lack of positive agglomeration effects due to the absence of big cities and considerable dispersion of the population. In consequence, their position relative both to the major development centres in individual countries and to the national average values visibly deteriorated in the analysed period. It should also be noted that there exist considerable differences in a variety of spheres between the regions situated along the eastern (external) and western (internal) border of the macroregion.

The following characteristics can be observed in particular in all the border regions situated along the EU external border:

- The border is of pivotal significance for socio-economic development processes (major role of border trade, accompanied by open-air (marketplace) trading being replaced by modern shopping centres, well-developed market services (transport, logistics, hotels and restaurants) and public services associated with border services and cross-border interactions, which offers

additional income opportunities for the local residents, but also ‘spoils’ the local labour market through the expansion of the grey economy;

- The local companies focus on gaining short-term profits dependent on the conditions of trade exchange with the neighbouring country, which is accompanied by a low propensity for pursuing long-term investment strategies, in effect resulting in the relatively low competitive edge of these companies;
- These regions are not attractive locations for FDI owing to the low quality of the human capital, which also hampers endogenous development given the low effectiveness of the education system (including weak higher education institutions) and very poorly developed R&D sector.

As regards the characteristics of the regions situated along the western border, operating under the Schengen regime, they are predominantly as follows:

- The border location plays a lesser role in the development processes here than in the eastern regions, but has a broader impact which includes cross-border trade exchange, FDI and market services in tourism (incl. shopping tourism), but with a reversed direction of flows regarding the latter (trips from CEE countries to Germany, similarly to commuting to work), and development of other directions of linkages (e.g. Russian tourists in Karlovy Vary);
- The direction of structural changes is varied, and accompanied by greater reindustrialisation (e.g. NUTS Jelenia Góra) than tertiarisation potential (e.g. NUTS Karlovy Vary);
- The regions show limited albeit discernible attractiveness for FDI, but demonstrate similar problems associated with endogenous growth as those observable in the regions located along the external border, which are related to the weaknesses of the education system and the R&D sector.

One feature that the border regions have in common regardless of the type of the border was the distinct orientation of the local strategies on satisfying social needs (public services, transport infrastructure), coupled with a highly emphasised role of tourism in local development processes (which is apparently overestimated in the eastern regions, while the actual potential in this sphere seems to be greater in the western regions). On the other hand, the local and regional authorities lacked breadth in their visions of development, also for the entire subregion (with an observable, poor functional integration of the regions in question). This also applied to the linkages between various actors involved in development processes, especially between public authorities and the enterprise, R&D and education sectors.

The position of the analysed regions against the backdrop of the pursued regional policies was rather varied and to some extent depended on the degree of their autonomy within the national administrative structures. In particular, this was associated with the risk of being threatened by marginalisation in a situation when a given subregion formed a part of a bigger region (NUTS2). What is a more serious problem, however, is that the effects of external intervention in the border regions (including the Cohesion policies) are largely limited to improving the living standards of the population, while its economic results are extremely modest, being confined to demand effects (stimulating economic performance locally through infrastructure projects). Moreover, the funds made available for the development of cross-border cooperation were rather scanty, which usually

means that the effects of such cooperation are disproportionately low in comparison to those of the Cohesion policy.

2.7 Development paths of different types of regions based on case studies : Regions with a concentration of social problems (Task 3c)

The main conclusion from the research is that structural social problems, associated with the vicious circle caused by ineffective economic restructuring and in effect weaker adaptation of some regions to the new socio-economic situation, are of a permanent nature. This results in a poor condition of the labour market - despite considerable improvement nationally – which on the one hand drives the migration of the most enterprising individuals and on the other leads to some of less resourceful residents becoming dependent on social welfare. In consequence, such regions are not attractive locations for inward investment, and their potential for endogenous growth is as limited. It can also be concluded on the basis of the remaining case studies analysed as part of the project that many social problems, visible in their regional concentrations, is shared by all non-metropolitan regions. In particular, this applies to labour market problems which are difficult to resolve due to the fact that increasing productivity, and not an increasing use of the pool of labour, is the main driver of economic growth. In addition, the labour markets of many of the analysed subregions are poorly integrated and commuting to work is still underdeveloped, which leads to the emergence of enclaves concentrating social problems, particularly in rural areas. Such enclaves, however, may also be found in cities, also as a result of the presence of ethnic and national communities.

Regardless of labour market problems, access to basic public services in the problem regions is relatively easy, thanks to substantial transfers from the central budgets. The encountered problems are associated mainly with higher education, with negative consequences in the form of young people leaving for major cities to attend university, which, coupled with rather bleak career prospects locally, as a rule leads to a permanent migratory outflow. At the same time, the main sources of social inequalities are connected with the place of residence, age, and belonging to an ethnic or national group.

In the short term, programmes implemented with the EU financial support played a significant role, facilitating the implementation of regional and national strategies associated with social goals. In particular, they were successful as regards improving access to public services, whereas their impact on the labour market situation was much weaker, with a low effectiveness of training programmes and courses.

