Evolution and Characteristics of Territorial Economic Disparities in Romania

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SUMMARY

The territorial disparities of Romania, as well as of other states, are a fundamental characteristic of the society's spatiality, with the changes thereof being conditional upon multiple factors. The economy and the society are unequally distributed spatially, this phenomenon being also accentuated by the regional and local specificities and by the different spatial way of manifestation of the natural, cultural economic and social factors. The unequal spatial distribution of the economic activities, transport infrastructures, settlements and population imprints paths of territorial development, sometimes strongly differentiated locally and regionally. Further on, we shall focus on the analysis of the territorial disparities in Romania, from geographic and economic perspectives.
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THEORETICAL BACKGROUND

The classic or hard production factors (capital, workforce and technological progress) lie at the base of the neoclassic, post Keynesian theories of the economic growth, as well as of the polarization theory, and of the export base theory. These consider that the demand and supply in the relation to the production factors cause the economic rise or decline of a region. The invested (local or foreign) capital is an important development factor, due to the creation of new jobs, the multiplicative effects generated by the newly established horizontal economic relationships, the generation of local or regional markets. That is why various local, regional or national players (the government, for example) often focus on the preparation and enforcement of certain economic strategies which allow the granting of tax or other incentives, with a view to attracting capital for the underdeveloped regions. In any case, we have to retain, as a basic idea, the fact that the neoclassic vision of an economic system promoting the harmonious, balanced and rational distribution of the resources and locations is no longer current, a statement valid as well with reference to those theories which place at their core the idea of economic equilibrium (including certain evolutionary historical theories), for the mere reason that a situation of absolute equilibrium, likely to concurrently maximize all the interests of all the economic players, cannot exist (Plummer, 2000). The development and growth cannot be uniform in all the regions, the equilibrium situations being relative and instable. The equilibrium theories,

especially the neoclassic theories, presume the achievement of a long-term convergence of the growth rate recorded by states and regions, a prediction not actually fulfilled (Benedek, 2004).

The new growth theories, the evolutionary historical theories, the adjustment theory, the dynamic theories or the new regionalism also take into account other development factors, sometimes even extra-economic factors, known as weak factors of the development: the development level of services, housing quality, accessibility of settlements, existence of research units, regional structure, that is to say, the cultural, social or political conditions of the economic development, the local or regional markets (the consumtion characteristics, income level, savings rate), the local administration role, price level, standard of living, workforce quality, local or regional development policy, etc. These theoretical evolutions are therefore related to the incomplete explanatory nature of the hard development factors, and of the quantity models. Contemporary economic geography is dominated by the evolutionary economy perspective, which considers that the development trajectories are determined by the institutions selected by the market (Sunley, 2000). In accordance with this core idea, the current trend is to complete analysis models based on the measurement of certain parameters (for example, output) by the analysis of the forms of regional growth and development, of the characteristics of those economic activities underlying the growth and the development, and of the local or regional particulars which stimulate or inhibit the growth. Therefore, unlike the macrostructural transition theories (such as the

adjustment theory, the evolutionary historical or dynamic theories), which develop various evolutive spatial models of growth and development, the major contemporary trend is focused on the analysis of the particular regional (and local) contexts of growth and development. This trend is based on the acknowledgement of the singularity and accidentality of the regional development, which confers on this approach a historicist feature, according to which events cannot happen twice, cannot be modeled, but possibly certain types of incidents, groupings of situations in various local or regional contexts can be modeled.

From a methodological perspective, two different outlooks on the region and regional development can be evidenced (also see Table 1):

➢ the structuralist theories tackle the regions from a global perspective, with the macroeconomic and macropolitical structures and the position of a region within a hierarchical system of center-periphery type determining the regional development. It is thus imprinted a path dependence, structurally and historically conditioned. Thus, the cause of the underdevelopment of some regions determines the development of the others. The development path of a region aspiring to a higher economic status is blocked by global competition and the dominance of some developed regions. Thus an international division of labor of center-periphery type follows, with different accumulation rates. This class includes the polarization or dependence theories;

➢ the regionalist theories offer a local perspective to the regional evolution, where the region is presented as an entity with its own personality, with sufficient endogenous capacity to imprint a certain development trajectory. Thus, the internal structure of the regions and the international relationships constitute the sources of regional development. This class includes the dynamic theories, the adjustment theory (the version adapted at the regional level), the evolutionary historical theories (Rostow, Friedmann, etc.), and the new regionalism. As we have already seen, these consider that each region or state goes through the same multiphase (or multicycle) historical development process (from the pre-industrial to the post-industrial society). Thus, a process of convergence towards a similar internal regional structure occurs. However, deviations are possible, and are even present to a large extent. These deviations are structural (these are the result of the interregionally differentiated internal structure), historical (these are the result of a historical accident, or of some various adjustment ways), or are the result of the different regional capacities of adaptation and innovation.

Table 1. Regional development theories

Theory	Interregional Differences	Regional Development Mechanism
New economic geography	Increase and persist	– agglomeration of industrial activities, determined by: the economy of scale, costs of transportation, and demand; – mobility of workforce in the industry
Neoclassic growth theories	Diminish; trend toward the regional homogenization	– mobility of hard production factors (capital, technology, labor)
New theories of the endogenous economic growth	Are maintained or increase, to the concentration of the tacit knowledge in certain regions	– technological progress; – investments in human capital; – learning effects;
Post Keynesian theories	Diminish as a consequence of the multiple spatial effects generated by investments	– investments and their multiplicative (income, capacity and complementarity) effect
Export base theory	Diminish as a consequence of the export oriented activities	– investments in export activities; – increase in the external demand
Polarization (dependence) theories	Increase, the obtained development advantages are cumulated, the range of the differences is contingent upon the position of the states within the current global economic system	– polarization effects, relationship between absorption and dispersion effects; – state interventions
Evolutionary historical theories	Diminish, tend toward an equilibrium state, linear-progressive evolution	– investments; – reverse polarization, integration
Adjustment theory	Persist, path dependence	– accumulation regime (compromise between the state and various institutions); – adjustment way
Dynamic development theories	Increase, new inequalities emerge	– cyclical technological innovations in the driving industries – adaptation
New regionalism	Diminish by the innovation capacity of the regions	– vertical disintegration and spatial agglomeration of companies; – setting up of local and regional production industries; – innovation, learning

Source: Benedek, 2004

A number of new outlooks must also be considered in order to understand the mechanisms of occurrence of the significant territorial disparities, which have in common the basic idea according to which the economic activities and the population tend to cluster sectorally and geographically, with the resulted spatial concentration representing more than the sum of the component parts. This concentration allows companies to achieve some economies of scale (Krugman, 2000) or competitive advantages (Porter, 2000). The proximity to markets and the input factors minimize the production costs, allowing the achievement of externalities beneficial for the entire network. The dynamics of spatial concentrations, irrespective of their type, is determined by their innovation potential, the development trajectory imposed by the used technologies, and the capacity to occupy new market segments. The spatial concentrations of the economy and population bear different names: spatial agglomerations or agglomeration economies (Krugman), clusters (Porter), or industrial districts (new regionalism), presented in detail in this sub-section. Further on, I will synthetically present the common denominators and the differences between these outlooks.

A first difference between the agglomeration economies (spatial agglomerations), clusters and industrial districts consists in the reference spatial classes use. Thus, while agglomeration economies are based on the concentration of the consumers (households and companies located downstream), in large urban regions with a diversified economy the clusters may also develop in rural regions or other region types, and the industrial districts comprise urban regions of medium or small size, with specialized economies. A second major difference is of sectoral economic nature: the economy of spatial agglomerations is based on services and industrial branches of intensive technology, the industrial districts are based on the consumer goods manufacturing industries (textile industry, wood processing, etc.), and the clusters are the most flexible, being present in all the economic sectors. Another major difference results from the organization of the economic activities: while the industrial districts are based solely on local or regional networks of small and medium-sized enterprises, globally competitive, both the agglomeration economies and the clusters comprise both small and medium-sized enterprises and large-sized companies, as well as transnational corporations. Henceforth the different perspectives offered for the regional development and political region: the industrial districts offer development a strictly regional perspective, offering a strategic foundation to the endogenous regional development strategy, while the spatial agglomerations support a neoliberal agenda, based on the supporting of innovative regions, competitive worldwide. The clusters are the most flexible and, from this viewpoint, notwithstanding the fact that Porter recommends the application of the cluster theory to advanced economies, the building of clusters requires a developed business environment.

TRANSFORMATION OF THE ECONOMIC SPACE IN ROMANIA CHRACTERISTICS OF EMPLOYED POPULATION

An important role in the emergence and evolution of the territorial disparities is played by the unequal allocation of the economic factors. The transformation of the economic structure of the country, and the technology evolution entailed a higher flexibility of the territorial allocation of the economic factors. The quantity, but especially the quality of the workforce represents one of the most important resources for the development of a country. Even if the statistical regions of Romania have an almost uniform population, their development level, the education and urbanization level, as well as the population structure by age groups indicate a high differentiation, and these contribute in a different manner to the optimal operation of the workforce market.

A general trend of ongoing increase in the rate of occupation of the age group between 55 and 64 years, and that beyond 65 years old, has been seen over the past years. Thus, after the wave of early retirements – within a rather short time –, these age classes increased their share of the total occupied population, from 13.8% (2004) to 16.3% in 2008 (in absolute value, this increase is of 80,000 individuals). This evolution of the working population may be explained by the worsening of the living standard and, especially, by the constant decline in the money revenues of a significant number of the rural inhabitants, who are forced to practice subsistence agriculture. All these trends are also very well illustrated by the fact that the rate of occupation of the population beyond 65 years old is much higher among the rural population (10.8% in 2008), than among the urban population (0.5% in 2008). In 2008, the highest occupational rate can be found in the Northeastern, South, Southwestern and Bucharest regions (over 60%); in the remaining regions, this share stays much below 60%. Outside the capital region, where the higher rates of the occupied population can also be explained by the wider palette of job offers, in the other regions of the country, and especially in the underdeveloped regions, the higher occupational rates are given by the high share of the population occupied in agriculture. To these there is also added the higher proportion of occupied population both from the youth segment (between 15 and 24 years old), and from the elderly group (beyond 54 years old). The lower occupational rate of the central region can be explained by the massive workforce layoffs, due to the restructuring of the heavy and extractive industries (especially in Braşov, Harghita and Covasna counties), whose population contributed significantly not only to the increase in the unemployment, but also to the increased number of retired persons. To these there are also added the higher

values of life expectancy at birth, which favored the extension of the structure by population ages, thus contributing to the increase in the inactive population. These evolutions of the occupied population are very well illustrated in the light of the population occupied in the two environments – in other words, even the underdeveloped regions may be characterized by a high share of the occupied rural population, while in the more developed regions, similarly to the trends in the Western countries, higher rates of the occupied urban population are characteristic.

As regards the education level, a higher rate of the occupied population with average studies can be ascertained; as a positive trend, one can notice the increase in the number of population with more time spent in school, which even exceeds the number of those having only primary education. The regional analysis of the education level of the occupied population reveals even more the differences between the regions: the number of the population with higher education is much higher in the Western and Central parts of the country than in the Southern or Eastern parts. In this context, it is very important to review the rate of occupancy of the younger age groups (15 to 25 years old), because the higher their number, the lower the education level and implicitly, the higher the rate of school abandonment. At the same time, these changes emphasize most the attention given by the households or the national economy to the need to ensure a highly qualified workforce. Nationwide, the rate of occupation of these age groups is 8.3%, however the Southern (9.4%) and Northeastern (9.2%) regions by far exceed this value. The only exception is Iaşi County, which is a university center of tradition, and has a rather high percentage of population with higher education. The smallest values of the rates of occupation of the young population can be found – besides the capital zone (6.1%) – in the Western region (7.4%), which is in close connection with the existence of a more trained population, with a higher education level.

The evolution in time and the changes occurring in relation to the number of the occupied population are best represented by the unemployment evolution, and the evolution of the workforce occupied in the main branches of the national economy. The evolution of the occupancy rates in the three sectors reflects, at the same time, the degree of modernization of the economy. During the transition period, the proportion of the population occupied in industry decreased from 34% in 1990 to 27% in 2000, the remaining active population being rather oriented toward subsistence agriculture, on the one hand, or certain branches of the secondary sector. As a consequence, the share of the population occupied in agriculture increased from 28% (1992) to 41% (2001), and thereafter recorded a significant diminution (27.6% in 2008), without reaching the values recorded in the beginning of the '90s.

At the regional level, the highest values of the population occupied in the primary sector can be found in the Southwestern, South and Northeastern regions (over 35%). These inequalities are much more accentuated if we analyze this index territorially, since in certain counties in Walachia and Moldavia (Giurgiu, Teleorman, Botoşani) the population occupied in the primary sector may reach even up to 50% (Figure 1). In contrast with these counties, the northern part of Walachia, with a much more diversified economic profile, attracted a series of direct foreign investments (Renault– Piteşti, Holcim – Câmpulung-Muscel, Samsung COS – Târgovişte). In a less favorable situation are the rural localities of this area, characterized by a negative migratory balance, and a reduced territorial infrastructure development. Higher proportions of the population occupied in agriculture can be found as well in Olt (45%), Vaslui (46.9%) and Călăraşi (47.1%) counties.

The lowest proportion of the population occupied in the primary sector can be found in the Central, Western and Northwestern regions (between 20% and 30%), to which the Bucharest-Ilfov region (below 5%) is added. At county level, the most heterogeneous is the Northwestern region, where significant differences exist between the two more developed counties of Cluj and Bihor, with high levels of industrialization and urbanization, and the other counties, Maramureş, Satu Mare, Sălaj and Bistriţa-Năsăud, where we find a high share of population occupied in agriculture (over 30%).

The population occupied in industry followed a top-down path, decreasing from 43.1% (1990) to 29.7% (2008). This decrease was more marked in Hunedoara, Gorj, Prahova, Braşov, Sibiu, Caraş-Severin counties (between 20% and 30%).
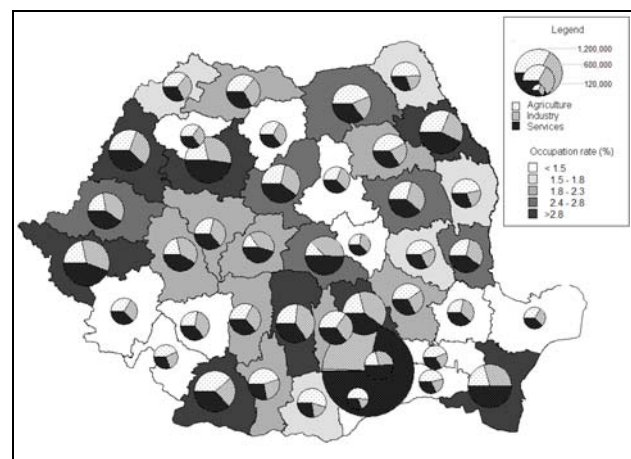
Source: the author, based on the date in the Annual Statistical Bulletin of Romania, 2010 (time series 1990-2008), INS, Bucharest

Figure 1. Share of occupied population in the three sectors of the national economy, in 2008

A review of the Hirschman-Herfindahl index in the beginning of the '90s indicates an increasing trend in the territorial distribution of the population occupied in

agriculture, followed by stabilization, especially at the beginning of the new millennium.

If during the socialist period the agriculture was concentrated only in certain territories, today the share of the population occupied in the primary sector has balanced out, a more or less intense increase in this respect being recorded in the most counties. Even if the territorial leveling of the population occupied in agriculture entailed the diminution of the disparities existing for several decades, in the global context that indicates even a deepening of the inequalities. The decrease in the Hirschman-Herfindahl index of the population occupied in industry is closely connected with the decline of the large industrial enterprises" concentrated in a single place", which mostly affected Braşov, Gorj, Hunedoara, Prahova, and Galaţi counties. The increase in this index at the beginning of the new millennium can be explained by the development of the civil engineering industry, unequally allocated, which again contributed to the deepening of the territorial disparities. The fact must be noticed that the civil engineering industry underwent a powerful boost (increasing between 25% and 30%), especially in Iaşi, Cluj, Sibiu, Bucharest, Bistriţa-Năsăud and Satu-Mare counties.

Table 2. Spatial concentration of population employed in the main branches of national economy

| 1996	1998	2000	2001	2002	2003	2004	2005	2006	2007	2008
Agriculture										
0.0271	0.0273	0.0273	0.0273	0.0272	0.0272	0.0272	0.0271	0.0271	0.0273	0.0273
Industry										
0.0368	0.0380	0.0367	0.0383	0.0372	0.0369	0.0402	0.0381	0.0379	0.3779	0.0377
Services										
0.0448	0.0480	0.0485	0.0505	0.0515	0.0537	0.0503	0.0558	0.0574	0.0592	0.0646

Source: authors, based on the Tempo Online data

At the same time, an increase trend can also be noticed as regards the index of concentration of the population occupied in services, especially as of 2001. Besides the positive effects of the direct foreign investments, an important role in the growth of services in Romania was played by the small and medium-sized enterprises, which absorbed a large part of the population laid off from industry.

As we have already seen, the tertiarization trend is much higher in the Transylvanian regions than in the Eastern or Southwestern zones of the country, but the strong differentiation within the same region is determined by the population's characteristics, the infrastructure development level, and the network of localities. If the share of the population occupied in the tertiary sector is rather homogenous in the Western region (in each county this sector comprises 30-40% of the active population), in the Northwestern region one can notice a strong differentiation between Satu Mare county, dominated by the primary sector (more than 35% of the population is occupied in this sector; 30% of the remaining population is occupied in industry, and other 30% in services) and Cluj county, where the tertiary sector seems to play the biggest role (according to the last statistical data, 47.6% of the county population is occupied in this sector). Such a differentiation also occurs in Harghita and Braşov counties, the first one absorbing a large part of the population laid off from industry, and creating an intensely agrarian society, while the last one has a significant tertiary sector. Thus, the diminution of the population occupied in various branches of the national economy did not occur uniformly; in certain sectors, such as the extractive and processing industry, transport, and hotels and restaurants (due to the taking out of service of certain hotel chains inconsistent with the measures provided for by the international offices), a significant diminution was recorded, while the proportion of the population occupied in the domains of trade, financial intermediation, public administration, education and, last but not least, agriculture increased considerably.

TERRITORIAL INEQUALITIES OF UNEMPLOYMENT

Besides the differentiations occurred in the structure of the occupied population, the marked increase in the unemployment entailed the speeding up of the regional disparities, at the same time creating a new dimension of territorial inequalities. The unemployment rate reached its climax in 1999, when the registered number of unemployed people was over 1 million. The highest unemployment rates are recorded in the Northeastern, South and Southwestern regions (over 6%). There is a reverse correlation between the unemployment rate and the population occupied in the tertiary sector ($r = -0.497$), while the correlation with the share of the population occupied in agriculture is direct and weaker (0.337).

The lowest values of the unemployment rate are recorded in Bucharest (1.6%), the Northwestern (3.3%) and Western (3.8%) regions, especially in the border counties, with a much more diversified economic structure (Figure 2)
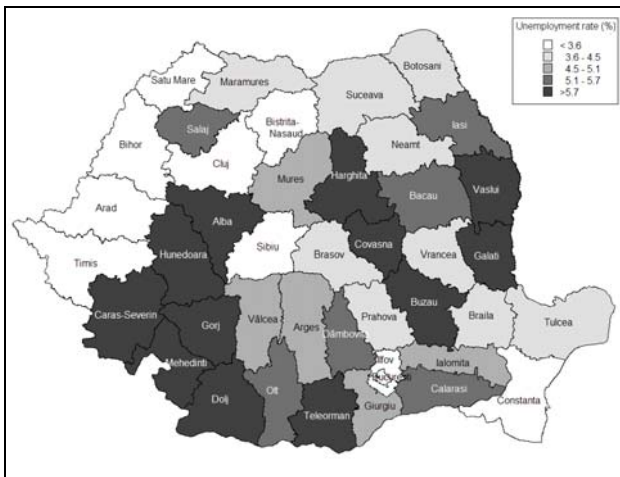
Source: authors, based on the Tempo Online data (2008)

Figure 2. Territorial unemployment differences

Starting from the fact that there is a rather close correlation (r = 0.506) between the unemployment rate and the GDP per capita, it is important to verify the situation of the counties contingent upon the unemployment rate, and their positions in the spatial development structure. As also follows from Table 3.

Table 3. The distribution of counties based on the GDP/capita and the unemployment rate

Unemployment Rate (%) in 2008	GDP/Capita (PPC) In 2007			
	High	Medium	Low	Very Low
very low	Bucharest Ilfov Cluj Bihor Timiş Arad Constanţa Sibiu	Bistriţa-Năsăud	Satu Mare	
low	Braşov	Vâlcea Mureş	Prahova Tulcea Brăila Maramureş	Vrancea Suceava Neamţ Botoşani
medium	Argeş Alba	Caraş-Severin Sălaj	Dâmboviţa Buzău Iaşi Bacău	Olt Ialomiţa Giurgiu Călăraşi
high		Gorj Covasna Harghita	Hunedoara Mehedinţi Dolj Galaţi	Vaslui Teleorman

Source: authors, based on the Tempo Online and Eurostat data, 2007

Bucharest, Ilfov, Cluj, Bihor, Timiş and Arad counties are the dynamic regions of Romania, and the last ones in this hierarchy – that is to say, Vaslui and Teleorman counties – are the least developed counties of the country, both socially and economically. Teleorman County has a multiply unprivileged situation, since both the demographic, and the economic and social indices (illiteracy rate, population occupied in agriculture) record low values. In Vaslui County, the population structure by age groups is still favorable; however, the education level

is very low, and the territorial infrastructure is underdeveloped.

All these reviews indicate that, actually, the unemployment generalization entailed the emergence of long-term unemployment, which most affects the male urban population (in 2008, the unemployment rate referring to this class of individuals was 2.9%), but the most vulnerable group remains the young population, between 15 and 24 years old, in relation to which the unemployment rate was 18.6%. If we perform a regression analysis, where the population unemployment rate is the dependant variable and the annual GDP growth the independent variable, it follows that GDP growth by 1 percentage point contributes to a decrease of 0.21 percentage points in the unemployment rate related to the population with higher education.

DEVELOPMENT LEVEL OF ROMANIAN REGIONS BASED ON THE GROSS DOMESTIC PRODUCT (GDP)

A particular feature of the regional development in Romania is the mosaic spatial structure of the countries, with the relatively developed regions coexisting with the underdeveloped ones, a fact explained as well by the localization of the natural, human, and infrastructural resources, their share varying from one region to another. The changes that occurred during the transition period led to increased inequalities and changes in the spatial structure. In the mid-'90s, the GDP growth by inhabitant was much affected by the economic decline of the whole country. Toward the end of the same decade, the stabilization of the macroeconomic processes, the consolidation of the direct foreign investments and, last but not least, the inflation reduction by 16% contributed to a large extent to the growth of the GPD per capita, with a growth rate of as high as 5.7% being reached in 2001. Even in these conditions of positive changes, the GDP per capita remains much below the average EU values, and only the capital, Bucharest, shows a higher economic performance, occupying a distinct place in the spatial economic structure of the country: its economic contribution, at 23% in 2007, exceeded the national average by two times, whereas the population concentration represents only 9%. At the same time, here are also located the largest number of small and medium-sized enterprises (21.5% of the total SMEs); the country's capital stands out both in terms of the high number of employees in the R&D sector, as well as of the high concentration of direct foreign investments.

This special evolution of the country's capital contributed even more to the accentuation of the existing economic inequalities. If we analyze the Romanian counties from the perspective of their share from the average country value, the territorial disparities become even more

conspicuous: the differences between the privileged and unprivileged counties deepened. While in 1998 this difference was 3:1, in 2007 the inequalities increased to almost 5:1.

Thus, although until the beginning of the new millennium the existing inequalities remained the same – as one can see from the review of the Hoover index and weighted relative average deviation – after this period, instead of a territorial leveling we witness an even more marked phenomenon of spatial polarization phenomenon (Figure 3). All these processes were influenced to a great extent by the restructuring of industry in the second part of the '90s, when the counties with significant mining industry, as well as the mostly agrarian and intensely ruralized counties in the southern and eastern parts of the country entered a decline, and the localities with a more diversified structure and more developed territorial infrastructure consolidated their positions in the economic area of the country. All these changes are well expressed as well by the annual GDP growth, which evidences a higher increase in the Western regions, as well as in the counties located north of the capital, and a slower one in the counties from the Southern and Eastern parts of the country.
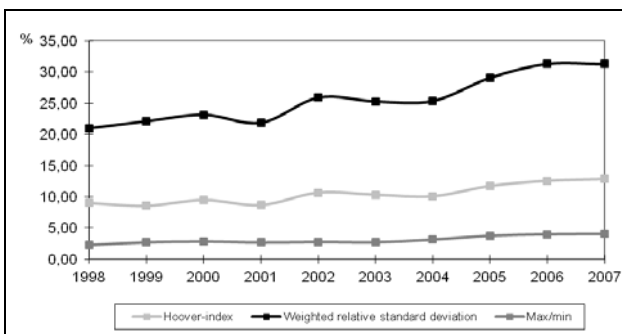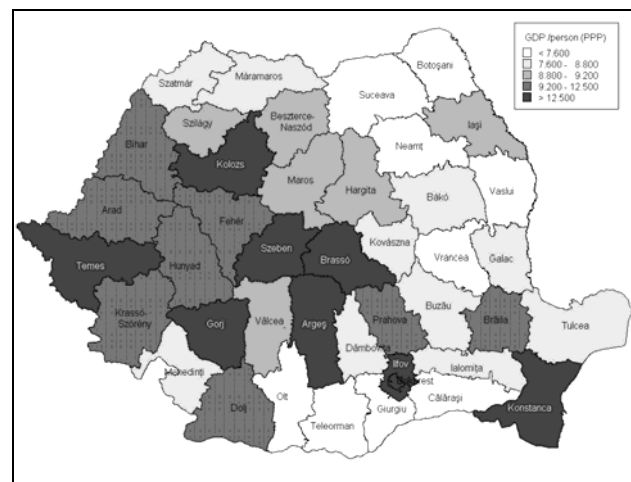

Source: authors, based on the Eurostat data

Figure 3. Territorial Inequalities Based on GDP/Capita

If we take into account the ratio between the maximum and minimum GDP values, we can state that the last years have contributed greatly to the change in the position of the counties in the development hierarchy; however, the general trend in the context of the development level has remained the same: the peripheral regions did not manage to strengthen their positions in the spatial economic structure, while the regions with a higher development level since the past decades strengthened their position within the new economic context. The least developed counties continue to be those in Moldavia, followed by Oltenia, and partially by Walachia, while the winners of the transition period may be generally considered the Transylvanian counties. The development of the Moldavia counties is strongly influenced by their dependency on agriculture, a situation aggravated as well by their location in the proximity of the borders with Ukraine and Moldavia. At the same time, in the case of the counties from the southern part of the country,

agriculture is the main economic activity. All these actually illustrate that, in the long run, the territorial development differences seem to remain stable: the positional changes emerge rather in the case of the more developed regions.

A higher level of the GDP per capita is recorded in the Bucharest municipality, and in the majority of the Transylvanian counties (Figure 4). Higher GDP/capita rates can also be noticed in the case of Gorj, Vâlcea, Argeş, Prahova and Constanța counties, which strengthened their position within the spatial economic structure of Romania after 1989 as well. As a matter of fact, Oltenia and Walachia are characterized by a dual spatial structure: the counties located to the north of these regions have a more diversified economic structure, as opposed to the weaker development of the counties in the southern part.

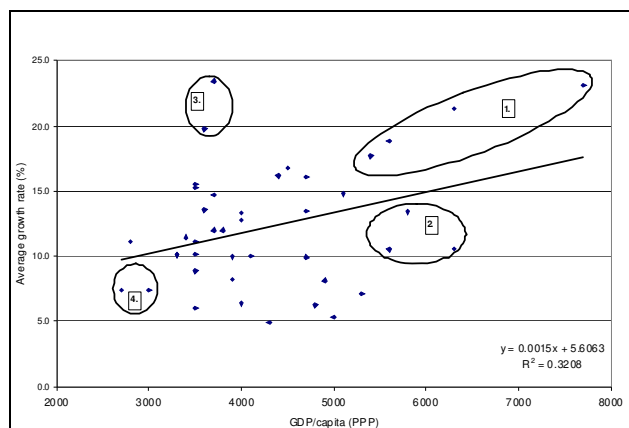

Source: authors, based on the Eurostat data

Figure 4. Territorial allocation of counties by GDP/capita

If we take into account the annual GDP/capita growth rate and the value of the economic performance of each county, several county groups can be distinguished (igure 5).

The first group includes, besides the country's capital, Ilfov, Timiş and Cluj counties – as a matter of fact, those counties which stand out due to their higher development, also doubled by GDP growth. These counties managed to adapt themselves the best to the changed economic social conditions, and better integrate the new elements of the territorial restructuring forces. These territories constitute the most dynamic poles of Romania, where the accumulated human capital, high urbanization, and high rate of population occupied in the tertiary sector will manage to support medium- and long-term territorial development.

The second class includes those counties where, although the GDP rate is high, its increase during the reviewed period was smaller. This class includes Constanța, Braşov and Gorj counties, where the social conflicts occurred pursuant to deindustrialization, and the slow privatization processes entailed a more moderate growth in the territorial GDP.

A rapid convergence process can be noticed in the case of the third group (Alba and Hunedora counties), since over the last years the development of these counties was much influenced by a high increase in the GDP rate. Keeping in view that the economic growth of the afore-mentioned counties began from a lower level, this fact entails a much more visible shift of position.

Source: authors, based on the Eurostat data

*Figure 5. Correlation between GDP and the annual growth rate*

The most unprivileged counties are included in the fourth group, being unable to place themselves on an ascending development path, and thus remaining the most underdeveloped areas of the country ever since the last decades. In question are Botoşani, Vaslui and Giurgiu counties.

FOREIGN DIRECT INVESTMENTS

Currently, direct foreign investment (DFI) represents one of the driving forces of Romania's development, since the invested capital significantly contributes to the economic growth of the country. The role of foreign investment does not require too many explanations; besides the provision of capital, these contribute not only to increased technological performance, but also to the high qualifications of the workforce. At the same time, direct foreign investments represent the main form of expression of globalization (Guran, 2002).

DFI evolution has undergone high oscillations, and one of the factors which adversely influenced the attraction of direct foreign investments during the '90s was the very general state of the national economy: high inflation, with adverse effects on economic growth, that being supplemented as well by a very slow pace of the privatization process and industry restructuring. Later on, the economic growth entailed increased DFI. Thus, while at the beginning of the new millennium the cumulated value of DFI hardly reached 100 million euro, this value increased to 5.2 billion euro in 2005. This evolution is closely connected with the improvement in the business environment, the stabilization of the economic social

sphere, and the accession to the European Union. While Romania is ranked among the last places in Europe as regards DFI value, nevertheless it ranks first out of the seven Southeastern European countries in this respect. The territorial allocation of DFI displays significant variations between counties and regions. In this respect, the GDP/capita and DFI/capita ratios remain eloquent, these variables expressing in a conclusive manner the development of each individual county (Figure 6). Out of the 12.8 billion euro subscribed share capital until the end of 2005, more than half (7.6 billion euro) is concentrated in the Bucharest-Ilfov region, followed by the South and Southeastern development regions. Oltenia and Moldavia rank in the last places here, as well as in other development indices
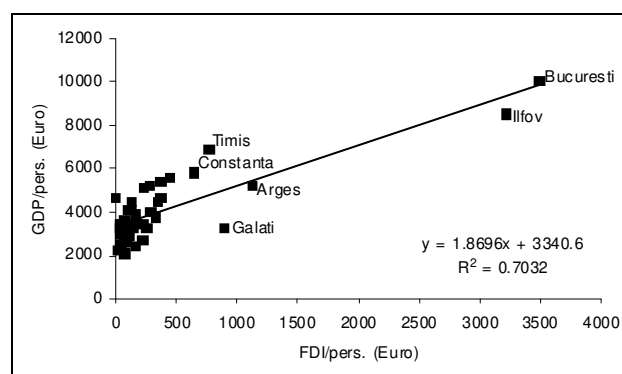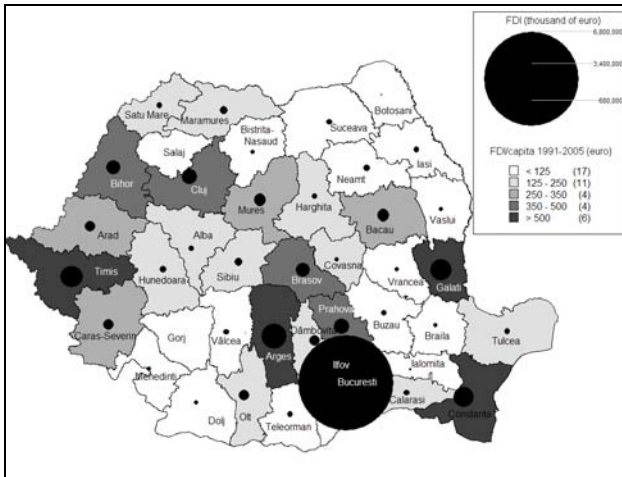

Source: authors, based on the data published by the Romanian Agency for Foreign Investments, Eurostat

Figure 6. Correlation between DFI/capita and GDP/capita, in 2006

The territorial allocation of the trading companies indicates an even more marked differentiation. Between 1990 and 2005 119,120 trading companies were established, of which more than half (64,507) are in Bucharest-Ilfov, followed by the Western, Northwestern and Central regions, and in this respect the last in this hierarchy are the Southwestern, South and Northeastern regions. The types of investors are also different, from one region to another: while the Western and Northwestern regions attracted a very large number of companies with foreign participation (especially European), the country's capital, as well as the Southern and Southeastern regions attracted several investments in greenfield initiatives, especially from non-European investors.

The territorial allocation of the FDI per capita at the county level indicates highly marked differences between the Western and Eastern parts of the country (Figure 7). Similarly to the GDP allocation per capita, several counties with higher FDI values can be distinguished: these are the Western counties, as well as the Eastern Transylvanian ones, continuing toward South with Argeş, Prahova and Ilfov counties, as well as Bucharest municipality. In the Eastern part of the country, only Constanţa and Galaţi were attractive for a significant

volume of FDI. As one can see, FDI has a high concentration in the counties having higher development potential; the counties in the Northern half of Moldavia, those in Oltenia and Eastern Walachia record very low FDI values/capita (below 1,550 Euro). Bucharest is the preferred target of the investors: more than 50% of the foreign investment and over 20% of the registered small and medium-sized enterprises are concentrated here.

Source: authors, based on the data published by the Romanian Agency for Foreign Investments, 1990-2005

Figure 7. Allocation of counties by Foreign Direct Investments (FDI)

Among of the decisive factors entailing the localization of the foreign investments are the accessibility, distance, and last but not least, the geographic position. If we correlate the FDI and the geographic position of each county, determined by the longitudinal coordinates, the connections are insignificant, while the correlation with the latitude coordinates (y) is -0.275. However, if we take into account only the counties actually located in the Western part of the country (Satu Mare, Bihor, Arad, Timiş, Caraş-Severin), we obtain a correlation of 0.542 with the longitudinal coordinates.

As regards the allocation of the investments by various branches of the national economy, industry remains the preferred sector of the foreign investors, a fact explained by the high value of the share capital subscribed here in the period 1991 to 2005, this representing 52%, followed by professional services, with 21.7%, trade, 14.9%, transport, 7.1%, tourism, 1.8%, civil engineering, 1.7%, and agriculture, 0.9%. The fact that several investors head toward industry can also be explained by the lower land prices; notwithstanding the fact that the infrastructure is underdeveloped, there is a qualified workforce and a large tradition in this domain. The fact must be noticed that investment in industry is more and more important due to the revamping needs, which also explains the high expenditure in this sector (almost 70% of the investments were intended for revamping, according to the Romanian Agency for Foreign Investments, 2005). All these point to the fact that the investors prefer those counties where the

infrastructure is well developed and, implicitly, is highly accessible, where the workforce is qualified (not necessarily cheap), where there is a large tradition in the domain of the industrial products, and the social environment is favorable to foreign investors.

CONCLUSIONS

In conclusion, we may state that the development policies of the last fifty years have had the positive effect of re-leveling the regional hierarchy, without bringing any spectacular reversals in the hierarchy of the regions. Thus, the territorial structure is currently marked by the clear dominance of Bucharest (logically, the capital also having the largest agglomeration economy in Romania), and certain industrial regions which have stood out ever since the first industrialization phases: Banat (first of all Timiş county, Arad and Caraş-Severin being under comparative regress), the Hunedoara – Sibiu – Braşov – Prahova Valley axis, the Lower Danube region (Galaţi – Brăila), and the Bacău–Neamţ grouping. The Dâmboviţa – Argeş axis, as well as Constanţa, were gradually added to these in the aftermath of the World War II. At the opposite pole, the same as 100 years ago, is Oltenia (notwithstanding the fact that on the whole it moved ahead of Moldavia, but not the Western part of the latter!), Moldavia (its Eastern and Nothern part), the Northern part of Dobrogea (Tulcea county), and certain areas of Transylvania (Sălaj and Bistriţa-Năsăud counties). Certainly, it is hard to see whether, and by how much, the interregional difference amplitude was reduced.

However, it is a certain fact that the development regions reproduce the regional differences established in time, statistically evidenced at the county level as well. Thus, each table indicator reveals the existence of certain development differences, which overlap over the borders of the cultural historical regions. Moldavia remains on the underdevelopment pole (Northeastern Development Region). Dobrogea, Walachia and Olteia (Southeastern, South and Southwestern Development Regions) have an intermediary position, while Transylvania, Banat and Crişana (Central, Western and Northwestern Development Regions), together with Bucharest, make up the development pole. The rather lower values of the indicators in the North-Western region are explained by the traditionally lower development level of Sălaj and Bistriţa-Năsăud counties.

The analysis of the changes occurring in relation to the demographic and economic potential of Romania leads to the conclusion that, instead of a diminution of the existing disparities, lately we are confronted with an ongoing increase in these. In a number of peripheral zones, the secular migration of the population has entailed the emergence of multiple disadvantages, as evidenced both by the change in the structure by age groups, as well as by the decline of certain regions, in the

absence of a coherent development. The birth rate diminution and the gradual aging of the population have changed to a large extent the population structure by age groups, and have had a major impact both on the organization of the economic and social system (education, pension system), and on the territorial disparities.

The evolution of the economic area in the transition period reveals no major changes as regards the spatial structure of Romania; the polarized regional development model strengthens more and more, dominated by the country's capital, with the highest level of economic and social development, to which there are added those counties having rather large urban centers, and a more diversified economic structure (Cluj-Napoca, Timișoara, Constanța); the weaker harnessing of the economic and human potential is characteristic of the peripheral counties, with a low urbanization level. In these areas, the accumulated social and economic dysfunctions were even more accentuated by the demographic ones – especially in the Southern Walachia counties – the youth migration contributing, for several decades, to increased demographic aging, which together with the lower education of the inhabitants, entailed the delineation of some zones with multiple dysfunctions. From among the new factors leading to a more marked differentiation of the regional development over the last 20 years, we remark here on the increase in direct foreign investment, the strengthening of the position of the small and medium-sized enterprises, and research and development activities. All these factors have had territorially selective effects, being especially concentrated in the developed regions.

The analysis of Romania's position within the spatial structure of the European Union emphasizes the peripheral position of the Romanian regions, as well as the existence of certain development gaps that are still significant, especially as compared to Central and Western Europe. On the whole, the analysis of the disparities with the aid of several mathematical statistical indices allowed the highlighting, at the European regions level, of a process of diminution of the territorial inequalities. Therefore, in the future we can expect to see a gradual diminution of the existing development differences in relation to the Romanian regions.

