DOI: 10.2478/vjbsd-2022-0006

ANALYSIS OF THE CENTRE-PERIPHERY RELATIONS – FOCUS ON THE COMPETITIVENESS OF HUNGARIAN DISTRICTS

Balázs Lőrinc[1]*, Henrietta Nagy[2], József Káposzta[1]

[1]Hungarian University of Agricultural and Life Sciences
[2]Kodolányi János University

Spatial economic analysis, including research on regional development and competitiveness, has long been a high priority area in the social sciences, both domestically and globally. Several dominant international models relate changes in regional competitiveness to the volume of investment, physical capital and improvements in the income situation of citizens. This suggests that the promotion and implementation of investment has the greatest impact on regional development, as it generates technological innovation and innovation in order to raise the skills of the available labour force, employ human resources at higher wages and thus raise living standards. On the basis of these findings, our study examines the level of development of the domestic LAU1 districts on the basis of their complex (social, economic and infrastructural) level of development, their income situation and their economic competitiveness.

Keywords: spatial economy, regional differences in development, economic competitiveness, centre, periphery

Introduction

The deepening of territorial differentiation is a phenomenon in our country and globally, too. As many national and international literature sources (Camagni and Capello, 2013; Horváth, 2001; Káposzta and Tóth, 2013; Káposzta, 2014; Lengyel, 2003; Lukovics, 2008) have shown, the phenomenon of underdevelopment and disconnection is particularly prevalent in regions where the population is in constant decline, where the level of education of the population is rapidly decreasing, or where the level of infrastructure development and economic competitiveness are declining (Aiginger, 1995; Camagni-Capello, 2013). It is therefore clear that the development of innovative regional development strategies must be based on intra-regional opportunities, on the exploitation of endogenous potential, and on the renewal and development of local and regional strengths. It is also important to take into account the conditions prevailing in a given region, including its strengths and weaknesses, and to take account of natural, economic and social processes when considering the potential for local economic development (Frantál et al., 2013; Garrod, Wornell and Youell, 2006). The Hungarian regional competitiveness strategy should therefore help to improve the quality of life of local people, so that regions that are currently less competitive and peripheral in economic terms can also become attractive places to live. To achieve this goal, it is not only necessary to level the living standards of those living in these areas, or to improve certain competitiveness indicators, but also to change attitudes, which will help to reduce territorial disparities in the future (Káposzta, 2021).

At the same time, it is clear from the findings on territorial disparities that, due to the complexity of the problems and the different characteristics of different regions, catching up cannot be based on a single pattern, since the cumulative problems that arise are clearly the result of several components. One of the starting points for the spatial problems that arise is the spatial location of centres and peripheries, the scheme of which can be interpreted in the following three meanings (Bonifert, 2003; Nemes Nagy, 1996; Horlings and Marsden, 2012; Keskitalo et al., 2020; Komorowski, Mróz and Stanny 2021):

- At the core of the geographic centre-periphery system is the spatial division of each spatial element, where the mathematical centre-boundary concept pair is used to identify the meaning of the theory. The centre is typically defined here as a place of distinction, while the periphery is an outer, peripheral zone. In this meaning, the centre is the point that is closest to the other points in the area as a whole, while the periphery is the location of the furthest points. The point at the centre is generally the point from which all other points in the area can be reached with the least effort.
- At the heart of the development (economic) centre-periphery relationship is the economic development dichotomy. Projected geographically, the centres are identified with developed regions and the peripheries with underdeveloped regions. This meaning can be linked to the internal structural differences between the centres and the peripheries.
- The essence of the power centre-periphery relationship is the imbalance of power and interests between the two poles. In this report, the centre-periphery relationship is linked to the social mechanisms and institutions that operate it.

In connection with the centre-periphery relationship, it can be stated that very important economic changes are taking place in our time, which are changing the spatial structure. Digitalisation and robotisation are changing both economic life and societies. Countries that cannot actively engage in these changes are likely to be marginalised. A key condition for inclusion is to modernise the sectoral structure of the economy, improve the share of knowledge and innovation-based activities, increase the length of value chains and ensure a highly skilled and continuously learning workforce through well-designed development policies (Łuczka, Kalinowski and Shmygol, 2021; Ray, 2001; Rosner and Wesołowska, 2020). The modernisation of the economic structure must go hand in hand with a lengthening of value chains and a significant improvement in the innovativeness and productivity of the small business sector. Productivity is also a key issue, as it is a prerequisite for economic growth and further wage increases. However, the transition to a new growth path will require significant technological upgrading, investment to address territorial disparities, and adult education. The use of modern technology, combined with the availability of knowledge, also increases the chances of increasing the share of knowledge-intensive,