2.8 Role of transport infrastructure in development processes (Task 4)

The role of infrastructure (transport in particular) is a subject of growing disputes. Most researchers nowadays tend to agree that transport infrastructure (widely: infrastructure in general) is not a sufficient, but necessary condition of development. The study in question also seeks to find an answer to this problem through the analysis of the last ten-year developments in Central and Eastern Europe countries (CEEC).

The main findings² are the following:

- Most of the investments supported by the EU are related to road infrastructure development;
- Most financing was used in the 2007-2013 programming period;
- Linear infrastructure seems to have a higher impact on the early development level.

2.8.1 Road infrastructure:

Figure 9. Part of the road infrastructure section covered by the investment

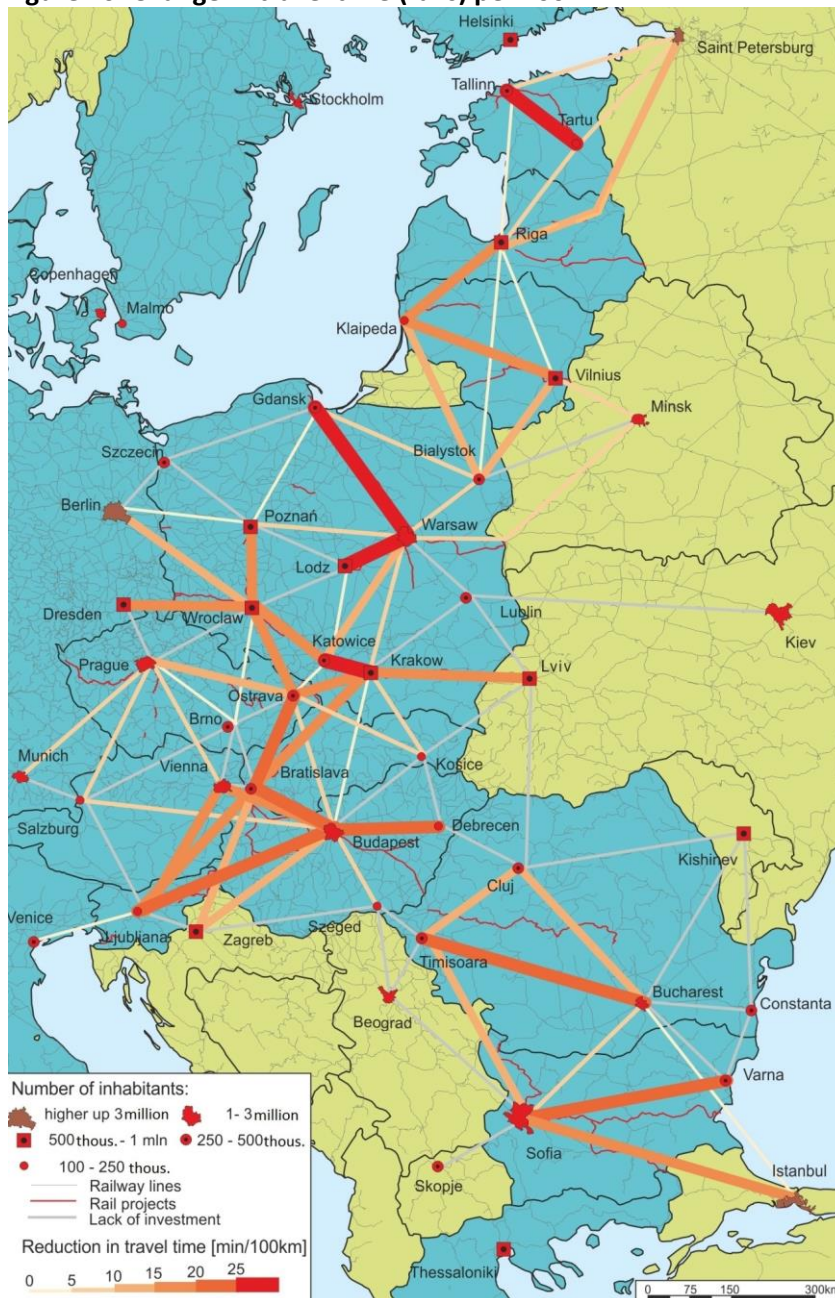


Source: own elaboration.

² The main findings and recommendations are based on the research report by Prof. Tomasz Komornicki.

- The EU supported infrastructure concentrated in the western part of the CEEC;
- Distribution was conditioned by the previous state of development;
- In the Czech Rep., Slovenia and Hungary, basic road networks are nearing closure, while in the other countries significant large deprived areas remain (part of Romania, north-western Poland, Latvia and Estonia) (territorial disparities continue);
- Most progress has been achieved in the network integration of the CEEC with the older Member States (in particular Poland-Germany, Czech R.-Germany, Czech-Austria and Bulgaria-Greece);

Figure 10. Change In travel time (rails) per 100 km



Source: own elaboration.