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Elements of Social and Solidarity Economy (SSE) in the Hungarian Local Development

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SUMMARY

There are a wide range of local Social and Solidarity Economy (SSE) initiatives in Hungary. Initiatives are aimed at rural development (LEADER), community development, ecology, employment and settlement rejuvenation. Participants are not always aware whether they are more attached to the concept of SSE than that of Local Economic Development (LED), or vice versa. No national platform encouraging the identification of shared interests and goals has been established yet. Perhaps, this is the very reason why there has been no breakthrough in government policies with a neoliberal bias. After the completion of a few non-profit employment programmes, interest in the development of local community may, going forward, bring about significant changes that can create a social and economic environment that goes well beyond tenders and facilitates self-reliance. However, only if we are familiar with the basic principles and systems of the SSE and LED can we utilise the benefits arising from local community economic development. Furthermore, in order to be able to use external help efficiently and conduct domestic and international discussions, we have to identify our position along the global spectrum.
Journal of Economic Literature (JEL) code: G21, G35, G00, G10, G15

1. INTRODUCTION

A quest of the future paths of regional development and especially the opportunities of convergence that disadvantaged regions may have inevitably results in looking for models that are alternative to earlier models of development that led to the divergence of these regions. Connecting the social economy representing a social alternative and local economies representing a regional alternative to global competition may open up new ways of developing peripheries. However, the two closely related concepts find their way into practice in rather diverse ways in the various geographical regions. In the midst of the global spread of local development as well as social enterprises, and with an increasingly wide range of global interactions between actors, it is worth identifying and taking note of both similarities and differences. In particular, the shaping of the policies of an enlarged European Union and wider co-operation between the civil actors of the Member States also require raising the awareness of varying interpretations and the differing careers, interests and values determining the contents underlying such interpretations. This paper analyses the characteristics of the emergence of a social and solidarity economy within local economic development in Hungary.

2. RELATIONSHIP BETWEEN SOCIAL AND SOLIDARITY ECONOMY (SSE) AND LOCAL ECONOMIC DEVELOPMENT (LED)

With globalisation advancing, the challenges that gave rise to the emergence of the SSE in its original form in the 19th century have also become global, with new components taking an increasingly high profile. Today what is called a new social economy is a fact of life (Reynaer 2008). One of the characteristics of this type of economy is that it endeavours to mitigate economic and social problems that have become global. Unemployment, pollution, food safety, the depletion of energy resources, climate change, urbanisation issues, poverty, migration and the increasing importance of IT are global issues that cannot be ignored and that are unmanageable within the framework of currently existing structures.

Although the SSE varies by continents and countries in terms of both content and quantity, what we cannot fail to observed is an undisputable pattern in the sector's inexorable expansion.

The first analysis of differences in the SSE by global large regions published in technical literature was an analysis of the North-South dimension (Favreau 2000, Tremblay 2009). Notwithstanding the differences, the

above analyses agree on the global unity of the SSE. Offering a more detailed and subtle approach, an analysis along the centre – semi-periphery – periphery division, while acknowledging that the fundamental objectives and principles of the SSE are identical, reveals further structural differences in the manner in which the SSE emerges, as well as its depth and activities. The weight attached to global challenges – due to diverging economic and social characteristics – varies from one global large region to the next. As a result of the different focuses of the challenges, expectations from the SSE also differ. Accordingly, objectives, target groups, typical activities and institutional structures vary by global large regions.

Centres: Unemployment is rampant again. As both the concept and the financial means of the welfare state have eroded, the state can no longer protect its citizens. Once generously provided public services are now frugally meted out and are unable to catch up with an increasingly diverse demand.

In the SSE civilians exercising their rights granted under democracy with a history of several hundred years seek to provide remedy when the market and the state fail. They undertake to provide retraining courses, reintegrate the unemployed into the labour market, help disadvantaged urban and rural regions converge and provide services for groups with special needs (e.g., those with disabilities, the homeless, people with rare diseases, immigrants and cultural minorities) (Mendell 2003; Reynaer 2008). The economic associations of farmers and craftsmen are often not considered to be part of the SSE due to their for-profit nature and their activities, over which members can no longer exercise control. Only social associations with disadvantaged persons as their members qualify (Defourny & Develtere 1999). Governments are increasingly aware, albeit to a varying extent depending on the underlying ideologies through which they operate, of the importance of the role that the SSE plays in improving the quality of life and mitigating the damage that a neoliberal economy has caused. Nevertheless, the SSE is still thought of as a social rather than an economic issue. It is considered to be a supplement rather than an alternative to the neoliberal economy.

Semi-peripheries: Although the fundamental infrastructure of public services is in place, some social groups have limited access to it. The formal economy still has unmistakeable reserves, which can, in part, be mobilised through the development of infrastructure and human resources. There is a significant gap between the countries that are no longer on the peripheries and the countries of the former socialist bloc. From the perspective of the SSE, the former resemble (have more in common with) peripheries, the latter, due to the legacy of their communist past, are in a special situation.

Peripheries: Not even the basic infrastructure of public services is available. Access is limited to even that which is available. There are fundamental deficiencies regarding health care, education and public utilities services. Furthermore, the absorption capacity of the formal economy is weak compared with the labour supply. The informal economy is strong and extensive, and due to the weaknesses of the public and private sectors, not too much hope can be pegged on an upswing in the formal economy. Both the number and the rate of those living under the poverty line are extremely high, and access to even staple foods is a problem. Self-help campaigns are inevitable.

The SSE has been advancing mainly in the health care sector, education, and agricultural and craftworks associations that facilitate reintegration into the economy (cooperation in regard to irrigation, seed banks, community kitchens, lending and selling). There are quite a number of such organisations that do not focus exclusively on one area. Rather, they seek to satisfy people's typical needs. Governments' attitudes are diverse. Some, accepting the recommendations of various world organisations, welcome a strong SSE; others, unwilling to admit their impotence or fearing political conflicts, restrain or even persecute the SSE movement. And also, there are countries where national independence and the SSE go hand in hand (Fonteneau & Develtere 2009).

Centres and the inner peripheries of semi-peripheries share the characteristics of peripheries.

The geographical differences of the SSE can be identified, in part, along a global rift between the centre and the periphery and, in part, on the basis of the resultant diverging needs. The global centre-periphery relationship also exhibits differences that stem from the various stages of social change. Assuming that the progress of civilisation is roughly similar in the various corners of the world and that the individual eras of social development have some fundamental characteristics in common, the SSE is different in traditional, modern and post-modern societies. This also leads to fundamental differences not only in objectives, but also in the social and economic integration of the SSE. A good example of the institutionalisation of the SSE is what has happened in the developed world, e.g. in Canada, most notably in Quebec. Case studies and analyses reporting SSE initiatives and their integration into government policies reflect the increasingly important role that the sector plays in the economy of developed countries (Fonteneau & Develtere 2009, Laville, Lévesque & Mendell 2005, Annis 1988, Frota 2008, Sikka & Saraswat 1993).

Social enterprises are increasingly visible in the European economic space and are aspiring to become vocal in EU policies as well. Typically, as a response, some measures have already been taken in business and employment policies; the emergence of the SSE in rural policy is also inevitable.

Table 1. An overview of the objectives of the SSE arising from global challenges in a centre-periphery context

Global challenge	Centre	Periphery
Unemployment	Mitigation of structural unemployment – labour market reintegration, assistance with starting a business Compensation for the government's shedding off its role as an omnipotent supplier or goods and services, labour market services Employment opportunities for women, the young, old-age pensioners and those living with disabilities Exploration of new areas of the economy In a formal economy	Increasing low employment potential – comprehensive labour market integration, encouraging self-employment Penetration of the non-profit sector into the traditional areas of economy Exploration of new areas of the economy An alternative to informal economy
Food supply	Assurance of food safety, restraining overconsumption	Assurance of quantity and nutrient content
Housing, urbanisation issues	Environment friendly housing, rejuvenation of housing estates Resolving the housing problems of the homeless Exodus from cities, suburbanisation and re-ruralisation	Provision of safe housing on a mass scale, provision of public utilities, elimination of ghettoes Inflow into cities, deserted rural regions, overcrowded cities
Environment protection	Disposal of earlier significant emissions, recycling, reduction in the ecological footprint	Prevention, preparation, frugality, prevention of the removal of natural resources
Energy shortfall	Use of alternative energy, frugality	Limitation on the extraction of fuel, forward-looking use of income, frugality
Diseases, epidemics	More comprehensive coverage by health insurance, special services	Provision of healthcare services, protection against epidemics
Migration	Acceptance and integration of immigrants	Mitigation of emigration
Info communication	Involvement of special target groups, assurance of community access, a higher number of opportunities of utilisation	Deeper IT penetration, general development of IT literacy
Uniform culture, disintegration of communities	Special training, revival of traditions, community development	Education, protection of traditions, networking, strengthening of communities

Source: edited by the author

Local economic development and the SSE spring from one and the same roots, both prioritising social goals; nevertheless, they do not overlap completely. The re-discovering of local economies and the localisation of economy are a protection mechanism for losers of globalisation; furthermore, the availability and utilisation of local, individual and specific attributes and values seem to have become the token of a successful entry into global competition. A widespread interpretation according to which 'local economic development (LED) is an intentional intervention by local communities in economic processes in the interest of sustainable development' (Lengyel 2010) covers both trends. 'The determination and implementation of the trends of economic development adjusted to and relying on local characteristics and resources may play an important role in creating the economic base of the regions' (Czene & Ricz 2010: 16). LED does not confine itself to the non-profit sector and the SSE also has some initiatives that go beyond locality. Components in the common part of the two trends include, e.g.,

1. Social enterprises: These become important especially where there are no for-profit businesses, but where there are resources and a significant unemployed labour force available for use;
2. Prioritising of local products: besides being beneficial to local businesses, this is also the preferred solution for ecological reasons (reduction in the distance of transportation and in the use of chemicals, avoiding the use of GMOs); furthermore, the interests of consumers also support this solution;

➢ direct sale by producers presupposes the creation of local markets dispensing with intermediary trade, the laying down of the conditions of sale at the place of production and the visibility of local products;
➢ the strengthening of regional and local subsistence through ensuring the capacity and co-ordination needed for satisfying local consumer demand with an increasingly wide range of local products contributes to the livelihood of the locals for two reasons: it provides quality goods for them and increases local revenues, which, in turn, may lead to the further expansion of the local market;
➢ socially conscious shopping also contributes to keeping wealth in situ and the strengthening of local producers.

3. Services satisfying local needs/demand: Social, personal and household care (childcare and elderly care, cleaning, garden care, maintenance, beauty parlour services and massage, etc.) and activities related to the general operation of a given place (maintenance of public spaces, public utilities, community transport and operation of communication channels) offer employment locally, while improving local living conditions.
4. Fair financing: Proposals aimed at addressing the scarcity of capital, which is the most serious problem for residents, seek to alleviate (at least partially) the interest burden and offer cashless solutions.

➢ 'Micro-loan circles' can help micro-enterprises have access to micro-credit facilities under favourable terms and conditions that do not otherwise meet banks' standard lending criteria.

➢ Bartering: under this cashless, labour-for-labour scheme, even those who could not otherwise afford to do so can have access to certain goods improving the quality of their lives; they offer the type of labour that others look for and are prepared to pay for.

➢ This is suitable for invigorating local markets and strengthening local identity and the image of the locality.

5. CSR: This is not directly related to SSE; it only has a relevance to SSE in terms of its basic principles; nevertheless, it can be a major source of help from external and for-profit economies.

Social capital, i.e. trust and networks, plays a dominant role in each of the above components.

Naturally, local social and economic space affects potential local responses to global challenges and, within that, the emergence of the SSE.

The local conditions of the SSE can be interpreted in the context of local labour force, local needs, civil society and communities.

In local societies embracing or rather 'generating' the SSE, it is mainly the characteristics of culture (values, norms and rules) that vary in space; as a result, the informal economy, the level of development of civil society, social inclusion, social capital and the type and strength of democracy also vary by regions.

The operational SSE also affects its immediate environs. This is not only because often the targeted economic activity is aimed at the transformation of the physical environment, but also because the resultant change in human and social resources influence the entire economic context.

Spatial differences may lead to the emergence of diverse activities, methods and institutional structures. In this respect, differences arising from different natures of urban and rural space are especially interesting. General differences between the town and the countryside, i.e., differences that go beyond the regional centre-periphery dichotomy, can be analysed along (1) size, scale and concentration (2) proximity to nature and humans (communities/traditions) and (3) cultural and lifestyle characteristics (Tonnies 1887-2002).

In the rural space the SSE will inevitably require co-operation at a regional level. This is how the size and concentration guaranteeing economic viability can be provided. The relative strength of traditional communities is definitely beneficial to the social aspect; however, close-knit networks, the smaller clout of civil organisations and mistrust in novel things may hinder progress.

In the urban space a more diverse selection of available labour, unsatisfied needs in a market-worthy size, the level of development of civil organisations, open

networks as well as a readiness to embrace novel things support the economic aspect of the SSE. Potential sources of difficulty include mistrust hindering inter-sectoral co-operation, a more acute difference in interests and human isolation. Closed communities in cities and towns have shared characteristics with those in the rural space.

Table 2. Conditions of the SSE in urban and rural spaces

Conditions	Urban spaces	Rural spaces
Labour force	Larger concentration, a wider selection of trades and professions	Smaller concentration, a more modest selection of trades and professions, commuting – demand for transport infrastructure
Needs	More differentiated needs above the threshold of economies of scale	More uniform needs below the threshold of economies of scale
Resources	Impact of agglomerations, diversity, R&D centres, a dense system of networks, innovation, flow of information	Proximity to nature and humans, traditions, isolation in terms of information
Communities	Organised along personal and business interests, density, a wide varieties of prospective business partners, open system of networks, mistrust in existing establishments	Traditional communities (family, church, school, workplace), a limited number of prospective business partners, mistrust in novel things
Democracy	Longer experience in how to abide by the rules of democracy, more rebellious attitudes, more diverse business interests, more sophisticated structures, established channels of interest representation (advocacy)	Respect for traditions and authority, the importance of the role of 'leaders', less experience, simpler structures, narrower channels of interest representation (advocacy)

Source: collated by the author

The extent to which the above urban-rural dichotomy prevails is largely subject to local social structures. Therefore, the above interpretation is valid in a given phase of development of modern societies. Some researchers claim that the rift between the town and the country no longer exists in post-modern societies. Citing examples in the UK, Scott et al. challenge the urban-rural dichotomy (Scott et al. 2007). Others, though noting that urban space has been penetrating into rural space, argue that in post-modern societies differences between the two types of settlement that allow two different lifestyles must be preserved (Woods 2005).

3. Hungarian Characteristics

3.1. The legacy

In state socialism, practically none of the conditions for local development existed. Limited market conditions and state control over the market alone hindered the emergence of local markets. Furthermore, the allocation of development funds in a central redistribution process rendered the accumulation of local resources and their mobilisation for development purposes impossible (Vági 1982). Under the rules of the planned economy, central redistribution was based on central planning and, within that, on the fact that the premises of business activities were assigned centrally. For a long time, spatial policy was subordinated to industry policy (Enyedi 1997). Regional identity was an unwanted phenomenon in a centralised state, and was impossible to strengthen due to the absence of autonomy linked to regions and locations and an extensive circle of regional actors (Pálné 1993). Local initiatives could not come into play because of the total centralisation of development decisions and a bureaucratic approach to decision making. The monolithic approach to development and the authoritarian hierarchy of the totalitarian state did not tolerate the strengthening of local communities. Rather, it outright prevented it (A. Gergely). Districtification added to the fragmentation of smaller regions and reduced room for manoeuvre for the smallest settlements to zero (Beluszky & Sikos 1982). Ideological homogeneity and the scarcity of information preventing the spread of foreign examples and models hindered the strengthening of the human aspect of local development and preparation for the changes already in the making.

Soft dictatorship, the depletion of the resources that had financed top-to-bottom developments, the fact that the adverse impacts of earlier developments had come to light, and increasingly vocal and feisty demands for democracy around the end of the Kádár regime also set a few processes in motion in Hungary that were beneficial to the conditions of local development. Such processes included, inter alia:[1]

1. Localisation and awakening of culture: Community development and community education relying on the active involvement of citizens evolved in the 1980s from former popular education, which channelled the ideology of the single party state to the masses and home-delivered 'elevated culture'. The manner of transformation facilitated and promoted the rediscovery of national heritage, the revival of popular culture 'resuscitating' local traditions, and the formation of small communities. The best terrain for community development was local development based on mainly UK and Danish patterns. Culture played an important role in the establishment of associations and clubs from the early 1980s. The party state was of two minds about new community associations. On the one hand, it provided definite support, hoping that local potential could supplement the eroding resources of an increasingly weak state; on the other hand, however, as soon as any spontaneous bottom-up movement not controlled from above emerged, the state put a brake on it immediately (Bőhm 1988a).

2. Increased importance of the resources of local economy: The very last reserves of socialist industrialisation were used up. Although in the 1970s, in the wake of the success of part-time farming, the modernisation of the individual farms occurred, the backwardness of living conditions became increasingly depressing. Funds had to be raised to finance development and, within that, the development of infrastructure, which had suffered delay, posing an increasingly acute problem. The scarcity of funds available to local councils led to an increasingly fierce fight for development resources (Vági 1982) and, through this, local interests were more articulately expressed than earlier, leading to the strengthening of local identity and the introduction of a new tax (settlement development contribution; Hungarian abbreviation: TEHO). Although it was a low-amount tax, it turned out to be a major social issue. Though symbolising the impotence of the state and being a means of passing the financial burdens of public utilities development, which should have been implemented earlier, onto the population, TEHO also had some beneficial effects. As residents were directly affected financially, they started to take an active interest in public affairs, vocalising their entitlement to having a say in development decisions.

3. Democratisation of public administration, a path to local autonomy: In the light of corporations' growing independence in economic administration from the 1970s, strong central control over local councils had become untenable by the '80s. They became less and less content with handling what the party allowed them to. They wanted to lay down transparent rules as to the issues that fell under the exclusive competence of the state, and those falling under that of local authorities (Kálnoki Kis 1988). As the central reserves of development were depleted, so the state started to praise what it had persecuted earlier, i.e., local potential to respond. This is indeed why – in order to mitigate the adverse impact of districtification – the institution of local leadership was adopted in public administration in 1985 in places with no independent administration. Local leaderships are 'local authority organisations as well as organisations of public representation whose

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[1] For more details, see G. Fekete, 2006

primary policy objective, which is also a statutory regulation applicable to them, is to provide interest representation for the rather numerous associated Hungarian villages' (Csefkó 1988). Aldermen were, albeit not everywhere, advocates of local interests outside their community and a driving force of local communities inside. Some local leaders fought fiercely to reclaim the independence of associated villages. As a result of their activity, demanding independence for associated villages had become a national issue in the late 1980s. However, in the absence of an independent budget and independent resources, they could not initiate major developments.

4. Discovery of local societies: The acknowledgement of local societies as structural elements having emotional ties with their place of residence and settlement hierarchy as a factor of inequality was a breakthrough in Hungarian sociology (Bőhm 1988b). Antal Bőhm found that the most serious impediment to the formation of communities was the prevailing system of public administration and, in particular, the fact that typically public administration regulated local societies via one single channel: through directives. The only responsibility of local societies was implementation. There was no feedback. If there was some progress made, soon there was also a step backward. The reason for this is that there was no popular control over public administration and no local public. Bőhm found that another impediment was underdeveloped political literacy and a lack of familiarity with the rules of democracy. Further impediments include a political attitude that deems all involvement unnecessary, the limits of the state's tolerance and the lack of local information (Bőhm 1988b, Bőhm 1988a). Awareness of the importance and characteristics of local societies went in conjunction with efforts aimed first at achieving local independence, then at self-governance (Bánlaky 1988). In an increasingly soft dictatorship the state (central government) went through the following two stages of progress: one was that development decisions had to be approved formally locally, the other was the open proclamation of the importance of the initiatives in the wake of the social debates in the 1980's and fast erosion of the development funds provided by the state. This enabled local groups to form associations and articulate their objectives, often with some external help from the professional classes. However, lack of funds prevented them from achieving those objectives; for want of something better, they had settle for organising cultural events and protecting folk traditions, or use such projects to camouflage their activities (Varga&Vercseg 1991). Local councils controlled from above did not allow local initiatives to be integrated into the improvement of living conditions and the development of the economy; nevertheless, 'local

battles' proved to be excellent preparation for the post-regime transition period, when these groups became legitimate associations.

3.2. Characteristics of the political changeover and the transition

In response to EU directives and discourses, mainly in order to mitigate suffocating unemployment, initiatives were made by the SSE and LED in post-socialist countries, among them Hungary. However, the state relinquished most of its former roles suddenly, with social and spatial inequalities increasing equally quickly. Governments pegged their hopes on a strong profit-oriented economy and, in stark contrast with what was the case in the state socialist era, allocated development funds to the strengthening of a neo-liberal economy. Neoliberal economic policy, which prevailed after the political changeover, did not cherish solidarity economy or the establishment of its institutional infrastructure. However, the resultant form of capitalism, often tagged as 'wild capitalism', led to stronger social polarisation, the impoverishment and social exclusion of an increasingly wide strata, the loss of food autonomy and domestic markets, heavier dependence on retailers and creditors, fewer types and lower amounts of social benefits, fewer services in areas with lower effective demand and the impossibility of rural existence, i.e., stronger demand for a solidarity economy. The clear articulation of needs as well as the recognition of the potential of the LED and the SSE take time and require the adoption of the Western pattern. However, even if there is a pattern to rely on, people find it hard to identify the path towards co-operation. They opt for the informal economy and, in order to secure a living, turn to the solutions identified in connection with the peripheries. Surviving etatism and expecting deus ex machina solutions to problems inhibit the consolidation of a civil sector in charge of providing self-help.

The solidarity and social economy is, for the time, being, put on the backburner. In addition to loss of confidence, unfavourable experience, animosity towards the co-operatives of collective farms, and disappointment in the idea of solidarity abused in the era of state socialism prevent the development of the SSE and solidarity businesses (by contrast, in Poland there was no forced collectivisation during state socialism and more numerous local values have been preserved (Rymsza & Kazmiarcak 2008)).

As a result of the social characteristics outlined above, initiatives driven by local self-governments are prevalent in local economic development; by contrast, there is hardly any typical community economic development or local social business indispensable for such development. Accordingly, although activities and organisations in local social economies seem to be similar to their Western European counterparts, the dynamics and operation of the former are different from those of the

latter because of the legacy of the past and the extremes of the transition.

3.3. Initiatives pointing to social economy of local economic development

In Hungary, typically, social businesses emerge in six areas of local economic development:
a) social land programmes
b) social agricultural co-operatives
c) non-profit employment projects
d) production and sale of local goods, products
e) special local circles offering cashless services
f) micro-credit circles.

a) *Social land programme*

This is an agrarian economy project providing assistance for disadvantaged families without any or with only very limited financial means needed for farming to earn a livelihood. In Hungary, aid projects similar to the social land programme have long-standing traditions, often going back as far as one hundred years. There were social policy experiments of a similar kind at the end of the 19th century and in the 1930s (Bartal 1998). Based on historical experience, operating along new principles and using new methods, social land programmes were launched in the early 1990s within the framework of small regional crisis management projects. Participants receive favourably priced services and other benefits/allowances from the state in order to be able to engage in small-scale farming and animal husbandry. The programme is financed from personal, community and settlement resources. It gained ground in three regions of the country: Northern Hungary, the Northern Great Plain and Southern Transdanubia (Jász & Szarvák 2005).

For nearly two decades since the date of commencement, the funds provided by the social land programme have been available for settlements in distressed areas, although to a varying extent. From the very beginning the programme has operated on an invitation-only basis: though the number of eligible settlements has increased consistently over the years, funds have always been awarded to the most disadvantaged settlements in the country.

In terms of the objective of their operation, social land programmes fall into one of the following three categories:

1. Programmes aimed at subsistence obviate the need for cash as legal tender and contribute to mitigating problems related to food supply. Promoting subsistence generates benefits of pecuniary nature, fosters work culture and facilitates the spread of the related value system, representing a shift from a paternalistic to a self-sustaining approach. Currently, most operational land programmes are at this level.

2. Income-earning activity: products are sold, and receipts can be spent on the purchase of other products and services. This type of production gives rise to the evolvement of mixed income economies. The land programme alone cannot guarantee the satisfaction of needs. Families also rely on the operation of a social care system for their livelihood. Social land programmes in Western Europe aim at achieving the third segment of mixed income, i.e. capital income from various forms of savings that can be thought of as part of household income that covers the cost of living (Csoba 2006). In Hungary, land programmes contribute to income needed for daily subsistence.

3. Assisted businesses integrated into society: profit-oriented communities of producers and sellers that are present across the entire spectrum of production. For the time being, this structure is less common. The emergence of social co-operatives also facilitates shifts in this direction.

As a rare exception there are places (eg. Tiszaadony and Túristvándi) where all three categories of the land programme are present and operated as a complex system (G.Fekete 2010).

Over the past 15 years close to five hundred settlements have been affected by a land project. The dominance of small settlements and small villages is unmistakeable. A further special characteristic is that it is mainly municipalities that organise these programmes. Only a mere 20% were non-municipality managed projects (Rácz 2009).

The programme has benefited a number of families. However, it is often the case that the very persons who could benefit from the programme the most do not apply (Csoba 2006). Undoubtedly, the activities pursued within the framework of the land programmes and the income from them contribute to livelihood security; however, they are not suitable for the accumulation of the assets (e.g., means of production, areas suitable for farming and working capital) needed for commodity production and a permanent market presence.

The key role that municipalities play in this programme also makes it possible for the programme to be connected to community work, thus enabling the municipalities to provide regular employment. This was especially successful in handling local employment problems in settlements such as Belecska, Kázsmárk, Rozsály and Tiszaadony (G.Fekete 2003).

b) *Social co-operatives*

Social co-operatives exist to provide social services such as the care of children, elderly and disabled people, and the integration of unemployed people into the workforce. In Hungary the legal framework needed for the establishment of social co-operatives was created in 2006.[2,3]

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[2] *Act X of 2006 on Co-operatives*
[3] *Government Decree no. 141/2006. (IV.29.) on Social Co-operatives*

The foundation of the first co-operatives was facilitated by a 5-year agreement between OFA and the Ministry of Social Affairs and Labour for the establishment and operation of social co-operatives. Similar to other countries in Europe, the objective of the legislation was to encourage members of the society to become active actors in the social economy. It also anticipated the satisfaction of such needs that the business or the public service sector cannot satisfy.

It is still early days to adopt a definitive stance regarding the practical usefulness or operation of the co-operatives, as too little time has passed since the creation of the system. Nor is there an adequate number of data, and there are only few such co-operatives. But their dependence on the local governments is evident. Mayors or other local leaders are often among the founders or they participate in the management. This political dependency means market dependency, too. Many social co-operatives were established to fulfil functions of local governments and they depend on contracts with local government. A successful example is Túristvándi, where the social cooperative organizes a self-sufficient local food supply and operates a local market.

c) Non-profit employment models

In order for permanent unemployment to be addressed, programmes had to be worked out that were capable of remedying the shortcomings of traditional community work (public purpose employment), e.g., only temporary, short-term employment at low wages. This was further boosted by European Employment Policy and the European Social Fund underlying its implementation.

Since 2002, approximately 300 such projects have been implemented, providing labour, training and networking opportunities. A shared characteristic of the projects is that once they are completed, they are also terminated (i.e., no longer operate). They cannot provide employment for the target group unless some external financial support is provided. The underlying reasons are, more often than not, the deficiencies of the tender schemes and the inadequate preparedness of local actors (G.Fekete 2007).

d) Production and sale of local products

There are three major categories:
1. Products produced for the purpose of internal market subsistence at the level of families, neighbours, settlements, small regions and regions. These products, which do not necessarily exhibit unique region-specific characteristics, are sold in the same regions to local residents, while also serving as basic supplies for residents.

2. Products produced for the purpose of the internal market at the level of families, neighbours, settlements, small regions and regions. These products, which exhibit unique region-specific characteristics, are sold locally. (It is this category that best approximates the idea of locally produced goods.)

3. Products produced for the purpose of external markets. They are unique commodities exhibiting unique, region-specific characteristics. Their main function is to provide diversity and uniqueness in a globalised world. They are AOCed (Appellation d'origine contrôlée (AOC), which translates as 'controlled designation of origin') It is worth applying for this protection for them. The best local products, mainly wines, pálinkas, special processed meat products and honeys, are exported.

4. Initiatives are mainly taken by LEADER groups in the framework of rural development. A real chance has been provided by the regulation on small scale production (2010)[4]. The movement of "give a chance for local products" and the net-trade of local products has spread country-wide. National Parks, with their special local products, also show best practices in the field of cooperation..

e) Special local circles offering cashless services and introducing local currencies

In Hungary the concept of LETS (Local Employement and Trading System) 'imported' from the UK first emerged in the winter of 1992 within the "Talentum" Circle (established in 1996) meeting organised bimonthly, where deals are concluded. Since the '90s several more organisations have emerged in the countryside (Circle of Szolnok, Circle of Tiszaluc, Hour-Circle in Miskolc, "Kaláka Circle" in Bátor). There are more initiatives to introduce local currencies (eg. "Green Forint" Circle in Gödöllő, "Krajcár Circle" in Budapest). (Talentum Körök 2011). The first of the Hungarian local currencies is the "Bluefrank" of Sopron (Kékfrank 2011).

f) Micro-credit circles

The main objective of the Kiút (a way out) Project, launched as an experimental programme in 2009, is to enable people living in deep poverty, mainly the Roma, to use their own resources to resolve their permanently dismal situation, through community-developing social support and the provision of financial services and information. The means towards that end is self-employment based on micro-credit, the maximum applicable amount of which is HUF 1 million. There are three standard loans. The interest rate for all three loans is

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[4] 52/2010.(IV.30) FVM regulation modified on 06. 07. 2010.

20% p.a. (HUF 200,000 with maturity of 6 months, HUF 500,000 with maturity of 12 months, HUF 1,000,000 with maturity of 18 months) The loan is repaid in weekly instalments. Given the characteristics of the target group, the interest payable and the conditions to be met (Kiút Program 2009), the sponsors of the project – Kiút Program Közhasznú Nonprofit Zrt., established expressly for the implementation of the programme, and Raiffeisen Bank Zrt. providing financing – will have a hard time turning it into a success story.

4. SUMMARY

Incorporated also into regional policies, the SSE and LED have gained ground across the world. The local SSE is only one segment of LED. It is the concept of a solidarity economy that has been adopted in developing countries demanding more radical changes, while that of a social economy that has gained ground in more developed regions that do not challenge the market economy status quo. Hungary's status as a semi-peripheral nation and its social and spatial differences, which have become increasingly marked since the political changeover, could easily explain the adoption of the more radical version. However, the models reached Hungary through the intermediation of the EU, therefore, they reflect what has been established there. The legacy of the state socialist past, i.e. distrust, the survival of paternalism and the devaluation of the concept of social solidarity, weakens the adaptation of a Western European-type SSE and LED. As a result, though some components of community economy had already existed before the regime change, progress regarding the consolidation of the SSE sector is slow and is wrought with contradiction. The community

form of LED is less common. Not all SSE forms widespread in Western European countries have reached us yet, and even those that have are implimented in not quite the version that is familiar there. An important feature is the influence of municipalities on local civil organisations and social businesses. Dependence on grant programmes is rather heavy; however, this is also advantageous because good grant-based programmes can also intermediate values and methods. Dangers, however, outweigh such advantages, because the development of the sector may easily fall out of step with actual social needs, and heavy dependence on the state may survive. There is a wide range of local SSE initiatives in Hungary. Initiatives are aimed at rural development (LEADER), community development, ecology, employment and settlement rejuvenation. Participants are not always aware of whether they are more attached to the concept of SSE than that of LED, or vice versa. No national platform encouraging the identification of shared interests and goals has yet been established. Perhaps this is the very reason why there has been no breakthrough in government policies with a neoliberal bias. After the completion of a few non-profit employment programmes, interest in the development of local community may, going forward, bring about significant changes that can create a social and economic environment that goes well beyond grants and facilitates self-reliance. However, only if we are familiar with the basic principles and systems of the SSE and LED can we utilise the benefits arising from local community economic development. Furthermore, in order to be able to use external help efficiently and conduct domestic and international discussions, we have to identify our position along the global spectrum.

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The Role of Human Resources in the European Union's Growth Strategy from the Perspective of Hungarian Regional Inequalities[1]

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SUMMARY

The European Commission introduced the Europe 2020 growth strategy in order to recover from the crisis and prepare the European economy for the next decade. The employment crisis of the North Hungarian region accelerated after a decline in the economic growth in 2008. In this situation, the region is to adopt the national goals and take the responsibility that are needed to materialize the Europe 2020 strategy. Furthermore, innovation efficiency connected to human resources and its conditions regarding the defined aims on the level of national values are to be analysed. Emphasising those priorities that are to be accepted on the national level can advance the region's economic growth. One of the possibilities to place the brownfielded areas of the North Hungarian region on a new developing track is forming an institutional system based on centralised innovation and improving the backgrounds of human resources and setting forth long-term financing.
Key words: human resource potential, sustainable development, innovation, Europe 2020 strategy
Journal of Economic Literature (JEL) code: J48 R58

THE EUROPE 2020 STRATEGY AND HUNGARIAN RESPONSIBILITIES

The Europe 2020 is the EU's growth strategy for the coming decade. The Commission pointed out three key areas that increase economic growth: (1) knowledge, innovation, education and "intelligent development" focusing on digital society (2) a more efficient utilization of resources and "sustainable growth" increasing competitiveness and on the top of that (3) the area of "inclusive growth" intensifying participation in the labour market acquiring competences and helping in the fight against poverty.

The Hungarian government in order to reach the highlighted goals of the Europe 2020 Strategy, proposed a national program to perform the following figures until 2020:

➢ the R&D expenditure is to increase to 1.8% of the gross national products;Ł

➢ the rate of employment among the workforce aged 20-64 is to increase to 75%;

➢ The rate of those with a diploma among the 30-34 year-old population is to increase to 30.3%; the rate of those not involved in education, trainings with maximum vocational certificates is to decrease to 10% among the 18-24 year-old population;

➢ the rate of the population living in poverty or social exclusion is to decrease by 5%;

➢ The proportion of renewable energy in terms of energy consumption is to increase to 14.6 %, the whole energy saving pledge is 10%, the emission of greenhouse gases outside the European Union's emission-trade system is to increase with maximum 10% compared to the level of the year 2005.

These goals can only be accomplished if the Hungarian government takes into consideration the development of the conditions of regional innovation. (Varga 2005).

Taking into consideration the regional specialities and the economic, social condition of the regions, and also the size and situations of them, a better innovation performance may only be achieved through revitalisation strategies. The factors that hinder the expansion of innovation in the country have to be analysed, for instance the dominance of Central Hungary. Many characteristics of the North Hungarian region's innovation situation is to be analysed in the view of employment policy and migration processes in order to have a more complete view of the priorities of the tasks ahead.

RESEARCH AND DEVELOPMENT FUNDS IN THE NORTH HUNGARAN REGION

The Europe 2020 strategy's first aim is to increase the funds in the field of R&D. The government intends to spend 1.8% of the GDP on R&D in the future at national level. In the case of the North Hungarian region 8 billion Ft is needed at current prices to achieve the minimum expenditure of 1%. Despite low financial resources North Hungarian companies seem to be committed to increase innovation and revenues.

In 2006, according to product innovation (these data were provided by the Central Statictics Office although the latest ones were asked) in the North Hungarian region the ratio of those companies that did not introduce product innovation was only 72% which exceeds the national average. In this way, this region shows the third highest innovation activity. At the same time, the number of patent applications was very low in the region. We may come to the conclusion that this region in the field of innovation imitates those products having new contents.

We may conclude that economic growth in the region realises in parallel with the increasing of differences. The expenses of R&D allocations contribute to these factors.

Table 1.
The priorities of the Europe 2020 strategy

Intelligent Growth	"Innovative Union" – developing the conditions of R&D
	"Youth in Action" – Enhancing the accomplishment of education
	" European Digital Society" – the development of Internet access
Sustainable Growth	"Resource Efficient Europe" - Energy efficiency, Environment friendly industry
	"Industrial Policy in the Age of Globalisation" – developing the circumstances of business, strengthening industrial basis
Inclusive Growth	"New Competences and the Platform of Workplaces" Modernisation of the labour market, Life-Long Learning
	"European Platform Against Poverty" – Ensuring cohesion regarding society and regions

Source: The Official Statement of the European Commission, 2010

Table 2. Regional distribution of R&D activity (2009)

	Central Hungary	Northern Great Plain	Southern Great Plain	Central Transdanubia	Western Transdanubia	**Northern Hungary**	Southern Transdanubia
GDP	48,14%	9,34%	8,87%	9,9%	9,68%	**7,55%**	6,53%
Funds of R&D activities (%)	65,4%	10%	7,7%	5,6%	4,7%	**4,1%**	2,53%
People employed in R&D activity (%)	57,2%	9,5%	6,3%	5,2%	5,9%	**5,2%**	10,7%
R&D facilities (%)	47,58%	11,21%	12,35%	6,49%	7,9%	**7,21%**	7,25%

Source: Central Statictic Agency, private counting

The North Hungarian Regional Innovation Strategy[2] features an aim focusing on the creation of developmental poles in regions. As it was recognised previously, the lack of spatial distance has a huge impact on the expansion of hidden knowledge or the rapid flow of information. Trust is vital for innovation-oriented cooperation, or the appearance of "common grounds" concerning communication which can be supported by frequent interactions and spatial propinquity (Varga 2006). The dominance of the Central Hungarian region is clearly visible: the North Hungarian region only gets 4.1% of the R&D funds (the national average is11.16%).

These values are under the GDP rates and one of the lowest among the the regions. The regional balance was not achieved during the innovation activities between 2006-2010 by the support of "ÚMFT GOP 1.". The Northern and Southern Lowlands were most supported since about 50% of the R&D funds of the regions were spent there. On the other hand, viewing the prority of "GOP 1." the North Hungarian region performed better which meant 14%. This time it was the Western Transdanubian region that lost the most. After the financial resources, the roles of the innovative companies are to be highlighted. Two basic conditions are essential

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[2] *North Hungarian Regional Innovational Strategy*, 2008, p. 67.

for the realisation of a system of an innovative company. First of all, the business sector should be full of vitality, able to develop and compete, and secondly a well-qualified population is needed. Not only an increase in the number of researchers can enhance the intensity of interactions, but also the mushrooming innovative companies and business services (even if the R&D factors are static) can boost the production of new and useful knowledge influencing the nation's economy. In order to improve the North Hungarian innovation

performance rearranging the European Union's financial resources for economy development purposes can be vital. Namely for the "high-tech" or innovative companies highlighting the quaterner sector. In order to use them capital is needed which is limited both at the level of the state and at the enterprises. The settlement and performance of innovative companies in a region is influenced by the structure and quantity of the labour force. When companies choose their premises or plants labour force has a leading role (Horváth 2010).

Table 3. GDP, funds of R&D activities and the awarded "GOP 1." supports

	Northern Great Plain	Southern Great Plain	Central Trans-danubia	Western Trans-danubia	**Northern Hungary**	Southern Trans-danubia
GDP	18,1%	17,10%	19,8%	18,66%	**14,56%**	12,58%
Funds of R&D activities (%)	27,39%	21,24%	15,4%	13,07%	**11,16%**	6,78%
Awarded rate of support **"GOP 1."**	24%	23%	20%	9%	**14%**	10%

Source: National Development Agency, private counting

The second axis of the goals set by the government is to increase the rate of employment along with the rate of people possessing a diploma. The new Széchenyi plan focuses on the dynamic expansion of employment nationwide. In terms of numbers this program of economic and social development plans to achieve one million new tax paying workplaces in the next ten years in Hungary. The government in the new Széchenyi plan does not make territorial demarcations. According to the government's plan to create new workplaces nationwide the regions have to adapt to the plan and increase the rate of employment by 22% regionally, in order to achieve the national goal.

