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Far from the core – regions and industrial parks in economic shadow in Hungary[1]

Part one

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Abstract

The economic development of NUTS2 regions in Hungary can be evaluated in different ways. It is their economic potential which is put in the focus of this paper. This potential can be measured by total revenues of leading companies operating on their territories in the first place, and then by number, profile and profit of these firms settled into industrial parks of the regions. The results of an analysis showing close correlation between their geographical position and success (or failure) in business might be used by the experts of the regional development agencies in decision making. This article is an attempt to evaluate the level of development of NUTS2 regions on the basic data for the leading 500 companies. The second part of the paper (Hung. Geogr. Bull. No 3. 2010) will deal with economic efficiency of top firms which are settled into industrial parks of less favoured regions. Analyses are going on the basis of financial and statistical indicators published by different institutions and firms (e.g. Central Statistical Office, Creditreform Ltd.) electronically or in printed version. The study also deals with a few regional effects of economic crisis burst in 2008.

Keywords: NUTS2 regions, revenues, regional inequalities, industrial parks

Introduction

To understand the problems the counties of Hungary chosen to be studied face nowadays it is necessary to give a brief survey about the economic environment of the country. After a relative prosperous 10 years' period (1995–2005) by 2006 Hungary's economic development slowed down and GDP growth remained below 4 per cent in that year. Fiscal consolidation has become the focus of economic policy. In 2007, the government's austerity program has

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decreased Hungary's large budget deficit, but the reforms have diminished domestic consumption, reducing GDP growth to less than 2 per cent.

The global financial crisis in 2008 hit Hungary's vulnerable economy extremely hard, with its large external debt, reliance on external financing and high level of foreign currency borrowing by its citizens, In this emergency situation the country was secured by heavy loans from the International Monetary Fund (IMF) and other financial institutions. The borrowing has helped to balance a large current account and state budget deficit, and resulted in a partially overvalued currency, supported a low stock of foreign reserve and secured a high level of short-term foreign currency debt.

Hungary's growth prospects are likely to improve beyond 2009, owing to the loan offered by the IMF and different European Union funds – EU subsidy of 22.4 billion EUR is available to Hungary until 2013 – and the country's traditional growth factors including relatively low wages and high skills of labour, advanced infrastructure and advantageous geographical position. According to experts' estimation the considerable volume of foreign direct investment (FDI) transfeHrred into Hungary may help to get over the crisis within 2–3 years. Its relative value exceeds the (weighed) average of Central East European (CEE) countries considerably *(Figure 1).*

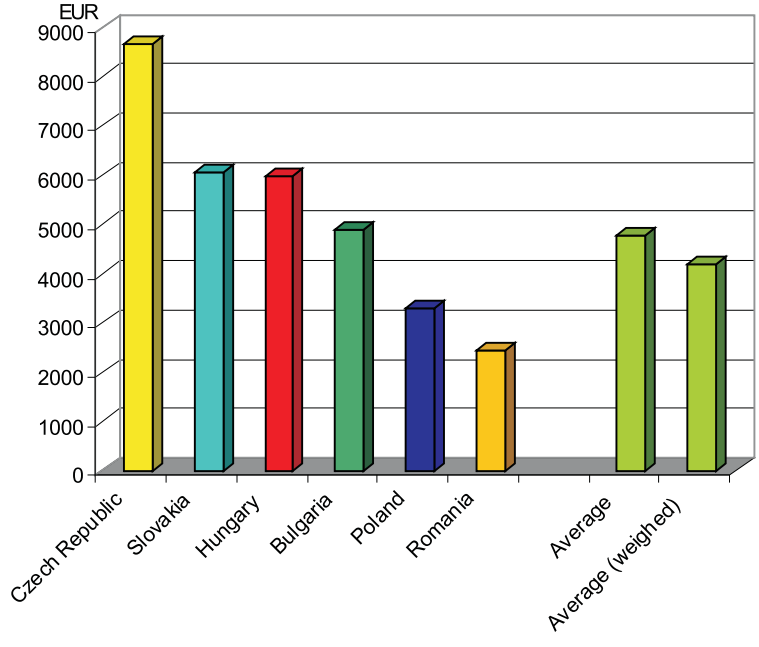

Fig. 1. FDI stock per capita in Central East European countries, 2009. *Source:* WIIW, 2010

Additionally it is worth mentioning that Hungarian economy is shifting towards a service profile, the rate of which from the GDP has reached 67 per cent in 2009. (Among the developed EU members this rate is over 70 per cent.) From year to year the ratio of large EU-projects serving the development of tertiary sector of the country increases steadily at the expense of projects in industrial development. The industrial/service projects ratio changed from 79:21 per cent (2004) to 57:43 per cent (2009) (ITD Hungary, 2010; Kukely, Gy. 2008).

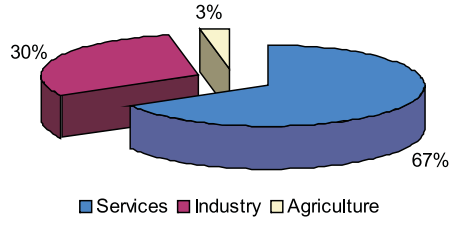

Fig. 2. GDP ratio per sector of economy in Hungary, 2009. *Source:* Hungarian Investment and Trade Development Agency, 2010

Attention should be drawn to the decreasing weight of agriculture within the country's economy (*Figure 2*). Being one of the key factors of rural economy in Hungary, declining incomes from farming activities have led to serious problems not only for farmers but for all larger companies investing into agriculture production and food industry.

