

Cohesion Policy in Hungary according to the First National Development Plan

Assessing the Allocation of the EU Development Funds in 2004-2006¹

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The high degree of territorial disparities in the European area on the level of countries and regions, the high resource and income concentration in the central areas are coming to the front. In Eastern-Central Europe similar disparities can be found as in the EU-15. In the course of the analysis of the Hungarian situation I reveal the effects of the period prior to transition to the Hungarian regional structure, with a review on the characteristics of the even more differentiated structure due to market forces. The examination of the disparities is shown on the level of regions, counties and micro-regions as well. It can be stated that in the EU disparities can be found on several levels and from several directions, in Hungary remarkable regional differences have come into being in the past two decades after the transition. Some regions have succeeded in coping with difficulties, others not.

The cohesion policy of the EU, the main aim of which is to reduce the disparities between EU regions and member states, has quite a long history which is worth to analyze and reveal. The development of the notion of cohesion was highly influenced by the deepening and broadening of integration; newly joint member states have been in lot cases underdeveloped than the EU average, so for the sake of single market, economic and monetary union there was a need to equalize the developmental differences.

In Hungary the first National Development Plan (NDP) was announced as an instrument of the cohesion policy, which is able to diminish the regional disparities according to its official objectives. NDP I embraces the most significant degree of concentration of development funds in the field of governmental and EU subsidies. That is why the examination of regional deviation of development funds

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and the assessing of the contemporary regional policy is such an important issue, as if the originally underdeveloped regions get the least of the funds then they are less capable to develop even if they utilize those funds efficiently and effectively. I analyzed the NDP I funds of 2004-2006 period in Hungary on micro-region level using the method of cluster analysis. Under the results of the analysis I made several conclusions. The observation of the allocation of Hungarian funds highlights the fact that in several cases the highly developed regions have higher tendering activity and efficiency through the tendering system, so they can concentrate more development funds into their own area; therefore they are more successful in this dimension of territorial competition. All of these facts support that tendering systems alone are not capable to diminish the territorial disparities, the increase of these are expected based on the theoretical background (e.g. Williamson hypothesis) and empirical analysis, aside from the presented objectives in the approved and ratified official documents. This means that the strengthening of competitiveness has come to the front rather than cohesion policy. If, however, convergence is the main goal of nowadays' development policy then a less developed micro-region cannot compete directly with a developed one. It is necessary to rethink the allocation of development funds especially on the basis of development levels.

On macro level there are additional important challenges concerning convergence. To further improve the development policy the most important is to reveal the causes of success and failure. According to the latest studies the improvement of the efficiency and effectiveness of development policy can be implemented if funds were given to the regions in need, competitiveness and convergence were separated and the total amount of funds was increased. The EU development funds provide the opportunity of convergence for Hungary. Nevertheless the importance of supportive policies is inevitable in this case as well: e.g. stable and strict economic policy based on social consensus and long-term strategy, concentration of funds, the priority of human resource development and the improvement of the efficiency of bureaucracy. These can be successful only together.

Introduction

In the first part of the study I summarize and analyze the relevant literature in connection with the territorial differences, convergence and divergence in the European Union and Hungary. My purpose with this is to draw up the tendencies and the strength of connection between convergence and cohesion policy, the problems and proposals for development. I study whether the strengthening of competitiveness – developed regions obtained more support – or convergence within the country – underdeveloped regions obtained more support to increase standard of living – came to the front in Hungary. To prove my hypothesis I use empirical analysis with the data of subsidies.