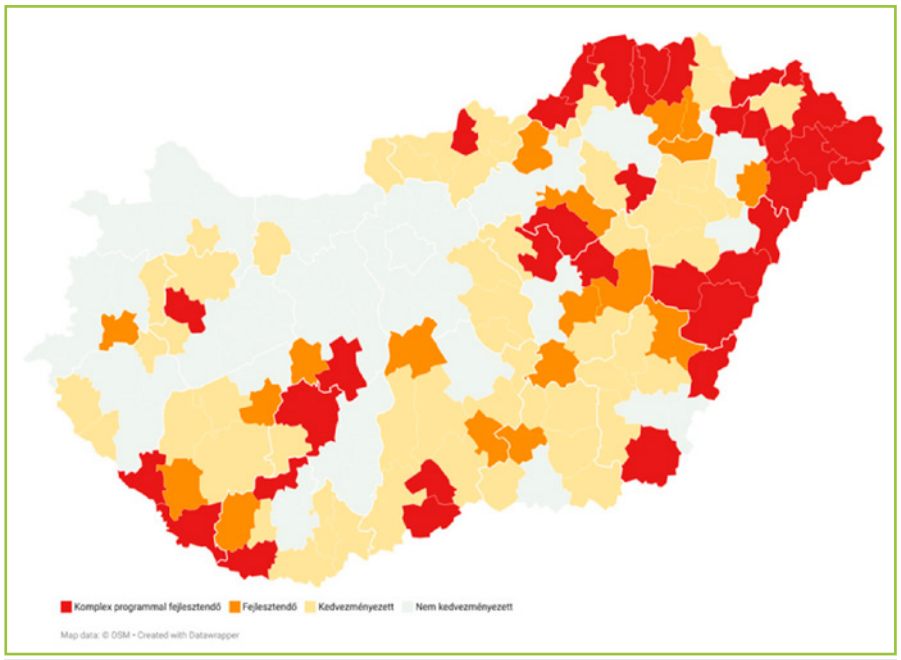


Figure 1 Beneficiary LAU1 areas in Hungary
Source: on the basis of Government Decree 290/2014 (26. XI.) on the classification of beneficiary districts, own editing, 2022

innovative and novel products and services in exports, so that we are not only forced to buy the knowledge and development results of others, but are also increasingly able to sell Hungarian intellectual products. It is also essential that our current situation and emerging trends should never be examined in isolation, but always in international comparison, as we are competing with others to increase our share of international markets and, by improving people's living standards and quality of life, to retain skilled labour (Šťastná, Vaishar and Stonawská, 2015; Vaishar and Pavlů, 2018; Vaishar et al., 2020). A skilled workforce is the most important resource for any country in our time. And a high level of financial stability and economic competitiveness also strengthen a country's economic and political security and reduces its exposure. On the other hand, the results of financial stability and economic competitiveness make it possible to improve living standards, quality of life, and community well-being (Csath, 2020; Lengyel, 2021; Tóth and Káposzta, 2021).

Following a brief literature review, the definition of the development of Hungarian districts and the underlying classification methodologies are presented. The basis for the research is the Government Decree 290/2014 (26. XI.) on the classification of beneficiary districts and the calculation methodology defined therein. Figure 1 shows the Hungarian spatial structure according to the 2014 delimitation.

This government decree defines the comparison of the development of each district by means of 24 indicators. The indicator values of the districts are obtained by aggregating the data of the municipalities. The beneficiary is the district whose calculated complex indicator is below the average of the complex indicators of all districts. Applying this threshold, the government decree in force since January 1 2015 has classified 109 districts as beneficiaries, of which 18 districts are classified as "to be developed" and 36 districts as "to be developed with a complex programme". The districts to be developed with a complex programme are mainly located in the border areas and in the inner peripheries of the country. In addition, it is striking that 23 of the 36 most disadvantaged LAU1 areas (marked in red) are located along the national border.

However, we believe that the period since 2015 has seen significant changes in economic, social and infrastructure indicators, including the level of development of individual districts. Onthis basis, we believe that it is worth examining the current level of development of districts in Hungary and explaining the changes over time (Figure 1).

Material and methods

For the regional level analysis, 174 of the 197 LAU1 districts in Hungary (outside the capital) and the 23 districts of the capital were included in the analysis, counting Budapest as a single district. The district system came into force in 2013 in Hungary, before that the Hungarian LAU1 areas were functioning as small districts. The study was conducted according to the district division in force from 2019, as the databases used are also backdated to earlier years according to the 2019 district division. Table 1 shows the set of indicators used to produce the LAU1 area-level Complex Development Index.

The 23 indicators used are divided into three pillars for 2020: the social pillar (8 indicators), the economic pillar (9 indicators) and the infrastructure pillar (6 indicators). The following methodology was used to produce the complex development index.

Normalisation of basic indicators:

$$fa_{i,j} = \frac{fa_{i,j} - \min\left(fa_{i,j}\right)}{\max\left(fa_{i,j}\right) - \min\left(fa_{i,j}\right)} \times 100$$

where: $fa_{i,j}$ – normalised basic indicator; min $(fa_{i,j})$ – minimum values of the indicators; max $(fa_{i,j})$ – maximum value of indicators

Calculation of group indicators:

$$fa_i = \frac{1}{n}\sum_{j=1}^{n} fa_{i,j}$$

where: fa_i – group indicator; $fa_{i,j}$ – normalised basic indicator; n – number of indicators in group

Calculation of the complex development index:

$$fi = \frac{1}{m}\sum_{i=1}^{m} fa_i$$

where: fa_i – group indicator; fi – complex indicator (complex development index); m – number of group indicators

On the basis of the resulting development indices, the districts were divided into four groups of equal intervals (quartiles).

For the regional (LAU1) income level test, the annual income per resident taxable income was used for 2020. In addition, the level of average hourly wage costs (in €) for the EU27 Member States in 2021 was also examined for the European perspective.