According to latest forecasts Hungary's industrial and trade data are improving as the country's export market recover, but the construction sector, retail and unemployment data is expected to deteriorate, GKI Co. (Economic Research Company, Budapest) claimed in a projection prepared together with Erste Bank. Following a contraction in 2009 the institute anticipates Hungary's economy to stagnate in 2010 as external demand picks up, European Union funding boosts investments, sentiment among the country's economic players improves and businesses start restocking inventories (GKI 2010).

The topic of the paper requires to answer some questions. Which regions may be considered developed or underdeveloped in Hungary? Whether the gap between developed and less developed regions is narrowing or widening? Whether a county being part of a developed region and situated relatively far from the dynamically developing core of the NUTS2 region it is incorporated within (e.g. Zala County in Western Transdanubia) can be regarded a stagnating or declining administrative segment of Hungarian economy? The present research takes into consideration the results of studies on the regional transformation and structural changes of Hungarian industry in general, considering industrial parks as special elements (Kiss, E.É. 2001, 2003; Nikodémus, A. 2002; Horváth, K. 2007).

Problematic NUTS2 regions and the counties incorporated have a moderate dynamism of economic development. They are characterised mainly by processing industry, food industry and have agricultural character, which goes together with both personal income and rate of unemployment below the national average.

14 counties from six regions[3] were selected into this category. In spite of a large number of industrial parks with fairly good regional accessibility these counties have only few important industrial firms and service companies with large annual revenue and efficient production.

The facts mentioned above also pointed out that unfavourable position of the counties within these regions derives mainly from their weak economic structure and it is not due to transport logistical reasons. There is more evidence for the relative favourable transport logistic conditions of all regions of the country.

Hungary's strategic position in the heart of the continent – as well as its role as one of the major transport junctions in the Central East European region – makes it increasingly important as a regional distribution centre. Thanks to Hungary's relatively developed transport infrastructure and an established background in logistics (11 large logistical regions), companies settled close to main international transport corridors can benefit from outstanding efficiency and added value.

The latest World Bank Logistics Performance Index (LPI) ranked Hungary highest of the Central East European countries and the Baltic States in 2008. Creating a complex parameter of LPI the survey evaluates the logistics services of 150 countries according to factors including speed of customs clearance, transportation costs, average import transaction and export lead times *(Table 1).*

Table 1. Ranking of CEE countries and the Baltic States according to Logistics Performance Index, 2008

Rank	Country	LPI	Customs	Infrastructure	International shipments	Logistic competence
1.	Hungary	3.15	3.00	3.12	3.07	3.06
2.	Czech Republic	3.13	2.95	3.00	3.05	3.00
3.	Poland	3.04	2.88	2.69	2.92	3.04
4.	Latvia	3.02	2.53	2.56	3.31	2.94
5.	Estonia	2.96	2.75	2.91	2.85	3.00
6.	Slovakia	2.92	2.61	2.68	3.09	3.02
7.	Romania	2.91	2.60	2.73	3.20	2.86
8.	Bulgaria	2.87	2.47	2.47	2.79	2.84
9.	Lithuania	2.78	2.64	2.30	3.00	2.70
10.	Croatia	2.71	2.36	2.50	2.69	2.83

Source: World Bank report on LPI, 2009

[3] Baranya, Somogy and Tolna countries in Southern Transdanubia Region; Veszprém County in Central Transdanubia Region; Vas and Zala counties in Western Transdanubia Region; Heves and Nógrád counties in Northern Hungary Region; Hajdú-Bihar, Jász-Nagykun-Szolnok and Szabolcs-Szatmár-Bereg countries in Northern Great Plain Region; and Bács-Kiskun, Békés and Csongrád counties in Southern Great Plain Region.

Database and methodology

The statistical basis of the investigation is the group of the leading 500 productive companies of Hungary (the top half of one thousand firms in industrial, agricultural and service sectors excluding banks and insurance companies) selected by their annual revenues and profit in HUF. They provide more than 85 per cent of total annual production value of Hungary, measured in HUF.

Their published data were analysed and compared to each other for the year of 2005 and 2009 firstly on a regional level, and secondly by counties (but only for the 14 counties mentioned above). In the third phase there will be analysed the activities of the relative small group of top 500 firms producing their products or services inside the industrial parks.

Simple mathematical and statistical methods are used in this empirical work to measure the most considerable regional and sub-regional inequalities and the level of concentration (Sikos T.T. ed. 1984; Nemes Nagy, J. ed. 2005) and their changes during the period 2005–2009.

The following indices[4] were calculated for the regions and the 14 counties:

- Range *(P)*
- Range ratio *(K)*
- Relative range *(Q)*
- Dual index *(D)*
- Hoover-index *(H)*
- Hirschman–Herfindahl-index (concentration index) *(C)*

For the purpose of calculation of *H* index the official data for labour statistics, i.e. the rate of economically active population of the regions were used for 2005 and 2009.

Economic features and transport position of NUTS2 regions in Hungary

Each of the seven NUTS2 regions of Hungary has specific features of economy which predestine their economic potential and the trends for the near future. This statement is also valid for the counties belonging to them.