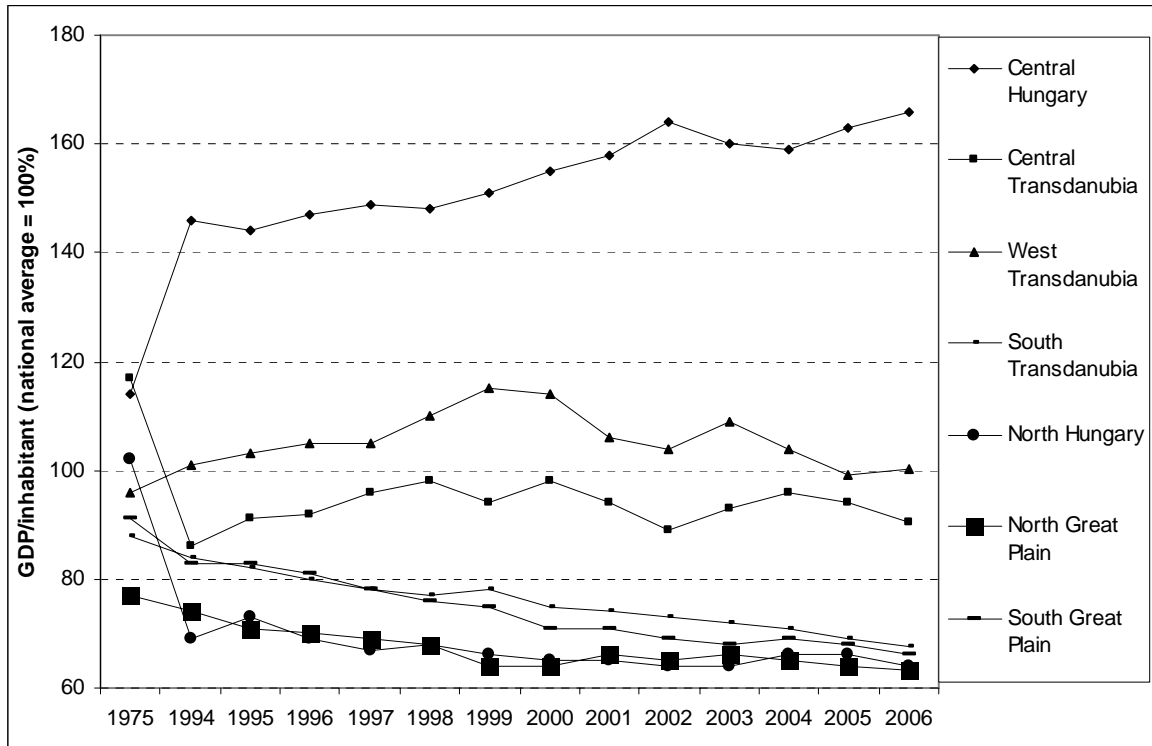
Disparities and cohesion policy

In the European Union significant disparities are obviously observed on the level of the member countries and the NUTS2 regions. Furthermore there is a considerable resource and income concentration in the central area of Europe (Maurel, 2006). Studying the EU-15 countries' inner territorial structure the economic capacities are concentrated in an area which is among Leeds, Lyon, Hamburg and Milan. This part means the 18% in territory, 41% in population, and 48% in GDP of the European Union. (Horváth, 2004) Or we can call it a Pentagon which is delimited by London, Paris, Milan, Munich and Hamburg (Molle, 2007). In Eastern-Central-Europe the situation is nearly the same as in the EU-15 countries (Bradley et al., 2005; Maurel, 2006). In this area there are problems: on one side the disparities within the countries and on the other side there is a development gap between the new member states (NMS) and the EU-15.

In Hungary the transition in 1989-1990 resulted in a more fragmented territorial structure which means a higher level of economic and social disparities than ever before. This was due to the market forces mainly. The territorial disparities are by necessity typical during the territorial realignment of the economy

and the society (Forman, 2001). Nowadays there are several ‘ruptures’ in our country: centre-peripheral zone (the excessive concentration of resources in the capital: Budapest), north-south, east-west (see the details on Figure 1). (Bradley et al., 2005; Horváth, 2001; Horváth, 2004; Pitti, 2008; Túry, 2006)

Figure 1: GDP differences in Hungary on regional level (1975-2006)



Source: own construction based on the works of Csire A. – Németh N. (2008): *Magyarország gazdasági térszerkezetének átalakulása a szocialista gazdaságpolitika kiteljesedéséig napjainkig.* www.nfu.hu/teruleti_elemezsek p. 3. and KSH (2008): *A gazdasági fejlődés regionális különbségei Magyarországon 2007-ben.* Debrecen, Központi Statisztikai Hivatal, p. 11.

To reduce the disparities in the countries and among countries the cohesion policy supports lagging regions and countries. The evolution of cohesion is highly influenced by the development of integration, the accessions and the new member states’ income level which was generally below the EU average. To fulfil the requirements of the common market and the economic and monetary union there was a need for an instrument to help the underdeveloped areas to catch up. The exact instruments of cohesion policy are the Structural Funds and the Cohesion Fund. The aim of cohesion policy is inevitably the diminishing of territorial

disparities. Therefore to evaluate its effectiveness we need to demonstrate the results in this field.