- Progress is noted in similar improvement between some CEEC (Poland –Czech R., Hungary-Slovenia, Hungary-Romania, Slovenia-Croatia);

- The analysed investments did not contribute significantly to development across the Baltic states, Bulgaria-Romania, Hungary and Slovakia, Poland-Slovakia;
- There is little improvement with linkages across the external EU border (except for the connections with Ukraine, Turkey and Belarus);
- Most effective (in terms of reducing the travelling times) was the support to investments linking the primary centres in Poland, Czech Republic and Bulgaria, while in relation to outer links, in all the countries except for the Baltic states.

2.8.2 Rail infrastructure:

- All the support was allocated to modernisation projects;
- The scale of modernisation was highly differentiated territorially;
- Railway projects featured a higher degree of concentration than road ones;
- Geographical pattern was proportional across the CEECs (internally);
- Improvement was observed in particular among the metropolises of the Visegrád Group countries (CZ, HU, PL, SLO) and Slovenia;
- Bulgaria, Romania and the Baltic states remain isolated from the EU and CEE modern railway system.

2.8.3 Air transport infrastructure:

- The only new airports constructed with the EU support were located in Poland (Modlin and Lublin; in both places former runways and other infrastructure were used);
- All other projects involved renovation or construction of new terminals;
- In larger airports (Warsaw, Budapest, Sofia), the outlays increased the throughput of the runways and the terminals, allowing for the development of new connections and improved service quality;
- In case of most regional airports, the supported projects were mostly oriented on low-cost carriers, whereas the economic profitability of these projects and of the respective facilities remains problematic.

2.8.4 Infrastructure development, economic advantages and accessibility:

- Relatively cheapest investments in Poland;
- Most investments were concentrated in the zones located in the western and central parts of the CEEC (plus southern Bulgaria);
- Statistical dependence level of investment outlays and changes in GDP (in relative terms) – the effect was not measurable;
- Statistical dependence on absolute changes in GDP – weak reverse dependence;
- Most investment outlays were made in highest development areas, which makes this policy rather reactive than proactive;
- Effectiveness of investments (measured by investment cost to the GDP growth in 2003-2010) shows lower levels in Hungary, western Czech Republic, central Poland; higher levels in western and southern Poland, Romania and Bulgaria;
- Metropolises are the main beneficiaries of the investments (strengthening their position) located mainly in the triangle Timisoara-Ljubljana-Warsaw;
- Eastern border (external) is a limiting factor;
- Islands of better potential accessibility thanks to the investments made: Warsaw, Bucharest, Sophia, capitals of Baltic states', some other Polish and Romanian cities;

- Areas of improved multimodal accessibility: western Lithuania, Gdańsk region, southern Poland, western Czech Republic, north-eastern Czech Republic, western Hungary, western Romania, western Bulgaria;
- Areas least accessible multimodally: northern Romania, south-western Bulgaria, north-eastern Poland.

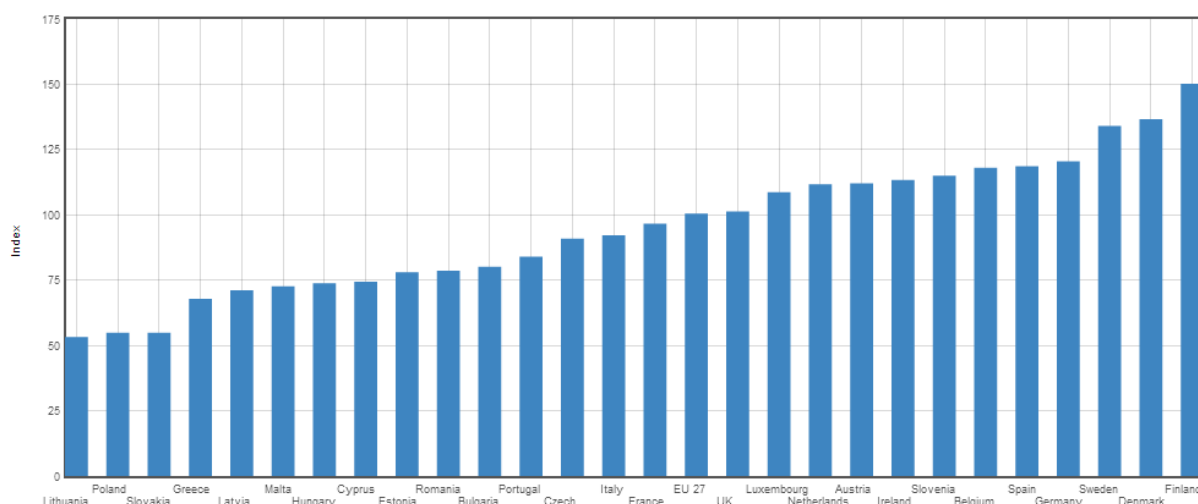
The general conclusion is that linear infrastructure seems to have a greater impact on the early development level.

2.9 The changing state of the natural environment and of environmental policies for sustainable development (Task 5)

In the period of more than 20 years, fundamental changes have taken place in the approach towards environmental protection and sustainable development in NMS 10. The political transformation which took place at the end of 1980s and at the beginning of the 1990s as well as the accession to the EU have left their mark (thanks to market economy introduction, industrial restructuring, individual efforts of countries as well as the assistance of EU funds brought about significant progress in the development of environmental protection, action has been taken to extend the areas where nature and biodiversity are protected).