Central Hungary (Budapest and Pest County) from the economic viewpoint can be characterized by its substantial contribution to GDP, a high concentration of businesses and the growing significance of financial and logistics services, as well as dynamic real estate development and attractivity to foreign investors (Kiss, E.É. 2000). The region is the country's most important transport

[4] For the content and explanation of these parameters see Nemes Nagy, J. ed. 2005.

node with the junction of 6 radial motorways of Hungary. The density of the trunk road network in the region exceeds the national average. Part of the high-quality railway network belongs to TEN corridor No. X running along the river Danube, making it deeply integrated into the Pan-European transport system. Budapest's Ferihegy Airport is an international air traffic hub with three terminals and high passenger traffic.

There are 35 industrial parks in Central Hungary (2009), mainly serving logistics companies but also offering excellent conditions for automotive and electronics manufacturers and innovative industrial companies. The proximity of the capital as a key factor is of great importance. The Infopark in Budapest serves similar R&D purposes as Technology Park Berlin-Adlershof in Germany (Kulke, E. 2008).

The local labour force has the professional qualifications required by multinationals in the service and commercial sectors, as well as sophisticated industries producing high added value (Brinszky-Hidas, Zs. 2003).

The region's key role is in education and research is also worth mentioning. More than a quarter of the country's secondary school students attend institutions in Central Hungary, while 27.9 per cent of those in higher education pursue their studies here. The region also has the largest capacity in Hungary for the education of economists and technical experts and 62.6 per cent of the country's scientific researchers and developers work here. Two thirds of the state R&D budget was invested in Central Hungary and the majority of the country's research centres are headquartered in Budapest (Mátyás, B. 2002).

Central Transdanubia (Fejér, Komárom-Esztergom and Veszprém counties) is located at the meeting point of two large European development zones. It is therefore directly affected by Europe's overall development and plays a key role in the country's in economic growth. The region has an excellent communications and transportation infrastructure and is intersected by important railways, public roads and motorways. Two Helsinki corridors, the M1, M6 and M7 motorways and pass through Central Transdanubia and the M8 is currently under construction.

Foreign direct investment received by Hungary over the past decade amounts to EUR 317.8 billion, of which 8.7 per cent arrived in Central Transdanubia. The region boasts among the highest industrial production per capita in the country. Tatabánya (seat of Komárom-Esztergom County) and its surroundings and Székesfehérvár (seat of Fejér County) showed a particularly dynamic growth between 1995 and 2006.

Top industries include the automotive industry (Suzuki, Rába Mór, AFL Hungary, Lear Corporation, Continental, Denso, Valeo, Visteon and Hankook Tire are all based in the region), electronics and information technology (Albacomp, IBM Data Storage, Nokia, Sanyo, Philips, Videoton, Foxconn

and Sanmina SCI) and the aluminium industry (Inotal and Suoftec). Major companies also operate in mechanical engineering and steel (Dunaferr, Alcoa-Köfém and Le Belier), the food industry and chemicals. In addition, Ajka crystal and Herend china are brands recognised all over the world.

The region is bordered to the north and east by the international waterways of the River Danube, extending over 140 kms, but with few river harbours. There are also several minor, and some major, currently abandoned military airports in the three counties of the region, providing opportunities for large-scale expansion of air traffic and transportation. The region's infrastructural provision is above the national average and includes 32 industrial parks (Kovács, Z. 1998; Kiss, E.É. 2003).

Western Transdanubia (Győr-Moson-Sopron, Vas and Zala counties) is considered one of the most developed parts of the country mainly owing to the advanced economic structure of Győr-Moson-Sopron County in the north. Manufacturing, the service sector and agriculture appear to be developing at more or less the same rate, while the standard of living is also above the national average. The same applies to the proportion of inward investment in industry and the export orientation of the region's businesses.

Besides Central Hungary and Central Transdanubia this region also has high proportion of enterprises founded with foreign capital. The geographical and cultural proximity of Austria has resulted in close business ties in many areas, e.g. within the West/West Pannonia Euregion (i.e. with Burgenland).

Western Transdanubia is the most industrialized area of the country in terms of the employment of its population. Several multinational automotive and electronics companies have established operations here. Most profitable companies with advanced technologies accumulated in 27 industrial parks with the Győr (Raab) Industrial Parks as the flagship (Balogh, L. 2003; Fancsali, J. 2005; Mónus, Á. ed. 2007).

Several firms of the region have joined the Pannon Automotive Cluster established in 2000 and having 96 members all over the country. This cluster has provided an opportunity for local small and medium sized enterprises (SMEs) to become influential suppliers. In additional sectors of economy, this encourages the formation of product clusters, and the synergies thus created in turn have a beneficial effect on the development of the region.

The main industries in the region based on total employment are the machine industry, textiles and foods. Around 70 per cent of the workforce is distributed between these sectors. The economic development of the Western Transdanubia Region is above the national average and GDP per capita is the second highest in the country. The region’s economic structure is highly developed and ranks above its peers in terms of attracting foreign capital, the ratio of industrial investments and export orientation.

Southern Transdanubia, a region comprising three counties (Baranya, Tolna and Somogy), is situated in the south-west of the country. It has home to 953,000 people, making it the most sparsely populated region. Southern Transdanubia is considered to be Hungary's gateway to the south, and as such plays an important role in the country's foreign relations. Its links to Croatia and the Adriatic Sea offer a perspective on co-operation with southern and south-western countries. Today Southern Transdanubia is ranked sixth of the country's regions in terms of GDP per capita.