Analyzing the theoretical and empirical studies in connection with the disparities in the EU we can conclude that convergence and divergence also occurs on different territorial levels. Among the countries convergence is provable, but inside of the member states divergence is typical on regional level (Sapir et al., 2003). The main dilemma is that the positive and negative tendencies are due to the cohesion policy or any other factors.

During studying the evaluations of the EU cohesion policy I have found different opinions about the usefulness and effectiveness of this policy. Some analysts think that subsidies have a positive effect on convergence, and therefore it is useful for region and countries for catching up to the EU average (Bouvet, 2003). Others think that this effect could be neutral or even negative (Boldrin – Canova, 2001; Bougas, 2001; Hurst et al., 2000; Puga, 2002). I think that it is not useful to analyse the cohesion policy only in connection with the tendency of convergence or divergence because it has a lot of other effects in other fields as well (on one hand necessity of strict government planning, effective public policy systems, development of methodology and practice of evaluation of cohesion policy, extra resources for development, stabilization of new democracies; on the other hand exaggerated complexity, development of bureaucracy, strengthening the suboptimal structure of investments) (Trón, 2008). The evaluation of the EU's cohesion policy regarding its side effects is positive, it has "permitted the EU to pass into higher stages of integration, which has had positive welfare effects" (Molle, 2006, 19). Thus personally I assume that the positive effects of cohesion policy are provable, but the critics are justified. I think that the cohesion policy could be effective in lagging regions but only when there are other supportive policies on national and regional level as well.

The development funds are a great opportunity for Hungary for catching up to the EU average, but the amount of these is smaller than as we supposed before. The subsidies are not enough alone to guarantee convergence, we need to consider the following actions, policies and principles as well: consensus in the society

referring to the long term strategic goals, strict economic policy, political stability, concentration of resources, the priority of human resource development and the upgrading of the bureaucracy systems (Applica, 2007; Czuriga, 2008; Hurst et al., 2000; MNB, 2006; Palócz, 2005; Stierle, 2004). All of these are only effective if we apply them together, inducing synergy effects.

The question is that whether Hungary should use the development funds from the EU to support the national economy to catch up or we should deal with the territorial disparities in the country and diminish the growing differences among regions and counties. To analyze the situation of 2004-2006 I studied the subsidy data² of the I. National Development Plan and the Economic Competitiveness Operational Programme (ECOP). I analyzed whether the more developed micro-regions (NUTS4 or LAU1) got more funds to support their competitiveness; or the less developed micro-regions to diminish the territorial disparities in the country.

The analysis of territorial allocation of the funds of ECOP and NDP

To analyse the territorial allocation I used the cluster analysis, which is a proper method to classify similar units in groups. The main objective is to formulate homogenous groups using different variables with which we are able to reduce the dimensions (Székelyi – Barna, 2003). The effective solution is when the units in one group are more similar to each other than to others in other groups (Han – Kamber, 2004; Norušis, 2005; Sajtos – Mitev, 2007; Székelyi – Barna, 2003). In this study units are the micro-regions that will be classified based on their tendering activity and efficiency with the help of cluster analysis.

Selecting variables and standardization

According to the rules in cluster analysis it is not worth to use variables with high correlation among them, because their weight in the analysis will be bigger

² The database is from the National Development Agency, it includes the data of 40 998 tendering projects between 2004 and 2006 on micro-region level. The source of it is the EMIR (unified monitoring and information system).

than real. If correlation was bigger than 0,9 between two variables then I removed one of them. With this I avoided redundancy. (Sajtos – Mitev, 2007) The results of this first step are in Table 1.

During the selection of variables it is necessary to pay attention to their relevance in connection with the analysis. Furthermore if the scales of the variables are not exactly the same then we should standardize them, thus the variables will be without dimension (Nemes Nagy, 2005; Norušis, 2009).