However, the progress, even though significant, is still insufficient; some of the shortcomings and omissions have not been removed yet: the quality of environment is improving but rather slowly as new threats have appeared with the increase of massive consumption at unprecedented scale (of transport, urbanization and waste management in particular). For various reasons elements of green economy are introduced slowly (**Figure 11**).

Figure 11. Eco-Innovation Scoreboard 2012 in EU



Source: Eco Innovation Observatory.

The future will be determined by the main megatrends: increased amounts of pollution and change of its characteristic (nanoparticles, endocrine disruptors, persistent organic compounds), urbanization, mining, intensive agriculture, climate change (due to natural or antropo-pressures) and other factors, as massive tourism or dynamic globalization. Without higher environmental awareness and “greening” of the economy and consumption in its every aspect the negative results of the megatrends will not be neither satisfactorily controlled nor reduced. Increasing natural areas

protection is important but not enough activity: the subject of intervention should be the whole environment, including human beings.

2.10 Metropolis and its region – a challenge for territorial cohesion (Task 6)

Metropolisation processes taking place in the Central and Eastern European countries had varying dynamics, largely dependent on the specific regional and national contexts. At the same time, some aspects were noticeable across all the countries of the macroregion. First and foremost, these included a growing involvement of the capital cities in the global economy, a phenomenon manifested *inter alia* by a substantial increase in the number of branch offices of transnational corporations providing services for the business sector (**Table5**). This means a visible progress in the tertiarisation of the economies of the metropolitan regions in the CEEC. It should be noted, however, that this inclusion into the globalisation processes remains one-sided, since the role of the CEEC metropolitan centres as seats of the head offices of large international companies is still insignificant, which to some extent can be attributed to the relative weakness of their national economies. Nevertheless, the convergence process of the CEEC metropolitan areas to the metropolises of highly-developed countries can be regarded as quite advanced.

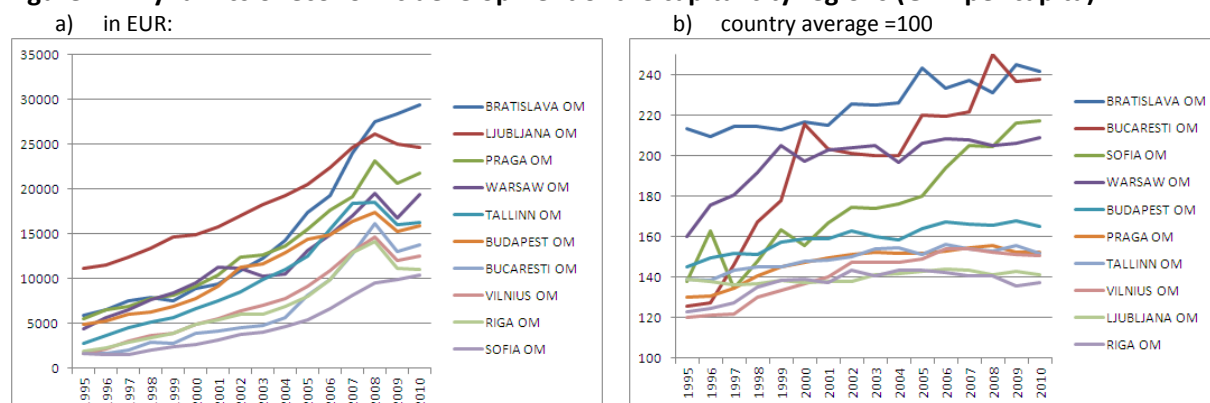
Table 6. Rank of CEEC capital cities

City	CB Richard Ellis (2011)		GAWC (P. Taylor) (2000)	
	Rank (197 cities)	Number of global APS companies (max: 350)	Rank (315 cities)	Connectivity index for 100 global APS companies (max. 1,00 - London)
Warsaw	12	150	39	0,42
Budapest	20	128	45	0,41
Prague	21	126	29	0,43
Bucharest	29	110	83	0,25
Bratislava	35	93	113	0,21
Sofia	53	80	121	0,20
Riga	76	59	154	0,16
Vilnius	86	51	179	0,14
Tallinn	89	49	176	0,14
Ljubljana	93	45	185	0,14

Source: prepared by the author on the basis of data from: (CBRE, 2011, Taylor 2000).

Speedy increase in the level of wealth of the metropolitan areas can be observed, which is yet another aspect differentiating them from their national economies at large (**Figure11**). Nonetheless, the scale of this dominance and the growth rate can quite vary from one metropolitan area to another. On the one hand the widest disparities and fastest growth being observed in the least-developed countries, i.e. Romania and Bulgaria, but disparities were also very high in Poland and Slovakia. On the other hand the disparities were moderate in Hungary, Czech Republic and small in Ljubljana while in Baltic states are different in that regard, as their capital city regions accumulate the bulk of the national economic potential and therefore play a key role in the changing of average values.