As many as 1,300 companies with foreign ownership have invested in Southern Transdanubia and the number of companies owned by Hungarians is rising steadily. This is partly thanks to the establishment of 19 industrial parks in the region so far, offering a host of communications services and supporting facilities for newly established businesses (Nyakacska, M. 1998; Csiba, Zs. and Pap, N. 2007).

The manufacturing sector is dominated by agriculture and food processing, energy production; tourism is also important. Some 8.6 per cent of the region's GDP derives from the agricultural sector. The region holds a prominent position on a national level in the production of maize and is one of the country's most important wine growing regions. The wines of Southern Transdanubia are famous all over Europe, but the high-tech sectors have also seen significant development, encouraged by a sophisticated technical infrastructure. Protecting the environment has always been a high priority in the region as illustrated by extensive reclamation following the closure of the coal mines – acknowledged all over in Central East Europe.

The regions main road arteries are the M6 and M60 motorways linking two county seats (Pécs and Szekszárd) to Budapest. The railway network is dense with Budapest–Gyékényes–Rijeka as the main international line. The region has a direct railway connection Pécs–Osijek and transfers to Vienna and Zagreb. There are four airports in the Southern Transdanubia, with the Pécs–Pogány Airport holding international status. The region also has a river port on the Danube at Mohács, opened to traffic in November 2008.

Northern Hungary (Borsod-Abaúj-Zemplén, Heves and Nógrád counties) has been a traditional industrial region of Hungary from the late 19th century. Its coal mining, metallurgy, heavy machinery production and chemical industry provided job for 2.5 million – mainly unskilled and low educated – people during the socialist era. After the regime change (1989–1990) restructuring of the region's economy started, but this positive process has slowed down after the turn of the millennium and now the region has to cope with more serious problems than those of Transdanubia. Northern Hungary which borders on Slovakia to the North comprises 28 industrial parks altogether, but only few of them accommodate prosperous companies (Lafferton, Gy. 2003; Kiss E.É. 2008). The M3 and M30 motorways link the region with Budapest.

County seats Miskolc and Eger can also be reached from the capital via Inter City rail services.

From its industrial heritage Borsod-Abaúj-Zemplén County maintains only the chemical industrial traditions up to this day (BorsodChem, Tisza Chemical Co). The economic structure of this county has changed dramatically with the arrival of several MNCs (Robert Bosch Power Tools, AES, Jabil Circuit, Continental Tobacco) producing goods for world market. In addition, several small and medium sized enterprises are growing strong and creating new jobs. However, significant workforce cuts still affect some branches of industry. As a consequence, the unemployment rate continues to be the highest in the country. On the other hand the county has an abundance in available skilled labour and their retraining and vocational training are subsidized by the government.

Heves county's economy has experienced dynamic and impressive growth in recent years, while its export-orientation has also intensified. The country's economic output is concentrated in three regions: The county seat Eger with its microregion contribute 48 per cent of total sales, while Gyöngyös and Hatvan with the surroundings provide an additional 40 per cent. The structure of the economy has undergone significant changes in recent times. The importance of the mining industry has declined, while that of the processing industry – primarily the machine industry, metal processing and the furniture, food, and textiles sectors – has increased.

The smallest county in North Hungary is Nógrád which belongs to the less favoured NUTS3 regions in Hungary against its proximity to Pest county and Budapest. It has moderate industrial and service production; only 4 industrial parks can be found on its territory. While the Hungarian capital experienced a labour shortage during the previous years, Nógrád county had human capital reserves.

The *Northern Great Plain* NUTS2 region (Hajdú-Bihar, Jász-Nagykun-Szolnok and Szabolcs-Szatmár-Bereg counties) borders on Ukraine and Romania, making it the eastern gateway of the European Union. The Northern Great Plain is accessible via the Debrecen International Airport, the M3 motorway and hourly Inter City train services from Budapest.

The region is traditionally a farming area with a strong history of agricultural and food industry related machine manufacturing. That means its economic potential is low and only the larger cities (mainly the county seats) are home to a number of major investors, such as Stadler (automotive, Szolnok), TEVA (pharmaceuticals, Debrecen), E.ON (energy supply, Debrecen) and Lego (toys, Nyíregyháza). In total, some 100,000 businesses operate in the region, but only few of them belong to the club of leading 500 companies of the country. There are 33 industrial parks in the region, but only 2 or 3 of them have a considerable economic importance (Kovács, T. 2001; Kiss-Majtényi, M. 2004; Percze, I.J. 2004).

The Northern Great Plain has long-standing traditions in the health and wellness industry, including spas and health resorts, excellent clinics and medical universities. It is hoped that these will be enriched by further biotechnology, organic food and herbal companies in the near future.

Southern Great Plain (Bács-Kiskun, Csongrád and Békés counties) borders on Serbia to the south and on Romania to the east. Its natural resources support both industry and agriculture. Meanwhile, its spas' waters of curative power, rare species of bird and gastronomic specialities make for an idyllic tourist destination.

Two Helsinki corridors (IV. and X/B) cross the region. The M5 motorway leads from Budapest to Szeged and the Serbian border directly. In the near future the a dual carriageway (M43) will run from Szeged to the Romanian border. The region has a public port on the Danube at Baja on the west and one on the River Tisza at Szeged. The region has twelve civil and one military airport.

Southern Great Plain has 32 industrial parks offering their services to investors. Besides them two enterprise zones have been created on the periphery of the region, one in Csongrád county (Makó and its sub-regional enterprise zone) and another one in Békés county (in the area of Sarkad and Szeghalom) (Osváth, S. ed. 2004; Papp, J. 2008).