The relationship between complex development level and income was also analysed, where the correlation between the two indicators was examined. Correlation answers the question

Table 1 System of indicators used to produce the LAU1 area-level Complex Development Index

Indicators	Unit of measurement
Permanent population	main
Population density	persons/km2
Ageing index	%
Dependency ratio of the population aged 65 and over	%
Live births per thousand permanent inhabitants	thousandths
Deaths per thousand permanent inhabitants	thousands
Permanent emigration per thousand permanent inhabitants	thousands
Permanent emigration per thousand permanent inhabitants	thousands
PAYE tax payers as a percentage of the resident population aged 15–64	%
Registered unemployment rate	%
Job seekers starting a career as a percentage of total job seekers	%
Jobseeker's allowance recipients as a percentage of permanent population aged 15–64	%
Proportion of high (above HUF 5 M) and low (below HUF 1 M) income earners	%
Annual taxable income per permanent resident in PAYE	thousand HUF/person/year
Annual taxable income per PAYE taxpayer	thousand Ft/person/year
Number of registered enterprises per thousand permanent inhabitants	thousand
Number of active enterprises per thousand permanent inhabitants	thousand
Public utility bollard	%
New dwellings as a percentage of the housing stock	%
Permanent population per 100 dwellings	person
Number of broadband Internet subscriptions per thousand permanent inhabitants	thousands
Number of passenger cars per thousand permanent inhabitants	thousands
Number of nursery places in operation per 100 permanent inhabitants aged 0–2	pcs

Source: based on TeIR databases, own ed., 2022

Table 2 System of indicators used for the production of the LAU1 Area-level Economic Competitiveness Index

Indicators	Unit of measurement
Taxpayers per thousand inhabitants	main
Annual taxable income per resident per year	thousand HUF/person/year
Annual taxable income per taxpayer per year	thousand Ft/person/year
Number of enterprises per thousand inhabitants	pcs
Net turnover per enterprise	thousand Ft/enterprise/year
Share of export sales in net turnover	%
Foreign capital as a percentage of registered capital	%

Source: based on TeIR databases, own ed., 2022

Note: For the indicators "net sales per enterprise", "export sales as a percentage of net sales" and "foreign capital as a percentage of registered capital", aggregate data are presented for enterprises that filed a corporate tax return in the relevant years, by LAU1 area unit

of whether there is a relationship between two or more quantitative variables and, if so, how close it is. The coefficient of correlation is characterised by the Pearson correlation coefficient – sign r2. The sign of the correlation coefficient, preserving the sign of the covariance, indicates the direction of the relationship. It indicates whether the line characterising the correlation is ascending or descending. The role of the two variables in the analysis of correlation is interchangeable, with neither having a privileged role. The closer the relationship, the closer the absolute value of the correlation coefficient is to 1. The looser the relationship between two variables, the closer the correlation coefficient is to 0.

After the complex development index and the income status map, to further reveal spatial disparities, the domestic districts were ranked by economic strength, including business and income, for 2010 and 2020. The indicators in Table 2 were used to produce the economic competitiveness index.

Calculation of the economic competitiveness index:

$$fa_{i,j} = \frac{fa_{i,j} - \min\left(fa_{i,j}\right)}{\max\left(fa_{i,j}\right) - \min\left(fa_{i,j}\right)} \times 100$$

where: $fa_{i,j}$ – normalised basic indicator; min $(fa_{i,j})$ – minimum values of the indicators; max $(fa_{i,j})$ – maximum value of indicators

The level of economic development of the districts has been plotted as a proportion of the national average, with a map. The study districts have been divided into 4 groups (1. below average – below average [DEVELOPED]; 2. below average – above average [DEVELOPING]; 3. above average – below average [ADVANCED]; 4. above average – above average [COMPETITIVE]), both in 2010 and in 2020, according to their level of development, using the method of the Living-Frigyes Index. To complement the map, we have also analysed each district by level of development in itself, and the extent of change from 2010 to 2020, thus identifying the aggregated values and development trajectories of districts that are not necessarily homogeneous in terms of their territorial coverage but similar in terms of their level of development. Datawrapper (www.datawrapper.de), an online map-editing

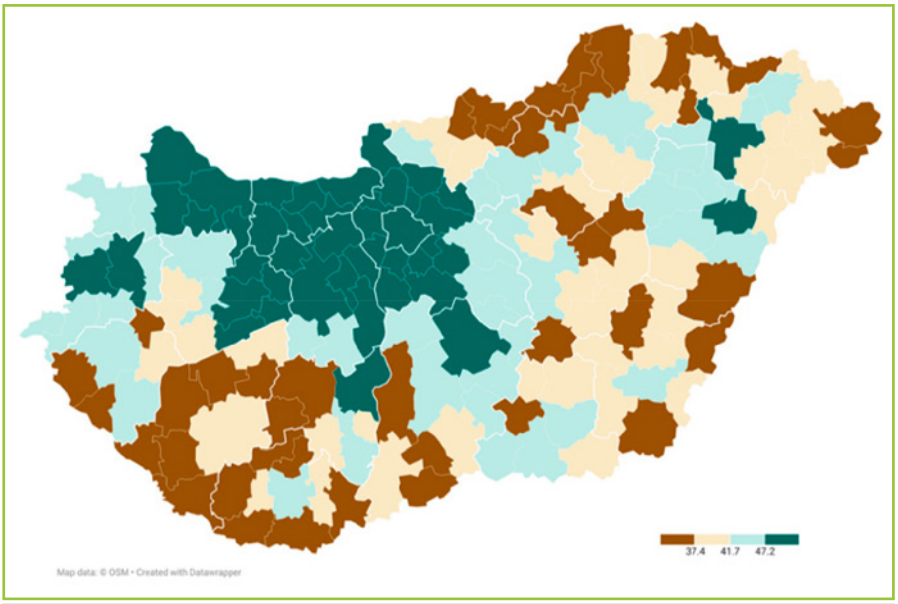


Figure 2 Complex Development Index values by LAU1 district in 2020
Source: based on TeIR databases, own ed., 2022