Figure 12. Dynamics of economic development of the capital city regions (GDP per capita)

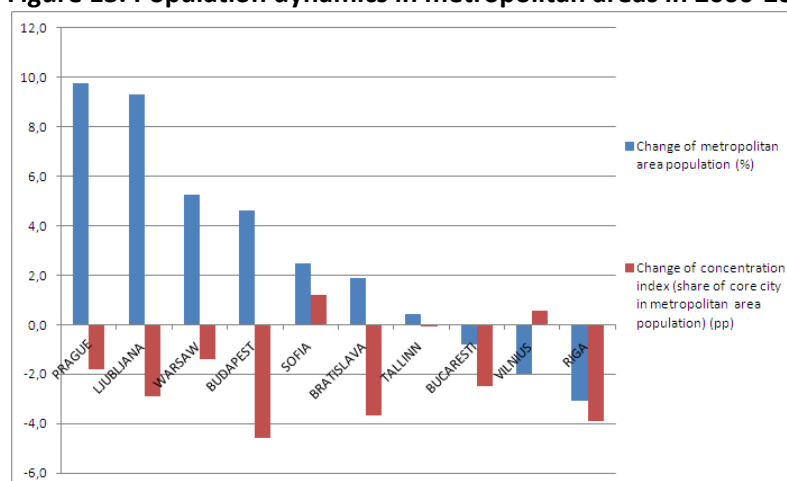


* OM – metropolitan area (NUTS3 proxy)

Source: prepared by the author on the basis of Eurostat data.

The metropolitan areas saw a substantial deconcentration in the population numbers, associated primarily with significant population dynamics outside the administrative boundaries of the central city, although, in some cases, it was also accompanied by a population decrease in this type of cities (**Figure12**). In the capital city regions that are developing at a fast pace, the problem of the demographic weakening of the central city is usually less acute. This could probably be ascribed to their being attractive destinations for migration, and such migration could counterbalance population ageing and suburbanisation processes. Deconcentration of the economic processes within the metropolitan area has not been very advanced to date and can be observed only in some of the capital city regions (e.g. Budapest), whereas elsewhere it assumes specific forms associated with given types of activity (e.g. industry in Warsaw). In consequence, the models of changes in the metropolitan systems are quite varied, with a simultaneous occurrence of concentration processes observable in some of these systems, and deconcentration processes visible in others.

Figure 13. Population dynamics in metropolitan areas in 2000-2011 (in % or pp)

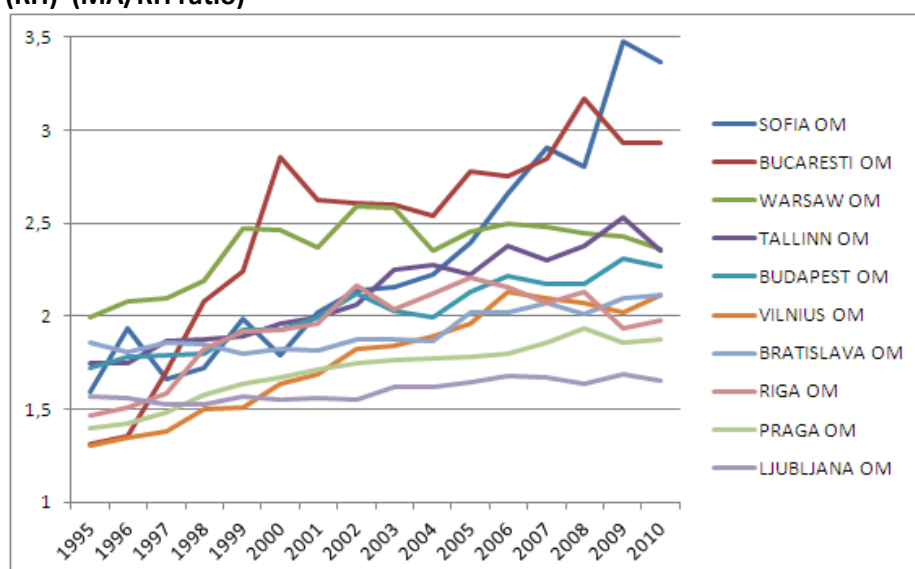


Source: prepared by the author on the basis of Eurostat and national statistics offices data.

The process of the metropolitan areas being separated from their regional hinterlands is quite well visible (**Figure13**). It is the fastest in the case of Romania and Bulgaria and the slowest in Slovenia and the Czech Republic. In this particular regard, the scale of the disparities is even wider than in the analysis of the country at large, which can be viewed as proof of a weakness of the metropolitan

hinterland, still functioning according to the industrial and agrarian development model. At the same time, in some cases the growth of inequalities was halted (and even decreased in the Warsaw macroregion in the recent years), which indicates that the spatial scale of development diffusion processes has increased. In general terms, the process of increasing the disparities slowed down post 2004 in all the macroregions, which can, among others, be explained by direct and indirect effects of the EU membership of the countries under analysis.

Figure 14. The gap in GDP per capita between metropolis (MA) and its outer regional hinterland (RH) (MA/RH ratio)



Source: prepared by the author on the basis of Eurostat data.