The combined share of industry and construction in the economy is more or less similar to that of agriculture, for which the region is well suited. Meanwhile, the service sector accounts for ca 60 per cent of the region's economic performance. The exploitation of the considerable R&D potential accumulated in the research centres operating e.g. in biotechnology and software industries, has already begun to accelerate ongoing industrial restructuring in the region.

Creating national logistics centres to reinforce the importance of the region derived from its geographical location may have a similar impact. New activities, such as electronics and mechanical engineering, are taking over from the region's traditional industries: textiles, leather and shoe production. The food industry continues to play an important role with several key brands (Pick salami, Csaba sausage), have acquired an international reputation. Mechanical engineering and the chemicals industry are also strongly export-oriented. Some of the region's industrial products also account for a sizeable share of national production (e.g. crude oil, natural gas, china products, roofing tiles and glassware). Foreign companies that have made a significant contribution to the region's development include Phoenix-Mecano, Knorr-Bremse, Masterfoods, Contitech Rubber, Hunguard, Linamar, Tondach and Henkel.

Processes on the level of the NUTS2 regions

Observing the regional distribution of total volume of *annual revenues* for the leading 500 firms of the country, a highly distorted structure can be experi-

enced both for 2005 and 2009. Back to 2005 Central Hungary Region concentrated 227 leading firms (55.4 per cent) which had increased to 303 in 2009 (60.6 per cent). This fact reflects not only its absolute dominancy among regions, but also means that this NUTS2 region accumulates nearly two thirds of the total annual revenue of the top 500 firms. Moreover, its share has increased from 16,681 bn HUF to 26,417 bn HUF (from 60.7 per cent to 63.5 per cent) between 2005 and 2009. Besides Central Hungary only Northern Great Plain region was able to increase its share with 1 per cent *(Figure 3).*

The second 'richest' region Central Transdanubia had only 63 leading firms in 2005 which diminished to 54 (-15.7 per cent) in 2009, but the region nearly managed to preserve its share within the total annual revenue (2005: 15,4 per cent, 2009: 15,2 per cent). This process marks a considerable revenue concentration process among the leading firms of the region also (revenue per firm: 66.1 bn HUF in 2005 and 117.5 bn HUF in 2009).

Since the turn of the millennium Central Hungary and Central Transdanubia together have given more than 75 per cent of the total annual revenue of the top 500 companies. Between 2005 and 2009 this imbalanced rate had grown further (from 76.2 to 78,8 per cent), because the rest 5 regions together produced only a modest increase during the period investigated *(Figure 4).*

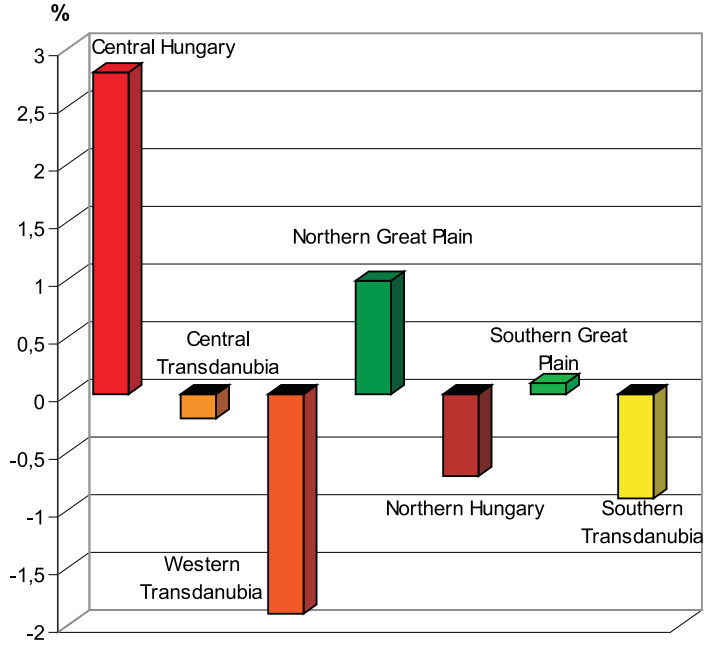

*Fig. 3.*The change of total annual revenues's rate by regions between 2005 and 2009