According to the statistical data the 75% employment rate would mean 609 thousand employees according to the study of Hungarian Central Statistical Office (HCSO), 686 thousand according to the Public Employment Service. Today the data is the following: 435 thousand (HCSO), 392 thousand (PES) employees. The data according to PES show an even lower employment rate. According to the most optimistic theories the number of employees should be increased by 150 thousand, this is slightly lower than the number of inhabitants of Miskolc. In my opinion in regard to the new Széchenyi Plan the intention needs to be declared, that during the establishment of new workplaces the disadvantaged regions need to be in the forefront. The government can send a message this way that it does not support migration and mobility trends, that it is important to keep the local knowledge in its own place, and to strengthen the circular migration which is the basis of a region's economic and social competitiveness.
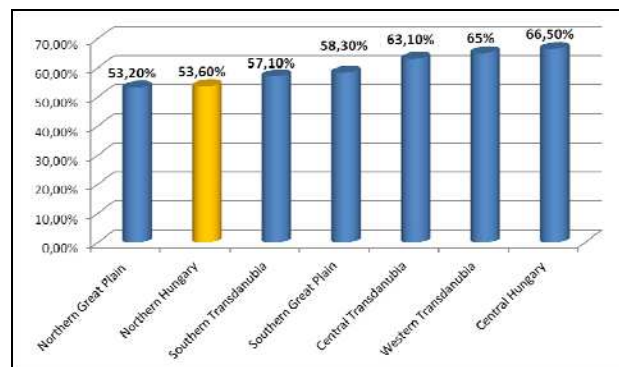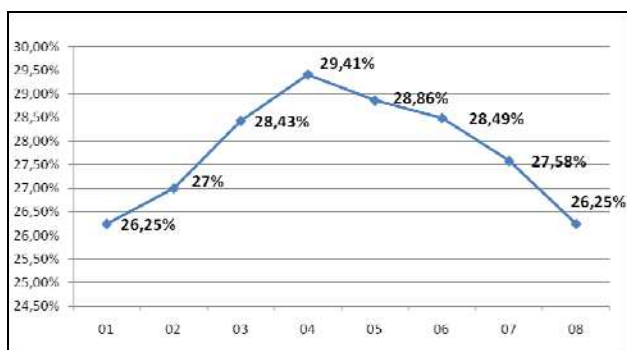

Source: National Statistic Office

Figure 1. Regional employment rates in the group of 20-64 in 2009

For the long term developments it would be important to see the minimum number of workplaces created in each region. Priority should be given to creating jobs in the primary labour market sector. This is important because of the quality of the workforce, and also because of the presence of the consumers who are open and have demands towards the companies. At the same time the increasing social acceptance of the innovation has a great impact on the members of the business sector. That is why education and openness becomes significant in terms of workforce demands. To increase the innovation activity of the corporate sector it is needed to have an adequate labour supply. In addition to these, a further element of the regional innovation programs is the local university. In order to increase the quantity of available knowledge a significant increase in research funding would be necessary for the science and engineering departments of the universities. (Varga 2006)

The Hungarian government made a commitment in accordance with the plans mentioned above, that till 2020 people with higher education degrees would reach a rate of 30.3% among the 30-34 year-olds. While the ration of those who do not take part in higher education or training programs, or have only the minimum education level among the 18-24 year-olds would decrease to 10% . In the first study I chose the data of the Central Statistical Office to calculate the ratio, I compared the number of students in higher education to the age group. It shows that since 2004 the number of students participating in higher education compared to their age group is decreasing. Among the positive things we must mention is that Hungary's scientific and engineering performance is in a good position in international comparison. It shows better conditions than the country's economic development would soggest (Török 2002). Northern Hungary also has a high quality engineering training. After the government change in the 90s and after Hungary has joined the EU the individuals were able to make their own choices. This also created the possibility and provided the legal background for employees to work abroad especially for those with a university degree and in possession of some language skills. In the following chart I examined the number and ratio of people taking part in higher education in the region, based on the statistics.

Source: National Statistic Office, own edition

Figure 2. Rate of the students in the group of the 30-34 (%)

In 2008 in the North Hungarian region for every 1000 inhabitants there were 12 students, which is the second lowest ratio. In the Central Transdanubian region the ratio is 10.2. In the Northern Great Plains there are 20 students

per 1000 inhabitants, while in the Central Hungarian region the ratio is 36.8. The number of people (age-group 19-24) in higher education decreased by 4% on country-level and with 4.7% in North Hungary between 2005 and 2008. In the region of North Hungary the proportion of those who have university or college degrees in 2005 (10.8%) hardly exceeded the country's average showed by the data collected during the census in 1990 (10.1%).

Table 4. The number of the students per to 1000 inhabitants, 2009

| Region	The number of the students per 1000 inhabitants
Central Hungary	36,8
Southern Transdanubia	20,8
Northern Great Plain	20
Southern Great Plain	18,2
Western Transdanubia	16,8
Northern Hungary	**12**
Central Transdanubia	10,2

Source: Hungarian National Statistics Office

The census in 2001 and also the micro-census in 2005 showed that the number of people who had diploma was the lowest in North Hungary (KSH, 2010).[3] The adverse situation of North Hungary was also confirmed by the data on education of the micro-census in 2005. The number of the population aged 15-29 was above 264000; nearly four tenth of them graduated from secondary school, and 8% had university or college diploma. Numbers are better nationwide: 45.3% and 10% (KSH, 2010).[4] The structure of the labour market does not help the process of innovation: the number of qualified people is very low in the labour supply.

Then I studied the proportion of employees in the region working in research. In 2009 62.9% of the researchers in the country worked in the region of Central Hungary, this number decreased in 2007 to 59.4%. In the region of North Hungary the number of researchers increased with 400 members from 2005 to 2009 (KSH, 2005, 2009) which is the same as the national average. This means that in 2009 1327 full-time researchers worked in the region, which was the second lowest number in the country (after the region of South Transdanubia). The rate rose only in two regions: in Northern Great Plain and in the region of Central Transdanubia.

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[3] *KSH: Higher Educaion in North Hungary, 2010*
[4] *KSH: The Situation of the Youth in North Hungary, 2010*
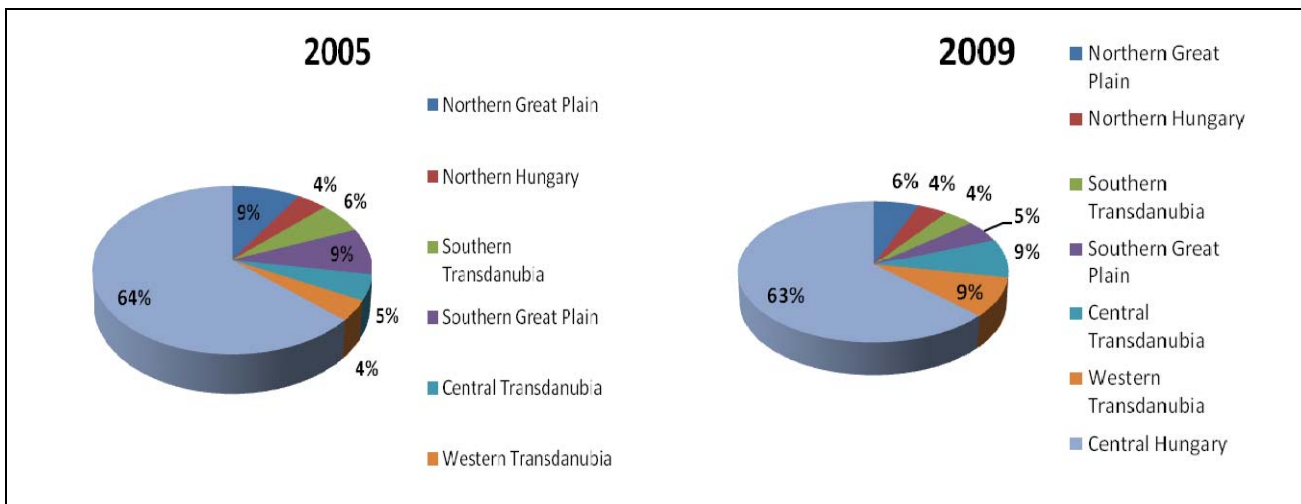
Source: Hungarian National Statistic Office

Figure 3. Regional distribution of the full-time employed researchers in 2005 and 2009

It is not easy to establish new, useful workplaces, when there is no background of researchers, who could take part in the innovation directly, or when there are no innovative and creative professionals who are highly qualified and able to develop their knowledge. We cannot imagine progress in employment without decreasing the tendency of migration,[5] (in 2008 9000 was the number of emigrants). The expansion in the primary sector of labour market is also a goal, together with the facilitation of re-migration and circular migration.[6] It could be one element to call young employees back to the region, whose job experience and language skills would be useful for international companies. It is important to make a strategy about labour market, which is based on attraction and protection as well – which means decreasing emigration and also controlling the number of the unemployed who move to the region (Dabasi 2009). Using the strategy of protection is also important, because the migration tendencies of the Hungarian researchers' know-how depend on innovative strategies and also the phenomenon called technology transfer. (Buzás-Molnár, 2003). The number of creative intellectuals can effect and help the appearance of foreign capital in the R&D sector of the region. It would be very important to emphasise re-migration, also because the last census showed that the number of those who speak foreign languages is low in North Hungary, around 12%, while 18% of the age-group between 15-39 spoke a language besides their mother tongue, most of them English (these numbers in the whole country are around 19% and 30%).

SUMMARY

It is essential to increase funding of regional innovations in order to achieve economic growth in North Hungary.To have better innovation results it is necessary to expand the human resource potential, and to apply conscious planning. Based on the human potential created by the circular migration it is easier to create a labour supply that is adaptable and creative in the region. However this process of government incentives is difficult to implement without the economic and political decisions and strategies. The decentralization of the resources is necessary, at least to the extent of of the GDP, compared to which the regional R+D resources and the number of employees is lower. More than that, it shows the lowest value among the regions. The government needs to decide on the establishment and schedule of priorities of a National Action Plan. To achieve the national goals planned in the Europe 2020 strategy, the government needs to take into account the regional differences in creating new workplaces, and to distribute the innovation funds accordingly. In my opinion in relation to this the intention must be declared in the new Széchenyi plan, that in the creation of new workplaces the hindered regions should come first. On the other hand the social costs of migration impose further burdens on the state and national budget. I am hopeful and look forward to the time when the plans including the regional factors mentioned above would be included in the government decisions and incorporate it in the national strategy.

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[5] *Besides this, it would be useful to consider the way we could help the inactive population to go back to work.*
[6] *International examples show that contacting migrants and developing programs that aim to help re-migration could be successful.*

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Contributions to the Issue of Regional Economic Growth and Equilibrium

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SUMMARY

The geopolitical change of direction taking place after 1989 induced a number of positive and negative social and economic changes in Hungary (as in the other post-socialist countries). Among the latter changes perhaps the most depressing one is that in the past two decades economic policy has not been able to achieve a sustainable and balanced economic growth, either in the short or in the long term, or to manage the problems arising from its lack. The external and internal imbalance (at macro and mezzo levels) arising in this way is continuously generating serious tensions.
This paper attempts to find an answer to the question of what role regional policy can play in creating local and regional economic equilibrium and in starting a relative convergence.
Key words: regional policy, regional growth, regional equilibrium, regional sustainability.
Journal of Economic Literature (JEL) code: O11, R11

INTRODUCTION

The economic policy of Hungary over the past decades can be described by a number of controversies. Little wonder that the final outcome is mixed: in accordance with ill-advised and whimsical improvisations (matching the election cycles) and, on the other hand, with the business cycles taking place in the world economy, the rate of Hungary's macroeconomic growth and the deviance from the equilibrium path keep changing from smaller to bigger; the sign and size of the domestic output margin keep changing cyclically while the exposure of macro- and mezzo-level outputs to external disturbances has also increased.

CAUSES AND RESULTS OF THE DEPRESSION

Lasting economic convergence is a function of three factors: growth rate, the sustainability of the growth rate and economic equilibrium (Figure 1).
Those shaping the Hungarian economic policy have disregarded this axiom since the 1970s.
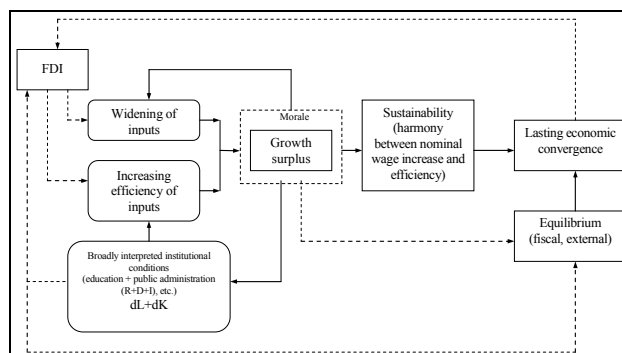
Source: author's own work

Figure 1. System of conditions of lasting convergence

The debt spiral of Hungary began at the same time as the oil price explosion of 1974. The continuous deterioration of our terms of trade and the increase in the imports price level (20% annually on average) were compensated by the government by means of continuous borrowing.
Our imbalance kept strengthening between 1985 and 1989 (while our net outstanding total debt increased from 6.5 billion USD to 14.9 billion USD, and gross outstanding total debt increased from 11 billion USD to 20.4 billion USD).

On the basis of the foregoing it can be understood that the domestic economy came to a state close to depression several times in the past decades.

The slow stabilisation of the past years has been halted by the economic policy deployed after 2002, and the outstanding total debt of Hungary began to increase again. Our position was further damaged by the financial crisis of 2008. The internal causes of our present situation, close to depression, can be attributed to the following (with some simplification).

a) Growth deficit, excessive desindustrialisation

The Hungarian economy has been struggling for more than three decades with the problem that the added value of our products and services is small. Since the beginning of the 1980s this has set back employment and the output growth rate in Hungary (Figure 2).
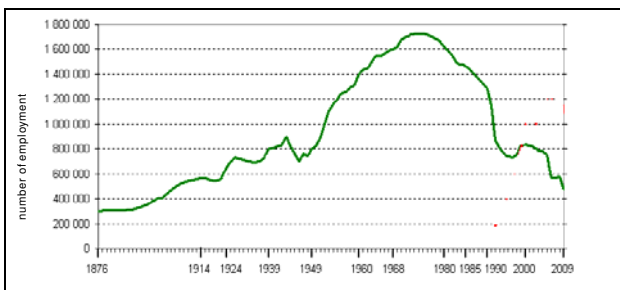
Source: author's own work

Figure 2. Development of the number of those employed in the Hungarian industry (1876-2009)

The decline of the processing industry has played a significant role in this in the past two decades. The service sector in Hungary has been unable to replace or outdo the employment or the production value of the industrial companies being closed down.

b) Lack of equilibrium

Thus (as shown by the above) the lack of equilibrium in the economy of Hungary is not a new phenomenon. The professional authors dealing with economic policy are debating at most the date of the acceleration of the process.

A lasting lack of equilibrium can be retraced, with some simplification, basically to three causes which are in close interaction with each other: the decreasing competitiveness and exportability of our products, the increase in consumption that has become disconnected from the economic growth rate and the unfavourable changes in exchange rates.

The lack of imbalance (in the budget and in the balance of foreign trade) thus arising has resulted in twin deficits.

c) Lack of sustainability

The growth path of the Hungarian economy has been hindered in addition to the errors in the economic policy of the past years by the increasing obligations in payments of interest.

The high state deficit incurs large redemption burdens, which narrows the range of possibilities for action of the budget (Figure 3). Part of the close to 1100 billion HUF that is at present used to pay interest could be spent on productive investments and other productive expenditure (health care, public education, etc.), and while leaving the expenditure unchanged, tax burdens could be considerably reduced (e.g., 7.5 times as much could be spent on housing support as in 2010, or more than twice as much could be spent on family support as in 2010, or the value added tax burden could be reduced by nearly half, or one-third of the interest expenditure could be sufficient to eliminate company tax completely, or personal income tax could be reduced by more than 40%, or the social security contributions of employers and employees could be reduced by more than one-third, thus reducing the tax wedge further and stimulating the labour market).
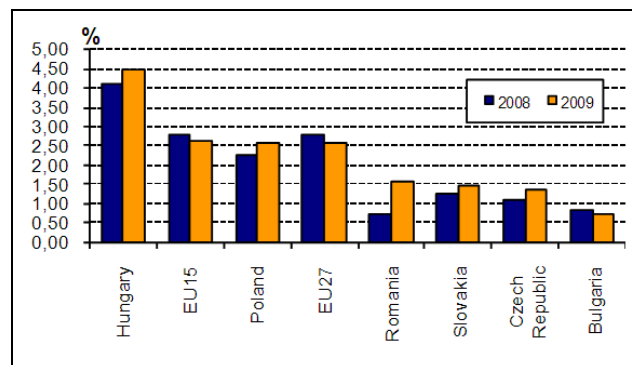

Source: EU Commission - AMECO

Figure 3. Interest expenditure as percentage of GDP 2008-2009

d) Moral affliction

The recognition that sustainable economic growth can hardly be set in motion without stable moral foundations is not a new phenomenon. The problem is not typical to Hungary, but the social and economic consequences of the deterioration of the general conditions are serious in Hungary as well.[1]

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[1] In Europe more than one third of the workers of large companies asked were willing to offer cash or other presents for clinching a deal, one quarter do not trust the ethical behaviour of the company management. Hungary is the second after Russia on grounds of the occurrence of malpractice. In the framework of the survey conducted in 25 countries in Europe, more than 2300 employees were asked from workers to top executives.(For the complete survey, see http://www.ey.com/HU/FIDS.)

The above deficiencies result in problems at the levels of both the national economy and of regions (Figure 4).
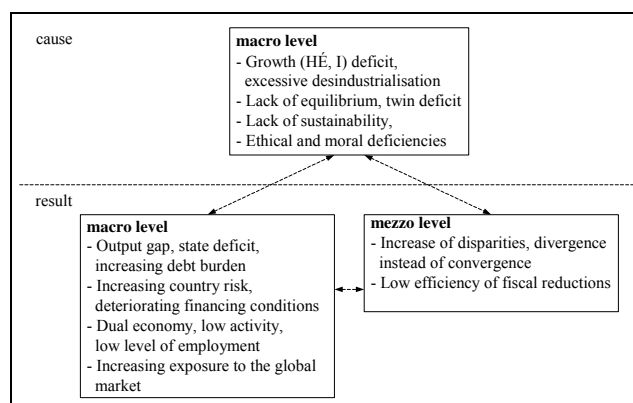
Source: author's own work

Figure 4. Macro- and sub-national results of depression

RESULTS OF THE DEPRESSION

In the following, regional (mezzo-level) problems will be discussed, as flowing from our topic.

a) *Increase in disparities, divergence instead of convergence*

The transition to the market economy (1989) found the Hungarian society and economy in regionally differing situations. The real and latent regional differences are not new. In the early and mid 1980s, with the deterioration of the competitiveness of the industry, mono-structural regions came into difficult positions (a good 20 years after the processes appearing in Western Europe due to similar causes).

As is well-known, though the party and political management of the times was aware of the problems, it took no steps concerning the the situation (measures taken for the sake of keeping up appearances were formed instead).

The change of economic and geopolitical direction increased regional differences further, for the counties took advantage of the opportunities arising from the changes in room for action in different ways (due to external and internal causes).

Table 1. Gross domestic product (million HUF)

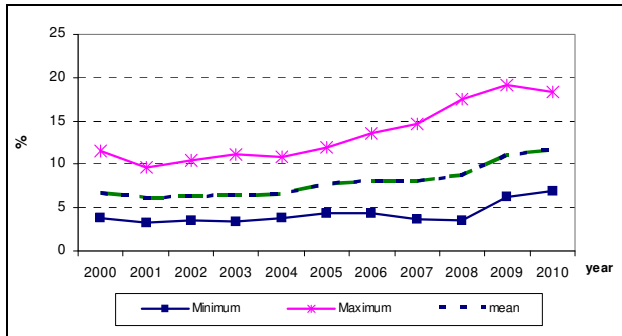| Year	Hungary	Regions						
		Central Hungary	Central Transdanubia	Western Transdanubia	Southern Transdanubia	Northern Hungary	Northern Great Plain	Southern Great Plain
1995	5746248	2308185	568269	580095	464657	533365	631593	660084
1996	7113667	2921656	710224	729160	558437	625806	771320	797064
1997	8814578	3672887	924147	908175	672553	755408	938459	942949
1998	10453044	4337164	1121369	1127137	786839	900063	1089406	1091066
1999	11640204	4914707	1205769	1315062	888122	978850	1152614	1185080
2000	13 368 903	5749466	1409831	1486596	984178	1096006	1318453	1324373
2001	15 307 183	6753595	1580835	1578964	1110079	1258985	1559864	1464861
2002	17 231 288	7842653	1665076	1752481	1230432	1394712	1717465	1628469
2003	18 838 254	8371940	1909057	2008898	1330164	1543478	1915188	1759529
2004	20822396	9332337	2166169	2142326	1433297	1732352	2074520	1941395
2005	21970780	10149328	2264769	2157842	1468924	1809434	2125955	1994528
2006	23730035	11238468	2349996	2352278	1538333	1886009	2268181	2096770
2007	25321478	12066320	2565394	2451606	1648809	1989681	2389327	2210341
2008	26753906	12879358	2647830	2588827	1746031	2020802	2499135	2371923
2009	26054326	12915040	2457169	2409882	1693787	1907020	2402846	2268582

Source: KSH

The investment and employment dynamics of the regions developed also depending on the sectoral structure of the regions (existence or lack of the driving sectors). Long-term low investment was matched by long-term low employment (although after 2009 the regional distribution of the unemployment rate decreased somewhat, this was thanks much more to higher public employment in the backward regions than to an improvement in the labour market situation) (Figure 5).

Source: author's own work

Figure 5. Distribution by county of the unemployment rate in Hungary

As a result, in the labour market of the transformation starting after 1990, the West-East direction unemployment slope emerged in Hungary; and a more than tenfold difference came into existence between the regions with lower and with higher unemployment rates.[2]

The different output paths of the regions can be explained by the different personal consumption and investment as well as by the external demand.

Our empirical investigations show that the volatility of regional output has been higher than the volatility of the output gap of the Hungarian macro-economy in the past years (Table 2).

Table 2. Annual changes in output gap[3] (%)

Year	Hungary	Regions						
		Central Hungary	Central Transdanubia	Western Transdanubia	Southern Transdanubia	Northern Hungary	Northern Great Plain	Southern Great Plain
1995	-0.08	15.67	-9.57	-15.26	-8.60	-4.48	-5.58	-6.61
1996	-3.09	3.97	-9.17	-12.20	-7.38	-7.04	-4.78	-4.19
1997	-1.29	1.34	-1.21	-6.99	-3.58	-4.14	-1.34	-1.47
1998	-0.63	-2.29	2.98	0.43	-0.66	-0.31	-0.27	0.83
1999	-3.87	-6.45	-2.96	3.69	0.17	-3.82	-6.56	-1.83
2000	-2.41	-5.25	0.99	5.12	0.31	-3.22	-4.09	-0.59
2001	0.12	-1.87	2.02	1.21	3.19	0.94	2.91	0.51
2002	2.09	1.89	-2.23	2.73	5.14	2.39	3.65	2.91
2003	2.01	-1.64	2.83	8.48	5.16	4.50	6.51	3.04
2004	3.82	0.07	7.76	7.24	5.43	8.83	6.97	5.93
2005	1.50	0.09	4.67	0.66	1.03	6.03	2.19	1.88
2006	2.13	2.59	1.42	2.74	-0.66	3.55	2.10	0.67
2007	2.00	2.52	3.83	0.66	0.35	2.76	1.13	0.11
2008	1.28	2.35	0.90	0.29	0.48	-1.48	-0.19	1.67
2009	-6.96	-3.61	-11.54	-11.64	-7.56	-11.95	-9.16	-7.71

Source: author's own calculations based on KSH data

Net exports are primarily responsible for the short-term fluctuation in output (Figure 6).
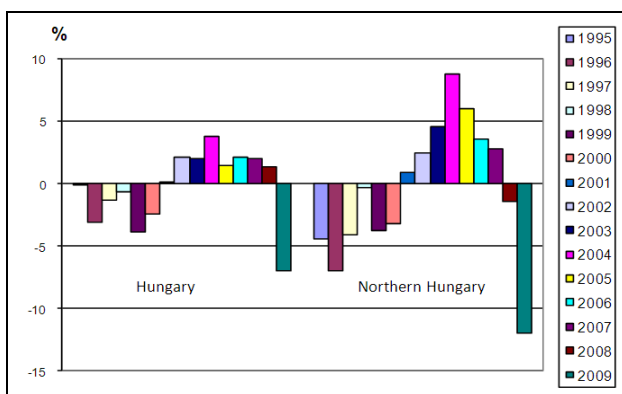
Source: author's own work based on KSH data

Figure 6. Output gap path

This means that the government measures limiting or expanding consumption have a smaller effect on the incomes of the population than the effect of monetary policy affecting net exports (assuming unchanged demand). And changes in net exports depend on the economic structure of the given region (to a considerable extent on the cyclical positions of the multinational companies established in the region).

b) Low efficiency of fiscal moves

The EU funding appearing in the Hungarian budget (1999: 3.3 billion HUF; 2010: 706.8 billion HUF, data at current price) and expenditure (1999: 14.9 billion HUF; 2010: 804.8 billion HUF, data at current price) increased dynamically between 1999 and 2010. Although the time period is relatively short (therefore it

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[2] *The number of those employed in January 2011 – in the age group 15-74 – was 3 million 743 thousand, which exceeded the figure for the previous year by 0.5 % (KSH, 2011). The number of unemployed aged 15-74 was 487 thousand, 8 thousand more than a year previously. The unemployment rate of 11.5 % was basically identical to that of the previous year (male unemployment rate of 12.0 %, and female unemployment rate of 10.9 %).*

[3] *The literature offers several definitions for output gap; e.g.: P. Kiss/Vadas (2005). Our data use the results of calculations based on the actual and potential GDP (GDP_{pot} – G_{tényl4}] / GDP_{tényl}] x100*

is hardly possible to draw strong conclusions), it can be clearly seen that the impact of the support arriving in Hungary on increases in the GDP lags behind that of the EU average (Table 3).[4]

Table 3. Impact of support on increasing the GDP

Country	GDP/EU* support	Contribution to increasing the GDP (%)		
		1989-1993	1994-1999	2000-2006
Portugal**	~ 3 %	3.9	4.6	6.1
Spain**	~ 1.5 %	2.9	3.1	4.2
Greece**	~ 2.6 %	4.3	5.6	6.1
Ireland**	~ 2.8 %	n.d.	8.9	8.6
Hungary***	~ 2.1 %	–	–	1.2

Notes: *   AGENDA 2000 (max. 4 %)
       ** The R de of Fiscal Transfers for Regional Economic Convergence in Europe (No.1029.2009.)
       *** between 2004-2006 (Source: author's own calculations)

This has several causes, such as:

➢ 'brainstorming' in the course of the allocation of funds;

➢ the majority of funding (60-65%) had the impact of increasing one-time demand or improving the community infrastructure and not of improving the economic potential, and within that there was a high rate of 'soft' projects. By contrast, the fundamental objective of the EU cohesion policy is to enable the regions with a low performance to converge. From this it follows that support is efficient when it generates additional output (compared to the situation without support).

Empirical investigations and analyses prove also in this respect that there are considerable differences (besides positive examples, low absorption efficiency is not rare);

➢ granting of funds took place on the grounds of political interests, significant portions were not used for investments supporting long-term convergence, and thus their impacts are also weak;

➢ funds are not additive, but have a substitution character. In the majority of cases they appeared not as additional funds but were substituted for former private or government investments (Kocziszky, 2010).

Our lagging and depressed regions were caught in a trap, for the efficiency of the fiscal moves of the past years (partly due to their soft nature and partly to their level being under the sensitivity threshold) was low, and the injections of capital proved insufficient to generate real convergence (that would have required a much stronger fiscal impetus).[5]

Beyond the macro- and mezzo-economic conditions of the real and nominal convergence of the regions in Hungary, the past years were lacking in sectoral and local economic policy harmony as well as in the underlying moral background. Part of the programmes had a virtual impact and the supports were used for 'political show schemes'.

An economic policy using a variety of fiscal and monetary instruments exclusively is insufficient for the management of regional problems, for the various shocks affect the counties to different extents.

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[4] *Under the l. National Development Plan in 2004-06 Hungary had close to 700 billion HUF at its disposal including national co-financing from the structural funds of the European Union, and the funds provided for the realisation of about 20 thousand projects in Hungary.*
Hungary was able to use almost all – 99 % – of the said EU funding in the period examined, however, the results is worsened by the fact that the beneficial financial performance incurred excess expenditure from the Hungarian budget of approximately 35 billion HUF. Among the reasons the national Auditing Office highlighted deficiencies in the harmonisation of the major national economic objectives, changes in certain objectives and the fact that while the institutions providing the support concentrated on the as complete as possible use of the funds, they did not pay appropriate attention to their efficiency (due to non-performance of winning projects it was necessary to have reserve developments, which cost more for their rapid production; there were also examples where developments already began had to be funded completely from national means due to suspicions about mismanagement).
The convergence of Hungary to the EU average is not progressing as we would have liked it to: the per capita gross domestic product increased only one per cent between 2004 and 2009 as a result of EU funding. At regional level the picture is even more disillusioning: while the more developed region of Central Hungary developed considerably, the positions of the six convergence regions did not change significantly, what's more Northern Hungary, Northern and Southern Great Plain, and Southern Transdanubia entered the group of the twenty poorest regions of the EU.
Examining the environmental, healthcare and certain education investments as well as regional development, it was found that we were coming closer to the EU development level, however, in the short term they did not result in economic growth. The situation was further complicated by the size of the funds and the compartmentalisation of their use, which resulted in the fact that we were only able to achieve partial results even in the realisation of the nicely sounding objectives. It can also be seen that while unemployment was soaring, in the development programs the effect of retaining jobs prevailed. In trainings promoting finding employment, approximately half of those completing the training and only 10 % of the disadvantaged found jobs. (ÁSZ, 2011).

[5] *There are no significant changes in the leading pack or in the lower third of the human development index (compared to 2000). According to the figures for 2009, the positions of Budapest (0.8739) Győr-Moson-Sopron county (0.687) and Fejér county (0.669) are the same, while those of Nógrád county (0.600) and Szabolcs-Szatmár-Bereg county (0.587) deteriorated further somewhat.*

# DESIRABLE DIRECTIONS OF A PARADIGM CHANGE

The mainstream of economic policy has been obsessed with growth in the past three decades and this view was mostly adopted by the authors of studies on regional growth and convergence as well. Today, however, it is more and more recognised that economic growth (even in such export-driven economies as Hungary) can be primarily achieved by an increase in productivity and added value and not by obtaining an increasing share of the global markets.[6]

The makers of the Hungarian economic and regional policy are facing a task that is not slight: they have to reduce low employment and deal with the lack in output arising from the deficit of added value simultaneously. This, however, requires a change of paradigm in regional policy.

Hungarian regional policy re-visited has to meet several requirements at the same time.

Condition 1: it has to be integrative, that is it has to arrange the elements of sectoral policies referring to regions in a multiplicative way along realistic objectives and funds; it has to meet top-down and bottom-up planning principles simultaneously.

Constructing regional policy is not independent of the objectives, instruments, resources of the sectoral and other cross-sectional policies (budgetary and monetary) or of the national economy-level allocation and re-allocation mechanisms.
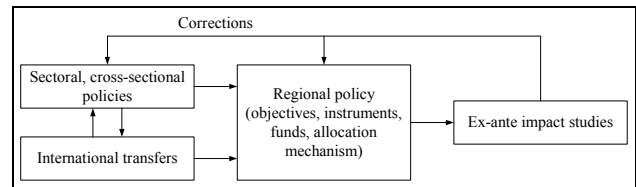
Source: author's own work

Figure 7. Logical process of constructing regional policy

Condition 2: sustainable and realistic regional growth objectives have to be set.

The objectives for a given region have to achieve improvements in economic growth and employment simultaneously.[7] That is why the empirical literature on convergence devotes more and more attention to conditional (relative) convergence (Barro and Sala-i-Martin, 1992; Romer, 1986), that is instead of 'catching up', it is increasingly the lasting growth rate that is determined by the own equilibrium path that comes to the foreground.

Creating the state of equilibrium at a lower level uses the empirical experience that in peripheral regions the likelihood of producing a high added value is lower due to the lower human potential index; therefore, increasing employment should be put in the foreground. This can increase the income of the population even in the short term, and local consumption can be increased without raising inflation.

Condition 3: expected consequences of regional policy are to be supported by ex-ante impact studies; its system of indicators and its methodology have to be elaborated.

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[6] *Economic widening is determined by the fight for a share that can be obtained in the global markets of processed goods. Economies showing external surpluses are generally declared to be 'competitive', taking no account of the development of their economic growth or productivity. Trade balance is regarded as the major index of a country, as if it were only a company. In reality, however, the two have hardly anything to do with each other. Trade balance means simply the difference between investments and domestic savings, or in a more general sense, the difference between aggregate expenditure and total output.*

[7] *This will probably be a prolonged process without the domestic industry (particularly the processing industry). It must not be forgotten that the high-tech (nano-, bio-, etc.) sectors produce high added value, have a low employment capacity and are located in highly concentrated areas even in the developed countries.*

Hungarian Clearing Turnover in the Context of the Past Fifteen Years

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SUMMARY

The past fifteen years have been decisive in terms of the appearance and development of one of the most significant background systems serving as a foundation for the economy, the clearing services. In November 1994 the automatic clearing system was introduced in Hungary, and the past two decades saw a well-balanced operation, continuous development and more or less uniform increase in turnover. The paper presents the events of this period, the present of clearing services, and the changes in the near future which are expected to have significant impacts.
Key words: clearing turnover, money, transfer, ACH, GIRO
Journal of Economic Literature (JEL) code: E42, G20

INTRODUCTION

For the up-to-date operation of the economy it is essential that there is a stable and reliable clearing service in operation. The clearing service practically provides the 'circulation' for modern economic life. Hungary has been using an automated interbank clearing system since the end of 1994. The clearing house of credit institutions operating the system, i.e. Giro Elszámolásforgalmi Részvénytársaság, was established as early as 1988. However, the start-up of the Interbank Giro System can be regarded as a more significant event, changing the domestic clearing turnover dramatically. The fact that the services offered by the clearing system that has been established are indispensable for the economy is shown by the National Bank of Hungary qualifying the system as 'an important payment system in terms of systems' and continuously controlling and overseeing its operation.

The paper – joining in with the topic of the volume – will present first of all the events of the past more than fifteen years, with particular emphasis on the operation of the clearing house, the widening of its range of services, the technical innovations and developments. Based on the information available today, a picture will also be drawn of the major plans, projects and expected tendencies affecting the near future.

PRELIMINARIES

There are three periods in the history of clearing services in Hungary:

The first period lasted from 1893, when the legal predecessor of today's GIRO Zrt. and KELER Zrt., the Budapesti Giro és Pénztáregylet Rt. was established and operated as a result of the accelerating development of financial institutions in Hungary in the years following the Austro-Hungarian Compromise, until 1948.

The second period lasted from 1948 to 1994. In this period the operation of the nationalised Budapesti Giro és Pénztáregylet Rt. came under the rule of the National Bank of Hungary, where the specialised staff performed this activity primarily manually.

The third period is considered to start in 1988 (establishment of the company), or rather in 1994 (start of the clearing services), which is called the period of automatic clearing. From that time on, clearing between credit institutions is performed fully automatically, electronically by GIRO Elszámolásforgalmi Rt. (today GIRO Zrt.) established specifically for the purpose. The following will present information on the clearing history of the period. (Ferber-Nagy, 1990)

The emergence of the two-tier banking system, which appeared in Hungary on January 1st, 1987, can be regarded as the trigger of the demand for automatic clearing. Three commercial banks were established from the credit

directorates of the National Bank of Hungary, its institute in Budapest and part of the Állami Fejlesztési Bank (State Development Bank): Magyar Hitelbank, Országos Kereskedelmi és Hitelbank, Budapest Bank; and Országos Takarékpénztár, Magyar Külkereskedelmi Bank as well as Általános Értékforgalmi Bank, which became independent of Pénzintézeti Központ, were connected by less tight links than previously to the central bank. Regarding the main elements, this meant that the commercial bank functions were practically separated from those of the central bank.

„Simultaneously with the establishment of the new financial institutions there appeared the demand for a payment system of the technology level of the age to be developed, in which a clearing house for credit institutions offered its services by means of computerised informatics and telecommunications systems. In this way the clearing of money turnover between banks will be completely electronically based; the computation and clearing of the interbank positions will be up-to-date; the amount of money in transit will decrease; the information on payment turnover will be more accurate and will appear faster." (Angyal)

BEGINNING OF THE PERIOD OF AUTOMATIC CLEARING

GIRO Rt. was established in December 1988 by 12 financial institutions, including the National Bank of Hungary. Between 1988 and 1994, GIRO Rt. worked on designing a clearing system meeting the interest and demand of the owner financial institutions and their clients and keeping the risks of the payment system low, on reconciling the interests and on building up the interbank clearing system. The main professional task was presented by solving the problem of the individual banks being capable of data processing according to the requirements of the giro system. (Fogaras, 1997)

Developing the Interbank Giro System (Bankközi Zsiró Rendszer – BZSR)

The switch to the new giro system (under Péter Ákos Bod as president of the National Bank of Hungary - MNB) was aimed at replacing the then paper-based accounting.[1] The tender announced by the central bank was won by a French company, which completed the development of the real-time, net clearing system,[2] called GIRONET, in 1992, but the planned start of January 1st, 1993 did not materialize. The management of MNB made the decision, in order to eliminate the risk arising from the

uncovered position of the banks, on the introduction of the gross principle: only full bodied items could be discharged in the system. This involved a complete transformation of GIRONET, therefore a new start date was given for 1 January 1994. The system, however, had not been completed by then; neither the banks nor MNB were ready for joining. Installing GIRONET was taken off the agenda, instead, a resolution was made on the implementation of the Interbank Giro System (BZSR) with a batch system but capable of making the coverage audit and operating on the gross principle, which would have been a background solution of the original online system. BZSR started operation on 18 November 1994. (Kovács 2010)
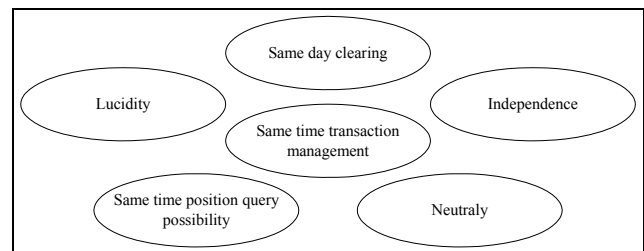
Source: authors' own work based on Fogaras (1997)

Figure 1. Operation principles of the Interbank Giro System (Bankközi Zsíró Rendszer)

DEVELOPMENT OF CLEARING SERVICES

Activities of GIRO Zrt.

1995 was the first full year of operation of the automatic clearing. The switch to the new bank account numbers was an event of outstanding significance for the complete banking system and the clearing services, and the clearing house played a considerable role in its smooth implementation.

That year saw the establishment of the Hungarian Treasury (Magyar Államkincstár – MÁK), which became involved in the clearing system. The role of MÁK in the clearing system became significant by 1998, for by then several hundreds of its institutions also became members of the clearing system and provided the majority of the group (wages) transfer transactions.

The activity of the background institution – as an interbank service provider – became of decisive significance in the first years and its efficiency affected the efficiency of the complete banking system. 1996 was the second full year in which the new system of clearing was tested in live operation.

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[1] Accounting for the six clearing banks was done by MNB.
[2] The net principle of giro clearing meant that payments were performed during the day without any conditions, and it will turn out only at the end of the day whether the bank sufficient coverage in its account for discharging its payment turnover.

The Interbank Giro System – thanks also to the efficient collaboration with the participants of the domestic money turnover – continued to operate without any problems. Further development and updating of the clearing system, the continuous widening of the range of services and raising their standards, and the performance of its fundamental function were implemented with great operational security.

In 1997 the service of group transfers and collecting was started, the first type with 1013 transactions, while there was no transaction in the second one.

It was at this time that experts first drew attention to the fact of the concentration: 5% of the orders accounted for 82.5% of the amount of turnover.

In 1998 the clearing house established in 1988 closed a jubilee year. Summing up the experience of the period completed, it was established that GIRO Rt. – on the basis of its order of operation developed, its personal and material conditions and its informatics and security system – was suitable for the reliable performance of the clearing services.

In 1998 the majority of the group transfers originated in institutions belonging to the scope of account management of the Hungarian Treasury. More than seven hundred institutions joined the service started at the beginning of the year.

The increase in the number of group collecting orders lagged behind that of the group transfers in the beginning. At the end of 1998 only 7 members of the clearing house sent collecting initiatives and the number of companies registered as collectors was only 81.