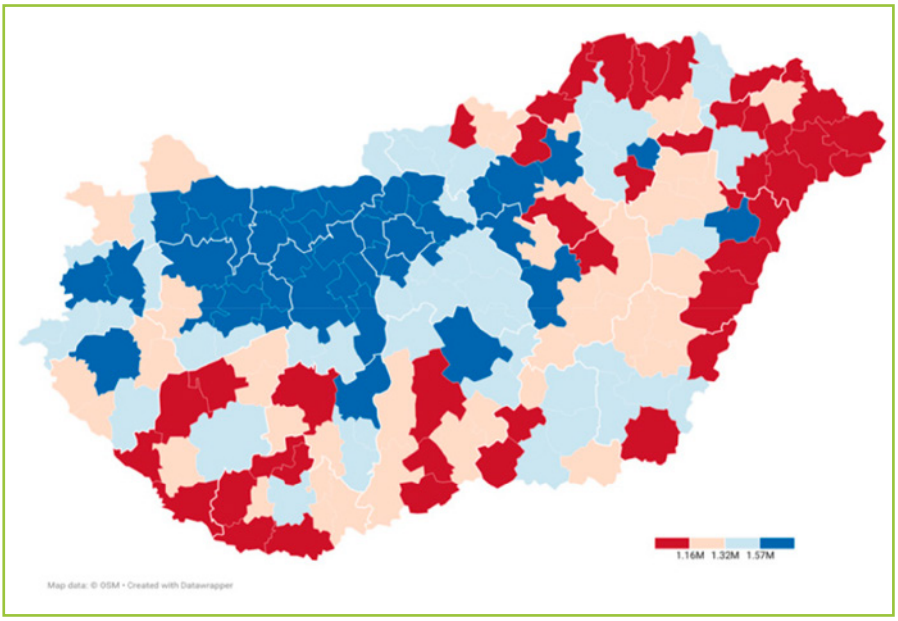


Figure 3 Annual taxable income per resident per year, LAU1 by LAU1 area in 2020 (HUF million)
Source: based on TeIR databases, own ed., 2022

application, was used to display the data on a map.

Results and discussion

After the introduction and methodological overview, this chapter of the study presents the quantifiable results of the study, including the Complex Development Index, the income situation (at national and EU27 level), the Economic Competitiveness Index and their correlations, and the economic changes between 2010 and 2020. Figure 2 shows the values of the Complex Development Index by district in 2020.

The level of development of domestic districts in 2020 shows very distinct homogeneous territorial groupings. The central role of Budapest is very striking, and thus the emergence of the Budapest agglomeration ring. In addition, the development levels of the areas along the motorway networks (M1 [Budapest-Győr], M3 [Budapest-Gyöngyös], M4 [Budapest-Szolnok], M5 [Budapest-Kecskemét], M6 [Budapest-Szekszárd], M7 [Budapest-Székesfehérvár]) are well above the national average. At the same time, it can be said that in the less competitive or underdeveloped, mainly rural areas of the country (e.g. Northern Hungary, Northern Great Plain, Southern Great Plain, Southern Transdanubia), districts with county capitals show outliers in their own region in the year under review (e.g. Debrecen, Nyíregyháza). However, the districts of border regions (e.g. Slovak-Ukrainian-Romanian border area, South Transdanubia) can be considered as peripheral, as can some of the inner peripheries (e.g. a set of districts with below average values up to the Central Tisza Region) (Figure 2).

Figure 3 shows the values of the annual income per capita taxable income per LAU1 district. As in the case of the Complex Development Index, income conditions show that the centre effect is strongly felt in 2020, as the most advantaged districts are located close to Budapest and the "rectangle" drawn by Budapest-Győr-Veszprém-Paks. Furthermore, in terms of income, the districts along the motorways are also well defined with their higher income situation (e.g. M1 – to Győr; M3 – to Gyöngyös; M6 – to Paks; M7 – to Székesfehérvár). However, only a few rural districts have the highest income ranking (e.g. Debrecen district, Kecskemét district, Szolnok district, Tiszaújváros district) (Figure 3).

Connected to the previous two figures, the correlation matrix between the values of the

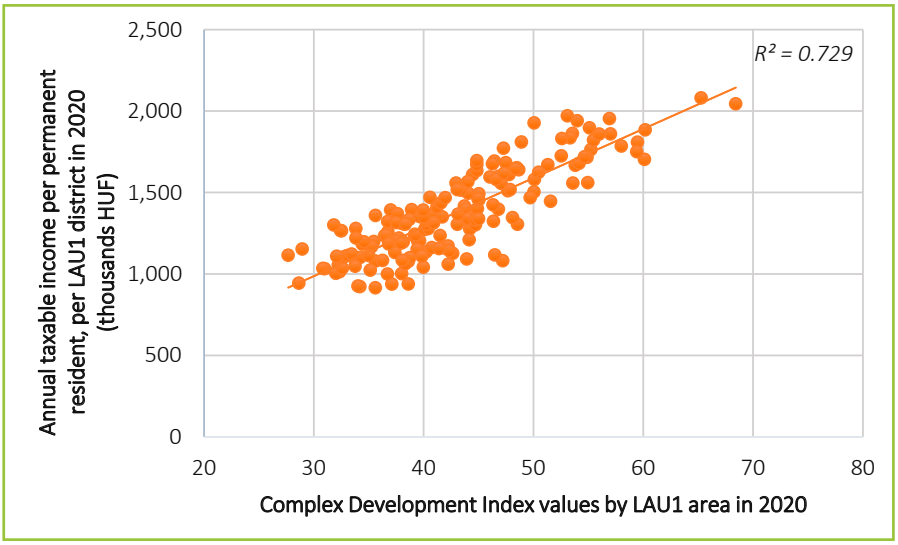


Figure 4 Correlation matrix of the Complex Development Index and income by LAU1 area unit in 2020
Source: based on TeIR databases, own ed., 2022
Note: By income I mean the annual income per resident that forms the tax base for income tax purposes, per LAU1 area, expressed in thousands of HUF