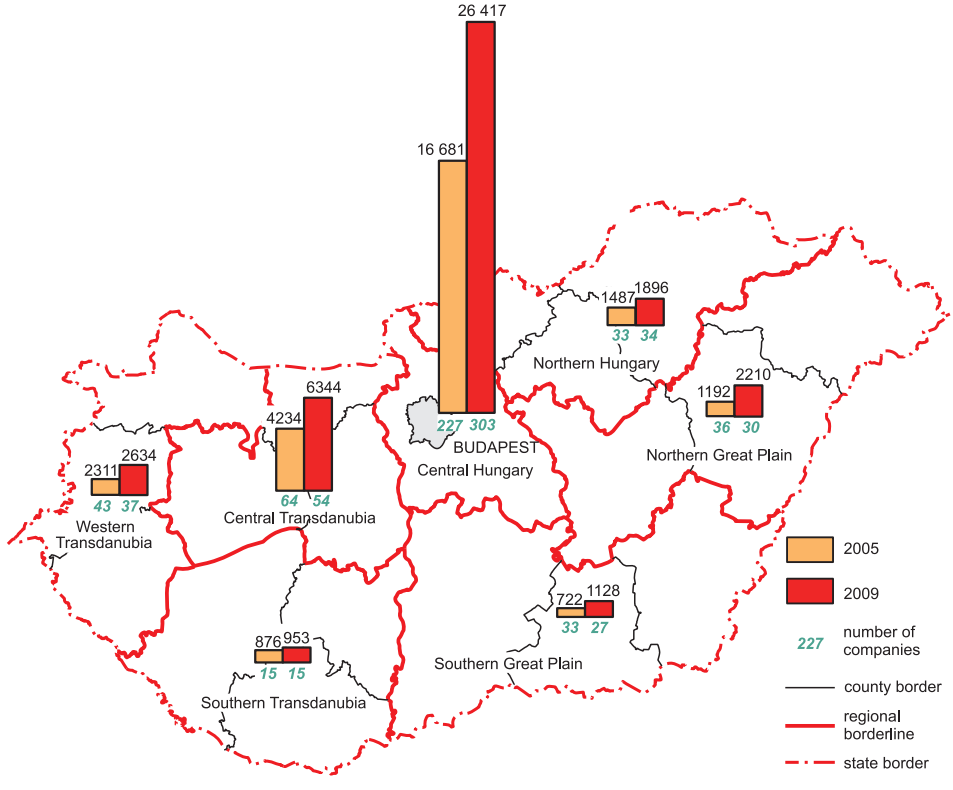

Fig. 4. Total annual revenue of leading 500 companies by NUTS2 regions in 2005 and 2009, bn HUF

The revenues of the two most developed regions demonstrate a considerable growth both in amounts and rate (2005–2009: 11,846 bn HUF or 56.6 per cent), opposite to the rest 5 regions (2005–2009: 2,110 bn HUF or 24.3 per cent), which marks 5.6 times difference in amounts and more than double growth in rate. Parallel to it the number of companies belonging to the top 500 companies has also changed in NUTS2 regions. Excluding Central Hungary a differentiated decrease could be observed in the value of this parameter in the rest of regions (*Table 2).*

Between 2005 and 2009 the relative annual revenue (revenue per company) has changed also in the regions, showing widening gaps between developed and lagging regions. But as for the rankings of this parameter Central Transdanubia has held the first place versus Central Hungary since 2005 *(Figure 5).*

Finally, calculating the indices showing the measure of regional inequalities for the leading 500 companies and its change, the results demon-

Table 2. Number of companies belonging to the top 500 by revenue (2005–2009)

Region	2005	2006	2007	2008	2009	Change 2009/2005	
						number	per cent
Central Hungary	265	277	286	292	303	+ 38	143.4
Central Transdanubia	63	65	62	56	54	- 9	85.7
Western Transdanubia	40	43	39	41	37	- 3	92.5
Southern Transdanubia	15	15	16	15	15	0	0.0
Northern Hungary	37	33	36	35	34	- 3	91.9
Northern Great Plain	34	36	33	36	30	- 4	88.2
Southern Great Plain	35	32	28	28	27	- 8	77.1

Source: Creditreform Ltd. 2006–2010

strate a general increase for all parameters *(Table 3)*. These figures forecast unfavourable tendencies and reflect inefficient efforts to diminish them up till now.

Table 3. Value of indices for revenue differences in NUTS2 regions

Index	2005	2009	Difference (+)
Range (P)	15.8050	25.4640	+ 9.6590
Range ratio (K)	19.0400	27.7200	+ 8.6800
Relative range (Q)	4.0250	4.2870	+ 0.2620
Dual index (D)	7.9610	9.2850	+ 1.3240
Hoover-index (H)	33.1500	34.3800	+ 1.2300
Hirschman–Herfindahl index(C)	0.4129	0.4377	+ 0.0248

Source: calculated by the author

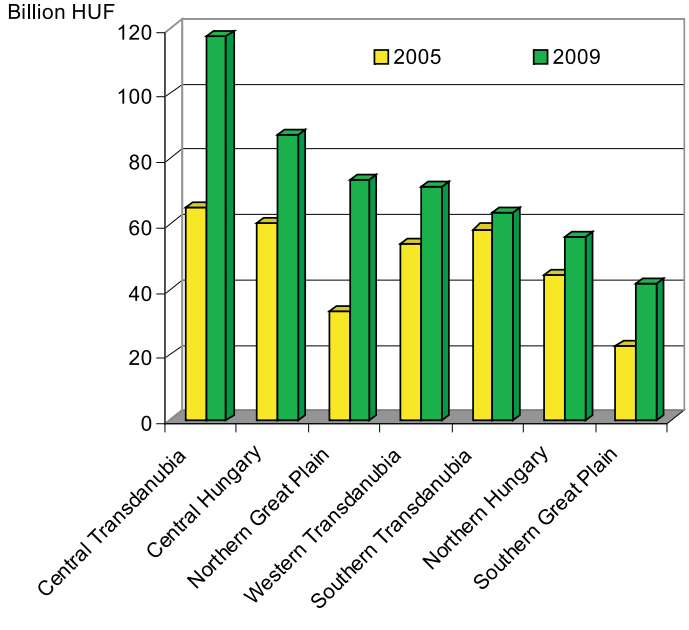

Fig. 5. Annual revenue per company by NUTS2 regions, bn HUF

Turning to the regional distribution of total volume of the *profit* for the firms investigated, the regional structure nearly goes to extremes. In 2005 Central Hungary has concentrated more than 70 per cent of the profit of the top 500 firms. Its profit share has increased from 1,585.9 bn HUF to 2,390.7 bn HUF (from 71.4 per cent to 77.8 per cent) between 2005 and 2009. 68 per cent of the total profit of the leading 500 firms has been generated at companies located in Budapest *(Figure 6).*