On 25 November 1998 GIRO Rt. was awarded ISO 9002 certification. GIRO Rt. was continuously awarded ISO 9002 qualification for the operation of BKR from November 1998 on, and from 2002 on the company has had ISO 9001:2000 certification as well.

In 1999 mutual savings associations outside the integration (TÉSZ) joined the clearing system as direct clearing members.

In that time the majority of transactions was still accounted for by traditional individual transfers (73%), while the share of group orders increased dramatically and accounted for 26% of all transactions.

In a joint development with the Hungarian Treasury, GIRO Rt. introduced a system for admitting and processing postal orders in March 2001. Group payments were further improved by the introduction of the gross principle clearing system. 2001 also saw an updating in the authorisation for sending and receiving messages.

The general objectives of the following years included improving transparency, developing a client-centred operation, improving efficiency and smooth performance of the clearing services. Development through projects was introduced.

Two new functions were included into the clearing services. One was late sending, which has since then enabled clearing members to send items to be processed without special consideration as late as six am. The other new function was the formal verification of bank account numbers, which took over considerable reconciliation work from the banks making the performance of credit entries more accurate and faster.

GIRO Rt. began authentic (authentication of electronic signatures) service for two banks and a financial organisation.

In 2003 the number of individual transactions – continuing to increase – came close to 100 million. Although the increase in the number of individual transactions lagged behind the increase in the number of group transactions, the share of individual transactions continued to be larger. This ratio – on the basis of trends – was soon to turn, for group solutions continued to gain more ground and simultaneously, the share of individual transactions decreased. Among the types of group transactions, the significant difference experienced so far between the HUF sums of transfers and collecting remained.

In 2003 the number of institutions under the Hungarian Treasury exceeded 800.

In December 2004 GIRO Elszámolásforgalmi Rt. closed a jubilee year (the company was about 15 years old, and the clearing services were 10 years old). Ten years passed since on 18 November 1994 the first electronic transaction was performed. The clearing turnover exceeded the annual limit of 200 million items.

In terms of the average value of transactions, a difference between group transfers and group collecting could be seen in a similar order to that between individual and group transactions. This can be explained by the fact that while collecting is used fundamentally for discharging utilities bills, group transfers are mostly a means of payment of wages of larger amounts for employees.

GIRO Rt. played an active part in the work of the working groups established by the Payment System Council. Pursuant to a resolution by the Council, one of the most important tasks was to proliferate group collecting, to increase its share and to reduce the use of 'yellow cheques' for payments.

In 2005 the activities of GIRO Rt. broke records in every field. In the field of clearing services the largest number of transactions processed in one day exceeded three million items. In that year the company cleared a total of 222 million transactions with a value of 55.6 billion HUF without a mistake.

Accession to the cross-border EBASTEP2 system, that of the transfer of small sums in euro, was also implemented in Hungary, which (HUNSTEP2) was performed jointly by GIRO Rt. and the National Bank of Hungary. In addition to its faultless domestic HUF-based operation in clearing, with the accession of Hungary to the EBASTEP2 system in 2005, the activities of the company also encompassed cross-border payments in euro. One of the greatest challenges of the years to come would be the accession to SEPA (Single Euro Payment Area).

In accordance with legislation requirements,[3] the name of the company was changed from Rt. (joint stock company) to Zrt. (closed joint stock company) showing the mode of its operation in 2006. From that year on, GIRO Zrt. and BISZ Zrt. made their joint annual report only in electronic format.

The increasing number and value of the transactions processed showed that the Hungarian payment culture kept getting more and more up-to-date gradually and changed over from cash to bank transfer. In the light of the changes in European payment processes and the tasks in connection with the introduction of the euro, GIRO Zrt. began elaborating the long-term strategy conception of the company with the involvement of Roland Berger Consulting.

The use of the services of GIRO Zrt. broke records in every field in that year. The daily average number of transactions performed exceeded one million in the year with the value of transactions performed daily exceeding 262 billion HUF. The number of transactions on some outstanding days in November and December exceeded 3.2–3.3 million items.

At BISZ Zrt. harmonisation of the business administration system and the Central Credit Information System (Központi Hitelinformációs Rendszer - KHR) was begun with the services, systems, and instruments of GIRO Zrt., as a result of which the concept group could offer more cost-efficient and up-to-date services for its clients.

The management of GIRO Zrt. adopted the long-term strategy drafted with the involvement of Roland Berger Consulting (GIRO, 2/2007/3). The mission of GIRO Zrt. is: It is primarily a priority clearing and credit management service provider of the Hungarian financial sector, and is differentiated by its confidential data management and reliability. Besides the primary task of performing clearing services, the Strategy highlights the preparation for the introduction of the euro in Hungary, the services supporting credit reference and risk management, as well as efficiency of scale, competition under equal terms, secure operation, transparency and – in accordance with the trends of the age – client-centeredness and services with added value.

GIRO Zrt. joined the Hungarian SEPA Association established in 2008, thus the company took an active part in the professional preparation of the domestic introduction of SEPA[4] as in the previous year.

Its services development plan focused on the implementation of the replacement of the basis software of the clearing system, i.e. the implementation of the first phase of the InterGIRO project. In harmony with the medium- and long-term strategies, the company transformed its services structure to a considerable extent,

as a result of which it achieved a clarified, transparent and predictable operation, a minimisation of the business risks, a definition of availability and a more efficient performance of its services.

In 2008 – contrasted with the previous year – the rate of increase of individual transactions was lower than that of the group payments.

At BISZ Zrt. the increase in the retail system exceeded the previous year by 15% and in the enterprise system by 31%. The global economic crisis made itself felt also in the clearing turnover (Figure 2). The number of items of 289 million of the clearing turnover showed only an increase of 2 % in comparison with 8 % in the previous years, while the total value of 63.5 billion HUF of the clearing transactions processed decreased by 9.7% .

BISZ Zrt. also reported the negative effects of the crisis: the number of live contracts with companies decreased by 5.4%, the existing credit defaults of residents (this system runs a negative list) increased by 56%, and thus the system encompassed a total of 790 thousand natural persons.

The synergy effects prepared with BISZ Zrt. in the previous years were implemented, thus the activities of informatics operation were also taken over by GIRO after finances and HR.
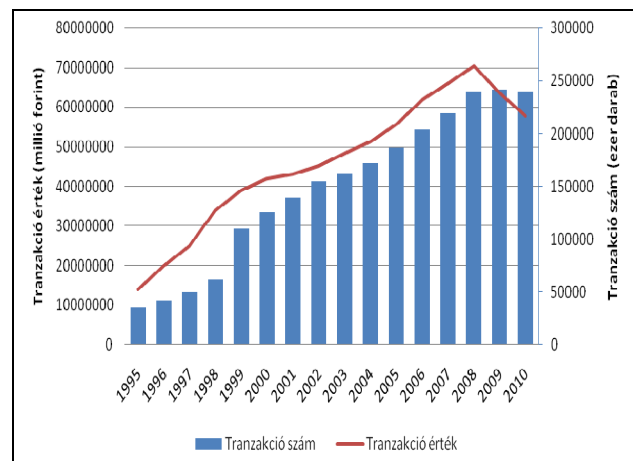
Source: Authors' own work on the basis of GIRO Zrt. data

Figure 2. Development of clearing transactions

In 2010 the experts expected a positive development in terms of clearing turnover, but the actual turnover did not justify the expectations, although the causes lay mainly in the characteristics of the clearing transactions. Despite the negative effects of the crisis that could be observed, in 2010 a new daily turnover record was born (4,218,455 items). The daily turnover exceeded three million items on three further occasions and the 2 million limit on 21 occasions.

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[3] *Act CXLIV of 1997, §177, paragraph /4/ amended by Act LXII of 2005, § 165*
[4] *Single European Payments Area*

Clearing clientele

The clearing member clientele continuously increased in the beginning (from 43 in the start-up year to 55 in 2000), then stagnation could be observed. Due to the cessation or withdrawal of certain credit institutions, and to new financial institutions entering the market, mergers, separations, etc. the number and composition of the members changed to a small extent from year to year. The early increase was largely the result of the mutual savings associations withdrawing from Takarékbank and belonging to TÉSZ joining individually in 1999. The number of clearing members was 54 on 1 April 2011 (Figure 3).

Alsónémedi és Vidéke Takarékszövetkezet	Magyar Cetelem Bank Zrt.
AXA Bank Europe SA Magyarországi Fióktelepe	Magyar Export-Import Bank Zrt.
Banco Popolare Hungary Bank Zrt.	Magyar Nemzeti Bank
Bank Of China (Hungária) Zrt.	Magyarországi Volksbank Zrt.
BNP PARIBAS Magyarországi Fióktelepe	Mecsekkörnyék Hitelszövetkezet
Budapest Hitel -és Fejlesztési Bank Nyrt.	Mecsekvidéke Takarékszövetkezet
CIB Közép - európai Nemzetközi Bank Zrt.	Merkatil Bank Zrt.
Citibank Europe Plc. Magyarországi Fióktelepe	MFB Magyar Fejlesztési Bank Zrt.
Commerzbank (Budapest) Zrt.	MKB Bank Zrt.
Credigen Bank Zrt.	Nagykáta és Vidéke Takarékszövetkezet
Crédit Agricole Corporate and Investment Bank Mo.-i Fióktelepe	Országos Takarékpénztár és Kereskedelmi Bank Nyrt.
Dél-Dunántúli Regionális Bank Zrt.	Oberbank AG Magyarországi Fióktelep
Deutsche Bank Zrt.	Örkényi Takarékszövetkezet
Erste Bank Hungary Zrt.	Pilisvörösvár és Vidéke Takarékszövetkezet
FHB Földhitel - és Jelzálogbank Nyrt.	Porsche Bank Zrt.
FHB Kereskedelmi Bank Zrt.	Raiffeisen Bank Zrt.
Fundamenta-Lakáskassza Lakástakarékpénztár Zrt.	Soltvadkert és Vidéke Takarékszövetkezet
FÜZES Takarék Szövetkezeti Hitelintézet	SOPRON BANK BURGENLAND Zrt.
Gránit Bank Zrt.	Szarvas és Vidéke Takarékszövetkezet
Hajdúdorog és Vidéke Takarékszövetkezet	Széchenyi István Hitelszövetkezet
Hanwha Bank Magyarország Zrt.	Szegvár és Vidéke Takarékszövetkezet
ING Bank N.V. Magyarországi Fióktelepe	Szentesi Hitelszövetkezet
KDB Bank (Magyarország) Zrt.	Takarékbank Zrt.
Kereskedelmi és Hitelbank Zrt.	TISZA Takarékszövetkezet
Központi Elszámolóház és Értéktár (Budapest) Zrt.	Tiszántúli Első Hitelszövetkezet
MagNet Magyar Közösségi Bank Zrt.	Turai Takarékszövetkezet
Magyar Államkincstár	UniCredit Bank Hungary Zrt.

Source: Authors' own work on the basis of GIRO Zrt. data

Figure 3. Members of the Interbank Clearing System
(1 April 2011)

In addition to the clearing members there exist also 'non-clearing-member credit institutions' – approximately two hundred institutions – which as respondent banks may indirectly join BKR through a clearing member, i.e. a correspondent bank.

Charges

In the first year of operation, sufficient experience was accumulated on the basis of clearing data on the development of money turnover, trends and the rates of transaction types. Thus it was possible to introduce a reduction of charges that was easy to model and was of appreciable amount on 1 January 1996.
In 1997 the clearing charges were modified several times, with the minimum charges rising from 5 HUF to 8 HUF to better reflect the transaction costs, while value dependence decreased from 0.25‰ to 0.21‰, but the ‰ charge remained, for a higher value involved higher financial responsibility.

In 1999 the charges continued to decrease, the ‰ charge decreased from 0.21‰ to 0.11‰, and the maximum charge from the then 1,000 HUF to 800 HUF.
In 2000 the charges decreased again, with the ‰ charge decreasing from 0.11‰ to 0.1‰, the maximum charge from 800 HUF to 400 HUF, while the colleting order charge rose from the then 4 HUF to 5 HUF. In group order charges the minimum charge rose from the then 5 HUF to 6 HUF, and the ‰ charge followed the ‰ charges of the clearing structure closely, and the order charge rose from the then 14 HUF to 16 HUF, with the charge for direct admission (this refers to the Hungarian Treasury) rising from 0.33‰ in 1998 to 0.3‰ in 1999 and then decreasing to 0.29‰ in 2000.
In 2001 the following charges decreased: maximum charge, and the direct submission minimum and the ‰ charge.
In 2002 the clearing charges continued to decrease, the minimum charges increased, the maximum charges decreased by close to 50%; the charges load decreased all in all. A plan was made for the introduction of a uniform transaction charge in 2006.
In 2003 there was further progress towards a uniform charges policy for clearing services: minimum charges increased and maximum charges decreased.
From the beginning of clearing services to 2006, the clearing members paid charges according to the amounts of transactions transferred. In 2006 GIRO Zrt. introduced a charging system independent of amounts and with a uniform transaction basis (20 HUF/item) (GIRO, Igazgatósági Előterjesztés, 7/2009/2). The transaction charge of 2010 (17 HUF/item) is more than 150 times lower than the maximum charge of 1995.

BISZ Zrt.

BISZ Zrt. was founded as a closed joint stock company by eight leading banks on 15 February 1994 with the purpose of establishing a credit information databank reducing the risk of credit accommodation. Due to a share capital increase in 1996, the circle of proprietors was increased by five new financial companies.
The Interbank Debtor and Credit Information System (Bankközi Adós- és Hitelinformációs Rendszer – BAR) became operational in 1995 with an overall register of the credit and credit-type contracts of businesses. The system was uploaded by the financial institutions with credit information data on businesses and residents and was used by them in their credit assessment processes.
Act CXII of 1996 (Hpt.) increased the scope of the users of the database to a significant extent, for it stipulated that in addition to credit institutions and specialised credit institutions also all financial institutions and investment trust companies offering investment credits join it.
In 1997 an amendment of Act CXII of 1996 (on Credit Institutions and Financial Services - Hpt.) created the legal foundations for a negative list register of natural person credit debtors. As a result, BISZ Zrt. opened its

system for registering the credit defaulting of natural persons in 1998.

The next milestone in the development of the system was represented by Act CXXIV of 2000. This amendment of the Act again increased the range of data belonging under the effect of BAR, which thus was extended by a register of businesses waiting in line, malpractices at credit card outlets and misuse of bankcards by residents.

In May 2003 the proprietor financial institutions sold their stocks to GIRO Elszámolásforgalmi Rt., which was also owned by financial institutions and in this way GIRO Rt. became the sole proprietor of BISZ Rt.

Previously the circles of owners and ownership rates of BISZ Zrt. and GIRO Rt. were almost identical. It was as a result of recognising this and of the possible synergy effects that Péter Legeza initiated the purchase of BISZ Rt. Due to the almost identical ownership rates it was possible to keep the purchase price low. (See the high profitability of the following years.). By purchasing BISZ Rt., GIRO Rt. made its data supply complete with the information from the debtor register system. And its service of authenticating electronic signatures and relevant experience supported the introduction of higher electronic security solutions in credit institutions.

In 2005 BISZ Zrt. offered a new service in the BAR credit report, which presented the credit reference data of a client in the form of a complete client report.

The Act on Credit Institutions and Financial Services in effect as of 1 January 2006 defined in detail and enacted the rules on the Central Credit Information System. As a result, the rules and data of the business and retail systems also changed. In addition, the Act introduced a register of resident credit requests rejected due to deliberate false data provision as well as of the institutions of legal action connected with reference data and of transfer of reference data. After complying with the stipulations of the Act, BAR was transformed and continued to operate as Central Credit Information System (Központi Hitelinformációs Rendszer – KHR).

Technical, IT Developments

In the period under examination two important IT systems, first the BKR, and then the InterGIRO system served the domestic clearing services. The following is a presentation of these systems.

BZSR/BKR

In August 1992 the French company BULL presented and delivered its completed clearing services system. The GIRONET mainframe (DPS8) system delivered by them used net clearing without coverage audit and had no background solution, therefore a decision was made on the establishment of a reserve system to be developed for a PC network and called Reserve Giro Centre (Tartalék Zsíró Központ –TZSK), the development of which was begun in October 1993. Following the decision on gross clearing, this system, originally meant as a reserve

system, came into the foreground and started operation first under the names Interbank Giro System (Bankközi Zsíró Rendszer – BZSR), and then Interbank Clearing System (Bankközi Klíring Rendszer – BKR). Starting with its live start-up in 1994, BKR did not make a mistake on a single day until it was closed in 1998 and processed 2 billion transactions.

InterGIRO

In 2009 after a long preparation and overall thorough testing, InterGIRO, the new clearing system of GIRO Zrt. (GIRO, Igazgatósági határozat, 7/2009/4) was introduced as of clearing day 2 November. Following a few weeks of pilot operation and four weeks of defaultless parallel operation, the previous clearing system was closed down definitely. The up-to-date, Java-based application, which offers good foundations for further development, was supplied by Montran Corporation (New York, United States), whose clearing software are operational in more than 35 countries.

The InterGIRO platform started operation in November 2009 and so far has come up to expectations with favourable operation experience. The availability of the clearing service has met the expected levels.

Further improvement of InterGIRO, within the InterGIRO2 project, will facilitate multiple clearing within a day in Hungary, which will be discussed in Part 5 in more detail.

Development of services in terms of IT in the past fifteen years

In 1995 the clearing house prepared on commission by the National Bank of Hungary a database distributed on CD and computer program facilitating the reconciliation of old and new account numbers primarily for banks and economic organisations with large clienteles, and developed and operated the GIROPHONE service for phone queries of individual account numbers. Another important event of the year was the introduction of the GIROMAIL correspondence system.

The banking system switched over to new bank account numbers that year. Based on an MNB conception, the standardised central solution of direct debiting (group collecting) was elaborated in the same year.

In 1998 preparations were begun for the IT solutions of the change of millennium (Y2K), and then in 1999 the banking part of the financial sector made preparations supported by GIRO Elszámolásforgalmi Rt. for the payments turnover to be continued in the same way also in the year of the millennium.

The company counted with the seasonality of annual clearing turnover from this time on (Figure 4), and the turnover of group payments increased with a bang (increased by thirty times in the course of one year).

Although the paper is not aimed at analysing seasonality, it should be noted in connection with the monthly development of the number of transactions that it is

influenced by a number of factors. One such fundamental factor is the fact of how many working days there are in a given month (number of weekends, state and religious holidays, etc.). In addition, the tendencies emerging may be caused by deadlines for tax payment, pensions for months 13 and 14 as well as other effects.
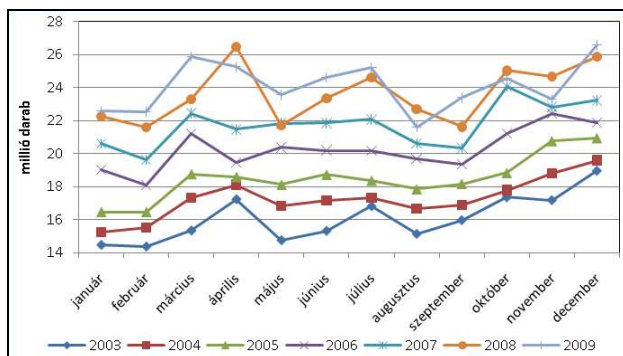
Figure 4. Monthly development of the number of transactions processed

Year 2000 brought important developments: the introduction of periodical clearing at the end of September and a reconstruction following the change in communication service provider and the development of a data management centre. The company increased the banking reception time by 4 hours with the introduction of periodical clearing. Thirty clearing members had their end-point instruments older than three years replaced.

With the integration of GIRODAT Rt. at the beginning of 2002, GIRO Rt. created GIRinfO Data Supply with the purpose that it should promote reducing the credit risks of financial institutions by providing access to authentic and public databases.

In 2003 there were several significant developments in clearing services. An enlargement of the functions of direct submission group payments was implemented. In addition to updating the endpoints in the banks, the construction of a new network monitoring system was completed. GIRO elaborated a Plan for Continuous Course of Business concerning the clearing services, and its live operation was tested in the middle of the year. The IT Security Conception and Policy was drafted, the Ethics Code including the norms of conduct and behaviour expected by the company was published in the first half of the year.

In September 2004 a decision was taken on Hungary joining the cross-border small amount euro transfer system, STEP2. The technical implementation was taken on by GIRO Rt. at the express request of MNB.

The Company Management System introduced during the year brought a new colour to the internal life of the company. Electronic document management and archiving was implemented, and the creation of a data storehouse eliminated a considerable part of paper-based work from everyday work.

In 2005 GIRinfO Data Supply successfully completed a switchover to a more up-to-date platform.

An outstanding project of the year was the replacement of the complete infrastructure of the clearing system. Development of GIRONet (today GIROHáló), the data transmission system built on the company's own copyright communication network was continued. Preparations were begun for the replacement of the BKR clearing system operating for a decade.

The services of GIRinfO were used by 80 clients already in 2007, and close to one and a half million queries were performed. The partners of the company used the information obtained from here to make their own risk evaluation systems much more reliable.

In 2008 the transaction turnover of GIRinfO Data Processing Service increased by 20 % in spite of the unfavourable macro-economic processes with an increase in the clientele at the same time: by the end of the year 87 clients used the service with its single-counter, on-line access. Under the effect of the crisis, however, the query transactions of GIRinfO data supply decreased to a significant extent. The spectacular increase in the past 7 years was followed by a huge decline. The average monthly number of queries in 2008 was 146,737, in 2009 it was only 98,798, and in the first five months of 2010 it was only 83,523 due to further decrease.

In 2009 after a long preparation and overall thorough testing, InterGIRO, the new clearing system of GIRO Zrt. (GIRO, Igazgatósági határozat, 7/2009/4) was introduced as of clearing day 2 November. Following a few weeks of pilot operation and four weeks of defaultless parallel operation, the previous clearing system operating for 15 years nearly to the day was closed down definitely. .

MANAGEMENT AND PROPRIETORS OF GIRO ZRT.

György Vasvári, managing director – later chief executive officer - (1988-1992), made the preparations for the foundation of the company, started the company and prepared the introduction of the SG2-BULL-based clearing system. The system did not become operational due to the cost requirements of certain banking functional demands and banking interests.

László Szamosi, chief executive officer (1992-2001), implemented BKR, the first clearing software that became operated live, in own development and led the company to a successful economic/growth path.

Péter Legeza, chairman – chief executive officer, has been directing the operation of the clearing house since 1 November 2001. His election was initiated by the National Bank of Hungary with the intention that the operation of the company should be more transparent and cost-efficient. Péter Legeza used to work for Interinvest (the predecessor of Inter-Európa Bank), Citibank, Westdeutsche Landesbank, Postabank, and then as a consultant for the National Bank of Hungary.

At Giro Zrt. he expanded the activities of the company by several new services, including data supply service (GIRinfO) and central credit information services (purchase of BISZ Zrt.). Based on new IT foundations and in cooperation with Montran Co he introduced new clearing software (InterGiro). Clearing services developed dramatically under his leadership and at present preparations are being made for the most significant development so far, same-day clearing and the introduction of the SEPA format.

Ownership structure

In 1988 at the time of its foundation, Giro Rt. had capital stocks of 504 million HUF. This increased continuously through further equity issue: equities in the face value of 50 million HUF in 1992, 30 million HUF in 1993, 30 million HUF in 1994, 5 million HUF in 1995, and again 5 million HUF in 1996. In 1996 the company increased its capital called up to the account of its equities threefold, to 1,872 million HUF. In 1997 the capital stock was again raised to the account of the company's equities, and from that year on the called up share capital of the company is made up of 2496 personal shares with a nominal value of 1,000,000 Ft HUF each.

The shareholders of GIRO Zrt. increased the capital stock of the company to close to 2.5 billion HUF in the past years (a total of 2496 shares with a nominal value of 1 million HUF each).
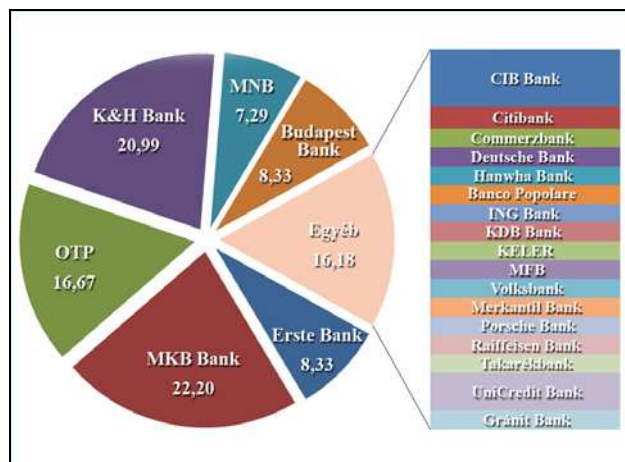

Source: authors' own work on the basis of GIRO Zrt. data

Figure 5. Share of the proprietors each of the shares of GIRO Zrt. (%)

Although the number of the clearing members (credit institutions joining BKR directly) is constant on the whole, the number of shareholders has been continuously decreasing since 2000 as a result of mergers and closures. Compared with the 43 share holders in 1995, GIRO Zrt. had 23 shareholders in 2011.

Current operation of BKR

Clearing of the interbank payments in Hungary is performed to its complete extent electronically. This is implemented in two ways: using BKR and VIBER (Real Time Gross Clearing System - Valós Idejű Bruttó Elszámolásforgalmi Rendszer) introduced in 1999 and operated by MNB.

BKR operated by GIRO Zrt. is a clearing system satisfying international directives and best practice, the structure of which facilitates the smooth everyday operation of domestic interbank payments. BKR ensures that credit institutions can offer their clients up-to-date and high standard payments services. In accordance with demand by the credit institutions, transaction of the day are cleared in the accounts of the clearing members by the morning of the following clearing day, thus they can be credited in the account of the client. (GIRO Zrt.)
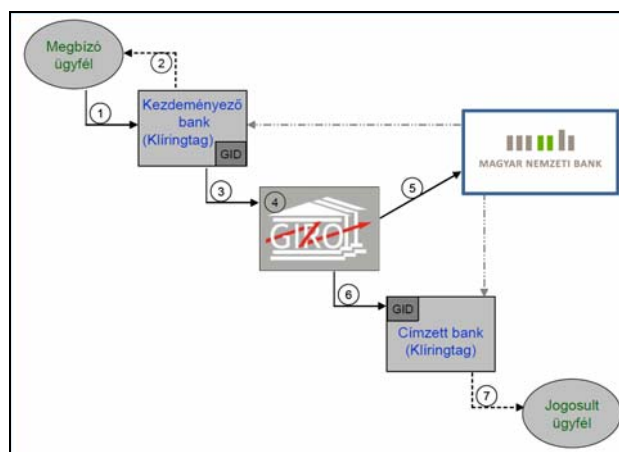
Source: GIRO Zrt.

Figure 6. Process of individual transactions in BKR

Steps in the process:
1. Submission of order [for day T-1].
2. Debiting the client account of the client [on day T-1] (display on the bank statement).
3. Starting interbank transaction [day T-1].
4. Receiving and clearing the transaction (with regard to frame) and calculating the interbank position [for clearing day T] in BKR.
5. Forwarding interbank position and receiving it [for clearing day T], debiting and crediting the bank accounts, informing the banks.
6. Forwarding and receiving the transaction [for clearing day T].
7. Crediting the account of the entitled client (display on the bank statement).

BKR clears only transaction where the accounts of the commissioning client and of the entitled client are managed by different clearing members.

THE FUTURE OF CLEARING IN HUNGARY

The period between 2002 and 2010 can be regarded as the most active period in the history of clearing in Hungary. In this time the Hungarian clearing house for credit institutions, GIRO Zrt., was successful in expanding its activities with data supply (GIRinfO) and central credit information services (purchase of BISZ Rt.), decreased drastically the clearing charges and introduced new clearing software (InterGiro) based on new IT foundations. Through their activities the company and its management actively participated in determining the Hungarian and EU development directives concerning clearing services.

Today the clearing house and perhaps the whole of the domestic banking sector are faced with perhaps their greatest challenge so far. Concerning the introduction of BKR and VIBER, we can say that the Hungarian clearing services system belonged to the forefront of Europe at the time, however, by today a considerable number of the European countries are ahead of us in several respects, which in itself makes catching up justified.

In the near future Hungary, as the 18th country in the European Union, will achieve same day clearing concerning domestic transfers in terms of all the clearing members and, simultaneously with that, introduce the SEPA format. The new clearing system created in the framework of the nationwide project InterGIRO2 will be operational as of 2 July 2012. This change may be a milestone in the history of clearing in Hungary and is expected to exert significant influence not only on the banking sector, but the whole of the economy as well.

The introduction of the euro will also cause considerable changes beyond doubt and require serious preparation in terms of clearing as well, but it seems to be a long way away as indicated by current trends. At the same time the use of the SEPA payment standards in the HUF-based payments will make overcoming the difficulties arising from the change of currency considerably easier.

Same day clearing

At present there are several payment systems operating in Europe. Their operators also show a great variety from the small and/or national clearing houses to the pan-European EBA STEP2 clearing house. In several EU member states these organisations also offer same day clearing services, which, however, may differ to great extents (e.g. in terms of clientele or charges). As regards the current situation, Hungary can be considered to be backward in this respect, for this service does not exist in Hungary.

This may be changed by the 'introduction of during-the-day clearing connected to the use of the SEPA standards' started on 2 July 2010, also called the InterGIRO2 (IG2) project, with the aim of introducing same-day clearing for domestic, non-paper-based transfers concerning all clearing members by 1 July 2012 and the SEPA format. This is a new challenge for the whole of the Hungarian banking sector which it has not been faced with since the establishment of the modern automated clearing house, GIRO Rt. The expectations are that if the project is implemented, transfers will be processed according to the SEPA standard and the majority will be credited to the relevant accounts within 1-2 hours, which will represent a major transformation of the money and clearing turnover. The necessary developments will affect the complete IT, operation and process organisation of the banks.

Single European Payments Area (SEPA)

The economic integration of the member states is one of the most essential objectives of the European Union. The free movement of capital, goods and services is an important element in the realisation of this objective. However, it was experienced in the EU that the money turnover between the member states is slow and expensive compared to the internal money turnover within the individual countries, which seemed to be a barrier to the deepening of the economic integration. Furthermore, despite the introduction of the euro in 1999 and despite the establishment of the common payment system performing large amount euro payment transactions, TARGET,[5] small amount euro electrical payment transactions continue to be administered in different ways in the euro zone. This was the reason for creating a single European payments area, SEPA. (Bartha, 2003.)

In Hungary SEPA transfers (HCT[6]) can predictably be introduced at the same time as same-day clearing, the two tasks have been combined in the ongoing InterGIRO2 project. (InterGIRO2 Üzleti kézikönyv v0.1, 2010)

From the day of starting the new system, it will be possible to clear only SEPA transfers for some time, and this will later be joined by SEPA collecting constructions. As far as can be foreseen, between 2012 and 2015 the old and new payments and clearing processes can be both used side by side, although with severe limitations.

SUMMARY

The past fifteen years have been decisive in the history of clearing services in Hungary, in the emergence and development of automatic clearing. The paper attempted to present the events in this period.

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[5] *Trans-European Automated Real-time Gross Settlement Express Transfer System*
[6] *Hungarian Credit Transfer: forint-based SCT (SEPA Credit Transfer)*

Since its first full year, 1995, the Interbank Clearing System (BKR) intended for the administration of transfer and collecting orders requiring clearing between banks has been practically faultless in its operation providing the money turnover necessary for the operation of the economy. Until the economic crisis originating in the property market of the United States and spreading all over the world, the clearing turnover in Hungary achieved an outstanding growth rate year by year. Behind this success is the clearing house, GIRO Zrt., which is performing its tasks with a continuously growing number of services and rising technical standards. Several audits by internationally recognised professional organisations bear witness to its reliable operation. Today its activities are regarded as a public service and their development (e.g. SEPA) represents an essential element in reviving the economy.

After presenting the successes of the past and present, the challenges of the future cannot remain without mention, for several ongoing and future changes make us look forward to the years to come. By means of the InterGIRO2 project we can get back into the vanguard of Europe, where we belonged at the beginning of the past 15 years. At the same time due to the complete European Union standardisation, issues of efficiency may make small clearing houses like the one in Hungary face tasks that seem unsolvable.

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Spatial Effects of Industrial Restructuring in the Visegrád Countries

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SUMMARY

During the transition period the Visegrád Countries (Czech Republic, Hungary, Poland, Slovakia) had to be integrated not only into the international political, legal, defence systems, but also the European and global production structures, chains. This rapid integration (or rather reintegration) process made significant effects on the production activities, which influenced the role of industry in the national economies, the structural distribution, the environmental emission and the geographical extent.
Keywords: Visegrád countries, industrial restructuring, spatial economics
Journal of Economic Literature (JEL) code: O14, O18

INTRODUCTION

Since the turn of the decades 1970-80, a considerable spatial and structural transformation can be observed in industrial production globally. The major changes have been induced by the opening up of the economies of China, the Eastern block countries and then of India. The Asian and Eastern European countries integrating into the global economy have provided hundreds of millions of workers and consumers, as well as abundant sources of resources and raw material supplies. In addition, the accelerating technical development has exerted a significant effect on the special location and structure of the secondary sector.

This global transformation has not left the industries of the Central-Eastern European countries untouched either. The rapid change in East-West orientation has lent an individual characteristic and development path to this region. During the transition period, the forces of de-industrialisation and re-industrialisation acted jointly, although with a shift in terms of space and sector. As a result, the production sectors of the Visegrád countries (Czech Republic, Poland, Hungary and Slovakia) underwent considerable changes (Barta 2002; Kiss 2010). It is important to state and emphasize that in spite of the vigorous tertiarisation of the economies, the industry has maintained its significance in the economies of the region, both in terms of the employment of workers and of the production of added value (Enyedi 2009). The performance of the processing industry fundamentally determined export capacity (the extent of volume), and had a direct effect on the growth of the entire economy

(other sectors) as well as the revenue level (Horváth 1999).

All this justifies a detailed structural and spatial examination of the secondary sector, with special regard to the processing industry.

CONCEPTUAL AND THEORETICAL BACKGROUND

The secondary sector includes the sectors of the production, processing and construction industries. These activities transform the raw materials and primary products of the primary sector into usable and consumable forms. The widening of the secondary sector is a consequence of the industrial revolution within a given national economy. The process began in England in the second half of the 18th century and is still continuing. In the course of the more than two hundred years the global diffusion of the phenomenon has taken place, with only a few segments of the Earth being left untouched. The phenomenon of industrial production and employment gaining ground is called industrialisation. According to the explanation in the encyclopaedia, the concept means the introduction of large-scale mechanised technology into the national economy of a given country. From the early 19th century to the middle of the 20th century, the developed countries saw an expansion of the industries of the secondary sector parallel with a reduction in the role of the agrarian sphere and an expansion of services. The underlying reasons for the growth of the industry expressed in absolute numbers were considerable changes in sectors and structure

(Szalavetz 2007). The structural changes lent a cyclic motion to the development of the entire economy (Kondratyev- or k-cycles). From the 19th century on, a variety of industries played the driving role (textile industry, steel making, chemical industry, vehicle manufacturing, information technology, etc.).

In the middle of the 20th century, the countries of the developed world reached what is called the post-industrial phase, where the role of the secondary sector became secondary behind that of the tertiary sector (services). The primary cause of the process is that the number of those employed in the industry decreased together with the value produced. Issues of the environment, labour market, regulation and budget contributed to the cutting down and decrease. The phenomenon is called de-industrialisation and is typical of several regions in North America and Western Europe (Rodwin & Sazanami 1991). This caused the largest decline in output and labour market disturbances in the regions with heavy industry or mono-structure production (Mid-England, Northern Spain, Northern Italy, Luxemburg, the Ruhr region, etc.).

Today Asia creates tough competition not only through the newly industrialised countries for the manufacturers in Europe and North America, but the fast development of China and India further increases the gravitational effect of the Far East and Southern Asia. That is why in the western world the economic policy objectives frequently include re-industrialisation, for the performance of the secondary sector often exerts a direct influence on the creation of value and jobs, which is of strategic significance concerning social and trade policies as well (Kocziszky 2008; Barta 2008).

However, it is not a matter of indifference in what way re-industrialisation and the revitalisation of the secondary sector takes place in Europe, particularly in Central-Eastern Europe. What industries will be introduced and will settle there?

If the mono-structural manufacturing industry based on mass-production is to (re-)appear, it is possible to talk of re-industrialisation. If, however, we can witness the settlement of production with a diversified structure under modern conditions (infrastructure, management, labour market, others), we can speak about neo-industrialisation (Landesmann & Székely 1995). The emerging 'new' production and sectoral structure will thus determine the labour market situation, revenue-producing capacity, the economic development path of a smaller region or even of an entire national economy for a longer period.

Inspired by the above ideas, the author wishes to find the answers to three questions in the paper:

➢ What tendencies can be discovered in the industries of the countries of Central-Eastern Europe in the period of transition?

➢ Is it possible to talk about industrial restructuring and which type of re-industrialisation has emerged?

➢ What spatial (regional) dimensions did the re-structuring have?

The examination has been expanded to cover the Visegrád countries. For the calculations the data in the on-line sources of OECD Factbook, EuroStat and the World Bank were used (EuroStat 2009; OECD 2008).

The examination of the secondary sector did not include the construction industry: only the processing industry was analysed.

The data available allow monitoring of the complete period of transition, while at the same time the time horizons of the regional and structural changes are limited to the period 2000-2007.

In spite of the fact that the financial crisis of 2008 opened a new chapter in the history of the development of the world economy, the analysis of its effects will be neglected here, due partly to the currently limited availability of the data, and partly to the complexity of the issue.

STRUCTURAL CHANGES IN THE INDUSTRIES OF THE VISEGRÁD COUNTRIES

The political changes of 1989 launched dramatic de-industrialisation processes in Central-Eastern Europe. The crash of the markets within the scope of the Council of Mutual Economic Assistance, the non-realisation of investments, the lack of competitiveness, the unfavourable sectoral structure and the economic slump in Western Europe led to a marked decrease in industrial output. The industrial added value decreased in Czechoslovakia by 27.83% in 1991 and by nearly the same value (27.72% (10.40 and 17.32)) in Hungary in two years (1990-1991). In Poland the depth of the J-function (called so due to its shape), i.e., the extent of the recession was not that large, but its duration in time was longer, for the decline had already started in the mid-1980s.

By 1993 and 1994 the significant decrease in the industrial added value came to an end, but the annual change index continued to show a fluctuation and volatility (Illés 2002). With the exception of Hungary, the other three Visegrád countries experienced several years when the industrial added value decreased. These declines can be traced back to structural problems and to a variety of effects of the different privatisation methods (Dabrowski et al. 2004). The form of privatisation fundamentally determined the development of the volume of foreign capital investment. Although Hungary was exempt from these structural declines in the 1990s, the 'investment boom' following the accession to the European Union in 2004 and the dramatic industrial growth emerging as its consequence could not be experienced here, which also has its underlying causes in the structural problems.

In the period 1994-2007 Slovakia produced simultaneously the highest average growth rate (7.15%) and the highest extent of fluctuation in terms of industrial added value. The performance of Hungary provided a counter-example: the average growth rate was the smallest (5.14%) but at the same time the most balanced.

In terms of the ratio of industrial added value against GDP (Gross Domestic Product), the positions of the Visegrád countries underwent significant changes. Only in the case of Slovakia was it possible to register growth in the period examined, which resulted in Slovakia presenting the same characteristics as the Czech Republic by 2007. In the latter it was possible to observe a slow amortisation of the share of the industry; this trend was changed only by the recovery following EU accession. The positions of the other two countries also came closer to each other in this period. However, Poland and Hungary followed different trajectories (development paths) to get to their final positions in 2007. While in Hungary the industrial recovery of the beginning of the period was able to increase the relative weight of the secondary sector within the entire national economy, and the processes leading to losses of market began to act only subsequently, in Poland these trends appeared in a reverse time sequence (Ehrlich et al. 1994). Following the apparent de-industrialisation of the 1990s, there came an improvement in position from 2002 on (Figure 1).
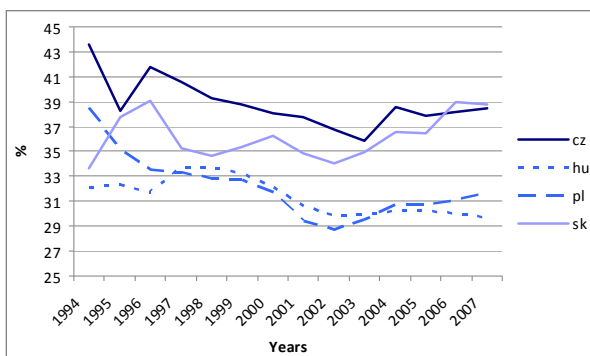
Source: author's compilation based on World Bank data

Figure 1. Industrial added value in percentage of the GDP

In spite of the fact that the ratio of industrial added value against GDP decreased in most cases, industrial output still exerts a decisive impact on the performance of the entire economy. This is proved by the strong concurrent movements of the annual changes in the GDP and in the industrial added value. The high correlation values of the two figures (Cz: 0.90; Hu: 0.92; Pl: 0.92; Sk: 0.41) provide proof of this.