According also to some other studies, the process of diffusion can be facilitated by such factors as development of transport accessibility of the peripheral areas or deconcentration of the population and the economic potential within metropolitan areas. Such factors as these can increase the functional cohesion of metropolitan macroregions as far as work commuting is concerned. On the other hand, the differences in the economic structures between the metropolises and their surroundings still remain significant, and can hardly be viewed as factors stimulating economic integration. The regional hinterland still remains strongly dependent on the natural resources and energy and raw materials industries, and examples of success at local level are still few and far between. In addition, the role of public policies is in this case rather limited and coincidental, owing to their being implemented at national level, in the context characterised by considerable weaknesses of supra-local tiers of public administration and local government.

3 Policy implications and recommendations

Based on the above conclusions, a number of recommendations can be put forward for the regional policy and selected sectoral policies, viz.:

3.1 Regional disparities and development dynamics, diffusion of development, sources and factors of regional growth (Task 2)

- The observable differences in the situation of the subregions (NUTS3) included in one NUTS2 level call for a territorial approach in the planning and implementation of regional policies;

- Metropolitan areas which represent national growth poles, whose development increases the convergence between countries, should be targeted by public policies, particularly in order to ensure a stronger public services sector since it can boost their attractiveness as places where the creative class will choose to live, in this way preventing the 'brain drain' to metropolitan centres in the higher-developed countries;
- The observable reindustrialisation processes can pose a threat in the context of their low technological advancement and low innovation of SMEs, a situation which should be addressed by providing supports to technology transfer and undertaking measures aimed to develop the human capital as well as the research and development potential in the transitional regions;
- Modernisation of agriculture in the peripheral regions may pose a threat in a long term if the structural changes are decelerated; for this reason, it is recommended to pursue a combination of policies aimed to promote development of their major urban centres since they could derive benefits from the diffusion of metropolisation processes and improve their industrial potential.

Based on the research, the following recommendations can be proposed for the period following the present crisis/economic downturn:

- Efforts should be made to rebuild the **endogenous potential** of CEE regions through creating conducive conditions for the expansion of innovative SMEs. In metropolitan regions, this should involve in particular establishing better linkages between business and academia. In non-metropolitan regions, support should be extended to the development of enterprise and technology transfer from metropolitan centres, which should be accompanied by measures aimed to improve the quality of human resources through the improvement of the education system. In the latter regions, ongoing restructuring processes should also be supported and accelerated, particularly those intended to reduce the role of agriculture in the economy.
- The above should be attained using the **European funds**, which were earlier largely spent on temporarily alleviating the consequences of the economic crisis, producing demand-side and not supply-side effects. The improvements in the living standards and environmental quality, achieved in this way, in the current and future programming periods should be augmented by efforts to reinforce their pro-innovation impact and in this way foster economic development.
- The **unique regional features and context** should be necessarily taken into account while devising and implementing regional development strategies and programmes, since the development trajectories of regions with similar characteristics can vary considerably; this suggests a significant role of soft, often immeasurable and distinctive factors associated with the local setting in their development processes.

3.2 Development factors in different types of regions (Task 3)

As a result of the analyses, a number of recommendations can be put forward for the identified types of regions; their implementation could help solve the problems that these regions are wrestling with and enable them to take advantage of the existing development opportunities.

3.2.1 Successful restructuring regions

In the regions with advanced restructuring processes, first and foremost it is necessary to continue the measures intended to overcome the negative consequences of the industrial past, in the form of: a) land reclamation and development of sites such as brownfields; b) increasing the flexibility of the labour market, incl. provision of supports to the retraining of employees in the traditional industrial sectors, and c) improving the condition of the natural environment.

These measures should be accompanied by activities aimed to make a more efficient and effective use of the endogenous development potential by:

- Improving the quality of human capital, also by upgrading the standards of teaching in secondary schools and higher education institutions (mostly those specialising in technology);
- Development of SMEs, particularly through supports intended to increase employment in the existing enterprises and those that facilitate their inclusion into the globalisation processes (internationalisation of operations);
- Expanding of cooperation links between large enterprises and the SME sector;
- Enhancing of linkages between the existing endogenous potential (R&D, human capital) and the enterprise sector (technology transfer, employee training).

In addition to the above, the measures implemented as part of external aid (incl. those adopted under the Cohesion policy) should be gradually reoriented, and shift from being traditionally focused on infrastructural and social goals to those targeting the economic sphere more broadly and increasing the innovativeness of enterprises. This calls for a better coordination between the implemented regional/local and sectoral policies, with a view to achieving stronger synergy effects.

3.2.2 Border regions

Among the principal recommendations addressed to the border regions is the one to make an attempt to include them more vigorously into globalisation processes. This should include creating conducive conditions for attracting inward capital on the one hand, and on the other for supporting the internalisation process of the local enterprises. To achieve this, it is necessary to strengthen the human capital through increasing outlays on improving the quality of instruction at all levels of the education system.

As regards the Cohesion policy, its socio-economic angle should definitely be strengthened if the above goals are to be attained. This is because the traditional focus on infrastructure may, in the long run, bring negative effects such as the need to maintain the costly infrastructure, while becoming dependent on external aid that creates demand effects in the local economy.