Table 1: Variables used in the cluster analysis³

	<i>ECOP</i>	<i>NDP</i>
Variable 1	applied ECOP funds per inhabitant (in thousand HUF)	tendering activity and efficiency at RDOP and ARDOP (factor)
Variable 2	planned ECOP total cost per inhabitant (in thousand HUF)	tendering activity and efficiency at HRDOP and ECOP (factor)
Variable 3	obtained ECOP funds per inhabitant (in thousand HUF)	tendering activity and efficiency at EPIOP (factor)
Variable 4	approved ECOP total cost per inhabitant (in thousand HUF)	
Variable 5	number of implemented ECOP projects per 10000 inhabitants	

Source: own construction

Selecting outlier units

In a cluster analysis the selection of outliers is important before the usage of the method. The outliers are absolutely different than the other units with special

³ In this table the variables in connection with the NDP are factors from a previous analysis that is not illustrated here in this study. Tendering activity means the variables 1 and 2, tendering efficiency means variable 3, 4 and 5. (ARDOP: Agriculture and Rural Development Operational Programme; HRDOP: Human Resource Development Operational Programme; EPIOP: Environment Protection and Infrastructure Operational Programme; RDOP: Regional Development Operational Programme)

features. In the case of using territorial data it is frequently noticed to have outliers because of the lack of normality (Nemes Nagy, 2005). It is useful to delete these units from the analysis, because they distort the results (Füstös et al., 2004). To reveal the outliers we can use the Single-Linkage method because it creates some clusters with a lot of members and many clusters with few members (Sajtos – Mitev, 2007). The outliers are useful to be analysed with qualitative methods (e. g. case study) to study their features. The outliers of this cluster analysis are in Table 2.

Table 2: Outlier micro-regions

<i>ECOP</i>	<i>NDP</i>
Lenti	Bodrogközi
Pásztói	Gárdonyi
Pécsváradi	Sásdi
	Tokaji
	Vasvári

Source: own construction

The empirical analysis

When the variables are measured on a metrical scale the distance between them is easily measurable with the Minkowski-metrics. During the cluster analysis I applied the hierarchical agglomerative method, so the Ward-method, because in this type of study it leads to the best solution (Sajtos – Mitev, 2007) and it is able to minimize the inner heterogeneity of the clusters (Székelyi – Barna, 2003). In this analysis I formulated three clusters in every case, because thus there was a cluster with average tendering activity and efficiency, one with below average and a last one above average. Finally I compared the means of each cluster with each other using variables highlighting development level of each micro-region. The results are in Table 3 and 4. I only used variables where the means are different from each other and the standard deviation was less than the 20% of the mean.

In connection with the analysis of ECOP with cluster analysis I succeeded in classifying homogenous clusters among the micro-regions utilizing the variables of tendering activity and efficiency. These clusters are homogenous in the field of

development as well: complex development index, MHFM,⁴ unemployment rate, taxable income per taxpayer. Thus the result of the analysis is that micro-regions with high tendering activity and efficiency are relatively more developed because they are illustrated with higher complex development index, number of companies per 1000 inhabitant etc. (The results in detail are in Table 3 and represented in Figure 2)

Table 3: The feature of the clusters at ECOP

		1	2	3
variables of tendering productivity	applied ECOP funds per inhabitant (in thousand HUF)	15,74	33,34	51,06
	planned ECOP total cost per inhabitant (in thousand HUF)	32,83	77,24	140,32
	obtained ECOP funds per inhabitant (in thousand HUF)	6,86	16,74	27,63
	approved ECOP total cost per inhabitant (in thousand HUF)	13,69	36,56	62,04
	number of implemented ECOP projects per 10000 inhabitants	4,57	9,00	14,70
	number of planned ECOP projects per 10000 inhabitants	10,18	18,21	27,78
variables of development	complex development index	2,57	3,07	3,53
	MHFM	30,84	36,58	41,73
	rate of employment (%)	48,27	54,39	58,56
	rate of unemployment (%)	9,78	7,12	4,72
	taxable income per taxpayer (in thousand HUF)	1043,85	1168,06	1271,71
	number of crimes per 1000 inhabitant	31,66	37,63	39,40
	number of joint ventures per 1000 inhabitants	17,96	28,08	38,01
	number of operating companies per 1000 inhabitants	64,66	83,07	96,20
structure of economy (proportion of agricultural companies) (%)	12,78	9,41	6,80	