But what were the extent and intensity of industrial re-structuring in reality? In order to give the right answer to that question, an analysis of the processing industry was done at sectoral level, on the basis of the types of indicators used above (added value and workers). The compatible data currently available (EUROSTAT) are for the period 2000-2007.

For better organisation, the industries were grouped by their technology intensity. In the grouping the EUROSTAT methodology was followed. Further details on the industries included in the research and their categories are given in the table in the Appendix. The table below shows the percentage changes in the number of workers and added value from 2000 to 2007 by individual categories and countries (Table 1).

Table 1. Percentage change in workers and added value by 2007 as compared to the basis of the year 2000, % (2000 = 100)

		Workers	Added value
Total	Total	104.63	215.60
	CZ	100.43	221.88
	HU	102.37	200.02
	PL	112.55	163.35
	SK	103.17	277.15
low-tech	Total	91.59	169.80
	CZ	84.70	165.29
	HU	96.70	157.56
	PL	103.91	145.84
	SK	81.04	210.50
medium-low-tech	Total	115.45	246.95
	CZ	106.80	236.94
	HU	117.27	226.35
	PL	122.91	209.49
	SK	114.80	315.04
medium-high-tech	Total	121.34	243.29
	CZ	112.63	238.21
	HU	119.71	236.95
	PL	125.31	200.61
	SK	127.70	297.38
high-tech	Total	118.89	225.12
	CZ	141.88	195.40
	HU	115.09	219.58
	PL	122.74	150.58
	SK	95.85	334.92

Source: author's compilation based on EUROSTAT data

Poland, where an increase of 12% was registered, there were no significant changes in the number of workers in the processing industry, however, their distribution by industries showed considerable modifications by the end of the period.

Low-tech industries (with low technology intensity) showed a significant loss in their weight in the labour market. Medium-low-tech activities (with medium-low technology intensity) produced identical tendencies in the Visegrád countries. In the period examined, all economies showed a marked increase in the number of workers employed.

By contrast, the medium-high-tech segment (with medium-high technology intensity) showed the largest average growth with a considerable scatter among the growths of the individual national economies. The labour

market roles of high-tech industries (with high technology intensity) – with the exception of Slovakia – increased during the period, which hints at a favourable change of direction in the restructuring of the industry.

The averaged, aggregate values prove the dynamic restructuring among the workers of the industry in the Visegrád countries. This is supported by the sectoral lists as well, which present the sectors with the largest growth and decrease on the other hand.

Industries creating the largest numbers of jobs in comparison:

➢ NACE code 34: Vehicle, transportation equipment manufacturing (181.5%);
➢ NACE code 30: Business machine and computer manufacturing (156.4%);
➢ NACE code 25: Rubber and plastic goods manufacturing (149.3%).

Five industries where the number of workers decreased:

➢ NACE code 18: Clothes and fur product manufacturing and textile dying (62.2%);
➢ NACE code 17: Textile manufacturing (71.1%);
➢ NACE code 24: Chemicals and chemical products, artificial fibres and chemical fibres manufacturing (87.7%);
➢ NACE code 26: Non-metal mineral products manufacturing (90.9%);
➢ NACE code 27: Metal raw material production (96.2%).

In the Czech labour market a marked movement covering the entire vertical structure of industrial workers was observed. What happened in Hungary was smaller both in volume and in extent. In Poland, industrialisation affected industries with low-, medium- and high-technology intensity in a uniform, balanced way. In Slovakia an interesting phenomenon can be observed, for both the low- and the high-technology intensity industries suffered losses in the labour market, and jobs in industry were mainly created in the sectors with medium-technology utilisation.

The question arises: in the context of the above, what differences can be found between the sectoral performances with consideration of the added value?

In the interval of 8 years, the added value increased in the majority of the industries, although the rate of growth varied. Only among the low-tech industries can be found an industry (the textile industry) where the added value decreased at current prices.

In the medium-low-tech and medium-high-tech industries similar trends emerged as in the labour market processes, with a high, above average rate of growth.

Among medium-high-tech activities, the increase in added value shows a highly varied profile, from below average in Poland to outstanding in Slovakia.

The ranking of the sectors covering the Visegrád countries developed as follows in terms of added value. The sectors producing the largest growth and the smallest increase demonstrate the economic restructuring in these terms as well.

Industries with the largest growth:

➢ NACE code 32: Telecommunications (radio, television) and telecommunication equipment manufacturing (379.9%);
➢ NACE code 34: Vehicle, transportation equipment manufacturing (324.6%);
➢ NACE code 25: Rubber and plastic goods manufacturing (284.2%);

And industries with the smallest growth:

➢ NACE code 30: Business machine and computer manufacturing (152.7%);
➢ NACE code 18: Clothes and fur product manufacturing and textile dying (112.2%);
➢ NACE code 17: Textile manufacturing (135.5%).

The industrial restructuring of the Visegrád countries also affected the sectoral distribution of the production of added value. The Czech Republic and Hungary showed similarities not only in the comparison in terms of workers, but also in terms of added value. The marked growth of the two countries was driven by the medium-tech industries, with the low-tech and high-tech segments lagging behind. In Hungary the slower industrial growth was accompanied by more marked trends in restructuring. In Poland the increase in added value was the slowest; however, the individual industries played well-balanced roles in the moderate expansion. In the period 2000-2007 Slovakia presented the highest rate of industrial growth, with the technology-intensive industries being the engines of the growth.

On the basis of the multi-aspect comparison of the individual national economies it can be stated that the process of industrial restructuring can be observed in all four Visegrád countries. More similarities than differences can be recognised between the economies, even if unique characteristics of certain sectors can be found. The data allow the conclusion that the strong industrialisation in the Visegrád countries in the period 2000-2007 produced significant structural changes. The winners of this structural change are the mid- and high-tech sectors. This can be regarded as a favourable development, for it suggests a modernisation of the production and processing structure (neo-industrialisation).

SPATIAL DIMENSIONS OF INDUSTRIAL RESTRUCTURING

De-industrialisation, then the new ground gained by industry, did not affect the regions of the Visegrád countries in a uniform way. The market processes of the transition period increased the inequalities in development between the individual regions. The calculations bear out the findings that among the regions outside the capitals, where tertiarisation was the strongest, the economies of the regions were able to start on a lasting growth path where industrial restructuring

had taken place, and thus jobs were retained and the region was able to become involved in the European and global division of labour.

The regions (NUTS 2 units, of which there are 35 in the Visegrád countries) were examined in terms of the changes in the number of workers in the processing industry and the volume of added value in the period 2000–2007.

The changes in the number of workers in the secondary sector on a national level were described previously, now the regional projection of the changes will be presented. Each of the four Visegrád countries shows a different configuration. Hungary and Slovakia are a couple of contrasts, for while in Hungary all the regions – although to different extents – were affected by the labour market de-industrialisation (decreasing employment in the industry), in its northern neighbour the powerful industrialisation that can be demonstrated at the national economy level made its positive effect felt in all the regions. In Hungary the largest decrease was shown by Central Hungary, as a result of the powerful tertiarisation of Budapest. A similar extent of decrease can be registered in the Southern Transdanubia. The decrease was of the smallest extent in Central Transdanubia. In Slovakia the number of jobs in the industry increased to the greatest extent in the western areas close to Bratislava, and to the smallest extent in the capital itself.

In the Czech Republic and Poland the processes in the industry have a more mixed spatial pattern. In the Czech Republic the regions of the capital and the country/rural regions are sharply divided. While in Prague the number of industrial workers decreased both in the absolute and the relative values, it increased in the other seven regions. The region of Strední Cechy (close to the capital) and the region in the Northwest (Severovýchod) benefited most from the labour market expansion of the industry. In Poland the wider surroundings of Warsaw (Mazowieckie) showed the largest increase; in addition, the number of workers in the secondary sector increased in most of the regions of the country (ten). At the same time, in six regions the number of workers in the industry decreased (in central Lódzkie, in Southeastern Malopolskie and Lubelskie, in Opolskie in Silesia, and in the Northern Zachodniopomorskie and Kujawsko-Pomorskie).

In terms of added value, each region showed an increase, although its value shows a significant scatter. It is a general phenomenon that an increase of the industrial value higher than the national average took place in the regions of the capital or around the capital (the exception being Mazowieckie in Poland). This is a particularly outstanding performance when it is taken into consideration above that central regions are characterised

by a decreasing or stagnating number of industrial workers. It can be read from the two processes that the capitals are likely to excel in attracting and retaining knowledge- and technology-intensive industries creating a high added value. In addition, the figures disclose that the regions around the capitals also enjoy the benefits of the spatial restructuring of the industry. This lends itself particularly well to measuring in the Czech Republic and Slovakia: in Strední Cechy and Západné Slovensko (Western Slovakia). These trends are less characteristic of Poland.

In the Czech Republic, in addition to the dynamic growth of the capital and the regions around it, Moravskoslezsko achieved a higher level of expansion rate.

In Hungary, in terms of added value Northern Hungary and Central Transdanubia showed a higher growth, although below average; thus in this case the traditional (northeastern–southwestern) industrial axle of the country is reflected.

It is interesting that in Slovakia the dynamics of the expansion of the industrial value is given not by the region of Bratislava, but by the regions in Western and Eastern Slovakia, where the largest increase in added value could be registered in the complete Visegrád population. The most complex picture in this comparison is also provided by Poland. Among the Visegrád countries Poland has the lowest added value increase while the slower rate is better distributed in spatial erms, for the industrial added value increased in 8 regions at a rate above the national average. It is conspicuous that in these regions employment in industry also increased by a larger rate in the period examined. It follows that in these regions the expansion of production in the labour-intensive industries provided the foundation for this development.

As a result of the transformation the following regional economic configurations had developed in the Visegrád countries by 2006.

The group of the central regions is easy to separate in terms of sectoral distribution. In these regions the role of the tertiary sector is outstanding concerning both the labour market and the added value. In the case of Bratislava and the region of Warsaw (Mazowieckie) it is possible to recognise individual features. In the former industry can be regarded as significant in value creation, while in the latter the role of agriculture as an employer becomes important due to the peripheral, rural regions. This group also includes the region of Szczecin (Zachodniopomorskie).

The majority of the remaining 31 regions (27) possess secondary sectors more significant than average, considering both the labour market and the added value.
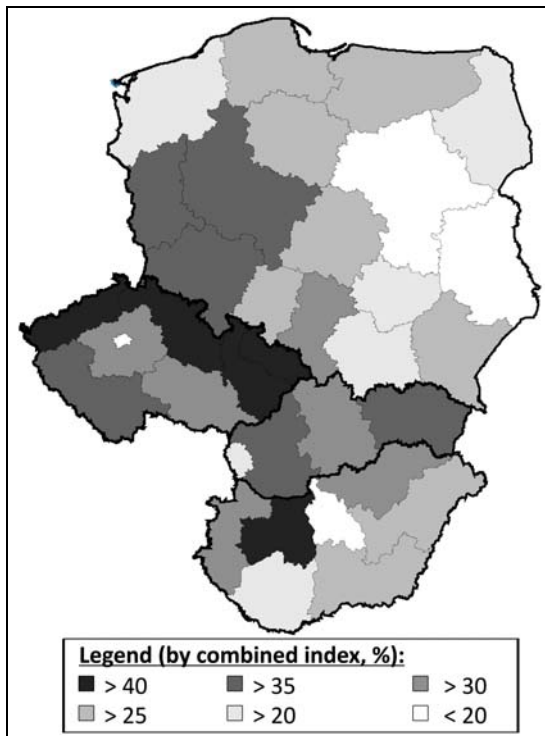
Source: author's compilation on the basis of EUROSTAT data

Figure 2. The role of the industry in the economies of the regions (2006)

In the Czech Republic and Slovakia the country regions (outside the capital) show a particularly strong, individual industrial character in both aspects. Only in Western Slovakia (Zápdané Slovensko), in the 'larder of the Highlands', does agriculture appear as a characteristic sector in terms of added value.

Hungary and Poland present more mixed pictures with more and more diverse regions. In Hungary the earlier (southwestern–northeastern) industrial axle is still evident, but the industrial character appears combined with agriculture also outside of these regions. It is only in Southern Transdanubia that agriculture is an employer with above average weight. In Poland, particularly in the east, the agricultural profile appears markedly and it gradually weakens towards the west. In the easternmost regions the labour market and economic roles of the primary sector are also characteristic. At the same time in Silesia (Slaskie, Dolnoslaskie) and in the south (Malopolskie), as well as in the western and southwestern regions (Lubuskie), industry has maintained its priority role.

In summary it can be stated that industry shows outstanding significance in half of the regions (in eighteen) and has a characteristic role in ten more. In the Czech, Slovakian and Silesian regions with significant industrial traditions and capacities, where it was possible to modernise the production structure via the appearance of foreign working capital in the second half of the transition period, industry continues to have an outstanding significance. The capital regions, with a dominance of the tertiary sector, differ substantially from this, and so do the eastern regions in Poland and the southern regions in Hungary, with their agricultural characteristics.

CONCLUSION

In the past two decades the role of industrial activities has shown significant modifications in both inter-sectoral and intra-sectoral comparison. The first half of the 1990s was characterised by strong de-industrialisation in terms of both the economy and of the labour market. The process generated severe social tensions (increase in unemployment and decrease of the income level), however, it exerted a beneficial effect on the environment due to the decreasing emissions. By the 2000s, accession to the European Union, the convergence of the Visegrád countries, the recovery of the global economy and the inflow of capital resulted in a considerable expansion of the production capacities in Central-Eastern Europe, with a simultaneous increase in the number of jobs in the industry as well as in the volume of the exports of goods. This period (2000-2007) involved a restructuring within the secondary sector. As a result of medium- and high-tech industries gaining ground, we can talk about a re-industrialisation of the neo-industrialisation type.

The regional comparison at the same time has shown that the favourable macro-economic processes cover significant spatial differences within the industry. The regions of the capitals (with high-tech activities) and the regions with a favourable geographical location and considerable industrial traditions can be regarded as the winners of the transition. In these areas foreign capital resulted in restructuring, an increase in the efficiency of labour and an expansion of production. At the same time mention must be made of the losers of the transition, of the regions where the restructuring generated by the domestic and international (capital) resources failed to materialise. Thus the share of the industry in the economies of these regions decreased or stagnated at a low level. This exerted a negative effect both on employment and the income producing capacity.

The various spatial elements, or groups of regions established as a result of the analysis, can be described in short as follows:

> ➢ The capital regions ('absolute winners') where the economy demonstrated a dynamic growth, labour is flexible and active, the services sector is wide, and production capacity is well-developed with an infrastructure serving it.

> ➢ The secondary beneficiary (potential converging) regions, which enjoy a favourable geopolitical location (mostly western), are urbanised, possess considerable and modernised industrial traditions and capacities as well as a well-developed services sector (although of smaller weight) and are thus successfully involved in the European division of labour and value creation.

➢ The regions that are the losers of the transition ('potential laggards') are the regions with less favourable geographical location, lying on the (inner or outer) periphery, where the economic restructuring is still ongoing, which results in an unfavourable sectoral division of the economy and unfavourable labour market conditions.

The performance of the processing industry remains of outstanding significance concerning the future sustainable economic development of Central-Eastern Europe. That is why it is a priority task to retain and take advantage of the industrial competitive advantages, primarily against the highly developed competitors in Western Europe and North America. To achieve that, the most important tasks seem to be attracting working capital, developing an investor-friendly environment, developing the infrastructure, easing the dual company structures (by supporting SMEs) and ensuring the appropriate vocational and professional training to meet the market demand.

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Employment Position in the Hungarian Least Developed Micro-regions (LHH)[1]

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SUMMARY

The paper describes the position of the least developed micro-regions (LHH) that are to be supported by the current Hungarian complex programme, with special regard to their employment and unemployment position. I have a double aim with this work. On the one hand, I aim at describing the position of LHH micro-regions in the national context with the help of different statistical indicators, setting up diagnosis and formulating breaking points and proposals that can generate projects supporting catching up in the future. On the other hand, with statistical–econometric calculations, I aim at proving that the methodology of the micro-regional classification of the governmental decree 311/2007. (XI.17.) has a different result when only labour market indicators are included in the calculations, instead of the all applied complex indicators.
Key words: micro-regions, labour market, discriminant analysis.
Journal of Economic Literature (JEL) code: J21, R23

INTRODUCTION

The Hungarian Central Statistical Office created a new statistical micro-regional system consisting of 150 units from 1st January 1998. This was modified by a governmental decree on the definition, the determination and the modification of micro-regions that entered into effect on 1st January 2004. As a result, 18 new micro-regions were created, which led to a total of 168 micro-regions. The decree created stable micro-regional levels for 5 to 7 years, which were capable of carrying out administrative tasks besides taking care of planning functions. Currently, Hungary can be divided into 174 micro-regions. The analysis of the micro-regions, counties and regions from an administrative point of view also gives rise to interesting questions. 'The great number of municipalities (with low number of population and limited resources) local government model – the "south" model – assumes a "strong" local (municipality) middle level and community spirit" (Torma 2002, 5-6).

The Parliament passed a resolution on 25th June 2007 for the period until 31st December 2013 about regional development funding and the principles of decentralisation as well as the criteria for classifying the preferred micro-regions. According to Parliamentary Resolution no. 67/2007 (VI.28.) about the classification criteria and the Local Government

Act on Association of Micro-Regions no. CVII. 2007, which is the modification of the same act no. CVII. 2004, the state of development of the micro-regions had to be redefined and the micro-regions had to be classified again in terms of regional development preferences.

The new classification of the preferred regions was announced by Decree no. 311/2007. (XI.17.). This lists 81 micro-regions in Hungary that are currently not eligible for support, 46 micro-regions that are underprivileged, 14 that are least developed, and 33 micro-regions that are not only least developed but also to be supported with the complex programme.

SOCIAL AND ECONOMIC BACKGROUND OF THE 33 LEAST DEVELOPED MICRO-REGIONS IN HUNGARY

Development differences among the micro-regions generate social injustice that is passed on from one generation to the next. In a certain part of the Hungarian micro-regions, high unemployment, the poverty related to it – deep poverty in some regions, along with a lack of active enterprises, lack of job creation and a low level of average housing and living conditions are still problems

In micro-regions where the Roma population lives, a number of these problems appear simultaneously. In 2007, based on the statistical data about development deficiencies, the government designated the 33 least developed micro-regions, which include one-tenth of the Hungarian population.[2]

"We do not give up on anybody" – this is the main message of the complex development program, which aims at creating possibilities for these 33 micro-regions to make the local economy dynamic, to extend employment and to create social and geographic mobility. Since then, several calls for grant projects have appeared, especially to improve the social, geographic and labour market position of the least developed micro-regions (such as "Step one up" program). Plans were evaluated in April 2009, which made it possible to launch the elaboration and then the realization of project plans.

According to G. Fekete, "The LHH Programme has the following key elements that are different from the previous Hungarian development practice:

1. Resource allocation is carried out on the basis of the micro-regional plan that is compiled "top down" for the predefined overall amount and resource types. That is, the necessary resources adjusted to the local needs that can be inserted into the given framework are available, but their utilisation is conditioned.

2. Besides the closing up of these regions to the national level, handling the differences within the regions and integrating the most lagging social groups are also emphasised.

3. It aims at complexity.

4. It is required to be realized typically through local development based on partnership, joining to the LEADER type developments that operate on the basis of the involvement of local communities and on the decentralisation of the decisions (or at least a part of them).

5. It ensures central planning methodology and expert help for micro-regions". (G. Fekete 2009)

Out of the regional and human resource development resources, about 100 billion HUF is to be set aside for 2009 to 2013 especially for the development of the 33 least developed micro-regions. Three-quarters of it is set aside for investments and one-quarter for training, employment and health development programs.
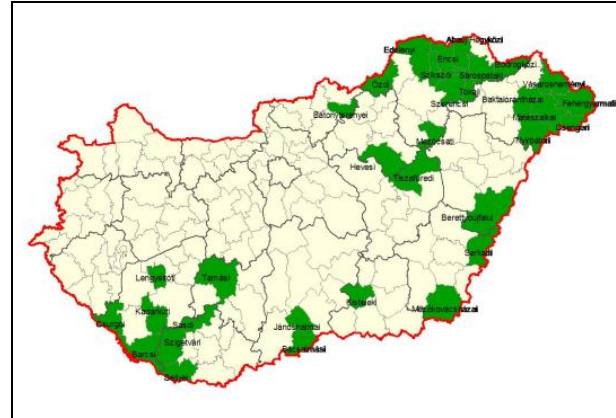
Source: NFÜ

Figure 1. LHH micro-regions of Hungary

One-tenth of the country's population lives in the 33 least developed micro-regions (Figure 1). The rate of those living in the least developed micro-regions is 28% in Northern Hungary, 21% in Northern Great Plain, 18% in Southern Transdanubia and 9% in Southern Great Plain. These are typically rural areas; in two-thirds of the micro-regions there is no settlement with more than 10,000 inhabitants, with the exception of Ózd. The areas with the highest unemployment can be found among the 33 micro-regions: Cserehát and Ormánság. Almost two-thirds of the Roma population lives in these 33 micro-regions. There are considerable differences among and within the 33 micro-regions.
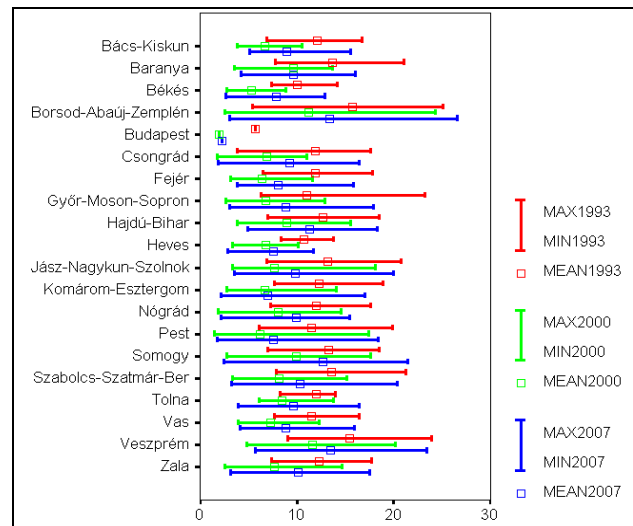
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Figure 2. Range of the unemployment rate (%)
at micro-regional level

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[2] *Southern Great Plain: micro-regions of Bácsalmás, Jánoshalom, Mezőkovácsháza, Sarkad, Kistelek*

Southern Transdanubia: micro-regions of Barcs, Csurgó, Lengyeltót, Sásd, Sellye, Szigetvár, Tamási, Kadarkút

Northern Great Plain: micro-regions of Baktalórántháza, Csenger, Fehérgyarmat, Mátészalka, Nyírbátor, Vásárosnamény, Berettyóújfalu, Tiszafüred

Northern Hungary: micro-regions of Edelény, Encs, Ózd, Sárospatak, Szerencs, Szikszó, Abaúj-Hegyköz, Bodrogköz, Mezőcsát, Tokaj, Heves, Bátonyterenye

The analysis of micro-regions includes the analysis of the range of the unemployment rate yearly, by county. To do so, I found the maximum, the minimum and the average of the unemployment values of the micro-regions within the given county. The results – the range of unemployment – are displayed for the years 1993, 2000 and 2007 with SPSS software (Figure 2). It demonstrates well that unemployment is the highest in Borsod-Abaúj-Zemplén county, where its maximum value was 26.57% in 2007 in the micro-region of Abaúj-Hegyköz. It is also high in the micro-regions of Bodrogköz (24.01%) and Encs (24.84%).

Describing the employment and unemployment rates of the Hungarian LHH micro-regions (Figure 3), it is highlighted that the labour market position was the most unfavourable in the micro-regions of the Northern Hungarian region. Similarly, a high unemployment rate and low employment rate belonged to the LHH micro-regions of the Northern Great Plain region. There are some LHH micro-regions also in the Southern Transdanubian and Southern Great Plain regions, but their employment position is more favourable.
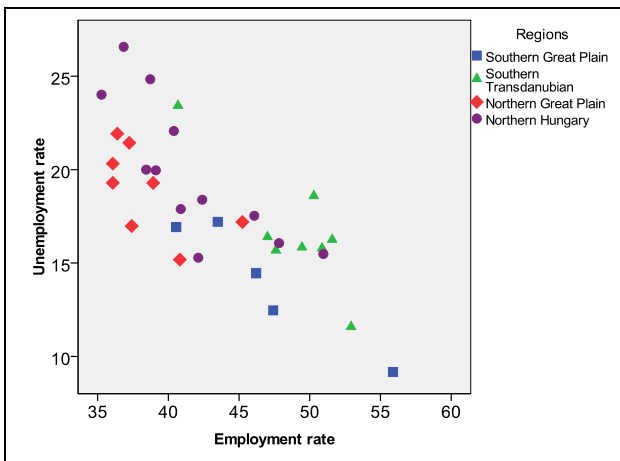
Source: own compilation

Figure 3. Employment and unemployment position of the Hungarian LHH micro-regions (2007)

THE POSITION OF LHH MICRO-REGIONS IN THE NATIONAL CONTEXT

My paper aims at examining to what extent LHH micro-regions constitute a separate group within all of the micro-regions of the country, taking into account different social and economic indicators, or whether they assimilate into other regions. I justify my short hypotheses with the help of the available latest statistical data.

Hypothesis A. There is a strong positive correlation between the long term unemployment and the number of

those who are entitled to a regular social grant; a homogenous group of LHH micro-regions, however, cannot be created.
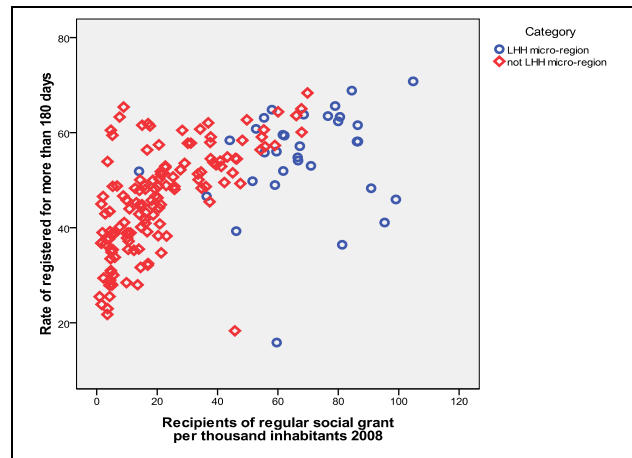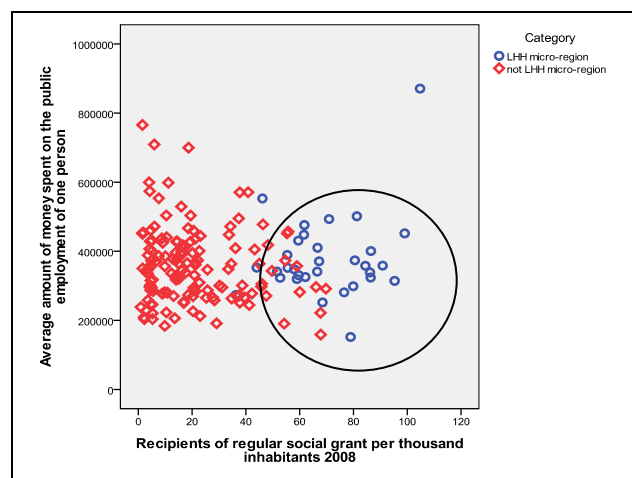

Source: own compilation based on HCSO data

Figure 4. Positioning of micro-regions (recipients of regular social grant per thousand inhabitants – rate of registered for more than 180 days)

As far as the unemployment rate of those registered for more than 180 days and the rate of recipients of regular social grant per thousand inhabitants are concerned, LHH micro-regions proved to be a fairly heterogeneous group. More than 50% of the inhabitants living in the area live on social grants. Taking into consideration long-term unemployment, however, the dispersion of the data has a wider range. The lowest long-term unemployment rate belongs to the micro-region of Csurgó in Somogy County (15.86%).

B. The average amount of money spent on public employment is nearly the same in any area of the country; it is not influenced by the rate of recipients of regular social grant per thousand inhabitants.
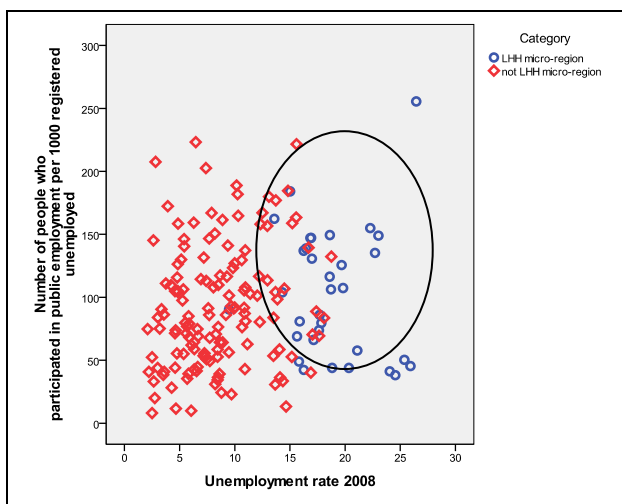

Source: own compilation based on HCSO data

Figure 5. Positioning of micro-regions (recipients of regular social grant per thousand inhabitants – average amount of money spent on the public employment of one person)

The per capita average amount of money spent on public employment ranges from 200,000 to 800,000 HUF in any micro-regions of the country. A well separated group of LHH micro-regions takes shape when the rate of recipients of regular social grant is higher than 50%. The per capita average amount of money spent on public employment is the highest in the micro-region of Abaúj-Hegyköz, this is the national maximum as well, namely 870,781 HUF yearly. In this micro-region, the number of people living on regular social grant per thousand inhabitants is 27, which is also the national maximum. The rate of those who participated in public employment per thousand inhabitants is also the highest in this micro-region (255 persons/1,000 inhabitants).

C. The measures of the unemployment rate and the number of those who participated in public employment per 1000 registered unemployed trace out a homogenous group around LHH micro-regions.
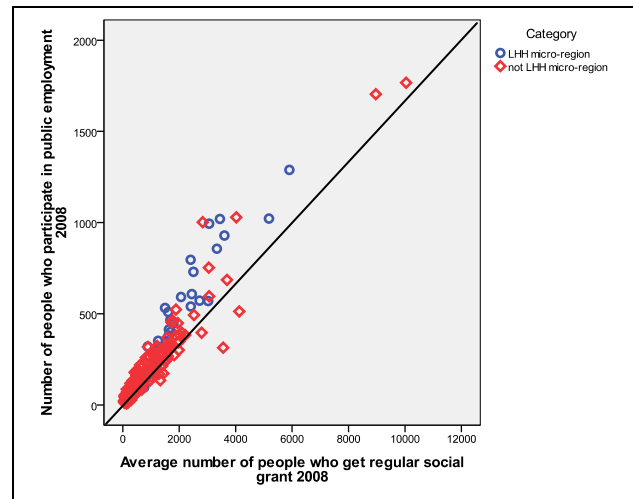

Source: own compilation based on HCSO data

Figure 6. Positioning of micro-regions
(unemployment rate – number of people who participated in public employment per 1000 registered unemployed)

By describing the unemployment rate and the rate of people who participated in public employment per 1000 registered unemployed, LHH micro-regions constitute an individual group. The dividing line is at around 15% of unemployment rate. The rate of those who participated in public employment does not separate LHH micro-regions ambiguously. The outlier belongs to the micro-region of Abaúj-Hegyköz in this case, too.

D. Where the average number of those who get regular social grant is high, the number of people participating in public employment is also high and there is a linear relationship between them. It is the same for LHH micro-regions as well.
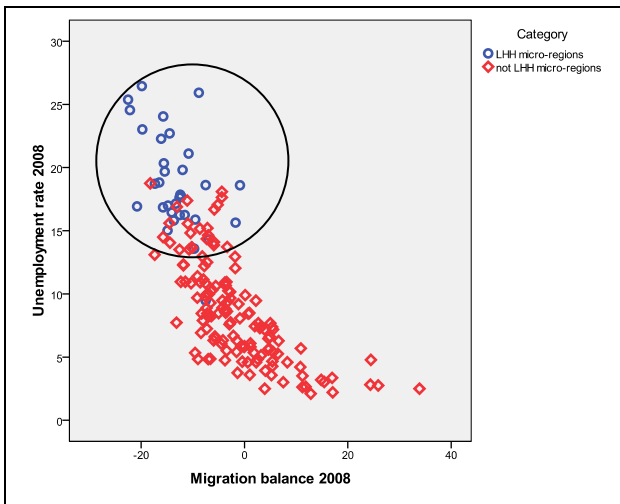

Source: own compilation based on HCSO data

Figure 7. Positioning of micro-regions
(number of people who get regular social grant – number of people who participate in public employment)

There is a linear relationship between the average number of those who get a regular social grant and those who participated in public employment. Observations disperse along the diagonal with 45° slope. In the micro-regions that are not LHH, the number of people living on regular social grant is lower and therefore the number of people involved in public employment is also lower, apart from two outliers. One of them is the micro-region of Miskolc (with 10,039 people being entitled to regular social grant) and the other one is Budapest (with 8,964 people being entitled to regular social grant). In the case of the capital, the high rate of people living on a regular social grant is reasonable, as the number of the population in absolute terms is the highest there. The high value of the micro-region of Miskolc, however, highlights its unfavourable social and employment position.

E. In LHH micro-regions, negative migration balance is associated with high unemployment rate, as highly qualified people usually migrate in the hope of a better job opportunity, while those staying at home live.

The circle that can be drawn around the LHH micro-regions represents the negative values of migration and the high unemployment rates of more than 15%. Most of the micro-regions of the country face the problem of emigration. At the same time, however, the unemployment position is more favourable in the non-LHH micro-regions. The highest emigration can be found in the micro-regions of Bodrogköz and Abaúj-Hegyköz, where the rates of the difference between immigrants and emigrants per 1000 inhabitants are -22.53 and -19.87. The highest immigration value belongs to the micro-region of Dunakeszi (33.87).

Source: own compilation based on HCSO data

*Figure 8. Positioning of micro-regions
(migration balance – unemployment rate)*

F. The tendency to commit crimes is no higher in LHH micro-regions in spite of the fact that the inhabitants of the area have lower income levels (mainly regular social grant, minimum wage or nothing at all); they do not try to live on violent crimes against either property or persons.
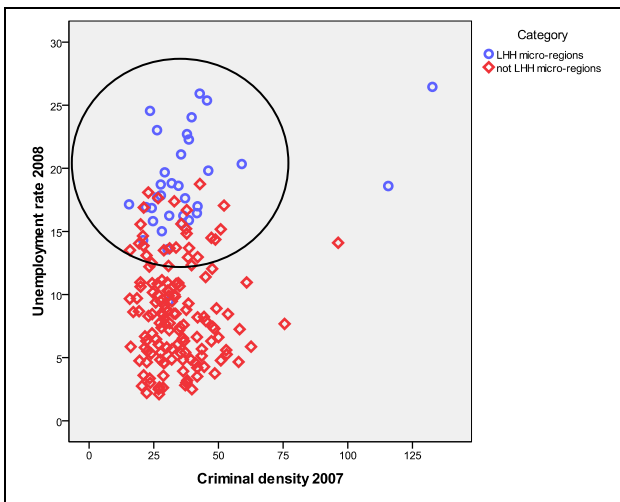

Source: own compilation based on HCSO data

*Figure 9. Positioning of micro-regions
(density of crimes – unemployment rate)*

By examining the density of crimes (the rate of registered publicly indicted crimes per 1000 permanent inhabitants) and the unemployment rate (Figure 9), one can conclude that LHH micro-regions have high unemployment rates (15-28%). The density of crimes, however, is surprisingly low (25-50%). Two outlier micro-regions can be observed in the case of crimes, these are the micro-regions of Rétság and Tokaj (this may be explained by the fact that in the micro-region of Tokaj, people can get higher income levels because of viticulture and this can provide a reason to commit crimes

G. The highest rates of unemployed registered for more than 180 days (long-term unemployed) can be found in LHH micro-regions.
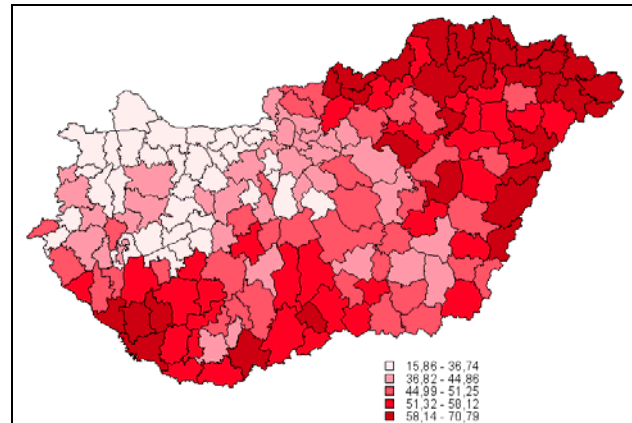
Source: MTA Resource map

*Figure 10. Rate of unemployed registered for
more than 180 days, % (2008)*

The rate of those who have been registered for more than 180 days, the measure that best describes long-term unemployment, is the highest in LHH micro-regions, especially in the Northern Hungarian and Northern Great Plain regions. This is a big issue in the peripheral parts of the country, except for Transdanubia. The highest values – which were also the national maximums – belonged to the micro-regions of Encs (70.79%), Szikszó (68.85%), Abaúj-Hegyköz (63.77%) and Szerencs (63.77%).

CLASSIFICATION OF HUNGARIAN MICRO-REGIONS BY LABOUR MARKET INDICATORS WITH THE USE OF DISCRIMINANT ANALYSIS

The new classification of the preferred regions was announced by Decree no. 311/2007. (XI.17.). It lists 81 micro-regions that are not eligible for support – I called them developed – (F), 46 micro-regions that are underprivileged (H), 14 that are least developed (LH) and 33 micro-regions that are least developed and to be supported with the complex programme currently in place in Hungary (LHH). The classification of the micro-regions is defined with the calculation of a complex measure by experts. Indicators can be classified into the following groups:
➢ economic indicators,
➢ infrastructural indicators,
➢ social indicators,
➢ welfare indicators,
➢ employment indicators (Faluvégi 2008).
I intended to find whether these categories were valid for the micro-regions also when only labour market indicators were included, or if other categories would be

created. I therefore collected the following indicators for the 174 micro-regions for 2008 based on HCSO data from the MTA Resource database:

- ➢ number of registered jobseekers (person),
- ➢ number of employed (person),
- ➢ working age permanent population (person),
- ➢ number of people participating in public employment (person),
- ➢ income base of personal income tax (thousand HUF)
- ➢ number of people entitled to regular social grant (person).

Discriminant analysis was introduced by Fisher and Mahalanobis. The basis of the model is that each observation is classified based on some predefined criteria, i.e. discriminant analysis is a possible way to classify observations. Its application assumes the presence of a discrete (the so-called classifying) variable and two or more quantitative variables in the database. The aim is to decide to what extent the original classes will be reproduced if we try to classify the observations based on the given quantitative variables; that is, to what extent quantitative variables differentiate (discriminate) among the classes. To apply discriminant analysis, some assumptions have to be met: the covariance matrices of the groups cannot differ significantly and the variables have to follow multivariate normal distribution (Obádovics 2004).