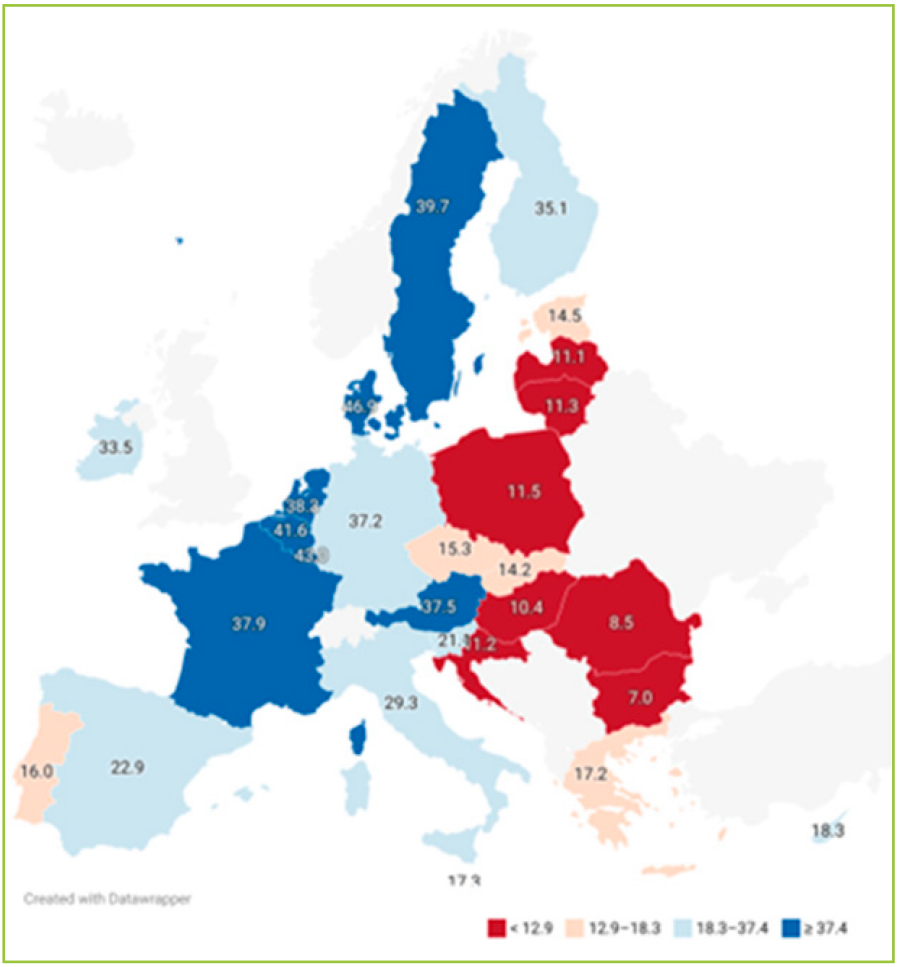


Figure 5 Average hourly wage costs in EU27 Member States in 2021 (€)
Source: Eurostat databases, own ed., 2022
Note: The calculation of average hourly wage costs excludes agriculture, forestry and fishing, public administration and the activities of households as employers, as well as the activities of organisations and bodies outside the field

Complex Development Index and the income status is shown in Figure 4.

As can be clearly seen, there is a very strong correlation (0.729) between the complex development index and income status, which shows that the values of the annual income per capita taxable income from PAYG largely determine the level of development of the districts in the country (Figure 4).

In my opinion, the development of some of the more backward districts requires the exploitation of endogenous resources and the development of well-designed development strategies. In our opinion, catching up of underdeveloped districts (e.g. local economic development, infrastructure development or human resources development) will be essential in the near future. If the currently underperforming districts cannot keep up with the central regions in the future, the spatial structure of Hungary will drift towards a bipolar (developed – underdeveloped) division in terms of regional development and welfare indicators. In the future, this process could lead to the spatialisation of internal peripheries, income inequalities and a radical decline of the so-called "social middle class". Figure 5 shows the average hourly wage costs (in €) for the EU27 Member States in 2021.

Based on the analysis of the competitiveness and income situation of the LAU1 districts in Hungary, it can be concluded that the disposable income and the turnover of local enterprises undoubtedly have a significant impact on the competitiveness of economic activities and the social welfare situation. Thus, the level of average hourly wage costs should also be examined when analysing the existence of regional disparities. The income situation of the EU27 Member States, and thus of Hungary, and the income competitiveness of the different countries of Europe can be very well delineated. The former Soviet successor states and the countries under Soviet occupation all have lower wage levels, while most of the countries of the West and the North can employ their citizens at much higher wage levels. The reasons for this are mainly related to economic competitiveness and the existence or absence of large, privately owned enterprises. In the case of Hungary, it is clear that the only way out of the 'middle-income trap' is to increase the competitiveness of the country's own high value-creating enterprises (spin-offs, SMEs) that contribute to Hungarian GNP (Figure 5). Figures 6 and 7 show the economic competitiveness index values of the domestic districts.