1: relatively low tendering activity, efficiency and low level of development

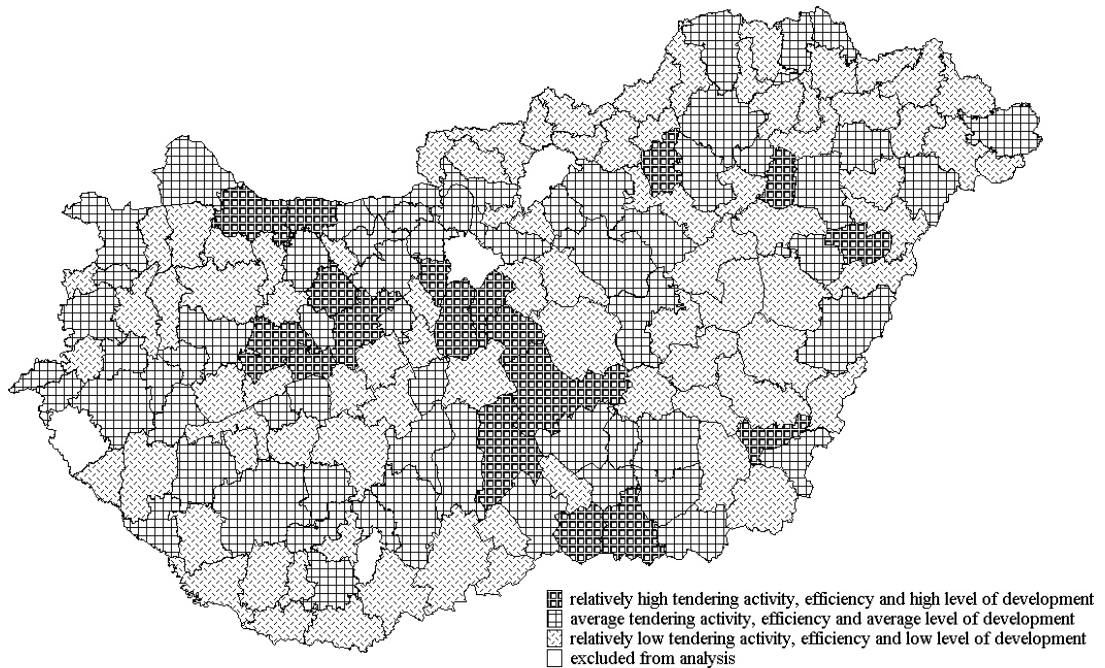
2: average tendering activity, efficiency and average level of development

3: relatively high tendering activity, efficiency and high level of development

Source: own construction

⁴ The MHFM is an index similar to HDI to exhibit the level of quality of life. The values of MHFM are calculated on micro-region level as well. The source of it was the study if Józán, P. "Az MHFM a kistérségekben a 21. század közepén"; in print; the calculations were made by Radnóti, L.

Figure 2: Clusters of micro-regions according to their tendering activity and efficiency at ECOP



Source: own construction

In the case of NDP the cluster analysis resulted a solution as well. The three clusters are homogenous regarding to their tendering activity and efficiency and the development level (according to their complex development index, MHFM, employment rate). Thus micro-regions with high tendering activity and efficiency are on a relatively low level of development with low complex development index, high unemployment rate and low employment rate. (The results in detail are in Table 4 and represented in Figure 3)

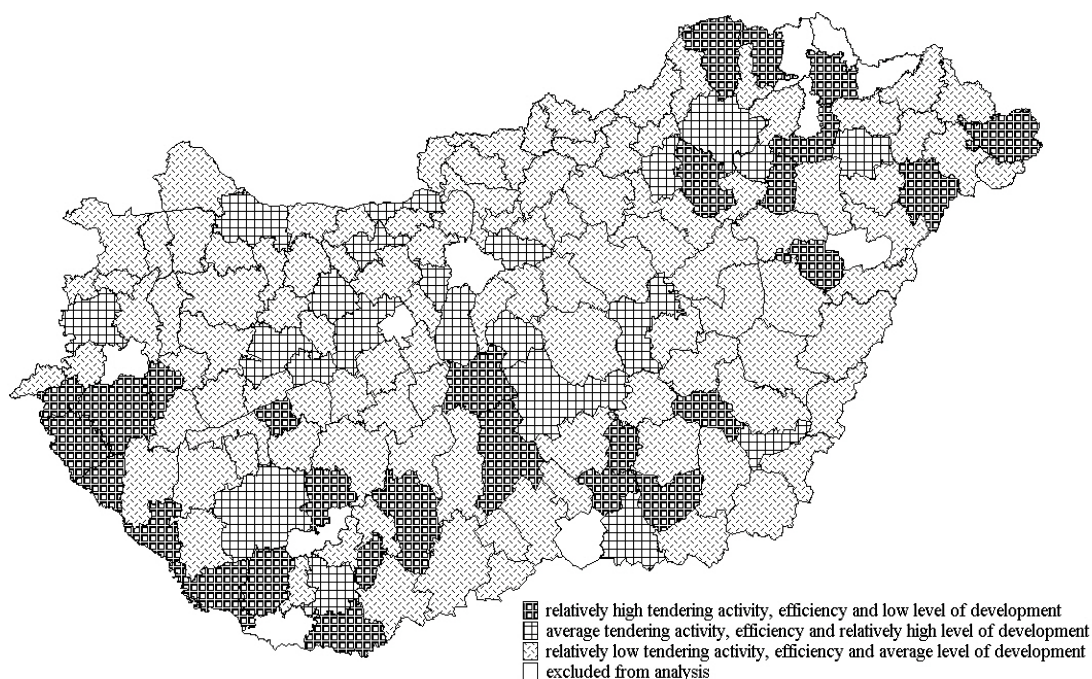
Table 4: The feature of the clusters at NDP 1