After the general analysis, I ran a discriminant analysis. Before that, I carried out a partial correlation analysis for each pair of indicators to test their independence, and this condition was met. The results of the discriminant analysis are provided in Figure 11. The dispersion of micro-regions is according to the original classification taking into account labour market indicators. The developed micro-regions (F) disperse fairly widely; that is, not each developed micro-region belongs to this group when labour market indicators are taken into consideration. The underprivileged micro-regions (H) are classified in the same group and show no significant deviation. The results are much more surprising in the case of the two least developed groups. The least developed micro-regions (LH) disperse fairly widely around the group centroid. The least developed micro-regions with complex program (LHH) also show a rather significant dispersion. Two lines can be fitted to the observations, which would arrange the micro-regions into a V shape (Sajtos-Mitev 2008).

I analysed the final table of discriminant analysis, which shows numerically to what extent the groups created as a result of the analysis carried out with labour market indicators coincide with the original classification or to what extent they are different.
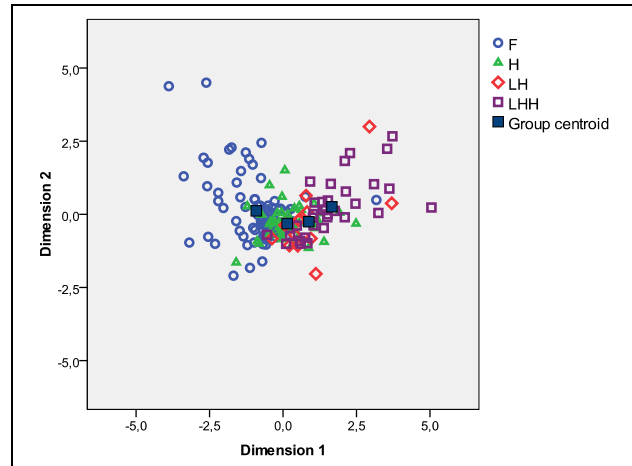
Source: SPSS compilation based on own computation

Figure 11. Result of the discriminant analysis

Table 1. Result of the discriminant analysis [a,b]

| | | | Predicted Group Membership | | | | Total |
			F	H	LH	LHH	
Original	Count	F	52	27	1	1	81
		H	8	29	6	3	46
		LH	0	5	7	2	14
		LHH	0	6	6	21	33
	%	F	64.2	33.3	1.2	1.2	100.0
		H	17.4	63.0	13.0	6.5	100.0
		LH	.0	35.7	50.0	14.3	100.0
		LHH	.0	18.2	18.2	63.6	100.0
Cross-validated	Count	F	51	28	1	1	81
		H	10	27	5	4	46
		LH	0	8	3	3	14
		LHH	0	6	6	21	33
	%	F	63.0	34.6	1.2	1.2	100.0
		H	21.7	58.7	10.9	8.7	100.0
		LH	.0	57.1	21.4	21.4	100.0
		LHH	.0	18.2	18.2	63.6	100.0

a) 62.6% of original grouped cases correctly classified.
b) 58.6% of cross-validated grouped cases correctly classified.

Source: Own computation

Based on Table 1, only 52 of the original 81 micro-regions are in their correct place and do not need labour market support either from a labour market point of view or based on legal classification. Out of the remaining 29 micro-regions, 27 would belong to the underprivileged group and one would belong to the two least developed groups respectively, in the light of the unemployment indicators. Out of the 46 underprivileged micro-regions, 29 are in their correct positions, while 17 should have been classified into the three remaining groups. Out of the 14 least developed micro-regions, 7 can be found in the appropriate group and out of the 33 least developed micro-regions with complex program, 21 can be found in the correct group, while six of them belong to the group of underprivileged and another six belong to the least developed micro-regions, based on labour market indicators.

As a result of the discriminant analysis, we can conclude that the classes created based on the entitlement limits of the financial support defined by the effective government decree do not coincide with the groups formed using labour market indicators. In the labour market, there are regional disparities also among micro-regions, about the extent of which discriminant analysis does not provide information. To reveal more information about it, further analysis is necessary. The calculation does not provide information either about which micro-regions are in the inappropriate group.

BREAKING POINTS FOR LHH MICRO-REGIONS – SUMMARY

LHH micro-regions face similar problems:
  ➢ deep poverty,
  ➢ unfavourable social and economic background,
  ➢ unfavourable labour market position,
  ➢ low entrepreneurial spirit,
  ➢ unfavourable infrastructural background,
  ➢ high rate of Roma population,
  ➢ low income level,
  ➢ lack of job opportunities,
  ➢ backwardness.

Some breaking points can be defined from the unfavourable situation of the area, which can be used also as main aspects of regional development:

1. Firstly, the favourable geographic potential of the region has to be taken into account, which may play an important role in the boost of tourism. It certainly requires appropriate tourism investments and plans.
2. The strong agricultural potential of the area should be utilized better. This would make improvement of the positions of the backward micro-regions of the country possible.
3. The situation of the numerous Roma population should be changed as well, by improving their health care and qualifications. To do so, different development and close-up programmes are necessary.
4. Measures should be taken against the high unemployment rate in LHH micro-regions, for which public employment could be a solution.

On the whole, we can conclude that LHH micro-regions of Hungary significantly lag behind the other micro-regions of the country. The most unfavourable situation can be found in the micro-regions of Northern Hungary and the Northern Great Plain. In most cases, LHH micro-regions form a separate group among Hungarian micro-regions, based on the above examined social and economic indicators. The convergence of these peripheral micro-regions is not easy at all; the creation of a better position, however, should be aimed at with the appropriate economic development tools. Based on the discriminant analysis, some micro-regions have a better position than the original classification, taking into account labour market indicators. Therefore a slight positive change can be experienced.

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United States and China: Changing in World Economic Positions?

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SUMMARY

Trends in the last decades, such as the rapid development and rising of China or the convergence of its absolute economic indicators to those of the USA, are significant elements of today's world economy. In this paper we analyze the external trade of these two economic powers: the focus of the research is on the openness of trade, the import and export structure and economic interdependence. The main questions are to what extent the external trade of the two examined countries is interdependent and whether the current Chinese economic growth is sustainable.
Key words: external trade openness, world economic positions, position change
Journal of Economic Literature (JEL) code: F13, F14

INTRODUCTION

The two countries with the largest economic power in the world – the United States of America and the People's Republic of China – have followed basically different development paths in the past decades. The average annual growth rate of GDP in China was 10% between 1980 and 2009, and as one of the most dynamically developing countries in the world, it has reached an economic growth of more than 10% in 15 years, which led it to become the second largest economy in the world. The economic growth of the USA has been much slower, an average of 2.7% annually between 1980 and 2009. Moreover, fluctuations have also been relatively more significant (in nine years out of the 30, the economic growth was at least 4%) (Worldbank 2011). Due to the "New Economy", it was one of the most rapidly growing developed countries from the beginning of the 1990s to 2008, but even growth occasionally higher than 4.5% lagged significantly behind the Chinese growth rate. The further development of these two nations has a strong influence on the changes of the world economy as well. China has become one of the most important factors in the multipolar world that took shape after the unipolar world (years after the cold war).
By 2009, the GDP of China on purchasing power parity had reached 9,091 billion USD, while that of the USA was 14.119 billion USD, based on Worldbank data. If the data, however, are not examined on the basis of purchasing power parity, the result is different: the GDP of China in current prices is 4,985 billion USD (according to the Worldbank data, the GDP in current prices and the GDP on purchasing power parity are the

same in the case of the USA). The largest gap between the two countries is in the GDP per capita: in China it was 6,827 USD on purchasing power parity and 3,744 USD in current prices, while in the USA it was 45,989 USD in 2009.

Table 1. GDP of the United States of America and China throughout the history (1990 Int. GK$)

Year (AC)	USA	China
1	272	26 820
1000	520	27 494
1500	800	61 800
1600	600	96 000
1700	527	82 800
1820	12 548	228 600
1850	42 583	247 200
1870	98 374	189 740
1890	214 714	205 379
1900	312 499	218 154
1913	517 383	241 431
1929	843 334	274 090
1950	1 455 916	244 985
1970	3 081 900	636 937
1990	5 803 200	2 123 852
2000	8 032 209	4 319 339
2008	9 485 136	8 908 894

Source: Angus Maddison: Historical Statistics of the World Economy: 1-2008 AD

The appearance of China as a determining actor is not a new phenonmenon. Earlier in its history, it was a developed, innovative power centre that had a large influence on its neighbourhood for many centuries (Table 1). This situation changed in the second half of the 19th

century as China lost some of its importance because of the opium wars. This was the period when China lagged behind the powers that strengthened enormously on the two coasts of the Atlantic Ocean. The data series show a noticeable change in the last decades. China is approaching the USA at a quick pace (leaving behind the other countries of the world as far as the absolute power of the economy is concerned). It is making good progress in absolute terms as the largest market of products such as automobiles and mobile phones and as the largest producer of cars, computers, etc. At the same time, however, it has a huge lag regarding the relative data of development.

A sign of the advance and the world economic expansion of Chinese companies is the fact that while in 2005, 16 out of the world 500 largest companies were Chinese, this value increased to 46 by 2010. An opposite trend can be observed in the case of the USA: in 2005, 176 of its companies were among the top 500 of Fortune Global, while in 2010, only 139 were.

Table 2. Comparison of China and the United States of America based on some basic data

	China	USA	China	USA
	2000		2009	
Population (million people)	1262.6	282.1	1331.4	307.0
Life expectancy at birth (year)	71.30	77.03	73.31	78.66
Balance on current account (% of GDP)	1.71	-4.21	5.96	-2.68
Balance on current account (BoP, current prices, billion US$)	20.5	-416.3	297.1	-378.4
Agriculture, value added (% of GDP)	15.06	1.19	10.35	1.23
Industry, value added (% of GDP)	45.92	23.44	46.30	21.29
Services etc, value added (% of GDP)	39.02	75.37	43.36	77.47
Employment in agriculture (% of total employment)	46.30	2.60	38.1*	1.4**
Employment in industry (% of total employment)	17.30	23.20	27.8*	20.6**
Employment in services (% of total employment)	12.70	74.30	34.1*	78**
External balance (% of GDP)	2.41	-3.86	4.41	-2.74
FDI, net (BoP, million current US$)	37 483.3	162 062	34 294.5	-133 971
FDI, net inflows (% of GDP)	3.20	3.25	1.57	0.95
Internet users (per 1000 people)	1.78	43.94	28.84	78.14
Fixed broadband internet subscribers (per 100 people)	0.00	2.51	7.78	27.78
Arms exports (million constant 1990 US$)	272	7 220	870	6 795
Arms imports (million constant 1990 US$)	2 015	301	595	831
Military expenditure (% of GDP)	1.81	3.05	2.01	4.68
Population of urban agglomerations of more than 1 million (% of total population)	13.68	43.15	17.49	44.64
Rural population (% of total population)	64.20	20.90	56.00	18.00

* data from 2008 Source: CIA World Factbook 2010
** data from 2007

Source: Worldbank

In the case of some measures of development, similar processes can be found. The difference between the USA and China decreases and the Chinese development is more dynamic. At the same time, however, one cannot ignore the fact that it is easier to develop from a lower base, while from a high and developed level it is more difficult to make advances in the case of measures like life expectancy at birth or internet users. Both the balance on current account and the external balance show significant differences. The average of China is one of the highest in the world, while the USA has a huge deficit.

The development of the USA is different in many aspects from that of other action centres, or determining world economic regions, especially from the development of the European Union. In several important fields of the economy and the society, state intervention is much lower than in the developed and welfare countries of Europe and the idea of self-care (such as in the case of the pension and health service) is much stronger. Large state distribution systems are less developed, government regulations are more flexible and at the same time, the opportunities of the private sector and the companies are more diverse. A lower tax burden and the often more permissive regulations have promoted the emergence of market relations more than in Europe. The more mobile, highly qualified labour force, the more flexible organisational structures (with the key role of IT), its developed infrastructural background and its governmental effectiveness have made the USA one of the most competitive economies in the world in the past years. It is in the 1st position at IMD and in the 4th position at WEF (international organisations that rank the competitiveness of the countries), while China has been ranked at the 18th and 27th positions respectively in 2010-2011.

In the past decades, Chine has undergone dynamic restructuring: the emphasis has been moved from agriculture to industry and services. From 2000 to 2009, the share of agriculture in the value added decreased by 4.5 percent, primarily for the benefit of the tertiary sector. Most of the employed (38.1%), however, still work in the rural areas in agriculture, which highlights the underdevelopment of the sector on the one hand and its huge employment potential on the other. Along with the economic development of China, employment restructuring can also be observed. The rate of the employed in agriculture decreased significantly during the period, while the rate of those employed in industry and services increased, which were associated with the reduction of the proportion of the rural population.

EXTERNAL TRADE OF CHINA AND THE UNITED STATES OF AMERICA

The external balance of the USA has been in deficit since 1976 and the deficit reached 865 billion USD (which is the highest out of the countries of the world) in 2008; the several-decade-long worsening trend, however, reversed

in the last two years. With the deepening of the crisis, American imports increased to a larger extent than exports (Figure 1). Because of the economic recession and the decrease of oil prices, the external balance has improved and the external deficit has decreased. Actually it is equivalent to 2.74% of the GDP, a total of 386.3 billion USD. The Chinese external average, however, also decreased: from 2008 to 2009, it diminished by 3.3 percent to 4.41 percent, i.e. to 220.1 billion USD.

The significant deficit in merchandise trade is slightly tinged by the positive processes in services. The USA is the largest exporter in services in the world and due to this, an average of almost 160 billion dollars can be found in the services trade.
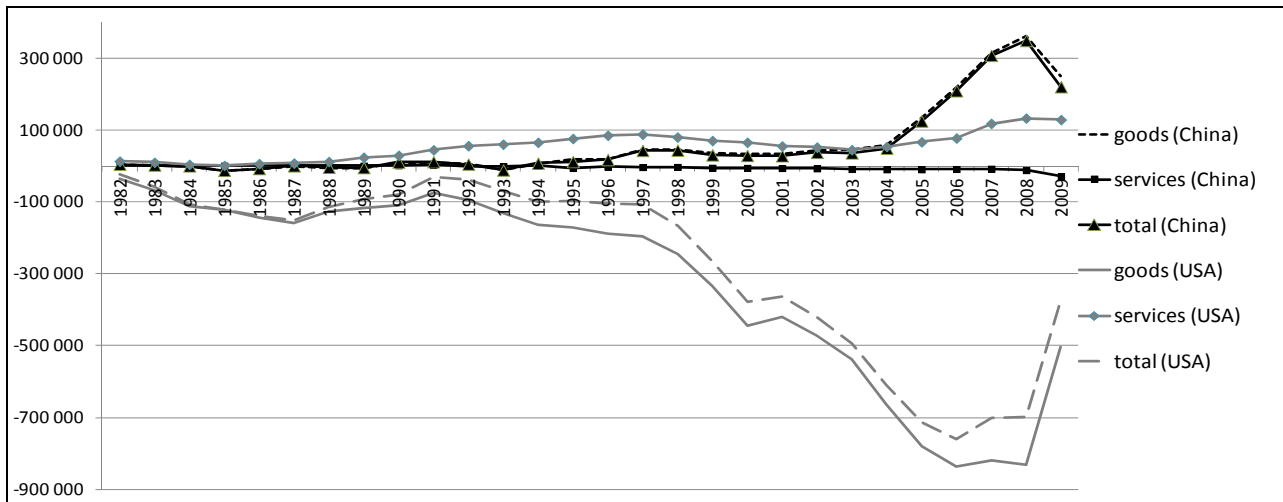
Source: own compilation based on Worldbank data

Figure 1. External balance of the USA and China (1982-2009, million US$, current prices)

The deficit of balance on current account and external balance has highlighted unfavourable trends for decades. The indebtedness of the USA is creating increasingly serious problems, and it has exceeded 67% of the GDP (9,471 billion USD) according to the Worldbank database. In contrast, the gross public debt of China was 17% in 2009, according to the IMF database. In spite of the huge economic potential of the USA, this is a warning sign and measures to manage the crisis can keep enlarging this morbid ratio. While the country used to be the largest lender after the Second World War, it has become the largest debtor of the world by now.

In the rank of the main targets of the American working capital, Europe is followed by Latin America, Canada, Eastern and Southeast Asia. Besides, offshore areas (such as Bermuda or Panama) play an even more important role. The bulk of the capital stock invested in the USA comes from Europe (United Kingdom, Netherlands, Germany); the role of Japan and Canada is much smaller. Capital movements that strengthened in the last several decades can be explained by the spread of deregulation and information technologies in the globalized world economy, by the strengthening of the ICT and by the interest policy of the FED. These factors resulted in the fast reaction of the American economy to the changes in the economy and to the cyclical fluctuations up to the crisis of 2008. These reactions were usually supported by the exchange rate of the dollar, which strengthened throughout the 1990s. Since 2001, however, it has weakened as a result of interest rate cuts, which supported exports. The huge external balance deficit that formed in spite of the weakening dollar means that externally financed consumption became extremely

large and the savings of the internal actors of the American economy decreased significantly. In spite of all these developments, we can conclude that the bulk (two-thirds) of the net savings of the world is still absorbed by the economy of the USA in the form of outside capital, and investment possibilities of thousand billions are the best here in all over the world. American government securities are among the most secure forms of investment. In spite of the difficulties of the financial sector, foreign investors are still ready to finance the American current account deficit, which still makes the dollar remain in the position of the number one global reserve currency (Magas, 2010).

Table 3. Leading exporters and importers in world trade in merchandise trade, 2008

Export			Import		
Rank	Country	Export value (billion $)	Rank	Country	Import value (billion $)
1	Germany	1465	1	USA	2166
2	China	1428	2	Germany	1206
3	USA	1301	3	China	1133
4	Japan	782	4	Japan	762
5	Netherlands	634	5	France	708
6	France	609	6	United Kingdom	632
7	Italy	540	7	Netherlands	574
8	Belgium	477	8	Italy	556
9	Russia	472	9	Belgium	470
10	United Kingdom	458	10	Republic of Korea	435

Source: World Trade Report 2009, p 15

Table 4. Leading exporters and importers in world trade in commercial services, 2008

Export			Import		
Rank	Country	Export value (billion $)	Rank	Country	Import value (billion $)
1	USA	522	1	USA	364
2	United Kingdom	283	2	Germany	285
3	Germany	235	3	United Kingdom	199
4	France	153	4	Japan	166
5	Japan	144	5	China	152
6	Spain	143	6	France	137
7	China	137	7	Italy	132
8	Italy	123	8	Spain	108
9	India	106	9	Ireland	103
10	Netherlands	102	10	Republic of Korea	93

Source: World Trade Report 2009, p 17

Among the main trade partners of the USA, its neighbours play an important role. After the European Union, Canada and Mexico are the main target countries of exports, preceding China and Japan, while as for imports, these two countries are in the 3rd and 4th position after China and the European Union. The USA established the North American Free Trade Agreement (NAFTA) with its two neighbouring countries, taking effect on 1st January 1994. Within the zone, exemption from customs refers to the goods produced in any of the three countries. A sign of the success of the cooperation is that 25-30% of the external trade of the world's largest economic power are realised with NAFTA countries in the last years, while as far as the two other countries are concerned, trade with the USA can reach as high as 70-80%. It is a significant ratio in the sense that Mexico has 107 million and Canada has 34 million inhabitants, so their population lags considerably behind that of other leading trade partners.

For two decades, the main trade partners of China have been Japan, Hong Kong, the USA and the Asian Tigers in the South Eastern part of Asia. The importance of Hong Kong in trade is related to the tax privileges it provides. The state has belonged again to China since 1997, having the status of "Hong Kong Special Administrative Region of the People's Republic of China". It ensures full tax exemption for each activity performed outside its territory, which many Chinese companies take advantage of by registering their activities in Hong Kong. The increasing value and quantity of the external trade denotes the dynamic progress of some destinations; for instance, the trade of China with Europe has increased almost tenfold since 1998.

OPENNESS

When examining the external trade openness of the countries in the world, the relatively close nature of the USA economy is a general approach, as examining the traditional openness (when the value of the exported and imported goods and services is related to the GDP), this value was around 25% in 2009. This ratio is 76% in Germany and exceeds 150% in Hungary. Certain opinions contradict the relative closeness, such as the trade intensity measure introduced by Squalli and Wilson, which is the ratio of the external trade turnover of the given country to the total external trade turnover of the other countries of the world. This is, practically speaking, the contribution of the given country to the trade of the world. They argue that the more significant the trade of the given country, the more open the country is. Based on the trade intesity measure, the value of openness is 10.81 for the USA; 5.54 for Germany and 0.593 for Hungary. The USA is therefore the most open economy in the world, followed by China, Germany, Russia and Great Britain (Squalli and Wilson 2006). This kind of openness approach, however, is tinctured by the rate of external trade of the USA to its whole economy, its "external trade exposure", the huge internal market and its role in the world economy, which is by far not as outstanding as in points of economic power.

Figure 2 demonstrates the external trade openness of the two largest economies in the world. It also highlights the export oriented economic growth of China. The role of the huge internal market has been dominant throughout the whole period in the USA, while it has become more and more important in China since the world economic crisis of 2008..
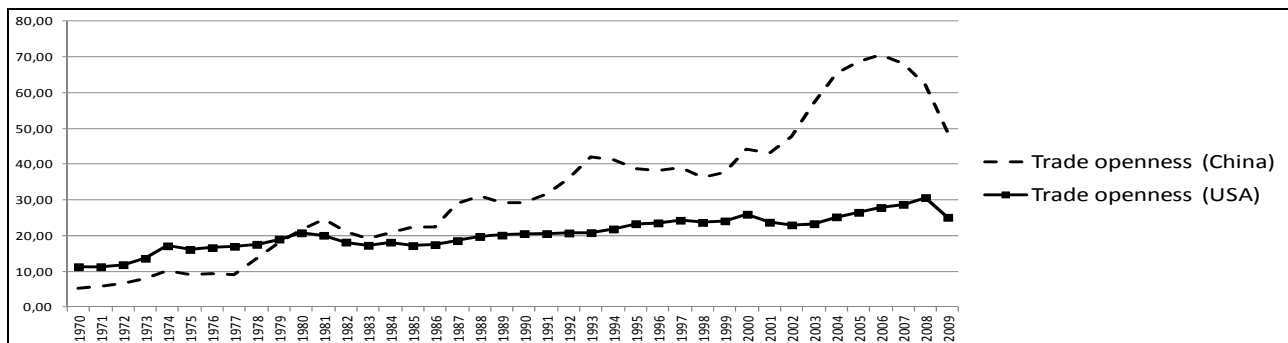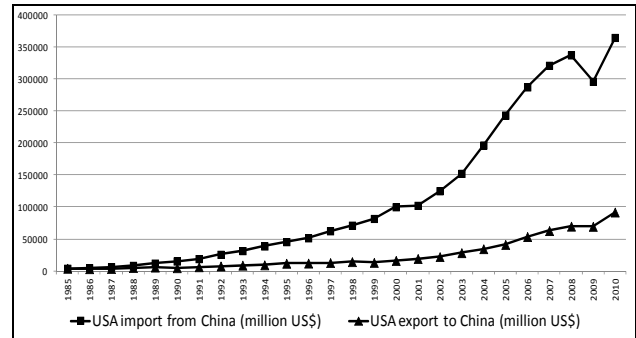

Source: own compilation based on Worldbank data

Figure 2. The openness of the United States of America and China between 1970 and 2009

The key element of the Chinese economic model is export orientation, which has been a determinant factor of economic growth since 1979. This makes it unique among the large underdeveloped countries. Other developing countries (such as Brazil, India or Indonesia) aimed at meeting internal demand, then generating economic growth based on the export of the strengthened economy. In contrast, China – despite the huge internal demand potential – chose the "export oriented development path" (Inotai 2011), which made it the number one exporter and the number two importer of the world by 2009. It possesses the world's biggest foreign exchange reserves, which exceeded 3,000 billion dollars in March 2011 (http://www.chinability.com/Reserves .htm). At the same time, the foreign exchange reserves of the USA were 130.8 billion USD in 2009, according to the CIA Factbook. However, one cannot forget about the fact that the bulk of the Chinese foreign exchange reserves are in American bonds, which gives China a strong interest in American economic growth and in its recovery from the crisis.

Figure 3, based on the classical sense of openness (export–import ratio for GDP), well demonstrates how export- oriented growth made China an increasingly important actor of the world economy after the Chinese revolution of 1979. It was "only" because of the incredible rate of economic growth that the data of China did not increase more sharply than that of the USA. The other drop in the curve is the consequence of the accession of China to the WTO in 2001, after the millennium. This made the reform processes speed up and the inflow of FDI and the openness of China increase.

Source: own compilation based on the data of the Foreign Trade US Census Bureau

Figure 3. Trade between China and the United States of America between 1985 and 2010 (million US$)
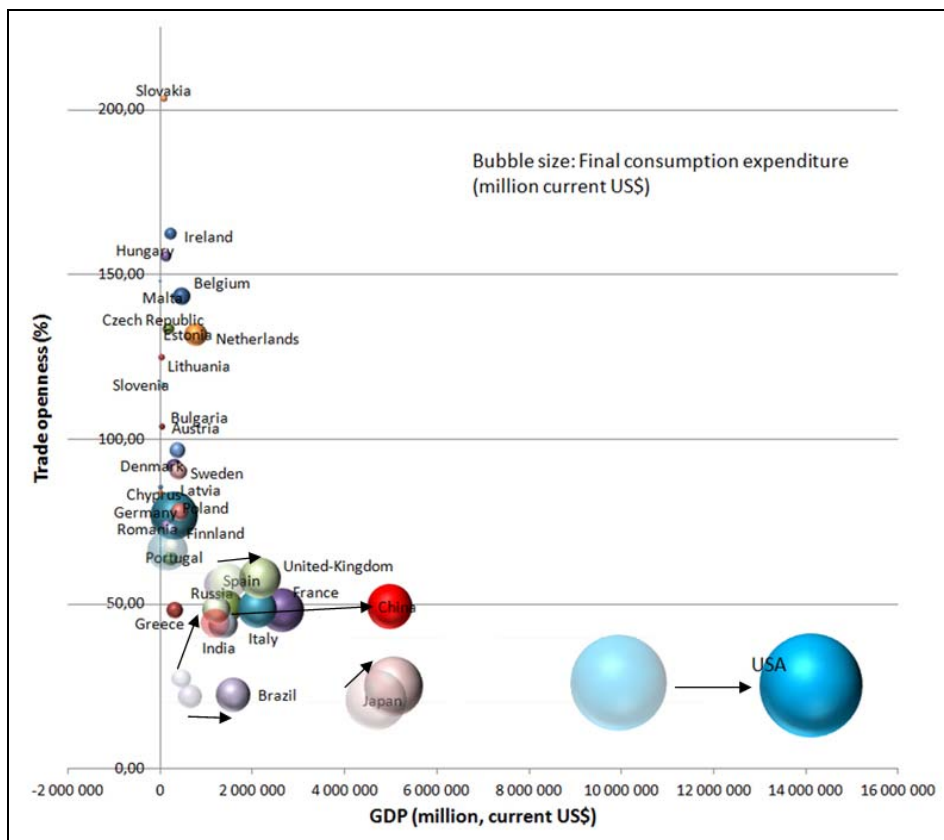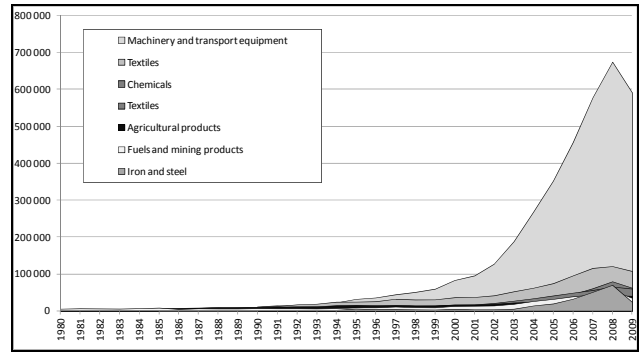

Source: own compilation based on Worldbank data

Figure 4. Position of the examined countries in 2009 (start date of the changes is 2000)

Figure 4 demonstrates the external trade openness of the European Union member states, the BRIC countries, Japan and the USA in a function of GDP in 2009. The size of the bubble is proportional with the internal consumption of the examined countries. In the case of some countries (BRIC countries, United Kingdom, USA), the shift from 2000 is also demonstrated. This is aimed at examining the changes after the crisis. Apart from Japan, internal consumption increased in each country. It is also remarkable that while the main characteristic in India was the increase of openness in the examined nine years, China was rather characterized by the increase of GDP (like in the USA).

STRUCTURE OF EXTERNAL TRADE

The biggest part of the exports of both China and the USA is characterized by the products of the machinery and transport equipment major product group, ensuring 591 billion USD of export revenue in China and 441 billion USD in the USA. Based on OICA (2011) data, China has the greatest automobile industry in the world: more than 18 million automobiles were produced in 2010, which is twice as high as the production of the second largest superpower of the world, namely Japan. In that year, the USA produced 7.7 million cars, which ranked it in third position. This large growth rate of Chinese automotive production is also due to the investments of the foreign automotive industrial companies and to the strengthening of the Chinese and joint venture automotive factories. The development, organisation and the product quality of the Chinese automotive industry lag behind the countries that have played a leading role for decades (especially Germany, Japan and the USA). The production of the Republic of Korea, Brazil and India also increased significantly and they have moved ahead of some traditional actors like France, Spain, Italy or the United Kingdom. Car and truck production has a determining role within the machine industry of a country. At the same time, however, other sectors of transport machine industry like the manufacturing of rail cars, locomotives, aircraft and shipbuilding also have emphasised importance. They also show high technological development in the leading countries, the group of which is the same as in machine industry. Apart from some exceptions (like China), the production of core countries is dominant in this case. Innovations, patents and developments ensure the dominance of North American, West European and East Asian countries.

Source: own compilation based on WTO data

Figure 5. Chinese export by major product group (1980-2009, million US$, current prices)

A typical trend in China is that high-tech manufacturing products play an increasingly important role in its exports, while the export of raw materials keeps decreasing (Fig. 5). The main reason for this is the technological development and the raw material and energy needs of its huge economy. The crisis has only slightly affected the trade of China; a major decline only characterized the steel and iron major group in exports.
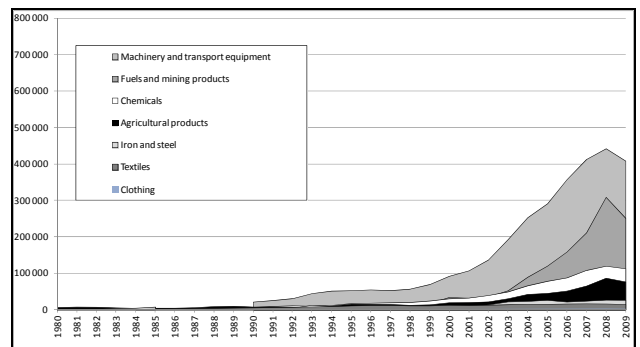
Source: own compilation based on WTO data

Figure 6. Chinese import by major product group (1980-2009)

The export-oriented growth model of China can be seen in Fig. 6 as well. The value of Chinese imports is about half that of its exports and the internal consumption started to increase at the beginning of the 2000s.
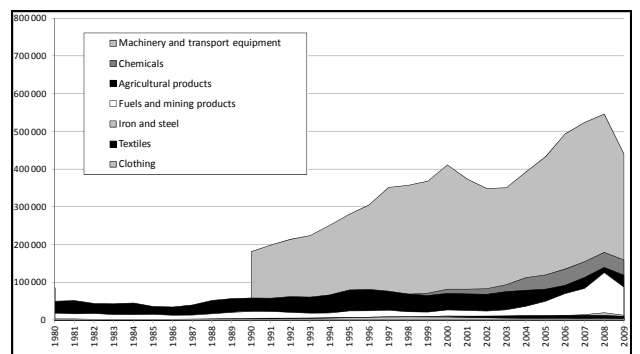

Source: own compilation based on WTO data

Figure 7. Export of the USA by major product group (1980-2009)

There is a significant deficit in the American goods turnover and the structure of the products is similar to that of the other developed countries. Export is made up of technologically high developed goods of high level processes, such as electric devices, parts, automotives (although their export has been decreased by production outsourcing), computers, chemicals and plastics.

This is partly due to the extremely high productivity and to the high R&D expenditures. Out of the world trade action centres, the USA has a leading role based on both the GDP per employee and the share of employment in services, which highlights the functionality of the "new economy". Typically, an average American employee works more (spends more hours working), more productively and more efficiently than an employee in the European Union. As far as the Chinese GDP per employee is concerned, the difference is more than five-fold. Moreover, the employment rate is also high (more Americans work out of the working age population), which together makes higher development possible.
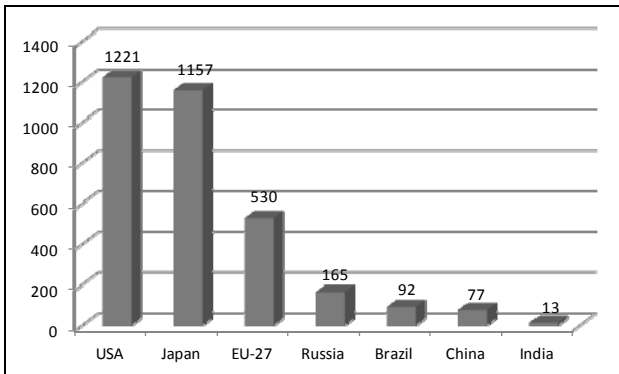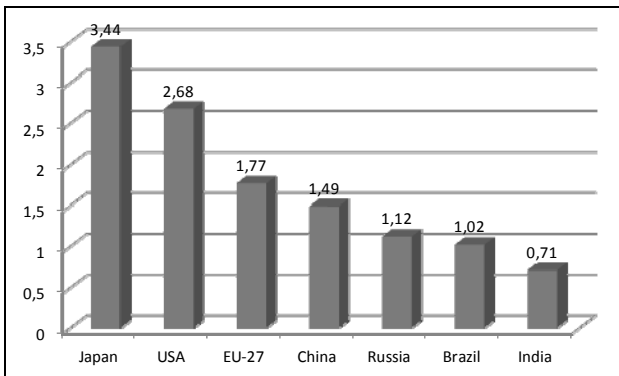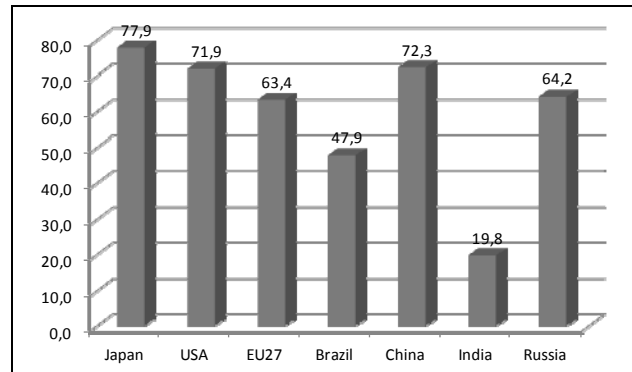

Source: OECD Factbook 2009

Figure 8. Expenditure on R&D, % of GDP (2007) and the per capita expenditure on R&D in some world economic regions (current US$, PPP, 2007)

Expenditure Expenditure on R&D made up more than 2.5% of the GDP in the USA (almost 300 billion USD) yearly (OECD Factbook 2010). The main sources of expenditure are the government (25-30%) and enterprises (65-70%); institutes of higher education and non-profit organisations (5%) have a smaller share in the total expenditure. The competitiveness of the American economy is partly supported by high-level research and development and by the illustrious research institutes that are successful even in the strong international competition.

Source: OECD Factbook 2009

Figure 9. Share of entrepreneurship, % of total R&D in some world economic regions (2007, %)

Innovations also create institutional changes: strategic alliances are formed and strengthened that have the objective of joint research and development (know-how transfer, jointly coordinated R&D programs, strategic joint planning).
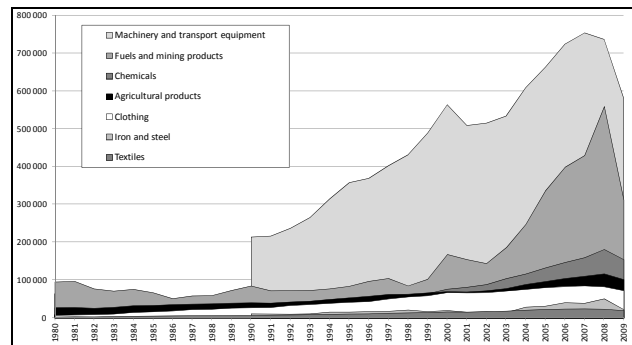
Source: own compilation based on WTO data

Figure 10. Import of the USA by major product group (1980-2009)

The USA is a core country with developed industry, which is highly represented in its trade by the major product groups. In the import of the USA, the major product group of fuels and mining products has an emphasised role. Although the USA was the third oil exploiter in the world in 2010 based on the IEA (2011) data, it fully converts its production to its own consumption. Moreover, it is also the first oil importer in the world. The huge energy need is typical in each sector of the American economy, as its industrial production is in the first place in the world and as its population is a significant energy consumer because of the high living standard, the lower price levels, the developed infrastructural and transport system, the climate conditions, the large distances and the increased transport and travel needs.
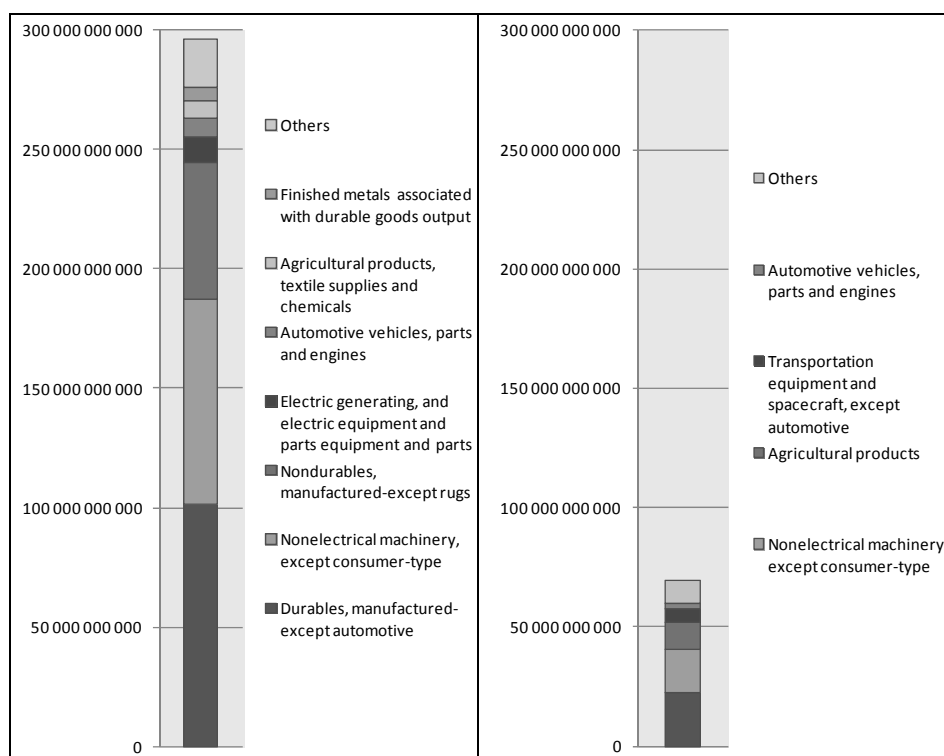
Source: Foreign Trade US Census Bureau

Figure 11. Goods and services from China to the USA and from the USA to China in 2009

When only the goods and services trade is regarded between the two countries, one can conclude that the USA basically exports manufactured products, namely durables and nondurables and nonelectrical machinery. The picture is significantly modulated by the fact that the bulk of this Chinese export is produced by American subsidiaries in China. The value of FDI from the USA to China was 3.6 billion USD in 2009 based on the US-China Business Council data, which made the USA the fifth biggest investor in the country. China imports mainly agricultural products and high-tech technology from the USA.

SUMMARY

Processes of the last decades like the fast development and rise of China or the catching up of its absolute economic measures to those of the USA are determining parts of today's world economy. Many people are concerned about when the "changing of the guard" will happen, when China will become the largest economy in the world. China may have its chance by the end of the next decade or the beginning

of the 2030s. At the same time, however, differences in the relative measures and in the economic and employment structure show that even with such a high rate of growth, it may take three to four decades to significantly decrease per capita production and income differences.