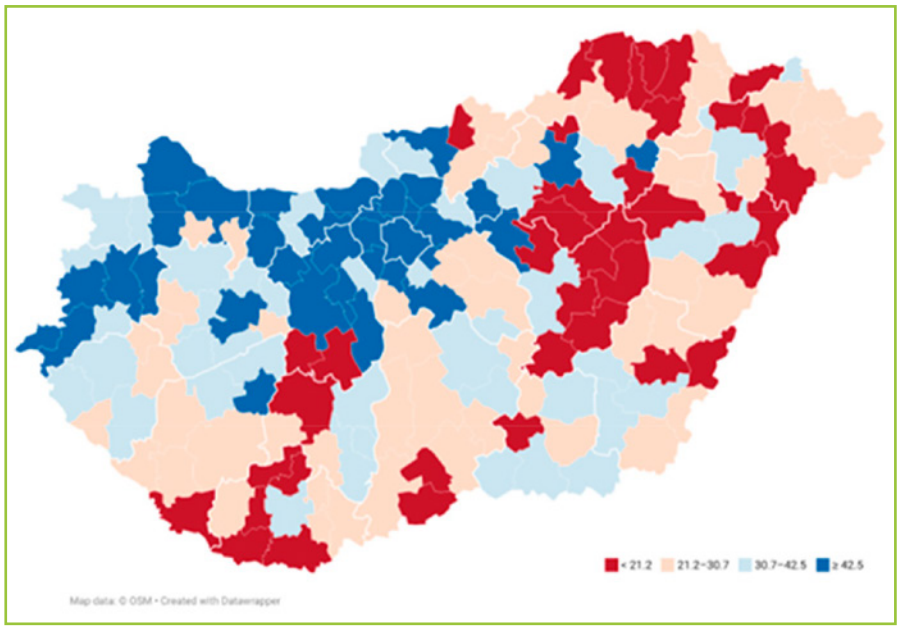


Figure 6 Economic competitiveness index values by LAU1 district in 2010
Source: based on TeIR databases, own ed., 2022

From the point of view of economic competitiveness, the spatial structure of our country is very similar to that of Complex Development. The Budapest-Győr economic axis is clearly visible in both years under examination, as well as the favourable values of the districts where high value-added enterprises, mostly with high foreign capital, are engaged in economic activities. The analysis at the regional level also shows that the absorption effect of Hungary's economic centre increased during the period under review, which is also reflected in the distribution of income and the value creation of enterprises. Accordingly, most of the competitive districts with the most favourable status belong to the capital, Budapest and its gravity zone (Budapest – Székesfehérvár – Győr), which is also largely served by the motorway network, where the dominant economic centres are dominated by leading multinational and domestic (mainly) energy companies (Figure 6, Figure 7).

Figure 8 shows the correlation matrix of the Complex Development Index and the Economic Competitiveness Index

As can be clearly seen, the correlation between the two development indices is lower than the correlation between development index and income level, but a significant relationship (0.559) can be found between the two indicators (Figure 8).

Table 3 shows the values of the Economic Competitiveness Index for 2010 and 2020, broken down by the level of development of the districts. It also shows the percentage change from 2010 to 2020.

There is no doubt that from 2010 to 2020, 6 of the indicators used show a positive shift in all development categories. Only the share of foreign capital shows a downward trend. Employment, income and entrepreneurship have all increased over the last 10 years, as has the value creation of companies, which has led to a marked increase in the share of exports. The development and economic competitiveness of domestic companies, and thus of the regions and of Hungary, will certainly benefit if our companies

Table 3 Average values of the indicators used for the Economic Competitiveness Index for each group of districts by level of development in 2010 and 2020

District	Taxpayers per thousand inhabitants	Annual taxable income per permanent resident (thousand HUF)	Annual taxable income per taxpayer (thousand HUF)	Number of enterprises per thousand inhabitants	Net turnover per enterprise (thousand HUF)	Export sales as a percentage of net sales (%)	Foreign capital as a percentage of registered capital (%)
2010							
Retrieved from	387.5	527.6	1,361.3	125.9	8,519	11.7	9.9
Falling down	410.6	628.0	1,529.5	146.0	13,960	21.2	20.4
Catching up	450.0	778.6	1,730.3	163.8	23,597	22.5	25.6
Competitive	451.9	1,002.1	2,217.3	180.7	74,447	31.9	65.6
2020							
Retrieved from	471.1	1,099.0	2,332.6	149.9	16,009	17.6	7.3
Falling down	489.7	1,311.9	2,678.8	172.3	23,916	22.9	19.0
Catching up	504.9	1,532.8	3,035.6	175.1	34,734	30.2	22.3
Competitive	504.2	1,868.0	3,704.9	202.2	96,569	37.2	61.1
Rate of change							
Retrieved from	121.6%	208.3%	171.4%	119.0%	187.9%	149.6%	73.5%
Falling down	119.3%	208.9%	175.1%	118.0%	171.3%	107.9%	93.1%
Catching up	112.2%	196.9%	175.4%	106.9%	147.2%	134.1%	87.3%
Competitive	111.6%	186.4%	167.1%	111.9%	129.7%	116.6%	93.2%

Source: based on TeIR databases, own ed., 2022
Note: The rate of change is the percentage change from 2010 to 2020 for these indicators (2010 data = 100%)