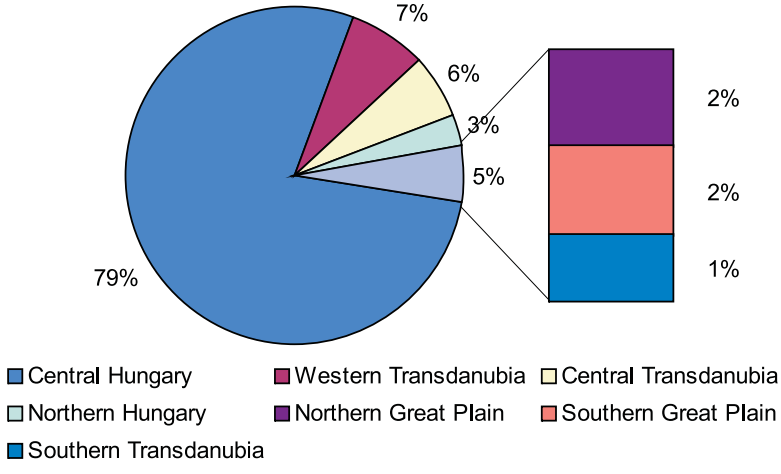

Fig. 6. The rate of total annual profit by regions in 2009

Comparing the change of revenues with that of profits in case of NUTS2 regions a highly negative tendency can be seen. Between 2005 and 2009 in case of profits of leading companies a serious decline or stagnation could be observed in all of the regions except Central Hungary. This process reflects heavy concentration of profit into Budapest and its agglomeration zone *(Figure 7).*

In 2009 Western Transdanubia was the second most profitable region (its favourable position was due to the economic efficiency of firms concentrated in the Győr Industrial Park). The region has nearly reached 230 bn HUF profit opposite to its main competitor Central Transdanubia, ranking third. In 2005 the aggregate profit of leading firms in Central Transdanubia still exceeded that in Western Transdanubia (161.8 bn HUF).

Since 2005 three NUTS2 regions (Central Hungary, Western and Central Transdanubia) together give ca 90 per cent of the total profit of the top 500 companies in Hungary. Between 2005 and 2009 this very high rate had increased further (from 89.1 to 91.2 per cent), because the rest four regions together produced only a very low increase of profit (from 242.1 bn HUF to 270.6 bn HUF) during the period investigated *(Figure 8).*

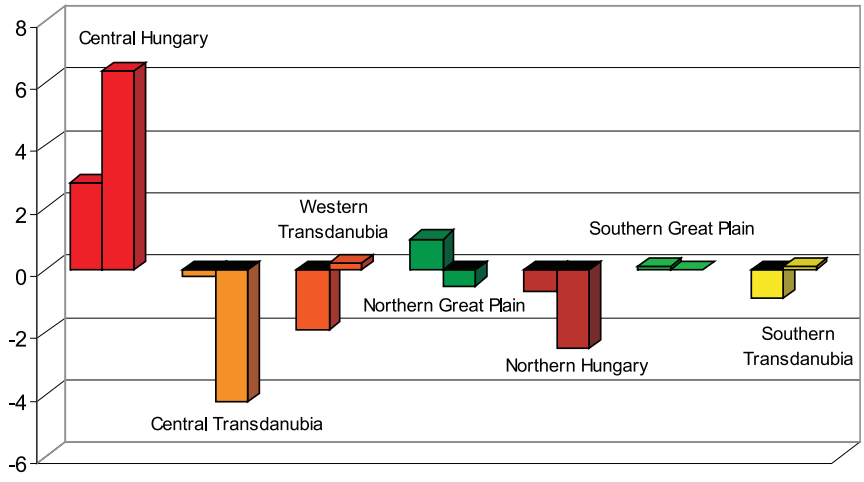

Fig. 7. Change in total annual profit's rate by regions in 2009 (right side columns) compared to its shares in 2005 and to the change of total annual revenue's rate (left side columns)