As far as cross-border cooperation programmes are concerned, they should be financially boosted, particularly on the external border of the EU, by the European Neighbourhood Instrument; also, more national funds should be allocated to these initiatives. In particular, they should be more strongly integrated into, and coordinated with, other public policies, the Cohesion policy in particular. Furthermore, similarly to the Cohesion policy, it is necessary to reduce the thematic goals of CBC programmes while ensuring greater selectivity in choosing projects to be funded. In this context, it is also necessary to make the functioning of the EU external border much more efficient as it still poses a major barrier to developing cross-border interactions.

3.2.3 Social problems regions

The main recommendation offered for regions with a heavy concentration of social problems is to take measures aimed to stop the migratory outflow and the accompanying, continued loss of human capital. Initiatives in this sphere should be twofold. On the one hand, they should include incentives

for economic restructuring processes with a view to increasing the share of advanced services and cutting-edge industries in the economy. One prerequisite for their success is providing support to the major cities in the region in a variety of aspects, including their educational and R&D potential, and dovetailing them with the existing or desirable economic specialisation. On the other hand, efforts should be made to improve the quality of education and increase its inclusiveness, understood as creating equal opportunities for all social groups, also ethnic and national minorities. These measures should seek to resolve local problems both in rural and peripheral areas, and in problem areas situated in cities. As a result of the former, it can be expected that the number of job offers for highly qualified workers and/or those who wish to fulfil high career aspirations in a given region will increase. In turn, the latter activities may produce a broader human capital base and prevent negative tendencies to inherit social problems by the younger generations. In effect, it can be expected that external investors will take a greater interest in the region.

As regards social policy, especially social welfare, it should be more precisely addressed and granted subject to certain conditions. Such additional requirements should not be short term in character or aim to reduce the number of beneficiaries, but should employ various measures and incentives encouraging labour market entry of the beneficiaries and their inclusion in social life in the long term. Secondly, in determining eligibility for receiving assistance, the rigid income criterion should be abandoned, and replaced by a qualitative evaluation of the situation of individuals and families to whom assistance should be addressed. By assumption, this should expand the spectrum of potential beneficiaries and include those individuals whose income slightly exceeds the statutory thresholds on the one hand, and on the other it should eliminate those recipients who, despite formally meeting the relevant requirements, are in a better financial situation owing to their unregistered incomes and/or other assets. These changes should be horizontal, and should also be implemented especially extensively in the regions classified in the group with a concentration of social problems.

3.3 Role of transport infrastructure (Task 4)

The following list of implications and recommendations comes from the study relating to infrastructure development in CEEC with the support from the EU, carried out as part of the GRINCOH project. All of them are based on the results of the research conducted and finalised in 2013.

- It is necessary to further differentiate the transport policy (and the Cohesion policy, to the extent to which it makes use of the infrastructural instruments) that is realised in the old and new Member States. The potential effects (also concerning the economic growth) of the investments made in the CEE countries are many times greater than the effects of the densification of the network in some countries of Western Europe (as indicated, in particular, by the 5th Cohesion Report of the EU). Moreover, the transport situation in the CEE countries also undergoes increasing differentiation, which ought to result in a further territorialisation of the implemented policies.
- Mutual connections between some of the CEE countries are insufficient. This applies in particular to the Polish-Slovak and Romanian-Bulgarian connections, as well as those integrating the Baltic states. The implementation of these connections should become a priority for the instruments of the Connecting Europe Facility (CEF).

- Shift of the emphasis of investment undertakings towards other branches of transport than road transport (complying with the recommendation as to the 60:40 proportion) should account for the specific conditions of individual countries and regions. Experience to date indicates that the effects of the road infrastructure may come faster, this being of definite importance from the point of view of the Cohesion policy objectives. That is why a potential transfer of the structural funds towards the railway investments ought to be first of all enforced in those regions where the construction of the basic motorway network has been or is being terminated. It is, by a similar token, desirable to move at a similar pace from the investments into the main axes towards the local solutions within the road transport sector.
- At the same time, there is a risk concerning the rationality of use of the EU funds in railway transport within the territory of the CEE countries. Limiting the undertakings to virtually solely modernisation works may not suffice to stop further disadvantageous shifts in the modal structure (increase of the share of road transport in cargo and passenger traffic), given that the system of motorways would have been terminated in some countries of the macroregion. It seems desirable to consider concentrating the funds on the construction (through new undertakings or continued modernisation) of the high speed rail network.
- The decision processes related to the establishment of rankings of the investment priorities should be de-politicised to the greatest possible extent.
- Location decisions concerning particular investment projects should take into account, to the maximum extent, the potential economic advantages, and not only the current demand, formed by the existing traffic and the cost of implementation. This regards the ultimate courses of the linear infrastructure, and also location of motorway nodes, as well as stations of the higher speed railways.
- Investigations confirmed that the objectives of the Cohesion policy with respect to a definite region (or a metropolis) may often be attained through the implementation of an investment project outside of the area of this particular entity (sometimes even at quite a geographical distance). The present political conditions are not conducive to taking decisions that concern the area of intervention distinctly separate from the area of support, where the benefits are supposed to arise.