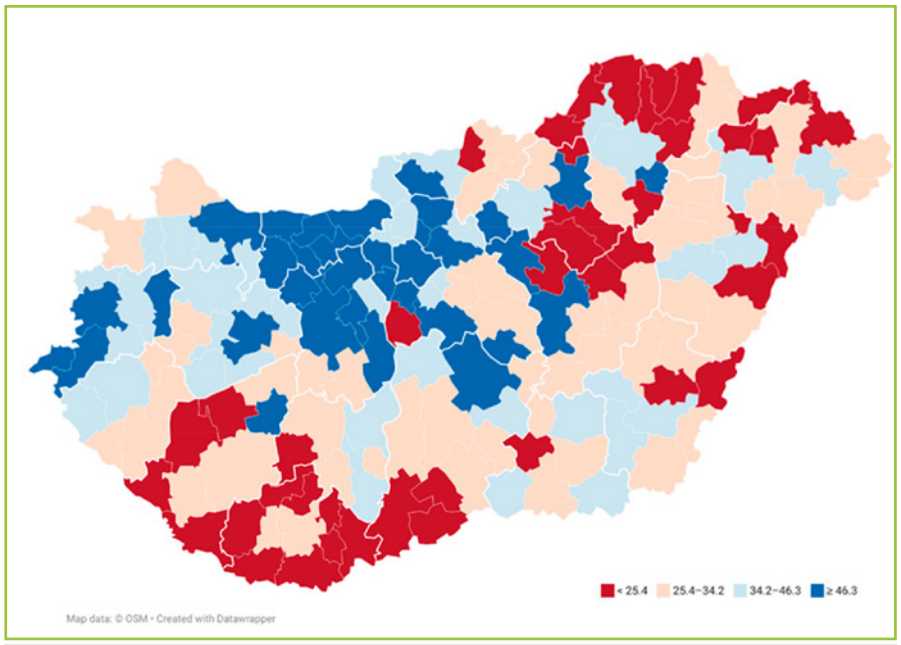


Figure 7 Economic competitiveness index values by LAU1 district in 2020
Source: based on TeIR databases, own ed., 2022

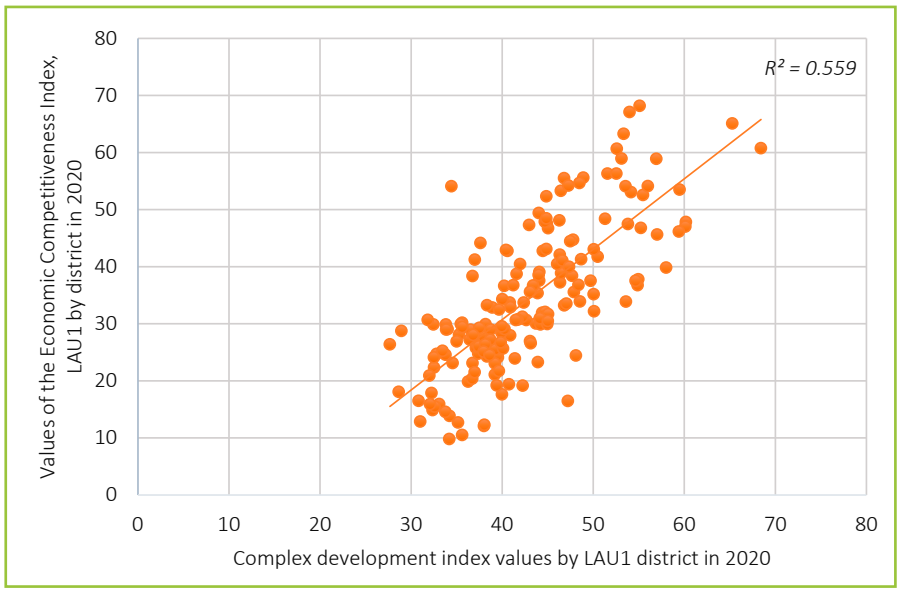


Figure 8 Correlation matrix of the Complex Development Index and the Economic Competitiveness Index by LAU1 district in 2020
Source: based on TeIR databases, own ed., 2022

open up to foreign markets, thereby diversifying their economic relations and broadening their customer base.

It should also be mentioned that the development rate of the districts that are competitive in terms of development levels is lower than that of the other three clusters for almost all indicators, while the absolute values of the individual indicators clearly show the difference between the developed and underdeveloped LAU1 territorial units in the country. In any case, it is encouraging to note that the catching-up rate of the lagging districts is very dynamic.

Conclusions

In conclusion, regional level studies will prove to be very important for Hungary in the future for the design and implementation of development strategies. It can also be argued that the growth of the centre, in this case Budapest, is accompanied by the expansion of peripheral areas, as the drain of resources is becoming more and more pronounced. As time goes by, the transition between developed and underdeveloped areas seems to disappear, so that the peripheral frontier merges with the periphery. It should be noted, however, that some of the districts farther from the centre are still able to generate income levels above the national average, but most of them have a high proportion of foreign working capital. This (or these) process(es) entails many dangers, which point to the need to identify the possibilities of escaping the 'medium economic development trap' as a main line of approach in the period ahead.

References

AIGINGER, K. 1995. Creating a Dynamically Competitive Economy: Defining Competitiveness of a Nation and a Case Study. Competitiveness, Subsidiarity and Objectives. London, 1995.

BONIFERT, D. 2003. A kistérségek szerepe az Európai Unió országaiban és Magyarországon. In Falu-város-régió, 2003, pp. 6–11.

CAMAGNI, R. – CAPELLO, R. 2013. Regional competitiveness and territorial capital: A conceptual approach and empirical evidence from the European Union. In Regional Studies, vol. 9, 2013, pp. 1383–1402.

CAMAGNI, R. – CAPELLO, R. 2013. Regional Competitiveness and Territorial Capital: A Conceptual Approach and Empirical Evidence from the European Union. In Regional Studies, vol. 47, 2013, no. 9, pp. 1383–1402. DOI: 10.1080/00343404.2012.681640

CSATH, M. 2020. Pénzügyi stabilitás és gazdasági versenyképesség. In Kaiser, T. szerk. Jó állam jelentés 2019. Budapest : NKE KTI – Kutatásmódszertani és Mérésügyi Iroda, 2020, pp. 64–90.