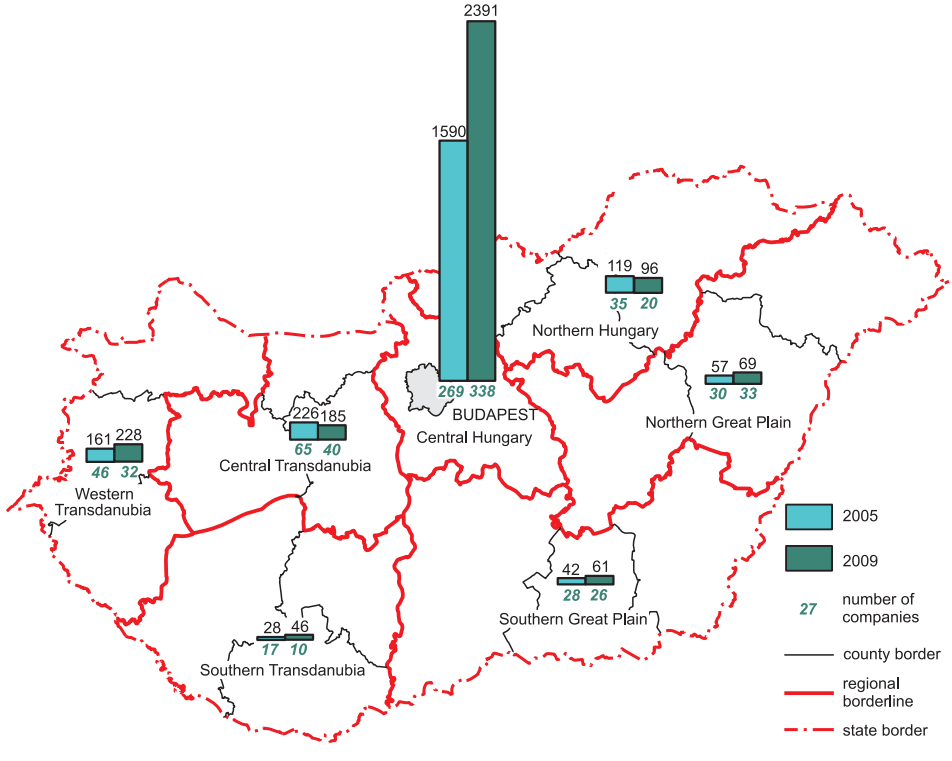

Fig. 8. Total annual profit of leading 500 companies by NUTS2 regions between 2005 and 2009, bn HUF

The profit increase of Central Hungary (801 bn HUF between 2005 and 2009) demonstrates a heavy concentration process, opposite to the rest six regions, where the profits of the market leaders showed a very modest growth (52 bn HUF) for the same period. Parallel to it the majority of NUTS2 regions show dramatic fall in the number of companies belonging to the top 500 ones by profit (*Table 4).*

Table 4. Number of companies belonging to the top 500 by profit (2005–2009)

Region	2005	2006	2007	2008	2009	Change 2009/2005	
						number	per cent
Central Hungary	269	275	289	326	338	+ 69	125.7
Central Transdanubia	69	68	68	47	41	- 28	59.4
Western Transdanubia	45	47	46	35	32	- 13	71.1
Southern Transdanubia	22	17	12	8	10	- 12	45.5
Northern Hungary	38	35	34	29	20	- 18	52.6
Northern Great Plain	29	30	26	32	33	+ 4	113.8
Southern Great Plain	28	28	25	23	26	- 2	92.9

Source: Creditreform Ltd. 2006–2010

The three leading regions have experienced growth and fall in amounts of profit while preserving their leading position over the regions situated in the rest of the country.

Between 2005 and 2009 the relative annual profit (profit per company) has changed also in the regions, showing a wide gap between developed and lagging regions. But as for the rankings of this parameter Western Transdanubia has got the leading position from Central Hungary since 2005 *(Figure 9).*

Calculating the indices showing the measure of measure of regional inequalities in the profit of the top 500 Hungarian firms, and its change the results demonstrate a considerable increase in *P, D, H* and *C* indices, a minor decline in *K*-index and a minimal decrease in *Q* index *(Table 5).*

Table 5. Value of indices for profit differences in NUTS2 regions

Index	2005	2009	Difference
Range (P)	2.1970	3.0310	+ 0.8340
Range ratio (K)	73.0700	63.3400	- 10.7300
Relative range (Q)	6.9110	6.8920	- 0.0190
Dual index (D)	15.0170	20.8840	+ 5.8670
Hoover-index (H)	39.8000	46.6000	+ 6.8000
Hirschman–Herfindahl index (C)	0.5283	0.6146	+ 0.0863

Source: calculated by the author

These figures – similar to the annual revenue data – reflect negative tendencies (except K-index) and the stabilization of a distorted regional structure of profit distribution.

To be continued

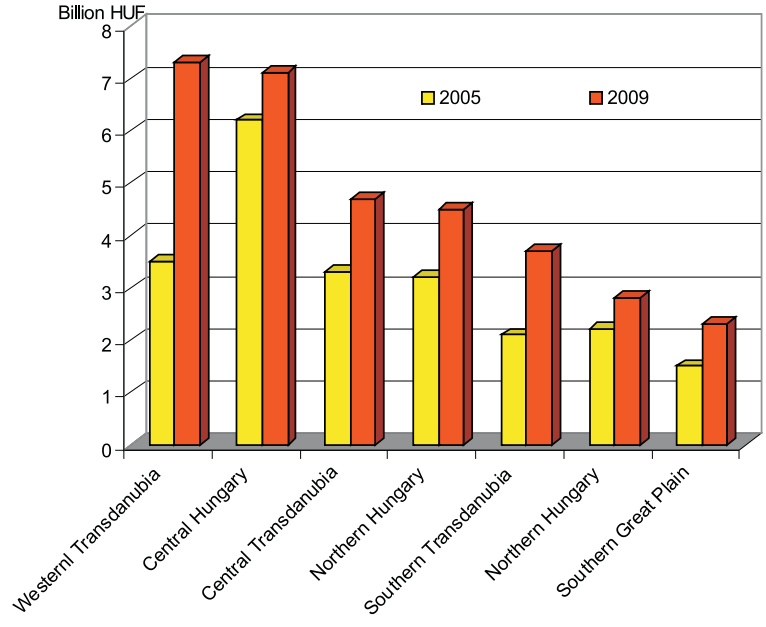

Fig. 9. Annual profit per company by NUTS2 regions, bn HUF

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