The question arises as to whether such a high rate of development and growth are feasible in such a time horizon. Probably not, as internal problems and contradictions (such as huge social, economic and regional differences, high rate of unemployment affecting rural population, low level of qualifications and disproportions of internal consumption) may significantly slow down or even prevent China from taking the leading role of the world economy from the USA. In relation to it, it is problematic in what way China will be able to respond to the challenges and to the changes, how it can create a more competitive economy, and whether its government is ready to follow Western patterns in handling the existing problems and deficiencies, to modify or decrease the role of the state or to develop atin a fast rate by forming successfully an Eastern pattern.

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Study of the Utilisation of Commercial Accommodations with Special Regard to Northern Hungary and Northern Great Plain

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SUMMARY

Increasing the accommodation supply is a top priority of tourism development at present. Tourism in Hungary has shown significant results since the 90s. Apart from several years' slight declines, the number of guest nights grew steadily; however, the increase of bed places came to a halt in 2004, and the data of the past several years have indicated a clear decrease. The differentiated appearance – also spatially – of the two phenomena raises the necessity of studying the utilisation of accommodations. This study examines the efficiency of operation of the various accommodation types in 2000 and 2008 using shift-share analysis.
Key words: tourism, utilisation of accommodations, shift-share analysis.
Journal of Economic Literature (JEL) code: L83

INTRODUCTION

Hungary's tourism has come a long way from the 1990s till now. The transition to a market economy, the obsolete supply relative to the standards, the global and international tourism trends all limited its development. The composition of tourists has changed: a significant decrease has been observed in the number of Central-Eastern European tourists, while remarkably more "western" tourists are coming to Hungary. Internal tourism has strengthened due to the purchasing power of the population: in 1990 less than 10% of the hotel guest nights were taken by domestic tourists, but this proportion had increased to approximately 50% by 2008. No positive processes could have taken place in the area of visitor turnover without the development of the supply. As a result of the development of attraction and accommodation supply, nowadays we already have a tourism supply that is high level in many ways. Despite the quality development of supply, the growth of Hungary's (especially foreign) tourism lags far behind the level of global growth. While the structure of the accommodation supply has improved, and the number and proportion of the facilities representing a higher accommodation category has grown as an effect of the regional development programs and private capital, an increase in the number of tourists did not follow the development of supply in every region.

This study seeks an answer to the question of what influence the changes in the regional distributions of

visitor turnover and the improvement of the composition of accommodations – the degree of which differs by regions and counties – have exerted on the utilisation of accommodations, where efficiency-related surpluses and/or deficits may have occurred. In order to answer the question I used shift-share analysis, relatively rare in the tourism literature (Dávid et al., 2009). My findings are formulated on the basis of the data from 2000 and 2008.

METHODOLOGY APPLIED

Originally, shift-share analysis was used to separate the regional and sectoral factors of economic growth. Its relatively significant use took place in the United States in order to analyse long-term regional growth. In Hungary it began to be used in the 1970s. The method is based on double standardisation, and the calculations require data collected according to regional and sectoral dimensions. By "sector" we mean economic sectors, age groups and settlement size groups. The method helps analyse the components of the growth of incomes (Nemes et al. 2001).

Shift-share analysis classifies the factors of the growth of the analysed phenomena into three categories:

➢ The values of the "total effect" (Si) show, in the case of the regions, how much the actual number of guest nights differ from the value that would occur at average bed-space utilisation.

➢ The "regional effect" (Sr) can be interpreted as the difference from the national efficiency level

characteristic of each accommodation category (that is, it shows how much the actual number of guest nights differs in a given region assuming the national efficiency level characteristic of the given accommodation category). We can find the regional factor characteristic of a given territorial unit (region) by adding the "regional effect" values characteristic of all accommodation categories.

➢ The difference between "total effect" and "regional effect" is the "sectoral effect" (Sa), which can be seen as the structural advantage or disadvantage of the studied region (that is, whether the accommodation supply is more efficient than average or its composition is less favourable, in terms of the level of utilisation, in the given region).

The results of the shift-share analysis can be represented on a map for the better interpretation. Eight categories can be formed on the basis of the sign of the "total", "regional" and "sectoral" effects, as well as the size of the "regional" and "sectoral" factors, as included in Table 1.

Table 1. Categories of shift-share analysis

No.	Category	Total effect (Si)	Regional effect (Sr)	Sectoral effect (Sa)	Relationship between the size of variables
1.	Greater than average change Positive regional factor	+	+	+	Sr>Sa
2.	Positive structural factor				Sr<Sa
3.	Greater than average change Negative regional factor Positive structural factor	+	–	+	$\lvert Sr \rvert > \lvert Sa \rvert$
4.	Greater than average change Positive regional factor Negative structural factor	+	+	–	$\lvert Sr \rvert < \lvert Sa \rvert$
5.	Smaller than average change Negative regional factor Positive structural factor	–	–	+	$\lvert Sr \rvert > \lvert Sa \rvert$
6.	Smaller than average change Positive regional factor Negative structural factor	–	+	–	$\lvert Sr \rvert < \lvert Sa \rvert$
7.	Smaller than average change Negative regional factor	–	–	–	Sr>Sa
8.	Negative structural factor				Sr<Sa

Source: Nemes Nagy József (ed.): Methods of regional analysis, 2005.

The "total effect" values of the territorial units are positive in categories 1-4 and negative in categories 5-8. The "regional effect" is greater in absolute value in categories 1, 3, 5, and 7, whereas it is smaller in categories 2, 3, 6, and 8 than the "sectoral effect" representing structural factors (Nemes 2005).

The colour intensity of the maps is independent of the size of the effects' absolute values. The particular categories can be divided into four main groups on the basis of their favourable or unfavourable perceptions:

➢ in categories 1 and 2 all "sectoral", regional" and total effects are positive;

➢ in categories 3 and 4 the "sectoral" or the "regional" effect is positive and the "total" effect is also positive,

➢ in categories 5 and 6 the "sectoral" or the "regional" effect is positive but the "total" effect is negative,

➢ in categories 7 and 8 all "sectoral", regional" and "total effects" are negative.

REGIONAL ASPECTS OF THE UTILISATION OF ACCOMMODATIONS

Tourism-related regional aspects are clarified by the exploration of the efficiency and territorial aspects of the accommodation provision, beyond the analysis of demand (number of guest nights) and supply (number of bed spaces) often found in the literature. I used a derived indicator for the analysis, namely the number of guest nights per the bed spaces of commercial accommodations.

The number of guest nights per bed space, which illustrates the efficiency of commercial accommodations in the regions, exceeded the national average (Si>0), which was 58.7 guest nights per bed place in 2000 (which means an occupancy rate of 16.1%) only in Central Hungary and Western Transdanubia. Compared to this level, 2,504,702 more guest nights were registered in Central Hungary (29.8% level of utilisation) and 737,992 more guest nights in Western Transdanubia (20.1% level of utilisation) (Table 2).

Table 2. Shift-share analysis according to the number of guest nights per bed space of commercial accommodations (2000)

Region	in hotels	in guest houses	in tourist hostels	in youth hostels	in resort houses	in campsites	Sr regional	Sa sectoral	Si total
Central Hungary	1081359	154810	38065	-23815	-4798	-82800	1162820	1341882	2504702
Western Transdanubia	393255	69435	31692	7220	274	100838	602714	135278	737992
Northern Hungary	-37018	-74642	41280	-6758	1855	-87041	-162325	-274463	-436788
Southern Great Plain	-174136	-19475	-47426	773	-15722	-68175	-324161	-147782	-471943
Northern Great Plain	23317	-101757	-25075	-5052	-14587	-27955	-151109	-325634	-476744
Central Transdanubia	-413032	-18293	-2704	69014	19420	180309	-165286	-629148	-794434
Southern Transdanubia	-873745	-10076	-35833	-41382	13558	-15176	-962653	-100133	-1062786

Source: own calculations on the basis of CSO[1] data

The rest of the regions considerably underperformed the national level (10.7-12.5%). Central Hungary has better than average indicators in each accommodation category apart from campsites. The same cannot be stated about Northern Hungary, which does not reach the national efficiency level in the case of any accommodation type except tourist hostels and resort houses. We can speak of more favourable indicators than the national level only in the case of hotels in Northern Great Plain.

Significant differences exist in the efficiency of the different accommodations at national and regional levels alike. In 2000 at national level there were 114.1 guest nights per bed space in hotels, 48 per bed space in guest houses, 33.7 in tourist hostels, 41.1 in youth hostels, 47.6 in resort houses and 1.2 in campsites (which means 31.2% utilisation in the case of hotels and 5.8% in the case of campsites).

In Northern Hungary the number of guest nights per bed space was 108 in hotels, for guest houses the figure was 39.4, for tourist hostels 40.8, for youth hostels 37.2, for resort houses 48.2 and for campsites the number was 10.5. In Northern Great Plain the number of guest nights per bed space was 117.4 in hotels, 34.9 in guest houses, 24.7 in tourist hostels, 36.9 in youth hostels , 42.8 in resort houses and 19.2 in campsites.

Table 3. Shift-share analysis according to the number of guest nights per bed space of commercial accommodations (2008)

Region	in hotels	in guest houses	in tourist hostels	in youth hostels	in resort houses	in campsites	Sr regional	Sa sectoral	Si total
Central Hungary	1396910	137546	27487	76031	5196	290	1643460	2059138	3702598
Western Transdanubia	393469	-3096	11267	2893	-2769	13820	415584	405719	821303
Southern Great Plain	-182389	7917	-59592	2482	25152	-6041	-212471	-361956	-574427
Northern Great Plain	-18001	15512	-10952	-26653	-2077	-6568	-48738	-590918	-639656
Northern Hungary	-183059	-60088	1915	-40226	-6161	-14387	-302007	-494308	-796315
South Transdanubia	-871704	-53237	24663	7110	-32639	-3921	-929727	-317393	-1247121
Central Transdanubia	-535226	-44554	5212	-21638	13299	16807	-566100	-700282	-1266383

Source: own calculations on the basis of CSO data

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[1] *Central Statistical Office, Hungary*

The results of the shift-share analysis prepared on the basis of 2008 data are similar to the situation 8 years ago in many respects. Again the same regions shared the positive and negative values of the total effect; the only difference was the order among them: in 2008, similarly to the situation in 2000, only Central Hungary and Western Transdanubia produced efficiency levels above the national average (17%) (Table 3).

Unfortunately, Northern Hungary and the Northern Great Plain are among the laggard regions with their indicators of 11.1% and 11.6%, which primarily come from the below-average level of utilisation of hotels and guest houses in Northern Hungary, and from that of hotels and youth hostels in the Northern Great Plain.

The guest nights per bed space decreased in each accommodation type, apart from guest houses, both in Northern Hungary and the Northern Great Plain from 2000 to 2008. At the same time, the national trends indicate improving efficiency in the case of hotels, guest houses and campsites and a worsening efficiency in the rest of the cases.

Of the above-national average part of the "total" effect, 77.2% was realised in Central Hungary and 22.8% in Western Transdanubia in 2000, while below-average performances appeared in the other five regions (especially in Southern Transdanubia and Central Transdanubia) (Table 4).

Basically, the same regions appeared on the positive and negative side in the case of the "regional" component, with the difference that Western Transdanubia shares a greater proportion (34.1%) of the positive "regional" effects", whereas Southern Transdanubia shares 54.5% of the negative values.

For "sectoral effects" 90.8% of the positive values occurred in Central Hungary and 9.2% in Western Transdanubia, while the negative values were mainly produced in Central Transdanubia (42.6%), the Northern Great Plain and Northern Hungary.

Overall, it can be stated that the majority of the above-average performances in terms of efficiency can be observed in Central Hungary, which is mainly due to the favourable distribution of bed spaces among accommodation categories, while Western Transdanubia can attribute its favourable position to "regional" factors. The negative "total effect" values are dominated by unfavourable structural factors in the rest of the regions, especially in Central Transdanubia.

Table 4: Values of the „total", „regional" and „sectoral" effects in the regions according to the number of guest nights per bed space of domestic commercial accommodations (2000)

Region	Si+	Si-	Sr+	Sr-	Sa+	Sa-
Central Hungary	77.2%		65.9%		90.8%	
Western Transdanubia	22.8%		34.1%		9.2%	
Northern Hungary		13.5%		9.2%		18.6%
Southern Great Plain		14.6%		18.4%		10.0%
Northern Great Plain		14.7%		8.6%		22.0%
Central Transdanubia		24.5%		9.4%		42.6%
Southern Transdanubia		32.8%		54.5%		6.8%
Country total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: own calculations on the basis of CSO data

The studies carried out in 2008 produced similar results, with the difference that the Northern Great Plain somewhat improved its position on the basis of the "regional effect", whereas the position of Northern Hungary worsened as compared to the values in 2000 (Table 4).

Southern Transdanubia keeps a significant share of the negative "regional" effects (45.2%), while Central Transdanubia somewhat improved its position in terms of the negative values of the "regional effects": in 2008 it had a 27.5% share as compared to the former 42.6%.

Table 5: Values of the „total", „regional" and „sectoral" effects in the regions according to the number of guest nights per bed space of domestic commercial accommodations (2008)

Region	Si+	Si-	Sr+	Sr-	Sa+	Sa-
Central Hungary	81.8%		79.8%		83.5%	
West Transdanubia	18.2%		20.2%		16.5%	
Southern Great Plain		12.7%		10.3%		14.7%
Northern Great Plain		14.1%		2.4%		24.0%
Northern Hungary		17.6%		14.7%		20.1%
Southern Transdanubia		27.6%		45.2%		12.9%
Central Transdanubia		28.0%		27.5%		28.4%
Country total	100.0%	100.0%	100.0%	100.0%	100.0%	100.0%

Source: own calculations on the basis of CSO data

The county data clarify the results of the county-level survey. It is typical in all counties of the regions that the number of registered guest nights is significantly below the value that would be expected at average bed space utilisation (58.7 guest nights/bed space in 2000, 61.9 guest nights/bed space in 2008) (Table 5).

In Borsod-Abaúj-Zemplén County the bed space utilisation exceeded the national level only in tourist hostels, resort houses and campsites, in Heves in hotels (+51,214 guest nights), guest houses and tourist hostels, in Nógrád exclusively in tourist hostels (9.2%), guest houses and resort houses, in Békés in guest houses and youth hostels and in Csongrád County in guest houses, youth hostels and resort houses. In Bács-Kiskun County there was no accommodation type the efficiency of which reached the national average (Table 6).

The situation had worsened everywhere, apart from Bács-Kiskun County, by 2008. We can speak of a higher than national average specific visitor turnover only in the case of tourist hostels in Borsod-Abaúj-Zemplén County. The efficiency advantage of hotels and tourist hostels significantly decreased in Heves, while the disadvantage of the other accommodation types further increased. The specific efficiency of no accommodation category reaches the national level in Nógrád; improvements could be observed only in the case of hotels and youth hostels from 2000 to 2008.

Table 6. Shift-share analysis according to the number of guest nights per bed space of commercial accommodations in the counties of the two regions (2000)

County	in hotels	in guest houses	in tourist hostels	in youth hostels	in resort houses	in campsites	Sr regional	Sa sectoral	Si total
Borsod	-68316	-72006	20501	-492	8092	-35471	-147692	-274295	-319227
Heves	51214	11416	18747	-4056	-3858	-33433	40030	-238335	-10339
Nógrád	-19917	-14052	2033	-2210	-2380	-18137	-54663	-87589	-107221
Hajdú-Bihar	114307	-30332	-6029	-1217	-1426	25531	-111591	32018	132853
Jász-Nagykun-Szolnok	-54446	2863	3862	-2983	-8972	-13150	100834	-245022	-317846
Szabolcs-Szatmár-Bereg	-36545	-74289	-22908	-852	-4189	-40336	-72824	-112631	-291751

Source: own calculations on the basis of CSO data

In Hajdú-Bihar County the utilisation level of bed spaces of hotels and guest houses, in Jász-Nagykun-Szolnok County that of hotels, guest houses, youth hostels and resort houses, whereas in Szabolcs-Szatmár-

Bereg that of guest houses and tourist hostels improved, while the situation worsened in the case of all other categories (Tables 6 and 7).

Table 7. Shift-share analysis according to the number of guest nights per bed space of commercial accommodations in the counties of the two regions (2008)

County	in hotels	in guest houses	in tourist hostels	in youth hostels	in resort houses	in campsites	Sr regional	Sa sectoral	Si total
Borsod	-192514	-13888	257	-4098	-1945	-35513	-247702	-274295	-521997
Heves	10605	-7091	5614	-11393	2250	-88655	-88670	-238335	-327005
Nógrád	-8231	-24512	-1239	-2058	-3640	-21781	-61461	-87589	-149050
Hajdú-Bihar	135407	-939	-960	-8018	-3438	4264	126316	38169	164484
Jász-Nagykun-Szolnok	-85894	7886	-1326	-133	9119	-4613	-74961	-330606	-405568
Szabolcs-Szatmár-Bereg	-67514	8564	-8666	-18502	-7757	-6219	-100093	-298480	-398573

Source: own calculations on the basis of CSO data

As for other regions, 74.6% of the above-average part of the "total effect" was realised in Budapest, 13.9% in Zala County (the remaining 11.5% in Győr-Moson-Sopron, Hajdú-Bihar, Vas and Békés Counties); the negative values were observed in a spatially dispersed manner.
The positive values of the "regional effects" mainly concentrated in Budapest (62.6%) and Zala County; their

negative values show a similar spatial distribution to the total effect, with a strong concentration in Somogy County (35.9%).
Similarly, 76.4% of the positive values of "sectoral effects" appear in Budapest; in Somogy County one can observe positive structural factors as well apart from the significant regional effects. The negative values of the

"sectoral effects" concentrate less in space (however, it has to be mentioned that the three counties of Central Transdanubia have a total share of 42.6%).

The county-level surveys of 2008 did not generate significant changes either, as 76.16% of the positive values of the "total effect" were concentrated in Budapest and 9.05% in Zala County (the remaining 14.8% were concentrated in Hajdú-Bihar, Győr-Moson-Sopron, Vas, and Pest Counties); while the below-average values appeared dispersed in space.

The largest proportion of the above-average part of the

"regional effects" was concentrated in Budapest (75.3%) and Zala County (10.7%), and the distribution of the negative values show similar spatial characteristics to the total effects (Somogy County's share of 36.5% is significant).

Once again, 76.7% of the positive values of the "sectoral effects" occur in Budapest; their negative values did not concentrate significantly in 2008 either (it is worth highlighting that Central Transdanubia's three counties have a total share of 28% as opposed to the 42.6% of 2000).
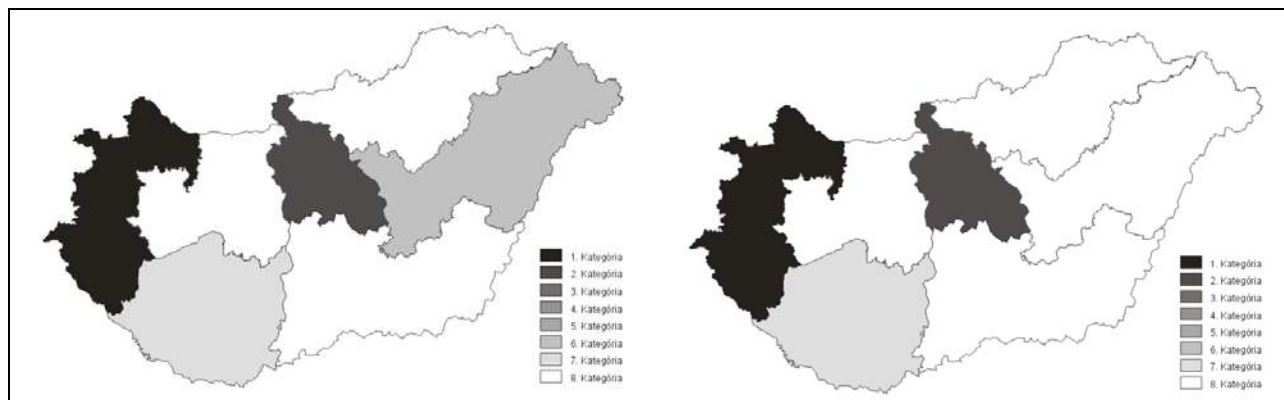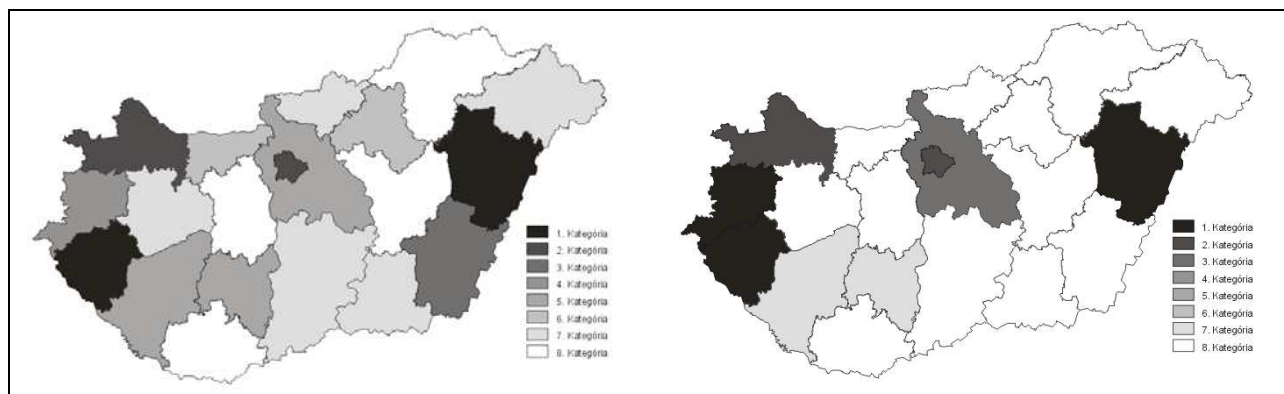

Source: own calculations on the basis of CSO data

Figure 1. Regions on the basis of shift-share analysis according to the guest nights per bed space of commercial accommodations (2000, 2008)

The regional maps illustrating the results of the analysis indicate that no significant changes took place during the seven years; the efficiency of accommodations of

none of the regions reached the national level with the exception of Central Hungary and Western Transdanubia (Figure 1).

Source: own calculations on the basis of CSO data

Figure 2: Counties on the basis of shift-share analysis according to the guest nights per bed space of commercial accommodations (2000, 2008)

The statements relating to the regions are made more sophisticated and also reinforced by the results of the counties. In 2000 Budapest, Békés and Hajdú-Bihar, and in 2008 Budapest, Pest, Csongrád and Hajdú-Bihar Counties could present efficiency exceeding the national level, apart from the counties of Western Transdanubia (Figure 2).

In 2008 the values of the "regional effects" exceeded the "sectoral effects" in absolute value, apart from Central

Hungary, which means that in the case of the regions efficiency below the national average is primarily due to territorial factors, coupled with unfavourable structural trends. Favourable trends were be experienced in any of the counties of the regions, and the average level of utilisation decreased everywhere in such a way that the composition of the accommodation types could not keep pace with favourable national processes.

SUMMARY

A significant part of the resources devoted to tourism development in recent years have been spent on the modernisation of accommodations, the expansion of existing accommodations and building new establishments. As a result, accommodations meeting the international expectations can be found almost in every region of Hungary. The pace of investments is overly optimistic in specific regions (e.g. Northern Hungary, the Southern Great Plain) compared to the trend of indicators describing visitor turnover. The results of the shift-share analyses aimed at the utilisation of accommodations also underpin this statement. The significantly not expanding visitor turnover, coupled with the dynamic growth of bed spaces, lead to a worsening efficiency. Unfortunately, the increase in the proportion of higher-class accommodations is slower than the national level. Objectives aiming at developing higher-class accommodation and enhancing incoming tourism should receive more emphasis when determining the near future's development priorities.

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The Methodological Development of Regional Sustainability Analysis[1]

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SUMMARY

Keeping in mind the needs to preserve the environment and quality of life, the Life Cycle Assessment (LCA) methodology has been developed to meet these needs. At present the main two direction of LCA research are to fulfil the requirement of the broader sustainable development concept and to somehow do away with previously dominating product-specific, plant-level modelling techniques. The Regional LCA Competence Laboratory – based in the Institute of World and Regional Economics – has recently been working on the elaboration of a demonstrative project which can serve the ambitious goal of finding a way to successfully combine the advantages of the above-mentioned approaches. In this paper we summarise the various sustainability models and introduce our regional sustainable development model proposal.

Key words: LCA, sustainable development

Journal of Economic Literature (JEL) codes: Q01 - Sustainable Development

INTRODUCTION

Life Cycle Assessment (LCA) is a comparatively recent tool that has rapidly grown to become a standard procedure for environmental scientists and engineers alike to investigate and assess the environmental performance of a wide range of human dominated processes. As the concept of three-pillar sustainable development became widely accepted, the LCA approach has also widened with these new aspects. The goal is to obtain a more consequent picture and evaluation from ongoing human and natural activities. As LCA models typically use product-specific, plant-level data, one of the biggest challenges among LCA researchers is to develop a new model based upon general macro- or regional (mezzo-) level economic datasets. The aim is to indicate regional economic and environmental effects from the production of goods and services and to support the regional policy makers. Both of the research directions are challenging but pose difficulties.

The aim of the Regional LCA Competence Laboratory is to develop a new methodology that can combine the advantage of a life cycle and input-output analysis to evaluate environmental, social and economic performance at a regional level. The novelty of the research on the one hand is that only the USA had such research programs; in Europe a similar, complex economic, social and environmental LCA approach has not yet been formed. On the other hand this research can serve as an impetus for domestic LCA research, which is only in its infancy. Moreover, high value added can be realised on both the methodological (development of research potential) and practical application sides (contribution to regional policy decision making). The Laboratory aims within this project are: to develop a new methodology, which can give a reliable evaluation for the regional environmental performance; to assess the sustainability of the region; and to support strategic decision-making by developing optimalisation scenarios for the region.

ABOUT LCA ANALYSIS

The concept of life cycle in economics is related to the cyclic character of micro-economy and to innovation, and has come into common use due to the works of Schumpeter (1939). Originally it was interpreted in relation to the product, and was used to mean the period of time which lasts from the beginning of the production of a certain product or group of products and/or its appearance in the market to the completion of the production and/or its disappearance from the market. Later it was expanded to technologies and even to organisations, first of all enterprises in connection with the strategic activities of the companies, investments and the changes in the mission and long-term objectives of

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[1] *The research and this paper are supported by NKTH Baross Gábor Program: LCANORRINO „Development of NORRIA North Hungarian Regional Innovation Agency LCA based environmental regional performance evaluation and optimalisation service, REG_EM_KOMP_09, 2009*

companies. The concept of life cycle used in environmental economics is of more recent origin than the former: it appeared about 20 years ago, at the beginning of the 1990s. Its emergence and the spread of its use were caused by the development of environmental sciences and the general change in the way of thinking related to the environment. The essence of that process of change is that thinking and the formulation of action plans and tasks were shifted from environmental protection to environmental management, to the prevention of damage and to the definition of the essence of sustainable development.

In this sense, life cycle analysis embraces the period 'from birth to death', the period 'from the cradle to the grave', and its complete effect on the environment covers this period. On the input side it examines the use of non-renewable resources or resources renewable to a limited extent, and on the output side it examines the damage caused to the environment in the chain of production and use as well as of destruction, i.e. in the complete life cycle, determining them quantitatively (in terms of physical indicators and/or money). The meaning and objective of Life Cycle Assessment (LCA) is given by the very fact that it looks for the products, technologies and organisations which ensure the most beneficial, optimum environmental total impact for satisfying a given need under the given conditions in a unit period of time (in general calculated for one year), i.e., those that exert the least possible load on the environment. When the environmental impacts are known, LCA assessment may promote the modernisation and improvement of the existing means, or just as well its replacement and superseding with new means. The life cycle according to the two ways of thinking and their analyses thus stem from different origins, their contents are different from each other and thus one cannot replace the other. At the same time, however, they can exist side by side, and complement each other in certain aspects, for both of them are related to innovation and are intended for evaluating innovation.

LCA ANALYSIS FOR SUSTAINABLE MEASUREMENT

The concept of sustainability as terminology is well-known and accepted among those involved in the topic and it has become fashionable to some extent without there being spectacular achievements behind it. In the beginning, several approaches narrowed the concept only to the sustainability of economic growth in the interpretation of sustainability. Today, and mainly in the sense used by environmental economists, it is about a strategic look into the future based on three pillars: in its course the economy develops while respecting environmental aspects, the ecological balance is maintained in the ecosystem, and the development satisfies the expectations of the society as well (Tóthné, 2007). If we accept that development does

not necessarily means material growth and increase of mankind in terms of numbers, but rather the intellectual development of mankind, then it is theoretically possible to preserve the state of the biodiversity of the Earth and sustainable development is feasible. According to a renowned representative of ecological economics: "sustainable development is achieving continuous social welfare without growing in a way exceeding ecological sustaining ability" (Daly, 1996).

Analysing sustainability in the life cycle approach was first put on the agenda in 2006. Since 2006 Life Cycle Assessment has become an important tool for the definition of the environmental impact of products and services. LCA is important for sustainability decision making at the European level, but it needs to develop continuously and catch up with the expansion of social, economic and environmental aspects, since the precise determination of LCA performance is now one of the major goals in sustainable development and is crucial for political decision making. In several research projects, life cycle assessment is already organically connected to sustainability analysis and life cycle costing and social life cycle assessment supplement environmental life cycle analysis (see the later CALCAS model, Klöpffer, 2008)

Developments aimed at the products generally set the objective of improving the environmental profile, which includes a reduction in materials and energy as well as a reduction in emissions or toxic materials (in the case of products, systems or products and the search for alternative solutions). A 'green product' possesses incontestable environmental advantages (the impact exerted by the product on the environment is smaller than that of its traditional rivals). On the basis of the threefold requirement of sustainability, the developments limit the use of non-renewable resources to the minimum, minimise the use of energy and water as well as of pollutants and avoid the use of hazardous materials in the production of the product. In addition, the product has a longer useful life, its recycling is ensured, and is at least of as good a quality as the not-environment-friendly rival product. It is an important criterion that it should be widely available at a competitive price (Karlsson and Luttropp, 2006). For environmentally friendly products a very carefully thought-out pricing mechanism (skimming, price discrimination, mixed pricing) is to be chosen, which depends basically on the consumers' environment-consciousness and willingness to pay and also on the competitive position. In the case of price discrimination, the company segments the market according to the consumers' willingness to pay and positions the product at different prices accordingly. But if the consumers' environmental consciousness is of a low level, the company uses mixed calculation instead and may include part of the additional costs in the prices of its other products. The LCA-based approach to environmental friendly developments focuses on the analysis of energy consumption (EUP directive), or in other cases on the replacement of toxic materials, or it promotes a better choice of packaging materials.

ENVIRONMENTAL IMPACT ASSESSMENT AND/OR LCA ANALYSIS

The importance of environmental protection is becoming increasingly prominent in all spheres of human society, while more and more environmental impact analysis methods have tried to give a reliable and coherent estimation (Fullana et. al., 2009). Among others, life-cycle assessment (LCA) has become a widely used tool in the last decade to estimate environmental effects of the entire life cycle of products and services. Unfortunately there is no methodology without uncertainty factors, or suspected inaccuracy. The characteristic uncertainty of the given estimations can be grouped into three categories:

➢ uncertainty or lack of data (due to the need of data aggregation, collection and lack of data sources)

➢ narrowed focus of analysed processes or effects (only one, mostly environmental aspect stands in the midpoint of the analysis, the analysed effect has multiple effects that are difficult to identify)

➢ unreliable data sources (national data sources often derived also from estimations).

In the next few paragraphs we briefly introduce the most commonly used and newly developed methodologies for giving estimations on sustainable development. These concepts served as a methodological basis of our suggested model and can be classified according to three characteristic features: whether it is an econometric model, built upon the LCA approach, or a more indicator-based statistical analysis.

1. Econometric modelling of SUS development

The econometric models, although often appearing as a model of sustainable development, mostly seek to forecast only the positional evolution of economic growth.

PANTA REI and SuE models: The scope of these models is to include the measuring of energy and material consumption and thus they are well suited to indicate the linkage of economic development and environmental impact. Both models are shown to meet the sustainability requirements.

PANTA RHEI is an ecologically extended version of the sector econometric simulation and forecasting model INFORGE (INterindustry FORecasting GErmany) and belongs to the class of econometric input-output models, which differs from neoclassical approaches assuming bounded rationality. PANTA RHEI has a high degree of interdependency. The bottom-up construction principle says that each sector of the economy has to be modelled in great detail and that the macroeconomic aggregates have to be calculated by explicit aggregation within the

model. The about 40,000 equations of PANTA RHEI describe the interindustrial flows between the 58 sectors, their deliveries to personal consumption, government, equipment investment, construction, changes in stocks, exports, as well as prices, wages, output, imports, employment, labour compensation, profits, taxes, etc. for each sector as well as for the macro-economy. In addition the model describes income redistribution in full detail. The model is extended with biotic and abiotic material inputs and the erosion of ground.

"Sustainable Europe" or SuE is a system dynamics model for the analysis of long-term dynamics based on physical accounting of resources where embodied energy is calculated as energy cost (natural capital accounting). SuE accounts directly for energy consumption, instead of deriving it from the price elasticity of different sectors for energy. The model does not calculate the reduction in energy and materials consumption resulting from resource taxation, but it will be capable of demonstrating the long-term impact on economic development and the resource consumption such a reduction in physical supply will cause (Bockermann et al., 2000).

REEIO model: After examining some of the econometric models Brettell (2003) proposed a model for regional sustainable development that involves economic but also more environmental impact factors as:

➢ Gross value added
➢ Personal income
➢ Consumer spending and investment
➢ Output of industrial production
➢ Employment
➢ Waste and industrial waste
➢ Waste management methods
➢ Key emissions
➢ Energy demand
➢ Water consumption (household & industrial).

The advantage of the model is that it can help the better understanding of development processes and the evaluation and comparing of scenarios to be able to forecast future paths. Weaknesses include heavy data requirements and a multiplicity of competing economic explanations to underpin the model explanation (Brettell, 2003)

FUGI model: The FUGI (futures of global interdependence) global modelling is a scientific policy simulation tool to provide global information and to find out possible coordination of policies among countries in order to achieve sustainable development of the global economy under the constraints of rapidly changing global environment. The FUGI global model 9.0 M200PC divides the world into 200 countries and regions. The scientific integrated economics design concept of the FUGI global modelling system has been influenced by recent advancements in life science, biotechnology and information technology. Each country/regional model is globally interdependent through direct linkages of the world trade matrices, export/import prices, primary commodities prices, foreign exchange rates, official

development assistance, private foreign direct investment, external debt, interest rates, population changes, economic development policies, energy policies and environmental policies. A full set of parameters of the model is carried out very efficiently by automatically selecting either OLS (ordinary least squares) or MLBM (maximum likelihood method) in accordance with the indicators of DW (Durbin–Watson ratio) (Onishi, 2005).

2. Indicator based statistical methodology

Those models belong in this group which address the sustainability dimensions and apply a chosen structural criteria for selection of a core set of indicators, in order to assess a sustainable path.

EPSILON: The EPSILON project (Environmental Policy via Sustainability Indicators On a European-wide level -- 2002-2005) delivered a computerised model through an aggregation of indicators. Assessing sustainability has been addressed over four spheres/pillars: the environmental, the economic, the social and the institutional dimension in order to benchmark European regions. A coherent objective based structure has been defined relying strongly on the analytical DPSIR framework (Driving-Forces, Pressures, State, Impact and Response model from the European Environmental Agency) leading to the selection of a core set of regional indicators, common to all regions, tracking all dimensions of interest to sustainability. The results are represented on sustainability maps in the form of air, soil, water and land quality indicators. These results should not be considered as absolute figures but rather as an attempt at a relative sustainability assessment (Blank et Al., 2005).

Another example of an indicator-based sustainability evaluation is the work of Marsalek et al. (2006), who compiled a set of core indicators suggesting a need for and comparison of social, environmental and economic indicators to measure sustainability.

3. LCA based approaches

This model often uses the approach of an input-output analysis, but evaluates the performances from cradle to grave, gathering inventory data and linking it with impact categories to get a better picture from present and future environmental, social and economic states.

Modelling sustainable development through exergy: This belongs to the kinds of models where sustainability function is found not as a classical economic function but in the form of material/energy flows of products and services. According to its concept, the exergy embodied

in resources, products, and waste materials has the potential to cause changes in both the industrial environment and the natural ecosystem. It estimates the present sustainability paths with an Ecoinvent-based LCA assessment of energy transformation/system routes (Rodriguez et al., 2010).
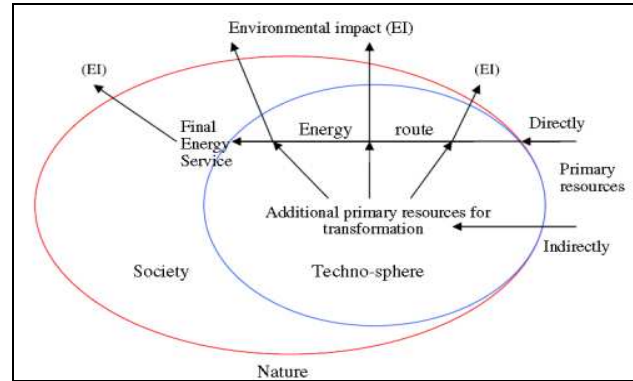
Source: Rodríguez et al., 2010.

Figure 1. Energy route model

EVR model: The basic idea of the EVR (Eco-costs/Value Ratio) model is to link the value chain to the ecological product chain. In the value chain the added value and the added costs are determined for each step of the production. Similarity, the ecological impact of each step in the production chain is expressed in terms of money, the so-called eco-costs. These costs have been estimated on the basis of technical measures to prevent pollution and resource depletion to a level which is sufficient to make our society sustainable. The specific EVRs have been calculated on the basis of LCAs, for materials, energy and industrial services. This model complies with ISO 14040 and 14044 and uses Ecoindicator'95 for characterization (Vogtländer et al., 2009). The model focuses more on environmental and economic aspects of sustainability but is capable of comparing governmental strategies from the point of view of both the consumer and producer.

CALCAS model: The aim of this concept is to broaden the LCA on the basis of the three-pillar model of sustainability and is called Life Cycle Sustainability Analysis (Klöpffer, 2008).

$$LCSA = LCA + LCC + SLCA [2]$$

The model struggles with operationalisation difficulties and problems about the integration of the pillars (environmental, economic and social aspects) and system boundaries. As a new direction the model also suggests involving technological,[3] physical[4] and economical[5] relations.

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[2] *Life Cycle Sustainability Analysis = Life Cycle Analysis + Life Cycle Costing + Social Life Cycle Assessment*
[3] *Life cycle costing (LCC), Total cost accounting (TCA), Total cost of ownership (TCO), Hybrid analysis, Life cycle activity analysis (LCAA), Life cycle optimalisation (LCO), Social life cycle assessment (SLCA), Carbon footprint (CF), Environmental risk analysis (RA).*
[4] *Economy-wide material flow analysis (CGE), Substance flow analysis (SFA), Material input per unit of service (MIPS), Energy/Exergy analysis (EA).*
[5] *Computable general equilibrium model (CGE), Input output analysis (IO), Environmentally extended input output analysis (EE-IOA), Partial equilibrium models (PEM).*

EIO-LCA and REIO-LCA: LCA studies have used mostly product-specific or plant-level data. The Economic Input-Output Life Cycle Assessment (EIO-LCA) uses information about industry transactions – purchases of materials by one industry from other industries – and the information about direct environmental emissions of industries to estimate the total emissions throughout the supply chain (www.eiolca.net). Although both process LCA and EIO-LCA have been important decision-making tools, neither of them has been able to perform regional and state level analyses efficiently. However, many decisions by regional policy makers would be better informed by local or regional aggregate data (Hendrickson et al., 1998).