FRANTÁL, B. – MARTINAT, S. – HALFACREE, K. – WALKER, G. 2013. New Rural Spaces: Towards Renewable Energies, Multifunctional Farming, and Sustainable Tourism. Brno : Academy of Sciences of the Czech Republic, Institute of Geonics, 2013. ISBN 978-80-86407-38-8

GARROD, B. – WORNELL, R. – YOUELL, R. 2006. Re-conceptualising rural resources as countryside capital: The case of rural tourism. In Journal of Rural Studies, vol. 22, 2006, no. 1, pp. 117–128.

HORLINGS, L. G. – MARSDEN, T. K. 2012. Exploring the 'New Rural Paradigm' in Europe: Eco-economic strategies as a counterforce to the global competitiveness agenda. In European Urban and Regional Studies, 2012, pp. 1–17. https://doi.org/10.1177/0969776412441934

HORVÁTH, G. 2001. A magyar régiók és települések versenyképessége az európai gazdasági térben. In Tér és Társadalom, vol. 15, 2001, no. 2, pp. 203–231. http://real.mtak.hu/115518/1/EPA02251_Ter_es_tarsadalom1619.pdf

KÁPOSZTA, J. – TÓTH, T. 2013. Regionális és vidékfejlesztési ismeretek. Debrecen : DE Gazdálkodástudományok Centruma, 2013.

KÁPOSZTA, J. 2014. Területi különbségek kialakulásának főbb összefüggései. In Gazdálkodás, vol. 58, 2014, no. 5, pp. 399–412. http://www.gazdalkodas.hu/index.php?l=hu&p=szam&szam_id=139

KÁPOSZTA, J. 2021. A regionális versenyképesség gazdasági kapcsolatrendszere. In M. Csath (szerk.): Versenyképességi mozaik. Budapest : Akadémiai Kiadó, 2021, pp. 1–15. https://mersz.hu/csath-versenykepessegi-mozaik

KESKITALO, E. C. H. – LIDESTAV, G. – WESTIN, K. – LINDGREN, U. 2020. Understanding the multiple dynamics of the countryside – Examples from forest cases in Northern Europe. In Journal of Rural Studies, vol. 78, 2020, pp. 59–64. https://doi.org/10.1016/j.jrurstud.2020.06.023

KOMOROWSKI, Ł. – MRÓZ, A.– STANNY, M. 2021. The Spatial Pattern of the Absorption of Cohesion Policy Funds in Polish Rural Areas. In Land vol. 10, 2021, no. 26. https://doi.org/10.3390/land 10010026

LENGYEL, I. 2003. Verseny és területi fejlődés: térségek versenyképessége Magyarországon. Szeged : JATEPress, 2003. https://eco.u-szeged.hu/download.php?docID=40089

LENGYEL, I. 2021. Regionális és városgazdaságtan. Szeged, Szegedi Egyetemi : Kiadó, 2021. https://eco.u-szeged.hu/download.php?docID=40089

ŁUCZKA, W. – KALINOWSKI, S. – SHMYGOL, N. 2021. Organic Farming Support Policy in a Sustainable Development Context: A Polish Case Study. In Energies, vol. 14, 2021, p. 4208. https://doi.org/10.3390/en14144208

LUKOVICS, M. 2008. Térségek versenyképességének mérése. Szeged : JATEPress, 2008. https://eco.u-szeged.hu/download.php?docID=39478

NEMES NAGY, J.1996. Centrumok és perifériák a piacgazdasági átmenetben, 1996.

RAY, C. 2001. Culture economies: a perspective on local rural development in Europe. Newcastle upon Tyne : Centre for Rural Economy, Newcastle University, 2001.

ROSNER, A. – WESOŁOWSKA, M. 2020. Deagrarianisation of the Economic Structure and the Evolution of Rural Settlement Patterns in Poland. In Land, vol. 9, 2020, no. 12, p. 523. https://doi.org/10.3390/land9120523

ŠŤASTNÁ, M. – VAISHAR, A. – STONAWSKÁ, K. 2015. Integrated Transport System of the South-Moravian Region and its impact on rural development. In Transport and Environment, vol. 36, 2015, pp. 53–64. https://doi.org/10.1016/j.trd.2015.02.012

TeIR. 2010. Országos Területfejlesztési és Területrendezési Információs Rendszer, 2010. online. https://www.teir.hu

TeIR. 2020. Országos Területfejlesztési és Területrendezési Információs Rendszer, 2020. online. https://www.teir.hu

TÓTH, T. – KÁPOSZTA, J. 2021. Successful Management of Settlements to Boost Rural Development. In European Countryside, vol. 13, 2021, no. 4., pp. 819–833. DOI: 10.2478/euco-2021-0044

VAISHAR, A. – PAVLŮ, A. 2018. Outmigration intentions of secondary school students from a rural micro-region in the Czech periphery: a case study of the Bystrice nad Pernstejnem area in the Vysocina region. In Acta Univ. Carol. Geograph., vol. 53, 2018, no. 1, pp. 49–57. https://doi.org/10.14712/23361980.2018.5

VAISHAR, A. – STASTNA, M. – ZAPLETALOVA, J. – NOVAKOVA, E. 2020. Is the European countryside depopulating? Case study Moravia. In Journal of Rural Studies, vol. 80, 2020, pp. 567–577. https://doi.org/10.1016/j.jrurstud.2020.10.044

Contact address

Balázs Lőrinc, Hungarian University of Agricultural and Life Sciences
lorinc.balazs@phd.uni-mate.hu