3.4 Environment policies (Task 5)

Firstly, the man and his economy function within a social system which is inextricably bound to the natural environment or the ecological system. This means that any changes in one or the other are interrelated. It is not possible to grasp the dynamics of the operation of one system if we analyse it in separation from the other. Economists use economic models, sociologists analyse the behaviour of societies and life scientists try to understand the functioning of nature, of individual ecosystems. They all contribute to our understanding of the functioning of the world but each does it only partially. They work on individual components and not on the system as a whole. That is why an interdisciplinary approach, using a system-oriented way of thinking is so important in research as well as in politics.

Secondly, regardless of the adopted approach, option or scenario, the key challenge to be considered in the long-term is to ensure the functioning of the life-sustaining Earth systems (e.g. the global climate). They will determine the existence of the natural conditions for the functioning of human civilisation and the economy, which is a part of it. Sustainable growth is not a tool for reaching a compromise between its three components: the society, the economy and the nature, but it is a platform for integration and equal treatment of those three components, assuming that the limits of this platform are set by the systems which sustain life on the Earth. It is the condition for the survival of the human species to ensure the operation of those systems and as such it cannot be subject to any compromise.

3.5 Metropolis-region relations (Task 6)

The major recommendations concerning the functioning of metropolitan areas include:

- Strengthening of metropolitan functions through improving soft factors of enterprise location. This can be achieved e.g. by improving the quality of urban space and halting the increasing spatial chaos in the metropolitan suburban zone that occurs as a result of urban sprawl processes.
- Reinforcing of international and national transport systems connecting the capital city regions of the CEE countries with other metropolises. In the spatial dimension, this should include the development of detailed development plans for the local systems situated within the main transport corridors and airports.
- Strengthening of the transport integration within the metropolis. In particular, efforts should be made to associate suburbanisation processes with the development of transport and public transportation systems, notably rail transport.
- Promoting cooperation between municipalities of the metropolitan area, including its institutionalisation and building a metropolitan identity. Work should be commenced on development plans for the metropolitan area, also with the use of structural funds which could provide the basis for promotional activities.

As regards more distant regional hinterland of the metropolis, the recommendations are offered in a number of variants and depend on the adopted development scenario for such areas, which in turn depends on the decisions of the public authorities.

3.6 Scenario 1. Depopulation of the regional hinterland and reactive policies of public authorities

The first scenario envisages depopulation of the regional hinterland of the metropolis due to the migration of people in productive age and ongoing population ageing processes. The pace of this process will largely depend on the expansion of housing construction in the metropolis and price availability of flats for purchase or rent on the one hand, and on the other – on the accessibility of the metropolitan labour market for the residents of the regional hinterland.

It should also be assumed that the number of the population living in the regional hinterland will fall in the long term. However, with adequate measures and initiatives on the part of the public authorities, this will not necessarily impoverish the regional surroundings. Such necessary activities of the public authorities should include in particular:

- Measures aimed to foster development of the main subregional centres,
- Measures aimed to prolong the period of professional activity and foster an economy inclusive of elderly people,

- Measures aimed to improve the quality of human capital,
- Maintaining access to, and improving the quality of public services,
- Development of public transport, including improved transport accessibility of subregional centres.

3.7 Scenario 2 External investments driven by improved attractiveness of the regional hinterland

The second scenario predicts that the macroregion's functional integration will be enhanced following the development of the regional manufacturing system. The main factors determining the competitiveness of the regional hinterland will include lower cost and better availability of the factors of production compared to the metropolitan area. The probability of this scenario will increase with a rapid development of the metropolitan area, coupled with concurrent planning restrictions mitigating urban sprawl in the direct vicinity of the metropolis.

In this scenario, the role of the authorities is to improve transport connections between the metropolis and the main subregional centres, accompanied by building the necessary technical infrastructure in the form of industrial parks where inward investors could locate their business. To this end, efforts should be made to improve the system of secondary education.

3.8 Scenario 3 Endogenous development of the regional hinterland in the conditions of external intervention

The third scenario foresees a remodelling of the economic and social structure of non-metropolitan areas mainly due to investments fostering the development of human capital and increased access to state-of-the-art technologies. Such changes must be initiated by the public authorities or else, based on the trends observable so far, the likelihood of such a scenario being enacted will not be very strong.

In particular, measures taken by the authorities should involve the development of the SME sector; such enterprises should receive supports in the form of access to workers with the required qualifications (role of the education system and employment services), a viable business environment (information, consulting, financial services), access to technology (role of technology transfer, R&D centres and higher education institutions), and incorporating their needs in the development strategies of the major urban centres. This will require such policies to be coordinated at the regional level and relevant support to be offered to local governments as they stand little chance of coping with such challenges on their own.

All this could trigger endogenous development processes, especially in the subregional centres furnished with relevant infrastructure, and help stop the widening of the disparities between the metropolis and the rest of the region. It should be noted, however, that only cities with sufficient quality of local leadership and strategic planning are likely to successfully embrace this development model. Choosing such a development trajectory should curb activities petrifying the existing regional economic structure, especially those that help sustain high employment in low-productivity agriculture.

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