To solve the mentioned deficiency Horvath et. al intended to construct and apply a regional economic input-output analysis model combining with a life cycle approach (REIO-LCA) based upon publicly available datasets. The model uses Gross State Product (GSP) estimates to calculate regional economic multipliers and then link them to regional electricity and fuel use, and air emission factors (Hendrickson et al., 2007)

SUGGESTED METHODOLOGY FOR REGIONAL SUSTAINABLE DEVELOPMENT

Suggested methodology for regional sustainable development

The methodological aspects of the sustainability LCA are inducing increasingly more interest among LCA researchers. Many assessments connect to sustainable product systems, to renewable resource systems or to regional and local sustainable models. In this paper we propose a regional sustainability assessment method based partly on LCA and partly on sectors' mutual relationship.
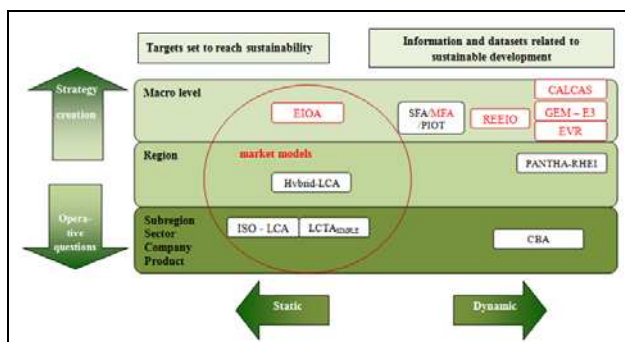
Source: Own compilation

Figure 2. Overview of sustainable development analysing models

The basic concept of our analysis is built on the LCA standards of ISO 14040 and ISO 14044 but supplemented by economic and social elements; according to our concept all (three) pillars of sustainability should be integrated into the assessment. In the development of the concept we used several models as a starting point (EIOA, MFA, REEIO, CALCAS, GEM-E3, EVR), selecting their advantages to build a measurable, relatively simplified, transparent, and coherent model specified to our region (at NUTS 2 level), representing an underdeveloped, area that was formerly a heavy-industrial centre.

In this model LCA is built on a matrix structure, and the regional environmental impacts have been aggregated in an environmental performance index (REI):

$$REI = I_n S I_k^T ,$$

where, I_n is a n-dimension unit row vector and I_k^T is a k-dimension unit column vector. The regional environmental performance is the sum of the element of matrix S that represents the single sectors environmental burdens by pollutants. So matrix S can be defined as:

$$S = \begin{bmatrix} S_{11} & \cdots & S_{1k} \\ \vdots & \ddots & \vdots \\ S_{n1} & \cdots & S_{nk} \end{bmatrix},$$

where the rows represent the single sectors (i=1, …, n) in the region's economy and its columns represent the measured pollutants (j=1, …, k). So the S_{ij} element of S matrix is the sector i's environmental burden caused by pollutant j. More specifically the given S_{ij} element is the aggregated environmental burdens of the dominant companies caused by the given j pollutant in the environmental burdens of sector i.
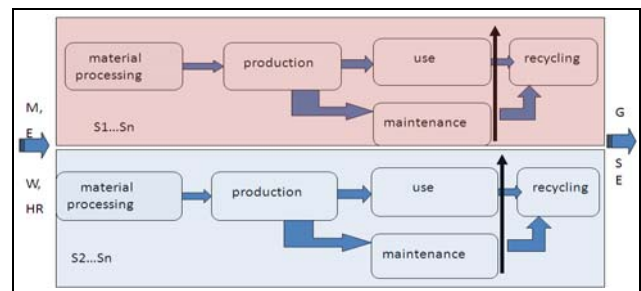
Where M = material; E = energy; W=water; HR=human resources; G=goods; S=services; E=emissions

Source: own compilation

Figure 3. Proposed regional LCA based sustainable development analysis

The economic and social impacts will be measured by scenario and trend analysis. For the system border we chose the region's geographical border, while the function unit is the unit of GDP produced in the region. The data analysed in the model is generated from regional material flow and sector-specific production data statistics. The model does not integrate the whole economic activity; it focuses on those sectors which have a more considerable role in the development of the region and can determinate its sustainable path.

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[6] *Combining life cycle assessment and economic input-output is based on the work of Wassily Leontief in the 1930s.*

DATA NEED FOR THE SUSTAINABILITY ASSESSMENT

Industrial sectoral data and environmental impact categories are to be provided by the datasets of GaBi 4 and Simapro software. Regional data will be derived from macro level I-O tables and regional specific characteristics can be integrated by company data collection (input-output monetary flow survey)

DELINEATION OF THE DIMENSIONS OF THE RESEARCH

To decrease the complexity, so to simplify the model, it is suggested decreasing the number of analysed activities in the region. Those sectors or supply chains should be involved into the sustainability analysis that produces relatively high economic and social value added but that also contribute to a relatively high percentage of environmental pollution and resource depletion. The selection of the dominant sectors is based on long-term statistical data analysis provided by the Hungarian Central Statistical Office (turnover, employed, emissions, input flows).
Analysis involves only:
➢ sectors which covers together the 80 percent of the environmental load focusing on the largest polluter producers at company level - environmental aspect;
➢ sectors where the added value is the highest, for each sector minimum 10% of the regional added value alone - economic aspect,
➢ sectors which employs the most, for each sector minimum 10% of the regional added value alone - social aspect.
Uncertainty factors in our model:
➢ Setting reliable data series for material and energy flows.
➢ Making emission information more accurate on account of the different public administration borders (in case of regions) and scopes of environment protection agencies,
➢ Mapping the significant polluters in the region,
➢ Setting sectoral models, and testing the analysis (Tóthné Szita, Roncz, 2010).

DELINEATION OF THE DIMENSIONS OF THE RESEARCH IN CASE OF THE NORTH HUNGARIAN REGION (FIRST RESULTS)

The target is to restrict the research area to only those sectoral relation analyses that produce the high value added but have outstanding resource usage and environmental impact. In this region the services produces the highest added value (real estate and financial services together add up to 23% of regional production). In case of electricity generation a higher gross value added and outstanding waste generation can be registered. In addition to the energy sector, industrial production (manufacturing) generates 30% of waste in the region while contributing to more than 10% of production (in value).
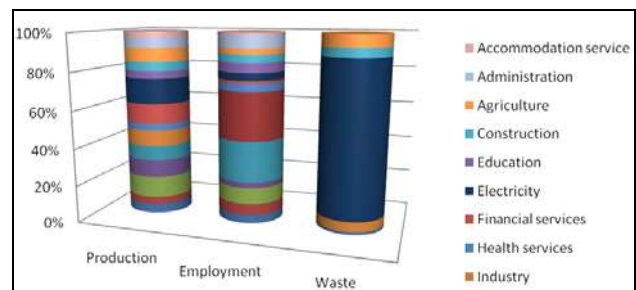
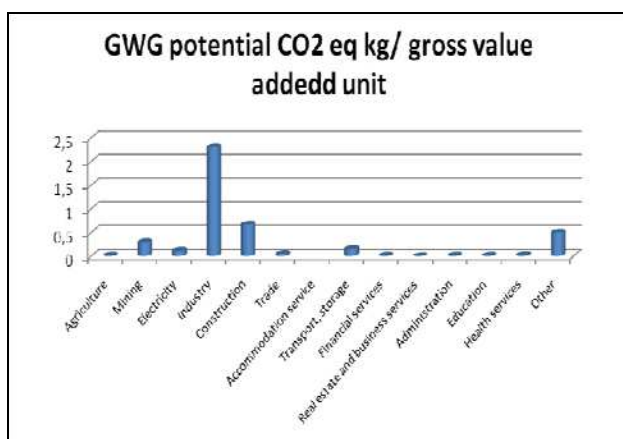Source: own compilation by Hungarian Statistical Office

Figure 4. Gross Value added produced by sectors, North-Hungarian region (%), 2008.
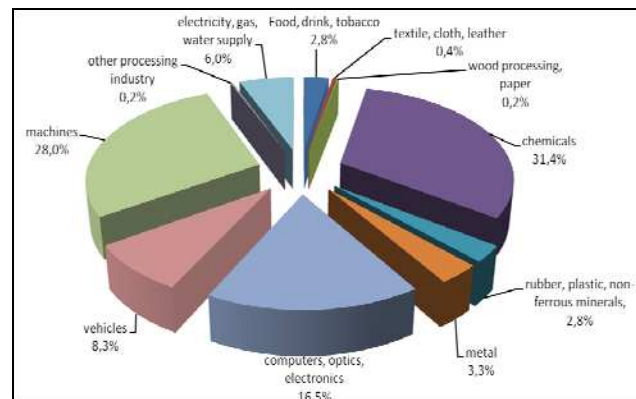
Source: own compilation by Hungarian Statistical Office

Figure 5. Manufacturing broken down by subsectors (%), 2008.

Examining the detailed chart of manufacturing subsectors, the chemical industry and mechanical engineering give the biggest share (31% and 28%) of the region's manufacturing production. In this way the product-based supply chain and concerned companies should be selected from these subsectors of the regions. The employment shares cover a similar percentage. In order to get better estimations on environmental emission data, company-level waste-output data collection is needed.

Source: own compilation by Hungarian Statistical Office

Figure 6. First robust estimations by main sectors, GWG potential CO2 eq kg/GVA unit, 2008.

If we calculate the average performance of each sector integrated with Ecoinvet[7] data we can get a robust estimation of sectoral GW (global warming) potential. As can be seen in Figure 6, as we already assumed the biggest environmental potential/GVA is in the categories of industry, construction and electricity production. According to the Ecoinvet dataset, mining also contributes to global warming at a relatively high extent. The group of others is an outstanding category due to the waste production intensity of the wastewater treatment activities of local waste management companies.

CONCLUSION

As the members of the Regional LCA Competence Laboratory we are working on the elaboration of a demonstrative project based on an LCA approach and I-O analysis. These are the two newest directions of the recent environmental performance analyses, so we can say that in completing the Laboratory's mission Hungarian LCA research can enter the mainstream of LCA research. The practical advantages are also promising: the consequent environmental, social and economic evaluation of regional performance can support regional decision-making policy in order to help the region to catch up by a more sustainable route.

However, the path to developing future scenarios for the region poses difficulties we have to face with the usual uncertainties: the lack of reliable statistical data, methodological implications, and the need for simplification. In this paper we have briefly summarized the current available literature on the topic. Building upon their findings we made a proposal for a regional sustainable LCA evaluation methodology assigning the data need, territorial and sectoral delineation of the research field. Analysing the production, employment and waste production rates of the sectors, the energy production, industry (chemical and machine engineering), waste treatment and mining were outstanding in terms of GWG potential/GVA. Due to the minor employment share of the mining and waste management sectors, the sectors of industry, construction and electricity production should be in the focus point of our analysis. This leads us specific subsector analysis demand, and can help us characterise the further steps and directions to improve the model and sustainability assessment.

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[7] We applied Siampro software to get Ecoinvent data.

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Differences in the Characteristics of Impoverishment Between Northern Hungary and Southern Great Plain

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SUMMARY

In Southern Great Plain and in Northern Hungary, poverty is a big issue, not only in country, but also in European context. Both poverty rate and relative poverty gap excess Hungarian and European average. As these regions are economically backward, too, my study examines whether economic growth (or recession) has an effect on poverty and if so, what kind of effect it is.
Key words: poverty; economic growth; economic crisis
Journal of Economic Literature (JEL) code: R11

INTRODUCTION

Even though information about the global economic crisis started in October 2008 is limited, economic recession, the decrease of real salaries and the significant decrease of the number of workplaces have rendered the life of many people more difficult. Changes in economic and social roles have accelerated, which affects the individuals' behaviour. It is not yet known how the crisis and its consequences affect the most deprived part of the society, those who lack social and cultural capital.

My study examines how recent economic crisis and the related unfavourable economic features affect poverty. As economic crisis goes together with economic recession, I am trying to determine to what extent it influences poverty. My paper is trying to prove that economic recession contributes not only to the impoverishment of an important portion of the society, but also increases the depth of poverty significantly. If I fail to reject this, it is worth examining to what extent one percent economic growth or economic decline can decrease or increase the rate of the poor and the depth of poverty.

The study examines two regions of Hungary: Northern Hungary (one of the most backward regions in 2008 in Hungary based on GDP per capita) and the Southern Great Plain (the third most backward region in 2008 based on GDP per capita). Eurostat reports that both of them are among the poorest twenty regions within the European Union (based on GDP per capita PPP, the South Plain is the 255th and Northern Hungary is the 259th among the 271 regions of the European Union).

POVERTY

There is no exclusive definition for poverty. According to the most general definition, one is considered to be poor if (s)he does not have the minimal amount of money necessary to make ends meet, that is his/her income does not exceed a minimal level (Bokor 1987).

Four main conceptions of poverty are distinguished in the poverty literature (refer to Table 1). Absolute concepts of poverty assume that minimum material needs can be defined regardless of space and time. Those who are not able to satisfy these needs are considered to be poor. The relative conceptions define poverty as being below some relative poverty threshold. People can be considered to be poor if they fall behind some average wealth level of the society to a certain extent (for example 50 or 60 percent of mean or median income level). The other approach using the relative poverty concept defines poverty line as an income level below which a certain part (one tenth or one fifth) of the population lives (Hegedűs and Monostori 2005).

Subjective well-being can be reflected by the so-called subjective poverty concept. This concept was elaborated by two research groups. Van Praag (1971) worked out the Income Evaluation Question (IEQ) to collect data on subjective well-being. Deleeck and his stuff defined CSP (Subjective Poverty Line). Subjective poverty concept can be used in two ways. On the one hand, poverty can be defined by examining who people consider to be poor. It can also be defined by collecting peoples' beliefs about their own position in a system of inequalities (Spéder 2002).

Table 1. Concepts of poverty

Concept of poverty	Income	Living conditions
Absolute	Subsistence level	Not pocessing certain items
	Regional minimum	Being in crisis
Relative	Living below the 50 or 60 percent of mean or median income	Deprivation index
	Lower decile, quintile	
Subjective	Subjective poverty	Minimal living conditions

Source: own compilation based on Spéder (2002, p 53).

Besides its monetary definition, there are multidimensional concepts of poverty as well. In this sense, deprived is the person who is in an unfavourable position from different views, so handicaps are accumulated. Accumulated poverty and social exclusion are, however, not exactly the same things. In the case of accumulated poverty, emphasis is put on the output, namely on the deprivation from certain goods and services. Exclusion, however, primarily focuses on the process leading to poverty (Havasi 2002). Complex view of poverty is important because deprivation is much more widespread if more dimensions are taken into consideration rather than define poverty by only one dimension (Bokor 1987).

Table 2. Laeken indicators

Primary indicators	Secondary indicators
At-risk-of poverty rate	Dispersion around the at-risk-of-poverty threshold
S80/S20 income quintile share ratio	
Persistent at-risk-of poverty rate	At-risk-of-poverty rate anchored at one moment in time
Relative median at-risk-of-poverty gap	
Regional cohesion	At-risk-of-poverty rate before cash social transfers
Long term unemployment rate	
Persons living in jobless households	Gini coefficient
Early school leavers not in education or training	In-work at risk of poverty rate
Life expectancy at birth	Long term unemployment share
Self defined health status	Very long term unemployment rate

Source: KSH (2008b) pp 1-3.

The European Union worked out the system of Laeken indicators in 2001 (refer to Table 2), which defines several − mainly relative − measures of poverty. Its application makes it possible to compare different level NUTS regions. My paper applies the most common measure of poverty defined by EU using the 60 percent of median income.

Using poverty line, the most important measures of poverty can be defined. The most common measure is poverty rate (H) that expresses the ratio of those living below the poverty line in the whole population (Ravallion 1996).

$$H = \frac{p}{n} \qquad (1)$$

where p is the number of persons living below the poverty line and n is the number of population. This measure describes the extent of poverty. It does not give any information, however, about the depth of poverty. If the financial conditions of a poor person worsen, the value of the poverty rate will not change at all.

That is why it is worth computing poverty gap as well, that measures the distance between the average income of the poor and the poverty line. In order to make it suitable to measure changes over time and space, this measure can be expressed as a percentage of the poverty line (this is the so called relative poverty gap (PG)).

$$PG = \frac{1}{p} \sum_{i=1}^{p} \frac{g_i}{z} \qquad (2)$$

where g_i's are the poverty gaps and z is the poverty line (Hajdú 1997).

THE EFFECT OF ECONOMIC GROWTH ON POVERTY

Economists have long been debating about the relationship between economic growth and poverty. It is not known exactly how economic growth affects the conditions of the poor. It is obvious that faster economic growth goes together with faster poverty reduction, but experts have long been debating about the exact nature of the relationship between these two factors. If economic growth can significantly reduce poverty, strategies relying on economic growth to reduce poverty are probably justified (Bourguignon 2002).

In the 1970s many economists believed that economic growth is not enough to reduce poverty. In 1974, Chenerey and his staff (1974) found that growth has benefit only to two persons out of three. Adelman and Morris (1973) had similar opinion. They said that economic growth reduces the income of the poor in absolute and relative terms as well. In this way those who live in extreme poverty were rather hurt than helped by economic development. Ravallion (2009) drew the same conclusion. By analysing 100 developing countries, he found out that conditional convergence, i.e. the growing advantage of starting from a lower development level, cannot be realized because of the high poverty rate.

In the evaluation of the theories about the relationship between poverty and economic growth, Kuznets (1955) and his hypothesis played an important role. It says that the two variables are related in an inverted U-shaped curve. It means that in the early stages of economic growth, income distribution worsens and it does not

improve until countries reach middle-income status. At the beginning of economic growth income inequalities increase, which does not allow the improvement of the poor's conditions. Kuznets hypothesis was based on data derived from cross-sectional data and on theory. Later, economists started to use time series besides cross-sectional data to characterize that relationship (similar research was carried out by Ravallion; Deininger and Squire; Schultz; Brno, Ravallion and Squire). All of these more recent studies tend to reject the Kuznets hypothesis. Empirical findings showed that economic development does not have any significant impact on income distribution (*Adams* 2003). Deininger and Squire (1996) found several countries where per capita gross domestic product (GDP) increased significantly while the value of Gini coefficients which is used to measure income inequalities hardly changed at all.

Later some new findings appeared that supposed a significant relationship between poverty and economic development. According to Dollar and Kray (2001), the average income of the poorest part of the society increases proportionately with average incomes. Their statement was based on an empirical research based on data from 92 countries for four decades. If we use the absolute concept of poverty – which supposes that the minimal need can be defined irrespectively of time and place and those who cannot satisfy these needs are considered to be poor – than let us suppose that economic development tends to improve the conditions of the poor as well. After a while – even without redistribution – they can cross the poverty line and get out of poverty. To some, it is suggested that "trickle down" can solve the problem in due course. In case of a developing country, however, it takes more than twenty years to be lifted out of poverty (Kanbur 1987). Adams (2003) carried out a research based on 50 countries and found that economic development reduced poverty significantly as it has little or no impact on income inequality.

A research examining Northern Hungary between 2000 and 2007 concluded that economic growth can reduce significantly poverty rate and poverty gap defined based on the existence minimum (Siposné Nándori 2009).

On the basis of this study and that of Adams (2003), I hypothesise that economic growth can reduce poverty rate and the depth of poverty at the same time in Northern Hungary and in Southern Great Plain. Taking into account the available data, the effect of economic growth on poverty can be examined between 2000 and 2008. In order to examine these effects, the measurement of the two concepts is necessary. Poverty can be measured by poverty rate and relative poverty gap described above.

Measuring economic growth is also possible in several ways. Per capita GDP on purchasing power parity or per capita average income / average consumption are usually used to measure economic growth (in poverty analysis, per capita income or per capita consumption are used as a measure of economic growth by Kuznets (1955), Kanbur (1987), Kakwani (1993), Ravallion and Chen (1996),

Bourguignon (2002). Per capita real GDP or GNI is used by Cashin (1995), Collier and Dollar (1999) and both measures are used by Adams (2003)). These two kinds of measures do not often agree. Differences are the result of the different definitions of the two measures. Average income and average consumption values come from household surveys, so they are usually highly correlated with household expenses. Per capita GDP and GNI values, however, are derived from national accounts, where household expenses are residuals. So any errors or omitted items in national accounts result in the deviation of household expenses. Measuring average income or average consumption can also have different results. People usually are not very keen on talking about their income and they tend to reject answering the questions related to their income level. According to a study made at the beginning of 1990s in Eastern Europe, average consumption level exceeds average income level in 82% of the cases (Milanovic, 1998). Many economists believe that data derived from national accounts are more accurate than the results of a representative survey, but Daeton (2001) believes that this is without any basis. In the analysis, real GDP per capita derived from national accounts and average income per capita derived from personal income taxation database are both used. As both data are published in current values, it is desirable to compensate for changes in the value of money.

METHODOLOGY

The effect of economic growth on poverty can be described by graphs and regression analysis. Graphs can help in determining the trend of this effect.

In order to describe the nature of the relationship between economic growth and poverty exactly, the method of regression analysis is used. Poverty at country i at time t can be expressed in the following way (Ravallion-Chen 1996):

$$\lg P_{it} = \alpha_i + \beta \cdot \lg \mu_{it} + \gamma \cdot t + \varepsilon_{it} - \beta \cdot v_{it} \qquad (3)$$

where P is the measure of poverty in country i at time t, α_i is a fixed effect reflecting time differences between countries in distribution, β is the growth elasticity of poverty with respect to the given measure of economic growth given by μ_{it}^*, γ is trend rate of change over time t and ε_{it} is a white-noise error term that includes error in the poverty measure. This model ignores every other factor that can influence the relationship between economic growth and poverty. That is why the following extended form of this model is used in the further analysis:

$$\lg P_{it} = \alpha + \beta_1 \cdot \mu_{it} + \beta_2 \cdot EDUC_{it} + \beta_3 \cdot REG_{it} + \varepsilon_{it} \qquad (4)$$

where P is the poverty measure (poverty rate or relative poverty gap) in county i at time t. The model contains three explanatory variables: μ_{it} as the measure of economic growth (average income level or per capita real

GDP), EDUC, the rate of secondary school students in the whole population and REG as the measure of regional correlation (the average level of the GDP of surrounding counties). α is the constant term, β_1 expresses the economic elasticity of poverty, β_2 provides information about the effect of human development on poverty and β_3 provides information about the effect of regional correlation on poverty.

Including REG and EDUC variables in the model makes it possible to control for the different levels of human development and regional correlation among the counties. The optimal regression function is determined using backward method. It involves starting with all candidate variables and testing them one by one, deleting any of them that are not significant.

Data about income levels are derived from the personal income tax returns of the Northern Hungarian and Southern Great Plain Regional Directorates. Even if data can include biases (like hidden income, income from the black economy), the analysis is carried out using these data because of the lack of more reliable data sources. Data about per capita real income, rate of secondary school students and per capita income of surrounding counties are from the database of Hungarian Central Statistical Office. Data about surrounding counties outside the country are derived from the database of Eurostat and IMF (in the case of Slovakia and Romania, it was possible to use GDP data of NUTS3 level counties. Serbia, however, does not uses NUTS levels of territorial units and therefore does not publish data about NUTS3 level counties. In this case country level GDP data can be used for the calculations). Per capita real income is calculated from the monthly net average income of the employed and the inflation rates. So it does not take into consideration the unemployed, the inactive and their income. It means that data can include biases. As there are no more reliable data sources at regional and county level about income levels, analysis is carried out based on these data.

RESULTS

Income level

To get a closer view of monetary poverty, it is worth examining the net income level and the change in income in the case of the counties of interest (Figure 1). Increase in income between 2000 and 2008 was the highest in Nógrád county (41%), while it was the lowest in Heves county (32%). In the counties of Southern Great Plain, the dispersion of income is smaller than in the counties of Northern Hungary.

The income level of 2008 is defined controlling for the effect of inflation. Its values in Northern Hungary excess the values of Southern Great Plain. The lowest values can be found in Békés and Bács-Kiskun counties, while Heves and Csongrád counties are characterized by the highest values.

The joint analysis of the two variables highlights that Békés county is in the most unfavourable condition from economic point of view, as both income level and change in income are low there. Based on income level, Heves county is in a favourable condition, the increase in income, however, is really low. The position of Nógrád county is exactly the opposite: economic growth is significant, but it is not yet enough to reach a high level of development among the counties of interest.
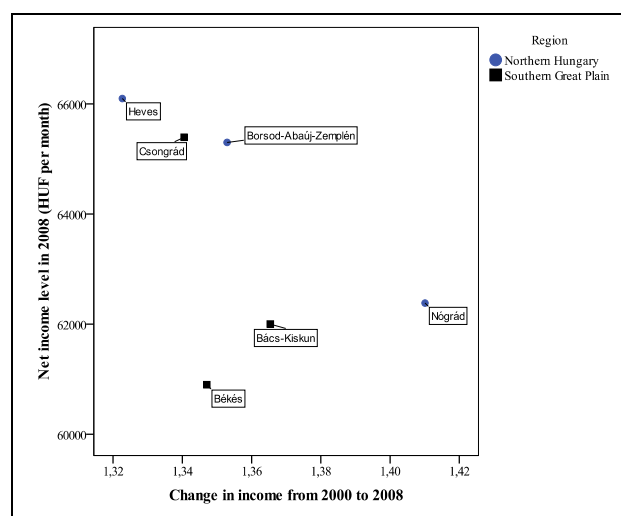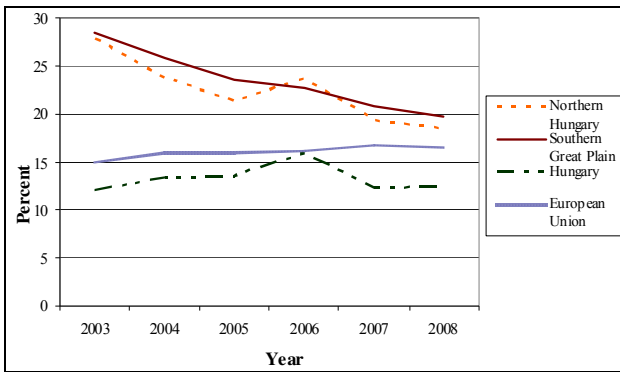

Source: own compilation based on the database of Hungarian Central Statistical Office

Figure 1. Distribution of counties of the Northern Hungarian and Southern Great Plain regions by change in income from 2000 to 2008 and by net income level in 2008

Poverty

Poverty rate (Figure 2) exceeds the Hungarian average and the EU average in both regions. The difference, however, increased from 2003 to 2008. In Southern Great Plain, poverty rate decreased from 29 to 20 percent. Within the region, the rate of the poor is the highest in Békés county (30 percent in 2003 and 21 percent in 2008).

Poverty rate is nearly the same in Bács-Kiskun and Csongrád counties. The only difference is that in Csongrád county the poverty rate decreased evenly, while in Bács-Kiskun county the dynamic decrease of the beginning of the period was followed by an increase in 2006.

Source: own compilation based on the database of APEH and Eurostat (Values of the European Union refer to 15 counties before 2003, to 25 counties between 2004 and 2006 and to 27 counties from 2007. The source of the poverty rate in Hungary for 2004: Vukovich (2008) p 14.)

Figure 2. Poverty rate (%) in the examined regions, compared to the national and European averages, 2003-2008

In Northern Hungary, trends are similar to that of Southern Great Plain. In the examined period, poverty rate fell, except for the year of 2006. Within the region, the poverty rate is the highest in Nógrád county, while Heves county is in the best position where the poverty rate was less than 17 percent in 2008 (no other counties reached this value in the examined regions).

The increase of relative poverty gap (Figure 3) shows that the average income level of the poor got farther from the poverty line, which means that they became poorer. The increase of poverty gap thus means the increase of the depth of poverty.

The backward of the regions under study from the Hungarian and European average is apparent, the change in relative poverty gap has the same trends. Between 2000 and 2008, there was a slight increase (7 percent in Northern Hungary and almost 10 percent in Southern Great Plain). In all counties of Northern Hungary, relative poverty gap significantly increased between 2000 and 2002. Then, in the following 3 to 4 years, it stagnated at around 50 percent. The only exception was Borsod-Abaúj-Zemplén county, where its value was almost 56 percent in 2006. This dynamic increase was followed by a dynamic decrease, which resulted in the lowest value of the region in 2007 and 2008.

In the counties of Southern Great Plain, the depth of poverty significantly increased between 2000 and 2002. In the following years, the value of this measure remained at around 50-52 percent. Similarly to Borsod-Abaúj-Zemplén county, relative poverty gap increased radically in Bács-Kiskun and Csongrád counties. In Békés county, this radical increase was not present, the depth of poverty was only about 46-47 percent there.
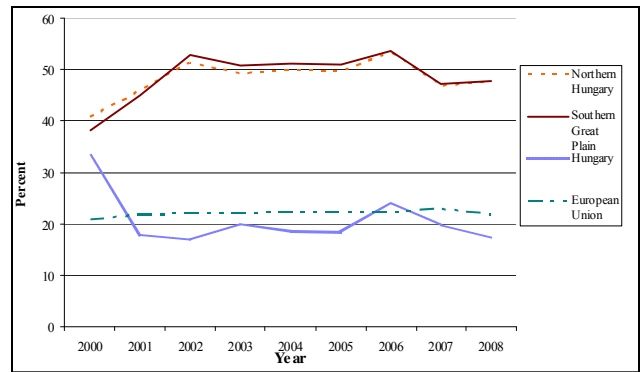
Source: own compilation based on the database of APEH and Eurostat (values of the European Union refer to 15 counties before 2003, to 25 counties between 2004 and 2006 and to 27 counties from 2007. The source of the poverty gap in Hungary for 2004: Társadalmi Kirekesztés Elleni Bizottság (2006): Helyzetelemzés a Szociális védelemről és társadalmi összetartozásról szóló Nemzeti Stratégiai Jelentés c. dokumentum 1. fejezetéhez)

Figure 3. Relative poverty gap (%) in the examined regions, compared to the national and European averages, 2000-2008

Analysis of the effect of economic growth on poverty

Graphs can help to determine the trend of the effect of economic growth on poverty.

Determining the direction of the relationship between income and poverty rate is not unambiguous (Figure 4). Nearly the same rate of observations can be found in the upper left and lower right quarters (which illustrate a negative relationship) than in the upper right and lower left quarters (that indicate positive relationship).

Relationship between average income level and relative poverty gap seems to be negative based on graphs (Figure 5) in both regions. Most of the observations can be found in the lower right and upper left quarters (14 out of 24 in Northern Hungary and 15 out of 24 in Southern Great Plain).
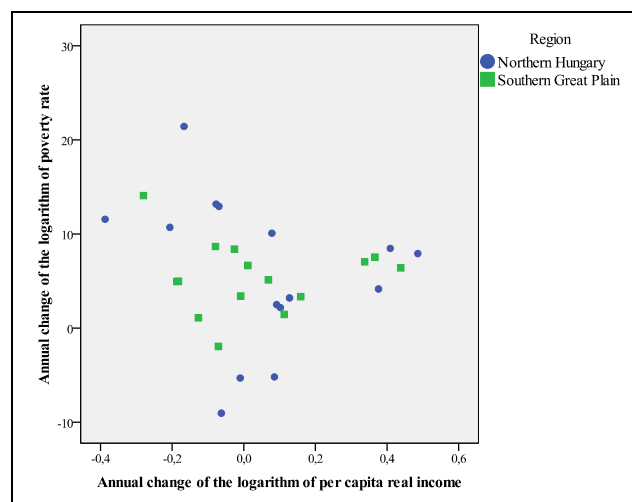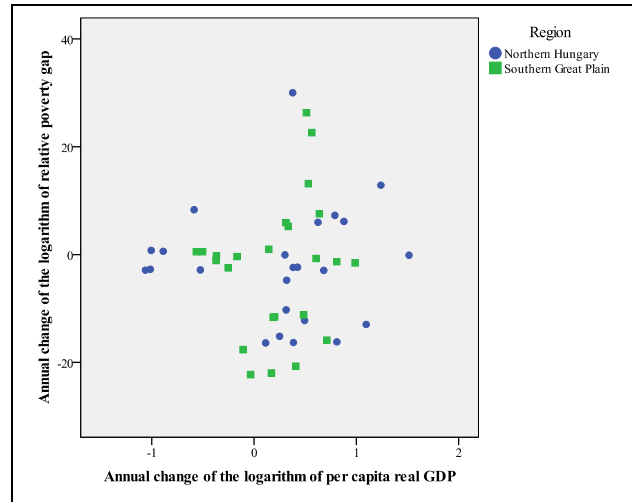

Source: own compilation

Figure 4. Relationship between economic growth and poverty (using average income level and poverty rate)
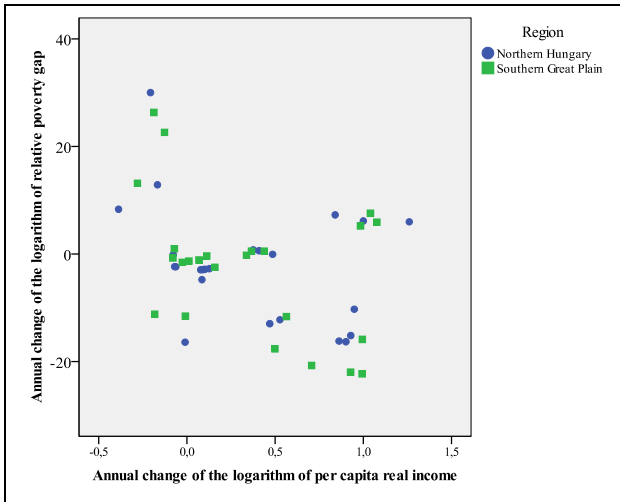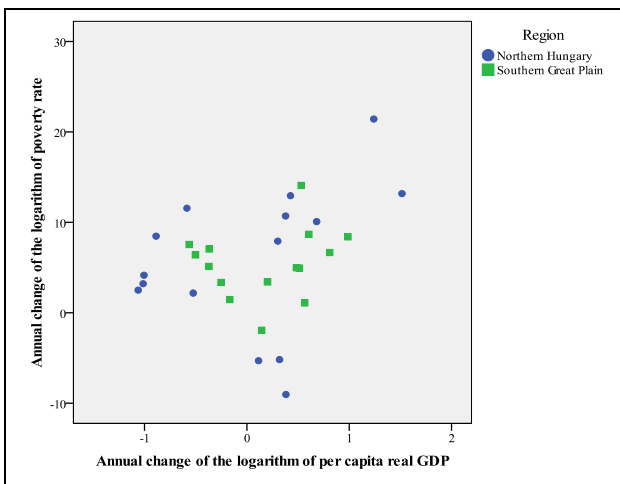
Source: own compilation

Figure 5. Relationship between economic growth and poverty (using average income level and relative poverty gap)

Measuring economic growth with per capita real GDP, the relationship between economic growth and poverty can be illustrated with graphs similarly to the previous case. Direct relationship can be found between the change of GDP and the change of poverty rate in Northern Hungary (Figure 6), though 60 percent of the observations (9 out of 15) is in the upper left and lower right quarters. In Southern Great Plain, the direction of the relationship cannot be determined based on the plot of observations. 47 percent of the observations can be found in the upper left and lower right quarters and 53 percent of them are in the lower left and upper right quarters.

Source: own compilation

Figure 6. Relationship between economic growth and poverty (using per capita real GDP and poverty rate)

As for the relationship between per capita real GDP and relative poverty gap, the direction cannot be determined unambiguously based on the scatter plot (Figure 7). The relationship is probably very weak.

Source: own compilation

Figure 7. Relationship between economic growth and poverty (using per capita real GDP and relative poverty gap)

The effect of the change of per capita GDP on poverty

The parameters of regression equation can be found in Table 2. The increase of per capita gross domestic product can decrease poverty rate significantly in both regions.

Table 2. Economic elasticity of poverty (measuring economic growth with per capita GDP)

Variables of poverty and coefficient of determination	Partial regression coefficients when Y = HI (t values)		Partial regression coefficients when Y = PG (t values)	
	Northern Hungary	Southern Great Plain	Northern Hungary	Southern Great Plain
Constant	55.414 (12.125)	47.245 (16.664)	0.494 (97.768)	0.503 (73.325)
Per capita real GDP	-0.013 (-4.929)	-0.009 (-3.489)	a	a
Rate of secondary school students	a	a	a	a
Average GDP of surrounding counties	-0.003 (-6.074)	-0.002 (-8.605)	a	a
R^2	0.806	0.897	0.000	0.000

a The effect of the given variable is not significant.

Source: own computation

A one thousand forint increase in per capita real GDP decreases poverty rate by 13 percent in Northern Hungary and 9 percent in Southern Great Plain. The effect of EDUC is not significant, the average GDP of surrounding counties, however, is in an inverse relationship with poverty rate. The 1000 HUF increase of the per capita real GDP in the surrounding counties decreases poverty rate by three percent in Northern Hungary and by two

percent in Southern Great Plain. Explanatory variables account for more than 80 percent of the variation of the dependent variables.

When relative poverty gap is the dependent variable, none of the explanatory variables has a significant effect on it either in Northern Hungary or in Southern Great Plain.

The effect of real income on poverty

Measuring economic growth with per capita real income (Table 3), results are different than in the previous model. Economic growth decreases poverty rate only in Southern Great Plain (1000 HUF increase in per capita real GDP increases it by one percent). Results are similar in the case of average GDP of the surrounding counties. Its increase by 1000 HUF decreases the rate of the poor by four percent in Northern Hungary and by three percent in Southern Great Plain. Using per person real income as dependent variable, the effect of human development is significant. The increase of the rate of secondary school students decreases poverty rate in Northern Hungary, and increases it in Southern Great Plain. Independent variables account for more than 80 percent of the variance of the poverty rate in this case, too.

If the indicator of economic growth is the income, it has a significant effect on relative poverty gap. The regression coefficient, however, is extremely low (0.000002 and 0.000006) so this effect is negligible.

In the two regions under study, the effect of economic growth on poverty is similar, taking into account GDP as a measure of growth. Income level, however, has a different impact on poverty in the two regions.

Table 3. Economic elasticity of poverty (measuring economic growth with per capita real income)

Variables of poverty and coefficient of determination	Partial regression coefficients when Y = HI (t values)		Partial regression coefficients when Y = PG (t values)	
	Northern Hungary	Southern Great Plain	Northern Hungary	Southern Great Plain
Constant	61.528 (11.029)	69.406 (9.034)	0.388 (7.153)	0.242 (3.708)
Per capita real GDP	a	-0.001 (-3.893)	0.000002 (0.065)	0.000006 (4.061)
Rate of secondary school students	-318.249 (-4.907)	217.352 (1.829)	a	a
Average GDP of surrounding counties	-0.004 (-6.397)	-0.003 (-10.140)	a	- 0.000014 (-2.410)
R²	*0.805*	*0.920*	*0.168*	*0.482*

a The effect of the given variable is not significant.
Source: own computation

SUMMARY

In Southern Great Plain and in Northern Hungary, poverty is a big issue, not only in country, but also in European context. Both poverty rate and relative poverty gap excess Hungarian and European average. As these regions are economically backward, too, my study examines whether economic growth (or recession) has an effect on poverty and if so, what kind of effect it is.

He analysis carried out for the two regions partly has similar results. Increase of per person real GDP decreases the rate of the poor in both regions, it does not have any effect on the depth of poverty, though. The per capita real income decreases poverty rate only in Southern Great Plain, it does not effect relative poverty gap, though.

I fail to reject the initial hypothesis depending on the measure of economic growth. Per capita real GDP can decrease poverty rate in both regions, it does not affect, however, relative poverty gap. Real income decreases poverty rate only in Southern Great Plain, while its effect on relative poverty gap is negligible in both regions. Result of the analysis about Northern Hungary between 2000 and 2007 are only partly supported by the current analysis. The different results are probably due to the different concepts of poverty. While the previous study is based on the absolute concept of poverty, and poverty line is defined by the existence minimum, this study uses relative concept of poverty (in accordance with the recommendations of the European Union) and defines poverty line as the 60 percent of the median income.

The fact that economic growth can decrease poverty rate implies that economic recession that goes together with global economic crisis increases poverty along with many other unfavourable social consequences. It means that the income of more and more people falls below the poverty line and they become poor.

Economic growth plays an important role in poverty alleviation as the growth of real GDP decreases the extent of poverty.

In the two examined regions, economic growth is currently not enough to reduce depth of poverty. Other means are also necessary to improve the conditions of those living in poverty. Malnutrition leads to the worsening of the state of health, to social stress and these consequences increase the cost of public health, public safety and so on.

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