	1	2	3	
variables of tendering productivity	applied NDP funds per inhabitant (in thousand HUF)	135,38	154,33	205,15
	planned NDP total cost per inhabitant (in thousand HUF)	218,03	252,58	331,85
	obtained NDP funds per inhabitant (in thousand HUF)	53,38	77,01	83,80
	approved NDP total cost per inhabitant (in thousand HUF)	93,12	120,93	147,43
	number of implemented NDP projects per 10000 inhabitants	18,48	20,94	29,48
	number of planned NDP projects per 10000 inhabitants	34,28	40,46	55,96
variables of development	complex development index	2,85	3,60	2,54
	MHFM	33,44	43,64	31,37
	rate of employment (%)	51,53	58,61	49,21
	rate of unemployment (%)	8,00	4,61	9,99
	taxable income per taxpayer (in thousand HUF)	1100,35	1351,02	1012,61
	gross added value per inhabitant (in thousand HUF)	453,37	1037,16	276,56
	structure of economy (proportion of agricultural companies) (%)	10,94	4,22	13,56

- 1: relatively low tendering activity, efficiency and average level of development
 2: average tendering activity, efficiency and relatively high level of development
 3: relatively high tendering activity, efficiency and low level of development

Source: own construction

Figure 3: Clusters of micro-regions according to their tendering activity and efficiency at NDP 1



Source: own construction

This study is not suitable to analyse a situation of one micro-region but to observe the tendencies in the development policy of Hungary, to draw up general conclusions. If we would like to analyse the features of an exact micro-region then

we should use qualitative methods as well. This solution is necessary in case of outlier micro-regions, because the conspicuous good and bad practices are useful to analyse and to learn from experience.

Concluding remarks

In this study I highlighted the fact that in the EU and Hungary there are serious disparities in the income level. Convergence is evident on the level of member states but on regional level divergence occurs. Therefore we really need cohesion policy to diminish the disparities and help lagging regions to catch up.

Using cluster analysis I proved that in Hungary in the period of 2004 and 2006 in connection with the NDP 1 the following allocation mechanisms are obvious:

- Referring to the ECOP there are homogenous groups of micro-regions in the features of tendering activity and efficiency that are also homogenous in the field of development: micro-regions with high tendering activity and efficiency are relatively highly developed, and micro-regions with low tendering activity and efficiency are relatively less developed. This means that the ECOP funds have strengthened the competitiveness of developed micro-regions and haven't supported a higher rate of convergence in the country.
- Referring to the NDP there are homogenous groups of micro-regions in the features of tendering activity and efficiency that are also homogenous in the field of development: micro-regions with high tendering activity and efficiency are relatively less developed, and micro-regions with average tendering activity and efficiency are relatively highly developed.

According to the previous results the ECOP, which has had originally the objective to strengthen competitiveness has implemented its aims. The NDP has strengthened the competitiveness of well-developed micro-regions and supported a higher rate of convergence in the country as well in an absolutely moderate way.

All of these tendencies highlight that tendering systems alone are not enough to diminish the disparities effectively. If, however, convergence in the country is the main goal of nowadays' development policy then a less developed micro-region cannot compete directly with a developed one. It is necessary to rethink the allocation principles of development funds especially on the basis of development levels.

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